

# FINAL INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN (2025-2029)

## NEW JERSEY ARMY NATIONAL GUARD SEA GIRT NATIONAL GUARD TRAINING CENTER



NEW JERSEY DEPARTMENT OF MILITARY  
AND VETERANS AFFAIRS  
NEW JERSEY ARMY NATIONAL GUARD  
ENVIRONMENTAL MANAGEMENT



MAY 2024

**FINAL**  
**INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN (2025–2029)**  
**NEW JERSEY ARMY NATIONAL GUARD**  
**SEA GIRT NATIONAL GUARD TRAINING CENTER**  
**MAY 2024**

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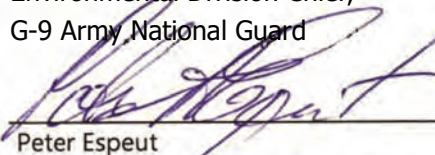
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**MAY 2024**

The Sikes Act of 1960 provided for cooperation by the Departments of the Interior and Defense, along with state fish and wildlife agencies, in planning, development, and maintenance of fish and wildlife resources on military installations throughout the United States. The Act also authorized the collection of hunting and fishing fees on military lands and directed the Department of Defense to expend such fees in furtherance of the purposes of the Act. The purpose of the Sikes Act directs the Secretary of Defense, in cooperation with the U.S. Fish and Wildlife Service and state fish and wildlife agencies, to carry out a program for the conservation and rehabilitation of natural resources on military installations. The Sikes Act allows for the sustainable, multipurpose use of natural resources subject to military security and safety requirements.

This Integrated Natural Resources Management Plan has been prepared in accordance with the Sikes Act, Sikes Act, 16 U.S. Code [U.S.C.] 670a et. seq., enacted September 15, 1960.

**The U.S. Fish and Wildlife Service and New Jersey Army National Guard are in mutual agreement with regard to the contents of this Integrated Natural Resources Management Plan:**

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**NEW JERSEY ARMY NATIONAL GUARD**  
**SEA GIRT NATIONAL GUARD TRAINING CENTER**  
**MAY 2024**

The New Jersey Department of Environmental Protection - Fish and Wildlife and New Jersey Army National Guard are in mutual agreement with regard to the contents of this Integrated Natural Resources Management Plan:

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**MAY 2024**

**The New Jersey Department of Environmental Protection - State Parks, Forests and Historic Sites and New Jersey Army National Guard are in mutual agreement with regard to the contents of this Integrated Natural Resources Management Plan:**

2 August 2024

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## EXECUTIVE SUMMARY

This Integrated Natural Resources Management Plan (INRMP) for Sea Girt National Guard Training Center (NGTC) has been prepared by the New Jersey Army National Guard (NJARNG) and the New Jersey Department of Military and Veterans Affairs (NJDMAVA) in accordance with Department of Defense, Department of the Army (DA), and Army National Guard Bureau policy and guidance. The purpose of this INRMP is to document the policies, practices, and desired future direction of the NJARNG's natural resource programs that are consistent with military training and use at Sea Girt NGTC. The INRMP was first developed and implemented in 2006 (NJDMAVA 2006a), updated in 2013 and 2018, and has been updated to cover the next five years (2025–2029). This plan and subsequent revisions have been developed in cooperation with the U.S. Fish and Wildlife Service and New Jersey Department of Environmental Protection, Fish and Wildlife, Endangered and Nongame Species Program in accordance with (*A Guide for Federal Agency Compliance with Section 7(a)(1) of the Endangered Species Act*, dated January 31, 2023 and *Federal Agency Obligations under Section 7(a)(1) of the Endangered Species Act*, dated February 6, 2024). This INRMP reflects a mutual agreement among the parties concerning conservation, protection, and management of fish and wildlife resources at the installation.

The INRMP has been written in accordance with various federal, Department of Defense, Army, and National Guard Bureau laws, regulations, and guidance documents and this version includes additional proactive conservation measures so that it acts as a consultation agreement that complies with Section 7(a)(1) of the Endangered Species Act of 1973. However, the signatories recognize that these additional conservation measures are funding dependent and may not be implemented each year, but will not hold the NJDMAVA, NJARNG, and/or the NGTC liable if those projects are not implemented each year.

Sea Girt NGTC is located at the south end of the Borough of Sea Girt along the Atlantic Ocean in southern Monmouth County, New Jersey. The installation encompasses 171 acres of state-owned land by the NJDMAVA that is surrounded by residential communities on its north, south, and west sides. Stockton Lake, a tributary of the Manasquan River, is located adjacent to the southern boundary, and the Atlantic Ocean is located adjacent to the eastern boundary. The NJARNG mission is to provide trained and ready forces for federal military requirements and for state contingencies as determined by the governor. The mission of Sea Girt NGTC is to provide facilities to support the stationing, training, and support of regional National Guard units, and facilities to support the academic training of Soldiers, Airmen, Sailors, and federal, state, and local law enforcement agencies in the region. The installation has been used for military training since 1885.

Six natural resources management program areas (land and watershed management, fish and wildlife management, rare species management, outdoor recreation, climate, and information management) have been established to address relevant issues at Sea Girt NGTC. This INRMP identifies management issues and establishes management goals, responsibilities, implementation schedules, and funding requirements for each of these program areas. Despite its location in a highly developed coastal community, Sea Girt NGTC provides important habitat for five rare species, including a federally listed bird (piping plover), a federally listed plant (seabeach amaranth), two state-listed birds (least tern and osprey), and a state-listed plant (seabeach knotweed). Management of these species is addressed in an Endangered Species Management Plan contained in Section 6.0 .

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**SEA GIRT NATIONAL GUARD TRAINING CENTER**

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## LIST OF ACRONYMS

ADT	Active-Duty Training
AMSL	above mean sea level
AOC	Atlantic Ocean coast
AR	Army Regulation
ARNG I&E	Army National Guard Directorate, Installations & Environment
ASGECI	Amy S. Greene Environmental Consultants, Inc.
BECP	Beach Erosion Control Project
BMPs	best management practices
BR	Breeding Population
CAFRA	Coastal Area Facility Review Act
CFMO	Construction Facilities Management Office
CFMO-EMB	CFMO – Environmental Management Bureau
DA	Department of the Army
DAG	Deputy Adjutant General
DAR	daily accumulation rate
DCA	Department of Community Affairs
DDT	dichloro-diphenyl-trichloroethane
DOD	Department of Defense
DLUR	Division of Land Use Regulation
EA	Environmental Assessment
EFH	Essential Fish Habitat
ENSP	Endangered and Nongame Species Program
EO	Executive Order
EQCC	Environmental Quality Control Committee
ESA	Endangered Species Act
ESMP	Endangered Species Management Plan
°F	degrees Fahrenheit
FAC	facultative species
FACU	facultative upland species
FACW	facultative wetland species
FEMA	Federal Emergency Management Agency
FGS	Final Governing Standards
FNSI	Finding of No Significant Impact
GIS	geographic information system
GPS	Global Positioning System
HUC	hydrologic unit code
ICRMP	Integrated Cultural Resources Management Plan
IDT	inactive duty training
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
LCC	Land Component Commander
LID	low impact development

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LOI	Letter of Interpretation
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NGJTC	National Guard Joint Training Center
NGTC	National Guard Training Center
NISC	National Invasive Species Council
N.J.A.C.	New Jersey Administrative Code
NJARNG	New Jersey Army National Guard
NJDEP	New Jersey Department of Environmental Protection
NJDEP-ENSP	NJDEP-Endangered and Nongame Species Program
NJDMAVA	New Jersey Department of Military and Veterans Affairs
NJPDES	New Jersey Pollutant Discharge Elimination System
N.J.S.A.	New Jersey Statutes Annotated
NL	not listed species
NOAA	National Oceanic and Atmospheric Administration
NPA	northern protection area
NRHP	National Register of Historic Places
OBL	obligate wetland species
OEBGD	Overseas Environmental Baseline Guidance Document
ONLM	Office of Natural Lands Management
POC	point of contact
RTI	Regional Training Institute
SGCN	species of greatest conservation need
SHPO	State Historic Preservation Office
SPA	southern protection area (A.K.A former SPA, Est 2024).
SSURGO	Soil Survey Geographic
STEP	Status Tool for the Environmental Program
SWAP	State Wildlife Action Plan
SWG	State Wildlife Grants
TAG	The Adjutant General
UPL	upland species
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
WPWA	Wreck Pond Watershed Association

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## SECTION 1

### INTRODUCTION

#### 1.1 AUTHORITY

This Integrated Natural Resources Management Plan (INRMP) for Sea Girt National Guard Training Center (NGTC, the installation, or the site) has been prepared by the New Jersey Army National Guard (NJARNG) and the New Jersey Department of Military and Veterans Affairs (NJDMAVA) in accordance with requirements specified by the following: Department of Defense (DOD) guidance set forth in the 10 October 2002 memorandum titled *Implementation of the Sikes Act Improvement Act: Updated Guidance*; DOD 1 November 2004 memorandum titled *Implementation of Sikes Act Improvement Act, Supplemental Guidance Regarding INRMP Reviews*; DOD 18 August 2017 memorandum entitled *Guidance for Addressing Migratory Bird Management in INRMPs*; Department of the Army (DA) policy set forth in the 25 May 2006 memorandum titled *Guidance for Implementation of the Sikes Act Improvement Act*; Army National Guard Bureau (NGB) policy set forth in the 9 April 2012 memorandum titled *Guidance for the Creation, Implementation, Review, and Revision and Update of INRMPs*; DOD Instruction 4715.03, *Natural Resources Conservation Program*; DOD Manual 4715.03, *(INRMP) Implementation Manual*; Climate Adaptation for DOD Natural Resource Managers (2019); and Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*. This document has also been prepared to be consistent with INRMP criteria specified by the Sikes Act, as amended in 2016 which requires preparation of INRMPs for military installations where there is a federal property interest. No federal property interest exists at Sea Girt NGTC because NJDMAVA owns the property. However, many of the buildings are managed using federal funds, and the facility supports the federal mission of the NJARNG. NGB policy specifies that all INRMPs will be consistent with the Sikes Act.

The Endangered Species Act (ESA) is to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide a program for the conservation of such species. The ESA directs all federal agencies to participate in conserving these species. Specifically, section 7(a)(1) of the ESA charges federal agencies to aid in the conservation of listed species, and section 7(a)(2) requires the agencies to ensure their activities are not likely to jeopardize the continued existence of federally listed species or destroy or adversely modify designated critical habitat. This INRMP has been prepared in accordance with the ESA, specifically, section 7(a)(1) and 7(a)(2). However, the proposed tasks listed in this INRMP can only be implemented based on available state funding. Any INRMP that has been written IAW section 7(a)(1) includes additional proactive conservation measures so that it acts as a consultation agreement of the Endangered Species Act of 1973. Proactive conservation projects are indicated as such throughout the INRMP. However, the signatories recognize that these additional conservation measures are funding dependent and may not be implemented each year and will not hold the NJDMAVA, NJARNG, and/or the NGTC liable if those projects are not implemented. The Formal Agency Consultation Request Letter to the U.S. Fish and Wildlife Service from the New Jersey Army National Guard is provided in Appendix A.

#### 1.2 MANAGEMENT PHILOSOPHY

This INRMP was developed under the following five concepts:

- No net loss to training capacity;
- Sustained use of lands for military training;

- 
- Natural resources stewardship;
  - Biodiversity protection; and
  - Ecosystem management.

In order to fully support and sustain its military mission at Sea Girt NGTC, the NJARNG must manage, protect, and enhance the biological integrity of its lands.

Natural resources stewardship is the management of natural resources with the goal of maintaining or increasing the resource's value indefinitely into the future. The stewardship goal of the NJARNG is to sustain multiple uses of natural resources over the long term, while promoting the health of the ecosystems in which these activities occur.

Biodiversity is defined as the variety of life and its processes, including living organisms, the differences among them, and the communities and ecosystems in which they occur. Protecting and enhancing biodiversity is an overall goal of the NJARNG.

Ecosystem management is a tool for the NJARNG to use not only in its efforts to protect and enhance biodiversity, but also to sustain the use of its military lands. This tool encourages management decisions to focus on natural resources at a community or ecosystem level rather than at a single species level.

The INRMP is a tool that can be used for future land use and project planning. In accordance with the DA and NGB policy, the major components of the INRMP include managing natural resources to support the military mission and to provide for sustainable use of training lands; identifying natural resources inventory and monitoring needs; protecting, enhancing, and restoring fish and wildlife habitat, including wetlands; and enforcing natural resources laws and regulations. Each of these components is essential to the success of an INRMP that aims to achieve sustainable military use and promote biodiversity.

### **1.3 PURPOSE OF PLAN**

The purpose of this INRMP is to document the policies, practices, and desired future direction of the NJARNG's natural resource programs that are consistent with military training and use at Sea Girt NGTC. The plan should include the following:

- Provide a comprehensive planning document that allows the NJARNG to carry out its mission, promote ecosystem health, and maximize biodiversity at its installations and in the surrounding region;
- Ensure no net loss of training capacity;
- Establish the framework for the implementation of natural resources programs and ecosystem management;
- Provide a centralized source of information on the status of natural resources programs;
- Identify mission-related impacts and options for conflict resolution of competing interests;
- Serve as a source of information for National Environmental Policy Act (NEPA) documents;
- Provide a source of guidance for compliance with environmental regulations; and
- Identify, prioritize, and schedule long-term budget requirements.

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## **1.4 ORGANIZATION OF PLAN**

This plan is divided into ten sections. Sections 1.0 through 3.0 provide introductory information, a description of the military mission and environmental setting, and an explanation of the natural resources planning structure. Sections 4.0 through 8.0 describe resource-specific management programs at the installation, including management issues and goals. Section 9.0 discusses the information management program. Section 10.0 includes an implementation plan for each program, and Section 11.0 contains references.

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## **SECTION 2**

### **MILITARY MISSION AND ENVIRONMENTAL SETTING**

#### **2.1 GEOGRAPHIC LOCATION AND SIZE**

Sea Girt NGTC is located along the Atlantic coastline of New Jersey at the south end of the Borough of Sea Girt in southern Monmouth County, New Jersey (Figure 2-1). The installation encompasses 171 acres of land surrounded by residential communities on its north, south, and west sides. To the south, the installation is bounded by Stockton Lake, a tributary of the Manasquan River, and the Borough of Manasquan. The Atlantic Ocean is adjacent to the eastern boundary, and railroad tracks run along the western boundary of the installation.

#### **2.2 MILITARY MISSION**

##### **2.2.1 Statement of Mission**

The NJARNG mission is to provide trained and ready forces for federal military requirements and for state contingencies as determined by the governor. The mission of the NGTC located at Sea Girt, New Jersey, is to provide facilities to support the stationing, training, and support of regional National Guard units, and facilities to support the academic and physical training of Soldiers, Airmen, and Sailors in the region. The installation facilities and grounds, including beachfront, have been used for military training since 1885. The vision for the NGTC is to continue its stationing, training, and support mission for the National Guard, while preserving its surrounding community and environmental integrity. Land and facility resource collaboration with common-interest "partners in education," such as the New Jersey State Police, Department of Corrections, Juvenile Justice Commission, and Department of Criminal Justice, supports this vision (Dreher, personal communication, 30 August 2017).

##### **2.2.2 Facility Uses and Users**

The New Jersey NGTC supports a variety of military and nonmilitary users. The installation serves as the home station for the 254<sup>th</sup> Regiment Regional Training Institute (RTI). The RTI's mission is to provide Combat Arms training under the RTI concept to active Army, Army National Guard, Army Reserve, and DA civilian personnel. The NGTC is also the home station for the Recruiting and Retention Battalion, the 63<sup>rd</sup> Army Band, and the State Medical Command. In addition, Facilities Maintenance Shop #2 and the New Jersey National Guard Militia Museum are located at the NGTC. Additional active duty and reserve units from the region use the facilities at the NGTC for inactive duty training (IDT), annual training, and various classes/schools (Dreher, personal communication, 30 August 2017).

Tenant organizations that have a permanent presence at Sea Girt NGTC include the following:

- New Jersey State Police Academy and Regional Laboratory;
- New Jersey Department of Corrections Academy;
- Division of Criminal Justice Academy;
- Juvenile Justice Commission Academy;
- Verizon;
- Allied Universal;
- New Jersey Youth Challenge Academy;

- 
- New Jersey National Guard Militia Museum; and
  - various NJARNG Units.

Approximately 168 full-time personnel, including tenants, are located at the NGTC. Additional military personnel and tenant students use the installation's facilities year-round. The student housing capacity is 894. Authorized individuals use outdoor recreation areas (e.g., beach and campground) seasonally (see Section 7.0 – Outdoor Recreation). In addition, local schools, communities, and sports leagues frequently use the parade grounds for organized sports (e.g., soccer, lacrosse, and croquet) under lease agreements. The NJDMAVA sponsors a National Guard Youth Camp one week each summer for approximately 120 children. The New Jersey State Police conduct a Trooper Youth program three to four times per summer; each one-week program includes approximately 80 pending high school seniors. The NGTC hosts a Scouts BSA (Boy Scouts of America) Camporee, with an attendance of approximately 10,000 scouts. The camporee lasts two days, with two additional days for set up prior to scout arrival and features camping on the parade grounds, demonstrations by the New Jersey State Police and NJARNG, and classes and activities for the scouts so they can earn their merit badges (Dreher, personal communication, 30 August 2017). Conserve Wildlife Foundation of New Jersey (CWF) also conducts summer youth camps at NGTC. Aerial demonstrations of NJARNG, New Jersey Air National Guard, and New Jersey State Police aircrafts are typically conducted during the Scouts BSA Camporee. All aircraft used in the demonstrations shall follow the aircraft guidelines in the INRMP, no unmanned aerial vehicles (UAVs) will be flown during any Camporee, and the Scouts BSA are not allowed on the beach during their Camporee. No UAV's are allowed at any time of the year at Sea Girt NGTC.

General management guidelines have been developed to avoid aircraft-related disturbance of beach-nesting birds at Sea Girt NGTC. These guidelines shall be implemented to the maximum extent possible, at the pilot's discretion, based on existing conditions during the aircraft operation (e.g., wind, visibility, weather, and other factors).

### **2.2.3 Planned Improvements**

The NJARNG is planning upgrades to the NGTC to better support National Guard troops during training and execution of federal and state missions. A Master Plan, which was updated in 2014 (Jacobs Global Building 2014), and subsequently a Site Development Plan dated 29 February 2016 (Jacobs Global Building 2016), were developed to provide a 25-year development strategy for the NGTC. Implementation of these plans will enable the NJARNG to maintain its troops and equipment at the necessary level of readiness in order to complete assigned missions.

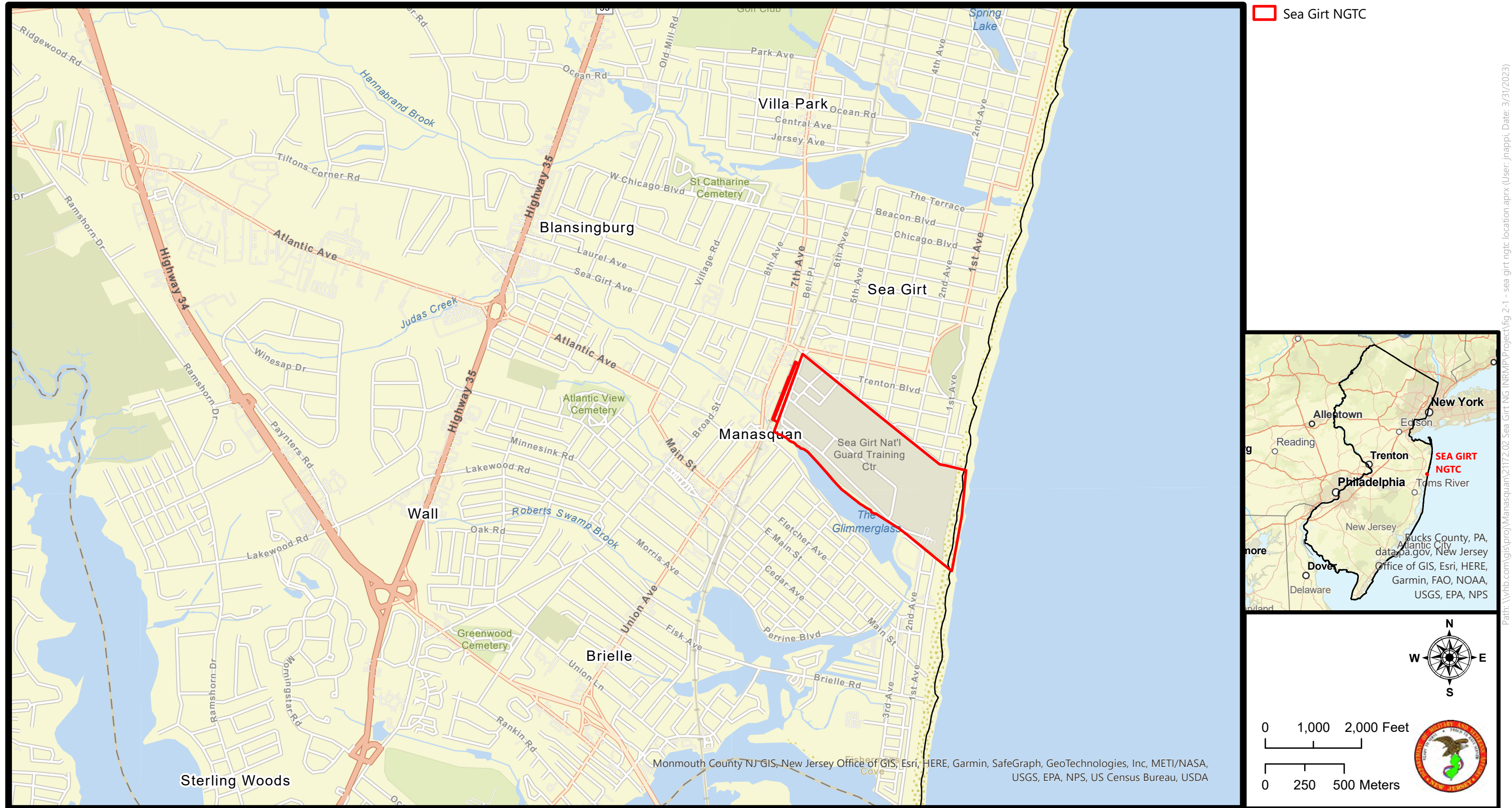
The Master Plan and Site Development Plan identified several activities, including the demolition of several preexisting buildings and future demolition of other structures as new facilities are built. The Master Plan and Site Development Plan will be implemented over multiple phases (Dreher, personal communication, 30 August 2017). A new RTI complex, consisting of classrooms, auditorium, offices, and billets, was completed in 2017. The dining facility renovation was completed in 2018. A new medical clinic, general education building, and field maintenance shop were completed in 2020. In 2023, two stormwater basins were repaired, Building No. 59 was demolished, and the Militia Museum Storage Building No. 66 was destroyed by a tornado and will require demolition. Potential future projects include design of a running track, installation of a storage shed, Camp Drive road improvements, electrical system rehabilitation, and installation of offshore wind power lines from wind turbines.

Figure 2-1 - Sea Girt NGTC Location

21172.02 | Sea Girt, New Jersey



March 31, 2023



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## 2.3 TRAINING FACILITIES AND ACTIVITIES

The NGTC supports academic training in classrooms and field training. The installation has 47 buildings with over 310,000 square feet, which include administration, classroom, food service, barracks, armory, military vehicle maintenance, storage, and other support facilities. The installation has 30 classrooms with seating capacity for 1,243 students and can house 894 students in its billeting facilities. The RTI course schedule for the 2023 training year includes 17 different courses (see Table 2-1). Typically, an individual course may occur over several weekends for IDT, up to a nine-week-long duration for active-duty training (ADT). The maximum scheduled class sizes are 48 students, with an average of 30 students per class. All IDT courses will be taught in ADT status once the new RTI Educational Complex is completed. Similar training to that identified in Table 2-1 is expected throughout the implementation period for this INRMP.

**TABLE 2-1 TYPICAL COURSE SCHEDULE FOR SEA GIRT NGTC RTI**

<b>Course</b>	<b>Maximum Capacity</b>	<b>IDT/ADT</b>
OFFICER CANDIDATE SCHOOL #61	30	IDT
081-68W10 HEALTHCARE SPECIALIST CMT (Comprehensive Medical Training) #001	24	ADT
5K-SI5K/012-SQI8 FOUNDATION INSTRUCTOR FACILITATOR COURSE #101	16	IDT
081-68W10 HEALTHCARE SPECIALIST (CMT) #001	24	ADT
081-68W10 HEALTHCARE SPECIALIST (CMT) #001	24	ADT
071-5K-F30/570-F17 TACTICAL CERTIFICATION COURSE #301	18	ADT
CLC-06 COMBAT LIFESAVER COURSE 301	40	ADT
131-F13, SGITC #001	16	IDT
964-68W10 (S) SUSTAINMENT #001	50	ADT
PRE-OCS	30	IDT
MTC-005, SQUAD DESIGNATED MARKSMAN #301	36	ADT
5K-SI5K/012-SQI8 FOUNDATION INSTRUCTOR FACILITATOR COURSE #102	16	IDT
071-11B30-C45 INFANTRYMAN ADVANCED LDR #001	48	ADT
MTC-005, SQUAD DESIGNATED MARKSMAN #302	36	ADT

<b>Course</b>	<b>Maximum Capacity</b>	<b>IDT/ ADT</b>
071-11B30-C45 INFANTRYMAN ADVANCED LDR #002	48	ADT
MTC-003, SMALL ARMS MASTER GUNNER #302	36	ADT
OCS #62	30	IDT
MTC-005, SQUAD DESIGNATED MARKSMAN #303	12	ADT

Field training areas include open parade grounds (approximately 91 acres), a bivouac area, a driver/motorcycle training area, small arms ranges, and the beach area (Figure 2-2). Military units and law enforcement tenant agencies use these training areas. A majority of the military field training occurs during IDT on the weekends (typically three weekends per month). Law enforcement training occurs throughout the week. Field training activities conducted at the NGTC include the following:

- The parade grounds are primarily used for unit assemblies, Governor Reviews, Boy Scout Camporees, ceremonies, and physical training; as well as soccer, field hockey, and football for local schools and private organizations.
- Areas east of the parade grounds and west of the dunes are used for bivouac and signal training.
- The small arms ranges are used for weapons training and qualification primarily by various state and federal law enforcement tenant agencies. Military units occasionally use the range for training only and not qualification. The NGTC has five outdoor ranges. The outdoor ranges are located in the eastern portion of the installation, immediately west of the dunes (Figure 2-2). Ranges 1, 2, and 5 are currently inactive. Range 1 is a practice hand grenade range, and Ranges 2 and 5 are small arms ranges. Ranges 3 and 4 are active, 25-meter baffle ranges. A total of 130,000 rounds of ammunition was utilized at the small arms range in 1994 and increased to 582,000 rounds in 2006. Between the years of 2013 and 2017, 490,000 rounds of ammunition were recorded. The lowest amount of ammunition utilized was recorded in 2015 and the largest amount of ammunition recorded was in 2021. A table showing the total ammunition rounds utilized over time is provided as Table 2-2.
- A driver/motorcycle training area is located southeast of the parade grounds and consists of a 0.3-acre asphalt pad. Military units and law enforcement tenant agencies occasionally use the area for driver training. Driver training is also conducted on existing roadways throughout the post by law enforcement agencies. No off-road vehicle maneuver training or tracked vehicle training occurs at the installation.
- The NGTC beach is used for physical training and water rescue/ocean survival training. Training is limited to areas outside the rare species protection areas described in Section 6.0. Water rescue training includes limited vehicle use on the beach to launch small watercraft.
- The military conducts combat medical training activities on weekends in between the dunes and range areas.
- Law enforcement tenant agencies conduct crime scene investigation training throughout the installation.

As noted above, no off-road vehicle maneuver training or tracked vehicle training is conducted at the installation. Consequently, training activities at the installation result in minimal disturbance to the land (Dreher, personal communication, 30 August 2017).

**TABLE 2-2 AMMUNITION ROUNDS RECORDED AT SEA GIRT NGTC**

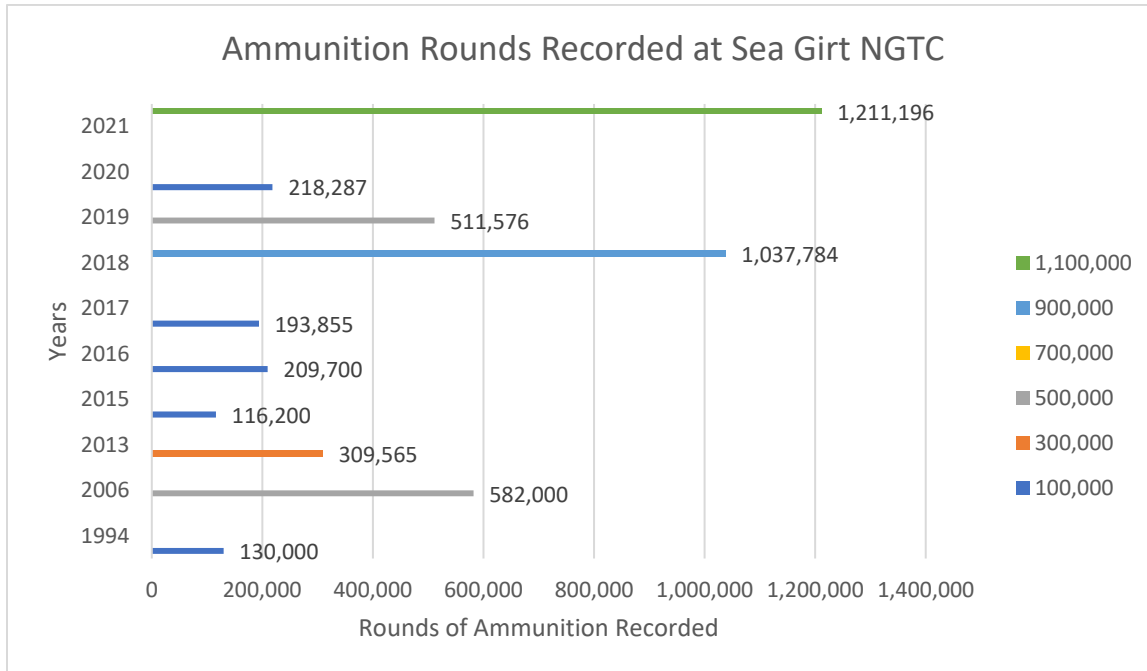


Figure 2-2 - Sea Girt NGTC Facility

21172.02 | Sea Girt, New Jersey



April 11, 2023



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## **2.4 LAND USE**

### **2.4.1 Historic Land Use**

The property on which Sea Girt NGTC is located has been used for military training since 1885. Prior to that time, the property consisted of farmland and residences. A more comprehensive history of Sea Girt NGTC is contained in the 2014 Final Phase I Archaeological Survey done at the installation (HDR 2014), the *Sea Girt NGTC Master Plan* (Jacobs Global Building 2014) and the 2019 Preliminary Assessment Report, prepared by Wood Environment and Infrastructure Solutions, Inc. (Wood, August 21, 2019).

### **2.4.2 Current Land Use**

Sea Girt NGTC consists of approximately 86 percent improved grounds, 13 percent unimproved grounds, and 1 percent semi-improved grounds. Land uses can be generally characterized as administrative/academic training, equipment/vehicle maintenance/storage, field training, live fire training (small arms), recreation, and open space. Approximately 65 percent of the installation is open space, including the parade grounds and athletic fields. Sea Girt NGTC is zoned as a recreational, open space (NJDMAVA 2013b).

### **2.4.3 Surrounding Land Use/Encroachment**

The aerial photograph in Figure 2-2 depicts surrounding land use. Virtually all developable lands surrounding Sea Girt NGTC are currently developed. The installation is bordered by the Atlantic Ocean to the east and Stockton Lake to the south, both of which are used for water-dependent recreation. Baseball fields and residences/vacation homes are located along the southeastern boundary. Dense residential development is also located south of Stockton Lake and along the northern installation boundary. Dense commercial and residential development, as well as a commuter and freight rail line, are located west of the installation.

## **2.5 GEOLOGICAL RESOURCES**

### **2.5.1 Geology**

Sea Girt is in the Coastal Plain physiographic province, and bedrock geology is mapped as part of the Lower Member Kirkwood Formation. Soils at the installation are formed from the unconsolidated sediments of Mesozoic and Cenozoic age. Of marine and continental origin, these sediments consist mainly of sand, clay, greensand (glauconite), and interspaced gravel beds. Sand, clay, and gravel deposits from the Quaternary age, deposited by outwash or melt water from a glacier that once covered northern New Jersey, form a thin layer over the Coastal Plain sediments.

### **2.5.2 Soils**

The following five types of soils are found at Sea Girt NGTC (Figure 2-3):

- Downer Urban land complex (DouB), 0 to 5 percent slopes. This map unit covers approximately 70 percent (130 acres) of the installation and consists of nearly level and gently sloping, well-drained Downer sandy loam and Urban land.
- Hooksan sand (HorBr), 0 to 5 percent slopes. This map unit covers approximately 4 percent (7 acres)

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of the installation and consists of nearly level to gently sloping, excessively drained soil on dunes adjacent to coastal beaches.

- Humaquepts (HumAt), 0 to 3 percent slopes, frequently flooded. This map unit covers 1 percent (3 acres) of the installation and consists of linear flood plains and poorly drained soils.
- Beaches (BEADV), 0 to 15 percent slopes, very frequently flooded. This map unit covers 4 percent (7 acres) of the installation and consists of dunes, and poorly drained soils.
- Urban land- Brockatonorton (USBORA), 0 to 2 percent slopes, occasionally flooded. This map unit covers 19 percent (35 acres) of the installation and consists of linear flats, with soils that are moderately well drained.

### **2.5.3 Topography**

The topography at Sea Girt NGTC is relatively flat, and averages less than 10 feet above mean sea level (AMSL) in elevation (Figure 2-4). The maximum elevation reaches 20 to 25 feet AMSL in the dunes where sand has accumulated against the sea wall and other structures in the eastern part of the installation. See Section 6.3.2.1 for additional data collected on beach topography.

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Figure 2-3 - Sea Girt NGTC SSURGO Soils

21172.02 | Sea Girt, New Jersey



April 03, 2023



Figure 2-4 - Sea Girt NGTC U.S.G.S. Topographic Map

21172.02 | Sea Girt, New Jersey



October 27, 2023



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## **2.6 WATER RESOURCES**

### **2.6.1 Watershed and Surface Water**

Sea Girt NGTC is in the Atlantic Coast water region, Monmouth watershed management area, Manasquan River watershed (hydrologic unit code [HUC11] 02030104100), and Manasquan River (below Route 70 bridge) sub-watershed (HUC14 02030104100100). No state open waters are located within the installation boundaries. However, the Atlantic Ocean is adjacent to the eastern boundary, Judas Creek to the northwest, and Watson Creek and Stockton Lake are adjacent to the southern boundary (Figure 2-5).

Judas Creek is a nontidal freshwater stream in its upper reaches and becomes tidally influenced and saline as it flows into Stockton Lake near the southwestern boundary of Sea Girt NGTC. Judas Creek and Stockton Lake are tributaries to Watson Creek, which is a tributary to the Manasquan River. Both Judas and Watson Creek are classified as FW2-NT/SE1 (freshwater, non-trout waters/saline waters of estuaries) by the New Jersey Water Quality Standards. Watson Creek, Stockton Lake, and Judas Creek are not classified as Category 1 waters (Debra Hammonds, New Jersey Department of Environmental Protection, personal communication, 5 August 2004). A steel bulkhead runs along a majority boundary between the installation and Stockton Lake.

No permanent surface waters are present on Sea Girt NGTC; however, there are two stormwater drainage basins that collect and retain wet conditions for extended periods. These areas are on the southside of the parking lot located in the center of Sea Girt and adjacent to the parade grounds (see Figure 4-1 in Section 4.2).

### **2.6.2 Groundwater**

Groundwater at Sea Girt NGTC is associated with the Kirkwood–Cohansey aquifer system. No potable groundwater wells are located on the installation; however, two irrigation wells utilized to water the croquet field are located in the northwest portion of the site. Several monitoring wells for the regional groundwater contamination studies, and one U.S. Geological Survey (USGS) monitoring well exist on-site. Based on water level measurements collected in the on-site monitoring wells, groundwater was recorded at depths of approximately four and six feet below ground surface (bgs).

According to the USEPA website (<https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0204241>), tetrachloroethylene (PCE) was discovered in groundwater that extends beneath the Sea Girt NGTC towards the Atlantic Ocean. Chlorinated compounds PCE, Cis-1,2-dichloroethene (cis-1,2-DCE) and trichloroethylene (TCE) originated from the White Swan Cleaners/Sun Cleaners Area Groundwater Contamination Superfund site, which is located west and upgradient of the Sea Girt NGTC.

A Remedial Investigation Report (RIR) prepared for the Superfund site by Wood, dated June 2013, discussed groundwater sampling and analysis results for the area upgradient of the NGTC. Additionally, the RIR discussed environmental investigations conducted on the NGTC. Based on the investigation results, groundwater contamination is present beneath the western half of the NGTC.

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### **2.6.3 Floodplains**

Figure 2-6 depicts floodplain data based on the Flood Insurance Rate Map for the Borough of Sea Girt, created by the Federal Emergency Management Agency (FEMA). This Flood Insurance Rate Map indicates that approximately 97 and 20 acres of the installation are within the 100-year and 500-year floodplains, respectively.

The effective and revised base flood elevation hazard data for the Sea Girt NGTC was reviewed on the U.S. Department of Homeland and Security FEMA database (<https://www.seagirt-nj.gov/office-emergency-management/pages/whats-my-base-flood-elevation>).

According to FEMA, Sea Girt NGTC is in an AE flood zone which includes areas that present a 1% annual chance of flooding and a 26% chance over the life of a 30-year mortgage. The effective base flood elevation hazard was reported with a 0.2% annual chance of a flood hazard.

Pending National Flood Hazard data is scheduled to be adopted by the local government and become effective within 6 months. According to FEMA, sea level rise increases are expected to be subject to between 0.9 and 1.6 feet by 2050, which will likely increase coastal flood elevations and expand the areas subject to the 1 and 0.2 percent annual chance floods.

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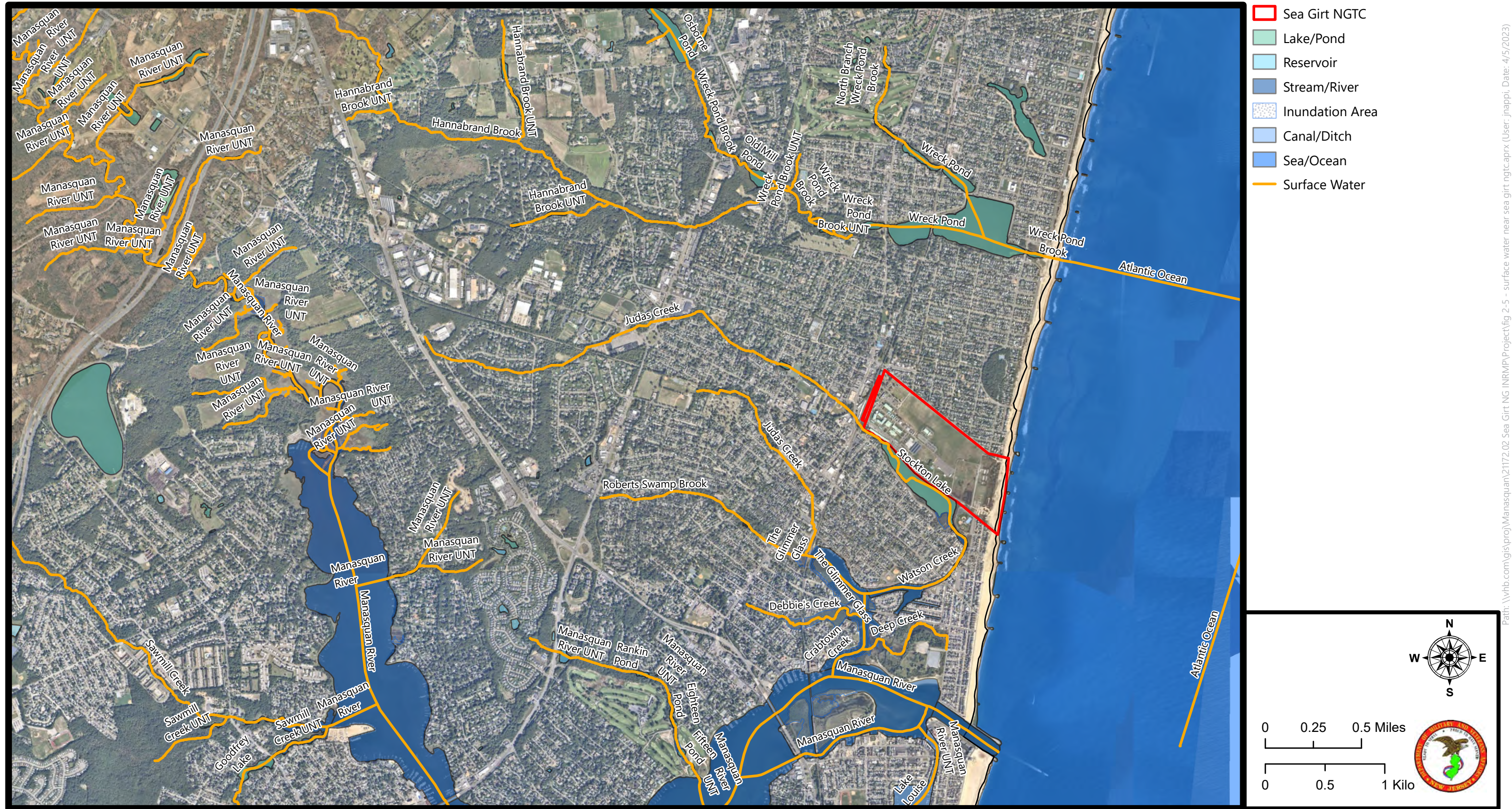
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**Figure 2-5 - Surface Water Near Sea Girt NGTC**

21172.02 | Sea Girt, New Jersey



April 05, 2023



- Sea Girt NGTC
- Lake/Pond
- Reservoir
- Stream/River
- Inundation Area
- Canal/Ditch
- Sea/Ocean
- Surface Water

0 0.25 0.5 Miles

0 0.5 1 Kilo

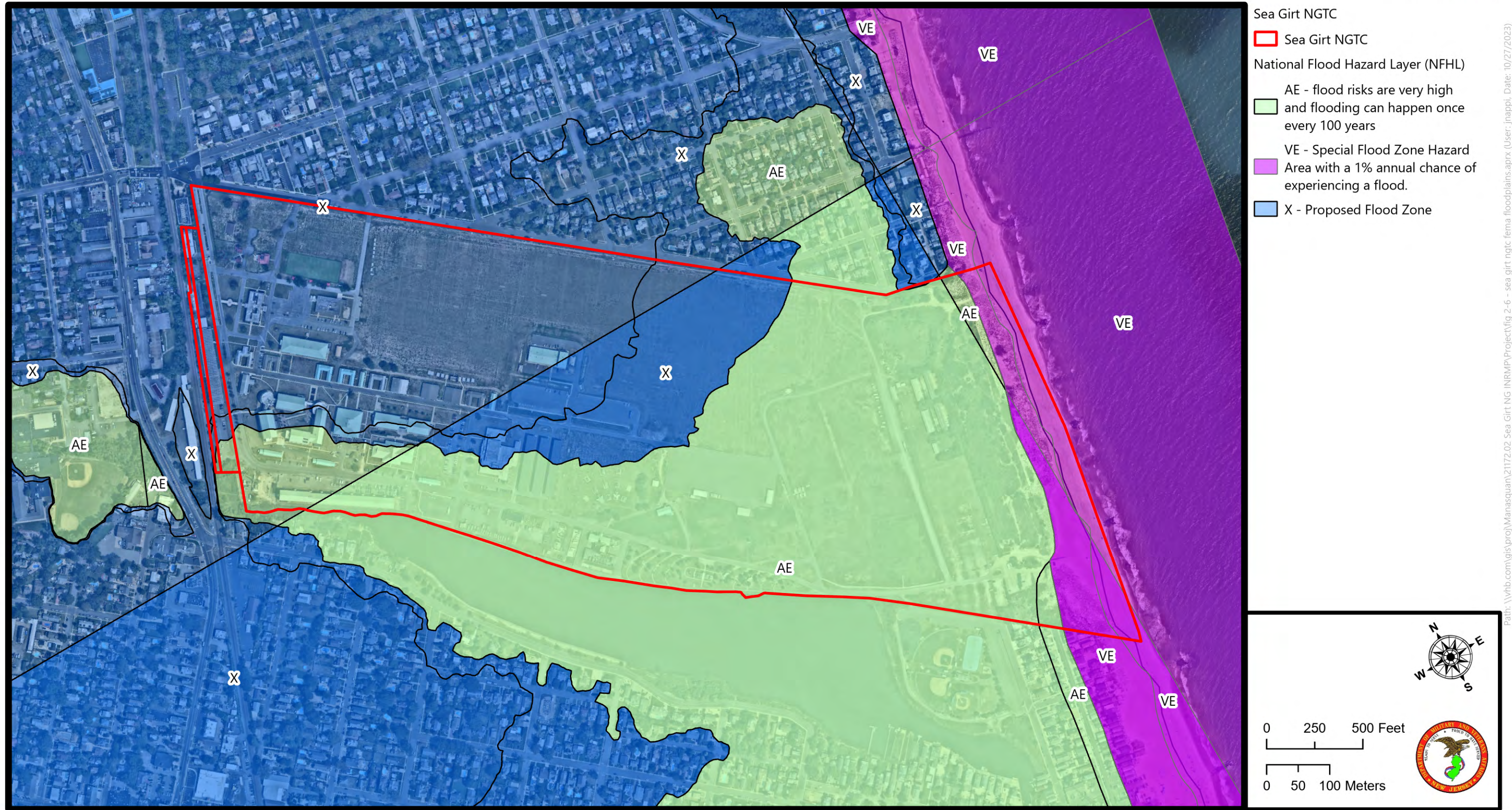
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Figure 2-6 - Sea Girt NGTC FEMA Floodplains

21172.02 | Sea Girt, New Jersey



October 27, 2023



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## 2.7 BIOLOGICAL RESOURCES

### 2.7.1 Historic Natural Vegetation

Significant changes to the vegetation of Sea Girt NGTC were made prior to, and during, the military use of this property. Historically, the property consisted of farmland with a few residences, prior to becoming a military installation in 1885 (Siegel et al. 2004). No records of the vegetation that existed prior to development are available; however, it is likely the vegetative communities would have resembled the coastal vegetation complex found on Sandy Hook to the north, or Island Beach to the south. The primary dune would have been dominated by American beachgrass (*Ammophila breviligulata*), and the secondary dune would have supported northern bayberry (*Morrela pennsylvanica*), eastern red cedar (*Juniperus virginiana*), black cherry (*Prunus serotina*), and beach plum (*Prunus maritima*). The transitional area between the dunes may have supported a community of beach heather (*Hudsonia tomentosa*) like that found at nearby Island Beach State Park. The pine/oak forests typical of the New Jersey coastal plain likely would also have occurred on-site. This forest canopy typically includes white oak, (*Quercus alba*), red oak (*Quercus rubra*) and pitch pine (*Pinus rigida*). Prior to the construction of the bulkhead wall along the installation's southern boundary, a natural salt marsh community most likely thrived at the edge of Stockton Lake. Saltmarsh cordgrass (*Spartina alterniflora*) and saltmeadow cordgrass (*Spartina patens*) would have been the dominant species in the salt marsh. Other species such as hightide bush (*Iva frutescens*) and groundsel tree (*Baccharis halimifolia*) may have occurred on the landward edges of this community.

### 2.7.2 Existing Vegetation/Ecological Communities

#### 2.7.2.1 Overview

Ecological community and flora surveys were conducted at Sea Girt NGTC in 1998 and 1999 (Parsons 1999). Additional plants have been added to the list based on multiple field investigations conducted by Amy S. Greene Environmental Consultants, Inc. (ASGECI) between 2007 and 2011 (ASGECI 2011). During the fall of 1998 and the spring of 1999, 105 vascular plants were identified at Sea Girt NGTC. An additional 49 vascular plants have been identified by ASGECI between 2007 and 2011. During the fall of 2022, VHB conducted a site wide survey to categorize the site's vegetation in accordance with the National Vegetation Classification System (NVCS). The complete list of plants identified on-site between 1998 and 2022 and the ecological community affiliation of each is provided in Appendix C.

The following section provides six general habitat categories (dunes, non-dune successional, built environments, palustrine, estuarine, and marine systems) divided into 12 ecological/vegetation communities and other cover types at the Sea Girt NGTC (Table 2-3 and Figure 2-7). These communities could be further categorized based on composition and species dominance; however, these basic divisions are effective at describing and prioritizing on-site vegetation characteristics.

**TABLE 2-3 ECOLOGICAL COMMUNITIES AT SEA GIRT NGTC**

<b>Ecological Community</b>	<b>Acres</b>	<b>Percent of Installation</b>
<b><u>Dunes</u></b>		
Eastern North American Coastal Dune (M057)	2.23	1.40
Eastern North American Coastal Shrub and Herb Vegetation (D026)	6.29	3.90
North American Ruderal Forest Group (G032)	4.54	2.80
<b>Total Dunes =</b>	<b>13.06</b>	<b>8.10</b>
<b><u>Non-Dune Successional Communities</u></b>		
Eastern North American Native Ruderal Forest Macrogroup (G030)	2.24	1.40
Northeast Floodplain Forest Group (G673)	0.16	0.10
<b>Total Non-Dune Successional =</b>	<b>2.40</b>	<b>1.50</b>
<b><u>Built Environments</u></b>		
Eastern North American Ruderal Forest Macrogroup (M013)	1.31	0.81
Horticultural Garden Vegetation Cultural Subformation (CSF21)	0.34	0.20
Developed Vegetation (CCL01)	92.87	57.70
Pavement	30.18	18.80
Buildings	7.99	5.00
<b>Total Built Environments =</b>	<b>132.69</b>	<b>82.50</b>
<b><u>Palustrine</u></b>		
Eastern North American Marsh Wet Meadow and Shrubland (M069)	4.99	3.10
<b>Total Palustrine =</b>	<b>4.99</b>	<b>3.10</b>
<b><u>Marine</u></b>		
Unconsolidated Shore/Intertidal	7.48	4.70
<b>Total Marine =</b>	<b>7.48</b>	<b>4.70</b>

**Figure 2-7 - Sea Girt NGTC Ecological and Vegetation Communities**

21172.02 | Sea Girt, New Jersey



May 09, 2024



NOTE:  
Vegetation Communities have been classified using the United States National Vegetation Classification (USNVC) <https://usnvc.org/explore-classification/>

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### 2.7.2.2 Dunes

Sand dunes occupy over 13 acres of the eastern part of the installation, primarily between the small arms ranges and the beach. The dunes reach a maximum elevation of approximately 20 feet. The seaward side of the dunes has been reinforced with a concrete seawall. Other structures including jetties and wooden bulkheads are located in portions of the dunegrass community adjacent to the coastal dune shrub community. Portions of the seawall and other structures are exposed or partially covered with sand. The small arms range backstops are located adjacent to the landward side of the dunes.



Sea Girt NGTC South Beach and Dune.  
Source: Stockton University, June 2022

The dunegrass community on the seaward side of the seawall and adjacent American beachgrass dominant areas, and portions of the unconsolidated shore/intertidal area is referred to as the “primary dune” (see Figure 6-1). This portion of the dune is most heavily influenced by salt spray, wind, erosion, sand accretion, and tide influences and, as a result, has minor yet distinctive differences in vegetation from more sheltered portions of the dunegrass community. This community generally consists of American beachgrass (*Ammophila breviligulata*), seaside goldenrod, sea rocket (*Cakile edentula*), seaside spurge (*Chamaesyce polygonifolia*), beach pea (*Lathyrus maritimus*), southern bayberry (*Morella cerifera*), salt spray rose (*Rosa rugosa*), purple sandgrass (*Triplasis purpurea*) and rough cocklebur. The marine influences on the primary dune result in the most ideal conditions for the piping plover (*Charadrius melodes*), seabeach amaranth (*Amaranthus pumulis*) and other rare species that utilize littoral zones.

The sand dunes on the landward side of the seawall and jetties contain the coastal shrub community, dune successional areas and sheltered coastal dunegrass areas. These communities are collectively referred to as “secondary dune” in annual reports at NGTC. The secondary dune is generally dominated by various woody shrubs and vines and is partially sheltered from salt spray, wind, erosion, and other marine influences. Successional dune and the disturbed successional dune communities both retain some coastal dune vegetation; however, have greater proportions of invasive species such as Oriental bittersweet (*Celastrus orbiculatus*), Japanese knotweed (*Polygonum cuspidatum*), and Japanese honeysuckle (*Lonicera japonica*), as well as aggressively growing species such as poison ivy (*Toxicodendron radicans*), box elder (*Acer negundo*) and virginia creeper (*parthenocissus quinquefolia*).

The dune communities provide several important ecological and protective functions including range safety, flood protection, land stabilization, wildlife habitat, and visual/noise buffering. In addition to being important habitat for the piping plover and seabeach amaranth, the Sea Girt NGTC primary dune has previously provided nesting habitat for the state-endangered least tern (*Sterna antillarum*). Numerous additional shorebirds including the American oystercatcher (*Haematopus palliatus*), semipalmated sandpiper (*Calidris pusilla*), and sanderling use the edge of this community and the adjacent unconsolidated shore habitats for foraging and resting. State-listed threatened, endangered, or Special Concern raptors including peregrine falcon (*Falco peregrinus*), Cooper’s hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus*), and short-eared owl (*Asio flammeus*) have been observed utilizing primary dune areas on-site for foraging or resting.

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In addition, the secondary dune provides wildlife habitat for a variety of nesting and migrant passerines and other birds. Key species potentially nesting within these communities include yellow warbler (*Dendroica petechia*), willow flycatcher (*Empidonax traillii*), brown thrasher (*Toxostoma rufum*), gray catbird (*Dumetella carolinensis*), Northern mockingbird (*Mimus polyglottos*), song sparrow (*Melospiza melodia*), and eastern towhee (*Pipilo erythrophthalmus*). Migratory birds, particularly yellow-rumped warbler (*Dendroica coronata*) and tree swallow (*Tachycineta bicolor*), rely heavily on fruiting poison ivy (*Toxicodendron radicans*) and northern bayberry bushes for foraging. Additional information on the wildlife at the Sea Girt NGTC may be found in the Wildlife portion of the INRMP in Section 2.7.37.3. From an ecological perspective, the Sea Girt NGTC dunes are an important component of the regional landscape. The dunes at the installation represent the only remaining habitat of this type in the immediate vicinity of the facility. The historic dune zone near Sea Girt NGTC has been completely developed with residences or vacation homes. The closest dune habitat of similar quality is located at Wreck Pond, which is approximately one mile north of the Sea Girt NGTC Facility. Dune habitat can be further classified into four ecological community types: coastal dune grass, coastal dune shrubland, successional dune, and disturbed successional dune.

**Eastern North American Coastal Dune (M057):** The coastal dune grass community has been classified as the Eastern North American Coastal Dune under the United States National Vegetation Classification (USNVC) system (<https://usnvc.org/explore-classification/>). See Figure 2-7 - Ecological and Vegetation Communities Map.



View of the Eastern North American Coastal Dune in the NPA, facing south.

Source: VHB, October 2, 2023.

After Hurricane Sandy in 2012, the composition of the coastal dune grass community changed quite drastically. Prior to Sandy, coastal dune grass communities were found along the eastern portion of the property and were dominated by American beachgrass, which typically comprises approximately 80 percent of the vegetation composition of this community, and typically more than 50 percent cover (ASGECI 2010b). After the hurricane, vegetation cover levels were closer to zero due to the heavy erosion. Since that time, and because of restoration projects, the American beachgrass has recolonized and now covers approximately 15.29 percent within the protected areas (CWF 2022) and encompasses 13.06 acres of the installation. Other commonly occurring species include coastal panicgrass (*Panicum amarum*), seaside goldenrod (*Solidago sempervirens*), purple sandgrass (*Triplasis purpurea*), sea rocket (*Cakile edentula*), seaside spurge (*Chamaeyce polygonifolia*), rough cocklebur (*Xanthium strumarium*), beach pea (*Lathyrus maritimus*), spoonleaf yucca (*Yucca filamentosa*), horseweed (*Conyza canadensis*), and saltmeadow cordgrass (CWF 2022). Asiatic sand sedge (*Carex kobomugi*) is an exotic invasive of concern and identified throughout the primary dune (CWF 2022). As discussed in Section 6.0 of the INRMP, this community and its associated intertidal, unconsolidated shore habitats, described below, are of ecological significance to, and a priority habitat at, NGTC due to the documented presence of the federally listed piping plover and the seabeach amaranth. Previously, the state-listed least tern (*Sterna antillarum*) also has occurred on the site, nesting or attempting to nest (CWF 2022).

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### **Eastern North American Coastal Shrub and Herb Vegetation (D026):**

The coastal dune shrubland has been classified as the Eastern North American Coastal Shrub and Herb Vegetation under the USNVC system. This 6.29-acre area is buffered by dune mounds and receives less exposure to salt spray and other conditions associated with the primary dune portions of the coastal dunegrass community. The three major woody components of this community are poison ivy shrubs and vines, northern bayberry, and rugosa rose (*Rosa rugosa*), which grow in patchwork. It generally contains less exotic invasive species than other successional communities within the secondary dune. American beachgrass and seaside goldenrod both grow along the edges of this community or are interspersed within less dense patches of shrubs.



*View of the Coastal Shrub and Herb Vegetation, facing south.*

*Source: VHB, February 8, 2022.*

Additional species within this community include winged sumac (*Rhus copallinum*), eastern red cedar, black cherry, Virginia creeper (*Parthenocissus quinquefolia*), *Rubus* sp. blackberries and coastal panic grass. This community, in conjunction with other dune habitats, provides coastal nesting and/or foraging habitat for a variety of bird species.

### **North American Ruderal Forest Group (G032):**

The successional dune has been classified as the North American Ruderal Forest Group under the USNVC system. This community occupies approximately 4.54 acres in the eastern part of the installation on a generally lower and flatter trough of the secondary dune (see Figure 2-7). It has portions of the dune shrubland community and contains northern bayberry, winged sumac and poison ivy (vines and shrubs). It differs primarily from the dune shrub community by the greater variety of generalist successional and exotic species present, some of which are associated with past disturbance. Additional dominant native species include blackberry, Virginia creeper, winged sumac, Eastern red cedar, and black cherry. Dominant exotic invasive species include Tree of heaven (*Ailanthus altissima*), Japanese knotweed, spotted knapweed (*Centaurea stoebe*),



*View of the Ruderal Forest Group, facing south.*

*Source: DRG, October 2023.*

non-native, highly aggressive common reed (*Phragmites australis*), and Japanese honeysuckle. Oriental bittersweet is among the most aggressive invasive species within this community. This species tends to colonize rock and debris piles from historic disturbance and smothers adjacent bayberry and poison ivy shrubs. Herbaceous dominant portions of this community contain a mix of grasses and forbs such as goldenrods (*Solidago* spp.), poorjoe (*Diodia teres*), sanddune sandbur (*Cenchrus tribuloides*), saltmeadow cordgrass, beach pea, trailing wild bean (*Strophostyles helvola*), crabgrass (*Digitaria* spp), horseweed, and rough cocklebur. A variety of bird species use these communities for nesting and/or foraging, including yellow warbler (*Dendroica petechia*), willow flycatcher (*Empidonax traillii*), brown thrasher (*Toxostoma rufum*), and others. Migratory birds such as the yellow-rumped warbler (*Dendroica coronate*) and tree swallow (*Tachycineta bicolor*) also forage for fruiting poison ivy and Northern bayberry bushes (CWF 2022).

#### **2.7.2.3 Non-Dune Successional**

Two non-dune successional communities exist at the Sea Girt NGTC: Disturbed Successional Community and Secondary Successional Forest.

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### **Eastern North American Native Ruderal Forest Macrogroup**

**(G030):** The disturbed successional dune has been classified as the Eastern North American Native Ruderal Forest Macrogroup under the USNVC system. This community occupies approximately 2.24 acres of the NGTC facility, primarily along the northeast elevated edge of the secondary dune community within the vicinity of the small arms firing range (see Figure 2-7 – Ecological and Vegetation Communities Map). This community is like the successional dune and retains remnants of native dune community vegetation; however, contains exotic invasive species monoculture patches.



*View of the Native Ruderal Forest Macrogroup, facing west.*

*Source: DRG, October 2023.*

**Northeast Floodplain Forest Group (G673):** The secondary successional forest has been classified as Northeast Floodplain Forest Group (G673) and encompasses approximately 0.16 acres of land located in the southwest corner of the site. This community contains mature trees more than 40 feet tall (see Figure 2-7). The forest contains a mix of exotic and native trees. Norway maple (*Acer platanoides*), white mulberry (*Morus alba*), silver maple (*Acer saccharinum*), and hackberry (*Celtis occidentalis*) exists within the canopy of this forest. This forest is adjacent to the common reed dominant wetlands described in this section. The understory of the secondary forest is dominated by invasive and opportunistic species typical of the on-site disturbed successional areas. Dominant invasive species include oriental bittersweet, japanese knotweed and multiflora rose, as well as aggressively growing native species such as poison ivy, box elder, and virginia creeper.



*View of the Floodplain Forest Group, facing northwest.*

*Source: DRG, October 2023.*

#### **2.7.2.4 Built Environments**

Five groups have been classified within the built environments: Eastern North American Ruderal Forest Macrogroup (M013), Horticultural Garden Vegetation Cultural Subformation (CSF21), Developed Vegetation (CCL01), Pavement, and Buildings.

**Eastern North American Ruderal Forest Macrogroup (M013):** This community encompasses approximately 1.31 acres of the installation with planted conifer or deciduous trees in canopies. Much of this community is maintained as linear hedgerows. Common trees in this community include Japanese black pine (*Pinus thumbergii*), Norway maple, black cherry, Norway spruce (*Picea abies*), and London plane tree (*Platanus acerifolia*). Many of the hedgerows have components of disturbed successional edge habitats (see previous section) as part of the canopy or as an understory component. Although heavily disturbed and considered low-priority habitats at NGTC, hedgerows and planted tree areas and associated disturbed successional areas support several common wildlife species, including red-tailed hawk (*Buteo jamaicensis*), Northern cardinal (*Cardinalis cardinalis*), Carolina chickadee (*Poecile carolinensis*), and Carolina wren (*Thryothorus ludovicianus*).



*View of the Ruderal Forest Macrogroup, facing northeast.*

*Source: VHB, October 3, 2020.*

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### **Horticultural Garden Vegetation Cultural Subformation (CSF21):**

Embedded within roadsides at NGTC are approximately 0.34 acres of horticultural garden vegetation. This community includes two rain gardens located at the front entrance gate (installed in October 2020) and two repaired stormwater drainage basins located south of Building No. 46 (installed in February 2023). These areas typically retain several inches of water or contain patches of mud during the wetter parts of the year. Over 350 individual plants consisting of 18 species were planted in the rain gardens including Switchgrass (*Panicum virgatum*), Little bluestem (*Chizachyrium scoparium*), Northern blue flag, Black eyed Susan (*Rudbeckia fulgida goldsturm*), Purple coneflower (*Echinacea purpurea*), Butterfly milkweed (*Asclepias tuberosa*), Spicebush (*Lindera benzoin*), New York aster (*Aster novi-belgii*), Cinnamon fern (*Osmunda cinnamomea*), Great blue lobelia (*Lobelia siphilitica*), Goldenrod (*Solidago rugosa fireworks*), Golden ragwort (*Packera senecio aurea*), Royal fern (*Osmunda regalis*), Mariachi salsa (*Helenium*), Goatsbeard (*Aruncus kneiffii*), Gayfeather (*Liatris spicata floristan violet*), Karmina (*Geranium cantabrigiense*), Cardinal flower (*Lobelia cardinalis*), and Little goldstar (*Rudbeckia fulgida*).



View of the Rain Garden, facing south. Source: Stockton, May 2021.

Burke Environmental Inc. (Burke) installed the following vegetation within the stormwater basins in 2023 including: 168 Salt grass (*Disichalis spicata*), 168 Cordgrass (*Spartina cynosuroides*), and 412 Salt meadow cordgrass (*Spartina patens*) on the slopes of the basins (2-foot on center); and 441 Bitter panicum (*Panicum amarum*) in the bottom of the basins (4-foot) on center.

### **Developed Vegetation (CCL01):**

Approximately 92.87 acres of the installation contain maintained lawn grass as the dominant vegetation community. Maintained lawn includes fields and landscaped areas that are regularly mowed, lack dense tree cover, and are dominated by various grass species and a variety of exotic and disturbance tolerant forbs. Maintained lawn may be found throughout the property and are used as parade grounds, sports fields, and other recreational activities. Common grasses include fescues (*Festuca* spp.) The most common dominant species include English plantain (*Plantago lanceolata*) and black knapweed (*Centaurea nigra*). Other common species include common plantain (*Plantago major*), crabgrass, bracted plantain (*Plantago aristata*), sheep sorrel (*Rumex acetosella*), blue toadflax (*Linaria canadensis*), yarrow (*Achillea millefolium*), wild strawberry (*Fragaria virginiana*), wild carrot (*Daucus carota*), mouse ear (*Hieracium pilosella*), chicory (*Cichorium intybus*), field hawkweed (*Hieracium pratense*), common dandelion (*Taraxacum officinale*), dwarf cinquefoil (*Potentilla canadensis*), and mugwort. Landscaped trees sparsely occur within this community, particularly around buildings, which includes London plane tree, Norway spruce, eastern white pine (*Pinus strobus*), Japanese black pine, Norway maple, silver maple, and pin oak (*Quercus palustris*). Additional exotic plantings, including Chinese silvergrass (*Miscanthus sinensis*), yew (*Taxus* sp.), and winged euonymus (*Euonymus alatus*), are found within the western portions of the facility.



View of the Developed Vegetation, facing west.

Source: VHB, January 13, 2022.

The maintained lawn, with an open landscape of more than 50 acres and proximity to the ocean, is uncommon within the regional landscape. The central and eastern portions provide an open habitat to

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migratory and wintering bird species despite the disturbed vegetation conditions. Bird species periodically identified in the fields include black-bellied plover (*Pluvialis squatarola*), Atlantic brant (*Branta bernicla*), horned lark (*Eremophila alpestris*) and nesting killdeer (*Charadrius vociferous*). Many other species, including Eastern meadowlark (*Sturnella magna*) and savannah sparrow (*Passerculus sandwichensis*), have been occasionally observed utilizing the open fields and adjacent freshwater wetlands at the NGTC. The fields are sometimes utilized by foraging state-listed raptors, including the American kestrel (*Falco sparverius*) and peregrine falcon. Resident and large concentrations of migratory Canada geese (*Branta canadensis*) utilize the maintained lawns during varying times of the year, creating an accumulation of fecal matter (CWF 2022).

Since these maintained lawns function as the parade grounds and support recreational activities, it is expected that these 92.87 acres will remain in a lawn state for the foreseeable future. However, the design of a future running track within the athletic fields is proposed. Other considerations for the lawn grass areas include converting the lawns to native warm season grasses that would discourage the large concentrations of Canada geese, which is considered a nuisance species on the NGTC (see Section 5.2.2).

**Pavement:** Although this category is not an ecological community, the approximate 30.18 acres of paved area represent a substantial portion of the cover at the Sea Girt NGTC. This category includes asphalt roads, paved lots, and some smaller interspersed areas of compacted material such as paths, gravel or sandy parking areas, and other large areas of unconsolidated and exposed soils and sparse vegetation that may function as partially or fully impervious surfaces. These paved roads and lots collectively occupy a significant portion of the installation and link the buildings and other facilities on-site. Most of the paved roads and lots are concentrated on the western and southern portion of the installation.

**Buildings:** This category includes most large structures at the facility and represents approximately 7.99 acres of the land cover at NGTC (Figure 2-7). Most large structures are in the western portion of the facility. The buildings and adjacent maintained areas and successional edges are of low ecological value and provide nesting and foraging habitat for disturbance tolerant generalist species such as house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), starling (*Sturnus vulgaris*), rock dove (*Columba livia*), and eastern gray squirrel (*Sciurus carolinensis*).

#### **2.7.2.5 Palustrine System**

The palustrine system consists of nontidal wetlands, swamps, peatlands, and marshes. Emergent vegetation, shrubs, or trees characterize palustrine habitats. Two palustrine communities occur at the installation: Palustrine Emergent Wetland (PEM) and Palustrine Shrub/scrub Wetland (PSS). Further details are discussed Section 4.2.4 Wetlands Management, and the locations shown in Figure 4-1.

**Eastern North American Marsh Wet Meadow and Shrubland (M069):** Approximately 4.99 acres of freshwater wetlands containing a mix of herbaceous and scrub-shrub components occur at the NGTC. This wetland type is primarily represented by a large complex of herbaceous and shrub wetlands near the eastern end of the facility near the beach area parking (see Figure 2-7). This complex has been identified as herbaceous wetlands (NJ-GeoWeb, 2012) and is maintained as wildlife habitat. Beginning in October 2020, the *Freshwater Wetlands Coastal Habitat Enhancement Plan*, dated July 2017, prepared by ASGEC was implemented by VHB and its subcontractor Envirosapes, Inc. The wetland restoration project included the installation of a split-rail fence around the perimeter of the area, a total of 1,163 shrubs and deer protection cages installed in eight shrub island locations, a total of 458 obligate plugs and duck protection fencing

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installed in the area where standing water occurs at least seven months during a year, an observation boardwalk, clamshell pathway, and educational signage explaining the wetland's ecological significance.

The large scrub-shrub and herbaceous wetland periodically floods and contains standing water or exposed mud habitats for several months during a year (typically October through June). This wetland, in conjunction with adjacent modified wetlands, provides very important foraging habitat for numerous species of resident and migratory shorebirds. Least sandpiper (*Calidris minutilla*), greater (*Tringa melanoleuca*) and lesser yellowlegs (*Tringa flavipes*), semipalmated sandpiper, black-bellied plover, semipalmated plover, killdeer, common snipe (*Gallinago gallinago*), short-billed dowitcher (*Plegadis falcinellus*) and glossy ibis (*Plegadis falcinellus*) are among the shore and wading birds that periodically forage in these wetlands. Raptors including peregrine falcon and northern harrier have also regularly been identified utilizing this area or adjacent areas for foraging.



View of the observation pier in the scrub-shrub and herbaceous wetland.

Source: VHB, May 20, 2022.

Remaining patches of herbaceous and deciduous scrub-shrub wetlands exist at the southwest corner of the installation and interface with the estuarine conditions of Stockton Lake. Common reed is the dominant species within this wetland. Smaller proportions of shrub or tree species include box elder, red maple, black gum (*Nyssa sylvatica*), black cherry, tree-of-heaven (*Ailanthus altissima*) and northern arrowwood (*Viburnum recognitum*). These wetlands, while providing some ecological function, are heavily degraded and lack the diversity of the other shrub wetlands on-site.

#### **2.7.2.5.1 Delineated Wetlands**

Wetlands on-site and adjacent to the property boundary consist of tidal wetlands, freshwater wetlands, and state open waters. A Letter of Interpretation (LOI) Regulatory Line Verification (RLV) was approved by NJDEP on 3 August 2012 (NJDEP File No. 1300-11-0004.1; Activity No. 110001) for the site. The NJDEP issued an LOI extension (1300-11-0004.1 FWW 170001) on 13 November 2017 with a new expiration date of 2 August 2022 (see Appendix E). Since the 2012 LOI and 2022 extension expired, a detailed wetland delineation was conducted by Davey Resource Group (DRG) on the 26<sup>th</sup> and 27<sup>th</sup> of October 2022 for the Sea Girt NGTC.

Forested, scrub-shrub, emergent and modified wetlands were identified and delineated on-site during the October 2022 field investigation and are identified on the Wetland Delineation Plan (see Figure 4-1 for wetland locations). A total of six individual wetlands (A through F) were identified totaling approximately 4.99 acres of wetlands. The boundaries of these wetlands were verified in a New Jersey Department of Environmental Protection (NJDEP) Wetlands Letter of Interpretation (LOI) – Regulatory Line Verification, issued May 2024. This section describes wetland characteristics identified during the field investigation.

As discussed above, there are four general wetland community types that occur within, or adjacent to, the Sea Girt NGTC facility boundaries: palustrine herbaceous wetlands, palustrine deciduous scrub-shrub wetlands, modified herbaceous wetlands, and estuarine salt marsh wetlands. In addition to these wetlands, the Sea Girt NGTC facility borders open waters of the Atlantic Ocean, Stockton Lake, and Judas Creek.

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The largest on-site wetland is a complex of palustrine herbaceous and deciduous scrub-shrub wetlands on the eastern end of the facility. Embedded within the maintained lawn areas on the eastern half of the Sea Girt NGTC are palustrine modified herbaceous wetlands.

Small off-site portions of wetlands adjacent to the tidal Stockton Lake on the western end of the facility contain distinct estuarine characteristics most evident by the presence of saltmarsh cordgrass. Off-site estuarine marshes and adjacent tidal mudflats containing common reed and cordgrass are also found on the eastern end of Stockton Lake.

### **Wetland Soils**

The wetland soils at Sea Girt tend to be sandy, highly disturbed soils on slopes of less than 5 percent. The two mapped Soil Survey Geographic (SSURGO) soils that are considered hydric, or that have hydric components, are Hooksan sand, 0 to 5 percent slopes, rarely flooded (HorBr) and Humaquepts, frequently flooded (HumAt). The two additional mapped NGTC soils, Downer-urban land (DouB) and Urban land - Brockatonorton complex (USBROA), are disturbed non-hydric soils. Wetland soil borings of 1 to 24 inches taken on-site occasionally show historic disturbance and typically contain portions with very strong hydric characteristics. These soils retain strong oxidation and reduction characteristics including low chroma matrix and mottling of 10 percent or more.

### **Wetland Hydrology**

Evidence of wetland hydrology varies in the wetlands during the year at NGTC. During the wetter parts of the season, the large, on-site, managed wetland and the adjacent modified wetland depressions contain ponded water and exposed mud. These wetlands clearly receive surface water sheet flow and some groundwater influence during parts of the season. Wetlands in the southwest corner of the facility receive consistent and direct hydrological influence from the nontidal portions of Judas Creek, which feeds Stockton Lake from its western end. The head of tide has been identified with the vicinity of these wetlands, and off-site portions of these wetlands receive heavier estuarine influence from the tidal portions of Stockton Lake. All palustrine wetlands on the southern half of the NGTC are occasionally exposed to flooding during rare extreme high tide events, primarily when they are coupled with coastal storms. Direct evidence of wetland hydrology observed during the October 2022 field investigation included ponding, flooding, tidal inundation, saturated soils, water-stained and matted leaves as well as hydrogen sulfide odor. These characteristics were not observed in upland portions of the site.

### **Wetland Vegetation**

The NGTC contains a variety of vegetation communities including emergent wetlands with shrub components, some bordering tidal marshes, modified wetlands that have been maintained as fields for 50 years or longer, and a small portion of forested wetland on the western end of the site. The vegetation characteristics of the wetlands identified at the NGTC facility are described below, and wetland locations are presented in Figure 4-1. The vegetation descriptions below include the predominant species and the Atlantic and Gulf Coastal Plain Wetland Indicator Status for each species. Each status was determined by the 2012 National Wetland Plant List, which replaced the 1988 U.S. Fish and Wildlife Service's (USFWS) *National List of Plant Species That Occur in Wetlands* (USFWS Biological Report 88 (24)) for all wetland determinations and delineations performed for Section 404 of the Clean Water Act and the National Wetland Inventory. More specifically, statuses were determined by the National Wetland Plant List's

supplemental State of New Jersey 2016 Wetland Plant List (Lichvar et al. 2016). The categories are assigned based on the species' frequency within wetlands and are described further in Table 2-4.

The wetlands listed below, and their resource values have been verified by NJDEP in an LOI – Line Verification, issued to the NGTC in May 2024. All intermediate resource value wetlands are subject to a 50-foot transition area (buffer). The remaining wetlands on-site are ordinary resource value wetlands and are not subject to transition areas.

**TABLE 2-4 WETLAND INDICATOR CATEGORIES**

<b>Indicator Code</b>	<b>Indicator Status</b>	<b>Designation</b>	<b>Comment</b>
OBL	Obligate wetland	Hydrophyte	Almost always occur in wetlands Usually occur in wetlands, but may occur in non-wetlands
FACW	Facultative wetland	Hydrophyte	Occur in wetlands and non-wetlands Usually occur in non-wetlands, but may occur in wetlands
FAC	Facultative	Hydrophyte	Almost never occur in wetlands
FACU	Facultative upland	Nonhydrophyte	Not listed on Wetland Indicator List
UPL	Obligate upland	Nonhydrophyte	
NL	Not listed		

Source: USACE 2016.

### **Wetland Area A**

Wetland Area A is a modified wetland with a small emergent component. The emergent component is dominated by flat-top goldenrod (*Euthamia graminifolia*, FAC), mild water-pepper (*Polygonum hydropiper*, OBL), groundseltree (*Baccharis halimifolia*, FAC), and common reed (*Phragmites australis*, FACW). The majority of this wetland is modified and typical of other maintained/modified wetlands onsite. These areas contain cool season grasses with small amounts of hydrophytic vegetation (primarily small white American-aster (*Symphotrichum racemosum*, FACW), and path rush (*Juncus tenuis*, FAC).

### **Wetland Area B**

Wetland Area B is a modified wetland dominated by cool season grasses with small amounts of rushes (*Juncus* sp.), path rush, goldenrods (*Euthamia* sp.), sedges (*Carex* sp.), English plantain (*Plantago lanceolata*, UPL), small white aster, sheep sorrel (*Rumex acetosella*, UPL) and field hawkweed (*Hieracium pratense*, UPL).

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### **Wetland Area C**

Wetland Area C is a recently restored emergent wetland with seasonal standing water as well as scrub shrub and modified wetland components. It also contains some upland inclusions. Wetland areas contain a variety of herbaceous species including panic grass (*Panicum virgatum*, FAC), salt meadow cordgrass (*Spartina patens*, OBL), small white American-aster, goldenrods, mild water-pepper, spike rushes (*Eleocharis* sp.), rushes, bulrushes (*Scirpus* sp.), curly dock (*Rumex crispus*, FAC), yellow-fruited sedge (*Carex annectens*, FACW), soft rush (*Juncus effusus*, FACW), chickweed (*Stellaria* sp.), forget-me-nots (*Myosotis* spp.), path rush (*Juncus tenuis*, FAC) and seaside goldenrod (*Solidago sempervirens*, FACW) along some of its edges. Observed shrubs include hightide bush (*Iva frutescens*, FACW), groundsel tree, and Northern bayberry (*Morella pennsylvanica*, FAC).

### **Wetland Area D**

Wetland Area D is a tidally influenced wetland fringe adjacent to Stockton Lake. It is dominated by common reed (*Phragmites australis*), with a small component of saltmarsh cordgrass (*Spartina alterniflora*, OBL). Some terrestrial portions contain poison ivy (*Toxicodendron radicans*, FAC) and oriental bittersweet (*Celastrus orbiculatus*, FACU) growing adjacent to and over the common reed.

### **Wetland Area E**

Wetland Area E is an emergent wetland primarily dominated by monocultures of dense common reed. Portions may be partially influenced by adjacent tidal conditions. A small northernmost portion of this wetland is a palustrine forested wetland (PFO) with evidence of groundwater influence. Common understory species in the forested portion include skunk cabbage (*Symplocarpus foetidus*, OBL) and poison ivy. Tree species include a fringe of hackberry (*Celtis occidentalis*, FACU), silver maple (*Acer saccharinum*, FACW) and red maple. A fringe of Japanese knotweed (*Polygonum cuspidatum*, FACU) grows on the northern wetland boundary and throughout the adjacent sloping uplands.

### **Wetland Area F**

Wetland Area F is a heavily maintained modified wetland similar to the adjacent wetland B. It contains a mix of hydrophytic and upland vegetation including cool season grasses and exposed ground. Small amounts of sedges/rushes were observed. These include path rush and sedges (*Carex* spp.). Forbs observed include small white American-aster, English plantain. Small amounts of sheep sorrel (*Rumex acetosella*, UPL) and field hawkweed (*Hieracium pratense*, UPL) were observed around fringes of the wetland.

#### **2.7.2.6 Marine System**

The marine system consists of the open ocean overlying the continental shelf and its associated high-energy coastline. Marine habitats are exposed to the waves and currents of the open ocean and have salinities exceeding 30 parts per thousand, with minimal or no freshwater dilution. One ecological community in the marine system is present at Sea Girt and is described below. The Atlantic Ocean is also located along the eastern property boundary.

**Intertidal Unconsolidated Shore:** This community occupied about 4.92 acres of Sea Girt NGTC prior to Hurricane Sandy (29 October 2012), along the facility's eastern boundary. Since then, several beach nourishment efforts were completed by the Army Core of Engineers on the Sea Girt NGTC beach front which

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now occupies approximately 7.48 acres of land. The intertidal consolidated shore includes the sand and the lower edge of the vegetative communities forming on the sandy beach area from mean low water to the extreme high water of spring tides. The vegetation is sparse due to heavy wave action and wind erosion. Vegetation within this area includes sea-rocket, seaside spurge, American beachgrass in the lower densities, and common saltwort.

The unconsolidated shore is adjacent to the easternmost portions of the coastal dunegrass community, which generally contains higher densities of American beachgrass. This intertidal unconsolidated shore is a dynamic community that can fluctuate in extent, particularly due to extreme storms and beach replenishment activities. For example, erosion processes (and the expansion of the coastal dunegrass community) reduced the extent of the unconsolidated sand and intertidal zone during the time between the 2006 INRMP and the 2013 INRMP. However, beach replenishment projects after Hurricane Sandy increased the extent again.



*Seabeach Amaranth in NPA.*  
Source: VHB, July 6, 2022.

Since 2001, individual seabeach amaranth plants, which are federally listed as threatened, have been periodically documented in these areas, and on the edges of the adjacent coastal dunegrass community. This community type is also used infrequently by foraging and/or nesting piping plover, which are infrequently observed at the Sea Girt NGTC.

#### **2.7.2.7 Estuarine System**

The estuarine system consists of deepwater tidal habitats and adjacent tidal wetlands. Typically, these tidal wetlands are partially enclosed by land, so that they have regular or sporadic access to ocean water. Freshwater runoff from the land dilutes the ocean water at least occasionally. This system extends from upstream habitats where salinity measures less than 0.5 parts per thousand to the invisible boundary at the mouth of a river, bay, or sound, including wetland emergents in seaward areas (Breden 1989). No estuarine communities are located within the installation boundaries. However, a salt marsh community is found adjacent to the Sea Girt NGTC property, to the south extending from the outer portions of the largest Wetland (see Figure 4-1).

**Salt Marsh Formation (F035):** A Marsh, Wet Meadow and Shrubland vegetation community has occurred along the fringes of Stockton Lake south of the installation. Although it is not mapped within the boundaries of NGTC, it is in extremely close proximity to the facility and is regularly utilized by wildlife moving to and from on-site communities. This community is predominantly vegetated by salt marsh cordgrass (*Spartina patens* and *S. alterniflora*) and common reed (*Phragmites australis*) (Department of the Army 2015). The salt marsh and its associated exposed tidal mud flats and open waters provide habitat for various shore birds including semipalmated plover, semipalmated sandpiper, willet (*Tringa semipalmata*), greater and lesser yellowlegs, and short-billed dowitcher. Key wading birds and allies observed within this community include black-crowned night heron (*Nycticorax nycticorax*) yellow-crowned night heron (*Nyctanassa violacea*), great egret (*Egretta alba*) snowy egret (*Egretta thula*), great blue heron (*Ardea herodias*), and clapper rail (*Rallus longirostris*). Least terns, Forster's tern (*Sterna forsteri*), and common tern (*Sterna herundo*) all utilize the edges of this habitat for



*View of the Salt Marsh, facing west.* Source: DRG, October 2023.

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resting and foraging. Wintering waterfowl, particularly gadwall (*Anas strepera*), Atlantic brant, American widgeon (*Anas americana*), and hooded merganser (*Lophodytes cucullatus*), utilize the edges of the salt marsh and adjacent open water.

#### **2.7.2.8 Uplands**

Uplands onsite consists of the following vegetation communities: secondary growth forest, maintained fields, primary and secondary dune, disturbed/successional, and landscaped areas. The secondary growth forest can be found in the southwest corner of the property. This community consists of species such as Norway maple (*Acer platanoides*, UPL), tree-of-heaven (*Ailanthus altissima*, NL), hackberry, Japanese knotweed, oriental bittersweet, and poison ivy. Maintained fields can be found throughout the property and generally consist of various cool-season grass species, common plantain (*Plantago major*, FACU), English plantain, crabgrass (*Digitaria* sp.), clovers (*Trifolium* spp.), knapweeds (*Centurea* spp.) birdsfoot trefoil (*Lotus corniculatus*, FACU), sheep sorrel, yarrow (*Achillea millefolium*, FACU), mouse ear (*Hieracium pilosella*, UPL) and field hawkweed.

#### **2.7.3 Wildlife**

The Sea Girt NGTC provides resources to a diverse wildlife community because of several terrestrial and aquatic ecological communities on-site (further described in Section 2.7.2 above). The installation is also located within the coastal portion of the Atlantic Flyway. The Atlantic Flyway is the migratory path of waterfowl, shorebirds, pelagic birds, songbirds, and other migratory birds of the North American East Coast. The fauna observed at Sea Girt NGTC is generally consistent with species typical of coastal and suburban areas. Table 2-5 provides a complete list of wildlife observed at the installation from surveys conducted at the installation as early as 1993 through 2022. See Section 2.7.2 for discussion on species associations within the ecological communities present at the Sea Girt NGTC.

##### **2.7.3.1 Proposed Wind Turbine Avian and Bat Survey**

An extensive avian and bat study was conducted in 2009 and 2010 because of a feasibility study for a 1.5-megawatt wind turbine that was proposed as part of the 2010 Master Plan at Sea Girt NGTC (WEST, Inc. 2011). The turbine was deemed not feasible following completion of preconstruction avian and bat surveys and public objection to the project. Survey techniques included an avian behavioral study, area search and breeding bird point count surveys, and acoustic and radar monitoring. Inventory information is presented from data collected as part of the one-year study. A total of 175 avian species were identified at the Sea Girt NGTC and the adjacent area around Stockton Lake, 97 of which were recorded as a part of the studies conducted for the turbine project. In 2023, VHB conducted data processing services of the 2009 and 2010 bat survey results at the Sea Girt NGTC for submission to the NABat Program. Automated analysis of recordings identified big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), eastern red bat (*Lasiurus borealis*), tri-colored bat (*Perimyotis subflavus*), little brown bat (*Myotis lucifugus*), northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), and evening bat (*Nycticeius humeralis*). Manual review confirmed the presence of big brown bat, silver-haired bat, hoary bat, eastern red bat, and tri-colored bat. Not all auto-classified calls were manually reviewed, including northern long-eared bat, little brown bat, and Indiana bat, therefore species presence is not confirmed. In 2023, acoustic monitoring for bats was conducted at the site. Data analyzation is underway, and results will be incorporated into the INRMP when available.

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### **2.7.3.2 Mammal Survey**

Mammals observed during surveys conducted by ASGECI between 2007 and 2013 and VHB and CWF between 2019 and 2022 included bottlenose dolphin (*Tursiops truncatus*), harbor seal (*Phoca vitulina*), red fox (*Vulpes vulpes*), eastern coyote (*Canis latrans*), eastern cottontail (*Sylvilagus floridanus*), feral cat (*Felis catus*), groundhog (*Marmotta monax*), muskrat (*Ondatra zibethicus*), striped skunk (*Mephitis mephitis*), white-tailed deer (*Odocoileus virginianus*), rat (*Rattus* sp.), and eastern gray squirrel (CWF 2022). Surveys in previous years also documented opossum (*Didelphis virginiana*), white-footed mouse (*Peromyscus leucopus easti*), star-nosed mole (*Condylura cristata*), raccoon (*Procyon lotor*). The red fox population has been reduced by two in 2017, ten in 2019, six in 2020, seven in 2021, six in 2022, and eight in 2023 due to predation management efforts to accommodate the security of endangered nesting bird species.

### **2.7.3.3 Insects, Reptiles, and Amphibian Surveys**

Biological surveys conducted at the Sea Girt NGTC between 2007 and 2022 identified amphibians, reptiles, and commonly observed invertebrates including Fowler's toad (*Anaxyrus* [formerly *Bufo*] *floweri*), eastern box turtle (*Terrapene carolina*), scuds (*Amphipoda* spp.), sand wasp (*Bembix* sp.), European caterpillar hunter (*Calosoma scrutator*), nine-spotted ladybeetle (*Coccinella novemnotata*), cow killer (*Dasymytila occidentalis*), mole crab (*Emerita talpoida*), Atlantic ghost crab (*Ocyropode quadrata*), mud dauber wasps (*Sphecidea*), Chinese mantis (*Tenodera aridifolia*), seaside grasshopper (*Trimerotropis maritime*), Curculionidae (weevil), and *Mytilus edulis* complex (blue mussel).

In 2019, Stockton University prepared the *Pine Barrens Tree Frog Presence/Absence Survey at NJARNG Facilities*, to locate and document potential Pine Barrens Tree Frog (PBTf) breeding habitat. Sound recorders were programmed to start 1 hour before sunset and stop one hour before sunrise and recorded for 5 minutes each hour and paused for 55 minutes. After installing recorders on-site, surveyors returned to the site after approximately one week to visually inspect the recording site. Based on the survey results, PBTf presence was not identified at the Sea Girt NGTC.

In 2020, Stockton University prepared the *Emerald Ash Borer (EAB) and Spotted Lantern Fly (SLF) Survey Results and Recommended Management Plans*. Surveys utilized active and passive methodology to confirm host tree and EAB and/or SLF presence. Based on the results, ash or white fringe tree were not identified. Because their host trees were not present, EAB infestation at the Sea Girt NGTC was not suspected. Sticky traps were deployed in clusters at the installation and confirmed the absence of SLF.

### **2.7.3.4 Rare Species**

A complete list of wildlife species that occur or have the potential to occur at Sea Girt NGTC are provided in Table 2-5 along with their conservation status. Sea Girt NGTC provides important habitat for two rare plants and four rare bird species. Seabeach amaranth is a federally threatened and state endangered plant, and seabeach knotweed (*Polygonum glaucum*) is state endangered. Piping plover is federally threatened and state endangered, and least tern, osprey, and American oystercatcher are state listed, all of which have been historically documented breeding at the Sea Girt NGTC. This list was generated by consulting a variety of sources including: the NJDEP Natural Heritage Program letter for the site; the USFWS Information and Planning for Consultation (IPaC) species letter; NJDEP Landscape Project data; citizen science sources such as eBird, HerpMapper, NABat, and iNaturalist; and species identified on site during field visits.

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An additional 12 state-listed threatened or endangered avian species and one federally listed endangered avian species (roseate tern [*Sterna dougallii*]) have been documented throughout the course of several surveys. These state-listed threatened or endangered species include Henslow's sparrow (*Ammodramus henslowii*), grasshopper sparrow (*Ammodramus savannarum*), cattle egret (*Bubulcus ibis*), short-eared owl, horned lark (*Eremophila alpestris*), peregrine falcon, bald eagle (*Haliaeetus leucocephalus*), yellow-crowned night heron, black-crowned night heron, savannah sparrow, vesper sparrow (*Pooecetes gramineus*), and black skimmer (*Rynchops niger*). These species have not nested on-site, but have been observed soaring over the site, foraging or roosting on-site (or in/adjacent to Stockton Lake) or documented passing through during seasonal migration periods. More detailed information about rare species found or potentially found on Sea Girt NGTC, and the management of these species, can be found in Section 6.0 , Rare Species Management.

Four federally endangered marine species have been documented offshore outside of the Sea Girt NGTC including the Atlantic leatherback (*Dermochelys coriacea*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), and North Atlantic right whale (*Eubalaena glacialis*).

In June 2022, a Garganey duck (*Spatula querquedula*) and Wilson's phalarope (*Phalaropus tricolor*) were observed foraging in the wetland restoration area (Wetland C). These species are notable on the site due to their distance outside of the expected native range. See Section 2.7.3.47.3 and Section 6.0 for more information on rare species.

The USFWS IPaC letter for the site lists federally endangered northern long-eared bat, proposed federally endangered tri-colored bat, and candidate species monarch butterfly (*Danaus plexippus*). Northern long-eared bat and tri-colored bat have been documented during acoustic surveys in the 2009 proposed wind turbine avian and bat survey as discussed in Section 2.7.3.1. Further discussions on these species can be found in Section 6.2.

A transient roseate tern was observed foraging offshore of the NGTC in 2007 (ASGECI 2008). A short-eared owl was documented in 2010 as it rested in the primary dunes (ASGECI 2011). Northern harrier and peregrine falcon were observed flying within Sea Girt NGTC fields, wetlands, and beaches, particularly in the fall (CWF 2022). Northern harrier is typically observed flying low over the dunes or marsh habitat at the site, and peregrine falcons are typically seen migrating and foraging over Stockton Lake and the eastern end of Sea Girt NGTC field areas during fall migratory and wintering periods (CWF 2022). Adult and juvenile bald eagles have been observed soaring over the site and adjacent communities (CWF 2022). Bald eagles have been observed roosting in the spring from 2015 through 2023 on the Sea Girt NGTC cell tower. Eagle nesting has not occurred, but eagles do nest nearby and were observed utilizing Sea Girt NGTC as a foraging area. The eagles are monitored with game cameras (Bill McBride INRMP Agency Coordination Site Visit, November 8, 2017). American kestrels were seen on several occasions foraging primarily over the eastern half of the site and in the wetland restoration area (CWF 2022). Savannah sparrow was documented on three occasions (two individuals and one pair) in the maintained lawn, herbaceous/deciduous scrub-shrub



*Osprey nestlings at five weeks after hatching, DMAVA, 2022.*

wetland, and primary dune during spring surveys conducted in 2010 (WEST, Inc. 2011). A flock of as many as 26 horned larks were documented roosting on the eastern half of the maintained lawn between December 2009 and March 2010, and a pair were observed resting and foraging in the NGTC fields in 2013 (WEST, Inc. 2011; ASGECI 2014a). Yellow and black-crowned night herons were observed foraging at Stockton Lake and the wetland restoration area (CWF 2022). Black skimmers, which are not commonly observed at Sea Girt NGTC, were documented once in 2007 as a single transient foraging near shore, and twice in 2010 as a pair foraging near shore and an individual flying toward Stockton Lake (ASGECI 2008; WEST, Inc. 2011; ASGECI 2014a). In addition, cattle egret, Henslow's sparrow, grasshopper sparrow, and vesper sparrow were each captured during nocturnal acoustic bird surveys conducted during migration periods in the spring and fall of 2009 and 2010 (WEST, Inc. 2011).

**Table 2-5 Wildlife and Plants at Sea Girt NGTC**

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<b>Mammals</b>				
<i>Tursiops truncatus</i> <sup>(2)</sup>	Bottlenose dolphin	NL	NL	X
<b><i>Sylvilagus floridanus</i></b>	<b>Eastern cottontail</b>	NL	NL	X
<i>Canis latrans</i> <sup>(4)</sup>	Eastern coyote	NL	NL	X
<i>Lasiurus borealis</i> <sup>(3)</sup>	Eastern red bat	NL	NL	X
<i>Felis catus</i>	Feral cat	NL	NL	X
<i>Sciurus carolinensis</i>	Gray squirrel	NL	NL	X
<i>Marmota monax</i>	Groundhog	NL	NL	X
<i>Phoca vitulina</i> <sup>(2)</sup>	Harbor seal	NL	NL	X
<i>Lasiurus cinereus</i> <sup>(3)</sup>	Hoary bat	NL	NL	X
<i>Myotis lucifugus</i> <sup>(1)</sup>	Little brown bat	NL	NL	X
<i>Ondatra zibethicus</i>	Muskrat	NL	NL	X
<i>Myotis septentrionalis</i> <sup>(5)</sup>	Northern long-eared bat	FE	SE	X
<i>Didelphis virginiana</i> <sup>(1)</sup>	Opossum	NL	NL	X
<i>Procyon lotor</i> <sup>(1)</sup>	Raccoon	NL	NL	X
<i>Rattus sp.</i> <sup>(4)</sup>	Rat sp.	NL	NL	X
<b><i>Vulpes vulpes</i></b>	<b>Red fox</b>	NL	NL	X
<i>Condylura cristata</i> <sup>(1)</sup>	Star-nosed mole	NL	NL	X
<i>Mephitis mephitis</i> <sup>(1)</sup>	Striped skunk	NL	NL	X
<i>Perimyotis subflavus</i> <sup>(5)</sup>	Tri-colored bat	FE (proposed)	NL	X
<i>Peromyscus leucopus easti</i> <sup>(1)</sup>	White-footed mouse	NL	NL	X
<b><i>Odocoileus virginianus</i><sup>(4)</sup></b>	<b>White-tailed deer</b>	NL	NL	X
<b>Birds</b>				
<i>Anas rubripes</i> <sup>(3)</sup>	American black duck	NL	NL	X
<i>Corvus brachyrhynchos</i>	American crow	NL	NL	X

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<i>Pluvialis dominica</i>	American golden plover	NL	NL	X
<i>Carduelis tristis</i>	American goldfinch	NL	NL	X
<i>Falco sparverius</i>	American kestrel	NL	ST	X
<b><i>Haematopus palliatus</i></b>	<b>American oystercatcher</b>	NL	SC	X
<i>Setophaga ruticilla</i> <sup>(3)</sup>	American redstart	NL	NL	X
<i>Turdus migratorius</i>	American robin	NL	NL	X
<b><i>Spizella arborea</i></b> <sup>(3)</sup>	<b>American tree sparrow</b>	NL	NL	X
<i>Anas Americana</i>	American widgeon	NL	NL	X
<i>Branta bernicla hrota</i>	Atlantic brant	NL	NL	X
<i>Haliaeetus leucocephalus</i>	Bald eagle	NL	SE - BR, ST - NB	X
<i>Icterus galbula</i> <sup>(3)</sup>	Baltimore oriole	NL	NL	X
<i>Riparia riparia</i> <sup>(4)</sup>	Bank swallow	NL	NL	X
<i>Hirundo rustica</i>	Barn swallow	NL	NL	X
<i>Setophaga castanea</i> <sup>(3)</sup>	Bay-breasted warbler	NL	NL	X
<i>Megaceryle alcyon</i>	Belted kingfisher	NL	NL	X
<i>Mniotilta varia</i> <sup>(3)</sup>	Black and white warbler	NL	NL	X
<i>Melanitta americana</i>	Black scoter	NL	NL	X
<i>Rynchops niger</i>	Black skimmer	NL	SE	X
<i>Pluvialis squatarola</i> <sup>(3)</sup>	Black-bellied plover	NL	NL	X
<i>Coccyzus erythrophthalmus</i> *	Black-billed cuckoo	BCC	SC - BR	
<i>Setophaga fusca</i> <sup>(3)</sup>	Blackburnian warbler	NL	SC - BR	X
<i>Parus atricapillus</i>	Black-capped chickadee	NL	NL	X
<i>Nycticorax nycticorax</i>	Black-crowned night heron	NL	ST - BR, SC - NB	X
<i>Larus ribidundus</i>	Black-headed gull	NL	NL	X
<i>Rissa tridactyla</i> *	Black-legged kittiwake	NL	NL	
<i>Setophaga striata</i> <sup>(3)</sup>	Blackpoll warbler	NL	NL	X
<i>Setophaga caerulescens</i> <sup>(3)</sup>	Black-throated blue warbler	NL	SC - BR	X
<i>Setophaga virens</i> <sup>(3)</sup>	Black-throated green warbler	NL	SC - BR	X
<i>Cyanocitta cristata</i> <sup>(3)</sup>	Blue jay	NL	NL	X
<i>Anas discors</i> <sup>(3)</sup>	Blue-winged teal	NL	NL	X
<i>Vermivora pinus</i> <sup>(3)</sup>	Blue-winged warbler	BCC (specific regions)	NL	X
<i>Quiscalus major</i>	Boat-tailed grackle	NL	NL	X
<i>Dolichonyx oryzivorus</i> *	Bobolink	BCC	ST - BR	
<i>Pelecanus occidentalis</i> <sup>(4)</sup>	Brown pelican	NL	NL	X
<i>Toxostoma rufum</i> <sup>(3)</sup>	Brown thrasher	NL	SC - BR	X

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<i>Molothrus ater</i>	Brown-headed cowbird	NL	NL	X
<i>Bucephala albeola</i>	Bufflehead	NL	NL	X
<b><i>Branta canadensis</i></b>	<b>Canada goose</b>	NL	NL	X
<i>Cardellina canadensis</i> <sup>(3)</sup>	Canada warbler	BCC	NL	X
<i>Aythya valisineria</i> <sup>(3)</sup>	Canvasback	NL	NL	X
<i>Setophaga tigrina</i> <sup>(3)</sup>	Cape May warbler	NL	NL	X
<i>Poecile carolinensis</i> <sup>(3)</sup>	Carolina chickadee	NL	NL	X
<i>Thryothorus ludovicianus</i> <sup>(3)</sup>	Carolina wren	NL	NL	X
<i>Sterna caspia</i> <sup>(3)</sup>	Caspian tern	NL	SC - BR	X
<i>Bubulcus ibis</i> <sup>(3)</sup>	Cattle egret	NL	ST - BR, SC - NB	X
<i>Bombycilla cedrorum</i> <sup>(3)</sup>	Cedar waxwing	NL	NL	X
<i>Setophaga cerulean</i> <sup>(3)</sup>	Cerulean warbler	NL	SC	X
<i>Setophaga pensylvanica</i> <sup>(3)</sup>	Chestnut-sided warbler	NL	NL	X
<i>Chaetura pelagic</i> <sup>(3)</sup>	Chimney swift	BCC	NL	X
<i>Spizella passerina</i> <sup>(3)</sup>	Chipping sparrow	NL	NL	X
<i>Rallus crepitans</i> <sup>(3)</sup>	Clapper rail	NL	NL	X
<i>Somateria mollissima</i> <sup>(3)</sup>	Common eider	NL	NL	X
<i>Quiscalus quiscula</i> <sup>(3)</sup>	Common grackle	NL	NL	X
<i>Gavia Immer</i>	Common loon	NL	NL	X
<i>Aria aalge</i> *	Common murre	NL	NL	
<i>Chordeiles minor</i> <sup>(3)</sup>	Common nighthawk	NL	SC	X
<b><i>Sterna hirundo</i></b>	<b>Common tern</b>	NL	SC - BR	X
<i>Geothlypis trichas</i> <sup>(3)</sup>	Common yellowthroat	NL	NL	X
<i>Accipiter cooperii</i>	Cooper's hawk	NL	SC - BR	X
<i>Calonectris diomedea</i> *	Cory's shearwater	BCC	NL	
<i>Junco hyemalis</i> <sup>(3)</sup>	Dark-eyed junco	NL	NL	X
<i>Spiza americana</i> <sup>(3)</sup>	Dickcissel	NL	NL	X
<i>Phalacrocorax auritus</i>	Double-crested cormorant	NL	NL	X
<i>Alle alle</i>	Dovekie	NL	NL	X
<i>Picoides pubescens</i> <sup>(3)</sup>	Downy woodpecker	NL	NL	X
<i>Tyrannus tyrannus</i>	Eastern kingbird	NL	NL	X
<i>Sturnella magna</i> <sup>(3)</sup>	Eastern meadowlark	NL	SC	X
<i>Pipilo erythrophthalmus</i> <sup>(3)</sup>	Eastern towhee	NL	NL	X
<i>Sturnus vulgaris</i>	European starling	NL	NL	X
<i>Sopizella pusilla</i> <sup>(3)</sup>	Field sparrow	NL	NL	X
<i>Corvus ossifragus</i>	Fish crow	NL	NL	X
<i>Sterna forsteri</i>	Forster's tern	NL	NL	X

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<i>Passerella iliaca</i> <sup>(3)</sup>	Fox sparrow	NL	NL	X
<i>Mareca strepera</i> <sup>(3)</sup>	Gadwall	NL	NL	X
<i>Larus hyperboreus</i>	Glaucous gull	NL	NL	X
<i>Plegadis falcinellus</i> <sup>(3)</sup>	Glossy ibis	NL	SC - BR	X
<i>Regulus satrapa</i> <sup>(3)</sup>	Golden-crowned kinglet	NL	NL	X
<i>Ammodramus savannarum</i> <sup>(3)</sup>	Grasshopper sparrow	NL	ST - BR, SC - NB	X
<i>Dumetella carolinensis</i> <sup>(3)</sup>	Gray catbird	NL	NL	X
<i>Catharus minimus</i> <sup>(3)</sup>	Gray-cheeked thrush	NL	SC - NB	X
<i>Larus marinus</i>	Great black-backed gull	NL	NL	X
<i>Ardea herodias</i>	Great blue heron	NL	SC - BR	X
<i>Ardea alba</i>	Great egret	NL	NL	X
<i>Puffinus gravis</i> *	Great shearwater	NL	NL	
<i>Tringa melanoleuca</i>	Greater yellowlegs	NL	NL	X
<i>Butorides virescens</i>	Green heron	NL	NL	X
<i>Gelochelidon nilotica</i>	Gull-billed tern	BCC	SC - BR	X
<i>Ammodramus henslowii</i> <sup>(3)</sup>	Henslow's sparrow	NL	SE	X
<i>Catharus guttatus</i> <sup>(3)</sup>	Hermit thrush	NL	NL	X
<i>Larus argentatus</i>	Herring gull	NL	NL	X
<i>Lophodytes cucullatus</i>	Hooded merganser	NL	NL	X
<i>Setophaga citrina</i> <sup>(3)</sup>	Hooded warbler	NL	SC - BR	X
<i>Eremophila alpestris</i>	Horned lark	NL	ST - BR, SC - NB	X
<i>Carpodacus mexicanus</i>	House finch	NL	NL	X
<i>Passer domesticus</i>	House sparrow	NL	NL	X
<i>Troglodytes aedon</i> <sup>(3)</sup>	House wren	NL	NL	X
<i>Limosa haemastica</i> *	Hudsonian godwit	BCC	NL	
<i>Passerina cyanea</i> <sup>(3)</sup>	Indigo bunting	NL	NL	X
<i>Geothlypis formosa</i> <sup>(3)</sup>	Kentucky warbler	NL	SC	X
<b>Charadrius vociferus</b>	<b>Killdeer</b>	NL	NL	X
<i>Larus atricilla</i>	Laughing gull	NL	NL	X
<i>Calidris minutilla</i> <sup>(4)</sup>	Least sandpiper	NL	NL	X
<b>Sterna antillarum</b>	<b>Least tern</b>	NL	SE	X
<i>Tringa flavipes</i>	Lesser yellowlegs	BCC	NL	X
<i>Melospiza lincolni</i> <sup>(3)</sup>	Lincoln's sparrow	NL	NL	X
<i>Egretta caerulea</i> <sup>(3)</sup>	Little blue heron	NL	SC	X
<i>Asio otus</i> *	Long-eared owl	BCC	ST	
<i>Clangula hyemalis</i> <sup>(3)</sup>	Long-tailed duck	NL	NL	X

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<i>Parkesia motacilla</i> <sup>(3)</sup>	Louisiana waterthrush	NL	NL	X
<i>Setophaga magnolia</i> <sup>(3)</sup>	Magnolia warbler	NL	NL	X
<i>Anas platyrhynchos</i>	Mallard	NL	NL	X
<i>Falco columbarius</i> <sup>(3)</sup>	Merlin	NL	NL	X
<i>Zenaidura macroura</i>	Mourning dove	NL	NL	X
<i>Cygnus olor</i> <sup>(3)</sup>	Mute swan	NL	NL	X
<i>Leiothlypis ruficapilla</i> <sup>(3)</sup>	Nashville warbler	NL	SC - BR	X
<i>Colinus virginianus</i> <sup>(4)</sup>	Northern bobwhite	NL	NL	X
<i>Cardinalis cardinalis</i> <sup>(3)</sup>	Northern cardinal	NL	NL	X
<i>Colaptes auratus</i>	Northern flicker	NL	NL	X
<i>Morus bassanus</i>	Northern gannet	NL	NL	X
<i>Circus cyaneus</i>	Northern harrier	NL	SE - BR, SC - NB	X
<i>Mimus polyglottos</i>	Northern mockingbird	NL	NL	X
<i>Setophaga americana</i> <sup>(3)</sup>	Northern parula	NL	SC - BR	X
<i>Stelgidopteryx serripennis</i> <sup>(3)</sup>	Northern rough-winged swallow	NL	NL	X
<i>Parkesia noveboracensis</i> <sup>(3)</sup>	Northern waterthrush	NL	NL	X
<b><i>Pandion haliaetus</i></b>	<b>Osprey</b>	NL	ST - BR	X
<i>Seiurus aurocapilla</i> <sup>(3)</sup>	Ovenbird	NL	NL	X
<i>Setophaga palmarum</i>	Palm warbler	NL	NL	X
<i>Calidris melanotos</i>	Pectoral sandpiper	NL	NL	X
<i>Falco peregrines</i>	Peregrine falcon	NL	SE - BR, SC - NB	X
<i>Dendrocia pinus</i> <sup>(3)</sup>	Pine warbler	NL	NL	X
<b><i>Charadrius melodus</i></b>	<b>Piping plover</b>	FT	SE	X
<i>Setophaga discolor</i> <sup>(3)</sup>	Prairie warbler	BCC	NL	X
<i>Prothonotaria citrea</i> <sup>(3)</sup>	Prothonotary warbler	NL	NL	X
<i>Haemorhous purpureus</i> <sup>(3)</sup>	Purple finch	NL	NL	X
<i>Progne subis</i> <sup>(3)</sup>	Purple martin	NL	NL	X
<i>Calidris maritima</i> <sup>(4)</sup>	Purple sandpiper	BCC	NL	X
<i>Alca torda</i> *	Razorbill	NL	NL	
<i>Melanerpes carolinus</i> <sup>(3)</sup>	Red-bellied woodpecker	NL	NL	X
<i>Mergus serrator</i> <sup>(3)</sup>	Red-breasted merganser	NL	NL	X
<i>Phalaropus lobatus</i> *	Red-necked phalarope	NL	NL	
<b><i>Buteo jamaicensis</i></b> <sup>(3)</sup>	<b>Red-tailed hawk</b>	NL	NL	X
<i>Gavia stellata</i>	Red-throated loon	NL	NL	X
<b><i>Agelaius phoeniceus</i></b>	<b>Red-winged blackbird</b>	NL	NL	X

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<i>Larus delawarensis</i>	Ring-billed gull	NL	NL	X
<i>Columba livia</i>	Rock dove	NL	NL	X
<i>Sterna dougallii</i>	Roseate tern	FE	SE	X
<i>Thalasseus maximus</i>	Royal tern	NL	NL	X
<i>Archilochus colubris</i>	Ruby-throated hummingbird	NL	NL	X
<i>Oxyura jamaicensis</i> <sup>(3)</sup>	Ruddy duck	NL	NL	X
<i>Arenaria interpres</i>	Ruddy turnstone	SC	SC	X
<i>Ammodramus caudacutus</i> <sup>(3)</sup>	Saltmarsh sharp-tailed sparrow	NL	SC - BR	X
<i>Calidris alba</i>	Sanderling	NL	SC - NB	X
<i>Passerculus sandwichensis</i> <sup>(3)</sup>	Savannah sparrow	NL	ST - BR	X
<i>Piranga olivacea</i> <sup>(3)</sup>	Scarlet tanager	NL	NL	X
<i>Charadrius semipalmatus</i>	Semipalmated plover	NL	NL	X
<i>Calidris pusilla</i>	Semipalmated sandpiper	NL	SC - NB	X
<i>Accipiter striatus</i>	Sharp-shinned hawk	NL	SC - BR	X
<i>Limnodromus griseus</i> <sup>(3)</sup>	Short-billed dowitcher	BCC	NL	X
<i>Asio flammeus</i>	Short-eared owl	NL	SE - BR, SC - NB	X
<i>Chen caerulescens</i>	Snow goose	NL	NL	X
<i>Egretta thula</i>	Snowy egret	NL	SC - BR	X
<i>Bubo scandiacus</i> <sup>(4)</sup>	Snowy owl	NL	NL	X
<i>Tringa solitaria</i>	Solitary sandpiper	NL	NL	X
<i>Melospiza melodia</i>	Song sparrow	NL	NL	X
<i>Porzana carolina</i> <sup>(3)</sup>	Sora	NL	NL	X
<i>Actitis macularius</i>	Spotted sandpiper	NL	SC - BR	X
<i>Piranga rubra</i> <sup>(3)</sup>	Summer tanager	NL	NL	X
<i>Melanitta perspicillata</i>	Surf scoter	NL	NL	X
<i>Cathartes ustulatus</i> <sup>(3)</sup>	Swainson's thrush	NL	NL	X
<i>Melospiza georgiana</i> <sup>(3)</sup>	Swamp sparrow	NL	NL	X
<i>Vermivora peregrina</i> <sup>(3)</sup>	Tennessee warbler	NL	NL	X
<i>Uria lomvia</i> *	Thick-billed murre	NL	NL	
<b><i>Iridoprocne bicolor</i></b>	<b>Tree swallow</b>	NL	NL	X
<i>Egretta tricolor</i>	Tricolored heron	NL	SC - BR	X
<i>Baeolophus bicolor</i> <sup>(3)</sup>	Tufted titmouse	NL	NL	X
<i>Cathartes aura</i> <sup>(3)</sup>	Turkey vulture	NL	NL	X
<i>Poocetes gramineus</i> <sup>(3)</sup>	Vesper sparrow	NL	SE - BR, SC - NB	X
<i>Calidris mauri</i>	Western sandpiper	NL	NL	X

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<i>Numenius phaeopus</i> <sup>(3)</sup>	Whimbrel	SC	SC - NB	X
<i>Zonotrichia leucophrys</i> <sup>(3)</sup>	White-crowned sparrow	NL	NL	X
<i>Zonotrichia albicollis</i> <sup>(3)</sup>	White-throated sparrow	NL	NL	X
<i>Melanitta fusca</i> <sup>*(3)</sup>	White-winged scoter	NL	NL	X
<i>Meleagris gallopavo</i> <sup>(3)</sup>	Wild turkey	NL	NL	X
<i>Tringa semipalmata</i> <sup>(3)</sup>	Willet	BCC	NL	X
<i>Empidonax traillii</i> <sup>(3)</sup>	Willow flycatcher	NL	NL	X
<i>Gallinago delicata</i> <sup>(4)</sup>	Wilson's snipe	NL	NL	X
<i>Oceanites oceanicus</i> <sup>*</sup>	Wilson's storm-petrel	NL	NL	
<i>Wilsonia pusilla</i> <sup>(3)</sup>	Wilson's warbler	NL	NL	X
<i>Hylocichla mustelina</i> <sup>(3)</sup>	Wood thrush	BCC	SC - BR	X
<i>Helmitheros vermivorum</i> <sup>(3)</sup>	Worm-eating warbler	NL	SC - BR	X
<i>Setophaga petechia</i> <sup>(3)</sup>	Yellow warbler	NL	NL	X
<i>Nyctanassa violacea</i>	Yellow-crowned night heron	NL	ST	X
<i>Setophaga coronate</i>	Yellow-rumped warbler	NL	NL	X
<i>Setophaga dominica</i> <sup>(3)</sup>	Yellow-throated warbler	NL	NL	X
<b>Amphibians</b>				
<b><i>Anaxyrus [formerly Bufo] fowleri</i></b>	<b>Fowler's toad</b>	NL	SC	X
<b>Reptiles</b>				
<i>Terrapene carolina</i> <sup>(4)</sup>	Eastern box turtle	NL	SC	X
<i>Dermochelys coriacea</i>	Atlantic leatherback	FE	SE	X
<b>Marine Mammals</b>				
<i>Balaenoptera physalus</i>	Fin whale	FE	SE	X
<i>Megaptera novaeangliae</i>	Humpback whale	FE	SE	X
<i>Eubalaena glacialis</i>	North Atlantic right whale	FE	SE	X
<b>Plants</b>				
<b><i>Amaranthus pumilus</i></b>	<b>Seabeach amaranth</b>	FT	SE	X
<b><i>Polygonum glaucum</i></b>	<b>Seabeach knotweed</b>	NL	SE	X
<b>Common Invertebrates</b>				
<b><i>Ocypode quadrata</i></b>	<b>Atlantic ghost crab</b>	NL	NL	X
<i>Tenodera aridifolia</i>	Chinese mantis	NL	NL	X
<i>Dasymutilla occidentalis</i>	Cow killer	NL	NL	X
<i>Calosoma scrutator</i>	European caterpillar hunter	NL	NL	X
<i>Emerita talpoida</i>	Mole crab	NL	NL	X
<i>Danaus plexippus</i>	Monarch butterfly	CS	NL	X
<i>Sphecidae</i>	Mud dauber wasps	NL	NL	X
<i>Coccinella novemnotata</i>	Nine-spotted ladybeetle	NL	NL	X
<i>Bembix sp.</i>	Sand wasp	NL	NL	X
<i>Amphipoda spp.</i>	Scuds	NL	NL	X

Scientific Name	Common Name	Federal Status	State Status	Documented On Site
<i>Trimerotropis maritima</i>	Seaside grasshopper	NL	NL	X

Notes:

(1) Source: Humanetrics, Inc., 1993

(2) Possible sighting (Source: ASGECI 2011)

(3) Source: WEST, Inc. 2017

(4) Source: ASGECI 2014

(5) Source: West, Inc. 2011

(6) A number of the species recorded on Sea Girt NGTC are either species undergoing 12-month status reviews for listing or are designated as Tier 1 DoD Mission Sensitive Species (MSS).

\* = Species has potential to occur at Sea Girt NGTC and is regulated by the Migratory Bird Treaty Act (USFWS 2022).

**Bold text = Current or historically known for reproductive habitat on-site.**

FE = Federally Endangered Species

FT = Federally Threatened Species

BCC = Bird of Conservation Concern

SE = State Endangered Species

ST = State Threatened Species

SC = State Species of Special Concern

BR = Breeding Population

NB = Non-breeding Population

NL = Not Listed

CS = Candidate Species

In addition to federally and state-listed threatened or endangered species, 32 State Species of Special Concern have been documented during surveys conducted at the Sea Girt NGTC; a majority of which were documented during the 2009/2010 wind turbine avian studies. A complete list of wildlife species observed at the Sea Girt NGTC (1993 through 2022), including all federally or state-listed species and Species of Special Concern, is presented in Table 2-5.



*Piping plover chicks with adult male.*

*Source: CWF, May 31, 2022.*

No critical habitat has been designated under the Endangered Species Act (ESA) for federally listed species at Sea Girt NGTC (USFWS 2022); with the exception of osprey, rare nesting birds and rare plant species which have been limited to the Sea Girt NGTC beach and primary dune area. The documented occurrences of rare species at the installation are relatively recent (i.e., since 2000). The recent occurrences of rare species are suspected to have occurred due to the beach nourishment that occurred in 1999 and 2013 at the Sea Girt NGTC. Prior to the 1999 beach nourishment project, the beach was too narrow to support suitable breeding habitat. The beach nourishment that occurred after Hurricane Sandy was thought to possibly improve the probability of nesting attempts by beach-nesting birds in 2013; however, beach-nesting birds were not observed attempting to nest by ASGECI or the NJDEP-Endangered and Nongame Species Program (ENSP) in 2013 through 2018. Conditions have improved for least tern, piping plover and seabeach amaranth populations following the 2013 beach renourishment (ASGECI 2014a). Sea Girt NGTC is scheduled for beach nourishment in late 2023.

Nesting least terns were first documented in 2000, followed by seabeach amaranth in 2001, nesting piping plovers in 2002, seabeach knotweed in 2003, and nesting ospreys in 2004. American oystercatchers (State Special Concern) have attempted nesting on-site but have not successfully fledged young (see Section 6.2.9 for more information). The remaining state or federally listed threatened or endangered species were documented as part of surveys conducted from 2007 through 2022. Additional information on rare species is provided in Section 6.0 .

Many species that are covered by the *Migratory Bird Treaty Act* are typically found along the Atlantic Coast, and thus occur or have the potential to occur on Sea Girt NGTC and are included in Table 2-5.



*Piping plover adult with full clutch.*

*Source: VHB, May 20, 2022.*

The New Jersey Landscape Project (version 3.3) also identifies potential rare species habitat at the Sea Girt NGTC (see Figure 2-8 and Table 2-5). Habitat is identified based on species occurrence records, species-specific habitat associations, and land use/land cover data. Portions of habitat (or habitat patches) are ranked 1 through 5. Rank 5 is assigned to those species-specific habitat patches containing one or more occurrences of wildlife listed as endangered and threatened pursuant to the ESA of 1973. Rank 4 is assigned to species-specific habitat patches with one or more occurrences of state endangered species. Rank 3 is assigned to species-specific patches containing one or more occurrences of state threatened species.

Rank 2 is assigned to species-specific habitat patches containing one or more occurrences of species considered to be species of special concern. Rank 1 is assigned to species-specific habitat patches that meet habitat-specific suitability requirements for endangered, threatened or special concern wildlife species, but that do not intersect with any confirmed occurrences of such species, and is used for planning purposes, such as targeting areas for future wildlife surveys (NJDEP Fish and Wildlife 2022).

Seventeen species were listed (Ranks 2 through 5) among nine habitats identified in association with (on, or immediately adjacent to) Sea Girt NGTC. These include two federally-list species, nine state threatened or endangered listed species, and eight state Species of Special Concern (See Table 2-6).

**TABLE 2-6 NEW JERSEY LANDSCAPE PROJECT SPECIES-BASED HABITAT AT SEA GIRT NGTC**

<b>Species</b>	<b>Rank</b>	<b>ID</b>	<b>Habitat Use</b>	<b>Habitat Description</b>
Piping plover	5	34185	Nesting Area	Beach
	5	29216	Nesting Area	Dune
Least tern	4	34185	Nesting Colony	Beach
	4	34185	Foraging	Beach
	4	29216	Nesting Colony	Dune
	4	29216	Foraging	Dune
	4	26106	Foraging	Military Installations
	4	34146	Foraging	Dune
	4	34146	Nesting Colony	Dune
	4	16674	Foraging	Military Installations
	4	2994	Foraging	Military Installations
	4	2995	Foraging	Military Installations
	4	16675	Foraging	Military Installations
	4	16677	Foraging	Military Installations
	4	12555	Foraging	Deciduous Scrub/Shrub Wetlands
	4	2997	Foraging	Military Installations
	4	26107	Foraging	Military Installations
4	2996	Foraging	Military Installations	
4	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters	
Bald eagle (BR)	4	13337	Foraging	Herbaceous Wetlands
	4	22524	Foraging	Herbaceous Wetlands
	4	12555	Foraging	Deciduous Scrub/Shrub Wetlands
	4	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters
Northern harrier (BR)	4	13337	Non-breeding Sighting	Herbaceous Wetlands
	4	22524	Non-breeding Sighting	Herbaceous Wetlands
Osprey (BR)	3	34185	Nest	Beach

<b>Species</b>	<b>Rank</b>	<b>ID</b>	<b>Habitat Use</b>	<b>Habitat Description</b>
American kestrel	3	33498	Nest	Tidal Rivers, Inland Bays, and Other Tidal Waters
	3	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters
	3	29216	Non-breeding Sighting	Dune
	3	29216	Non-breeding Sighting	Dune
	3	34146	Non-breeding Sighting	Dune
	3	27365	Non-breeding Sighting	Recreational Land
Black-crowned night heron (BR)	3	27365	Non-breeding Sighting	Recreational Land
	3	13337	Foraging	Herbaceous Wetlands
	3	22524	Foraging	Herbaceous Wetlands
Yellow-crowned night heron	3	12555	Foraging	Deciduous Scrub/Shrub Wetlands
	3	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters
	3	13337	Foraging	Herbaceous Wetlands
	3	22524	Foraging	Herbaceous Wetlands
American oystercatcher (SC)	3	12555	Foraging	Deciduous Scrub/Shrub Wetlands
	3	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters
	2	34185	Nesting Area	Beach
Brown thrasher (SC – BR)	2	29216	Nesting Area	Dune
	2	34146	Nesting Area	Dune
Common tern (SC – BR)	2	4254	Breeding Sighting	Urban
	2	17371	Breeding Sighting	Other Urban or Built-Up Land
	2	27365	Breeding Sighting	Recreational Land
	2	17372	Breeding Sighting	Other Urban or Built-Up Land
Fowler's toad (SC)	2	34185	Foraging	Beach
	2	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters

<b>Species</b>	<b>Rank</b>	<b>ID</b>	<b>Habitat Use</b>	<b>Habitat Description</b>
Glossy ibis (SC – BR)	2	13337	Foraging	Herbaceous Wetlands
	2	12555	Foraging	Deciduous Scrub/Shrub Wetlands
	2	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters
Great blue heron (SC – BR)	2	13337	Foraging	Herbaceous Wetlands
	2	22524	Foraging	Herbaceous Wetlands
	2	12555	Foraging	Deciduous Scrub/Shrub Wetlands
	2	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters
Horned lark (BR)	2	4254	Non-breeding Sighting	Urban
	2	13337	Non-breeding Sighting	Herbaceous Wetlands
	2	22524	Non-breeding Sighting	Herbaceous Wetlands
	2	17371	Non-breeding Sighting	Other Urban or Built-Up Land
	2	27365	Non-breeding Sighting	Recreational Land
	2	17372	Non-breeding Sighting	Other Urban or Built-Up Land
	2	13337	Foraging	Herbaceous Wetlands
Snowy egret (SC – BR)	2	22524	Foraging	Herbaceous Wetlands
	2	12555	Foraging	Deciduous Scrub/Shrub Wetlands
	2	33498	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters
	2	13337	Foraging	Herbaceous Wetlands
Tricolored heron (SC)	2	13337	Foraging	Herbaceous Wetlands
	2	22524	Foraging	Herbaceous Wetlands
	2	12555	Foraging	Tidal Rivers, Inland Bays, and Other Tidal Waters

Source: NJDEP Landscape Project, Species Based Habitat, Atlantic Coastal and Piedmont Plains Regions (Version 3.3, 20171027).

Notes: SC=Special Concern; BR=breeding population.

**Figure 2-8 - Sea Girt NGTC Landscape Project Data**

21172.02 | Sea Girt, New Jersey



April 05, 2023



- Sea Girt NGTC
- Sea Girt NGTC
  - Landscape Project - Species-Based Habitat - Marine
  - Rank 5 - Federal Listed Marine Habitat
  - Landscape Project - Species-Based Habitat - Atlantic Coastal
  - Rank 1 - Habitat specific requirements
  - Rank 2 - Special Concern
  - Rank 3 - State Threatened
  - Rank 4 - State Endangered
  - Rank 5 - Federal Listed

Path: \\vhb.com\gis\proj\Manasquan\21172.02 Sea Girt NG INRM\Project\fig 2-8 - sea girt ngtc landscape project data.aprx (User: jnappi, Date: 4/5/2023)

0 250 500 Feet

0 50 100 Meters

Note:  
Common Name "Osprey" - Referenced from NJDEP Layer:  
Landscape Project - Species-Based Habitat - Atlantic Coastal (ID: 90)

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#### 2.7.4 **Invasive Plant Species**

An *Exotic and Invasive Species Report* was prepared for NJDMAVA for Sea Girt NGTC in 2013, as a follow-up to a previous Invasive Species Report prepared in 2011 (ASGEI 2014a). In 2023, a *Poison Ivy Control and Revegetation Plan* (DRG 2023) was prepared for the installation.

The 2013 *Invasive Species Report* re-evaluated the areas previously mapped and identified as containing invasive species to document any changes in composition or size. During the 2013 survey, a total of 32 invasive or noxious plant species were identified at Sea Girt NGTC, covering approximately 3.8 acres (not including the native poison ivy). Of these, 31 were had been identified in the 2011 survey; the new species identified was Chinese bush clover (*Lespedeza cuneata*). Seventeen of the 32 plants identified are among the most invasive and widespread in New Jersey and the United States, but not all of these species were identified as current or potential threats to sensitive vegetation communities at Sea Girt NGTC (ASGEI 2014a). The *Poison Ivy Control and Revegetation Plan* (DRG 2023) included a survey of 19 areas (approximately 0.218 acres) within the dunes. Coverage percentages of poison ivy ranged from 10 percent to 100 percent with an average of approximately 60 percent. Codominant species within the identified areas included a mix of native and non-native species common in successional and dune communities. Common co-dominants included Virginia creeper (*Parthenocissus quinquefolia*), Oriental bittersweet (*Celastrus orbiculatus*), Northern bayberry (*Morella pensylvanica*) and black cherry (*Prunus serotina*). Other species periodically observed include winged sumac (*Rhus coppelina*) and Eastern red cedar (*Juniperus virginiana*). Occasional dominant herbaceous species were present including American beachgrass and seaside goldenrod. In most locations within the study area, the Poison ivy was present as a vine periodically interspersed with other vegetation. In other areas, it occurred as shrubs typically ranging from 2-6 feet in height. Based on the field findings, several control methodologies to manage poison ivy was provided including control and subsequent monitoring and maintenance measures; chemical treatments and manual removal where necessary; replacement plantings; signage; implementation timing and costs; and monitoring/maintenance protocols.

Effects of Hurricane Sandy, which made landfall near Atlantic City, New Jersey, on October 29, 2012, and caused unprecedented damage along coastal Monmouth and Ocean Counties, significantly affected or altered some of the vegetative communities on Sea Girt NGTC, including eliminating or reducing some invasive species such as Japanese honeysuckle and autumn olive in a disturbed successional community within the northeastern portion of Sea Girt NGTC. However, the occurrence of Asiatic sand sedge (*Carex kobomugi*) was exacerbated by the storm; the plant became distributed along the entire shoreline of Sea Girt NGTC. Most of the dominant invasive species include Japanese knotweed and Oriental bittersweet, as well as aggressively growing nuisance species, poison ivy and common reed, which have remained unchanged or have slightly increased since 2011.

During the exotic and invasive species surveys, a list of invasive plants occurring at the installation was developed, and potential control measures were re-evaluated (See Section 4.2.4 for Invasive Plant Management). Table 2-7 lists the invasive species observed in 2013 and 2023, their occurrence at Sea Girt NGTC (e.g., found in large monocultures, isolated monocultures, not dominant, etc.), and the communities in which they were observed.

**TABLE 2-7 INVASIVE PLANTS OBSERVED AT SEA GIRT NGTC**

Common Name	Scientific Name	Occurrence	US NVC
Purple loosestrife	<i>Lythrum salicaria</i>	C	M069
Asiatic sand sedge	<i>Carex kobomugi</i>	B	M057, D026
Japanese stiltgrass	<i>Microstegium vimineum</i>	B	G030, CCL01, CSF21
Spotted knapweed	<i>Centaurea stoebe</i>	A	G030, G673
Oriental bittersweet	<i>Celastris orbiculatus</i>	A, MSP	M069, G030
Common reed	<i>Phragmites australis</i>	A, MSP	F035, M069
Japanese honeysuckle	<i>Lonicera japonica</i>	A, MSP	G030, G032
Porcelainberry	<i>Ampelopsis</i>	C	M673, G030, G032
Autumn olive	<i>Elaeagnus umbellata</i>	A	G673
Poison ivy*	<i>Toxicodendron radicans</i>	A, MSP	G030, M069, D026
Rugosa rose	<i>Rosa rugosa</i>	A	G032, G030
Japanese knotweed	<i>Polygonum cuspidatum</i>	A, MSP	G030, G032
Mugwort	<i>Artemisia vulgaris</i>	A, MSP	G030, D026, G032
Tree-of-heaven	<i>Ailanthus altissima</i>	B, MSP	G032, D026
Chinese privet	<i>Ligustrum sinense</i>	C	G030
Saltwort	<i>Salsola kali</i>	B	F035
English ivy	<i>Hedera helix</i>	D, MSP	G030, G032, G026
Multiflora rose	<i>Rosa multiflora</i>	MSP	G032, G026
Black locust	<i>Robina psuedoacacia</i>	B	G030, G673
Norway maple	<i>Acer platanoides</i>	B, D, MSP	M013
Wild carrot	<i>Daucus carota</i>	B	M069
Chicory	<i>Cichorium intybus</i>	B	M069, CCL01
Sheep sorrel	<i>Rumex acetosella</i>	B	M069, CCL01
Common mullein	<i>Verbascum thapsus</i>	B	G673
English plantain	<i>Plantago lanceolata</i>	A	M069, CCL01
Birdsfoot trefoil	<i>Lotus corniculatus</i>	A/B	M069, G032
Winged euonymus	<i>Euonymus alatus</i>	D	G032, G030
Black knapweed	<i>Centaurea nigra</i>	A/B	G673, G030
White mulberry	<i>Morus alba</i>	C	G673, G030
Yarrow	<i>Achillea millefolium</i>	B	M069, CCL01
Chinese silvergrass	<i>Miscanthus sinensis</i>	D	G030, G032
Chinese bushclover	<i>Lespedeza cuneata</i>	C	M069, CCL01

Source: (ASGECI 2014a and VHB 2022)

**Occurrences:** **A** – Large monocultures or large areas of 60 percent+ dominance present; **B** – Sporadic occurrences common within a community or the site; **C** – isolated or few monocultures or occurrences present; **D** – planted on-site; **MSP** – Species identified among a patchwork of other invasive species, none of which are individually dominant or co-dominant.

**Communities:** **SD** – secondary dune; **PD** – primary dune; **W** – herbaceous/scrub-shrub wetland; **DS** – disturbed successional; **FE** – maintained lawn and modified herbaceous wetland; **F** – secondary successional forest; **BW** – brackish tidal wetlands; **UR** – landscaped/urban areas.

\* Poison ivy is a native species; however, is considered noxious due to its potential for harm to humans and is included here as a species to be managed.

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## 2.8 CULTURAL RESOURCES

### 2.8.1 Cultural Resources Management and Native American Consultation

The NJARNG has prepared an Integrated Cultural Resources Management Plan (ICRMP) for the period (2021–2025) which includes Sea Girt NGTC (NJARNG 2021), in accordance with DoDI 4710.02, dated 24 September 2018, *Cultural Resources Management*, and Army Regulation 200-1, *Environmental Protection and Enhancement*. The ICRMP serves as the NJARNG's comprehensive plan for managing cultural resources and includes detailed information regarding applicable cultural resources management laws, regulations, and NJARNG management procedures, as well as descriptions of known and potential resources present. The ICRMP was developed in consultation with the State Historic Preservation Office (SHPO; Saunders 2021) and Indian tribal governments.

The United States has a unique legal relationship with Indian tribal governments as set forth in the Constitution of the United States, treaties, statutes, executive orders, and court decisions. Since the formation of the Union, the United States has recognized Indian tribes as domestic dependent nations under its protection. The NJARNG ICRMP provides the consultation procedures for federally recognized Native American Indian tribal governments to provide meaningful input on actions or policies that might be of tribal interest, including natural resources which may be culturally significant to Tribes. In accordance with federal statutes and DOD policy, the NJARNG initiated consultation with federally recognized Indian tribes during preparation of the ICRMP and complete Section 106 NHPA consultation prior to project implementation. There are presently four federally recognized Indian tribes with known lineal descent from the aboriginal occupants of New Jersey: the Delaware Tribe in Bartlesville, Oklahoma; the Delaware Tribe of Western Oklahoma in Anadarko; the Stockbridge Munsee Community of Wisconsin; and the Shawnee Tribe in Miami, Oklahoma.

Cultural resources could present constraints to various natural resources management activities at Sea Girt NGTC. Ground disturbing activities associated with the INRMP could require National Historic Preservation Act Section 106 consultation. When necessary, the NJARNG would initiate the Section 106 process with the SHPO to ensure that impacts on cultural resources are avoided. Specific procedures for Section 106 consultation and procedures for inadvertent discovery are specified in the ICRMP, and these procedures are incorporated into this INRMP by reference. In addition, the NJARNG would consult with appropriate Indian tribal governments for any INRMP activities that may have the potential to significantly affect protected tribal resources, tribal rights, or Indian land. The ICRMP includes contact information for the tribes and consultation procedures.

There are no known sacred sites and/or traditional cultural properties on NJARNG that may be part of a larger cultural landscape (NJARNG 2021).

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### 2.8.2 Historic Architectural Resources

A total of 60 buildings and structures are located at Sea Girt NGTC, and most of them have been determined by the NJ SHPO as not eligible for the National Register of Historic Places (NRHP) due to significant alterations (NJARNG 2021, Appendix D-5). Quarters One is the only building at Sea Girt NGTC that has been identified as being eligible for listing on the NRHP as a well-preserved 19<sup>th</sup> century New Jersey shore farmhouse associated with Commodore Robert Stockton's plantation, known as Sea Girt, and it also was the Quartermaster General Residence (Kiernan 1999). Quarters One is not owned by the NJARNG but is operated and maintained as one of its facilities (NJARNG 2021, Appendix D-5). A Preservation Plan was prepared for Quarters One in 2014 to provide the historic context on the building, describe its current conditions, and detail the work needed to ensure its preservation (Wright et al. 2014). Recommendations were developed based on its continued use as a part-time residence at the NGTC. Asbestos-containing materials were identified in one location of the dwelling: the linoleum covering the floor of the rear stairwell off the kitchen. Another hazardous material identified was lead-based paint found throughout the interior and exterior of the building. All repairs or rehabilitation work at Quarters One must be in accordance with current requirements for asbestos and lead-based paint removal, abatement, and monitoring (Wright et al. 2014).



*Sea Girt NGTC Quarters One*

The installation does not contain, nor is it part of, a NRHP-eligible historic district or historic landscape (NJARNG 2021, Appendix D-5); however, a viewshed exists from the porch of Quarters One across the parade grounds to the firing range and ocean. This viewshed from the NRHP-eligible property is significant and must be taken into consideration for future projects.

### 2.8.3 Archaeological Resources

John Milner Associates, Inc., completed a Phase I archaeological survey at Sea Girt NGTC in 2004 (Siegel et al. 2004). The survey included a pedestrian survey and limited subsurface excavation (i.e., shovel tests) in undisturbed areas of the installation (i.e., the parade grounds). Fifty-one shovel tests were excavated, resulting in 84 artifacts. Many of these were modern items, which were noted in the inventory and discarded. Artifacts were relatively evenly dispersed across the property and represent general field scatter. No prehistoric artifacts were recovered, and no archeological sites were identified. Based on the results of the Phase I investigation, a more comprehensive archaeological survey was recommended.

In 2005, the NJARNG contracted John Milner Associates, Inc., to conduct a Phase IB archeological survey (Siegel and Baldwin 2005). An additional 1,217 shovel tests were excavated, resulting in 369 historic artifacts distributed relatively evenly across the site, and represent general field scatter, mostly dating to various periods of the installation's history, which were collected and processed. Like the previous investigation, many additional items identified were recent, and therefore were noted and discarded. Two prehistoric artifacts, both isolated finds, were recovered. No archeological resources were identified on the property.

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However, the Phase IB study revealed an area of archaeological sensitivity east of the croquet fields that appeared to contain evidence for an eighteenth-through-nineteenth-century historic period archaeological site. Any construction proposed for this location would require a Phase II archaeological survey. Activities proposed by the implementation of the Sea Girt Master Plan were reviewed by the SHPO and determined to require additional investigation in this location.

The Phase II survey of the area identified in 2005 (the western end of the sports field) was conducted by HDR in 2013 (Parker and Gabler 2013). The SHPO determined the identified site, 28-MO-407, Shearman-Mount-Stockton Farmstead Site, was eligible for the NRHP in a letter dated November 5, 2013 (Saunders 2013). A total of 725 STPs and seven 1-meter square test pits were excavated. Artifacts recovered from the site represent manufacture dates from the mid-eighteenth to mid-nineteenth centuries.

In 2014, a Phase I survey by HDR was conducted of an area to the east of Quarters One for a proposed museum site (Parker et al. 2014). Forty-nine STPs and one 0.5-meter by 0.5-meter excavation unit were tested. A total of 358 historic artifacts and 86 modern artifacts were recovered and designated as 28-MO-408. The site lacked integrity and coupled with the high volume of modern artifacts, it was determined not eligible for the NRHP.

Any future project activities that require federal funding, licensing, or permitting; Freshwater Wetlands permits, Waterfront Development permits, and Upland Development permits issued by the State of New Jersey's Division of Land Resource Protection (NJDEP DLRP); as well as environmental assessments under EO 215, must develop prior to project implementation a means to avoid, minimize, and/or mitigate impacts on all National Register eligible properties, which include Quarters One and the Shearman-Mount-Stockton Farmstead Site (28-MO-407).

## **2.9 INSTALLATION RESTORATION PROGRAM**

Sea Girt NGTC has several current Installation Restoration Program sites at the installation, including those associated with underground storage tanks (USTs), with a contaminated groundwater plume originating off-site, and with asbestos-containing debris areas.

A *Preliminary Assessment Report (PAR)*, dated August 21, 2019, prepared by Wood, was completed for the Sea Girt NGTC (Wood 2019). Based on the findings of the 2019 PAR, several oceanfront residences, a large farmhouse and outbuildings were located on the site prior to 1853. From 1853 to 1866, the site was owned by "Commodore Robert Field Stockton". During this time, a Victorian dwelling, known as the "beach house" was constructed on the Stockton plantation. In 1870, the site was acquired by "Sea Girt Land Improvement Company" with the intention of building residential dwellings. However, by the late 1880s, the site was purchased by the State of New Jersey for the purpose of establishing a military base. The State of New Jersey has continuously owned and operated the site since it was purchased. Currently, the site is an active New Jersey National Guard base and training center. A total of 85 Areas of Concern (AOCs) were reported in the 2019 PAR and are discussed below. The AOC locations are presented in Figure 2-9.

### **Underground Storage Tanks (AOC-1 through AOC-18 and AOC-24 through AOC-33)**

From 1941 to 1998, several USTs were maintained on Sea Girt NGTC, and were used to store gasoline and fuel oil. These USTs were decommissioned over time (Brockerhoff Environmental Services 2016). NJDEP required the NJARNG to perform additional investigation work to adequately remediate various gasoline,

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heating oil, and diesel fuel USTs at the facility. Each of these former UST sites has received a No Further Action (NFA) determination. However, ground penetrating radar surveys conducted during a site investigation in 2011 revealed underground anomalies indicative of three additional USTs present on-site (Brockerhoff Environmental Services 2016). Excavations were conducted at the sites of the three anomalies in September 2012. The USTs were removed from two of the anomaly sites: Tank E4, a 550-gallon leaded gasoline UST; and Tank E12, a 1,000-gallon diesel UST. The UST closure activities were conducted under Closure No. N14-9573, and UST Facility Questionnaires were submitted to the NJDEP. Excavations at the site of the third anomaly did not detect tanks, tank piping, or visually affected soils, so it was determined that no UST was present at the anomaly site and no further investigation was required (Brockerhoff Environmental Services 2016).

### **Former Transformer, Sub-station and Spills (AOC-16 through AOC-18, AOC-60, AOC-62, AOC-64)**

On January 30, 1994, a spill occurred from a ruptured diesel fuel tank on a 5-ton tractor trailer, which was located in the parking lot of Building 60. Approximately 45 to 50 gallons of diesel fuel leaked into a storm drain that discharged to Stockton Lake. The spill was contained and reported to the NJDEP. Case #94-01-30-1320-00 was assigned. Cleanup was conducted by S&D Environmental Services. Cleanup consisted of the application of absorbent pads and booms, flushing out the sewer and drains, and catching the diesel fuel at the outfall. The case was closed by the Monmouth County Health Department on February 1, 1994.

An electrical substation was observed on the southwestern portion of the site. The substation is operated by JCP&L. Staining/leaking on the concrete pads and surrounding gravel was observed from outside the fence. Based on these observations, Wood recommended further investigation at this AOC.

In 2006, Trinity Construction discovered buried cans of "grease" in the area of Firing Ranges 3 and 4. The NJDEP was notified, and Case No. 06-01-31-1048-26 was assigned. LBG conducted a soil and groundwater investigation for the firing ranges in 2006 to address this incident. Approximately 58 tons of impacted soil were excavated and removed from the area as reported in the 2007 RIR for the firing ranges. In addition, 21 55-gallon drums were used to store debris, including the cans of grease from the excavation prior to offsite disposal. Temporary well point groundwater samples exhibited metal and PAH exceedances. Further investigation at this AOC was recommended.

On August 17, 2007, a hydraulic fluid spill was documented in an e-mail from Joseph Dunleavy to Dean Arrighi. According to the e-mail, the drains in the building were affected by tidal changes in Stockton Lake and hydraulic fluid from a lift had discharged to the floor surface during a high tide period. The spill was contained on paved areas and remediated by absorbent pads. The NJDEP was not notified for the spill. Wood was unable to locate any records for disposal of the cleanup debris (e.g., absorbent pads). The e-mail recommends closure of the six lift cylinders, 75-gallon AST, and approximately 200 feet of piping. Wood was not able to determine the location of Building 69; in documentation the building was described as the "old state police maintenance building" that is "now used by the Sea Girt maintenance force." Based on this description, the reference to Building 69 is presumed to be the current Building 68. Based upon the aforementioned information, further investigation of this AOC was recommended.

In 2012, NJDMAVA observed one of the three Building 7 transformers that were located on a concrete pad behind the building leaking. Sampling and analysis were conducted. PCB results ranged from 0.83 mg/kg to 2.2 mg/kg. Remediation consisted of the removal of the transformers and the excavation of the area impacted by PCBs. Temporary well points were also installed; groundwater samples were analyzed for EPH

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and PCBs. No compounds were detected in the groundwater. The concrete pad and associated impacted soil below the pad were excavated and removed from the site. The analytical results for post-excavation samples exhibited concentrations less than the most stringent remediation standards. The RI/RAR, dated December 18, 2015, documents the investigation and remediation activities for this AOC. The Unrestricted Use AOC-specific RAO for the former transformer concrete pad, dated December 15, 2015, was issued by Richard Jasaitis of Kleinfelder, LSRP No. 575610.

### **Asbestos Containing Material and Lead (AOC-19 through AOC-21, AOC-83 and AOC-85)**

During excavation at the asbestos debris areas, soil samples revealed lead in area two at concentrations ranging from 1.3 milligrams/kilograms (below all applicable remediation standards) to 127 milligrams/kilograms (slightly exceeds the NJDEP Default Impact to Groundwater Soils Screening Level). This soil was removed from the site within six months of the laboratory results' indicating lead in the soil. Post-excavation lead samples indicated levels below the site-specific impact on groundwater standard (Kleinfelder 2015). Any activities proposed in an identified freshwater wetland or transition area are regulated under the Freshwater Wetlands Protection Act (New Jersey Statutes Annotated [N.J.S.A.] 13:9B-1 et seq.) (See Section 0).

Lead paint chips were observed in the soil surrounding the Quarters 1 building. NJARNG retained Weston Solutions, Inc. to investigate this AOC. Sampling to date has confirmed lead is present in soil at concentrations greater than applicable standards. NJDEP was contacted and case number 18-03-02-1138-52 was assigned. A CDN was submitted in 2018 and the investigation is ongoing. Further investigation at AOC-85 was recommended.

Asbestos-containing building materials originating from on-site sewer pipe improvements have been mixed with soil stockpiles and inadvertently spread across four areas encompassing a total of 2.4 acres of the Sea Girt NGTC, the limits of which be adjacent to freshwater wetlands (see Figure 2-9). A preliminary site investigation of the asbestos debris areas was initiated in early 2012. Asbestos remediation was completed in asbestos debris areas one, two, and three in 2016 in compliance with New Jersey Administrative Code (N.J.A.C.) 7:26C (Kleinfelder 2016). At asbestos debris area four, the asbestos was covered with a stone roadway (Kleinfelder 2013). This asbestos contamination area is adjacent to a wetland area, but the asbestos is contained under the current paved roadway. Further investigation at AOC-21 was recommended.

Building 71 consisted of a masonry block building, which was locked and fenced with barbed wire. The building was used for storage of various hazardous materials, munitions and ACM. The building floor was slab on grade with a large crack running the length of the interior room. The ground outside the building was soil covered with grass. No secondary containment measures (e.g., trench) were present at the openings of the storage building. Wood recommended further investigation of AOC-83.

### **Vapor Intrusion and Groundwater (AOC-22, AOC-23 and AOC-79)**

A groundwater plume consisting of several volatile organic compounds has been found to have migrated beneath the NGTC (see Figure 2-9) from an off-site commercial property, White Swan Laundry and Cleaners, Inc., which was located approximately one mile northeast of Sea Girt NGTC; USEPA (U.S. Environmental Protection Agency) ID: NJSFN0204241 – 1322 Sea Girt Avenue, Wall Township, Monmouth County, NJ). The groundwater was contaminated with dry cleaning chemicals and/or their breakdown products, including perchloroethylene, trichloroethene, and cis-1,2-dichloroethylene (USEPA 2017). A remedial investigation

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and feasibility study was overseen by the USEPA to determine the nature and extent of the contamination of the site, and to evaluate remedial opportunities. In September 2013, the USEPA finalized its plan to clean up contaminated soil and groundwater at the site (USEPA 2017). Beginning April 2023, EPA will oversee the construction and operation of a groundwater extraction and treatment system at the White Swan Laundry and Cleaner, Inc. Contractors will be working between 8th Avenue to Route 35 and Laurel Avenue to Sea Girt Avenue. This work will include drilling wells, conducting tests to see how much water can be taken from each location, and testing portions of roadways. EPA does not anticipate that there will be any other impacts to the community. The work is anticipated to end in June 2025.

Sea Girt NGTC presently installs vapor barriers and vapor mitigation systems in buildings to prevent the intrusion of chemical vapors from contaminated groundwater into buildings (Bill McBride, INRMP update kickoff meeting, February 14, 2023). Groundwater samples are collected by the USEPA from wells installed on-site in 2010 to monitor the extent of contamination; the wells continue to be monitored. Cleanup progress of this Superfund site can be monitored at: <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0204241>.

Stockton Lake is located immediately adjacent to the southern portion of the site, separated by a wooden bulkhead. Based on historical documentation, Stockton Lake has received runoff generated from Site operations, including historical spills and firing range activity. Based on the aforementioned information, Wood recommended further investigation of AOC-79.

#### **Hazardous Materials and Storage (AOC-34 through AOC-37, AOC-41 through AOC-44, AOC-84)**

Multiple vehicles are parked and stored at the parking area located south of Building 36. The parking area consists of soil, gravel and concrete surfaces. Staining was observed on the unpaved area and concrete surfaces of the parking area (southern portion). A hazardous materials storage building is located west of the NJSP crime lab. The building is cylindrical in shape and is used for the storage of hazardous materials generated by the NJSP crime lab. Multiple dumpsters were observed throughout the site. The dumpsters are used for the collection and disposal of trash generated during the normal operations. An outdoor flammable material shed that is located east of Building 36 is used for satellite waste storage of spent paint, antifreeze, oil, filters and diesel fuel. New Jersey State Fire College (NJSFC) conducted training operations on the southeastern portion of the site. A shed located adjacent to the NJSP Crime Lab facility was used to store landscaping equipment and tools and was not available for an inspection. A shed that is located east of Building 36 (OMS 25) is connected to Building 36 by an outside entrance and appears to be situated on the building's concrete floor. Based on Wood's review of historical drawings, the shed was previously used as an oil storage area. A paint storage shed was observed east of Building 67. The condition of the floor could not be determined due to the various materials, pails and equipment stored. The shed had been impacted by Hurricane Sandy in 2012. Further investigation at AOC-41, AOC-43, AOC-44 and AOC-84 were recommended.

#### **Loading Docks (AOC-38 through AOC-40)**

Loading docks are located on the northern and southern exterior side of Building 60. Based upon Wood's review of client-supplied drawings and historical Sanborn Maps, the docks were once used as loading/unloading platforms for the arsenal warehouse. The northern loading platform connected to a former railroad spur that serviced the site in the early 1900s. Further investigation of AOC-38 was recommended.

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### **Floor Drains, Sumps and Boilers (AOC-45 through AOC-49, AOC-68, AOC-73 and AOC-81)**

Floor drains and sumps are in most of the site buildings and reportedly discharge into the municipal sanitary sewer system. No hazardous materials were stored within the immediate area adjacent to these floor drains and sumps. No visible staining was observed, and the surrounding floor material was structurally sound in all buildings. A drain/sump was observed in the concrete pad of the outdoor vehicle maintenance area. The surrounding ground surface material was structurally sound with no signs of staining. A 7-inch floor drain was observed in the garage of Quarters 3. The garage was formally used for vehicle maintenance; therefore, investigation of AOC-46 was recommended.

In building 60, a tar-like substance coated most of the basement flooring. Except for a shallow seam noticed on the northern portion of the basement floor, the ground surface appeared to be structurally intact. Two sump pits were present in the basement: an inactive, concrete-sealed sump pit located in the northeastern most corner (at the bottom of the basement steps) and an inactive sump pit, which contained standing water in the southern portion of the basement. NJARNG personnel could not determine when either pit was last active. Further investigation at this AOC was recommended.

Since the late-1990s, all boilers have been converted from No. 2 fuel oil to natural gas. However, during Wood's August 6, 2015 Site reconnaissance, the boiler rooms and appurtenances (e.g., boiler, hot water heater, and sump) were still present in most Site buildings. Further investigation was recommended at Building 67, where an approximately 18-inch diameter hole in the floor has the potential for discharge to the environment.

A lawn mower/maintenance storage area was observed in Building 65. Evidence of oil spills or discharges on the concrete floor was apparent. Cracks were observed along the floor's expansion joints. Based on these observations, Wood recommended further investigation of AOC-73.

### **Collection Systems (AOC-50 through AOC-57)**

From the mid-1930s to the early 1970s, a concrete washstand was located south of the vehicle storage building. Multiple roof leaders were observed on most of the NGTC buildings. All roof leaders appeared to be in working condition and no visible staining or contamination was observed around the area of the discharge spouts. A storm sewer collection system receives storm water runoff from the paved and grassy areas across the site and discharges to Stockton Lake. Visual observations indicated that the storm sewer catch basins situated on paved areas were intact with no visible joints or cracks around the structure. A septic system and drainage field area that was used for the treatment of sanitary waste was located south of the former Sewage Treatment Plant. A brick septic tank is or was located west of OMS 25. The tank is believed to be septic-related and was scheduled to be filled when the OMS building was constructed in the late-1970s. Therefore, the potential for impacts to the subsurface exists. Further investigation of AOC-50, AOC-52, AOC-53, AOC-54, AOC-56 and AOC-57 was recommended.

### **Historic Fill Material (AOC-58)**

Approximately 14 acres of the southern portion of the site consists of historic fill including the former sewage treatment plant, the campgrounds and bathhouse, the former OMS 25 (Building 36) and portion of the parking lot at Building 60 (former arsenal warehouse). In addition, the bulkhead installation included

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backfill from an unknown source(s). An area behind Building 60 was apparently used to pile soil from an unknown source. Further investigation at this AOC was recommended.

### **Fire Ranges (AOC- 75 through 77)**

From 1885 to the present, live fire ranges were utilized at the site for small arms training, including a firing range along the shoreline with targets in the Atlantic Ocean. On-shore firing ranges consisted of training with grenades, rifle grenades, and mortars. Underground tunnels were also previously used on the eastern portion of the site to connect various firing ranges to one another. Therefore, the potential for lead impacts to the subsurface exists. Further investigation of these AOCs was recommended.

### **Buildings and Storage Areas (AOC-69, AOC-71, AOC-74 and AOC-78)**

Air vents and ducts to the outside of buildings were observed in multiple buildings throughout the site. Air vents and duct work appeared to be in good condition. No further investigation was recommended for AOC-69.

Multiple chemical storage cabinets and closets were observed in several of the site buildings. All chemical storage cabinets and closets appeared to be in good condition. There was no evidence of spills or discharges and the floors in the immediate areas were structurally sound with no visible cracks or voids. Cabinets were observed in the following buildings: Quarters 3 Garage, NJSP Crime Lab and Buildings 36, 59, 60, 66 and 68. Based on these observations, Wood recommended no further investigation of soil or groundwater at AOC-70. A compressed gas cylinder of ammonia was observed in a storage shed behind Building 7. The cylinder was emitting a strong ammonia odor. The concrete slab in the immediate area was structurally sound with no visible cracks or voids. The cylinder did not appear to be in use. Based on these observations, Wood recommended no further investigation at AOC-71.

Staining on the concrete floor in the rear storage area of Building 66 was observed. The concrete floor had visible cracks and voids. Based on these observations, Wood recommended further investigation of AOC-74.

A former blacksmith shop was located east of the current Armory building. According to the Telephone, Electric and Gas Map, dated June 1935, a former blacksmith shop and two associated water tanks were depicted east of the Quartermaster's horse stables (currently the grass area east of Armory parking lot). Based on the aforementioned information, Wood recommended further investigation at AOC-78.

# Figure 2-9 - Areas of Concern at Sea Girt NGTC

21172.02 | Sea Girt, New Jersey



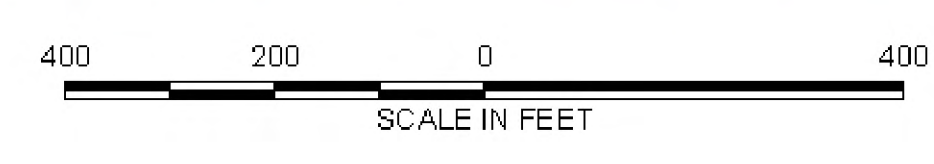
October 27, 2023



**Legend**

- Area Of Concern (AOC) Location
- AOC Label
- Site Boundary
- Wetland Boundary

Note: Detailed information on the Areas of Concern (AOCs) are included in Section 2.8 - INSTALLATION RESTORATION PROGRAM of the INRMP.



Reference Drawing:  
Wood Environment & Infrastructure Solutions, INC.  
Figure 4 - Site Plan Depicting Areas of Environmental Concern  
Dated 11/11/2015

Path: \\vhb.com\gis\proj\Manasquan\21172.02 Sea Girt NG INRMP\Project\fig 2-9 - areas of concern at sea girt ngtc.aprx (jnappi, 10/27/2023)

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## SECTION 3

### NATURAL RESOURCES PLANNING STRUCTURE

#### 3.1 INTRODUCTION

This section presents the framework for natural resources planning and INRMP development and implementation at Sea Girt NGTC. The key steps to developing an effective INRMP include:

- Forming a planning team and identifying stakeholders;
- Assessing current natural resources programs;
- Identifying management issues and concerns;
- Developing overall natural resources program goals and project-specific goals;
- Identifying staffing and funding requirements;
- Developing a schedule for implementation of the project-specific goals; and
- Evaluating potential environmental consequences of proposed management activities and providing opportunities for public review.

Section 3.02.0 of this INRMP includes descriptions of existing natural resources at Sea Girt NGTC. The status of existing programs, management issues, and management goals are provided in Sections 4.0 through 8.0 of this INRMP. Six natural resources management program areas (land and watershed management, fish and wildlife management, rare species management, outdoor recreation, climate and information management) have been established to address relevant issues at Sea Girt NGTC. The program structure has been developed to facilitate issue identification and prioritization, as well as project funding, implementation, and tracking. Because of the inherent interaction of natural resources, overlap exists among programs. Therefore, all programs are integrated with each other, as well as with the overall land use and mission planning processes. The following management program areas are included in this INRMP:

- Section 4.0 – Land and Watershed Management
- Section 5.0 – Fish and Wildlife Management
- Section 6.0 – Rare Species Management
- Section 7.0 – Outdoor Recreation Management
- Section 8.0 – Climate
- Section 9.0 – Information Management

Some program areas that are typically addressed in Army INRMPs are not included in this INRMP because they are not applicable to Sea Girt NGTC. Specifically, the Integrated Training Area Management Program, Integrated Wildland Fire Management, and Forest Management are not addressed. Sea Girt NGTC is not currently classified as an Integrated Training Area Management Program installation based on its size and the type and magnitude of military field training that occurs. The installation lacks forested areas; therefore, forest management and wildland fire are not applicable. The NJDMAVA is attempting to seek a waiver from the DA to develop a wildland fire plan.

The following subsections provide additional information about the overall natural resources planning process, including responsibilities, stakeholder involvement, NEPA integration, staffing, funding, and the INRMP review and update process.

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### **3.2 RESPONSIBILITIES**

The Adjutant General (TAG) of the NJARNG has overall responsibility for the preparation and implementation of an INRMP that fulfills both stewardship and legal requirements. The Construction Facilities Management Office – Environmental Management Bureau (CFMO-EMB), within the NJDMAVA, is assigned day-to-day responsibility for development and implementation of the INRMP. The director of the Sea Girt NGTC is responsible for providing input to the plan and implementing specific elements of the plan.

### **3.3 ENVIRONMENTAL QUALITY CONTROL COMMITTEE**

In accordance with AR 200-1 (Chapter 15), the NJDMAVA Environmental Quality Control Committee (EQCC) has been established to advise the TAG on all NJARNG environmental issues, priorities, policies, strategies, and programs. The EQCC is a multidisciplinary group, meeting quarterly, that represents military land use needs and subject-matter expertise. Membership includes the following:

- Construction and Facilities Management Office;
- Construction and Facilities Management Installation/Contracting Office;
- Construction and Facilities Management Office, Environmental Management Bureau;
- Director, Sea Girt NGTC;
- G1, G3, G4, G6 – T Representatives;
- Joint Training and Training Development Center;
- Judge Advocate General;
- Medical Command;
- Public Affairs Office;
- Recruiting and Retention Board;
- State Army Aviation Officer;
- State Army Aviation Officer Safety and Occupational Health Manager;
- Surface Maintenance Manager;
- 254th Regiment (Combat Arms);
- 42nd Readiness Support Group;
- 44th Infantry Brigade Combat Team; and
- 57th Troop Command.

Specific EQCC responsibilities with respect to the INRMP include the following:

- Identifying military training and land use needs;
- Identifying and evaluating management issues and concerns;
- Providing policy, guidance, and oversight for development of goals and objectives;
- Identifying staffing and funding resources for implementing the INRMP; and
- Overseeing development, implementation, and revision of the INRMP fostering environmental awareness and good stewardship at Sea Girt NGTC.

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### 3.4 STAKEHOLDERS

In addition to the NJDMAVA EQCC, internal and external stakeholders are involved in the natural resources planning process. Internal stakeholders include the military users of the installation. External stakeholders include tenants, various government agencies, and nonprofit groups. These stakeholders have a vested interest in how the natural resources at the installation are managed. External stakeholders include the following:

- Sea Girt NGTC tenants;
- USFWS – New Jersey Field Office;
- NJDEP-ENSP;
- Conserve Wildlife Foundation;
- Monmouth County;
- Borough of Sea Girt; and
- Borough of Manasquan.

### 3.5 AGENCY INVOLVEMENT

In accordance with DA and NGB policy, this updated INRMP has been prepared in cooperation with the USFWS and NJDEP-ENSP. The DOD, USFWS, and state fish and wildlife agencies have defined their cooperative relationship for INRMP preparation and implementation within the *Memorandum of Understanding between the US. Department of Defense and the US. Fish and Wildlife Service (USFWS) and the Association of Fish and Wildlife Agencies for a Cooperative INRMP on Military Installations* (Tripartite MOU, July 2013). The USFWS *Guidelines for Coordination on INRMPS* (June 2015) provides detailed information on the Service's INRMP coordination and review responsibilities.

The NJARNG formally requested that these agencies and representatives from the Conserve Wildlife Foundation participate in the INRMP preparation process, and a planning meeting was held at Sea Girt NGTC on 14 February 2023. A copy of the Draft INRMP was provided to these representatives for review and input to the Final INRMP. The Final INRMP has been submitted to regulatory agencies involved for concurrence and to establish a mutual agreement of the party's concerning conservation, protection, and management of fish and wildlife resources. Copies of agency correspondence are provided in Appendix D.

In 2000, Congress created a State Wildlife Grants (SWG) program to fund actions and programs that benefit wildlife and their habitats to conserve declining species before they become threatened or endangered. Priority is placed on projects that benefit species of greatest conservation need. To be eligible for funding under the SWG program, a state must develop a comprehensive wildlife conservation strategy, known as State Wildlife Action Plans (SWAP). SWAPs present an assessment of the health of wildlife and habitats within a state, identifies the problems they face, and outlines conservation actions.

In the August 2006 memorandum that provided the DOD's official INRMP template, the DOD identified the incorporation of SWAPs into INRMPS, and vice versa, as a critical element of the environmental management strategy and mission sustainability. During the development of the most recent SWAP update, the State of New Jersey invited multiple federal, state, and local partners. The DOD is listed as one of the contributors to the revised SWAP.

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The NJDEP Fish and Wildlife released the first New Jersey SWAP in 2006, revised it slightly in 2008, and a draft of a complete revision of the SWAP was published for public review in December 2017 (NJDEP Fish and Wildlife 2017). The SWAP guides conservation strategies to benefit wildlife and their habitats in the state, and provides actions that can be implemented by local, county, state, and federal agencies, non-profit organizations, and private landowners. The 2017 SWAP focuses on 107 species of greatest conservation need (SGCN) and concentrates on key habitats and conservation focal areas (NJDEP Fish and Wildlife 2017). Piping plover and least tern, both which are monitored on Sea Girt NGTC beaches, are considered focal SGCN within the SWAP. Actions and goals within the SWAP that are directly relevant to Sea Girt NGTC (and this INRMP supports) include the following:

- Control of invasive animal and plant species to maintain native species populations and restore ecological functions;
- Collection and analysis of data as part of research, survey, or monitoring primarily focused on fish and wildlife populations;
- Ongoing monitoring of fish and wildlife habitat quality and quantity;
- Promote the protection of critical coastal habitats that provide nesting, migrating, and wintering areas for SGCN birds, fish, and other coastal SGCN through conservation area designations;
- Develop a management plan to restrict human activity (e.g., recreational, maintenance work, etc.) from sensitive habitats/areas such as avian nesting sites, reptile and amphibian breeding areas (nesting or gestation/birthing and breeding pools, respectively), and bat hibernacula, and federal buffers for marine mammals;
- Develop a management plan to ensure SGCN populations' persistence based on long-term monitoring of resident and migratory SGCN populations and their habitats; and
- DOD and appropriate state agencies work together to improve DOD INRMPs to develop strategies to minimize or eliminate disturbances to all SGCN (i.e., beyond their federal requirements) during military activities and to improve SGCN habitat and presence.

### **3.6 NATIONAL ENVIRONMENTAL POLICY ACT AND PUBLIC REVIEW**

The NGB Office of General Counsel has determined that Sikes Act requirements for INRMP implementation necessitate the preparation of NEPA documentation prior to plan approval. In addition, the Sikes Act requires that INRMPs be made available to the public for review. NEPA requires federal agencies to consider the potential environmental consequences in their decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions.

An Environmental Assessment (EA) was prepared and made available for public review on August 11, 2005, for the original 2006–2010 INRMP in accordance with NEPA, 32 Code of Federal Regulation Part 651 (Environmental Analysis of Army Actions; Final Rule; March 29, 2002), and the NGB NEPA Handbook (Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with NEPA, March 2002) to analyze the potential environmental consequences of implementing the Sea Girt NGTC INRMP; a Finding of No Significant Impact (FNSI) was signed for the 2006–2010 INRMP on June 6, 2006. A Record of Environmental Consideration (REC) was completed for the 2025–2029 INRMP to meet the requirements of NEPA (Appendix G).

The environmental impacts of the actions involved in the implementation of this updated INRMP for the implementation period of 2025 through 2029 were assessed, and it was determined that a REC was sufficient

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review and analysis to meet the requirements of the NEPA. INRMP updates that are not expected to result in biophysical consequences materially different from those anticipated in the existing INRMP must be supported by a Record of Environmental Consideration that tiers off the original INRMP EA (FNSI must be attached to the Record of Environmental Consideration), but do not require public comment per the NGB memorandum (Guidance for the Creation, Implementation, Review, and Revision and Update of INRMPs [Section 16c], April 9, 2012).

### **3.7 STAFFING**

Primary staffing for developing and implementing the INRMP comes from the NJDMAVA CFMO-EMB in Lawrenceville. The Chief, CFMO-EMB, has overall responsibility and the Natural Resources Manager has day-to-day responsibility. The Natural Resources Manager also has responsibility for several other program areas that encompass 35 NJARNG facilities statewide. Therefore, only a small percentage (approximately 5 to 10 percent) of the Natural Resources Manager's time is allocated to natural resources management at Sea Girt NGTC. The Director, Sea Girt NGTC and the installation facilities management staff provide logistical and on-site support for the implementation of the plan. The Natural Resources Manager at NGB-ARE provides technical guidance and support to implement various aspects of the INRMP. Biologists from the NJDEP-ENSP, USFWS, contractors specializing in natural resources services, Conserve Wildlife Foundation and interns from Stockton University also provide substantial staffing support for rare species management at Sea Girt. Other possible staffing sources for natural resources programs at Sea Girt NGTC include various NJARNG units on makeup orders, temporary NJDMAVA staff, and Sea Girt NGTC maintenance staff. Estimated staffing requirements for implementing specific INRMP goals and programs are presented in Section 10.0.

### **3.8 FUNDING**

Estimated funding requirements for implementing specific INRMP goals and programs are presented in Section 10.0 . The primary funding source for implementing specific management activities and projects contained in the INRMP is the ARNG I&E. The Status Tool for the Environmental Program (STEP) is the standard Army budgeting process that is used to identify programming, budgeting, and resource allocation needs to execute the Army Environmental Program. Project-specific goals contained in this INRMP will be programmed through the STEP. In addition, the Army Environmental Program (AEP) will be used as the program and project management and performance reporting system, including for financial reporting.

Other potential funding sources for implementing the INRMP include Real Property; Morale, Welfare, and Recreation; Sustainment, Readiness, and Maintenance; and DOD Legacy Program funds. Fees collected for use of the beach, campground, and cottages at Sea Girt NGTC are used for maintenance of these facilities; however, are not available for general natural resources management activities.

### **3.9 PRIORITIZING GOALS**

Project-specific management goals and objectives have been established to address management issues, where appropriate, to provide a clear direction and concrete approach to natural resources planning. These project-specific goals are defined as project-level activities that the NJDMAVA intends to implement to fulfill the overall natural resources program goals. Project-specific goals are prioritized for implementation using the following NGB environmental funding criteria (NGB 2016; NGB 2018; NGB 2023):

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- **Compliance/Class 0 – Recurring Natural and Cultural Resources Conservation Management Requirements.** This includes activities needed to cover the long-term recurring administrative, personnel, and other costs associated with managing environmental programs that are necessary to meet applicable compliance requirements (federal, state, and local laws, regulations, EOs, and DOD policies) that are in direct support of the military mission. Class 0 also includes monitoring, data collection, compilation, evaluation, and analysis in order to quantify change as needed to prepare and update INRMPs, recurring actions (i.e., prescribed burning in long-leaf pine habitat, control of certain invasive/noxious species, etc) essential for sustaining ecosystem integrity to preserve mission capabilities or sustain rare species habitat, and long-term monitoring (>10 years) of eagles or other migratory birds and rare species.
  - **Compliance/Class 1 – Established Deadlines.** This includes projects/activities that are currently out of compliance or that are not currently out of compliance; however, shall be if projects or activities are not implemented within the program year. This class also includes non-recurring conservation/management projects/activities that were a basis for an installation avoiding critical habitat designation, control of noxious/invasive species on ARNG property if required conditions of the Federal Noxious Weed Act apply, a project that directly or indirectly supports military readiness activities, and implementation of such project would result in a may affect, not likely to adversely affect determination for the readiness activity, or Section 7 consultation requirements for a mission or range project.
  - **Maintenance/Class 2 – Future Requirements.** This includes those projects and activities needed that are not currently out of compliance; however, shall be if projects or activities are not implemented in time to meet an established deadline beyond the current program year. This class also includes actions necessary to avoid future adverse impacts on wetlands, project to control soil erosion where there's a significant threat to the functioning ecosystem, conservation recommendation within a biological opinion that supports mission flexibility/ sustainability, and/or helps avoid potential adverse impacts on the rare species or critical habitat, an action that is necessary to prevent adverse impacts on rare plants due to neglect or lack of adequate management, or a project solely for the management and conservation of a rare species or critical habitat on the installation to support mission and/or species status.
  - **Stewardship/Class 3 – Best Management Practices.** This includes those projects and activities that promote proactive conservation efforts/best management practice or conservation recommendations within a biological opinion that helps support Section 7 responsibilities; however, are not critical actions to support mission and/or the species/critical habitat on the installation that are not tied to potential future violations or to avoid significant impacts.

### 3.10 INRMP EVALUATION AND REVISION

This INRMP covers a five-year planning period (2025 through 2029). Section 101(b)(2) of the Sikes Act requires that INRMPs be reviewed as to operation and effect by the parties thereto on a regular basis, but not less often than every five years. The DOD requires INRMPs to be reviewed annually by the DOD installation, and ARNG with the cooperation of the federal and state fish and wildlife agencies.

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The CFMO-EMB will continue to review the plan annually (at a minimum) in consultation with the EQCC, USFWS, and NJDEP-ENSP. The CFMO-EMB, USFWS, and NJDEP-ENSP hold annual planning meetings or conference calls in February to review the INRMP and coordinate specific implementation aspects for the coming season. The need for revisions or updates to the INRMP is discussed at these meetings/conference calls. In addition, the CFMO-EMB will continue to formally request a comprehensive review of the plan by the USFWS and NJDEP-ENSP not less often than every five years. The CFMO-EMB documents all INRMP reviews in a Memorandum for the Record and NGB plans to initiate an annual review tracking database in the future.

The INRMP will continue to be updated, as needed, based on various factors such as changes in conditions and the effectiveness of ongoing management practices. Revisions will be submitted to the USFWS and NJDEP-ENSP for review and concurrence. These reviews are guided by the *Memorandum of Understanding between the US. Department of Defense and the US. Fish and Wildlife Service (USFWS) and the Association of Fish and Wildlife Agencies for a Cooperative INRMP on Military Installations* (Tripartite MOU, July 2013). The mutual DOD and USFWS *Guidelines for Streamlined Review of INRMP Updates* (July 2015) and the *ARNG INRMP Policy*, (2016) to clarify and describe the process for reviewing and concurring on updates to existing INRMPs.

The CFMO-EMB evaluates all proposed INRMP revisions to determine if public review and NEPA documentation are appropriate and necessary. Generally, any INRMP revisions that would result in materially different biophysical consequences than previously considered would be subject to public review and the NEPA process.

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## **SECTION 4**

### **LAND AND WATERSHED MANAGEMENT**

#### **4.1 PROGRAM DESCRIPTION AND OVERALL MANAGEMENT GOALS**

The Land and Watershed Management Program provides a foundation for the conservation of all other natural resources components and serves as a basic land use and conservation management guide. Sound land and water management practices that conserve soil and water are paramount to the overall natural resource conservation program. Soil and water resources form the basis for supporting the remaining components of the system.

This program is integrated with other mission, land use, and environmental planning processes at the installation, as well as all other natural resources management programs. Issues addressed under the Land and Watershed Management Program include the following:

- Coastal zone management;
- Erosion and sediment control;
- Stormwater management;
- Wetlands management;
- Shoreline management; and
- Invasive plant management.

Overall management goals for the Land and Watershed Management Program include the following:

- Conserve, develop, manage, and maintain all land and water resources in accordance with proven scientific methods, procedures, and techniques to facilitate the military mission;
- Avoid, reduce, or eliminate any contribution of pollution due to erosion and sedimentation;
- Maintain no net loss of installation wetlands and protect the biodiversity, functions, and values of wetland communities;
- Prevent the introduction of invasive species and control populations of such species in a cost-effective and timely manner;
- Comply with all applicable federal and state laws and regulations, as well as DOD policies that mandate land and water conservation; and
- Implement ecosystem management practices to achieve program goals.

#### **4.2 PROGRAM STATUS AND MANAGEMENT ISSUES**

##### **4.2.1 Coastal Zone Management**

Sea Girt NGTC is located adjacent to the Atlantic Ocean and within New Jersey's Coastal Area Facility Review Act (CAFRA) zone. Under the Coastal Zone Management Act, a state exerts control over coastal uses and resources through enforceable state policies. New Jersey protects coastal waters and the land adjacent to them under a variety of laws, including the following:

- Coastal Area Facility Review Act (N.J.S.A. 13:19). The CAFRA law regulates almost all development activities, including construction, relocation, and enlargement of buildings or structures; and all related work, such as excavation, grading, shore protection structures, and site preparation in the coastal zone.

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- Waterfront Development Law (N.J.S.A. 12:5-3). The Waterfront Development Law is a very old law, passed in 1914, that seeks to limit problems that new development could cause for existing navigation channels, marinas, moorings, other existing uses, and the environment. A Waterfront Development Permit is required for any development in a tidally flowed waterway anywhere in New Jersey. Examples of projects that need a Waterfront Development Permit include docks, piers, pilings, bulkheads, marinas, bridges, pipelines, cables, and dredging.
  - Wetlands Act of 1970 (N.J.S.A. 13:9A). The Wetlands Act of 1970 requires the NJDEP to regulate development in coastal wetlands. Regulated coastal wetlands are delineated on maps prepared by the NJDEP. These maps are available for public inspection at each county clerk's office. A coastal wetlands permit is required to excavate, dredge, fill, or place a structure on any coastal wetland shown on the maps. The wetlands at Sea Girt NGTC are not regulated under the Wetlands Act of 1970. However, they are regulated under the Freshwater Wetlands Protection Act.
  - Tidelands Act (N.J.S.A. 12:3) – Tidelands are lands now or formerly flowed by the mean high tide of a natural waterbody, including lands that were previously flowed by the tide but have been filled and are no longer flowed by the tide. The people of the State of New Jersey own tidelands. Therefore, a tidelands license, lease, or grant must be obtained from the NJDEP, Bureau of Tidelands Management, prior to using these lands.

The NJDEP DLRP issues permits for activities regulated under the CAFRA, Waterfront Development Act, and Wetlands Act of 1970 in accordance with the Coastal Zone Management Rules (N.J.A.C. 7:7) (note, the New Jersey Coastal Permit Program Rules were consolidated into one chapter within the Coastal Zone Management Rules in 2015 in order to align the rules governing the permitting processes of the coastal, freshwater, and flood hazard permitting programs) (NJDEP DLRP). These laws and rules, as well as application forms and additional information about the permitting process, are available on the NJDEP DLRP Program website (<https://dep.nj.gov/wlm/lrp/>).

All actions at Sea Girt NGTC including construction, excavation, grading, shore protection, site preparation, and other ground disturbing activities require a CAFRA permit. The CFMO-EMB is responsible for reviewing the action, determining the permitting requirements, and preparing the appropriate permit application for submission to the NJDEP.

#### **4.2.2 Erosion and Sediment Control**

Military training activities at Sea Girt NGTC result in minimal ground disturbance, and no training-related soil erosion problems currently exist. Consequently, potential erosion and sediment control issues would primarily be related to future construction activities. Soil erosion and stormwater discharges from construction activities are regulated in New Jersey as follows:

- The Soil Erosion and Sediment Control Act Chapter 251 requires certification of a soil erosion and sediment control plan for any construction project disturbing more than 5,000 square feet. The soil erosion and sediment control plan must conform to the *Standards for Soil Erosion and Sediment Control in New Jersey* and ensure that erosion will not occur once construction is completed. Disturbance activities include residential and commercial development, transportation and utility infrastructure,

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public facilities, and mining. The plan is submitted to the Freehold Soil Conservation District for certification. Application forms and additional information about the process are available on the Freehold Soil Conservation District website (<http://www.freeholdscd.org/>).

- The New Jersey Pollutant Discharge Elimination System (NJPDES) rules require coverage under General Permit Number NJG0088323 (Stormwater Discharge Associated with Construction Activity) for construction, grading, and excavating activities that disturb one acre or more. Coverage under the general permit is obtained by submitting a Request for Authorization and payment electronically online utilizing the NJDEP's Stormwater Construction Activity E-Permitting System, or via paper application to the NJDEP's Bureau of Permits Management. The General Permit conditions include requirements for development and implementation of a certified soil erosion and sediment control plan, as described above. The Request for Authorization Form and additional information are available on the NJDEP website (<http://www.nj.gov/dep/stormwater/>).

The proponent of the construction activity is responsible for ensuring that soil erosion and sediment control plans are developed and implemented, and that coverage is obtained under the General Permit. Generally, the design or construction firm will prepare soil erosion and sediment control plans and necessary applications. The CFMO-EMB supports the plan and application preparation process, as needed.

#### **4.2.3 Stormwater Management**

A majority of the stormwater from the installation discharges to the on-site and municipal storm sewer system through storm drains located in developed areas. Some storm drains along Governor Wilson Drive discharge to Stockton Lake. Stormwater from the southeastern portion of the installation flows into Stockton Lake via a stormwater ditch. Impervious areas are served by a system of catch basins and drain lines, the majority of which drain to Stockton Lake, apart from five catch basin lines along Governor Wilson Drive that collect drainage from Sea Girt NGTC and drain to Sea Girt Avenue. A previous assessment of the existing stormwater infrastructure system indicates that the system was first constructed prior to 1935 (Jacobs Global Building 2014). No significant issues were identified with the system; however, occasional flooding of the system, partial or total siltation of some drainage pipes, presence of undersized pipes in some areas, and reverse pitch in drainage pipes were identified as items of concern for the system.

An application for a NJDEP Freshwater Wetlands General Permit for Maintenance and Repair of an Existing Drainage Feature (GP1) was issued on October 27, 2011 (DLRP File No. 1344-03-0001.1 FWW110001), to conduct maintenance to clear the ditch to reduce ponding during heavy rains and improve drainage in this portion of the installation. Maintenance was previously conducted under a GP1 issued in 2005; however, the ditch became clogged with sediment, vegetation, and debris. Initial clearing of vegetation, debris, and sediment under the re-issued permit was completed in 2012. Activities required to maintain proper drainage will require a new permit.

Stormwater management issues and regulatory programs related to construction activities are discussed above in Section 4.2.2. NJDEP issued Phase II NJPDES Stormwater Regulation Program Rules (N.J.A.C. 7:14A) on February 2, 2004, to address and reduce pollutants associated with existing stormwater discharges from small municipal separate storm sewers and public complexes, including large publicly owned or operated military bases. The CFMO-EMB reviewed the new rules and determined that they are not applicable to Sea Girt NGTC, based on the number of full-time personnel and installation users.

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NJDEP also issued Stormwater Management Rules (N.J.A.C. 7:8) on February 2, 2004. The rules set forth the stormwater management design and performance standards for proposed "major development," which is defined as disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more. Disturbance for this rule is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation. The rules emphasize the use of non-structural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and a buffer adjacent to Category One waters and their immediate tributaries. Details of the performance standards can be found in Subchapter 5 of the Stormwater Management Rules ([https://dep.nj.gov/wp-content/uploads/rules/rules/njac7\\_8.pdf](https://dep.nj.gov/wp-content/uploads/rules/rules/njac7_8.pdf)). No Category One waters are located on, or adjacent to, the installation. Therefore, the buffer requirements are not applicable.

As briefly mentioned in Section 2.6.1, a newly constructed parking lot at the facility has caused drainage issues in two ditches adjacent to the parking lot (see Figure 4-1). Heavy periods of rain on the impervious pavement cause the stormwater areas to collect excessive amounts of water and retain wet conditions. The NGTC is considering other stormwater retrofit options, including low-impact development (LID) techniques such as rain gardens and bioswales. LID refers to systems and practices that use or mimic natural water processes and result in the infiltration, evapotranspiration, or use of stormwater to protect water quality and associated aquatic habitat. LID employs principles such as preserving and recreating natural landscape features, minimizing imperviousness, and treating stormwater as a resource rather than a waste product (USEPA 2018).

The design and performance standards specified by the Stormwater Management Rules will be incorporated during the design process for any future development at Sea Girt NGTC that would result in disturbance of one or more acres of land or increasing impervious surface by one-quarter acre or more. The proponent of the action is responsible for ensuring that the design conforms to the rules. NJDEP reviews compliance with the rules as part of the CAFRA permitting process. The CFMO-EMB supports the CAFRA permitting process, as needed.

In addition, on October 31, 2011, NJDEP issued new NJPDES rules in accordance with N.J.A.C. 7:14A authorizing a General Permit (No. NJ0178217) for pesticide application discharge to surface waters. This permit authorizes the applications of biological and chemical pesticides in water when such applications are made in, over, or near surface waters of the State and in the following pesticide use patterns: (a) Nuisance Insect Control (i.e., mosquito and fly control), (b) Aquatic Pest Control (i.e., weeds, algae), (c) Aquatic Nuisance Animal control, (d) Aerial Treatment of Forest Canopy and (e) Aquatic Agricultural Activities. Pesticide application is occasionally conducted at the Sea Girt NGTC. Any spraying that may occur in areas including ditches adjacent to surface water such as Stockton Lake requires this authorization. The Request For Authorization form can be found on the Division of Water Quality website ([http://www.nj.gov/dep/dwq/gp\\_surfacewater.htm](http://www.nj.gov/dep/dwq/gp_surfacewater.htm)).

In November 2022, a Stormwater Management Regulatory Review and Applicability Determination Report and Stormwater Management Feature Inventory and Maintenance Procedures was prepared by Stockton University Environmental Internship Program (SUEIP) for the Sea Girt NGTC. Based on the survey results, a total of 129 drainage inlets, 24 stormwater utility access covers, 35 outfall pipes, 12 infiltration basins, 2 vegetated filter strips, and 16 curb inlets were identified at the site. Most on-site drainage inlets discharge

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directly to Stockton Lake via outfall pipes and two drainage inlets discharge to infiltration basins. Surveyors documented heavy sediment accumulation and/or vegetation growth in 10 drainage inlets. The sediment accumulation and vegetation growth deemed two drainage basins located south of the Maintenance Building along Range Road, as non-functional.

In an effort to improve storm water quality and serve as demonstrator projects for low impact design stormwater management features and provide vital pollinator habitat to the site, two rain gardens and two stormwater basins were constructed on-site. Two rain gardens located at the front entrance gate (installed in October 2020) and two repaired stormwater drainage basins located south of Building No. 46 (installed in February 2023).

### **Stormwater Basins**

Owen, Little, and Associates (OLA) were contracted to conduct an analysis of the two non-functioning infiltration basins (IB-5 and IB-6). Findings from this assessment are detailed in the 2020 *Brinkerhoff Basin Evaluation Report*. OLA found that there was evidence of two deleterious conditions including:

- Inability of the basins to drain within an acceptable time period, with almost permanently retained water pools; and
- Eutrophication of the flooded basins, with invasive vegetative growth and masses of flocculated algae.

Through these two observations, OLA concluded that the two infiltration basins were in a failed state as of 2020. OLA concluded that the basins failed due to the subsoils being unsuitable for the infiltration basins, as the subsoil had a low permeability that did not allow rapid enough seepage of the retained stormwater out of the basin. Also, siltation from the parking area runoff was a contributing factor in the failure of the infiltration basins. Finally, the washing of bird feces from parking areas could have impacted the bottom of the basin through clogging the sand layer. Several recommendations were given to remedy these issues. To address the issues of nitrification and high nutrient loading from geese feces, there were three recommended actions:

- Provide a perimeter planting barrier around the parking areas to discourage the geese from walking into the contributory drainage area;
- Provide fencing to keep the geese from entering the basin areas from the circulation roadway; and
- Utilize planting of vegetation species that are not attractive to the Canadian Geese as a food source.

To address the issues of sedimentation, the following actions were recommended:

- Provide fencing or plantings at the perimeter of the parking area to allow deposition of windborne soil outside the pavement areas;
- Provide separate forebay areas in the basins at the discharges to act as sedimentation traps, and to allow easier cleaning of any sedimentation collected; and

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- If possible, provide a sloping, or steeped, basin bottom to concentrate any siltation at a specific area where it can settle and be periodically removed.

In addition to these functional corrections, OLA provided further recommendation for infiltration basin refurbishing including converting the infiltration basin to a bioretention system to achieve 80% or greater total suspended solids removal prior to the discharge into environmentally sensitive downstream waters. The following design parameters included:

- Remove the existing, contaminated bottom materials and invasive vegetation in the basins;
- Provide a basin underdrainage piping system connected to the outlet discharge structures to address the issue of low permeability subsoils. This underdrain piping should be perforated and placed within a stone layer below the planting bed to intercept vertical seepage;
- Provide a bottom bed of planting soil consisting of a blended mix of sands and fine sands, silt and clay, and organic materials by weight;
- Provide stone berms across the basins at low points to act as sedimentation traps;
- Slope the basin bottoms toward the low, inlet areas to limit any clogging that may occur to the lower areas; and
- Provide native vegetation within the basin consisting of suitable species tolerant of inundation, and non-attractive to geese.

In February 2023, NJDMAVA contracted Levy Construction Corporation to implement the construction and repair of the two non-functioning infiltration basins (IB-5 and IB-6). The preparation of a current Stormwater Management Plan is proposed for Sea Girt NGTC.

### **Rain Gardens**

In 2020, NJDMAVA EMB was awarded a grant through the National Environmental Education Foundation (NEEF) funding source to design and carry out a volunteer event for the National Public Lands Day (NPLD). The NEEF NPLD is an annual event focused on improving public lands through community involvement and providing educational outreach opportunities for volunteers.

In April 2021, two rain gardens were constructed at the front entrance gate with the assistance of Envirosapes, LLC, Stockton University Environmental Internship Program (SUEIP), NJDMAVA EMB staff, VHB, and over 20 NEEF NPLD volunteers.

This area was chosen to construct the rain gardens since it typically retains several inches of water runoff during the wetter parts of the year. Approximately 350 individual plants consisting of 18 species were planted in the rain gardens, as detailed in Section 2.6. A Sea Girt Rain Garden Maintenance Protocol Plan (SUEIP, 2021) was prepared by SUEIP for the Site and includes details of the design, installation, location map, photographs, rain garden maintenance and checklist, and considerations for soil and plant replacement.

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#### 4.2.4 Wetlands Management

The focus of wetland management at Sea Girt NGTC is to ensure compliance with federal and state regulations, EO 11990, and DA policy. This involves obtaining accurate information regarding the presence of wetlands and integrating this information into the overall planning processes at the installation to ensure that potential impacts on wetlands are avoided. The wetland data contained in the NJARNG geographic information system (GIS) is available to a variety of users to ensure that wetland issues are integrated into the mission and land-use planning processes. Actions at Sea Girt NGTC including construction, excavation, grading, shore protection, site preparation, and other ground disturbing activities are reviewed to determine the applicability of the Freshwater Wetlands Protection Act and Section 404 of the Clean Water Act. The proponent is responsible for notifying the CFMO-EMB of the action early in the planning process. The CFMO-EMB is responsible for reviewing the action, determining the permitting requirements, and preparing the appropriate permit application for submission to the NJDEP and/or the U.S. Army Corps of Engineers (USACE).

Activities in wetlands are regulated under Section 404 of the Clean Water Act, the Wetlands Act of 1970 (N.J.S.A. 13:9A), and the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.). Activities in mapped Coastal Wetlands are regulated by the NJDEP under the Coastal Wetlands Act of 1970. As noted above in Section 4.2.1, no coastal wetlands that are regulated under the Coastal Wetlands Act of 1970 are present at Sea Girt NGTC.

The NJDEP DLRP regulates activities in and implements the permitting program for freshwater wetlands and associated transition areas (see description below). The Freshwater Wetlands Protection Act and associated rules, application forms, and additional information about the permitting process, are available on the NJDEP DLUR website (<https://dep.nj.gov/wlm/lrp/>).

In addition, the USACE has permitting authority for actions that take place in non-delegable waters, which include waters that are presently used, or are susceptible to use, in their natural condition or by reasonable ordinary high-water mark. This term includes all waters that are subject to the ebb and flow of the tide, shoreward to their mean high-water mark, including wetlands that are partially or entirely located within 1,000 feet of their ordinary high-water mark or mean high tide. All the wetlands at Sea Girt NGTC are non-delegable because they are within 1,000 feet of mean high tide. Therefore, the USACE (New York District) regulates certain activities on-site. Additional information about the Corps permitting process and application forms is available on the USACE's website (<http://www.nan.usace.army.mil/Missions/Regulatory/>).

The Freshwater Wetlands Protection Act applies to all wetlands at the installation, as well as transition areas for wetlands on the installation and adjacent properties. Regulated activities within wetland transition areas include removal, excavation, or disturbance of the soil; dumping or filling with any materials; erection of structures; placement of pavements; and destruction of plant life which would alter the existing pattern of vegetation. Wetlands are classified according to their resource value as determined by the NJ Freshwater Wetlands Protection Act Rules. A transition area is defined as an area of upland adjacent to a freshwater wetland that minimizes adverse impacts on the wetland or serves as an integral component of the wetland. The width of the regulated upland transition area or buffer around the wetland area is based on the resource value of the wetland, which is determined as follows:

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- **Exceptional resource value wetland** – (1) discharges into FW1 or FW2 trout production waters or their tributaries, (2) is a present habitat for threatened or endangered species, or (3) is a documented habitat for threatened or endangered species and remains suitable for breeding, resting, or feeding by these species. The NJDEP identifies present or documented habitat for threatened and endangered species using the Landscape Project method. The standard width of a transition area for these wetlands is 150 feet.
  - **Ordinary resource value wetland** – is a freshwater wetland that does not exhibit any of the characteristics of an exceptional resource value wetland, is isolated, is less than 5,000 square feet, and meets other criteria specified at N.J.A.C. 7:7A-2.4. Transition areas are not required for ordinary resource value wetlands or adjacent to state open waters.
  - **Intermediate resource value wetland** – is any freshwater wetland not defined as exceptional or ordinary resource value. The standard width of a transition area for these wetlands is 50 feet.

A key component of wetland management is having accurate and accessible information about the location of wetlands and associated regulated transition areas at the installation. To facilitate wetlands and transition area protection and management, NGTC first applied for a NJDEP Freshwater Wetlands (FWW) LOI in December 2011, and the LOI was issued by NJDEP on August 3, 2012. The NJDEP issued an LOI extension on 13 November 2017 with a new expiration date of 2 August 2022. In April 2023, NGTC applied for a current FWW LOI. The LOI verified the location and resource value (transition areas width) of wetlands on-site. The LOI was issued by NJDEP in May 2024.

As part of the LOI application process, a survey and detailed wetland delineation was conducted for the entire facility in October 2022, as part of a LOI issued in May 2024. Figure 4-1 shows six delineated wetlands and their associated transition areas. The on-site wetland delineation data are also included in the NJARNG GIS. Approximately 4.99 acres of wetlands and 3.73 acres of upland transition area are located within the installation boundaries. Please refer to Section 2.7.2 for information on existing vegetation/ecological communities and detailed wetland descriptions.

Wetlands on the property drain to Judas Creek and Stockton Lake, which have NJDEP Surface Water Quality Classifications of freshwater, non-trout/saline estuarine and Category Two (FW2-NT/SE1, C2). Therefore, no wetlands on-site are classified as exceptional resource value for reason of draining to FW1 or trout-production waters. None of the NGTC wetlands contain the necessary habitat requirements required for wetland-dependent threatened and endangered species.

The 2023 NJDEP LOI correspondence confirmed that there are four wetlands (Wetlands A, C, D and E) with an intermediate resource value and an associated 50-foot buffer. The remaining two delineated wetlands (Wetland B and F) are ordinary resource value (no buffer). No exceptional resource value wetlands were identified on-site.

In alignment with the INRMP's overall management goals for the Land and Watershed Management Program, the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* prepared in July 2017 proposed habitat enhancements on the eastern portion of the Sea Girt NGTC. Beginning in October 2020, the *Freshwater Wetlands Coastal Habitat Enhancement Plan*, dated July 2017, prepared by ASGEC was implemented by VHB and its subcontractor Envirosapes, Inc. The proposed project involved the enhancement of existing on-site wetland and beach/dune habitats by controlling invasive species, planting

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desired native coastal and wetland species, improving vegetation habitat conditions for rare, threatened, and endangered wildlife on-site, stabilization activities, and installing a walking path and observation pier (ASGECI 2017). A permit application to conduct this work under the Freshwater Wetlands Protection Act for GP No. 16 (Habitat creation and enhancement activities), 17 (Trails and boardwalks), and 1 (Maintenance and repair of existing features) was submitted to NJDEP DLRP in May 2017, and a CAFRA GP 24 (Habitat creation, restoration, enhancement, and living shoreline activities) permit request was also submitted concurrently (NJARNG, Request for a Wetlands General Permit GP-1, GP-16 and GP-17, May 2017). The FWW GP-16 was renewed with NJDEP with an expiration date of 24 April 2023.

Sea Girt NGTC is proposing the renewal of the GWW GP-16 for continued maintenance and monitoring of the Freshwater Wetlands and Coastal Habitat Enhancement.

Figure 4-1 - Sea Girt NGTC Delineated Wetlands

21172.02 | Sea Girt, New Jersey



April 14, 2023



- Sea Girt NGTC
- Delineated Wetland (Surveyed)
- Stormwater Drainage Basin
- 50-Foot Wetland Transition Area

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#### **4.2.5 Shoreline Management**

The installation includes approximately 2,800 feet of shoreline along Stockton Lake and 1,980 feet of shoreline along the Atlantic Ocean. The Stockton Lake shoreline previously consisted of a deteriorating wooden bulkhead, which, in 2011, was reconstructed as a steel bulkhead. The NJDEP Bureau of Coastal Engineering provided permitting and construction for the bulkhead replacement. It is anticipated that this steel bulkhead will last for decades; however, when it becomes time to replace the current bulkhead, the installation may consider whether a living shoreline is appropriate for this location.

The Sea Girt NGTC beach has been part of the Atlantic Coast of New Jersey Sandy Hook to Barnegat Inlet Beach Erosion Control Project (BECP), which is implemented by the USACE, New York District, and the NJDEP. The project included beach nourishment along 21 miles of Atlantic Ocean shoreline in Monmouth County. Beach nourishment for the project section that includes the Sea Girt NGTC beach was completed in August 1999. Renourishment is dependent upon the severity of annual erosion of the beach and is usually several years between cycles for a duration of approximately 50 years.

After Hurricane Sandy, the beaches in the project area lost roughly five million cubic yards of sand. The USACE has repaired and restored this area after Hurricane Sandy through the Flood Control and Coastal Emergencies Act (Public Law 84-99) and the Disaster Relief Appropriations Act of 2013 (Public Law 113-2). The work entailed replacing the sand lost during the storm, as well as restoring the beach to its original design profile. This effort, completed in the summer of 2014, involved the placement of more than eight million cubic yards of sand (USACE 2017). NJDMAVA was notified by NJDEP that USACE will mobilize to Sea Girt NGTC to conduct beach nourishment on December 18, 2023. As the scheduled beach nourishment approaches, an updated survey will be performed for a more accurate idea on the quantity of sand that was lost and will be replaced. Approximately 128,000 cubic yards of sand is expected to be replaced; however, depends on site conditions at the time of construction (NJDEP email dated March 8, 2023).

#### **4.2.4 Invasive Plant Management**

EO 13751 (*Safeguarding the Nation from the Impacts of Invasive Species*) identifies invasive species as “a non-native organism whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health.” Invasive species present a major threat to ecological and economic systems globally and within the United States. Invasive species generally lower wildlife production, reduce diversity of native species, and cause significant economic and quality of life impacts (New Jersey Invasive Species Council 2009). Quality of life and economic impacts from invasive species may include introduced human disease or associated hazards, impacts on agriculture, and damage to resource-dependent recreational activities such as boating, hunting, fishing, and wildlife viewing.

In December 2016, EO 13751, an amendment to EO 13112 (*Invasive Species*), was enacted to call upon executive departments and agencies to act to prevent the introduction and spread of invasive species, and to support efforts to eradicate and control invasive species that are established. EO 13112 established the National Invasive Species Council (NISC). The NISC is charged with providing coordination, planning and overall leadership for federal invasive species programs, as well as reaching out to state, tribal, local, and private partners. EO 13751 expanded the membership of the NISC to include more federal agencies and clarified the operations of the NISC. The amendment incorporates considerations of human and environmental health, climate change, technological innovation, and other emerging priorities into federal efforts to address invasive species; and strengthens coordinated, cost-efficient federal action. EO 13112 also

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required the Secretary of the Interior to establish the Invasive Species Advisory Committee to advise NISC on invasive species issues and called on NISC to prepare and issue the first national plan to deal with invasive species. EO 13751 requires the Secretary of the Interior to maintain the Invasive Species Advisory Committee to provide information and advice for consideration by the NISC. Finally, EO 13751 requires that federal agencies coordinate complimentary, cost-effective activities concerning invasive species including the following, subject to the availability of funds and administration budgetary limits:

- Prevent the introduction, establishment, and spread of invasive species;
- Detect and respond rapidly to eradicate or control populations of invasive species in a manner that is cost-effective and minimizes human, animal, plant, and environmental health risks;
- Monitor invasive species populations accurately and reliably;
- Provide for the restoration of native species, ecosystems, and other assets that have been affected by invasive species;
- Conduct research on invasive species and develop and apply technologies to prevent their introduction and provide for environmentally sound methods of eradication and control of invasive species;
- Promote public education and action on invasive species, their pathways, and the ways to address them, with an emphasis on prevention, and early detection and rapid response;
- Assess and strengthen, as appropriate, policy and regulatory frameworks pertaining to the prevention, eradication, and control of invasive species and address regulatory gaps, inconsistencies, and conflicts;
- Coordinate with and complement similar efforts of States, territories, federally recognized American Indian tribes, Alaska Native corporations, Native Hawaiians, local governments, nongovernmental organizations, and the private sector; and
- In consultation with the Department of State, and with other agencies, as appropriate, coordinate with foreign governments to prevent the movement and minimize the impacts of invasive species.

In addition, in June 2000, the Plant Protection Act was enacted, which consolidated all previous major statutes pertaining to plant protection and quarantine. It superseded and repealed a majority of the Federal Noxious Weed Act of 1974; however, it left intact Section 15, "Management of undesirable plants on federal lands" (7 U.S.C. 2814). Section 15 requires federal land management agencies to develop and establish a management program for control of undesirable plants that are classified under state or federal law as undesirable, noxious, harmful, injurious, or poisonous, on federal lands under the agency's jurisdiction (7 U.S.C. 2814).

In accordance with EO 13751 and Section 15 of the Federal Noxious Weed Act, the NJARNG will control populations of invasive plants in a cost-effective and environmentally sound manner. When practicable, control efforts will be coordinated with other local or regional control programs. A variety of control measures will be employed based on species-specific and site-specific requirements. In some cases, a combination of control measures may be appropriate.

In August and September of 2022 and 2023, as part of the Freshwater Wetland and Coastal Habitat Enhancement Monitoring (Task 3.10), Asiatic sand sedge growing along the beach dune area and parking lot was eradicated. Purple loosestrife (invasive plant) and poison ivy, cattail, and common reed (aggressively growing nuisance species) growing in the wetland restoration area, were eradicated. VHB's subcontractor, Black Lagoon, applied herbicide to spot treat areas using a three percent glyphosate (e.g., Roundup®) and

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water solution. The treatment was performed when CWF determined beach nesting birds fledged; however, still within the growing season.

#### **4.2.4.1 Invasive Species Management Priorities**

Although several invasive animals occur at Sea Girt NGTC including house sparrow, starling, and European green crab (*Carcinus maenas*), the primary invasive species management concern at Sea Girt NGTC is invasive plants. Proper invasive vegetation management is essential to maintain suitable on-site habitat for the on-site federally listed threatened species (i.e., seabeach amaranth and piping plover) and numerous state-listed endangered, threatened and Special Concern Species that utilize the facility vegetation communities.

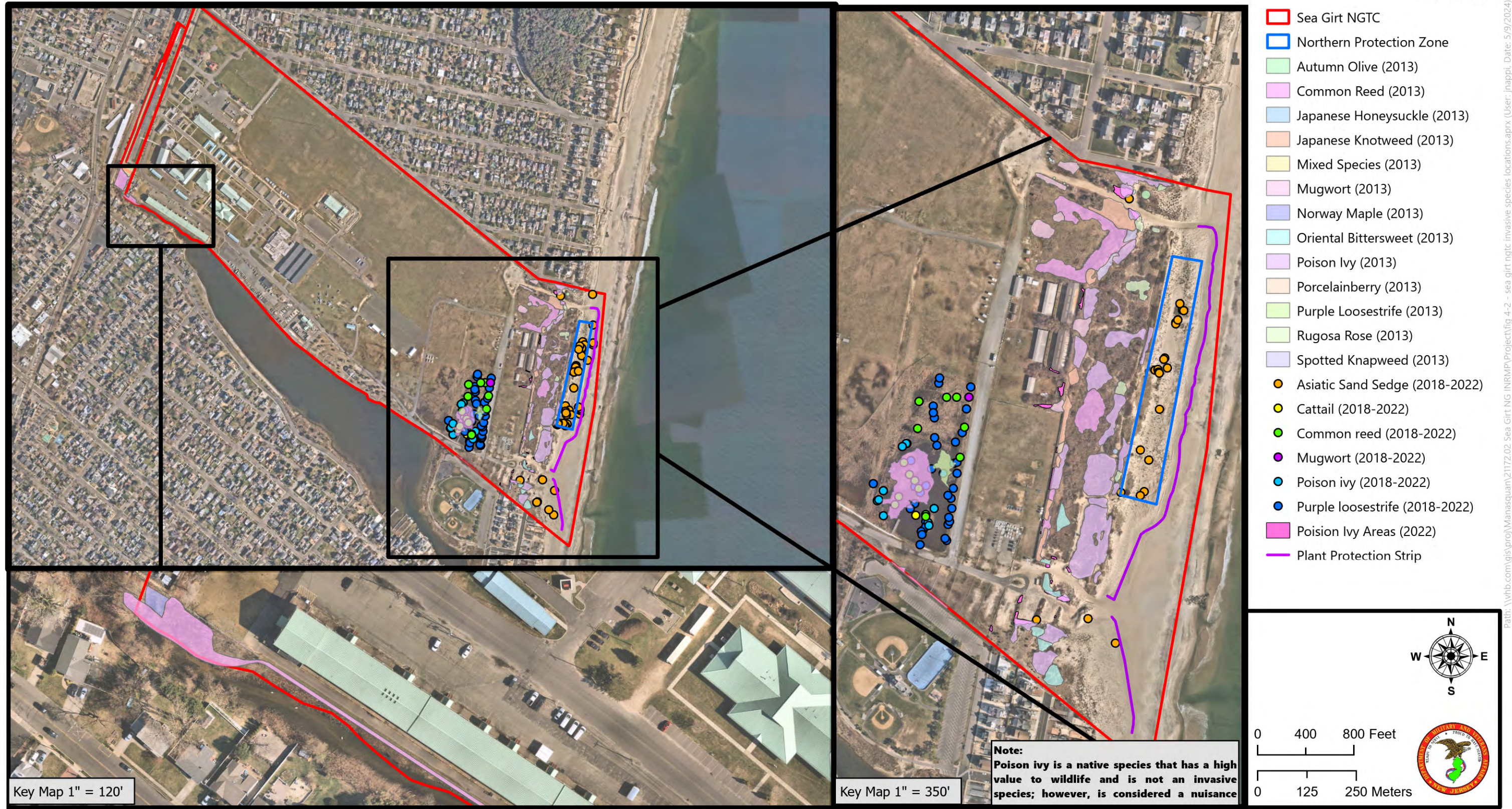
As discussed in Section 2.7.4, an exotic and invasive species report was prepared for the NJDMAVA for Sea Girt NGTC in 2013, as a follow-up to a previous invasive species report conducted in 2011 (ASGECI 2014a). The 2013 report re-evaluated the site and existing invasive species monoculture polygons (identified in previous surveys) and species, and modified, added, or eliminated polygons based on findings. In 2023, a *Poison Ivy Control and Revegetation Plan*, prepared by DRG included a survey of 19 areas (approximately 0.218 acres) within the dunes. Coverage percentages of poison ivy ranged from 10 percent to 100 percent with an average of approximately 60 percent. Codominant species within the identified areas included a mix of native and non-native species common in successional and dune communities. Common co-dominants included Virginia creeper, Oriental bittersweet, Northern bayberry, and black cherry. Other species periodically observed included winged sumac and Eastern red cedar. Occasional dominant herbaceous species were present including American beachgrass and seaside goldenrod. Based on the field findings, several control methodologies to manage poison ivy was provided, including control and subsequent monitoring and maintenance measures; chemical treatments and manual removal where necessary; replacement plantings; signage; implementation timing and costs; and monitoring/maintenance protocols. Poison ivy is a native species that provides food and habitat to migratory birds. Where poison ivy is not in direct contact with human uses of the Sea Girt NGTC property, the poison ivy should be left in place as a component of the native flora. Figure 4-2 shows the locations of invasive species identified at the Sea Girt NGTC between 2013 and 2022. See Section 2.7.4 and Table 2-7 for invasive species observed at Sea Girt NGTC.

**Figure 4-2 - Sea Girt NGTC Invasive Species Locations**

21172.02 | Sea Girt, New Jersey



May 09, 2024



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As shown in Figure 4-2 Sea Girt NGTC Invasive Species Locations, the invasive plants often occur in unmaintained areas along the installation boundary, within wetlands, and on the small arms range berms and adjacent secondary dune areas. A majority of the installation is subjected to routine mowing and, as a result, the impact of invasive or noxious plants is somewhat suppressed in those disturbed areas. Other areas, including small work areas and along facility boundary fences, support fragmented and disturbed communities with a mix of native and invasive species. These areas have lesser wildlife value, and invasive control would be limited due to off-site influences.

The highest priority for control of invasive plants at Sea Girt NGTC is within those on-site native communities that provide unique and significant habitat to rare plants and wildlife. These habitats include the primary dune (dune grass communities and adjacent intertidal areas), the secondary dune (dune shrubland and successional dune habitats), and the large on-site freshwater wetland habitats (see Figure 2-7 – Ecological and Vegetation Communities). The primary dune has been documented to support nesting birds considered state- threatened or endangered, while the secondary dune has been documented to support migratory birds considered state- threatened or endangered.

**Primary Dune:** Small amounts (under 1 percent – ASGECI 2013) of noxious or potentially invasive species such as rugosa rose or saltwort occur in the primary dune habitats at NGTC. However, the most serious invasive species threat identified in this community is Asiatic sand sedge. This highly invasive dune species was first identified on-site in 2007 and removed by hand. It has subsequently re-established itself in locations across the primary dune (See Figure 4-2). Following Hurricane Sandy in 2012, Asiatic sand sedge appeared to be more widely distributed within the primary dune on-site as a result of the storm (ASGECI 2014A). On 8 August 2022, VHB retained a New Jersey licensed pesticide applicator, Black Lagoon, to apply herbicide to spot treat areas of Asiatic sand sedge across the primary dunes.

**Secondary Dune:** Within the successional portions of the secondary dune habitat, patchwork monocultures of Japanese knotweed and common reed, spotted knapweed, and Oriental bittersweet are present and quite dominant in this community. Japanese honeysuckle, not often represented as a monoculture on-site, is also a substantial component of the successional dune community. An additional common native plant of the secondary dune, poison ivy, is dominant in this area. Poison ivy can display invasive characteristics and contains toxin that causes an irritating skin reaction to most people. Because of the potential human harm, it can inflict, poison ivy is monitored as an invasive and considered for management at Sea Girt NGTC. Although poison ivy is a nuisance to people, it has ecological value in the dune community. The white, waxy berries are a popular food for songbirds during fall migration and in winter, when other foods are scarce. Birds also feed on insects hiding in the tangled vines. Small mammals forage on poison ivy foliage, twigs, and berries. The dense root system of poison ivy also helps to control dune erosion at Sea Girt NGTC.

**Freshwater Wetlands:** The herbaceous and scrub-shrub freshwater wetland complex on the eastern end of the facility is primarily affected by two highly invasive wetland species: common reed and purple loosestrife. Other invasive species, including Oriental bittersweet, have also been recorded within this wetland complex. Within this wetland (Wetland Area C), common reed was located as an approximate 0.30-acre monoculture. Common reed is also found in both freshwater and estuarine wetlands along the facility's southern boundaries as well as in a variety of upland habitats. Although mapped as monocultures (see Figure 4-2 – Invasive Species Locations), purple loosestrife occurs within the herbaceous eastern boundary of the freshwater wetland complex and nowhere else on-site. On 8 August 2022 and 21 September 2022,

VHB retained a New Jersey licensed pesticide applicator, Black Lagoon, to apply herbicide to spot treat areas of purple loosestrife, poison ivy, cattail, and common reed within Wetland Area

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#### **4.2.4.2 Management Options**

Various options for invasive plant control methodologies have been considered at the Sea Girt NGTC. The following section discusses these primary management options.

##### **Avoidance Measures**

Avoidance of the introduction or reintroduction of invasive species is the most cost-effective and least intrusive way to control invasive species infestation, and therefore is the preferred method of control. Prevention of invasive species reestablishment or spreading requires basic on-site measures including regular invasive species monitoring and early detection, education of staff and visitors, proper storage and disposal of plant materials, proper clothing and equipment decontamination measures, and general best management practices (BMPs) for on-site activities. BMPs include containment and limited transport of soils, and minimization of impacts in and around wetlands and other sensitive habitats.

There are currently several invasive species that have been recently or historically planted on-site, including Norway maple, winged euonymus, and English ivy. There is currently no evidence of planted invasive species on-site affecting sensitive habitat areas at NGTC; however, planting of exotic invasive should be avoided. Over time, existing non-native plantings should be phased out, where feasible. The avoidance of invasive species plantings will prevent infestations or reinfestations of these species and, if native substitutes are included, enhance the quality of wildlife habitat. Several guides produced by agencies, including the USFWS, have created conservation planting guides that include information on native substitutes for popular exotic plantings.

##### **Mechanical or Manual Removal**

Once an invasive species is established, mechanical removal is the preferred methodology for removal at NGTC, particularly with small infestations. For the smaller infestations in the most sensitive habitats, such as purple loosestrife in the freshwater wetland, initial manual (by hand) removal is the least intrusive and most appropriate measure. In other areas, such as shrubs along the edge habitats, cutting and/or mechanical removal with aid from machines may be feasible. Although the option of manual or mechanical control is always theoretically preferred, it could be extremely labor intensive and nearly impossible to effectively control most on-site invasive species exclusively through mechanical means. For cost, ecological, and safety reasons, limited use of herbicides (discussed below) is likely required in combination with mechanical or manual removal to contain larger on-site infestations and suppress reestablishment.

##### **Chemical Controls – Herbicide Use**

Within this document, several general systemic nonpersistent herbicides are recommended for control of invasive species, typically in conjunction with mechanical or manual removal. Due to the persistence of invasive regeneration from remaining root systems and other remnant parts (e.g., Asiatic sand sedge and Oriental bittersweet) as well as persistent annual seed banks (e.g., spotted knapweed), seasonally repeated application of herbicide may be unavoidable to initially suppress an infestation. Herbicides most commonly considered for control of on-site invasives include brands of glyphosate, imazapyr, triclopyr, and dicamba. Herbicides may be used as a foliar spray or direct application to a cut stem, depending on the species and the specific site conditions.

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Each of these herbicides is sold under a variety of brand names at different levels of active ingredient and for various applications (e.g., wet site, dry site, etc.). Additional research should be conducted, and careful selection of the brand should be made based on its specifications for use.

At Sea Girt NGTC, herbicide use will be extremely targeted and minimized to the greatest extent practicable. Strict safety and protective protocols for pesticide use will be established, reviewed, and followed on-site. This will include rules for application, education of users, and required personal protective gear (gloves, eye protection, masks, long sleeves, etc.). Herbicides will be used sparingly and wisely, particularly in the sensitive and permeable dune and wetland habitats of the installation. Pesticide/herbicide use will be in accordance with the requirements of the NJARNG Integrated Pest Management (IPM) Plan.

NJDEP NJPDES Rules (N.J.A.C. 7:14A) contain a General Permit (No. NJ0178217) for pesticide discharges to surface waters for the purposes of nuisance species control (see Section 4.2.3). The NGTC is required to receive this authorization for any pesticide/herbicide use in and around surface waters and wetlands on-site. Additional consultation with the appropriate agencies and professionals, including the USFWS, NJDEP-ENSP, and NJ Department of Agriculture, must occur before any pesticide/herbicide is utilized on-site.

### **Other Measures**

Biological controls, or the use of one living organism to control another, are sometimes used to control invasive infestations. Local examples include use of the herbivorous loosestrife beetle to control purple loosestrife, or goat grazing to control common reed and woody invasive plants in some wetlands. Although both of these and other biological methods have been successful at sites within New Jersey, they are currently not appropriate for the scale of control at NGTC. Biological controls can be complicated by inadvertent impacts caused by the release of exotic control species.

Prescribed burning may be used to quickly and effectively suppress by removing much of the biomass before subsequent control such as herbicide application. This methodology requires highly trained personnel and burning permits. This method is not necessary and is impractical for Sea Girt NGTC for many ecological and logistical reasons. The largest concentration of invasive species is located near rare species habitat. The timing of a controlled burn is often most effective when conducted in late spring or early fall, which is when rare beach-nesting birds or seabeach amaranth could be present on-site. Burning near rare species habitat could pose a significant risk to these non-target species. Even if conducted outside of the sensitive time period, destruction of suitable rare species habitat could occur. In addition, prescribed burning is also impractical due to the size of the treatment area and its location within a developed suburban community that is highly sensitive to public safety and other associated concerns.

### **General Management Summary**

To effectively implement invasive species management on-site, a treatment, restoration, and prevention plan will be established for the Sea Girt NGTC. This plan will provide site prioritization, schedule of activities, and protocols on methods of invasive species control and prevention and native species restoration.

Project Management goals and objectives have been created to implement invasive species management on-site (see Section 4.3). Habitat management goals include the control of invasive plants in primary dunes, secondary dune areas, and freshwater wetland habitats through a combination of chemical, manual, and/or

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mechanical treatments. Once initial invasive species removal is complete, managed areas will be restored with native species and monitored and retreated as needed.

The most highly invasive species threatening sensitive habitats will be considered a priority for treatment. These priority species include Asiatic sand sedge, common reed, Oriental bittersweet, Japanese honeysuckle, spotted knapweed, purple loosestrife, and Japanese knotweed. Other species found in small numbers near sensitive habitat areas such as porcelainberry and privet should also be removed and closely monitored. Treatment of poison ivy will be limited to areas on and around the small arms range berms, wetland, public paths, parking lots, and other high-traffic areas where people may regularly be exposed to the plant. Poison ivy will be left uncontrolled on the upper back dunes to retain its wildlife and erosion control benefits.

Possible coastal species for dune planting include American beachgrass, coastal panicgrass, bayberry, beach plum, and other *Prunus* spp. cherries. Shrub species are most appropriate for the back dune areas. Tree planting on either side of the dunes will be prohibited because trees provide perches for avian predators that could have an impact on beach-nesting bird activity. Due to the proximity to rare species habitat, all invasive plant treatments and restoration plantings will be conducted in coordination with the USFWS and NJDEP-ENSP. The Sea Girt NGTC Invasive Species Survey Report (ASGECI 2013) provides additional species-specific invasive plant treatment information. In addition, as part of the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017) to guide habitat enhancements on an eastern portion of the NGTC, the plan outlines projects to control invasive species within the beach/dune and wetland habitats and re-planting with desired native coastal and wetland species. Specifically, common reed and purple loosestrife within wetland and transitional habitats will be treated intensively, and all Asiatic sand sedge observed in the dune and beach areas will be hand-pulled or treated with herbicide as part of the monitoring implementation. The *Poison Ivy and Revegetation Plan* (DRG 2023) provides species-specific invasive plant treatment information including control and subsequent monitoring and maintenance measures; chemical treatments and manual removal where necessary; replacement plantings; signage; implementation timing and costs; and monitoring/maintenance protocols.

### **4.3 PROJECT-SPECIFIC MANAGEMENT GOALS**

Project-specific management goals, which include ongoing and/or planned management measures for achieving goals for the Land and Watershed Management Program, are presented below and implementation information (e.g., staffing, funding, and schedule) is provided in Section 10.0 . Additional field investigations have further assisted in identifying Land and Watershed Management Goal No. 2, No. 3, and No. 4. Finally, stormwater management needs for the parking lots discussed in Section 4.2.3 has led to defining Goal No. 5.

**Land and Watershed Management Goal No.1** – Protect and rehabilitate sensitive wildlife habitats that support threatened and endangered species by controlling invasive plants.

#### **Priority Classification: Compliance – Class 2**

Prepare a treatment, restoration, and prevention plan for invasive species management to implement the INRMP invasive species goals, objectives, and strategies. Specific strategies to be employed include the following:

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1. Secure appropriate permitting for pesticide application in wetlands and coastal habitats.
  2. Provide treatment of EAB and SLF infestations by completely removing host trees, continue use of Lindgren funnel traps, and commercially produced sticky band traps with host trees that display limited evidence of infestation. (*EAB and SLF Survey Report*, Stockton 2022).
  3. The *Poison Ivy Control and Revegetation Plan* (DRG 2023) concluded several control methodologies to manage poison ivy, including control and subsequent monitoring and maintenance measures; chemical treatments and manual removal where necessary; replacement plantings; signage; implementation timing and costs; and monitoring/maintenance protocols.
  4. Provide detailed protocols and information on selected and approved herbicide and other treatments.
  5. Provide required detailed information on replanting and future habitat monitoring and management.
  6. Provide information on safety measures, education, on-site infestation prevention, and other BMPs by the facility.
  7. The Spotted Lanternfly Program – Chemical Control Treatment Grant is currently available through the New Jersey Department of Agriculture (NJDA) and is open for reimbursements to county governments. Monmouth County was accepted in 2022 for the reimbursement program. Information on this grant can be located at <https://www.nj.gov/agriculture/news/press/2022/approved/press220803.html>.

**Priority Classification: Compliance – Class 2**

Hand removal of Asiatic sand sedge has caused the plant to spread. In order to eliminate Asiatic sand sedge from the primary dune areas and prevent reinfestation, herbicide application will be used on an annual basis to control it. Specific strategies to be employed are described in the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017) and the *Annual Survey Protocol Plan* (VHB 2023), and includes the following:

1. Remove Asiatic sand sedge by herbicide application once a year.
2. Due to rare plant species, herbicide should only be used sparingly, with appropriate procedures and approvals.
3. Conduct regular monitoring and reporting.

Priority Classification: Compliance – Class 2

Reduce and maintain levels of common reed, poison ivy, cattail and purple loosestrife dominance of less than 5 percent total vegetation cover in the palustrine freshwater wetland complex (Wetland C). Specific strategies to be employed are described in the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017) and the *Annual Survey Protocol Plan* (VHB 2023).

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**Priority Classification: Compliance – Class 2**

Eliminate all highly invasive shrubs, trees, or vines that have limited occurrence (single or less than 10 trees) within the secondary dune habitats. Species include autumn olive, privet species, tree-of-heaven, and porcelain berry. Specific strategies to be employed include the following:

1. Cut trunks or mechanically remove stumps or vines (before fruiting), as necessary, from successional and disturbed successional dune habitats.
2. Spot treat shrubs and trees with an approved and appropriate direct stem herbicide. Treat vines with an approved and appropriate foliar or stem herbicide.
3. Monitor on a regular seasonal basis for reoccurrence and respond quickly if reinfestation occurs.

**Priority Classification: Compliance – Class 2**

Reduce and maintain established high-priority invasive shrubs, vines, and herbs in coastal dune shrubland and adjacent dune successional habitat (this may or may not include the disturbed dune successional areas) to dominance levels of less than 5 percent cover. Target species include Oriental bittersweet, Japanese honeysuckle, Japanese knotweed, and spotted knapweed. Specific strategies to be employed include the following:

1. Monitored replanting of appropriate native shrubs, which may include northern bayberry, *Prunus* spp., cherries, native *Rosa* spp. roses, or smooth sumac.

**Land and Watershed Management Goal No. 2** – Minimize visitor and staff exposure to poison ivy through education and management means.

**Priority Classification: Compliance – Class 2**

Control poison ivy vines or shrubs in high-traffic areas while maintaining current levels (80 to 100 percent) of shrubs within coastal dune shrub and interior portions of successional dune habitats. Specific strategies to be employed include the following:

1. Eliminate poison ivy in disturbed non-dune successional areas around buildings, material piles, and maintenance areas by using an appropriate and approved foliar herbicide and/or by mechanical means.
2. Conduct periodic surveys for poison ivy to identify the extent of its growth on Site and identify new infestations.
3. Prevent poison ivy on edges of dune successional habitats from encroaching on bare ground paths and lots by using an appropriate and approved foliar herbicide and/or by mechanical means; and maintain paths and work areas and repeat treatment as necessary for safety needs.
4. Make most beach visitors (greater than 50 percent) and all staff aware of poison ivy habitat presence, benefits, and potential health hazards.

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Specific strategies to be employed include the following:

1. Post at least four signs in and around paths and public beach areas warning individuals about the presence of poison ivy; include an illustration.
2. Brief staff on the safe removal of poison ivy and prevention of rashes.
3. Provide literature: Through distribution of the NGTC wildlife habitat guide, make individuals aware of the benefits and concerns of poison ivy on-site.
4. Implement the Poison Ivy Control and Revegetation Plan (DRG 2023).

**Land and Watershed Management Goal No. 3** – Prevent introduction and spread of invasive species.

**Priority Classification: Compliance – Class 2**

1. Implement periodic inspections for early detection of invasive species. Invasive species surveys need to be conducted every ten years.
2. Review scientific literature and regulatory updates to identify up and coming invasive species and update the list of target invasive species.
3. Implement procedures for storage and disposal of plant materials.
4. Implement procedures for clothing and equipment decontamination.
5. Implement additional BMPs as identified in the to-be-developed invasive species treatment, restoration, and prevention plan.
6. Educate staff and visitors.

**Land and Watershed Management Goal No. 4** – Monitor and manage the on-site wetland restoration area.

**Priority Classification: Compliance – Class 2**

1. Maintain the split rail fence that was installed in 2020 around the perimeter of the modified herbaceous portion of Wetland C, for the purpose of keeping unauthorized vehicles or visitors out of the wetland. More details are provided in the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017) and the *Annual Survey Protocol Plan* (VHB 2023).
2. Per the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017), maintain the managed wetland (Wetland C) to assure proper ecological values and functions including wildlife habitat, filtration of nutrients, and reduction of runoff. Specific details on monitoring and managing Wetland C are outlined in the habitat enhancement plan.
3. Maintain three interpretive signs that were installed in 2020 along the southern boundary of the managed wetland area. Details of the signs are provided in the habitat enhancement plan.

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4. Maintain the crushed clamshell walking path installed in 2020 between Wetland C and Camp Drive and the boardwalk observation pier installed in 2021 from the pathway out into Wetland C. Details of the walking path and observation pier are provided in the habitat enhancement plan.

**Land and Watershed Management Goal No. 5** – Improve storm water quality and provide vital pollinator habitat to the site by monitoring and maintaining the two new stormwater basins, two new rain gardens, and the site’s stormwater infrastructure. The following goals were established to improve the functionality of the stormwater retention basins, shown in Figure 4-1, to manage stormwater runoff more effectively from parking lots during high flow volumes and to decrease the duration of water ponding in these basins.

**Priority Classification: Compliance – Class 3**

1. Develop and maintain a Site wide stormwater infrastructure system maintenance plan.
2. Incorporate New Jersey Youth Challenge Academy (NJYCA) to assist in maintaining the site’s stormwater infrastructure system to include the rain garden and Stockton Lake plantings. (*Raingarden Maintenance Plan, and Landscaping Plan Along Stockton Lake Bulkhead and Walking Path at the Sea Girt NGTC, Stockton 2021*).
3. Approximately 51.15 acres (29.5%) of impervious surfaces are present at the site and are managed by 129 drainage inlets, 24 stormwater utility access covers, 35 outfall pipes, 12 infiltration basins, 2 vegetated filter strips, and 16 curb inlets. Deficiencies observed in the current stormwater management system included heavy sediment accumulation and/or vegetation growth in 10 of the drainage inlets. Sediment accumulation and vegetation growth can clog inlets making them non-functional. Drainage inlet maintenance and inspection procedures shall be performed to maintain the function of stormwater management measures, including, but not limited to, repairs or replacement to the structure; removal of sediment, debris, or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; and repair or replacement of non-vegetated linings. (*Stormwater Management Feature Inventory and Maintenance Procedures, Stockton 2022*).
4. Consider low impact development features for any new stormwater management features over traditional stormwater systems. Develop new stormwater management and surface water quality improvement projects at the site.

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## **SECTION 5**

### **FISH AND WILDLIFE MANAGEMENT**

#### **5.1 PROGRAM DESCRIPTION AND OVERALL MANAGEMENT GOALS**

The Fish and Wildlife Management at Sea Girt NGTC addresses a variety of topics including the following:

- Habitat management;
- Wildlife management;
- Nuisance wildlife management;
- Fisheries management; and
- Natural resources law enforcement.

In accordance with the overall natural resources management approach of the NJARNG, fish and wildlife management focus on protecting and enhancing biodiversity through ecosystem management. Virtually all natural resources management activities at Sea Girt NGTC affect fish and wildlife resources. Accordingly, fish and wildlife management issues and concepts have been integrated into all the other management programs, and there is significant interaction among programs.

The overall goal of the program is to manage fish and wildlife resources to maintain and enhance ecosystem functions and values in a manner that supports, and is consistent with, the military mission. Additional overall program goals include the following:

- Maintain healthy fish and wildlife populations;
- Maintain and enhance biodiversity;
- Use ecosystem management practices to achieve program goals; and
- Ensure that wildlife populations do not conflict with the military mission of the NJARNG.

#### **5.2 PROGRAM STATUS AND MANAGEMENT ISSUES**

##### **5.2.1 Wildlife and Habitat Management**

As described in Section 2.0 Sea Girt NGTC is relatively developed and natural wildlife habitats are primarily limited to the beach and dune areas, small wetland areas, and areas adjacent to Stockton Lake. Nonetheless, undeveloped portions of the installation provide important habitat, including habitat for federally and state-listed species. Specific habitat management practices and protection measures are discussed in more detail in Section 6.0 – Rare Species Management, and Section 4.0 – Land and Watershed Management.

Because of the developed nature and proximity to residential areas, the installation supports few game species and is not capable of supporting a recreational hunting program. Therefore, game management is not discussed further in this INRMP. Management of non-game species is addressed in Section 6.0 – Rare Species Management.

##### **5.2.2 Nuisance Wildlife and Pest Management**

Sea Girt NGTC actively manages nuisance species and pests under the authority of the NJARNG's IPM Plan (NJARNG 2019). At the Sea Girt NGTC, mosquitoes are periodically sampled in the freshwater wetlands for Zika virus monitoring, conducted by the Monmouth County Mosquito Commission, as part of the pest

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management program on the Sea Girt NGTC covered by the NJARNG's. Although Zika virus has not been detected, West Nile virus was detected during the 2017 and 2020 monitoring periods (C. Appleby, NJARNG, email dated, November 13, 2020). Currently, there is no active mosquito control that occurs on the Sea Girt NGTC. Additional priority species for pest management are detailed in the IPM Plan.

Representatives from Monmouth County Health Department (MCHD) and Stockton University conducted mosquito surveys at the site in 2016 through 2022, as documented in the *Mosquito Habitat Breeding Survey Reports* (Stockton 2018-2022). Based on the surveys, ideal conditions for mosquitos include stagnant water, clogged up creeks, and catch basins. Recommendations include eliminating potential mosquito breeding habitat locations such as trash cans, lids, buckets, tires, and other supplies and equipment that collect standing water. Infiltration basins should not contain standing water; however, if they do, can be treated with chemical pesticides. Wetland and riparian areas (buffer zones) cannot be chemically treated or filled in without a permit. Changing Climate Sustainability Goal No. 4 of the INRMP includes addressing mosquito borne illnesses by conducting surveys for mosquito breeding habitat and cooperating with the Monmouth County Mosquito Commission to conduct sampling for Zika and West Nile Virus and apply pesticide to control mosquito populations.

For nuisance wildlife management, resident Canada geese have been the target of management activities on the Sea Girt NGTC. Resident Canada geese are those Canada geese that nest within the lower 48 states in the months of March through June and reside within the lower 48 states in the months of April through August. They are currently the only wildlife species that is considered a potential nuisance at Sea Girt NGTC. Resident Canada geese populations have increased significantly over the last 20 years throughout the eastern United States and New Jersey. Resident geese, as their name implies, spend most of their lives in one area, although some travel hundreds of miles to wintering areas. As shown by banding studies, resident geese are distinct from migratory populations that breed in northern Canada. Resident birds are long-lived and have a relatively high reproductive capacity, especially in suburban settings, allowing flocks to grow rapidly and spread to other areas. In suburban areas throughout New Jersey, abundant suitable habitat, lack of natural predators, limited hunting, and supplemental feeding have created an explosion in the resident goose population.

Though Canada geese are a valuable natural resource enjoyed by many, the recent population increases of resident birds have caused significant problems. General problems have been well documented by various federal and state natural resources management agencies and include overgrazing of lawns and natural vegetation; accumulations of fecal matter and feathers in public areas (a goose produces a pound of fecal matter per day); nutrient loading to surface waters; competition with, and displacement of, other birds; public health concerns; aggressive behavior by nesting birds; and safety hazards near roads and airports.

At Sea Girt NGTC, large numbers of Canada geese sometimes congregate in and around the cantonment area, especially on the parade grounds. Flocks have increased in size and have begun nesting at the installation. Resident Canada geese are considered a potential nuisance at the installation and warrant active management based on the following reasons:

- Resident Canada geese could negatively affect mission activities and create a significant Bird/Wildlife Aircraft Strike Hazard by congregating in the immediate vicinity of the helicopter landing pad. This increases the potential for loss of life and property. The NJARNG's policy is to minimize all aviation risks;
- Geese sometimes congregate on and around the small arms ranges at the installation and create a potential distraction and safety hazard for personnel training on the ranges; and
- Maintained open areas at the installation can be littered with goose fecal matter, which can degrade water quality and increase the potential for transmission of human and avian diseases.



View of Atlantic Brant along Stockton Lake. Source: ADC, 09 May 2022.

Primary management authority for all migratory birds, including Canada geese, lies with the USFWS Division of Migratory Bird Management, with secondary involvement by the states. Many states, including New Jersey, have implemented several federal depredation orders allowed under USFWS regulations, to allow citizens increased flexibility to deal with resident Canada goose damage. Canada goose damage abatement strategies and depredation orders, as well as registration and permit requirements that can be employed, are found at <https://epermits.fws.gov/eRCGR/geSI.aspx>.



View of Canada geese in the tank area. Source: ADC, 29 July 2022.

Management techniques that can be used to reduce resident Canada goose populations or deter them from using a specific area include goose removal, hunting, reproduction control, hazing, and altering habitat (e.g., shoreline vegetative buffer or barrier fencing). Hazing of Canada geese refers to simply scaring or harassing them into leaving an area. Hazing is allowed without a permit provided the birds are not actually handled by a person or attacked by a dog. Hazing techniques include the use of laser harassment, pyrotechnics, audible distress sounds, effigies or other visual frightening devices, habitat management, dogs and falcons, and repellents.

The Sea Girt NGTC facilities management staff has used several techniques such as decoys, vehicle flushing, reproductive controls, and hazing by Canada Geese Bird Screamer Launcher and projectiles, trained dogs and lasers to discourage resident Canada geese from using portions of the installation. Hazing is persistent harassment that employs non-lethal management strategies. In addition, the feeding of Canada geese is strictly prohibited at the Sea Girt NGTC. The NJDMAVA, on behalf of the Sea Girt NGTC, has previously contracted Goose Control Technology of New Jersey and VHB to implement the goose control program. Between 2012 and 2022, methods utilized to reduce the presence of the Canada Geese included dogs to harass Canada geese, nests were removed, and eggs were added, Canada Geese Bird Screamer Launcher and Projectiles were utilized; and geese were harvested by NJDEP. Hazing was conducted weekly at random times and days between sunrise and sunset between April and October (VHB 2022). The NJDMAVA will continue to contract as needed, to assist in the eradication of Canada geese on-site.

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In 2011, the Sea Girt NGTC Health & Safety Goose Control Program Standard Operating Guide was issued, outlining current management procedures.

Hazing, the primary means of goose control used on-site, is conducted in accordance with the following guidelines:

- Hazing by dog is conducted by trained personnel and is limited to developed portions of the installation west of the dunes. Limiting the area in which trained dogs may gain access avoids potential impacts on non-target species such as the piping plover and least tern.
- Laser harassment includes the use of a hand-held laser to scare resident geese from roosting, feeding, or drinking sites. Laser use procedures are outlined in the Sea Girt NGJTC Health & Safety Goose Control Program Standard Operating Guide. Laser hazing is only conducted by trained Sea Girt NGTC staff and is restricted from use on Stockton Lake.
- Hazing is only conducted from 1 April through 31 August, to avoid potential impacts on migratory Canada geese and other migratory birds such as the Atlantic brant.
- Hazing is not conducted during the molting period for humane reasons. During molting, which typically occurs in June, adults undergo a replacement of their feathers and are unable to fly.

Currently, management techniques that have been implemented thus far have had mixed success in reducing resident Canada geese conflicts at Sea Girt NGTC to an acceptable level. For example, in 2012, the number of geese observed onsite<sup>1</sup> was greatly lower during the dog hazing period when harassment was conducted on a near daily basis; however, in 2013, the number of geese observed onsite had moderate fluctuations for certain periods but higher numbers in August and September for unclear reasons (Figure 5-1) (VHB 2022). Canada goose activity in 2022 has increased slightly from 2020 during May and after the molting season, based on daily accumulation rates of fecal matter in the selected plots. However, goose activity in 2022 was still significantly lower than in previous years prior to 2020 and was the lowest it's been in June and July since 2015. Since observations of goose numbers can have significant variability due to factors such as weather and time of day (and inter-annual variability of population demographics), the NGTC also periodically conducts goose fecal counts and estimates the fecal daily accumulation rate (DAR) as a more ideally consistent measure of goose population trends and to assess the effectiveness of goose deterrents. For multiple survey years (2012, 2013, 2015, 2016, 2018, 2019, 2020, and 2022), the annual average DARs by month are presented in Figure 5-2, and generally depict a trend of declining DAR levels within each year<sup>2</sup>. In addition, Figure 5-3 depicts an average annual DAR. Although the same transects are sampled each year for fecal counts, the number of months as well as the sampling season has varied across the years, causing it to be difficult to detect change in goose population trends.

Potential conflicts with the resident Canada geese population will continue to be monitored, and management practices discussed above will continue to be implemented, as necessary. Additional alternatives to discourage resident Canada geese from using the installation may also be considered. These may include habitat management techniques such as altering mowing regimes or planting alternative ground covers. The Sea Girt NGTC may also consider the use of eagle kite decoys to deter geese from using

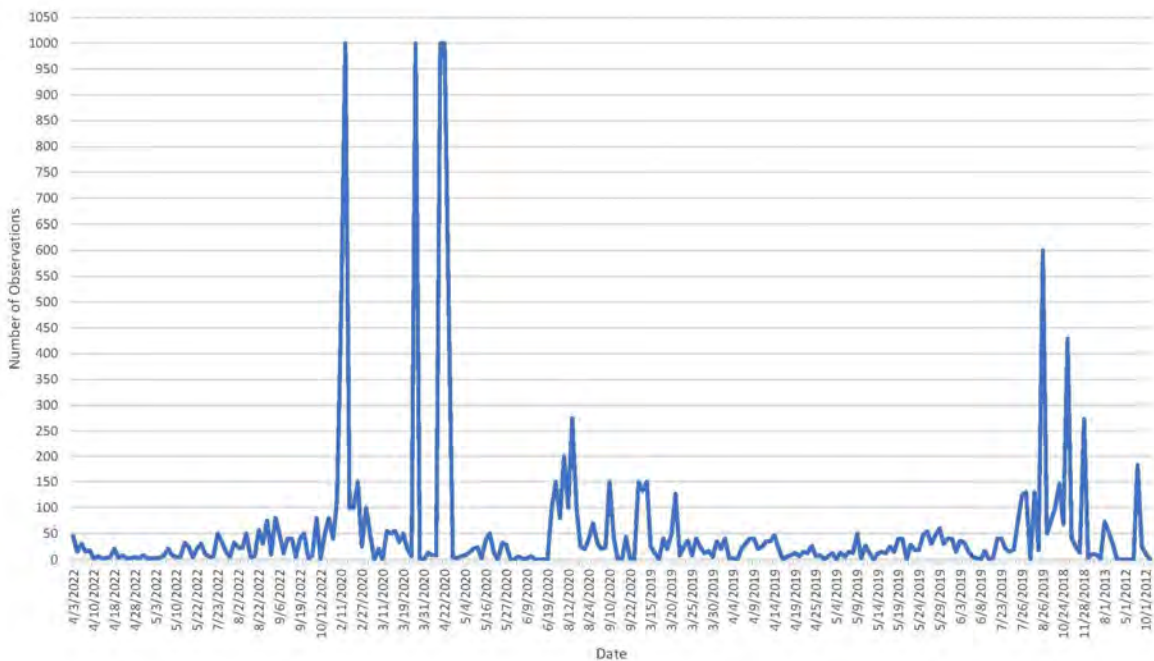
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<sup>1</sup> The term "onsite" refers to that the number of geese observed does not include flyover observations or geese observed on Stockton Lake. Also note that data on the number of geese observed may not have been collected consistently from year to year.

<sup>2</sup>Although dog hazing occurred in 2012 and 2013, it was not conducted since 2016; thus, it is difficult to confidently state whether dog hazing and other techniques have been effective.

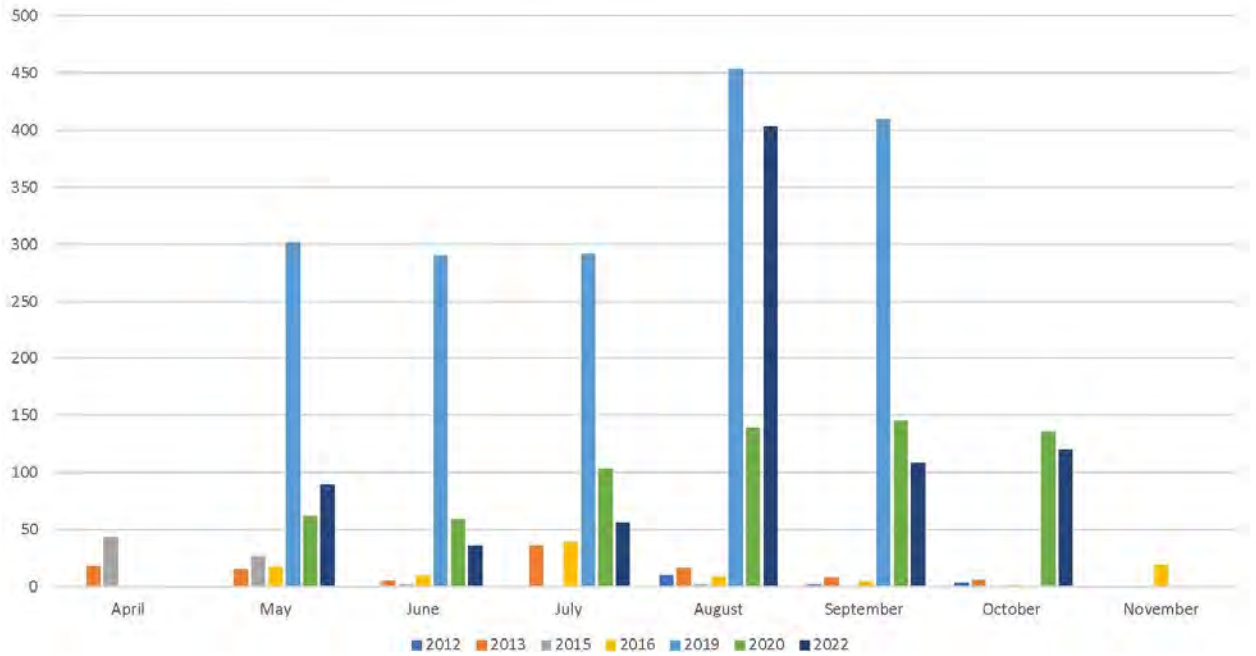
the site. Eagle kites can be used to simulate a natural predator as a three-dimensional eagle with a wingspan of seven feet. The kite turns in a prey-seeking circular motion that geese perceive as real and react to by flushing the area; with continual harassment, they will avoid the area all together. As with the other means of harassment noted above, the eagle kite deterrent would only be conducted from 1 April through 31 August and not during the molting period. Decoy use would be limited to the parade grounds north and west of the eastern extent of the motorcycle training area (see Figure 2-2) to avoid impact on sensitive habitat (beach, dunes, wetlands, and Stockton Lake). See Section 5.4, which further describes ongoing and planned Canada goose management measures to support the overall management goal of deterring resident geese from using the installation.<sup>3</sup>

**FIGURE 5-1 AVERAGE MONTHLY NUMBER OF GOOSE OBSERVATION ONSITE 2012 THROUGH 2022.**

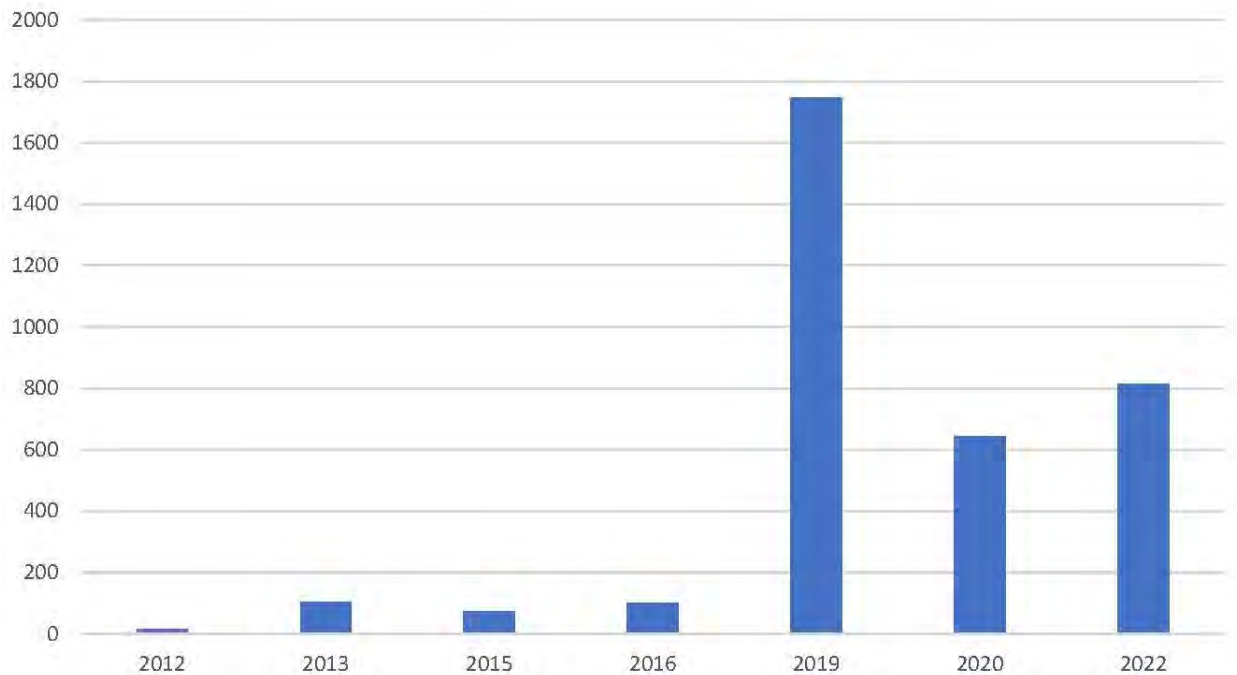


<sup>3</sup> Canada goose behavioral periods: breeding/nesting (April and May), molting (June and July), and migrant geese arrival (October).

**FIGURE 5-2 AVERAGE MONTHLY FECAL DAILY ACCUMULATION RATE**



**FIGURE 5-3 AVERAGE ANNUAL FECAL DAILY ACCUMULATION RATE**



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### **5.2.3 Fisheries or Marine Management**

No fisheries or marine resources exist within the Sea Girt NGTC boundaries. Fisheries adjacent to the installation (Atlantic Ocean and Stockton Lake) are under the jurisdiction of the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service (formerly National Marine Fisheries Service), Atlantic States Marine Fisheries Commission, and New Jersey Marine Fisheries Council.

The NOAA Fisheries Service is responsible for managing Essential Fish Habitat (EFH) identified in the Magnuson–Stevens Fishery Conservation and Management Act. EFH is defined as “Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” EFHs for several species at various life stages are known to occur in Stockton Lake, directly south of the facility, as well as in coastal waters of the Atlantic Ocean (NOAA EFH Mapper n.d.). Typical species of these EFHs can be found in Table 5-1. No Habitat Areas of Particular Concern were identified at either location. In addition, no EFH Areas Protected from Fishing were identified at either location. As such, these species are not expected to be affected by activities occurring at the facility, and therefore are not specifically addressed as part of this INRMP. However, habitat protection measures implemented under Land and Watershed Management (Section 4.0 ) and Rare Species Management (Section 6.0 ) support overall fisheries management goals. In addition, Section 7.0 discusses recreational fishing, which is permitted to authorized users at designated locations at the installation in accordance with federal and state regulations.

**TABLE 5-1 SPECIES WITH ESSENTIAL FISH HABITATS NEAR SEA GIRT NGTC**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Life Stage(s) Found at Location</b>	<b>Location</b>
Atlantic Butterfish	<i>Peprilus triacanthus</i>	Adult, Juvenile	AOC
Atlantic Cod	<i>Gadus morhua</i>	Adult	AOC
Atlantic Herring	<i>Clupea harengus</i>	Adult, Juvenile	SL, AOC
Black Sea Bass	<i>Centropristis striata</i>	Juvenile, Adult	SL, AOC
Bluefin Tuna	<i>Thunnus thynnus</i>	Juvenile	AOC
Clearnose Skate	<i>Raja eglanteria</i>	Adult	SL, AOC
Common Thresher Shark	<i>Alopias vulpinus</i>	ALL	AOC
Dusky Shark	<i>Carcharhinus obscurus</i>	Neonate	AOC
Longfin Inshore Squid	<i>Doryteuthis pealeii</i>	Juvenile, Adult, Eggs	SL, AOC
Monkfish	<i>Lophius piscatorius</i>	Eggs, Larvae	AOC
Ocean Pout	<i>Zoarces americanus</i>	Adult, Larvae, Eggs	AOC
Red Hake	<i>Urophycis chuss</i>	Larvae, Juvenile, Eggs	AOC
Sandbar Shark	<i>Carcharhinus plumbeus</i>	Juvenile, Adult	AOC
Silver Hake	<i>Merluccius bilinearies</i>	Adult	AOC
Skipjack Tuna	<i>Katsuwonus pelamis</i>	Juvenile, Adult	AOC
Smooth Dogfish	<i>Mustelus canis</i>	ALL	AOC
Spiny Dogfish	<i>Squalus acanthias</i>	Sub-Female, Adult Male	AOC
Tiger Shark	<i>Galeocerdo cuvier</i>	Juvenile, Adult	AOC
White Shark	<i>Carcharodon carcharias</i>	ALL	AOC
Window Pane Flounder	<i>Scopthalmus aquosus</i>	Larvae, Eggs, Juvenile, Adult	AOC
Winter Flounder	<i>Pseudopleuronectes americanus</i>	Larvae, Eggs, Juvenile, Adult	AOC
Yellowtail Flounder	<i>Limanda ferruginea</i>	Larvae	AOC

Notes: AOC: Atlantic Ocean Coast; SL: Stockton Lake

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### 5.3 NATURAL RESOURCES LAW ENFORCEMENT

The NJARNG and/or NJDMAVA do not have in-house staffing assigned to, or specifically trained for, natural resources law enforcement. The property is fenced and protected against trespassing. Any trespassers or others suspected of natural resources law violations are reported to local law enforcement and/or the NJDEP.

### 5.4 PROJECT-SPECIFIC MANAGEMENT GOALS

Project-specific management goals, which include ongoing and/or planned management measures for achieving goals for Fish and Wildlife Management, are presented below, and implementation information (e.g., staffing, funding, and schedule) is provided in Section 10.0 . Fish and Wildlife Goal No.1 is ongoing; however, management measures developed to successfully reach this goal have been expanded for the current implementation period.

**Fish and Wildlife Goal No.1** – Deter resident Canada geese from using the installation.

#### **Priority Classification: Stewardship – Class 3**

1. Reduce the number of resident Canada geese to no more than 20 and eliminate nesting on-site.
2. Develop an annual resident Canada goose hazing plan that includes population survey protocol, management techniques, and acquiring permits for direct population controls.
3. Conduct nest/population survey.
4. Conduct resident Canada goose hazing/population controls as described in the *Hazing Plan*. Continue hazing by laser harassment (conducted by trained personnel only), or trained dog and handler. Consider implementing use of eagle kite decoys as an additional hazing technique. Hazing may only be conducted during the period of 1 April 1 through 31 August, except during the molting period (typically June).
5. Prepare an *Annual Summary Report* to evaluate Canada goose control measures.
6. Install and maintain the solar powered Bird-X Goosebuster Sonic Goose Deterrent System (<https://bird-x.com/bird-products/electronic/sonic/goosebuster/>) (*Goose Buster Electrical Cover Sheet* and *Goose Buster Spec Index*, prepared by BD Engineering, dated 20 April 2023) with the option of purchasing addition units to supplement the current unit.
7. Clean sidewalks on a regular basis during the months Canada geese are likely to be on Site to prevent their feces from being tracked into the buildings, especially the mess hall and barracks. Purchase a commercial turf sweeper (<https://sweep-all.com/>) for regular use to remove geese feces from the parade grounds and other landscaped grass areas, if needed.

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## **SECTION 6**

### **RARE SPECIES MANAGEMENT**

#### **6.1 PROGRAM DESCRIPTION AND OVERALL MANAGEMENT GOALS**

For the purposes of this INRMP, the term "rare species" is used to refer to various plants and animals that warrant special management concern and are protected by law in some cases. Rare species include the following:

- Species listed or proposed as endangered or threatened, or designated as candidates for listing, by the USFWS under the ESA of 1973 (Public Law 93-205).
- Wildlife species listed as endangered or threatened by the NJDEP-ENSP, under the New Jersey Endangered and Nongame Species Conservation Act of 1973 (N.J.S.A. 23:2A et seq).
- Wildlife or plant species designated as a state species of concern by the NJDEP-ENSP or the New Jersey Natural Heritage Program, respectively.
- Plants listed as endangered by the NJDEP Division of Parks and Forestry under the New Jersey Endangered Plant Species List Act (N.J.S.A. 13:1B-15.151 et seq).

The overall rare species management goal for Sea Girt NGTC is to conserve listed species in accordance with the ESA, Endangered Species Recovery Plans, U.S. Army regulations and guidance, and approved site-specific management plans, including Endangered Species Management Plans (ESMPs). The ESA requires that all federal agencies conserve listed species. Conservation, as defined by the ESA, means the use of all methods and procedures necessary to bring any listed species to the point where protection pursuant to the ESA is no longer necessary. The ESA specifically requires agencies not to "take" or "jeopardize" the continued existence of any endangered or threatened species, or to destroy or adversely modify habitat critical to any endangered or threatened species, unless they undergo formal consultation under Section 7 of the ESA and receive an Incidental Take Statement. Under Section 9 of the ESA, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or conduct any activity expected to reduce appreciably the likelihood of the survival and recovery of a listed species by reducing its reproduction, numbers, or distribution.

Army policy on listed species includes the following elements: balancing mission requirements with endangered species protection, cooperating with regulatory agencies, and conserving biological diversity within the context of the military mission. As required by AR 200-1, the Army must ensure that it carries out mission requirements in harmony with the requirements of the ESA. According to ESA section 7(a)(1) charges federal agencies to aid in the conservation of listed species, and section 7(a)(2) requires the agencies to ensure their activities are not likely to jeopardize the continued existence of federally listed species or destroy or adversely modify designated critical habitat. All Army land uses, including military training and recreation, are subject to the ESA requirements for the protection of listed species and critical habitat. In fulfilling its conservation responsibilities, the Army is required to work closely and cooperatively with the USFWS, which is the federal agency responsible for enforcing the ESA for those listed species found at the Sea Girt NGTC. Installations are encouraged to engage in informal consultation with the USFWS while planning projects or activities to ensure ESA compliance. In conserving biological diversity, installation commanders and Army natural resource managers are required to develop and implement policies and strategies to maintain viable populations of native plants and animals, maintain natural genetic variability

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within and among populations, maintain functioning representations of the full spectrum of ecosystems and biological communities, and integrate human activities with the conservation of biological diversity.

AR 200-1 requires installations to prepare and implement an Endangered Species Management Component to the INRMP to address federally listed, proposed, or critical habitat designated or proposed on the installation (AR 200-1). The Endangered Species Management Component must establish specific goals and measurable objectives for the subject species and critical habitats. In addition, an ESMP is required at Sea Girt NGTC by the USFWS' 2002 Programmatic Biological Opinion regarding the BECP and by the Coastal Area Facility Review Act permit issued by the NJDEP DLRP for beach raking. This INRMP serves as the ESMP for federally and state-listed species at Sea Girt NGTC.

In accordance with AR 200-1, the NJDMAVA will engage in informal Section 7 consultations at the earliest opportunity with the USFWS to ensure that proposed actions that may affect listed species or critical habitat are consistent with the requirements of the ESA. The CFMO-EMB is responsible for identifying actions at Sea Girt NGTC that require ESA consultation and initiating the consultation process. The informal Section 7 consultation process is typically initiated by sending a written description of the proposed action and a map showing the location of the proposed action to the USFWS New Jersey Ecological Services Field Office in Galloway. The Galloway Field Office has developed a consultation guidance website at <https://www.fws.gov/office/new-jersey-ecological-services/new-jersey-field-office-project-review-guide>. Contact information for the USFWS is provided in Appendix D, and a more detailed description of the ESA coordination/consultation process is provided in Chapter 4 of AR 200-1, which is accessible on the Internet at the U.S. Army Publishing Agency Home Page (<http://www.apd.army.mil/>).

In addition to terrestrial wildlife, aquatic species are also provided federal protection. The NOAA Fisheries Service is responsible for managing marine mammals protected under the Marine Mammal Protection Act of 1972, marine or anadromous species protected under the ESA, in addition to EFH (discussed in Section 5.2.2).

All marine mammals are protected under the Marine Mammal Protection Act of 1972; therefore, any occurring in coastal waters off the NGTC, such as bottlenose dolphin and harbor seal (previously observed in waters near the NGTC), are afforded this protection. There are also four federally listed marine species that may occur in the coastal waters of Atlantic Ocean adjacent to the NGTC: Atlantic leatherback sea turtle, fin whale, humpback whale, and northern right whale (as identified in Section 2.7.3.4). Though present adjacent to the NGTC, no protected marine or fisheries resources exist within the boundaries of the facility. These species are not affected by activities occurring at the facility, and therefore are not specifically addressed as part of this INRMP. However, habitat protection measures implemented under Land and Watershed Management (Section 4.0 ) and Rare Species Management (Section 6.0 ) support overall marine species and fisheries management goals. Species that are state-listed as threatened or endangered are not protected under the ESA. However, AR 200-1 also specifies that installations should cooperate with state authorities in efforts to conserve state-listed species as a matter of responsible stewardship, when feasible. In addition, the installation has regulatory obligations to avoid take of state-listed species under provisions of the New Jersey Endangered and Nongame Species Conservation Act and Coastal Zone Management Rules. Species protections under the ESA have been written into various land use regulations promulgated by state regulators. The New Jersey Endangered Species Conservation Act of 1973 states that no person may take, possess, transport, export, process, sell or offer for sale, or ship, and no common or contract carrier may knowingly transport or receive for shipment any species of wildlife appearing on: (1) the state

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list of endangered species; (2) the list of nongame species regulated by the NJDEP; and (3) the federal list of endangered species. Species designated as state Species of Special Concern are not afforded regulatory protection and would be given a relatively lower management priority, if they were to occur at Sea Girt NGTC. A summary of New Jersey agencies involved in rare species conservation is provided below:

- The NJDEP Division of Fish and Wildlife, ENSP, is responsible for actively conserving New Jersey's biological diversity by maintaining and enhancing endangered and nongame wildlife populations within healthy, functioning ecosystems. The program is responsible for the protection and management of nearly 500 wildlife species, including the 83 species currently listed as endangered or threatened under the New Jersey Endangered and Nongame Species Conservation Act of 1973 (N.J.S.A. 23:2A et seq.).
- The NJDEP Division of Parks and Forestry, Natural Heritage Program, is responsible for maintaining New Jersey's list of Endangered and Special Concern plants. The Natural Heritage Program also maintains the Natural Heritage Database, which is a continuously updated inventory of rare plants and animal species and representative ecological communities in New Jersey.
- Impacts on state-listed species that are associated with development and other activities are addressed during review and issuance of various environmental permits by the NJDEP DLRP (See Section 4.0 – Land and Watershed Management, for descriptions of environmental permitting requirements).

The CFMO-EMB will engage in informal consultations at the earliest opportunity with these state agencies to ensure that the conservation of state-listed species is addressed during the planning process for proposed actions. In addition, this INRMP serves as an ESMP for federally and state-listed species. Appendix C provides contact information and Internet addresses for these agencies.

## **6.2 PROGRAM STATUS AND MANAGEMENT ISSUES**

### **6.2.1 Overview**

As summarized in Table 6-1 Rare Nesting Birds and Plants at Sea Girt NGTC, two federally listed species (seabeach amaranth and piping plover) and four state-listed species (seabeach knotweed, osprey, American oystercatcher, and least tern) have been documented inhabiting (breeding/reproducing at) Sea Girt NGTC. An additional 15 state-listed threatened or endangered birds and one federally listed bird have been identified on-site during surveys conducted between 2018 and 2022. These include northern harrier, American kestrel, roseate tern, Henslow's sparrow, grasshopper sparrow, short-eared owl, cattle egret, horned lark, peregrine falcon, bald eagle, yellow-crowned night heron, black-crowned night heron, savannah sparrow, vesper sparrow, and black skimmer. None of these 15 species have been documented breeding at Sea Girt NGTC. A complete list of wildlife documented at Sea Girt NGTC is shown in Table 2-5.

The American oystercatcher, Fowler's toad, and brown thrasher are listed as species of special concern in New Jersey and have been documented breeding at Sea Girt NGTC. A brown thrasher breeding sighting was reported in 2010 on the NJDEP NJ-Geoweb site, under the layer for Species Based Habitat for the Atlantic Coastal Landscape Project. Numerous suspected fowler's toads breed annually in the wetland on site. American oystercatcher nesting activity is discussed in Section 6.2.9.

Portions of the site do provide ecologically significant resources by supplying foraging, staging, and migratory stopover sites to local or migrant species. Habitat management and species protections

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established in this INRMP are expected to collectively benefit these species and the habitat they utilize on-site. Should any of these species become established at the Sea Girt NGTC, the NJDMAVA will coordinate with the USFWS and NJDEP-ENSP to determine the need for implementation of future species-specific management measures.

The NJDMAVA has been working cooperatively with the USFWS and NJDEP-ENSP to monitor and manage listed species on the Sea Girt NGTC beach since 2000. Prior to the development of the INRMP in 2006, interim management procedures and protection measures were developed and implemented through the informal consultation process with the USFWS and significant support from the NJDEP-ENSP. In 2006, the management procedures set forth in the INRMP were formally adopted. In 2007, the NJDMAVA contracted ASGECI to provide services necessary to implement the INRMP during 2007 through 2013. Activities conducted for rare species management included a combination of site monitoring and on-site protection for the federally threatened target species including piping plover and seabeach amaranth; surveying or monitoring of state-listed species including least tern, seabeach knotweed, and osprey; maintenance and enforcement of rare species protection areas; enforcement of endangered and threatened species policies; public outreach for site visitors; and education and awareness briefings for stakeholders utilizing the Sea Girt NGTC.

No critical habitat has been designated under the ESA for piping plover and roseate tern. Except for osprey, American kestrel, and northern harrier, threatened or endangered nesting bird and plant species have been limited to the Sea Girt NGTC beach and foredune areas. The documented occurrences of rare species at the installation are relatively recent (i.e., since 2000). Nesting least terns were first documented in 2000, followed by seabeach amaranth in 2001, nesting piping plovers in 2002, seabeach knotweed in 2003, and nesting ospreys in 2004.

The occurrence of beach-nesting birds and beach plants at the installation generally corresponds to increases in populations of these species that have been observed along the Monmouth County shore since 1997. See Table 6-1 below for a list of rare nesting birds and plants observed at Sea Girt NGTC. In 1994, the USACE initiated construction on the Atlantic Coast of New Jersey from Sandy Hook to Barnegat Inlet BECP. The project included beach nourishment along 21 miles of shoreline in Monmouth County. Beach nourishment for the project section that included the Sea Girt NGTC beach was completed in August 1999. Prior to initial beach nourishment, there were no known records of piping plovers nesting on beaches between Sea Bright and Manasquan inlet, and the likelihood of plovers colonizing this area was low due to the narrow width of the beaches. In addition, seabeach amaranth had been considered extirpated from New Jersey since 1913, and from Monmouth County since 1899 (USFWS 2004).

From experience with similar beach nourishment projects in other parts of New Jersey, the USFWS began advising the USACE in 1995 that piping plovers might nest in the BECP area if beach nourishment created suitable habitat. In response, the USACE, USFWS, and NJDEP-ENSP have partnered since 1996 to conduct annual endangered species surveys in the project area (USFWS 2004). The rare beach species at Sea Girt NGTC have been documented during these surveys conducted by the USFWS and NJDEP-ENSP. The following subsections provide additional information about each of the rare nesting birds and plants that have been documented at the installation.

Hurricane Sandy made landfall on October 29, 2012, causing unprecedented damage along the coastline, including major elevation loss in the primary dune and loss of aboveground vegetation. The newly open

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conditions for beach-nesting birds at NGTC were thought to possibly improve the probability of nesting attempts by beach-nesting birds in 2013; however, beach-nesting birds were not observed attempting to nest by ASGECI or the NJDEP-ENSP in 2013. Historically, conditions have improved for least tern and seabeach amaranth populations following beach renourishment (ASGECI 2014a).

**TABLE 6-1 RARE NESTING BIRDS AND PLANTS AT SEA GIRT NGTC**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Federal Status</b>	<b>State Status</b>	<b>General Location</b>
<i>Sterna antillarum</i>	Least tern	NL	E	Beach
<i>Charadrius melodus</i>	Piping plover	T	E	Beach
<i>Pandion haliaetus</i>	Osprey	NL	T (BR)	Adjacent to Stockton Lake
<i>Haematopus palliatus</i>	American oystercatcher	NL	SC	Beach
<i>Polygonum glaucum</i>	Seabeach knotweed	NL	E	Beach
<i>Amaranthus pumilus</i>	Seabeach amaranth	T	E	Beach

Source: Various unpublished USFWS, NJDEP-ENSP, and Office of Natural Lands Management reports.

T=threatened, E=endangered, NL=not listed, BR=breeding population only; SC = Species of Concern.

Note – Table does not include species such as transient or migrant species that are not known to breed or reproduce on-site.

This tables only lists beach-dependent rare species.

### 6.2.2 **Piping Plover**



*USFWS image, 2022.*

Piping plovers are small, migratory, territorial shorebirds present on the New Jersey shore between March and August. This species nests above the high tide line on sandy ocean beaches and barrier islands within gently sloping foredunes, blowout areas behind primary dunes, wash over areas cut into or between dunes, the ends of sandspits, and deposits of suitable dredged or pumped sand. Although piping plovers are territorial toward their own species, they often nest near least tern colonies, benefiting from the terns' aggressive predator defenses. Piping plover nests consist of a shallow scrape in the sand,

frequently lined with shell fragments and often located near clumps of vegetation. Piping plovers usually lay four eggs, which hatch in approximately 27 to 30 days. After hatching, the precocial chicks are led by their parents to feed on marine invertebrates such as worms, fly larvae, beetles, and crustaceans. Feeding areas include intertidal zones of ocean beaches, ocean wash over areas, mudflats, sandflats, wrack lines (organic ocean material left by high tide), and the shorelines of coastal ponds, lagoons, and salt marshes. Chicks fledge after about 25 to 35 days (USFWS 2004; USFWS 1996a).

Threats to the piping plover and primary causes of nest failure include habitat loss, human disturbance of nesting birds, predation, oil spills, and other contaminants. Habitat loss results from development, as well as beach stabilization and other physical alterations to the beach ecosystem. Development along the Atlantic shoreline for residential and commercial uses, and the subsequent stabilization of the once shifting and dynamic beach ecosystem via seawalls, breakwaters, jetties, and groins, have resulted in the destruction and alteration of natural beaches to such an extent that many beaches no longer provide suitable piping plover habitat. Human disturbance of nesting birds includes foot traffic, sunbathing, kite flying, pets, fireworks displays, beach raking, construction, and vehicle use. These disturbances can result in nest abandonment, crushing of eggs, failure of eggs to hatch, and reduced survival of chicks. Predation on piping plover chicks and eggs is intensified by development because predators such as foxes, crows, gulls, and

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raccoons thrive in developed areas, and are attracted to beaches by food scraps and trash. Unleashed and feral dogs and cats also prey on piping plover chicks and eggs (USFWS 2004; USFWS 1996a).

Since predation and disturbance are the principal causes of nest failure, management of piping plovers is focused on fencing and signage around nesting and chick foraging areas to reduce human disturbance in the areas where piping plovers may nest or feed. Human disturbance can affect both nesting and feeding; excessive disturbance may cause parents to desert the nest, exposing eggs or chicks to the summer sun and predators, and interruptions to feeding hatchlings may stress juvenile birds during their development (USFWS 2015). Additional predation management actions at Sea Girt NGTC are discussed in Section 6.3.11. Given the success of predation management, continued and active use of the ranges, and maintaining an active bathing beach as documented in the below sections, Sea Girt NGTC has been able to fledge piping plovers while not adversely impacting the firing range operations and the need to limit the number of recreational beach visitors.

Data from piping plover surveys conducted at Sea Girt NGTC from 2000 through 2022 by cooperating parties, including the NJDEP-ENSP, The Conserve Wildlife Foundation of New Jersey, ASGECI, Wreck Pond Watershed Association (WPWA), and VHB are summarized in Table 6-2. Piping plover activities from 2000 to 2022 can be summarized as:

In 2000, 2001 and 2003, unpaired adults were observed but no nesting activity occurred. A pair of piping plovers nested on the Sea Girt NGTC beach in 2002. However, the pair's nest of four eggs never hatched. A pair of piping plovers was observed during the week of April 19, 2004, but they did not establish a nest at Sea Girt NGTC. Unpaired adults were observed on-site during the 2005 and 2006 breeding season; however, no courtship or nesting behavior was observed. The 2007 season was the first season in which a nest was successfully hatched at the Sea Girt NGTC. One chick of the four-egg nest hatched but expired shortly after. A necropsy coordinated by the USFWS revealed that the chick died from pneumonia and its stomach was empty. Piping plovers have been documented on-site during the early spring of 2008 through 2011. During the 2009 breeding season, a pair of piping plovers and a single chick that had originated from the Wreck Pond beach (located approximately one mile north) migrated to the Sea Girt NGTC. The chick moved several times between Wreck Pond and the Sea Girt NGTC using the site as an alternate foraging habitat and refuge before fledging, which is estimated to have occurred on July 16, 2009.

During the breeding season in 2012, a single piping plover was observed at NGTC using the NPA habitat for resting and foraging. Monitors identified the bird at NGTC within an open (blown out) portion of the central NPA. Monitors confirmed that the plover was separate from individuals at Wreck Pond. On May 27 and June 8, 2012, monitors again confirmed the presence of this piping plover within the NPA, loafing and traveling between the blown-out portion of the NPA and the intertidal zone to forage. In 2013, evidence of piping plover nest scrapes were observed in the Southern Protection Area (SPA) on April 30 and May 14, 2013 (Note the "SPA" was dropped by the USFWS in 2024 as a "Protected Area" and instead adopted as a "Plant Protection Strip). Guidance on Plant Protection Strips can be found here: (<https://www.fws.gov/sites/default/files/documents/Plant%20Protection%20Strips.pdf>).

The second scrape had tracks associated with it that matched piping plover. No piping plovers were spotted in the SPA at that time. The first piping plover spotted on-site was spotted on May 30, 2013. The bird was identified in front of the NPA and harassed by a sandpiper. No other piping plovers were observed by monitors at the NGTC during the remaining 2013 season (ASGECI 2014a).

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In 2014 and 2015, unpaired adult piping plovers were observed on site, but no nesting activity occurred. From 2016 to 2018, piping plovers were not surveyed on site due to lack of funding for the surveys; however, NJFW - ENSP did perform surveys on the site.

In 2019, two pairs of piping plovers nested at Sea Girt NGTC with a total of two fledged chicks. Piping plovers have nested on-site each year from 2019 to 2022. In 2020 and 2021, three chicks fledged both years. In 2022, although four chicks hatched, no chicks fledged due to predation and getting lost after a storm event. Additionally, one adult piping plover was predated by an avian predator, which contributed to the nesting failure in 2022. In 2023, for the first year after four consecutive years of nesting activity at the NGTC, no piping plovers nested on site. The pair of plovers, Joey and Hamlet, had been nesting at the NGTC since 2019. They were exceptionally successful in 2021, fledging three chicks. This was a feat that had never been accomplished by piping plovers before in NGTC history. However, in 2022, the pair faced extreme difficulty due to weather and predators, and were not successful in fledging any chicks. The mother, Hamlet, was lost to a predator attack shortly before the clutch of four eggs hatched. The suspected predator was a bird of prey, likely an owl or peregrine falcon. The father, Joey, managed to continue incubating and hatched four chicks, but all were lost naturally or to predation. Joey did not return to the NGTC for the 2023 season.

Piping plover habitat use at NGTC may be limited, in part, by a combination of dense vegetation cover, erosion, and the presence of foxes. However, given the successful fledging of several chicks recently, with active management of predators and habitat enhancement to control vegetation densities and provide materials such as shells to build nest scrapes, the site can support breeding plovers.

Seasonal vegetation data between 2008 and 2010 showed a trend toward increasingly dense American beachgrass population within much of the Study Area (see Section 6.3.2.1). The USFWS Atlantic Coast Piping Plover Recovery Plan (1996a) encourages land managers to remove or reduce dense vegetation to provide suitable habitat for beach nesting birds and rare beach plant species. In 2018, a Coastal Zone General Permit 2 was obtained for Sea Girt NGTC to conduct beach and dune maintenance. These activities included beach raking in a portion of the NPA to achieve less than 50% vegetation cover with patches of vegetation between 5% and 20% in the frontal portion of the berm area. The owner is in the process of hiring a consultant to renew this permit in 2023.

#### **6.2.2.1 Impacts From Outdoor Recreational Use**

The small arms ranges are used for weapons training and qualification primarily by various state and federal law enforcement tenant agencies. Military units occasionally use the range for training only and not qualification. The NGTC has five outdoor ranges. The outdoor ranges are located in the eastern portion of the installation, immediately west of the dunes (Figure 2 2). Ranges 1, 2, and 5 are currently inactive. Range 1 is a practice hand grenade range, and Ranges 2 and 5 are small arms ranges. Ranges 3 and 4 are active, 25-meter baffle ranges. A total of 130,000 rounds of ammunition were utilized at the small arms range in 1994 and increased to 582,000 rounds in 2006. Between the years of 2013 and 2017, 490,000 rounds of ammunition were recorded. The lowest amount of ammunition utilized was recorded in 2020 during the Covid Pandemic and the largest amount of ammunition recorded was in 2021. A table showing the total ammunition rounds utilized over time is provided as Table 2-2.

An annual average of 64,184 visitors gained access to the Sea Girt NGTC beach from 2011 through 2016. Estimates decreased from 70,023 in 2011 to 59,178 in 2016. An annual average of 48,044 visitors gained

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access to the Sea Girt NGTC beach from 2017 through 2022. A table showing the amount of beach visitors overtime at the Sea Girt NGTC is provided as Table 7-1.

Beachgrass vegetative cover requirements for piping plovers range from less than 10 percent to 13 percent vegetative cover for the back and primary dune, respectively. The Sea Girt NGTC monitors the percent cover of beachgrass annually in three areas, the NPA, Former SPA, and the southern beach area, since 2008 to determine whether thinning may be warranted. Within the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017), the plan's Objective 4 states that American beachgrass vegetation cover in the NPA will be no greater than 50 percent with vegetation patches ranging from 5 to 20 percent cover in frontal portions. Following Hurricane Sandy in 2012, beachgrass percent cover decreased within the NPA and the southern beach area, thus considered ideal cover levels for piping plover. Beachgrass in the SPA rebounded since Hurricane Sandy; yet in recent years, has had cover less than 50 percent, ideal for piping plovers.

Note though that the SPA has been ruled out for vegetation management due to its proximity to private residences and proximity to the bathing beach. The 2022 vegetation assessment concluded an average cover of American Beachgrass of 15.29%, a decrease of 2.09% from 17.38% as of the 2020 vegetation assessment. The average cover of American Beachgrass in the NPA was 23.82%, an increase of 7.5% from 2020. The average cover of American Beachgrass in the SPA was 22.06%, a decrease of 13.77% since 2020. This decline in American Beachgrass cover could be attributed to an increase in plant diversity within the SPA. The average percent cover from 2008 through 2022 is presented in Table 6-7 (and its associated line graph, Figure 6-3).

#### **6.2.2.2 Impacts From Predators**

Rare beach nesting birds like the federally threatened and state endangered Piping Plover are highly susceptible to mammalian predation. Both the eggs and chicks of these species are potential prey items for predators and because these birds lay their eggs on the sand, they are particularly vulnerable to predation. Predation management is being conducted at the SGNCTC to help ensure breeding pairs of endangered species have the greatest chance of egg and chick survival. The red fox population has been reduced by two in 2017, ten in 2019, six in 2020, seven in 2021, six in 2022, and eight in 2023 due to predation management efforts to accommodate the security of endangered nesting bird species. Trapping efforts in the past appeared to be successful for piping plovers at the Sea Girt NGTC with two fledged chicks in 2019, three fledged chicks in 2020, and one pair successfully hatching and fledging three chicks in 2021 (CWF 2022).

**TABLE 6-2 SUMMARY OF PIPING PLOVER SURVEY DATA FOR SEA GIRT NGTC, 2000–2022**

<b>Year</b>	<b>Pairs<sup>1</sup></b>	<b>Unpaired Adults Observed</b>	<b>Nests</b>	<b>Eggs Laid</b>	<b>Chicks Hatched</b>	<b>Chicks Fledged</b>
2000	0	Yes	0	0	0	0
2001	0	Yes	0	0	0	0
2002	1	Yes	1	4	0	0
2003	0	Yes	0	0	0	0
2004	1	No	0	0	0	0
2005	0	Yes	0	0	0	0
2006	0	Yes	0	0	0	0
2007	1	Yes	1	4	1	0
2008	0	Yes	0	0	0	0
2009	0	Yes	0	0	0	0 <sup>2</sup>
2010	0	Yes	0	0	0	0
2011	0	Yes	0	0	0	0
2012	0	Yes	0	0	0	0
2013	0	Yes	0	0	0	0
2014	0	Yes	0	0	0	0
2015	0	Yes	0	0	0	0
2016	0	No	0	0	0	0
2017	0	No	0	0	0	0
2018	0	No	0	0	0	0
2019	2	No	2	8	7	2
2020	1	Yes	1	4	4	3
2021	1	Yes	1	4	4	3
2022	2	Yes	1	4	4	0

Nores:

1. Pairs refer to a male and female that display courtship or nesting behavior.

2. On June 25, 2009, a pair of piping plovers and a single chick had migrated from the Wreck Pond beach (approximately one mile north), where it had hatched, to the southern portion of the NPA at the NGTC. The chick moved several times between Wreck Pond and NGTC before fledging around July 16, 2009. The chick was considered to have fledged from the Wreck Pond beach.

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### 6.2.3 Seabeach Amaranth

Seabeach amaranth is an annual plant endemic to Atlantic Coast beaches and barrier islands, and usually grows on a pure sand substrate. The plant's primary habitats include over wash flats at accreting ends of islands, lower foredunes, and upper strands of noneroding beaches (landward of the wrack line). Seabeach amaranth occupies a terrestrial upper beach habitat, between eight inches and five feet above mean high tide. The plant is intolerant of even occasional flooding during the growing season, May through late fall. The habitat of seabeach amaranth is sparsely vegetated with annual herbs, and less commonly, perennial herbs (mostly grasses) and scattered shrubs.



*USFWS image, 2022.*

Vegetative associates of seabeach amaranth include sea rocket, seaside spurge, and other species of open, sandy beaches. Seabeach amaranth is a species of early successional beach habitats and is intolerant of competition. It does not occur on well-vegetated sites, especially where perennials have become established. The species shows a particularly strong negative association with American beachgrass. Seabeach amaranth is often associated with beaches managed for protection of beach-nesting birds. As an annual plant that relies on seed production, dispersion, and germination to reproduce, population size and locations of individual plants within suitable habitat can vary substantially from year to year. Threats to seabeach amaranth include disease, lack of beach nourishment projects that may deposit old seed from offshore, beach stabilization (particularly the use of beach armoring, such as sea walls and riprap), intensive recreational use, and herbivory by moth caterpillars such as webworms (*Pyralidae*) (USFWS 2004; USFWS 1996b). Data from seabeach amaranth surveys conducted at Sea Girt NGTC by the NJDEP Division of Parks and Forestry, Office of Natural Lands Management (ONLM), ASGECI, USFWS, VHB, and Conserve Wildlife Foundation are summarized in Table 6-3.

Seabeach amaranth surveys conducted by the NJDEP revealed the presence of seabeach amaranth between 2001 through 2006. After two consecutive years without observation, three plants were identified during the 2009 season. No seabeach amaranth plants were identified from 2010 through 2013. However, seabeach amaranth plants were present each year from 2014 through 2017. Notably, 50 plants were observed in 2015, much more than has been observed in previous and subsequent years.

In 2019, an experimental planting of 21 seabeach amaranth seeds was conducted within the SPA and NPA, which contributed to the overall total of 39 plants observed that year (CWF 2019). In 2020, only five plants were observed (CWF 2020). Four plants were observed in 2021 (CWF 2021). In 2022, three plants were observed which all flowered, budded, and dropped seeds (CWF 2022).

The population of seabeach amaranth is declining regionally since an initial explosion in population from around 2000 to 2004. New Jersey plant numbers dropped from 6,522 in 2006 to 2,185 in 2007 (ASGECI 2011). Diseases may be responsible for some population loss; however, habitat loss and lack of beach nourishment projects that may have deposited old seed from offshore onto the beaches is suspected as the primary reason for major population decline. The seabeach amaranth was expatriated from New Jersey from around 1913 until it was rediscovered in 2000. Its return roughly corresponds with the onset of beach nourishment projects conducted by the USACE, and several large storms that have occurred locally.

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The USFWS recommends the following measures for protecting seabeach amaranth on Atlantic coastal beaches within New Jersey, of which Sea Girt NGTC implements at the site per the USFWS technical assistance letter (*Recommendations for Protection of the Federally Listed (threatened) Plant Seabeach Amaranth*, October 24, 2017):

- Prohibit beach raking from the landward limit of the beach berm (i.e., dune, seawall, bulkhead, boardwalk, commercial/residential structure) to the mean high-water line from May 15 to November 30. This prohibition should be reflected in CAFRA permits from the NJDEP-DLRP. Applicants requesting a waiver from permit conditions regarding the length or width of a "no rake" zone should contact the Service to arrange a site visit and should be prepared to propose additional areas of suitable habitat elsewhere within the same municipality that will be managed for seabeach amaranth. Detailed discussion of restrictions on beach raking at Sea Girt NGTC can be found in Section 6.3.6.
- Prohibit sand scraping (i.e., bulldozing) year-round. This prohibition should be reflected in CAFRA permits from the NDEP DLRP. Detailed discussion of restrictions on sand scraping at Sea Girt NGTC can be found in Section 6.3.7.
- Restrict vehicle use to only essential (non-routine) and emergency services, and to the area below the mean high-water line. These restrictions should be implemented from 15 May to 30 November. Detailed discussion of restrictions on vehicle use at Sea Girt NGTC can be found in Section 6.3.5.
- Route people away from protective zones, in areas of high pedestrian traffic, using string-and-post symbolic fencing. The Service may be contacted for site-specific fencing recommendations. Detailed discussion of restrictions on pedestrian traffic and pets at Sea Girt NGTC can be found in Section 6.3.4.
- Limit vegetation planting and sand fencing to dune areas, allowing the upper beach to remain unstabilized and sparsely vegetated. Use only native species of vegetation for any planting in accordance with N.J.A.C. 7.78-34.4. Detailed discussion of dune and vegetation management at Sea Girt NGTC can be found in Section 6.3.12.
- Coordinate surveys and monitoring with the Service. Detailed discussion of seabeach amaranth monitoring and data sharing at Sea Girt NGTC can be found in Section 6.3.10.2.

The above measures are covered in detail, with additional measures, in Section 6.3. Intentional seed distribution was not previously a method recommended by USFWS, but Sea Girt NGTC will work with USFWS and USDA to implement a plant propagation program for seabeach amaranth, if the USDA and USFWS are interested.

**TABLE 6-3 SUMMARY OF SEABEACH AMARANTH SURVEY DATA FOR SEA GIRT NGTC, 2001–2022**

<b>Year</b>	<b>Plants</b>
2001	1
2002	18
2003	6
2004	9
2005	12
2006	4
2007	0
2008	0
2009	3
2010	0
2011	0
2012	0
2013	0
2014	2
2015	50
2016	11
2017	1
2018	0
2019	39
2020	5
2021	4
2022	3

**6.2.4 Least Tern**

Present on New Jersey beaches from early May through August, least terns’ nest in colonies on sandy beaches above the high tide line, and occasionally on sandy fill on bay islands. The birds lay one to three eggs in a nest scraped in the sand. Eggs hatch after about 21 days. Adult birds feed a diet of fish to the chicks, which remain in the colony for two to three weeks, until they fledge, usually between mid-July and mid-August. All adults in the colony participate in defending eggs and chicks against predators and human disturbance. Threats to the least tern include habitat loss, human disturbance of nesting birds, predation, flooding, oil spills, and other contaminants (USFWS 2004; USFWS and ENSP n.d.).



*USFWS image, 2022.*

Data from least tern surveys conducted at Sea Girt NGTC by the NJDEP-ENSP, Conserve Wildlife Foundation, USFWS, and consultants are summarized in Table 6-4. High annual variability in the number of adults and nesting success has been observed at the NGTC. In 2012, at least one tern colony with at least 34 terns attempted to nest on NGTC, first in front of the SPA and then within the NPA. Eventually one pair nested but the nest failed, possibly due to predator presence. In 2013, post Hurricane Sandy conditions on the

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NGTC beach included a leveling of beach topography and massive reduction in vegetation cover. Least terns did not attempt to nest on-site in 2013; however, least terns were recorded flying overhead on July 24, 2013 (ASGEI 2014a). In 2015, 19 least tern nests were observed at Sea Girt NGTC. Nests were also present in 2016 and 2017. In 2019, 31 adult least terns were observed, and 14 nests were created. From the 14 nests, only one chick fledged from the colony. In 2022, two adults were observed on site, but no nests were created.

Specific causes of the least tern population and nesting success fluctuations observed at Sea Girt NGTC since 2000 are unknown. However, several factors could be contributing to the observed fluctuations, including changes in habitat suitability due to coastal dynamics affecting beach morphology, beach erosion, and dune plant succession; disturbance by predators; and public use of the beach. Terns tend to move colonies annually across sites (due to habitat conditions, presence of predators, and disturbance levels). Even though terns attempt to occupy NGTC annually for nesting, Sea Girt NGTC still provides important habitat within the larger mosaic of suitable nesting habitat annually.

**TABLE 6-4 SUMMARY OF LEAST TERN SURVEY DATA  
FOR SEA GIRT NGTC, 2000-2022**

<b>Year</b>	<b>Adults</b>	<b>Nests</b>	<b>Chicks Fledged</b>
2000	15	4	15
2001	197	101	14
2002	48	12	9
2003	26	4	0
2004	0	0	0
2005	2	1	0
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	0	0	0
2010	0	0	0
2011	0	0	0
2012	35	14	0
2013	1	0	0
2014	0	0	0
2015	30	19	0
2016	3	2	0
2017	4	1	0
2018	0	0	0
2019	31	14	1
2020	0	0	0
2021	0	0	0
2022	2	0	0

**6.2.5 Seabeach Knotweed**

Seabeach knotweed occurs along the Atlantic Coast on sandy beaches, dunes, dune-hollows, coastal pond shores, and margins of saline marshes. Most seabeach knotweed occurrences in New Jersey are on sandy beaches where the plants generally occur above the limit of the tide. Seabeach knotweed is a pioneer species of unstable habitats created by wash overs and active sand deposition. Flowering and fruiting take place from May to November. Vegetative associates include American beachgrass and seabeach spurge. The species is considered rare throughout most of its range. Threats include off-road vehicles, mechanical beach raking, and beach reclamation projects (Schuyler 1990). Seabeach knotweed was first documented at Sea Girt NGTC by the USFWS during a site visit conducted on July 23, 2003. Two plants were identified by the USFWS in 2004, one in 2005, and five in 2006. No plants were found during surveys conducted from 2007 through 2013 by both USFWS and ASGECI. No plants were observed from 2018 to 2021. In 2022, one seabeach amaranth plant was observed south of the NPA. The plant was able to germinate, flower, and seed because of the extension of the NPA fencing into the south beach (CWF 2022).

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### 6.2.6 Red Knot



USFWS image, 2022.

The red knot (*Calidris canutus rufa*) is a medium-sized shorebird that migrates annually between its breeding grounds in the central Canadian Arctic and several wintering regions as far south as Tierra del Fuego. During both spring and fall migrations, red knots use key staging and stopover areas to rest and feed (USFWS 2014). The red knot is a federally listed bird (threatened), state listed as endangered, and protected by the Migratory Bird Treaty Act. Rufa red knots also occur on the NJ coast during fall migration (July 1-Nov 30). Outside of Delaware Bay, the main part of the diet is small bivalves such as clams and mussel spat (USFWS 2024).

The New Jersey Atlantic Coast is a critical stopover place for the species; large flocks arrive along the coast in May through June to coincide with the spawning season of the horseshoe crab (*Limulus polyphemus*) (USFWS-New Jersey Field Office to NJDEP DLRP, n.d.). Key areas used as stopover habitat by red knots along the coast are characterized by unstabilized inlets and typically feature intertidal sand flats exposed on a falling tide, but continuous beaches have also been utilized (USFWS 2017).

The beaches of Sea Girt, including at the NGTC, are not known to be frequented by red knots during migration (M. Kolk, USFW-New Jersey Field office, personal communication, 15 November 2017); however, eBird reports citizen sightings of red knots since 2013 near Wreck Pond and Spring Lake, just north of the installation. The most recent sighting at these locations included three red knots during the fall migration period on August 21, 2017, during the solar eclipse (eBird 2017). Recent monitoring of rare species on the installation frequently scanned for red knot around the mudflats of Stockton Lake at the request of NJDEP and USFWS; however, the species has not been observed at, or adjacent to, Sea Girt NGTC to date (CWF 2022).

USFWS released the Recovery Plan for the Red Knot in March 2023 required under the ESA (USFWS 2023a). NGTC staff should be aware of their potential presence and avoid disturbance if encountered. During red knot migratory periods, if red knots are observed at the NGTC, it may be warranted to implement a beach driving restriction to avoid direct lines of travel through shorebird flocks and/or maintain a specified distance from any flocks. The rufa red knots require a buffer of at least 400 feet, based on Paton et al. 2014. Larger buffers may be needed for motorized activities (USFWS 2024).

### 6.2.7 Osprey

The osprey is a large raptor with a wingspan of four and one-half to six feet. As a fish-eating species, the osprey is strictly associated with bodies of water that support adequate fish populations. Consequently, ospreys inhabit coastal rivers, marshes, bays, and inlets, as well as inland rivers, lakes, and reservoirs. Ospreys nest on live or dead trees, man-made nesting platforms, light poles, cellular phone towers, channel markers, abandoned duck blinds, or other artificial structures that are near fishing areas and offer an unobstructed view of the surrounding landscape. Territories typically contain poles, snags, or structures near the nest on which the osprey perch. Ospreys generally return to New Jersey in late March and take up nesting in April.

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Osprey populations in New Jersey experienced substantial population declines in the late 1800s and early 1900s due to habitat loss, eradication of nest trees, egg collecting, and shooting. Further declines attributable to the pesticide dichloro-diphenyl-trichloroethane (DDT) and other contaminants occurred from approximately 1946 through 1975. However, populations have been increasing in New Jersey and elsewhere due to the ban of DDT, reintroduction of healthy eggs, construction of nesting structures, and the osprey's acceptance of artificial nest sites. The New Jersey population grew from a low of 68 pairs in 1975 to 366 pairs in 2003, the majority of which were located along the Atlantic Coast (NJDEP 2004; Todd Pover, personal communication).

A pair of ospreys nested at Sea Girt NGTC for the first time during 2004 and successfully fledged two chicks.



*Osprey game camera photo of two nestlings at five weeks after hatching (6/29/2022).*

The nest was located along Stockton Lake in a temporary cellular phone tower owned and operated by a private company. The company constructed a permanent cellular phone tower during the installation and removed the temporary equipment following the 2004 nesting season. A second nest was established on the permanent tower during 2005 and in multiple seasons since.

The presence of a large nest in the cellular phone tower could lead to operational and maintenance issues. Cellular phone companies are permitted to disturb an osprey nest to conduct operation and maintenance activities when conducted outside of the nesting period of April 1 to August 31 (NJDEP Fish and Wildlife 2012b). However, companies often opt for providing and encouraging the use of an alternative nest site to resolve such issues and avoid future timing restrictions. Currently, there are no deterrents on the cellular tower, and the breeding pair continues to use the cellular tower. The Sea Girt NGTC and the cellular tower owner, in consultation with the NJDEP-ENSP, are considering various deterrents that would prevent the ospreys from nesting on the tower. Actions considered include discouraging nest establishment by enclosing the structure with screens to discourage the ospreys from utilizing it. These actions have not yet been implemented. The CFMO-EMB Natural Resources Manager will continue to monitor the nesting activity and report the findings to the NJDEP-ENSP annually and work to convince the cell tower owner to install nest deterrents and conduct all tower upgrades in accordance with the NJDEP's raptor and osprey nest management guidance document (NJDEP 2020).

In August 2008, Sea Girt NGTC received approval from the NJDEP for a Coastal General Permit #22 for Avian Nesting Structures to erect an alternate nest platform. The pole and platform were installed adjacent to Stockton Lake on September 16, 2008. Ospreys never attempted to nest on this platform. The platform was destroyed during the winds and flooding during Hurricane Sandy on October 29, 2012.

### **Osprey Watch**

The Center for Conservation Biology operates an Osprey Watch program, providing access to annual survey data for the Sea Girt NGTC nests (# 3307 and 5711).

<http://www.osprey-watch.org/nests>

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In 2013, a pair of ospreys attempted to build a nest on a power pole near Building 73. The nest was blown down during construction. In 2014, a pair of ospreys rebuilt the nest on the same pole and may have successfully fledged chicks. To lure the pair off the power pole, in 2015 a nest platform was installed on an adjacent out of service pole along with a pair of game cameras. The pair returned to the power pole nest in



*Osprey Platform with Game Cameras (July 2017).*

2015. At the end of the 2015 season, a high voltage electrical contractor moved the nest to the platform. In 2016, the pair laid two eggs in the platform nest, but abandoned it by July 2016. The pair returned in 2017 to lay three eggs. However, the game cameras failed by May 2017. Young were observed in July 2017.

Due to surveys occurring late in the season, no ospreys were observed in 2018 (CWF 2018). In 2019, there were two pairs of nesting osprey and five total fledglings (CWF 2019). In 2020, there were two pairs of nesting osprey and two fledglings (CWF 2020). In 2021, there were two nesting pairs and two total fledglings (CWF 2021). In 2022, there were two pairs of nesting ospreys, one on the large communications tower on the western side of Sea Girt NGTC property and one on the osprey platform on top of a power pole on the east side of the property. A total of five nestlings fledged from their nests in 2022 (CWF 2022). In 2023, there were four pairs of nesting ospreys, one on the large communications tower on the western side of the site, one on the eastern nest tower, one on a power pole east of the Youth Challenge building, and one on a power pole west of the Youth Challenge building (CWF 2023).

On June 24, 2023, a fire started on a utility pole due to a soaked osprey nest. The two power pole nests were removed by the utility company so power could be safely restored to the campus. One nest was empty, and one nest contained three unharmed chicks. The chicks were brought to The Raptor Trust (TRT) for care while a new nest box could be installed on an empty utility pole. A new nest box was installed on June 26, 2023, on a bare utility pole just east of Building 60, and the chicks were retrieved from TRT. A reunion between the chicks and parents was attempted, but unfortunately failed. The chicks were brought back to TRT until foster nests could be found (CWF 2023).

CWF biologist, Ben Wurst, found two foster nests in Barnegat Bay. Each nest contained one chick about the same age as the NGTC chicks. The NGTC chicks were fostered into the Barnegat Bay nests successfully on June 28, 2023, and are being checked regularly. One nest was fitted with a camera so updates could be provided (CWF 2023).

The New Jersey State Police conducts annual road driver stop training to include the use of firearms with blank rounds on the road proximate to the osprey platform. This activity has had little effect on the nesting ability of the ospreys given their high fledging success rate.

One or two chicks are fledged almost annually from both the cell tower and platform, as documented by contractors (e.g., ASGECI 2014a report) and two game cameras installed by CFMO-EMB. Nest activities for both nests are reported to The Center for Conservation Biology Osprey Watch program (Nests 3307 and 5711) by CFMO-EMB.

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### **6.2.8 Saltmarsh Sparrow**

Saltmarsh sparrow (*Ammodramus caudacutus*) occurs along the Atlantic Coast from New Jersey through mid-coast Maine. It is typically found in saltmarsh/meadow habitat—saltmarsh cordgrass, saltmeadow cordgrass, or needlerush (*Juncus gerardii*). It nests in clumps or thatches of grasses, slightly elevated above soil surface with vegetation or wrack canopying the nest. Nesting habitat is typically within infrequently flooded estuarine intertidal marsh. Saltmarsh sharp-tailed sparrows feed on insects, spiders, and small invertebrates during the breeding season, and feed on seeds of grasses and other plants in the fall and winter. The most common cause of nest failure is flooding. Predators to saltmarsh sharp-tailed sparrow include northern harrier, short-eared owl, crows, rats, red fox, raccoon, and occasionally snakes (USFWS 2001).

The saltmarsh sparrow has been observed migrating through Sea Girt NGTC, but species-specific surveys have not been conducted since the species is not currently listed as a federal threatened or endangered species. The USFWS is undertaking a discretionary status review of the saltmarsh sparrow to determine whether the species warrants listing under the ESA. A listing determination is expected by September 9, 2024 (<https://www.fws.gov/sites/default/files/documents/national-domestic-listing-workplan-fiscal-years-2023-2027.pdf>).

### **6.2.9 American Oystercatcher**

American oystercatchers are a beach-nesting bird and are listed as species of special concern in New Jersey. They return to New Jersey in early March to establish territory and nest. New Jersey holds an estimated 15% of all breeding American oystercatchers (AMOYWG 2022). They make their nests on beaches by scraping a shallow depression in the sand just above the high tide line or on back-bay islands.

In 2011, a pair of American oystercatchers initiated early nesting activities on the Sea Girt NGTC beach within the historic piping plover nesting area. Two nest scrapes were identified, and an individual from the breeding pair was observed sitting on one of the scrapes; however, a nest was not produced, and the pair eventually moved off-site (ASGECI 2012a).

In 2019, one American oystercatcher pair nested on site in the southern half of the NPA. Both adults were unbanded. The nest was found on June 6th with one egg and was found being incubated at full clutch (two eggs) on June 10th. On June 13th a tidal surge and storm washed over the original nest location, causing the eggs to be pushed back towards the grass line further on the berm. The pair made a new scrape for the eggs and continued to incubate the nest after this storm event. The nest was lost on June 19<sup>th</sup> due to fox predation (CWF 2019). In 2020, two nesting attempts were made by the same pair but both nests were failed due to fox predation (CWF 2020). In 2021 and 2022, multiple American oystercatchers were observed on site, but no nesting attempts were made (CWF 2021). In 2023, American oystercatchers made a nesting attempt just outside of the NPA with one egg in the nest. The nest failed due to possible predation and high tides (CWF 2023).

### **6.2.10 Northern Long-Eared Bat**

The northern long-eared bat (NLEB) has recently been reclassified from federally threatened to federally endangered under the ESA (16 U.S.C. § 1531 et seq.). The final rule to reclassify NLEB as federally endangered was published in the Federal Register on November 30, 2022, and took effect March 31, 2023 (Federal

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Register, Vol. 87 No. 229). The northern long-eared bat is found across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where the species has declined by up to 99 percent from pre-white-nose syndrome levels at many hibernation sites.

The species typically overwinters in caves or mines and spends the remainder of the year in forested habitats. As its name suggests, the NLEB is distinguished by its long ears, particularly as compared to other bats in the genus *Myotis*. Recordings of NLEB calls were identified during automated analysis of the 2009-2010 Wind Turbine Avian and Bat Study discussed in Section 2.7.3.1. However, not all calls were manually reviewed, therefore species presence is not confirmed at the site.

#### **6.2.11 Tri-colored Bat**

On September 14, 2022, the USFWS published their proposal to list the tri-colored bat as endangered under the ESA (Federal Register, Vol. 87, No. 177). The tri-colored bat is a small insectivorous bat that is distinguished by its unique tricolored fur and often appears yellowish to nearly orange. The once common species is wide ranging across the eastern and central United States and portions of southern Canada, Mexico and Central America. During the winter, tri-colored bats are often found in caves and abandoned mines, although in the southern United States, where caves are sparse, tri-colored bats are often found roosting in road-associated culverts where they exhibit shorter torpor bouts and forage during warm nights. During the spring, summer, and fall, tricolored bats are found in forested habitats where they roost in trees. In addition, tricolored bats have been observed roosting during summer among pine needles, eastern red cedar (*Juniperus virginiana*), within artificial roosts like barns, beneath porch roofs, bridges, concrete bunkers, and rarely within caves.

Like NLEB, tri-colored bats face extinction due primarily to the range-wide impacts of white-nose syndrome. Tri-colored bats were documented during acoustic surveys in the 2009 proposed wind turbine avian and bat survey as discussed in Section 2.7.3.1.

#### **6.2.12 Monarch Butterfly**

With its iconic orange and black markings, the monarch butterfly is one of the most recognizable butterfly species in North America and is known for its impressive long-distance migration. Monarch butterflies use a wide-variety of habitats including fields, roadside areas, open areas, wet areas, urban garden, or anything that contains milkweed and flowering plants. Adult monarchs feed on the nectar of many flowers during breeding and migration, but they can only lay eggs on milkweed plants. In December 2020, monarch butterflies were listed as a Candidate Species under the ESA. The listing under the ESA is warranted but precluded at this time by higher priority listing actions. As a candidate species, the monarch butterfly does not currently have any federal protections. However, the restored wetland and the rain garden on site may provide suitable habitat for the monarch butterfly and may become a part of future survey work. Monarchs may also occur in vegetation portions of the dune or beach where nectar plants occur, such as goldenrod species (USFWS 2024).

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### **6.2.13 Rare Species with Potential to Occur at Sea Girt NGTC**

Although the following rare nesting bird and plant species have not been documented nesting/growing at Sea Girt NGTC, they might colonize the beach in the future, based on the availability of potentially suitable habitat. These rare species with potential to nest/grow at Sea Girt NGTC are as follows:

- Black skimmer (*Rynchops niger*) – colonial beach-nesting sea bird, state-listed as endangered.
- Common tern (*Sterna hirund*) – beach-nesting sea bird, State species of special Concern.
- Red knot (*Calidris canutus rufa*) – migratory bird with potential stopover sites on adjacent offsite tidal marsh of Stockton Lake, federally listed as threatened, state-listed as endangered.
- Seabeach evening primrose (*Oenothera humifusa*) – beach and dune habitats, state Species of Special Concern.
- Sea-milkwort (*Glaux maritima*) – beach and salt marsh habitats, state Species of Special Concern.
- Seabeach sandwort (*Honckenya peploides*) – beach and dune habitats, state-listed as endangered.
- Seabeach purslane (*Sesuvium maritimum*) – beach habitats, state Species of Special Concern.
- Roseate tern (*Sterna dougallii*) – colonial beach-nesting sea bird, federally-listed as endangered.

Each of the rare bird species above has been documented on-site but are not known to have nested at the installation. The habitat management and species protections established in this INRMP are expected to be sufficient to protect these species if they should become established. The NJDMAVA would work cooperatively with the USFWS, NJDEP-ENSP, and NJDEP-ONLM to manage the state-listed endangered species, if they colonize the Sea Girt NGTC beach.

## **6.3 BEACH MANAGEMENT**

### **6.3.1 Introduction**

This section discusses specific management issues and defines management practices for rare nesting bird and plant species that occur in the beach area at Sea Girt NGTC. These species include piping plover, seabeach amaranth, least tern, and seabeach knotweed. Management practices for these species are integrated because they share common habitats and management issues.

### **6.3.2 Description of Beach**

#### **6.3.2.1 Physical Attributes**

The Sea Girt NGTC beach consists of approximately 12.4 acres from the foredune to mean high tide. The beach is approximately 1,980 feet long by 270 feet wide, based on 2023 imagery. Three riprap groins are located along the installation's shoreline and additional groins are located to the north and south. The seaward side of the dunes has been reinforced with a concrete seawall, portions of which are exposed or partially covered with sand.

#### **Beach Topography**

Beach topography surveys have been conducted periodically from 2008 to 2020 in an effort to better understand the beach's micro topography with an eye to manage it for successful beach nesting shore bird breeding habitat. The results of the beach topography surveys are summarized below.

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ASGECI analysis of Sea Girt NGTC beach topography during each fall between 2008 and 2010 revealed seasonal intertidal decreases in elevation of three to six feet. Other portions of the beach, including much of the primary dune community, generally underwent increases or decreases in elevation of approximately one foot during the study period. Many areas accumulated one foot or more of sand as a result of fall and winter storm overwash. Generally, dune peaks remained at elevations of 15 to 17 feet AMSL. Higher elevations occurred along the westernmost portions of the primary dunes, where sand accumulated against the sea wall and other structures. Elevations in these areas reached 20 to 25 feet AMSL. Similar maximum dune elevations were identified in the 2006 INRMP.

Since 2007, ASGECI typically has observed a partial replenishment, leveling, and stabilization of beach sand along the dune toe and intertidal zone each spring. This seasonal replenishment tempers some of the storm-driven fluctuations from the previous fall/winter storm season. This leveling effect varied each spring and, in some seasons, was less apparent, and habitat appeared less suitable for nesting piping plover. Hurricane Irene, in August 2011, eroded portions of the primary dunes at levels that appear greater than storms evaluated during the topographic study period; however, elevation data were not taken after this event.

The topographic data collected in September 2013 reveals that Hurricane Sandy altered nearly all topography and elevation of the beach and dune communities at Sea Girt NGTC. A general leveling of dune peaks was particularly noticeable in the NPA and frontal portions of the SPA. Areas containing peaks that were identified as high as 14 to 16 feet AMSL in the NPA were leveled, and the majority of the NPA was level at approximately 10 feet AMSL. In many sections of the SPA, there were elevation losses from approximately 15 to 10 feet AMSL and an overall narrowing of the beach berm. The topography and elevation in the rear portions of the SPA appeared to be less altered by Hurricane Sandy, and elevations remained, generally ranging from 15 to 20 feet AMSL (ASGECI 2014a).

As part of a region-wide beach replenishment project extending into New York, the USACE replenished Sea Girt beaches with sand taken from offshore borrow areas. The sand was hosed onto the beach in January 2014. The result was a wide beach berm extending an additional 200 to 400 yards at an approximate elevation of 10 feet AMSL (NAVD 88) (ASGECI 2014a).

During the summer months in 2019, there was a steep cliff in front of the NPA where the berm met the intertidal zone. High tides and wave action caused this cliff to become steep and unpassable by beach nesting birds like the piping plover. In 2020, there was a more gradual decline from the edge of the berm and piping plovers were able to easily forage (CWF 2020). This information was reflected in the topographic surveys done in 2018 and 2020 by Owen Little & Associates.

Due to the seasonal influence of storm intensity and frequency on the Sea Girt NGTC beach topography, periodic seasonal topographic analysis would be required in the future to determine long-term topographic trends. It would be expected that continued sea-level rise due to climate change may ultimately lead to greater loss of beach habitat in decades to come, particularly without any future artificial beach replenishment.

In 2014, Sea Girt NGTC partnered with Victoria University of Melbourne, Australia to install three Fluker posts ([www.flukerpost.com](http://www.flukerpost.com)) along the beach habitat to help monitor coastal and vegetation changes. Fluker posts were originally founded by Victoria University but has since been sold to a company called "We Make Apps" in Australia. These posts rely on "citizen science," allowing citizens to take photos from a fixed point using their mobile devices and upload the photographs via a Quick Response code. Victoria University organizes the photographs chronologically and hosts them on a publicly available Google Photos website. It is hoped the photographs can show historic changes to the beach landscape and add a qualitative analysis to the annual quantitative vegetative assessments at Sea Girt NGTC. Locations of the three Fluker posts at Sea Girt NGTC are shown in Figure 6-1. As of 2023, only one out of the three posts stand due to storms and vehicle collisions. NJDMAVA intends to reinstall them after the planned beach nourishment in 2023.



*Fluker Post at Sea Girt NGTC, 2022*

## **Dune Vegetation**

Dune vegetation surveys have been conducted periodically from 2008 to 2022 in an effort to better understand the beach's vegetation cover to manage it for successful beach-nesting shorebird breeding habitat. The results of the dune vegetation surveys are summarized below.

The dunes include areas classified as coastal dune grass (primary dune), coast dune shrubland (secondary dune), and successional/disturbed dune. The foredune areas are also vegetated with American beachgrass. Vegetation in the foredune area decreased substantially following Hurricane Sandy in 2012 but has subsequently recovered since beach nourishment by the USACE in the following season. Areas north and south of the Sea Girt NGTC installation generally lack well-established dunes. However, roughly one mile to the north, a vegetated dune system approximately 250 meters in length exists at the Wreck Pond beach.

Between 2008 and 2010, ASGECI collected vegetation and topographic data from the coastal dune grass (primary dune) community. For this study, multiple qualitative and quantitative vegetation assessment parameters and observations of abiotic conditions were incorporated to create a profile of beach habitat conditions. The three-year dataset indicated that American beachgrass represented approximately 80 percent of all beach vegetation cover and composition at the height of the growing season (ASGECI 2010b). Mean beachgrass cover levels within the entire study area ranged from approximately 40 to 50 percent. Several other species contributed to cover and composition in significantly smaller amounts. These species included seaside goldenrod, which was typically under 10 percent; as well as sea rocket, salt meadow cordgrass, and northern bayberry, which each represented under 5 percent of total of beach vegetation species cover during the peak of the growing season. About 20 other species have represented one percent or less of cover and composition (ASGECI 2010b) during various study seasons. The primary dune contained

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extremely dense patches of American beachgrass (80 to 100 percent cover) interrupted by occasional bare sandy areas that generally contain greater amounts of beachgrass community associates, sea rocket, purple sandgrass, or seaside spurge.

The post-Sandy cover data collected in 2013 indicated the near complete loss of vegetation cover and a highly uneven cover distribution. The mean American beachgrass cover percentage for the NPA in 2013 was  $0.24 \pm 0.48$ , varying from the 2008 cover percentage of  $41.91 \pm 7.58$ . The overall mean cover percentage for the Study Area was determined to be  $2.23 \pm 2.00$ , indicating an approximate 95 percent loss of beachgrass cover from the 2008 results (ASGECI 2014a).

During the subsequent season, the USACE expanded the NGTC beach as part of a shoreline restoration project that extended through Monmouth County. This expansion of the beach has currently allowed for the recolonization of American beachgrass at cover levels of 5 to 20 percent within the habitat protection areas (ASGECI 2017). In 2014 and 2015, the average cover of American beachgrass in the overall study area increased to 9.56% and 12.96%, respectively (CWF 2018).

In 2019, the average cover of American beachgrass in the overall study area was 18.15%, with the cover increasing greatly in the NPA after a nearly complete loss of vegetation from Hurricane Sandy in 2012 (CWF 2019). There were similar results in 2020, with an average cover of 17.38% of American beachgrass in the overall study area (CWF 2020). In 2022, the average cover of American beachgrass in the overall study area decreased slightly to 15.29%, with about 23% cover in both the NPA and the SPA. There was also an increase in plant species diversity in 2022 (CWF 2022).

The Sea Girt NGTC primary dune toe and adjacent intertidal areas are topographically dynamic and vegetation cover fluctuates substantially from season to season depending on the frequency and severity of large storms, high tides, and high wind. American beachgrass responds positively to this dynamic environment and tends to rapidly recover disturbed areas, particularly those areas where seasonal sand accretion of around one foot has occurred.

### **6.3.2.2 Beach Management Responsibility**

The Sea Girt NGTC boundary extends east to the mean high tide line. Areas between mean high tide and mean low tide are considered tidelands and are owned by the State of New Jersey. The Adjutant General has overall management responsibility for all NJDMAVA-owned property and the Director, Sea Girt NGTC, has responsibility for day-to-day management of the installation. The Borough of Sea Girt provides lifeguard services for the Sea Girt NGTC beach via agreements with the NJDMAVA. Sea Girt NGTC staff operates the NJDMAVA-owned beach rake.

#### **6.3.2.2.1 Manasquan Borough**

The Borough of Manasquan abuts the southern border of the Sea Girt NGTC and has updated their Beach Management Plan in April 2021. Manasquan has created a precautionary zone for listed species from Stockton Ave to the site's Southern beach border between the water's edge and the nearest landward home (about 265 feet). Beach raking and routine driving will be prohibited from March 15 to August 31 during the nesting season to promote nesting of beach-nesting birds and the growth of rare plants. If no listed species appear by July 15, including unfledged plover chicks at National Guard Training Center, Manasquan can rake this area. Additionally, sand scraping will be prohibited year-round in the precautionary zone. This protection measure has unintended consequences of the recreational beach use and beach management

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on the site's mission if beach nesting shore birds successfully breed in Manasquan's precautionary zone and migrate onto the site's beach. If beach nesting birds successfully breed in the precautionary zone, protection measures will follow the applicable State and Federal laws and regulations (i.e., no driving, no raking, no dogs) while the birds are present. recreational use and beach management.

Manasquan has a designated "recreational zone" which spans the developed recreational beach from Stockton Avenue to the Manasquan Inlet. Any listed species documented in this zone will receive protection as required by applicable State and Federal laws and regulations. Within this zone, a plant protection strip will be designated at the westward limit of the berm (sand fence) and measure approximately 15 feet or 10 percent of the beach width (whichever is smaller) to encourage colonization by listed beach plants. The plant protection strip will be implemented from the beach access point at Ocean Avenue south to the Manasquan Inlet. Beach raking and routine driving will be prohibited within the Plant Protection Strip from May 15 to November 30.

#### **6.3.2.2.2 Sea Girt Borough**

Sea Girt NGTC is within Sea Girt Borough. Sea Girt Borough has updated their Beach Management Plan in 2021 to include protection and management for listed species. Three zones were designated for specific uses, the Protected Zone, the Precautionary Zone, and the Recreational Zone. The Protected Zone spans approximately 0.1 miles from the northern boundary of Sea Girt Borough south to the northern side of the Beacon Boulevard jetty. This area will have restrictions on beach raking and driving and prohibits sand scraping year-round excluding the beach access points.

The Precautionary Zone spans approximately 0.05 miles from the northern side of Beacon Boulevard jetty south to the southerly curb-line of Beacon Boulevard. This zone will be managed to promote the protection and recovery of listed species only upon notification of a listed beach-nesting bird nesting in the Protected Zone. Restrictions on vehicle use will only occur upon notification of beach-nesting birds hatching. These restrictions would remain in effect until the fledging or mortality of all plover chicks.

The Recreational Zone spans approximately 0.92 from the southerly curb-line of Beacon Boulevard to the municipal boundary with Sea Girt NGTC at Sea Girt Avenue. This zone is comprised of developed recreational beaches. Any listed species documented in this zone will receive protection as required by applicable State and Federal laws and regulations. There are no restrictions on beach raking, vehicle use or sand scraping with the exception of a "Plant Protection Strip" to encourage colonization by listed plants. The Plant Protection Strip will extend 10 feet from the east toe of the dune beginning at the jetty south of Philadelphia Boulevard and extending 350 feet south. In addition, a Plant Protection Strip will also extend the length of the Crescent (Philadelphia Boulevard south to Trenton Boulevard, 0.3 mile) west of the dune and east of the boardwalk. Beach raking and vehicle use will be prohibited in the strip from May 15 to November 30 and sand scraping will be prohibited year-round (with the exception of beach access paths).

#### **6.3.2.3 Beach Access and Use**

Authorized personnel from the installation can gain access to the beach via two sand roadways located on the northern and southern ends of the beach (Figure 6-1). The southern end serves as the primary access point for recreational use and includes a pedestrian walkway for authorized recreational users. General public access to the beach is not provided through the installation. However, the public can gain access to the area from the north and south via the beach. Military training conducted on the beach and recreational uses of the beach are described in Sections 6.3.8 and 7.2, respectively.

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### **6.3.3 Restricted Areas**

Restricted areas referred to in this INRMP include the northern rare species protection area (NPA), former southern rare species protection area (SPA), the no rake zone, the 100-meter vehicle buffer around the northern protection area, and any additional area that may be established, as necessary, to protect any rare species.

#### **6.3.3.1 Northern Rare Species Protection Area and Former Southern Protection Area**

Two rare species protection areas (northern and southern) were established at the Sea Girt NGTC beach to protect rare species habitat and minimize human disturbance. The rare species protection area boundaries are depicted in (Figure 6-1) and are based on previously identified beach-nesting bird and seabeach amaranth locations. The boundaries have been mapped, and the data are contained in the NJARNG GIS. The NPA is approximately 870 feet long by 180 feet wide and covers 3.3 acres. The NPA has been established in the same general location since 2001. The SPA covers approximately 1.3 acres. The SPA was established for the first time in 2005. Perimeters of the protection areas change slightly each season based on site conditions including dune vegetation expansion or beach erosion. However, measures are being taken to prevent further encroachment of the dune vegetation into the bathing beach area to ensure the site's recreational goals are met. Most piping plover and least tern nesting activity to date has occurred within the NPA; however, a least tern nest with hatched chicks did occur in the SPA in 2015. All but one documented seabeach amaranth locations to date have been within the NPA or SPA boundary established for that season. Figure 6-1 depicts the locations of those rare species where GIS locations were collected.

Symbolic fencing, which consists of posts, string, and signage, is used to delineate the rare species protection areas in the field. The signage notes that the area is closed to protect rare species and provides information about prohibited activities. The rare species protection areas are generally maintained as off-limits year-round; however, the string fencing is installed from mid-March or early April through 1 December. These dates include the period when beach-nesting birds and/or rare beach plants might be present. NJDEP-ENSP/NJDMAVA staff will install the protection area fencing each year and cooperatively maintain the fencing through 31 August. Protective fencing should include all suitable habitat from the toe of the dune seaward, leaving a swath equivalent to the width of two vehicles from the edge of fencing to the wrack line. Sea Girt NGTC, CFMO-EMB, and USFWS (or its designee) staff will maintain the fencing from 1 September through 1 December and will remove the fencing after 1 December. At the discretion of NJDEP-ENSP and USFW, protection area fencing may be removed earlier than December 1 based on rare species activity level or in anticipation of severe weather conditions. The NJDMAVA will provide fencing materials and signs for the SPA, and the NJDEP-ENSP will provide materials for the NPA. NJDMAVA materials and signs are stored at Sea Girt NGTC or NJDMAVA HQ in Lawrenceville, NJ. Several management practices, which are described in the following subsections, are applicable to the rare species protection areas.

Future distributions of rare species on the Sea Girt NGTC beach are expected to be limited to the two established protection areas based on historic data and current habitat suitability. Nonetheless, habitat conditions are expected to change over time based on several factors, including beach erosion and planned USACE beach renourishment cycles. In addition, once piping plover chicks hatch, they become highly mobile. Therefore, rare species may occur outside the protection areas.

Accordingly, the following management practices have been established to ensure protection of species that might occur outside the established protection areas:

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- Surveys and monitoring are conducted as described in Section 6.3.10 to identify rare species that might occur outside the protection areas.
  - Boundaries of the existing rare species protection areas are evaluated annually and modified accordingly by the NJDMAVA, USFWS, and NJDEP-ENSP based on survey results, beach erosion, and beach renourishment.
  - Any piping plover and/or least tern nests found outside the rare species protection areas will be fenced immediately by the NJDEP-ENSP and NJDMAVA, providing a sufficient buffer to prevent disturbance of nesting birds. In addition, protection area fencing will be extended, as needed, upon detection of territorial birds, courting birds, or highly mobile chicks moving outside the protection areas. The NJDEP-ENSP and NJDMAVA will continue to monitor nests and enforce buffers. The protection measures outlined in this section, including those for unfledged chicks, will be implemented in coordination with the USFWS and NJDEP-ENSP. The protection measures will be implemented in a manner that affords adequate protection to the species, while minimizing impacts on the military mission, including recreational use of the beach. Any American oystercatcher that establishes a nest outside of the fenced area, the protection area fencing will be expanded if it is proximate to the protection area, or a new fenced area will be established around the nest.

### **6.3.3.2 No Rake Zone**

A "no rake zone" has been established in front (seaward) of the NPA<sup>4</sup> (Figure 6-1). Beach rake operation is generally prohibited in the "no rake zone" from 15 March through 1 December especially if nesting beach-nesting shorebirds and/or unfledged chicks are present. However, if nesting shore birds and/or unfledged chicks are not present and after consulting with USFWS and NJDEP-ENSP, raking may occur to remove accumulated debris that has washed up onshore and/or remove any tire ruts.

This habitat is an important feeding area for unfledged piping plover chicks. Beach raking removes natural substrate, which piping plovers forage upon. As with other vehicles, beach rakes also have the potential to inadvertently run over unfledged chicks foraging seaward of the NPA. Additional discussion on vehicle usage and beach-raking restrictions can be found below (Sections 6.3.3.3, 6.3.5, and 6.3.6).

### **6.3.3.3 100-Meter Vehicle Buffer**

This buffer is established around the NPA when piping plover nests, unfledged piping plovers, and/or least tern chicks are present. The purpose of this protection measure is to prevent the unintentional crushing of chicks and/or eggs and creating tire ruts, which can trap chicks moving towards the water to feed. Routine and emergency vehicles not responding to a bona fide emergency are prohibited from the beach vehicle buffer when chicks are present onsite. A detailed discussion of implementation of vehicle restrictions can be found in Section 6.3.5.

### **6.3.3.4 Rare Plant Protection Strip**

This area(s) is established if seabeach amaranth and/or seabeach knotweed are identified outside the NPA and/or the former SPA. The purpose of establishing this area is to prevent vehicular and/or pedestrian traffic

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<sup>4</sup> The "no rake zone" shall extend from the eastern limit of the NPA to the western limit of the Atlantic Ocean; however, in the event of natural processes that may result in changes to the boundaries of the NPA or current dune area, the "no rake zone" shall extend westward to the base of the concrete seawall.

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from trampling the plant. String and post symbolic fencing shall be erected by the NJDMAVA around the limits of the plant or group of plants to include a three-meter buffer. If the rare plant is proximate to the established fence, the fence may be expanded to encompass the plant rather than establish a new fence. Alternatives to this approach will be implemented in coordination with the USFWS, if such fencing restricts routine use of the beach. The Plant Protection Strip will run the length of the NGTC beach, interrupted only at the beach entry points. Within the NPA, the strip should be at least 25% of the width of the dry beach (e.g., that area should remain fenced and free of vehicles/raking even when bird restrictions are lifted for the year). Outside the NPA, the strip should be at least 10% of the width of the dry beach. The strips should be located seaward of the toe of the dune as shown on Figure 6-1.

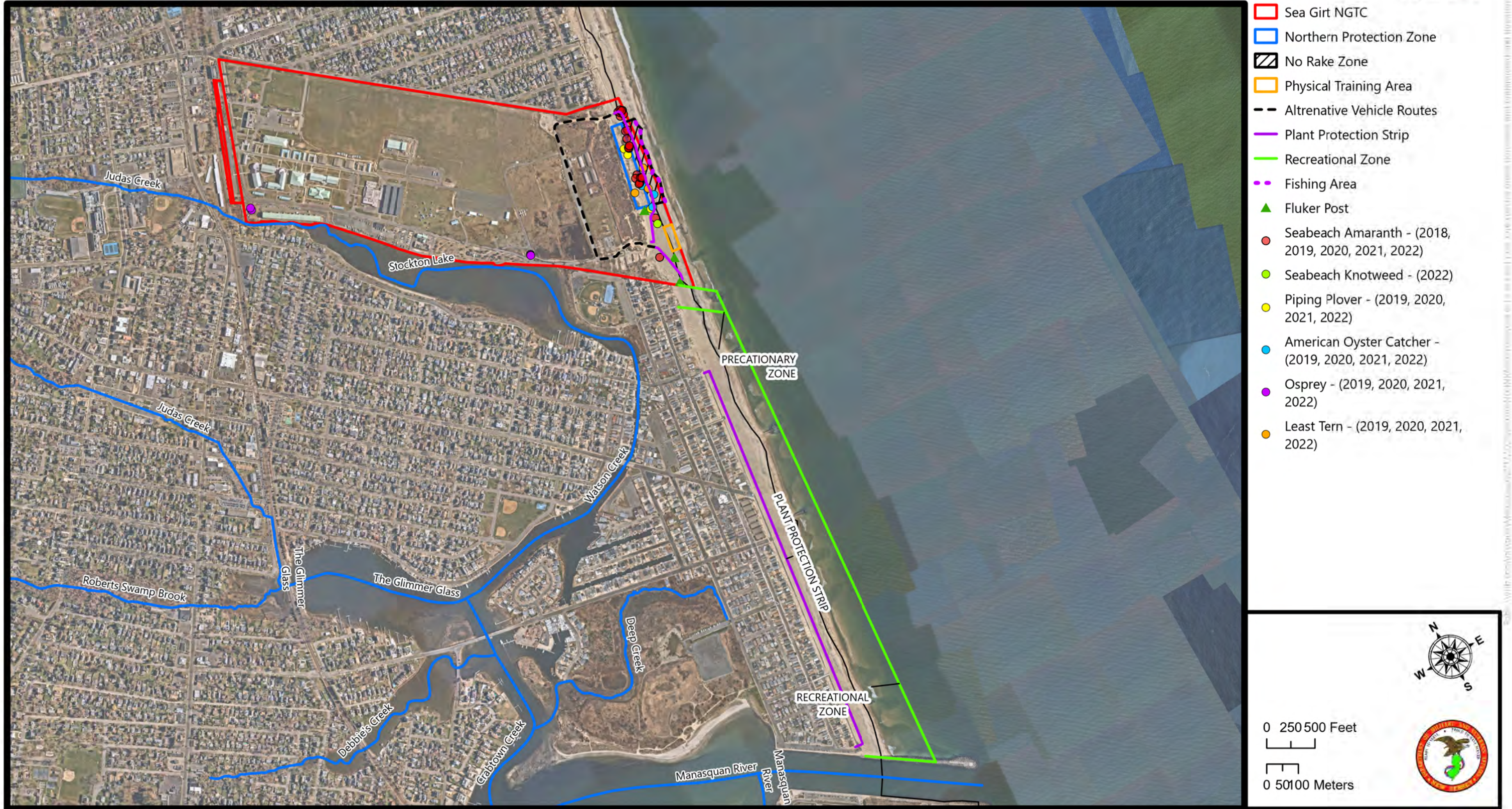
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**Figure 6-1 - Sea Girt NGTC Rare Species Protection Areas and Endangered and Threatened Species Locations**

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May 09, 2024



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#### **6.3.4 Pedestrian Traffic and Pets**

General pedestrian beach use is prohibited in the rare species protection areas always. Entrance in the protection areas (when piping plover nests, unfledged piping plovers, and/or least tern chicks are present) is limited to designated rare species monitors, or by others, if required for a bona fide emergency. The Sea Girt NGTC parking lot is open to visitors from 15 March through 1 December. Residents and others gaining access to the Sea Girt NGTC beach from the Sea Girt and Manasquan Borough beaches are allowed to travel on foot through the beach area year-round. Most recreational activity on the beaches occurs during the summer months and peaks during summer weekends and holidays. Crowds and pedestrian traffic during peak activity times are typically most concentrated on the Sea Girt NGTC beach south of the NPA.

Physical training activities, such as beach runs and group exercises, also occur on the Sea Girt NGTC beachfront. These activities are limited to a designated Physical Training Area whenever rare beach nesting birds are nesting, and chicks are present (see Figure 6-1). When implementation of the Physical Training Area occurs, all other portions of the Sea Girt NGTC beach will be closed to physical training activities. After chicks have fledged, activities such as running are permitted to enter through the “no rake zone” and other portions of the beach, as long as individuals remain outside the limits of the rare species protection areas. The New Jersey State Police utilizes an ambulance ATV during their beach physical training. If beach nesting birds are present, the ATV cannot be used on the beach, and physical training activities cannot be conducted in the no rake zone.

Pets are not allowed on Sea Girt NGTC property, including the beach, year-round. K-9 units may gain access to the beach when actively responding to a bona fide emergency; however, at all other times, they must be kept on a leash and kept at least 50 meters from the rare species protection areas. Trained goose control dogs may gain access to portions of the property, but at no time are they allowed on the dunes and beach, or within the rare species protection areas. Despite the pet restrictions at Sea Girt NGTC, off-leash dogs entering habitat areas remain problematic (Bill McBride, INRMP update kickoff meeting, 31 July 2017). See Section 6.3.11 – Predation management for additional information on pet controls measures.

In recent years, there has been an increase in Site visitors that have claimed their pet(s) are emotional support animals and meet the definition of a service animal under the Federal Americans with Disabilities Act (ADA). Service animals are defined as dogs that are individually trained to do work or perform tasks for people with disabilities. Dogs whose sole function is to provide comfort or emotional support do not qualify as service animals under the ADA. In July 2022, a memorandum was produced to provide guidance on service animal access to the National Guard Training Center. Sea Girt NGTC permits service animals to accompany individuals who are already authorized access to the installation, but emotional support animals are not permitted.

#### **6.3.5 Vehicle Use**

Vehicle use on the Sea Girt NGTC is limited to access for military training activities, municipal law enforcement patrols, lifeguards, and beach maintenance activities (i.e., beach raking). Vehicles are defined as a piece of mechanized equipment used for transporting people or goods, especially on land, such as a car, truck, or cart. Beach raking (see Section 6.3.6) and lifeguard patrols comprise a majority of the vehicle use on the Sea Girt NGTC beach. The Borough of Sea Girt guards the beach daily during the season (approximately late May through early September) to provide emergency response and identify hazards so

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that emergencies can be avoided. Lifeguards conduct routine vehicle patrols of the entire beach several times each day to ensure that beach surveillance is accomplished in areas that cannot be viewed from the lifeguard stands. During these patrols, equipment (e.g., life rafts, wheelchairs, etc.) and personnel are transported to the lifeguard stands, and necessary coordination and supervision is provided to the lifeguards staffing the stands. The following management practices apply to vehicle use at the Sea Girt NGTC beach:

- Privately owned vehicle use is prohibited on the entire beach year-round. A parking lot for authorized recreational beach users is provided near the southern beach access.
- Routine and emergency vehicle use is prohibited within the rare species protection areas (Figure 6-1) from 15 March through 1 December. Emergency vehicles are defined as military vehicles, ambulances, fire apparatus, and other emergency response equipment responding to an emergency call. Emergency vehicles do not include routine lifeguard traffic, vehicular law enforcement patrols, military vehicles conducting routine training, or routine facility maintenance activities. With the exception of an emergency, vehicles are not permitted to drive in front of the NPA "no rake" zone at all during the monitoring season. Although nests may be protected by a fence, driving through this area compacts sand and destroys potential habitat for plants and endangers nests that are laid outside fenced areas and not yet detected by field staff for protection.
- In an effort to minimize overall vehicle use on the Sea Girt NGTC beach, the beach rake will always gain access to the southern portion of the beach via either the installation's main entrance and the southern beach access point, or by exiting at the northern beach access, following the alternate vehicle access route, and reentering at the southern beach access. See Section 6.3.6 for additional information on beach raking.
- During red knot migratory periods, if red knots are observed on the NGTC beach, driving restrictions on the beach may be warranted.
- Additional protection measures are implemented as soon as piping plover, least tern eggs, and/or American oystercatcher eggs and/or unfledged chicks or other federally listed species are identified on the Sea Girt NGTC beach. These management practices are necessary to avoid crushing chicks or creating tire ruts, which can trap chicks moving towards the water to feed. Beginning vehicle access restrictions at the onset of egg-laying will allow natural processes to smooth out deep tire ruts and allow for additional undisturbed feeding and breeding activities of the nesting birds. The presence of nests/unfledged chicks will be determined and communicated to appropriate individuals (including Borough of Sea Girt personnel) in accordance with the monitoring/communication procedures described in Section 6.3.10. The following protection measures will be implemented when piping plover, least tern, and American oystercatcher eggs and/or unfledged chicks are present. The additional protection measures continue until chicks have fledged. For the purposes of vehicle management, plover chicks are considered fledged when observed in sustained flight for at least 15 meters, irrespective of age. In most cases, piping plover chicks attain flight capability by 35 days of age, but longer pre-fledge periods may occur. The following protection measures will be implemented when piping plover nests, unfledged piping plover, and/or least tern chicks are present:

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1. All routine vehicle use will be immediately restricted within the “no rake zone” (Figure 6-1) and within the 100-meter protection area buffer (see number 2 below) when eggs or unfledged chicks are present. Routine vehicle use includes routine lifeguard traffic, vehicular law enforcement patrols, military vehicles conducting routine training, and routine facility maintenance activities. Sea Girt NGTC or CFMO-EMB staff will install detour signs at the northern and southern limits of the no rake zone. Vehicles will gain access to the southern portion of the beach, when necessary, by exiting at the northern beach access, following the alternate vehicle access route, and reentering at the southern beach access (Figure 6-1).
  2. Low speed, emergency vehicles used as an emergency chase vehicle when tenants conduct physical training must be left at the entrance to the beach and not driven on to the beach into the 100-meter protection area buffer when chicks are present onsite.
  3. A 100-meter vehicle-free zone will be established around the NPA (Figure 6-1). Signs installed by Sea Girt NGTC or CFMO-EMB staff will mark this zone.
  4. An agency responding to a bona fide emergency (i.e., lifeguards, police, and/or fire departments) which requires them to enter the NPA, SPA, no rake zone, and/or 100-meter vehicle-free buffer shall report each incident to the CFMO-EMB Natural Resources Manager no later than 24 hours after responding to the emergency. The report shall include each vehicle use, date, time, operator, responding agency, agency point of contact, and the purpose of the emergency response.
  5. Upon hatching or notification by the NJDEP-ENSP or USFWS of the date that is two days prior to a predicted hatch date, whichever is sooner, until notification of fledging or mortality, all non-emergency essential use of motorized vehicles outside of the restricted areas, including nonemergency use of lifeguard ATVs, lifeguard trucks, Sea Girt Department of Public Works motorized vehicles, beach rakes, military vehicles, and Sea Girt NGTC maintenance vehicles must adhere to the following protection measures:
    - Vehicle use on the beach will be limited to during daylight hours only. Vehicle speeds will not exceed five miles per hour.
    - Vehicles can only be used outside of the 100-meter vehicle exclusion zone.
    - Every vehicle will contain a map of nonemergency vehicle restricted areas.
    - A pedestrian escort will always precede each moving vehicle walking approximately 10 feet ahead of each vehicle.
    - The agency conducting the vehicle operation shall notify the CFMO-EMB Natural Resources Manager, Sea Girt NGTC, NJDEP-ENSP, and USFWS no later than 48 hours prior to conducting vehicle operation. The agency conducting the vehicle operation will log each vehicle use, date, time, operator, escort, and purpose for each vehicle pass and shall report each incident to the CFMO-EMB Natural Resources Manager no later than 24 hours after concluding the activity.
    - A Qualified Monitor (as identified by the NJDEP-ENSP and USFWS) will locate the plover chicks in the early morning prior to the use of the vehicle and notify the Sea Girt NGTC and CFMO-EMB Natural Resources Manager of chick location(s). A “Qualified Monitor” is a person who has the skills, knowledge, and ability to accurately observe and record data on shorebird breeding activities without causing disturbance to the birds under observation. A qualified monitor can be employed by a non-profit, NJDMAVA, NJDEP, USFWS,

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NJDMAVA hired consultant, and/or Stockton University provided the NJDMAVA, NJDEP-ENSP, and USFWS all agree that the person meets the qualifications of a Qualified Monitor and will act in the best interest of all parties. A training session shall be conducted annually by the CFMO-EMB Natural Resources Manager, in coordination with the NJDEP-ENSP and USFWS, to train one primary and one backup staff member at the NGTC to become a Qualified Monitor. The Qualified Monitor will locate the chick(s) prior to the use of vehicle and notify the Sea Girt NGTC and CFMO-EMB Natural Resources Manager of chick locations.

- If the vehicle operation occurs regularly during the brooding period, the agency may develop an agreement with the qualified monitor to have the monitor on-site at specified dates and times to ensure compliance with these requirements.
  6. The NJDEP-ENSP, USFWS, and NJDMAVA have developed a partnership for monitoring beach-nesting birds at the Sea Girt NGTC and will coordinate efforts to monitor all broods during the chick-rearing phase of the breeding season to reliably determine brood mobility. Initially, the minimum monitoring frequency will be five days per week; however, may be reduced to three days per week based on the NJDEP-ENSP biologist's professional judgment (see Section 6.3.10 for additional details on monitoring).
  7. If the brood monitoring indicates that highly mobile broods are present and chicks are moving outside the NPA, no rake zone, and 100-meter vehicle-free zone, then all vehicles will be guided by a qualified monitor who has first determined the location of all unfledged chicks. The monitor will ensure that a minimum 100-meter vehicle-free zone is maintained around the chicks. In addition, the NJDMAVA will coordinate with the USFWS and NJDEP-ENSP to determine if any additional protection measures are necessary if highly mobile broods are present. The Sea Girt NGTC beach may be closed to all non-emergency traffic, including raking, if it is deemed necessary by the NJDEP-ENSP, USFWS or their designees to protect a mobile chick.

All additional vehicle restriction protection measures remain in place until the NJDEP-ENSP or USFWS have determined that the chick has fledged, meaning able to fly. For the purposes of vehicle management, fledged piping plover, least tern, black skimmer and American oystercatcher chicks are presumed to have survived the nesting season once fledged. Monitoring and management restrictions are usually relaxed once all chicks are fledged. For management purposes, chicks are considered fledged when observed in sustained flight for at least 15 meters, irrespective of age. In most cases, beach nesting birds attain flight capability by 35 days of age; however, longer pre-fledge periods may occur. Only the NJDEP-ENSP or USFWS can determine when vehicle restrictions can be lifted.

### **6.3.6 Beach Raking**

Prior to 2016, the NJDMAVA had an agreement with the Borough of Sea Girt to rake portions of the Sea Girt NGTC beach. Starting in the 2016 beach season, the Sea Girt NGTC started to rake the beach using their own equipment. The purpose of beach raking is to remove debris to protect the health and safety of beach users. Raking generally takes place from late May to early September. On March 4, 2018, the NJDEP DLRP issued NJDMAVA a Coastal Zone General Permit (GP) 2 authorization for beach and dune maintenance activities (DLRP File No. 1344-03-0001.2 CZM 180001). The permit authorizes beach raking in accordance with standard permit conditions, project specific conditions, and BMPs as found in the Rules on Coastal

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Zone Management (N.J.A.C. 7:71-10). The permit expires on March 3, 2024. According to NJDEP correspondence via email, dated December 14, 2023, the current GP-2 recorded with the Borough of Sea Girt, can be utilized for Sea Girt NGTC's beach and dune maintenance activities; therefore, NJDMAVA is not required to renew their GP-2 permit.

The following management practices apply to beach raking at the Sea Girt NGTC beach:

- In an effort to minimize overall vehicle use on the Sea Girt NGTC beach, the beach rake will always gain access to the southern portion of the beach via the installation's main entrance and the southern beach access point or by exiting at the northern beach access, following the alternate vehicle access route, and reentering at the southern beach access.
- Beach raking is prohibited within the rare species protection areas (Figure 6-1) from 15 March through 1 December.
- A "no rake zone" has been established in front (seaward) of the NPA (Figure 6-1). Mechanical raking is prohibited in this area from 15 March through 1 December. Signs installed by CFMO-EMB staff mark the northern and southern limits of the no rake zone, which includes approximately 770 linear feet of beach. The area may be cleaned by hand during the restricted season.
- The frequency of beach raking will be minimized to the extent possible when unfledged chicks are present. The beach rake will not be permitted within the 100-meter vehicle-free zone, described in Section 6.3.5, if unfledged chicks are present. If highly mobile broods are present, beach raking may cease for short periods of time, or an avian observer shall guide the beach rake, as described in Section 6.3.5. Individuals responsible for beach maintenance will be provided with annual environmental awareness training, as specified in Section 6.3.8.
- If a significant number of debris is deposited in the no rake zone during the restricted season, the NJDMAVA will consult with the USFWS and NJDEP for one-time mechanical raking events. A "significant number of debris" includes conditions where hand removal would not be practicable and conditions where the debris represents a human health hazard. A one-time mechanical raking event may also take place to remove tire ruts from vehicles on the beach if chicks are not present. The USFWS and NJDEP will handle such consultation in an expedited manner and will consider the situation an emergency consultation if the debris represents a human health hazard.
- As part of Outdoor Recreation Goal No.1 and in accordance with the Coastal Zone Management Rules (N.J.A.C. 7:7), the SPA dune needs to be managed in order to support the continued use of the bathing beach area, while still protecting both natural resources and built infrastructure. In order to maintain the current limits of the bathing beach, and the southern dune, NJDMAVA proposes to measure the current limits of the southern dune and compare it to the locations of the former SPA protection area fence from previous years to develop a model fence and dune location that maximizes the bathing beach and vehicular access to the lifeguard stands, but still provides the sites natural storm protection and meets the Rare Species Goals. NJDMAVA plans to submit a Federal Consistency determination application to include dune management measures to maintain the model limits. These measures proposed include installation of a snow fence in the fall and winter months along a previous year's fence location and/or on top of the dune to prevent accumulation of sand, sand scraping, and raking the bathing area to the limits of the model.

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### **6.3.7 Sand Scraping**

Sand scraping is defined as the mechanical distribution of sand from one area of the beach to another. Sand scraping will be prohibited within the rare species protection areas and no rake zone year-round, unless otherwise part of a permitted habitat enhancement project done in consultation with the USFWS and NJDEP-ENSP. Sand scraping will only be permitted on other portions of the beach as stipulated in the installation's CAFRA permit for routine beach maintenance.

### **6.3.8 Military Training**

During the summer months, various military units use the beach for ocean survival training. During the training, instructors refresh students on water survival issues, including reviewing a 20-person life raft's operational checklist, inflating the raft, and riding the raft back to shore. During these water exercises, members of the U.S. Coast Guard or other military lifesaving units are present to assist in the training or render assistance if an emergency develops. These units may use personal watercraft (i.e., jet skis) during the training exercises. The watercrafts are trailered by government vehicles to the southern beach access and are launched from the southern shoreline. The U.S. Coast Guard may use a helicopter as part of the ocean survival training and/or to render emergency assistance. Helicopter operations shall remain approximately 450 feet lateral distance east of the rare species protection areas at an altitude of 25 feet above ground level, retrieving trainees from the water, returning trainees to the water, and flying back to Atlantic City International Airport. These training events take place once or twice a year and the duration is two to three hours. The helicopters do not fly over the beach or land at Sea Girt NGTC during these training events.

The following management practices apply to military training use at the Sea Girt NGTC beach that occurs from 15 March through 1 December:

- Units using the beach for training shall comply with the general protective measures described above, including those for vehicle use and pedestrian traffic.
- Any military vehicles participating in training shall be parked near the southern beach access when not in use (Figure 6-1). Parking on the beach is strictly prohibited.
- Watercraft and rafts shall not be launched from, or landed in, the no rake zone (Figure 6-1) from 15 March through 31 August. This management practice does not apply after 1 July if no piping plover or least tern nesting activity has been observed by that date. During strong offshore currents, rip tides, or other emergency situations, watercraft and rafts may be landed in the no rake zone and military vehicles may gain access to the area to provide emergency response and retrieve equipment used during the emergency.
- Except for emergency situations, during training events helicopters shall remain 300 feet offshore (a minimum of 450 feet lateral distance east of the northern rare species protection areas) from 15 March through 31 August. This management practice does not apply after 1 July if no piping plover or least tern nesting activity has been observed by that date. If landings or takeoff are necessary, the guidelines specified in Section 6.3.9 will be followed.
- During the initial scheduling/advance planning of the training exercise, the unit commander shall designate a "rare species monitor," responsible for ensuring that the unit complies with the protection measures for listed species. The Sea Girt NGTC Director or CFMO-EMB staff (or designated contractor) shall conduct an environmental awareness briefing and provide a handout

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to the unit requesting use of the beach. The handout shall describe the protection measures with which the unit is expected to comply during training, and a map showing locations of the rare species protection areas and no rake zone.

- The CFMO-EMB staff or contractor will conduct a second briefing for the unit rare species monitor immediately prior to the training event (i.e., within one week) to review the protection measures and identify current locations of listed species. The NJDEP-ENSP and/or USFWS shall participate in these briefings, as necessary, to identify current locations of listed species.
- The unit's rare species monitor shall brief all students and instructors regarding the protection measures at the start of the training event. In addition, the monitor will attempt to minimize adverse effects to listed species during emergency entry into the no rake zone or rare species protection areas, to the extent possible without hindering emergency response. If the unit responds to an emergency within the rare species protection areas, the rare species monitor shall report the incident to the CFMO-EMB Natural Resources Manager as stated in Section 6.3.5 no later than 24 hours after the incident. The report shall include each vehicle use, date, time, operator, responding agency, agency point of contact, and the purpose of the emergency response.

Other activities, including beach runs or group exercises, are not considered military training and, as such, are not given a brief. However, as discussed in Section 6.3.4, adaptive management measures may be used, including implementing the designated Physical Training Area when highly mobile chicks are present (see Figure 6-1). When implemented, other portions of the Sea Girt NGTC beach will be closed to physical training activities.

### **6.3.9 Aviation Operations**

In addition to helicopter operations associated with water survival training exercises (Section 6.3.8), the NJARNG and New Jersey State Police occasionally operate helicopters at Sea Girt NGTC. These operations include landings and takeoffs at the landing zone near Quarters 1. Both the NJARNG and New Jersey State Police make approximately one flight per month (i.e., total of two landings and two takeoffs per month). The flight paths are shown in Figure 6-2 and are based on safety and operational constraints, which include prevailing winds, location of the small arms ranges, and location of residential areas. None of the flight paths cross over the NPA, where all beach-nesting bird activity has occurred to date. The closest flight path is approximately 475 lateral feet north of the NPA. The helicopters make a steep decent/accent out of/into the landing site and are at an altitude of approximately 500 to 800 feet when they are closest to the NPA.

General management guidelines have been developed to avoid helicopter-related disturbance of beach-nesting birds at Sea Girt NGTC. These guidelines shall be implemented to the maximum extent possible, at the pilot's discretion, based on existing conditions during the helicopter operation (e.g., wind, visibility, weather, and other factors). The following guidelines apply from 15 March through 31 August, but are not applicable if they compromise safety:

- Helicopters shall not fly over, or within, 475 lateral feet of the NPA.
- Helicopters shall achieve a minimum altitude of approximately 500 feet when within 475 lateral feet of the NPA.

No UAV's are allowed at any time of the year at Sea Girt NGTC. No UAV's will be flown at the site, regardless of the operator to include but not limited to tenants, law enforcement, military, beach goers, cottage renters, and/or other government entities.


# Figure 6-2 - Sea Girt NGTC Helicopter Flight Path


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April 07, 2023



 Sea Girt NGTC  
Flight Path


 NJ Army National Guard

 NJ State Police



0 250 500 Feet

0 50 100 Meters



Path: \\vhb.com\gis\proj\Manasquan\21172.02 Sea Girt NG INRMP\Project\fig 6-2 - sea girt ngtc Helicopter Flight Paths.aprx (User: jnappi, Date: 4/7/2023)

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### **6.3.10 Rare Species Monitoring and Data Sharing**

#### **6.3.10.1 Beach-Nesting Birds**

Monitoring and timely communication of monitoring data is an integral part of the rare species management program for Sea Girt NGTC that allows for adaptive management. The NJDEP-ENSP and the NJDMAVA have partnered in conducting beach-nesting bird monitoring at Sea Girt NGTC for over 20 years. The NJDEP-ENSP in coordination with the USFWS conducts monitoring as part of ongoing statewide surveys. ASGECI (contracted by the NJDMAVA) and the WPWA have supplemented agency monitoring efforts from 2007 through 2013 (see Section 6.3.10.3). In 2018, VHB and CWF were contracted by NJDMAVA and have supplemented agency monitoring efforts from 2018 through 2022. Currently, it is anticipated that these statewide surveys will be performed based on funding availability for the next five-year planning period (2025–2029) covered by this INRMP.

To facilitate the process of endangered species coordination, monitoring and management, a set of procedures have been developed and carried out each active season that guides the process of identification and protection of endangered species at the Sea Girt NGTC. The procedures include the following:

- Representatives from Sea Girt NGTC, CFMO-EMB, USFWS, NJDEP-ENSP and designated biological consultants hold annual meetings or conference calls in February to review and coordinate monitoring and management activities planned for the upcoming season. At this time, issues from previous seasons are discussed and protocol and management improvements are considered.
- A combination of staff from the NJDMAVA, NJDEP-ENSP, Stockton University, and/or NJDMAVA consultants shall conduct beach-nesting bird surveys at Sea Girt NGTC during the nesting season. Typically, the site will be monitored three to five days per week starting early April. The actual survey effort will vary based on observed nesting activity. Monitoring frequency will be highest when actual nesting activity is observed and when eggs and unfledged chicks are present. Funding and staff availability will determine who conducts most of the beach nesting shorebird monitoring and will be discussed during the annual meeting. Monitoring will be conducted at a sufficient frequency to reliably determine anticipated hatch dates and brood mobility.
- Each monitoring group will provide brief, weekly monitoring reports via fax and/or e-mail to the CFMO-EMB Natural Resources Manager and the Sea Girt NGTC Director. Reports may be transmitted more or less frequently based on the level of bird activity observed at the installation. Key information triggering special protection measures (e.g., the presence of eggs, chicks, or nesting outside the established rare species protection areas) will be transmitted as soon as possible, usually within 24 hours.
- The CFMO-EMB Natural Resources Manager or designee will be responsible for notifying other individuals of key information and special protection measures. These individuals include the Sea Girt NGTC Facility Manager, the rare species monitor for military units scheduled to conduct training on the beach, and the Borough of Sea Girt lifeguard staff, beach-raking staff, and law enforcement staff that patrol the beach.
- Each monitoring group will provide copies of all written annual survey reports that include data for Sea Girt NGTC to the CFMO-EMB Natural Resources Manager. If available, Global Positioning System (GPS) data for individual nest locations will be provided in electronic format for incorporation into the NJARNG GIS.

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### **6.3.10.2 Seabeach Amaranth and Other Plant Monitoring**

The NJDEP-ONLM conducted seabeach amaranth surveys between 2001 and 2006 from Long Branch to Cape May, including the Sea Girt NGTC beach. To support this effort and meet the requirements of the INRMP, the Sea Girt NGTC contracted VHB and its subcontractor CWF to conduct rare plant surveys at the Sea Girt NGTC facility. The survey area includes the entire beach area between the high tide line and the landward limit of the beach, e.g., dune line or seawall (including protection areas). Surveys were performed in conjunction with the biweekly rare bird survey and were conducted from 2007 through 2013 and 2018 through 2022 and followed agency approved protocols. NJDEP-ONLM still conducts coastwide rare beach plant surveys annually coastwide, including at Sea Girt NGTC, typically in late July or August. Targeted rare species included seabeach amaranth, seabeach knotweed and several other rare beach or dune plant species potentially occurring on Sea Girt NGTC property. During surveys, the dune community is slowly walked in a grid-like fashion by one or more surveyors. Plant surveys typically take one to three hours at each visit. Surveys are suspended in the protection area and the buffer if nesting birds are identified. Survey areas may also be limited for other circumstances such as excessive storm damage. Any seabeach amaranth identified outside the protection areas is immediately reported to the USFWS and the appropriate agency point of contacts (POCs).

In addition to the aforementioned biweekly surveys, three interagency rare plant surveys at the NGTC are coordinated with the USFWS (or its designee) and the CFMO-EMB Natural Resources Manager during the last week of June, third week of July, and between 15 August and 15 September. Typically, these interagency surveys take a maximum of two hours to complete. Coordination also occurs with NJDEP-ENSP as it relates to nesting bird activity, but NJDEP-ENSP does not participate in the annual surveys. The timing and frequency of interagency surveys typically depends on availability of staff, site conditions, and previous plant survey coverage of the beach.

The exotic invasive plant Asiatic sand sedge and other threats to seabeach amaranth are also monitored during all surveys. A specific survey sheet for plant monitoring activity is completed and sent along with the general monitoring report after each visit.

Once rare, threatened, or endangered plants are identified, all relevant data are recorded, such as plant size, condition, potential threats, and any additional protection needed. All rare plants are photographed, and GPS locations are taken. Surveyors are required to fence any plants outside of the designated protection areas with a three-meter buffer. After identification, plants are regularly monitored and documented at each regular site visit.

The NJDMAVA intends to continue conducting rare plant surveys at Sea Girt NGTC during the 2025 through 2029 implementation period. The objective is to identify the number and locations of rare plants on the Sea Girt NGTC beach, both inside and outside of the established rare species protection areas. Plants identified outside of the established protection areas will be fenced as specified in Section 6.3.3. The survey protocol will be submitted for USFWS review and input each year prior to 1 May. The survey procedures utilized from 2007 to 2013 and 2018 to 2022 are summarized in Section 6.3.10.3 below. Protocol may vary from year to year based on changing conditions and available funding.

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### **6.3.10.3 Rare Species Monitoring Services**

From 2007 to 2013 and 2018 to 2023, the NJARNG has contracted a biological consultant to provide an array of INRMP mandated rare species protection services including supplemental monitoring services of the Sea Girt NGTC beach area for threatened and endangered plants and animals. From 2013 to 2017, the CFMO-EMB has been used in house and intern staff to continue rare species monitoring services. If funding is available in future years, NJDMAVA anticipates using interns and contractors to perform these services. These rare species goals are indicated below as ESA Section 7(a)1 activities. If funding is not available in future years, NJDMAVA will use in-house staff to implement a limited number of protection measures. In any event, the NJDMAVA will continue to the best of their ability to implement the INRMP rare species goals in cooperation with NJDEP-ENSP and USFWS. The contracted rare species monitoring services that occurred between 2007 and 2023 are summarized below:

- Public education and awareness including preparation of materials and completion of annual awareness, youth camp, and military training briefs; creation of a site-specific field guide and regular informal education with the visiting public. The contractor also prepares and sends out pet policy letters, as needed.
- Installation, monitoring and maintenance of protective fencing and signage as well as regular removal of trash accumulated in the protection and buffer areas.
- Collection and preparation of GIS and photographic data, and preparation and maintenance of the GIS database. This includes all GPS and resource data collected on-site for various features including topography, vegetation communities and resource locations, rare plant and nest (once inactive) location data, and management areas. Photos are taken after each visit and their details are incorporated into all reports and the GIS data base.
- The annual revision of site protocols and submission to the USFWS, NJDEP-ENSP, and Natural Resources POC occurs no later than May 1 of each year. The protocol outlines the methods for biweekly surveying, procedures when beach-nesting species or plants are identified, study methods, enforcement, and other planned management actions. Protocols also include thresholds for exiting protection areas when beach-nesting birds are observed. Observations that require immediate exit from protection areas include plovers, least terns, or other beach-nesting birds resting within, or near, dune areas, chicks or eggs, observation of plovers scraping nests, observed copulation, and observed courtship rituals or territorial behaviors (i.e., "plover marching," chasing, plover's circular courtship flights and calls, stone/shell tossing, or any other behavior that might indicate on-site nesting interest).
- Rare plant and bird surveys are conducted concurrently between 1 April to 1 December for each monitoring season and biweekly monitoring will occur, if required. The contractor will adjust the frequency of these surveys in consultation with POCs (i.e., more during nesting plover season, extra visits after storms, etc.). The surveyor(s) scans (via scope and binocular) and walks the beach at varying times of the day. Contractors note all rare species and general wildlife, take necessary photographs and GIS, and identify issues and threats such as on-site dog walkers.
- Summary monitoring reports and photographs are submitted within five days of a visit to the facility POC, NJDMAVA, USFWS, and NJDEP-ENSP. Reports include rare species and wildlife observations, threats, and other activities completed by the contractor. In addition, the contractor may submit reports to the police, animal control, or boroughs as special conditions require.
- Communication to the CFMO-EMB Natural Resources Manager and Sea Girt NGTC facility POCs within 24 hours of beach-nesting bird observations. The contractor begins enforcement of special

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protection measures. The contractor coordinates with the NJDEP-ENSP to allow for the most efficient and least disruptive coverage and enforcement. Contractors are always careful not to cause harm or injury, either by accident or on purpose, to any rare species present at the facility.

- Increased coverage when birds are present. Contractor coverage may be three to five days per week, based on the agency coordination and availability of resources. Coverage includes nondisruptive monitoring of adults and chicks and enforcement of all protection measures. The contractor carefully observes the behaviors and condition of all beach-nesting birds while present on the beach. The contractor may consult with the CFMO-EMB Natural Resources Manager, Sea Girt NGTC facility POC and agencies for additional enforcement measures as needed, such as additional fishing restrictions. Nest survey frequency remains high until the last chick is fledged, which is typically 35 days after the last egg hatches and clearance has been given by the NJDEP-ENSP and USFWS.
- Monitoring, including interagency monitoring, for rare plants occurs between the high tide line and the landward limit of the beach e.g., dune line or seawall (including protection areas) in conjunction with the biweekly bird surveys. (see Section 6.3.10.2)
- Preparation and distribution of an annual summary report to the CFMO-EMB Natural Resources Manager that includes discussions of all services and issues. NJDEP Natural Heritage Rare Species reporting forms for any rare species identified at the Sea Girt NGTC are submitted to the New Jersey Natural Heritage Program. The annual report also includes copies of additional reports and permits that have been prepared that season.
- Preparation of an annual primary dune vegetation community and topographic study (prepared in 2013). This study involves the quantitative and qualitative assessment of the primary dune community and relevant abiotic factors. The vegetative assessment determines the percentage of vegetation coverage within the northern and former southern protected areas of the beach. Parameters measured include plant cover, density, frequency, vigor, and composition. Various methods of data collection included quadrat cover estimations and point intercept transect sampling. Transects were created in 2008 and maintained throughout the study to facilitate seasonal comparisons. The study also included analysis of soil, tides, weather, and an annual survey of beach topography conducted by a licensed surveyor. Data from the study was used to create a set of beach habitat management recommendations related to cover and topography (see Section 6.3.12).
- Predator population surveys conducted between 1 April to 1 December for each monitoring season focus on red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*) and feral cat (*Felis catus*). Both invasive and noninvasive techniques are used throughout the survey period to determine seasonal (i.e., winter vs. summer) and temporal (i.e., dawn vs. dusk) differences within the target predator population. For noninvasive surveying techniques the use of camera traps, tracking, and nocturnal surveys are carried out on-site. In addition, invasive trapping procedures and GPS collaring of one fox in 2023 occurred and was tracked over the survey period.
- Predation Management Services are conducted throughout the year with the assistance of Animal Damage Control (ADC), NJDEP and United States Department of Agriculture (USDA). Trapping occurs between the months of January and December each year and in accordance with New Jersey State trapping regulations and protocols. Tracking and observations of red fox activity is used to set snares based on the animal's natural movements. GPS coordinates of the traps are collected. During the rare bird monitoring season, if evidence of a raccoon, red fox, or cat is noticed within

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the protected areas, ADC will be instructed to remove the predator by trapping methods and dispatch the predator on-site.

- In 2022 and 2023, a macroinvertebrate study was started to better understand how well the macroinvertebrate population rebounds after no vehicles have driven in the “No Rake Zone” in front of the NPA. Chicks of beach-nesting birds such as piping plovers and least terns forage on wrack line macroinvertebrates. Parameters assessed included macroinvertebrate species richness, abundance, and biomass; beach sediment grain size, beach slope, wave height, and tidal period; beach nesting bird species, activities, and approximate numbers; beach grooming activities including level of effort; and approximate pre-nesting beach vehicle traffic volume using game cameras.
- In conjunction with the macroinvertebrate study, a microplastic study was started in 2023 using methodology from the Plastic Wave Project, a citizen science project to learn where and when microplastics congregate along the Jersey shore. The microplastics study will be conducted four times per year on the dune line, the high tide line, and the low tide line at Sea Girt NGTC. The first study was conducted on June 30, 2023, and no microplastics were observed.

### **6.3.11 Predation Management**

Beach-nesting bird eggs and chicks are highly susceptible to predators. In addition, predators can disturb birds that are attempting to nest and cause them to seek alternative nesting sites. Potential predators at Sea Girt NGTC include foxes, raccoons, crows, gulls, and feral/domestic cats and dogs. A resident fox population with a den site between the dunes and small arms ranges was first documented at Sea Girt NGTC in 1998 (Parsons 1999). Dens have also been identified in the secondary dune areas west of both the NPA and SPA on-site (ASGECI 2011).

The NJDEP-ENSP biologists have frequently noted fox and dog tracks within the rare species protection area, and predators have been suggested as a possible cause of piping plover and least tern nesting success. The monitoring efforts at the site for the last 20 years have confirmed that foxes have contributed to the loss of piping plovers, least terns, and American oystercatcher nests.

Predation management protocols that have been implemented on site since 2017 include the use of nest enclosures and population reduction, as well as public awareness and policy/law enforcement, in the case of domestic predators or pets. Population reduction involves physically removing predators from a site. The typical course of action involves live capture and humane euthanasia. Options such as live capture and relocation are not viable due to lack of relocation sites, the potential for creating predator problems elsewhere, and the risk of spreading diseases to wildlife or domestic stock in other areas. Population reduction is often a controversial management practice. However, the years that foxes were controlled at Sea Girt NGTC has shown measurable success in the increase of nesting activity for piping plovers and fledged chicks. The red fox population has been reduced by two in 2017, ten in 2019, six in 2020, seven in 2021, six in 2022, and eight in 2023. Trapping efforts in the past appeared to be successful for piping plovers at the Sea Girt NGTC with two fledged chicks in 2019, three fledged chicks in 2020, and one pair successfully hatching and fledging three chicks in 2021 (CWF 2022).

The NJDMAVA plans to continue predation monitoring during its annual beach-nesting bird surveys. In addition, the NJDEP-ENSP will consider using predator enclosures for all piping plover nest attempts at Sea Girt NGTC. Enclosures consist of staked wire fencing that encircles a nest as a barrier to predators, while

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permitting passage of plover adults and chicks. Netting is normally installed on the top of the structure to prevent entry by avian predators. The NJDEP-ENSP has successfully used exclosures at other piping plover nesting sites in Monmouth County. However, exclosures are only useful after a nest has been established and are not practical for reducing predator disturbance prior to nesting. Furthermore, exclosures do not protect chicks from predators such as foxes once the chicks' hatch. The use of predator exclosures also increases adult mortality.

Predation management methods may include baited traps or snares to capture target predators, gassing dens, or use of a scent-based red fox control program. Trapping will occur in accordance with BMPs that will be developed for predator management at the Sea Girt NGTC and will be implemented just prior to, or at the early stages of, the beach-nesting bird nesting season. Capturing and handling of any species will be conducted in consultation with the NJDEP wildlife control staff, USDA, NJDEP-ENSP, and USFWS, and in accordance with all federal and state regulations regarding animal capture and required permits.

Utilizing snare and bait traps, the following predation management events were conducted at the Sea Girt NGTC in:

- 2009 by the NJDEP-ENSP, which resulted in the capture of six foxes and one cat. However, the amount of evidence, including direct observation, tracks, foraging signs, and scat, reported in the 2010 Rare Species Summary report, indicate that foxes appear to remain abundant in the dune habitats (ASGECI 2011);
- 2017 by the USDA in cooperation with the USFWS and resulted in the capture of two red foxes, six raccoons, and one opossum;
- 2019 by VHB's subconsultant Animal Damage Control (ADC) and resulted in the capture of 10 red foxes and two opossums. Observation of fox, coyote, cat, and raccoons' activity through game cameras, tracks, and nocturnal surveys was still significant after trapping (CWF 2019);
- 2020 by ADC and resulted in the capture of seven red foxes;
- 2021 by Rutgers University and resulted in the capture of two red foxes that were fitted with radio collars in Sea Girt Borough (CWF 2021);
- 2021 by ADC and resulted in seven captured foxes (CWF 2021);
- 2022 by ADC and resulted in the capture of six red foxes (VHB 2022); and
- 2023 by ADC and resulted in the capture of eight red foxes.
- In April 2023, three fox dens were gassed by Animal and Plant Health Inspection Service (APHIS). Fox dens were selected based on Lotek GPS collar data and game camera observations, where the female collared fox would frequently visit the den sites. Following treatment of the dens, nearby game cameras did not observe kits; however, the resident female collared fox was observed no longer visiting the dens following treatment, deeming the kits successfully dispatched onsite (CWF 2023).

Local predator populations may also migrate between Sea Girt NGTC and other den sites in the vicinity.

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From 2012 through 2013, AECOM conducted a Mammal Population Survey and Radio Collar Fox Study. Based on the data collected, red foxes are likely to pose the greatest threat to avifauna because they are abundant and traverse the entire NGTC property, including the NPA and SPA, each day. In 2013, a pair of red foxes produced a successful litter, and in the spring of 2013, the resident red fox population included two dens, six kits, and at least two transient foxes. During the late spring, summer, and fall, the red fox population on and surrounding the NGTC was reduced due to at least three fox suffering mortality from vehicles and at least two fox being afflicted with mange. By Fall 2013, it appeared that the population of foxes continuously using NGTC was at least three: one den and two other foxes. The number of foxes and other mammals observed on the NGTC property in 2012–2013 may have been significantly altered by the effects of Hurricane Sandy (AECOM 2013). In 2022, a LiteTrack Iridium 150 GPS wildlife tracking collar was successfully placed on a female red fox. Trapping procedures occurred in April 2022 before the start of the rare beach nesting bird breeding season. A Rutgers PhD student specializing in predator studies was tasked with setting the snares and collaring the captured fox. During a trapping period from April 27 to April 29, 2022, six snares were set in the secondary dune system and one red fox was captured. The trapper secured the fox in hand and installed the GPS tracking collar in the field without sedation. The collared fox was tracked remotely via Iridium data download and uploaded to their web service. The collar was set to collect seven GPS fixes per night between the hours of 06:00 and 18:00 in 2-hour intervals. All collected fixes can be viewed on the Iridium web portal service accessible through the Lotek website. Based on the data, a total of six dens were found around the NGTC property. Four were located within the NPA and SPA primary dunes and two were found in the wetland. One den site located in the NPA appeared to be very active upon its discovery, as evidenced by many fox tracks and scat found around and near it. This den was located just north of the beach-nesting bird area that had been cleared of vegetation for nesting piping plovers. The den was located near the 2022 piping plover nest location. A game camera was installed facing the active den to monitor it. Camera images showed the 2022 collared female fox excavating the den followed by images of the female and her older kits entering and exiting the den.



Collared red female fox at Sea Girt NGTC, CWF 2023.

During the 2019 field season, piping plover, least tern, and American oystercatcher were found nesting on site. This return in nesting was possibly in part due to predation management at the Sea Girt NGTC. As discussed in Section 6.2, these three species have had limited nesting success on Sea Girt NGTC property in the years prior to 2019. In 2019, two piping plover nests fledged two chicks, 14 least tern nests fledged one chick, and one American oystercatcher nest laid eggs but were ultimately lost to predation. Fox trapping occurred after the beach-nesting bird breeding season in September 2019 and resulted in 10 fox captures.

In 2020, trapping was conducted during the nesting season prior to egg hatching. That year, one piping plover pair nested and fledged three chicks, and two nesting attempts were made by American oystercatchers but both nests failed due to fox predation. In 2021, trapping was conducted during the nesting season prior to and during chick hatching. That year, one piping plover pair nested and fledged three chicks. In 2022, trapping was conducted prior to and after nesting season. That year, one piping plover pair nested on Sea Girt NGTC and hatched four chicks; however, all four chicks and one adult were predated. The adult piping plover was thought to have been predated by an avian predator. Additionally, one least

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tern nest was predated by red fox early in the 2022 season, and one AMOY nest was predated or washed away during a storm in the 2023 season.

Based on predation management and predator population results of recent years, the number of predators observed on site has increased and continues to decrease the nesting success of rare beach-nesting birds. Continuing predator trapping, inspecting for active dens, and tracking and monitoring predators are recommended to reduce the numbers of predators at the Sea Girt NGTC. Continuing predation management efforts will not only limit the predation of rare beach nesting birds, but it will also encourage the birds to return to the SGNATC habitat to roost and nest. Trapping both before and after nesting season is recommended.

Avian predators, such as hawks or crows, are another potential predator to beach-nesting birds. A peregrine falcon has been observed perched on the predator enclosure placed around a piping plover nest. A female piping plover was predated by an avian predator in 2022. Potential effective management techniques to control avian predators are anti-perching devices on posts near shorebird nest sites. Non-lethal management of avian predators is challenging because many traditional methods, such as auditory or visual deterrents, would also impact the shorebirds (USFWS 2022).

Sea Girt NGTC has a "no pet" policy for the entire installation. Authorized beach users are prohibited from bringing pets onto the installation or beach. The Boroughs of Sea Girt and Manasquan have leash laws requiring all pets to be leashed when in public areas. The Borough of Sea Girt prohibits pets on the beach from 15 March through 30 September in the Protected Zone and Precautionary Zone but allows leashed dogs in the Recreational Zone from 1 October through 15 May. If birds are nesting, or chicks are present, Sea Girt Borough will temporarily revoke the permission. Descriptions of the different zones designated by Sea Girt Borough are in Section 6.3.2.2. The Borough of Manasquan prohibits pets on the beach from 1 April through 31 October, except for Fisherman's Cove, where leashed pets are permitted year-round. Between 1 November and 31 March dogs must be always leashed.

Signs are posted around the rare species protection areas at Sea Girt NGTC that state "No Pets Allowed." The frequent presence of dog tracks within the rare species protection area suggests that local pet owners are not abiding by the installation's no pet policy and are allowing dogs onto the beach from the north and south. Leashed and unleashed dogs, inside and outside of the rare species protection area can disturb nesting birds and reduce nesting success. The NJDMAVA addresses this issue through the following management practices:

- The NJDMAVA posts no pet signs on the beach at the northern and southern property boundaries to reinforce the no pet policy.
- Letters are issued by the Sea Girt NGTC, no later than one month prior to the start of each monitoring season, to the Monmouth County Animal Control and Sea Girt and Manasquan Police Departments as a reminder of the policy currently in place at the Sea Girt NGTC. In addition, an open letter to pet owners in the Boroughs of Sea Girt and Manasquan is posted annually on the borough websites informing pet owners of Sea Girt NGTCs "no pet policy."
- Sea Girt NGTC staff that observe dogs on the beach will attempt to contact the owner and explain to them the no pet policy. Persistent problems will be referred to the Borough of Sea Girt and/or Manasquan Police Department. The NJDMAVA will also request that Borough of Sea Girt lifeguards working the Sea Girt NGTC beach follow this same procedure.

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- Any observation of unattended domestic or feral dogs or cats on the beach will be referred to Monmouth County Animal Control.

Sea Girt NGTC has also installed recycling and trash cans with predator resistant lids at the boardwalk to the southern beach access to ensure that cans do not overflow and attract raccoons, gulls, or crows that may threaten beach-nesting birds. The Sea Girt NGTC staff continually monitors to identify the need for additional trash disposal.

### **6.3.12 Dune and Vegetation Management**

Over the last few years prior to 2023, a portion of the NPA was thinned and approximately five cubic yards of clam shells were spread across the thinned area to enhance beach-nesting bird habitat. This resulted in an increase in nesting activities, demonstrating the need for thinning and active management of the dune vegetation. Currently, the NJDMAVA has no specific plans for dune stabilization or enlargement activities on the Sea Girt NGTC beach and does not anticipate the need for such activities over the next five years. Any required future repairs or maintenance to the existing stabilized dune and/or seawall would be designed and carried out in coordination with the USFWS, NJDEP ENSP, NJDEP DLRP, and USACE.

As discussed in Section 4.2.4, invasive plant issues have been identified on the landward side of the dune. The NJDMAVA may implement invasive plant treatments and restore infested areas with appropriate native plants. These activities would be limited to the landward side of the primary dune and would be carried out in coordination with the USFWS and NJDEP-ENSP. Planting trees on either side of the dune is prohibited because trees provide perches for avian predators that could have an impact on beach-nesting birds.

The suitability of habitat on the Sea Girt NGTC beach for beach-nesting birds and seabeach amaranth is based in part on existing vegetative cover. Therefore, habitat suitability is expected to change over time as ecological succession, storms, beach erosion, and beach renourishment affect vegetative cover. American beachgrass is the dominant plant on the Sea Girt NGTC beach. American beachgrass forms a dense mat of intertwining rhizomes and roots that allows it to spread relatively rapidly. Although this species provides important sand stabilization functions, its rapid spread could limit beach-nesting bird and seabeach amaranth habitat. Seabeach amaranth shows a particularly strong negative association with American beachgrass.

Beachgrass vegetative cover requirements for piping plovers, least terns, and seabeach amaranth are not well defined, and the ideal percent vegetative cover is likely to be different for each species. A range from less than 10 percent to 13 percent vegetative cover for the back and primary dune, respectively, is a target for piping plovers. Considering the needs of seabeach amaranth and least terns, a range of 20 to 70 percent vegetative cover might be appropriate when all three species are present on a beach (Maslo et al. 2011; Wendy Walsh, USFWS, personal communication). This target range is appropriate for the western portion of the NPA, with lower densities of beachgrass (5 to 10 percent) adjacent to the intertidal zone. The USFWS has suggested that thinning might be an appropriate management practice at Sea Girt NGTC if the beachgrass becomes too dense in the rare species protection areas to provide suitable habitat for listed species. The Sea Girt NGTC monitors the percent cover of beachgrass annually in three areas, the NPA, SPA, and the southern beach area, since 2008 to determine whether thinning may be warranted. Within the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017), the plan's Objective 4 states that American beachgrass vegetation cover in the NPA will be no greater than 50 percent with vegetation patches ranging from 5 to 20 percent cover in frontal portions. Following Hurricane Sandy in 2012,

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beachgrass percent cover decreased within the NPA and the southern beach area, thus considered ideal cover levels for piping plover. Beachgrass in the SPA rebounded since Hurricane Sandy; yet in recent years, has had cover less than 50 percent, ideal for piping plovers. Note though that the SPA has been ruled out for vegetation management due to its proximity to private residences. The 2022 vegetation assessment concluded an average cover of American Beachgrass of 15.29%, a decrease of 2.09% from 17.38% as of the 2020 vegetation assessment. The average cover of American Beachgrass in the NPA was 23.82%, an increase of 7.5% from 2020. The average cover of American Beachgrass in the SPA was 22.06%, a decrease of 13.77% since 2020. This decline in American Beachgrass cover could be attributed to an increase in plant diversity within the SPA. The average percent cover from 2008 through 2022 is presented in Table 6-5 (and its associated line graph, Figure 6-3).

If thinning becomes warranted in the future, the objective will be to maintain American beachgrass cover in the NPA at levels no greater than 50 percent with patches ranging from 5 percent to 20 percent in the frontal portions (ASGECI 2017). As described in the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017), thinning can be conducted between December 1<sup>st</sup> and March 14<sup>th</sup> using non-mechanized (hand pulling) or mechanized (small machines such as a backhoe or beach rake) methods, depending on access and the amount of beachgrass to be removed.

Both strategies would be expected to require an NJDEP Coastal General Permit for Habitat Enhancement (CAFGP29) and possibly permitting from Corps. However, hand pulling of vegetation (as opposed to machine use) may facilitate this permitting process by more easily demonstrating minimization of unintended impacts. The USACE (1967) indicates that American beachgrass may recover fully from thinning within one season (Cohen et al. 2008). The periodic post-management collection of vegetation data likely would be required to determine the short-term management success and longer-term vegetation and sand displacement trends, particularly those related to global sea-level rise.

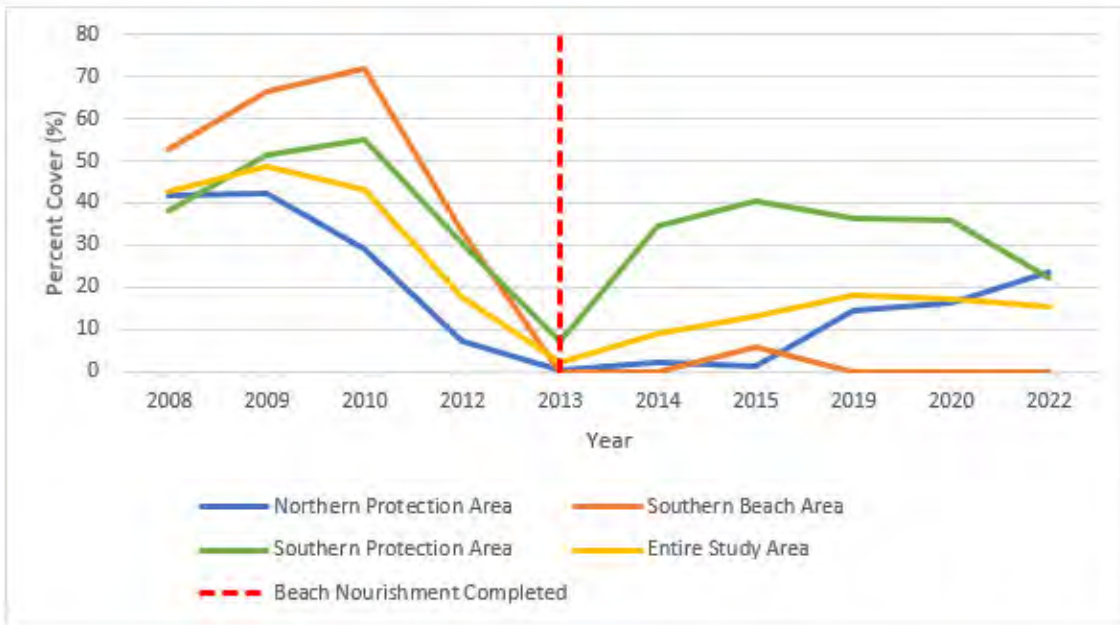
As part of Outdoor Recreation Goal No.1 and in accordance with the Coastal Zone Management Rules (N.J.A.C. 7:7), the SPA dune needs to be managed in order to support the continued use of the bathing beach area, while still protecting both natural resources and built infrastructure. In order to maintain the current limits of the bathing beach, and the SPA dune, NJDMAVA proposes to measure the current limits of the SPA dune and the former SPA protection area fencing and compare it to the locations of the former protection area fence from previous years to develop a model fence and dune location that maximizes the bathing beach and vehicular access to the lifeguard stands, but still provides the sites natural storm protection and meets the Rare Species Goals. NJDMAVA plans to utilize the Borough of Sea Girt's GP2 to perform dune management measures to maintain the model limits. These measures proposed include installation of a snow fence in the fall and winter months along a previous year's fence location and/or on top of the dune to prevent accumulation of sand, sand scraping, and raking the bathing area to the limits of the model.

The need for beach vegetation management will continue to be evaluated in coordination with the USFWS and NJDEP-ENSP. Possible management practices beyond thinning include raking, disking, herbicide treatments, and saltwater irrigation. Any vegetation management practices will need to consider potential adverse effects to listed species and will need to occur outside the seabeach amaranth growing and beach-nesting bird nesting seasons. If appropriate, any vegetation management would be implemented in coordination with the USFWS, NJDEP-ENSP, NJDEP DLRP, and USACE. See Section 6.3.2 – Description of Beach, for additional information on vegetation cover at Sea Girt NGTC.

**TABLE 6-5 AVERAGE PERCENT COVER OF AMERICAN BEACHGRASS**

Year	Northern Protection Area	Southern Beach Area	Former Southern Protection Area	Entire Study Area
2008	41.8	52.9	38.2	42.6
2009	42.2	66.6	51.5	48.6
2010	29.1	72.1	54.8	43.0
2011	n/a	n/a	n/a	n/a
2012	7.0	33.3	30.3	17.6
2013	0.2	0.0	7.1	2.2
2014	2.0	0.0	34.5	9.1
2015	1.5	5.7	40.4	13.2
2016	n/a	n/a	n/a	n/a
2017	n/a	n/a	n/a	n/a
2018	n/a	n/a	n/a	n/a
2019	14.29	0.0	36.29	18.15
2020	16.32	0.0	35.83	17.38
2021	n/a	n/a	n/a	n/a
2022	23.82	0.0	22.06	15.29
2008-2022 Percent Cover Difference	-17.98	-52.9	-16.14	-27.31
Percent Change from 2008	-43.01	-100	-42.25	-64.11

**FIGURE 1 AVERAGE PERCENT COVER OF AMERICAN BEACHGRASS**



	2008	2009	2010	2012	2013	2014	2015	2019	2020	2022
Northern Protection Area	41.8	42.2	29.1	7.0	0.2	2.0	1.5	14.29	16.32	23.82
Southern Beach Area	52.9	66.6	72.1	33.3	0.0	0.0	5.7	0.0	0.0	0.0
Southern Protection Area	38.2	51.5	54.8	30.3	7.1	34.5	40.4	36.29	35.83	22.06
Entire Study Area	42.6	48.6	43	17.6	2.2	9.1	13.2	18.15	17.38	15.29

### 6.3.13 Environmental Awareness Training

In addition to the awareness training provided to military units training on the beach, the CFMO-EMB conducts annual environmental awareness briefings to educate Sea Girt NGTC staff and users about the installation's rare species management program. The briefings are conducted in early March, following the annual meetings with the USFWS and NJDEP-ENSP in February. The briefings include the Sea Girt NGTC facilities management staff, on-site military unit representatives, the 1-150th Assault Helicopter Battalion, the NJARNG State Aviation Officer, and other tenant agency representatives. In addition, representatives from the Borough of Sea Girt are invited to attend the briefings, including beach-raking staff, lifeguard staff, and law enforcement personnel. In addition, an interpretive sign has been installed at the southern beach and on the boardwalk access to increase awareness of recreational beach users. The USFWS has expressed a willingness to aid with environmental awareness training efforts upon request and pending available staff.

A site-specific Field Guide for visitors (updated 2023) has been produced to facilitate identification of common and rare species and habitats on the Sea Girt NGTC beach. The Field Guide is also designed to make the visitors aware of the protected resources at Sea Girt NGTC and the role of the NJDMAVA in their protection. The Field Guide is available online at <http://www.nj.gov/military/installations/docs/3307-booklet-FINAL.pdf>.

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### **6.3.14 Special Events**

The NJARNG and NJDMAVA occasionally host special events at Sea Girt NGTC that could result in short-term increases in beach use and disturbance to rare species. Examples of such events include the Annual Military Review of the troops, family appreciation days or other organized celebrations, fireworks displays, music concerts, youth camps, and Irish festivals sponsored by the Ancient Order of the Hibernians. These activities have the potential to affect rare species through increased human disturbance and other disturbances such as noise, if they occur during the beach-nesting bird season. The circumstances of each special event could vary considerably. Therefore, each event will be addressed on a case-by-case basis. Event planners and Sea Girt NGTC staff will notify the CFMO-EMB early in the planning process for such events. The CFMO-EMB will evaluate potential effects of the special event on rare species, develop event-specific protection measures, and initiate informal consultation with the USFWS and NJDEP-ENSP, as appropriate. The objective is to provide input early in the process to ensure that special events take place as planned, without adversely affecting rare species.

#### **6.3.14.1 Fireworks**

In 2009, the NJ Department of Community Affairs (DCA), Division of Fire Safety, conducted its annual fireworks safety training at the Sea Girt NGTC, which provides a sufficiently large, open area to meet the DCA's 210-foot building set back safety standards. This event has not been held since, but is being left in the INRMP in case the NJDCA wishes to use the site in the future and the previously agreed upon protection measures. According to the DCA, the Sea Girt NGTC is a suitable site for this training given its wide-open fields in an urbanized area where participants can experience the type of winds DCA inspectors may encounter while overseeing professional fireworks displays at the shore.

The training consists of launching fireworks to display proper handling techniques for approximately 30 fire inspectors. The USFWS issued *Guidelines for Managing Fireworks in the Vicinity of Piping Plovers and Seabeach Amaranth on the U.S. Atlantic Coast*. Fireworks are highly disturbing to beach-nesting birds and, in the early breeding season, may cause territory or nest abandonment. The USFWS recommends a ¾-mile (3,960-foot) buffer from the nearest plover nesting and/or foraging area and fireworks launch point. The Sea Girt NGTC does not provide sufficient open space to maintain the ¾-mile buffer from designated rare species protection areas and meet minimum building set back requirements. Therefore, additional protection measures are provided below.

- The launch site will be located on the western end of the parade grounds maintaining a minimum distance of 900 meters (2,953 feet) from the designated rare species protection areas while also providing for the required 210-foot building set back distance. The CFMO-EMB will provide a map to DCA identifying the approved launch site.
- Training will occur on a non-holiday weekday during daylight hours to prevent drawing spectators onto the Sea Girt NGTC beach who may pose a threat to beach-nesting birds or protected habitat (NPA and SPA).
- The DCA must contact the CFMO-EMB Natural Resources Manager no later than 30 calendar days, 15 calendar days, 7 calendar days, and the day prior to the training to determine beach-nesting bird status. If chicks are present during any of the status check dates and it appears that they will not be fledged by the training date, the training will not be permitted.
- Notification via email or fax by the CFMO-EMB will be provided to the NJDEP-ENSP and USFWS at least two weeks in advance of the scheduled event.

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On September 8, 2017, the Borough of Sea Girt launched fireworks during a short duration from the beach for the centennial celebration with approval from the NJDEP and USFWS (USFWS-New Jersey Field Office to William McBride at Sea Girt NGTC, 19 July 2017). The following protection measures were implemented in preparation for the event:

- Survey the beach on September 7 to identify any nesting piping plovers or black skimmers and amaranth growing outside the protection areas;
- Consult with USFWS and NJDEP if any of the above listed birds are nesting (note that for the aforementioned September 8<sup>th</sup> event, this date is after the nesting season for the rare bird species); and
- Erect additional fencing around any amaranth plants growing outside the two protection measures (Please note that if the plants are present, the fireworks can proceed).

The fireworks proponents must continue to work with the CFMO-EMB to prepare a USFWS consultation package, and the fireworks activities will not occur until the USFWS concurs that the activity likely will not have an adverse effect on listed species.

#### **6.3.14.2 Beach Users**

Security personnel at the main entrance gate keep a daily car count of beach users during the season. An annual average of 64,184 visitors gained access to the Sea Girt NGTC beach from 2011 through 2016. Estimates decreased from 70,023 in 2011 to 59,178 in 2016. An annual average of 48,044 visitors gained access to the Sea Girt NGTC beach from 2017 through 2022 (NJDMAVA 2022). The outdoor recreational areas and uses are further described in Section 7.0. A table showing the number of beach visitors over time is provided as Table 7-1.

### **6.4 PROJECT-SPECIFIC MANAGEMENT GOALS**

Project-specific management goals, which include ongoing and/or planned management measures to achieve goals for Rare Species Management, are presented below, and implementation information (e.g., staffing, funding, and schedule) is provided in Section 10.0. The implementation of most of the Rare Species Goals are funding dependent as most are considered an ESA Section 7(a)1 activity and are indicated as such. However, in the event funding is not available select Rare Species Goals will be implemented. Rare Species Goals No.1 through No. 4 and No. 7 are ongoing, while Rare Species Goals No. 5 and No. 6 is conducted as needed.

**Rare Species Goal No.1** – Implement management practices and protection measures for rare species present on Sea Girt NGTC in accordance with the INRMP, and in cooperation with the USFWS and NJDEP-ENSP.

#### **Priority Classification: Compliance – Class 1**

1. Hold annual meetings or conference calls with the USFWS and NJDEP-ENSP.
2. Conduct annual environmental awareness briefings and annual “Qualified Monitor” training for Sea Girt NGTC staff and users.

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3. Install rare species protection area fencing (NJDEP-ENSP/NJDMAVA) and no rake zone signs (NJDMAVA) by March 15. Maintain fencing and signs (March 15 through August 31 – NJDEP-ENSP/NJDMAVA, September 1 through December 1 – NJDMAVA). At the discretion of the NJDEP-ENSP, installation may occur during the first two weeks in April and may be removed prior to December 1.
    - a. For safety reasons, the NGTC agrees to close the range for up to three hours during the work week so that the ENSP can install the northern protection area fencing and signs. In February or March, the NJDMVA, NGTC, and ENSP shall determine a mutually agreeable date and time for the fence and sign installations so the range can be scheduled for closure.
  4. Communicate with the ENSP and USFWS biologists regarding rare species monitoring results. Disseminate information to beach users and maintenance staff, as appropriate.
  5. Implement special management procedures based on monitoring data (e.g., install detour signs at no rake zone and no vehicle signs when piping plover eggs and/or least tern chicks are present, predation management, and vegetation control).
  6. Install interpretative signs at both the north and south ends of the NPA about the rare species management on the NGTC beach. The signs will be similar in size as existing signage at the entrance to the NGTC beach. Signs will describe the management intent of the area, life cycle and habitat requirements of target species, and the impact of human disturbance on the target species. Additional information may be included on the signage after discussion with the NJARNG COTR.
  7. The natural resource manager shall register for various email listservs from the NJDEP (<https://public.govdelivery.com/accounts/NJDEP/subscriber/new>) regarding natural resources and rare species management and the USFWS Pleasantville Field Office's Endangered Species Act Update quarterly email update. These listservs provide regulatory updates which helps the natural resources manager keep abreast of new laws, regulations, and rare species listing status.
  8. On an annual basis, the natural resource manager shall obtain a site-specific rare species list from the NJDEP Natural Heritage Program (<https://www.nj.gov/dep/parksandforests/natural/heritage/request.html>) and the USFWS (<https://ipac.ecosphere.fws.gov/>). The natural resources manager shall review the lists to identify any new rare species that may occur onsite and take appropriate measures to survey for and develop and implement any protection measures.
  9. Update the field identification guide at least every three years (ESA Section 7(a)1 activity).
  10. Install and maintain a Motus Wildlife Tracking System (*Motus Electrical Cover Sheet* and *Motus System Spec Index*, BD Engineering, dated April 20, 2023) to facilitate research and education on the ecology and conservation of migratory animals (ESA Section 7(a)1 activity).
  11. Conduct a window bird strike survey in an effort to understand the increasing amount of bird window strikes near the RTI and RTI barracks buildings (ESA Section 7(a)1 activity).

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12. Prohibit low speed vehicle use on the beach when beach-nesting bird chicks are present onsite. Enforce that the vehicles that are used during physical training be left at the entrance to the beach and not driven onto the beach into the vehicle buffer.
  13. Incorporate NJYCA to conduct environmental outreach programs and demonstrations to include urban gardening, constructing, managing, and maintaining raised garden beds, managing a composting program, planting and maintaining monarch habitat plots, constructing and maintaining bat boxes (ESA Section 7(a)1 activity).
  14. Prepare an annual survey work plan in coordination with the USFWS.
  15. Incorporate survey data into the NJARNG GIS, prepare annual survey report, and submit the report to the USFWS.

**Rare Species Goal No.2** – Conduct Rare Animal, Amphibian, and Insect Surveys (NJDEP-ENSP/ NJDMAVA or contractor).

**Priority Classification: Compliance – Class 1**

1. Conduct beach-nesting bird surveys from April 1 through August 31 (ESA Section 7(a)1 activity). Depending on funding availability, these surveys will be conducted by NJDMAVA hired consultants, NJDMAVA staff, NJDEP-ENSP, and/or Stockton University interns. The level of effort and responsible survey agency will be discussed and identified during the annual NJDEP/USFWS meeting.
  - a. For safety reasons, the NGTC agrees to delay the opening of the range until 0800 hours two days during the work week between 1 April and 31 August. In February or March, the NJDMAVA, NGTC, and ENSP shall determine mutually agreeable weekday dates for when the surveys will occur, so the range can be scheduled for closure.
2. Incorporate data into the NJARNG GIS.
3. Conduct an annual beach macroinvertebrate study. Chicks of beach-nesting birds such as piping plovers and least terns forage on swash zone macroinvertebrates. The goal of this study is to better understand how well the macroinvertebrate population rebounds after no vehicles have driven in the “No Rake Zone” in front of the NPA (ESA Section 7(a)1 activity).
4. Conduct annual surveys for Fowler’s toad (*Anaxyrus woodhousii fowleri* [state species of concern]) and southern grey tree frog (*Hyla chrysoscelis* [state endangered]) to better document the presence and/or absence of these species on Sea Girt NGTC (ESA Section 7(a)1 activity).
5. Conduct bald eagle (*Haliaeetus leucocephalus* [state endangered]), red-tailed hawk (*Buteo jamaicensis* [not listed]), and peregrine falcon (*Falco peregrinus* [state endangered]) surveys to determine presence and/or absence of these species on Sea Girt NGTC (ESA Section 7(a)1 activity).
  - a. The presence of these species on site are threats to beach nesting birds and present competition with osprey for nesting habitat.

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6. Utilize environmental DNA (eDNA) analyzation methods to aid in the identification and monitoring of rare species (ESA Section 7(a)1 activity).
    - a. Identify which rare species can be identified using eDNA and include eDNA analysis with any surveys for those eDNA species. Potential candidate eDNA species include monarch butterfly (*Danaus plexippus*), rusty patch (*Bombus affinis*), American (*American bumblebee*), and yellow banded bumble bees (*Bombus terricola*), Fowler's toad, and grey tree frog.
  7. Conduct periodic acoustic monitoring surveys for bat and report findings to NABat.

**Rare Species Goal No.3** – Conduct annual seabeach amaranth and seabeach knotweed surveys and implement protection measures.

**Priority Classification: Compliance – Class 1**

1. Conduct surveys during the last week of June, third week of July, and between August 15 and September 15.
2. Install and maintain fencing and signs around plants that are found outside the existing rare species protection areas. Report findings of seabeach amaranth plants outside the protection areas to the USFWS immediately.

**Rare Species Goal No.4** – Maintain and monitor the osprey nesting platform in cooperation with the NJDEP-ENSP and phone company.

**Priority Classification: Compliance – Class 2**

1. Coordinate with the NJDEP-ENSP and phone company regarding design of nesting deterrent for cellular phone tower (ESA Section 7(a)1 activity).
2. Coordinate removal of existing nesting materials from the cellular phone tower and installation of nesting deterrent with the phone company and the NJDEP-ENSP. Obtain appropriate regulatory approvals and conduct removal activities outside of the nesting season (ESA Section 7(a)1 activity).
3. Monitor nesting activity and report findings to NJDEP-ENSP annually (ESA Section 7(a)1 activity).
4. Coordinate with phone company to install a web accessible camera to observe nesting activities at the nest on top of the cellular tower (ESA Section 7(a)1 activity).
5. Inspect and maintain nesting platform annually prior to March 1. Remove nesting material from nesting platform every 3 to 5 years depending on the amount of accumulated nesting material (ESA Section 7(a)1 activity).
6. Continue to maintain the game camera on the osprey nesting platform (ESA Section 7(a)1 activity).
7. Collect and analyze fish carcasses for lead. Investigate survey protocols to test for lead in bones and cartilage of fish carcasses that are left behind by the ospreys (ESA Section 7(a)1 activity).

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**Rare Species Goal No.5** – Implement a predation management program for target species in coordination with NJDEP-ENSP, USFWS and NJDEP wildlife control staff (ESA Section 7(a)1 activity).

**Priority Classification: Compliance – Class 1**

1. Reduce the predator population to a sustainable level as determined by the predatory population management plan, and continue annual maintenance/control, as necessary.
  - a. Develop protocol for a predator population survey.
  - b. Conduct an annual predator population survey targeting foxes, cats, and raccoons. The annual survey shall also include a query of the Boroughs of Sea Girt and Manasquan to ascertain the number of licensed pets (cats and dogs).
  - c. Develop a predator population management plan including target species reduction rates.
  - d. Conduct predation management in coordination with NJDEP-ENSP, USFWS, and NJDEP wildlife control staff. Trapping will be implemented just prior to, or at the early stages of, the beach-nesting bird nesting season.

**Rare Species Goal No.6** – Implement habitat enhancement for rare beach species in cooperation with the USFWS and ENSP. (Note: The management actions associated with the elimination/control of Asiatic sand sege is under the Land and Watershed Goal #2 in Section 4.3). ESA Section 7(a)1 activity.

**Priority Classification: Compliance – Class 1**

1. Implement dune habitat enhancement measures.

Coordinate with the ENSP and USFWS to develop dune vegetation and grading plan to improve topography and attain required permits.

Implement habitat enhancement measures by creating a half-acre area beginning at the northern extent of the NPA. All work would be conducted between December 1 and March 14 to protect potential beach-nesting bird and seabeach amaranth populations.

Conduct follow-up vegetation cover and topography monitoring to evaluate enhancement measure.

Work with USFWS and USDA to implement a plant propagation program for seabeach amaranth and plant protection strips.

Per the *Freshwater Wetlands and Coastal Habitat Enhancement Plan* (ASGECI 2017), as needed, maintain American beachgrass vegetation cover goals in NPA to levels no greater than 50% with patches ranging from 5 percent to 20 percent in frontal portions. Consult the habitat enhancement plan for specific guidance.

**Rare Species Goal No.7** – Encourage citizen science programs.

**Priority Classification: Compliance – Class 3**

2. Inspect and maintain Fluker posts annually.

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- a. Encourage participation in the Fluker Post Research Project (FPRP). The FPRP leverages citizen science habitat monitoring to allow land managers to detect changes in habitat caused by climate change, human usage, extreme weather events, etc. It also creates a historical record of changes that have occurred in the area being monitored. Users take photos using their own mobile devices and upload them via the We Make App application. Download images annually at a minimum to assess changes in coastal topography and dune vegetation.
  3. Encourage participation in the Bumble Bee Watch program. Bumble Bee Watch is a collaborative effort to track and conserve North America's bumble bees. This community science project allows for individuals to upload photos of bumble bees to start a virtual bumble bee collection; identify the bumble bees in your photos and have your identifications verified by experts; help researchers determine the status and conservation needs of bumble bees; help locate rare or endangered populations of bumble bees; learn about bumble bees, their ecology, and ongoing conservation; and connect with other community scientists. More information can be found at <https://www.bumblebeewatch.org/about/>
  4. Encourage participation in the Avian Knowledge Network (AKN) program. AKN uses data and technology which citizens and other stakeholders can contribute to and access to support shared conservation goals.
  5. Encourage participation in MyCoast, eBird, Osprey Watch, and NABat citizen science programs.

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## **SECTION 7**

### **OUTDOOR RECREATION**

#### **7.1 PROGRAM DESCRIPTION AND OVERALL MANAGEMENT GOALS**

The Outdoor Recreation program addresses consumptive and nonconsumptive natural resources-based recreation at Sea Girt NGTC. The program emphasizes natural resources-based activities and does not address outdoor sports such as golf. Recreational opportunities at the installation include fishing, camping, wildlife viewing, and general use of the beach. The overall goal of the Outdoor Recreation program is to allow maximum use of Sea Girt NGTC for natural resources-based activities in a manner that does not interfere with mission activities or affect rare species. Providing recreational opportunities provides quality of life benefits to military personnel and their families, which ultimately supports military recruiting objectives. In addition, participation in these activities tends to increase natural resources awareness and foster good stewardship of the land. The wetland restoration area and beach ramp have wheel chair accessibility and is maintained by onsite NJDMAVA personnel. The NJDMAVA Environmental Management Bureau (EMB) is responsible for managing the outdoor recreation program.

#### **7.2 PROGRAM STATUS AND MANAGEMENT ISSUES**

##### **7.2.1 Access for Outdoor Recreation**

In accordance with the Sikes Act, public access to the installation for natural resources based outdoor recreation is allowed to the extent that:

- The use is not inconsistent with the needs of fish and wildlife resources; and
- The use is subject to requirements necessary to ensure safety and military security.

Access to Sea Girt NGTC for outdoor recreation is controlled and limited due to safety issues associated with the small arms ranges, and to ensure that recreational activities do not interfere with the military mission. The installation is generally closed to public entry. Military personnel, retired military personnel, NJDMAVA employees, and tenant employees may gain access to the installation with proper identification.

##### **7.2.2 Outdoor Recreation Areas and Uses**

Designated outdoor recreation areas at the installation include the beach, campground, and fishing area. The beach area is open to beach pass holders from Memorial Day until the week after Labor Day. Military, retired military, NJDMAVA, and tenant employees can gain access to the beach year-round. In a letter dated 15 May 2018, a beach pass policy memorandum was issued to provide guidance and procedures for requesting and issuing beach pass access to the Sea Girt NGTC. The following individuals are granted access with valid identification:

- Military and military dependents including (1) New Jersey National Guard (NJNG) (current and retired) and (2) Reserve Component and Active-Duty personnel living or stationed in New Jersey (current and retired);
- NJDMAVA state employees and NJNG federal DOD employees (non-dual status), current and retired;

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- Current and retired federal and state law enforcement officers from the New Jersey State Police, New Jersey Department of Corrections, New Jersey Juvenile Justice Commission, and New Jersey Division of Criminal Justice; and
  - Local First Responders to include current members of of the Sea Girt, Manasquan, Spring Lake, Spring Lake Heights, Brielle, and Wall Police, Fire, and Rescue Squad/Emergency Medical System.

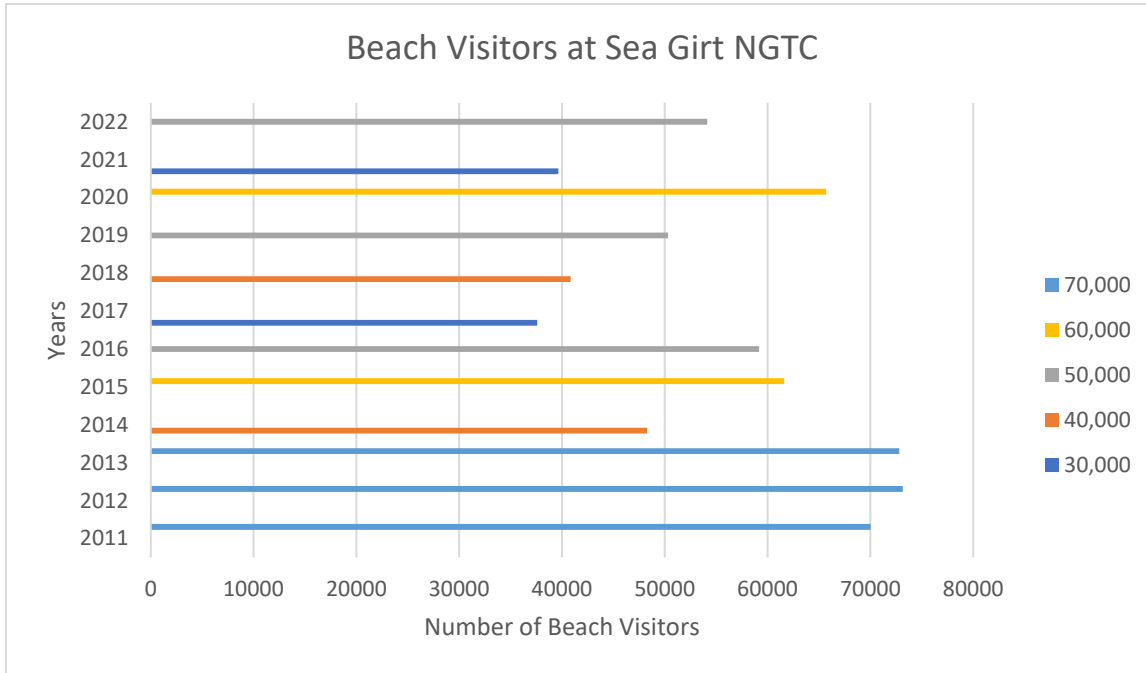
In addition, courtesy beach passes are provided to the following for distribution to extended family and friends of the following:

- New Jersey National Guard members (current and retired) – authorized to sponsor three additional beach passes;
- Reserve Component and Active-Duty members (current and retired) – authorized to sponsor one additional beach pass;
- NJDMAVA employees and NJNG federal DOD employees (current and retired) – authorized to sponsor three additional beach passes;
- federal and state law enforcement officers (current and retired) – authorized to sponsor one additional beach pass for a spouse of dependent;
- local First Responders – authorized to sponsor one additional beach pass for a spouse or dependent;
- TAG – reserves the right to direct access to the NGTC to supporters of the New Jersey National Guard (e.g., civic groups, Veterans’ organizations, donors); and
- TAG, Deputy Adjutant General (DAG)/Assistant Adjutant General (AAG), and Land Component Commander (LCC) – provided limited number of passes for discretionary distribution to support the good of the organization.

Current NJNG and NJDMAVA state employees can purchase an additional four beach passes for family members 12 years and older above the authorized amount.

Security personnel at the main entrance gate keep a daily car count of beach users during the season. An annual average of 64,184 visitors gained access to the Sea Girt NGTC beach from 2011 through 2016. Estimates decreased from 70,023 in 2011 to 59,178 in 2016. An annual average of 48,044 visitors gained access to the Sea Girt NGTC beach from 2017 through 2022. A table showing the amount of beach visitors overtime at the Sea Girt NGTC is provided as Table 7-1. Estimates are based on each car passing through the security gate with three passengers. Beach parking fees of \$3/day, \$15/week, and \$50/season apply to those personnel identified above. All others are required to pay \$5/day, \$20/week, or \$60/season. Lifeguard and beach-raking services are provided during the season through an agreement with the Borough of Sea Girt. The rare species protection area described in Section 6.0 is off-limits to all recreational use. Routine beach maintenance, including beach raking, is conducted in accordance with the rare species protection measures specified in Section 6.0 of this INRMP and the CAFRA permit.

**TABLE 7-1 BEACH VISITORS AT SEA GIRT NGTC**



The following beach rules apply to visitors and those stationed at the NGTC:

- (1) Park only in authorized areas.
- (2) Swimming is only permitted on the southern portion of the beach.
- (3) No boats, kayaks, rafts, surfboards or personal watercraft.
- (4) No dogs or pets.
- (5) No glass containers.
- (6) No alcoholic beverages.
- (7) No tents, lean-tos, cabanas, etc.
- (8) No vehicles on the beach.
- (9) No fires, grills, or BBQs.
- (10) Do not walk into the dune areas.
- (11) Do not enter into the restricted environmentally sensitive areas and wildlife habitats behind the ranges and on the beach.

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(12) Fishing in approved area only (north beach).

(13) Remove all trash/litter from the beach and deposit in approved containers.

The Sea Girt NGTC campground is located along Stockton Lake in the southeastern portion of the installation. The campground is typically open from Memorial Day through October. Facilities include a bathhouse and nine sites with water, electric, and sewer hookups. No tents, pets, or open flames are allowed. The Director's office makes reservations for campsites from 9:00 a.m. to 1:00 p.m. on Wednesdays only. Preference for reservations is given to military and retired military personnel. NJDMAVA employees may reserve sites if the campground is not full. Nightly rates are \$25 for pop-up campers and \$30 for other units. User fees go into the installation's billeting fund and are used for maintenance of the facilities. The installation also has three cottages that are available seasonally for \$45 to \$55 per night to military and retired military personnel through a lottery. Campers are provided with informational flyers identifying camp site rules, beach and fishing rules, and identifying firing range and environmental area restrictions.

Nonconsumptive outdoor recreation activities at the installation include general use of the beach, wildlife viewing, and the Beach Picnic Area. Military units, Post tenant agencies and visitors may request the use of the Beach Picnic Area for unit or large events. There are 16 large metal picnic tables in this area that seat approximately 80 to 115 people. Tents, cabanas, and grills may be used in this area.

Consumptive uses include recreational fishing from the beach and in Stockton Lake. Surf fishing for species such as striped bass, bluefish, and weakfish is popular at the installation. Fishing in Stockton Lake is less popular because areas near the shoreline are relatively shallow and the dock previously used for fishing, adjacent to NGTC's campground, was removed during reconstruction of the bulkhead in 2011. Stockton Lake is considered a Special Restricted Shellfish Growing Water, as indicated by the NJDEP Bureau of Marine Water Monitoring's 2011 Shellfish Classification Map. "Special Restricted" means the shellfish can only be harvested under an NJDEP permit and must be further purified or processed prior to being sold. Based on this restriction, recreational shellfish harvesting is not allowed at Sea Girt NGTC. No hunting or trapping is allowed on the installation.

In the summer of 2007, the Sea Girt NGTC first identified a portion of the beach in front of the NPA as a designated fishing area to limit bathing and ocean recreation activities, which can be detrimental to rare species utilizing the protection area, while giving fisherman a safe place to fish. Signs are erected and brochures (included in Appendix E) are distributed identifying the extent of the designated fishing area (second jetty north area during the summer season) and informing fishermen that unused bait and fish scraps should be taken with the fisherman, and not disposed of on the beach or in trash containers. Access to the fishing area may be temporarily restricted if piping plover chicks are present at the Sea Girt NGTC.

### **7.3 PROJECT-SPECIFIC MANAGEMENT GOALS**

Project-specific management goals, which include ongoing and/or planned management measures or activities to achieve goals for Outdoor Recreation, are presented below, and implementation information (e.g., staffing, funding, and schedule) is provided in Section 10.0 . Outdoor Recreation Goal No. 1 is ongoing.

**Outdoor Recreation Goal No.1** – Continue to implement beach access, fishing area, and campground programs for natural-resources-based outdoor recreation.

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**Priority Classification: Stewardship – Class 3**

1. Administer the beach access program.
  - a. Under the INRMP, the Owner’s environmental staff are primarily responsible for advising Site staff operation and maintenance requirements regarding environmental concerns.
2. Enforce designated fishing area and trash/bait management procedures.
3. Administer the campground access program.
4. Update the Camp Site Guidance flyer and Fishing Area brochure, as needed.
5. Expand onsite birding opportunities.
6. Maintain the clamshell path, wooden boardwalk, and interpretive signage.
  - a. Promote the use of alternative weed control such as propane torches to burn weeds, manual hand pulling, and the application of surfactants in addition to herbicides.
  - b. Extend the path into the campground and into the beach parking lot area to include crosswalk stripping on the paved roads and interpretive signage to direct pedestrians to use the path over walking on the road.
7. Update recreational memorandums as needed and distribute them to the appropriate parties. These memorandums include rules for the campground, rental cottages, fisherman use, and emotional support vs. service animals.

**SECTION 8 CLIMATE**

**8.1 PROGRAM DESCRIPTION AND OVERALL MANAGEMENT GOALS**

Over the last 10 years, NJARNG installations have encountered significant effects from climate change including damage from extreme weather events, increased coastal flooding, increased average annual temperatures, longer fire seasons, increased drought conditions, and beach erosion from rising sea levels. As a result, climate change has been identified by the DOD and NJDMAVA as a critical national security threat and threat multiplier that must be addressed on NJARNG installations (Rutgers, 2020).

Located in the Outer Coastal Plain of New Jersey, the climate at Sea Girt is influenced by its proximity to the Atlantic Ocean. This maritime influence tends to have a moderating effect on coastal temperatures, causing them to be slightly cooler than inland temperatures in the summer and slightly warmer than inland temperatures in the winter. The Office of the New Jersey State Climatologist reports temperature and precipitation monthly averages from 1991 to 2020, and 30-year averages “norms” recorded at several stations throughout coastal NJ (Office of the New Jersey State Climatologist n.d.). See Table 8-1 below.

**TABLE 8-1 CLIMATOLOGICAL DATA SUMMARY FOR SEA GIRT NGTC**

Month	Temperature (°F)			Precipitation (inches)		
	Mean (1991–2020)	Normal (1991–2020)	Preliminary New Normal (1991–2020)	Mean (1991–2020)	Normal (1991–2020)	Preliminary New Normal (1991–2020)
January	33.3	30.7	41.8	3.51	4.20	3.85
February	34.5	32.4	43.1	2.90	3.31	3.10
March	40.8	40.2	49.2	4.24	4.33	4.28
April	50.0	51.5	58.9	3.77	3.91	3.84
May	69.5	61.4	68.3	3.79	4.13	3.96
June	69.3	70.7	77.8	4.38	4.34	4.36
July	75.1	76.0	83.5	4.64	4.40	4.52
August	73.6	74.2	81.8	4.59	6.27	5.43
September	67.6	67.1	68.1	4.17	4.33	4.25
October	56.2	54.9	65.5	4.24	4.71	4.47
November	46.4	44.5	55.6	3.41	3.82	3.61
December	38.4	35.9	46.9	4.78	4.34	4.56
Total	-	-	-	48.2	52.09	50.25

**Source:** Office of the New Jersey State Climatologist. Available at <http://climate.rutgers.edu/stateclim/>. Accessed on April 7, 2023. Values are calculated from average monthly temperatures and precipitation totals recorded at several stations throughout coastal NJ and represent inches of liquid equivalent precipitation.

**8.2 CLIMATE CHANGE**

Climate change refers to fluctuations in the Earth’s climate over a long period of time and may be due to a combination of both natural and human causes. However, in recent years, increased greenhouse gas emissions from human activities have caused the acceleration of climatic change throughout the globe.

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As mentioned in the DOD Quadrennial Defense Review of 2014, the DOD has identified climate changes as a major impact to military readiness not only from an operational standpoint but also to infrastructure that supports the military mission. To identify and respond to these climate change threats, several Army and DOD regulations require DOD agencies to identify and address climate impacts on military lands and include:

Department of Defense Issuances (DODI) 4715.03 Natural Resources Conservation Program (2018) instructs that the changing climate be addressed in INRMPs to help mitigate potential impacts on the natural resources on installations and identify significant natural resources that are likely to remain on DOD lands or that may in the future occur on DOD lands and, when not in conflict with mission objectives, take steps to implement adaptive management to ensure the long-term sustainability of those resources.

- Department of Defense Manual (DODM) 4715.03 INRMP Implementation Manual (2018) provides guidance on how to integrate changing climate considerations into an INRMP.
- Climate Adaptation for DOD Natural Resource Managers (2019) which consists of two major sections. Part I includes an overview of climate risks to military installations and mission requirements, an introduction to adaptation, a brief primer on climate science, a review of options for incorporating climate concerns into INRMPs, and a summary of climate and adaptation considerations for individual INRMP program elements. Part II offers a step-by-step method for carrying out the INRMP adaptation planning process.
- United States Army Climate Strategy (2022) provides goals and objectives with target completion dates to ensure the Army continues to maintain a ready force in the face of climate change hazards.
- Army Directive 2020-08 which directs commanders of Army installations to assess, plan for, and adapt to the projected impacts of changing climate and extreme weather by adding the results of climate change prediction analysis tools into all facility and infrastructure related plans, policies, and procedures. The intent is to enhance the installation master planning process and Army facility standard designs beyond the current Unified Facilities Criteria minimum requirements. The directive also mandates the incorporation of the results of the Department of Defense Climate Assessment Tool (DCAT) into all appropriate plans, such as real property master plans, INRMP, Installation Energy and Water Plans, emergency management plans, continuity of operations plans, and standard operating procedures. Master planners will use the Army Climate Assessment Tool and Army Climate Resilience Handbook to identify a range of potential impacts from changing climate and other extreme weather that could affect the installation, assess their likelihood, and identify preparedness and resilience measures to mitigate their effects.

In accordance with the above referenced requirements, the following sections discuss the best available science to assess climate change at Sea Girt NGTC and expand and develop new climate adaptation goals for 2025-2029 INRMP period.

### **8.3 CLIMATE VULNERABILITY AND RESILIENCE ANALYSIS METHODOLOGY**

The NJDMAVA EMB team has undertaken statewide natural, cultural, and compliance planning level surveys (PLS) above and beyond those necessary for standard environmental management. These inventories provide essential baseline data for NJDMAVA to monitor for changing site ecology and identify subsequent changes to rare and invasive species management strategies.

The Climate Change Planning Goal No. 1 of the 2018-2022 version of the Sea Girt NGTC INRMP included a project to "Conduct a climate change vulnerability assessment with defined adaptation strategies." To achieve this goal,

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NJDMAVA partnered with Rutgers University (Rutgers) to develop a joint vulnerability assessment and adaption strategies. Rutgers prepared “A Climate Change Risk and Resilience Assessment of New Jersey’s National Guard Facilities”, dated December 2020 and “Site Profile and Risk Analysis: NGTC at Sea Girt”, dated January 19, 2021.

For this INRMP update, the Rutgers vulnerability assessment and several other tools were used to assess climate change vulnerability of Sea Girt NGTC to provide a comprehensive review of the best science available. The tools and the results of the assessments are provided in this section. Coupled with results of the climate vulnerability tools presented in this section and the PLSs, the NJDMAVA EMB team is well positioned to evaluate climate vulnerabilities and suggest and implement climate change adaptation projects.

### **8.3.1 Rutgers University Climate Change Risk and Resilience Assessment**

In 2020, Rutgers University Jacques Cousteau National Estuarine Research Reserve and the Edward J. Bloustein School of Planning and Public Policy prepared the Climate Change Risk and Resilience Assessment of New Jersey’s National Guard Facilities. This included a review of the 2020 New Jersey Scientific Report on Climate Change (NJDEP 2020), desktop analysis of existing climate data, site visits to 12 NJDMAVA installations, and facilitation of a panel of Rutgers scientists. Using this information, Rutgers compiled the best science available to assess climate risks and resilience and provides recommendations to reduce climate-related impacts to missions, operations, and natural resources on NJARNG installations.

### **8.3.2 Rutgers University Site Profile and Risk Analysis: NGTC at Sea Girt**

In 2021, Rutgers University prepared a Site Profile and Risk Analysis for the Sea Girt NGTC. This analysis assessed the climate impacts, vulnerable functions, setting, critical infrastructure, natural resources, and compiled climate data to assess the climate resilience of the installation. To project future climate data, Rutgers used two emissions scenarios to provide a range of future estimates using the NJADAPT tool. One emissions scenario corresponds to a high emissions future where carbon dioxide and methane emissions continue to rise, and one emissions scenario corresponds to stabilizing emissions. Climate data results are discussed in Section 2.5.3.2 below.

### **8.3.3 Department of Defense Climate Assessment Tool**

In 2021, the DOD fielded DCAT as a nationwide standardized screening tool to identify climate hazards as identified by Congress and the Department of Defense Climate Change Adaptation Roadmap (2014) that are of the greatest concern to military readiness, mission execution, and infrastructure sustainability. These 8 hazard areas include coastal flooding, drought, energy demand, extreme temperature, historical extreme conditions, land degradation, riverine flooding, and wildfire. Each hazard area contains between two to eight sub hazards that provides a more detailed analysis of the hazard’s impact on the site. The DCAT assigns a Weighted Order – Weighted Average (WOWA) score as a type of multi-criteria evaluation technique to analyze different types of information to create a single exposure index or score. In this tool, WOWA has no absolute meaning and is a unitless score that measures the relative exposure of climate change between sites and across commands and regions.

The DCAT provides two types of assessments:

- A Standard Assessment which presents the results of exposure assessments without any user input except for choosing the appropriate facility, and
- An Extended Assessment which allows user to add site specific data to the tool and explore the results of the hazard assessment. Use of the Extended Assessment is only recommended for advanced users who understand the tool’s logic and data models as unexpected results may be encountered.

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For the Sea Girt NGTC, the Standard Assessment of the DCAT was used to assess risk of climate change hazards under four different scenarios: “lower” emissions in 2050, “lower” emissions in 2085, “higher” emissions in 2050, and “higher” emissions in 2085. Results of the assessment are provided in Appendix B and are discussed in Section 2.5.3.3 below.

### **8.3.4 Climate Mapping for Resilience and Adaptation**

The National Oceanic and Atmospheric Administration's Climate Mapping for Resilience and Adaptation (CMRA) tool (U.S. Climate Resilience Toolkit, 2023) allows the user to select a location and explore current and future exposure to climate-related hazards including extreme heat, drought, wildfire, flooding, and coastal inundation. The Sea Girt Census Tract 34025809200 was chosen for analysis. Future climate indicators were grouped into early century (2015-2044), mid-century (2035-2064), and late century (2070-2099) and showed minimum and maximum data for lower (RCP 4.5) and higher emissions (RCP 8.5) scenarios.

### **8.3.5 NJADAPT**

Rutger’s University NJADAPT NJFloodMapper tool was used to conduct a flood exposure analysis. This tool uses the best available science for sea-level rise and numerous other parameters including total water levels, hurricane surge, and FEMA flood zones.

The Total Water Levels (TWL) Tool was used to create maps that illustrate three flooding types: permanent inundation (i.e., the future Mean Higher High-Water line); high tide flooding (i.e., sunny-day flooding, nuisance floods); and extreme coastal flooding from storms (i.e., hurricanes and nor’easters). The TWL method is based on NOAA’s “What Will Adaptation Cost” guide (2013) and is consistent with the 2019 Science and Technical Advisory Panel report for sea-level rise in New Jersey. A range of sea-level rise projections were selected based on future emissions projections and planning horizons to develop exposure maps for permanent inundation.

The resulting TWL for the exposure analysis is rounded to the nearest whole foot. The resulting TWL inundation map represents “still water”, which reflects the astronomical tide, the storm surge, and limited wave setup caused by breaking waves. The inundation mapping more closely corresponds to FEMA’s Still Water Flood Elevations (SWEL), not the Base Flood Elevation (BFE). Therefore, this analysis could under-represent the amount of inundation, as the calculations do not consider wave velocity and other dynamic effects from storms.

For this analysis, the Atlantic City NOAA tide gauge was selected. Low, moderate, and high emissions scenarios were evaluated for the site for 2050 and 2100. Low global greenhouse gas (GHG) emissions correspond to a future consistent with the global goal of limited warming to 2°C above early industrial (1850-1900) levels. Moderate GHG emissions correspond to a future consistent with current global policies. High GHG emissions correspond to a future consistent with the strong, continued growth of fossil fuel consumption. Sea-level rise (SLR) estimates used in the analysis were based on a 95% chance of exceeding and a 50% chance of exceeding. Additionally, an analysis was done for potential flood events that could occur using flood heights that occurred during Hurricane Sandy in 2012.

## **8.4 RESULTS**

### **8.4.1 Rutgers University Climate Change Risk and Resilience Assessment**

The 2020 *Climate Change Risk and Resilience Assessment of New Jersey’s National Guard Facilities* separated their findings by each of the 12 sites that were assessed. Climate vulnerabilities identified for the Sea Girt NGTC were impacts from sea-level rise, convective storms, vector borne diseases, and increased temperatures and humidity.

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Sea-level rise was identified as the largest threat to Sea Girt NGTC. Sea-level rise will increase the likelihood that the installation will experience flooding from high-tide flood events and coastal storms. Sea-level rise coupled with a projected increase in frequency of convective storms will continue to damage and erode the protective dune system on the installation, cause damage to buildings and training facilities, and degrade habitats of managed and endangered species present on the installation. Sea-level rise and a predicted rise in precipitation also has the potential to further damage buildings on the installation, exacerbate existing stormwater drainage issues, and have impacts on freshwater wetland habitats.

Vector borne diseases, such as West Nile Virus from mosquitos, may become more prevalent due to increased amounts of precipitation, standing water from floods, and growing number of degree days. Increased annual temperatures were also projected, which may impact outdoor training activities and increase energy demands for indoor cooling systems.

#### **8.4.2 Rutgers University Site Profile and Risk Analysis: NGTC at Sea Girt**

Results from the 2021 Rutgers University Site Profile and Risk Analysis are discussed below.

The Site Profile and Risk Analysis for Sea Girt NGTC provided an analysis of projected climate data for two climate emissions scenarios: a stabilizing emissions future and a high emissions future.

Average monthly precipitation indicators for Sea Girt NGTC demonstrate a rising trend through the end of the century for both stabilizing emissions future and a high emissions future.

Average daily temperatures demonstrate a rising trend through the end of the century. Under a high emissions scenario, the average daily temperature at the installation is projected to increase 5 to 10 degrees Fahrenheit. Under a stabilizing emissions scenario, the average daily temperature at the installation is projected to remain or increase 0 to 5 degrees Fahrenheit.

Average annual cooling degree days at Sea Girt NGTC demonstrate a rising trend through the end of the century for both a stabilizing emissions future and a high emissions future. Cooling degree days are calculated by the energy required to cool an indoor space to 65 degrees Fahrenheit from the predicted outdoor temperature. Average annual heating degree days at Sea Girt NGTC are projected to decrease as winter temperatures rise.

Average annual growing degree days at Sea Girt NGTC demonstrate a rising trend through the end of the century, with higher projections for a high emissions future than a stabilizing emissions future.

The NOAA Storm Events Database was used to assess convective storms, drought, and wildfire events that have occurred from 1950 to 2019. This source does not provide projections of future events. The Sea Girt NGTC outdoor training area has a moderate fuel hazard, and the dune vegetation presents a high fuel hazard when drought conditions are present.

Sea-level rise projections through 2050 are not dependent on assumptions about future global emissions and the commensurate change in global mean temperature. Projections after 2050 assumed moderate to high emissions scenarios through the end of the century. For all emissions scenarios, sea-level rise demonstrates a rising trend through the end of the century. The highest of daily high tides will begin to surpass the current high tide flooding threshold (1.8 feet) between 2050 and 2070 and may be equivalent to the current 10-year flood event (3 feet) by 2100.

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### **8.4.3 Department of Defense Climate Assessment Tool**

Results from the DCAT tool are provided in Appendix B and discussed below.

DCAT ranked future climate exposure hazards based on four scenarios: “lower” emissions in 2050, “lower” emissions in 2085, “higher” emissions in 2050, and “higher” emissions in 2085. The number one future climate hazard for the Sea Girt NGTC is coastal flooding. In modeled historical period (1950 to 2005) and in the “lower” emissions scenarios for 2050 and 2085, coastal flooding is largely due to coastal erosion. However, in “higher” emissions scenarios in 2050 and 2085, the risk of coastal flooding is largely due to coastal flood extent, which is likely due to sea-level rise. Coastal flooding remains the number one hazard to the installation in all scenarios (WOWA Score 86.3 to 95.3).

Drought was ranked as the second climate hazard (WOWA Score 70.8 to 77.2) that Sea Girt NGTC will be exposed to. This hazard remains the same level of risk over different emissions and time scenarios. The greatest contributing indicator of drought at the installation is the average amount of water that flows down a particular river, per year (mean annual runoff), with other indicators of a deficiency of moisture (aridity), periods of rapid drought intensification with impacts on agriculture, water resources, ecosystems (flash drought), flash drought frequency, drought year frequency, and consecutive dry days following in that order.

Energy demand was ranked as the third climate hazard (WoWA Score 57.4 to 58.8) that Sea Girt NGTC will be exposed to. The greatest contributing factor to energy demand is the average daily temperature maximum for five consecutive days per year (5-day maximum temperature). Over time and increasing amounts of emissions, the number of cooling degree days will increase as a contributing factor to energy demand.

Energy demand and riverine flooding (WOWA Score 53.8 to 75.1) ranked closely in future climate exposure hazards. In the “higher” emissions scenario for 2085, riverine flooding was ranked as the third climate hazard that Sea Girt NGTC will be exposed to. It was ranked fourth in the “higher” emissions scenario for 2050. The greatest contributing factor to riverine flooding is when rivers overflow their banks and flow into surrounding areas. The amount of extreme precipitation days increases with time and increasing amounts of emissions.

Extreme temperature was ranked as the fifth climate hazard that Sea Girt NGTC will be exposed to. The greatest contributing factor is an increasing 5-day maximum temperature. The number of frost days was shown to decrease over time, with the number of high heat index days increasing over time. The days per year above 95 degrees Fahrenheit will also increase over time and increase emissions scenarios.

Wildfire was ranked as the sixth climate hazard that Sea Girt NGTC will be exposed to. The greatest contributing factor is the flash drought frequency. The ignition rate of wildfires will increase over time and with increasing emissions.

### **8.4.4 Climate Mapping for Resilience and Adaptation**

Results for the CMRA tool are provided in Appendix B and are discussed below.

Temperatures for Sea Girt Borough are expected to increase in both the lower and higher emissions scenarios and in all three century groups. Annual temperature thresholds with maximum temperatures greater than 90 degrees Fahrenheit are expected to increase from an average of 13 days to an average of 40 days in the late century for the lower emissions scenario, and an average of 68 days in the late century for the higher emissions scenario. Annual temperature thresholds with maximum temperatures greater than 100 degrees Fahrenheit are expected to increase from zero days to an average of four days in the late century for the lower emissions scenario, and an average of 13

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days for the higher emissions scenario. Annual cooling degree days are expected to increase from an average of 938 degree-days to an average of 1,559-degree days in the late century for the lower emissions scenario, and an average of 2,126 degree-days in the late century for the higher emissions scenario. Extreme heat is listed as a “relatively low” national risk index rating according to the FEMA National Risk Index.

Average annual total precipitation is expected to increase from 46 inches to 49 inches in the late century for the lower emissions scenario, and 50 inches in the late century for the higher emissions scenario. Days per year with precipitation (wet days) is expected to decrease from 178 days to 176 days in the late century for the lower emissions scenario, and 173 days for the higher emissions scenario. Days per year with no precipitation (dry days) are expected to increase from 188 days to 189 days in the late century for the lower emissions scenario, and 193 days in the late century with the higher emissions scenario. The maximum number of consecutive dry days will stay consistent. Additionally, annual temperature thresholds will increase as previously discussed. Drought does not have a national risk index rating in Sea Girt according to the FEMA National Risk Index.

Although the days per year with no precipitation (dry days) and annual temperature thresholds are expected to increase, the maximum number of consecutive dry days is expected to stay consistent. Wildfire does not have a national risk index rating in Sea Girt according to the FEMA National Risk Index.

The average annual precipitation is expected to increase. The average annual days with a total precipitation of greater than one inch is expected to increase from six days to eight days in the late century for the lower emissions scenario, and nine days in the late century for the higher emissions scenario. Annual days with a total precipitation of greater than two and three inches are expected to stay the same. Annual days that exceed the 99<sup>th</sup> percentile is expected to increase from four days to five days in the late century with the lower emissions scenario, and six days in the late century for the higher emissions scenario. The number of days with a maximum temperature below 32 degrees Fahrenheit is expected to decrease from 14 days to six days in the late century for the lower emissions scenario, and two days in the higher emissions scenario.

The percentage of Sea Girt Borough that is in a 100-year floodplain is 28.21% and 6.04% in a 500-year flood zone. The percentage of Sea Girt Borough that is outside of the 100-year or 500-year flood zone is 65.74%.

Sea level rise is used as the indicator for coastal inundation. The percent of selected census tract impacted by global sea level rise did not have a modeled history for comparison but is expected to increase from zero percent in the early century to three percent in the late century for the lower emissions scenario, and six percent in the late century for the higher emissions scenario.

#### **8.4.5 NJADAPT**

Results from the NJADAPT NJFloodMapper tool are discussed below. Flood mapping figures are provided in Appendix B.

In low, moderate, or high emissions scenario in 2050 with 0.7 ft SLR estimate (at least 95% chance of exceeding), the TWL was 1 ft. In a low or moderate emissions scenario in 2100 with 0.7 ft SLR estimate (95% chance of exceeding), the TWL was 1 ft. In a high emissions scenario in 2100 with the same parameters, the TWL was 2 ft.

In a low, moderate, or high emissions scenario in 2050 with a 1.4 ft SLR estimate (approximately 50% chance of exceeding), the TWL was 1 ft. In a low emissions scenario in 2100 with a 2.8 ft SLR estimate (approximately 50% chance of exceeding), the TWL was 3 ft. In a moderate emissions scenario in 2100 with a 3.3 ft SLR estimate

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(approximately 50% chance of exceeding), the TWL was 3 ft. In a high emissions scenario in 2100 with a 3.9 ft SLR estimate (approximately 50% chance of exceeding), the TWL was 4 ft.

Adding a potential flood event to the analysis produced more drastic flooding results. The following results used Hurricane Sandy flood heights (+4.16 ft) to assess potential future flood events and their effects on the site.

In low, moderate, or high emissions scenarios in 2050 with 0.7 ft SLR estimate (at least 95% chance of exceeding), the TWL was 5 ft. The same parameters in 2100 yielded a TWL of 5 ft for a low emissions scenario, 5 ft for a moderate emissions scenario, and 6 ft for a high emissions scenario, with a 95% chance of exceeding these flood heights.

In low, moderate, or high emissions scenarios in 2050 with a 1.4 ft SLR estimate (approximately a 50% chance of exceeding) and flood heights similar to Hurricane Sandy, the TWL was 6 ft. In a low emissions scenario in 2100 with a 2.8 ft SLR estimate (approximately a 50% chance of exceeding), the TWL was 7 ft. In a moderate emissions scenario in 2100 with a 3.3 ft SLR estimate (approximately a 50% chance of exceeding), the TWL was 7 ft. In a high emissions scenario in 2100 with a 3.9 ft SLR estimate (approximately 50% chance of exceeding), the TWL was 8 ft.

A TWL of 1 ft will not have much of an effect on the site. Once a TWL of 2 ft is reached, some flooding may begin to occur on site. A TWL of 3 ft will have impacts on buildings located throughout the site and will further erode the beach. SLR is highly likely to reach these levels by the end of the century. TWLs of 4 ft or greater will have major impacts on site facilities, with a TWL of 7 ft or 8 ft covering more than half of the site. TWLs of 7-8 ft are only likely to occur during major flood events.

## **8.5 DISCUSSION**

### **8.5.1 Installation Impacts**

Due to the location of Sea Girt NGTC on the Atlantic coast, all of the climate change tools discussed above have identified coastal flooding and sea level rise as the greatest threats to the installation. According to the Rutgers University Site Profile and Risk Analysis for the Sea Girt NGTC (2021), the installation has already experienced damage from flood water and poor stormwater drainage in the past. Flooding has occurred in the areas near Stockton Lake and Camp Road when the Watsons Creek gauge measures the water level above 4.37 ft NAVD88 and is likely to increase over time. The bulkhead on Stockton Lake was reconstructed to prevent further flooding, but climate models predict that by 2100 a regular high tide will top the existing bulkhead. Recommendations for this area include removal of the bulkhead, implementation of a living shoreline, improvement of the stormwater drainage system, and relocation of NJARNG facilities and equipment.

As flooding increases over time, standing pools of water are more likely to occur. Standing pools of water and increased temperature can increase mosquito breeding grounds and further the spread of vector-borne diseases like West Nile Virus on the installation. The area adjacent to the wetland and the tent pad site identified in the Master Plan located on the parade grounds are at risk to increased standing water from rainfall events and sea level rise. It is recommended that surveys for mosquitos and control of their populations occur to lower the risk of vector-borne diseases on the installation.

Coastal erosion is expected as a result of coastal flooding, sea level rise, and an increase in convective storms. A negative sediment budget will result in more instances of dune erosion and storm surge penetration through the gap in the dune feature and the concrete seawall. This could affect the firing range west of the dunes, beach nesting bird nesting areas, and rare plant species that may be present on the beach and dunes. Actions will need to be taken

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to prevent further coastal erosion of the dune features at Sea Girt NGTC. Increased stress on threatened and endangered species and related ecosystems will require increase monitoring and land management requirements.

The predicted increase in temperature and humidity will increase energy demands for indoor cooling and dehumidification systems. Increased temperatures and humidity will also effect the length of time for outdoor training and recreational activities. Building cooling at Sea Girt NGTC is powered by electricity. The electrical energy demand for increased cooling days can be mitigated by placing more solar panels on the site and by completing an electrical upgrade.

Drought and wildfire are not likely to have an effect on the installation. There are low amounts of fuels that could ignite in the event of a drought because of the mowed and maintained lawn areas.

Vulnerability of the Sea Girt NGTC to climate hazards will need to be continually updated and monitored over time as environmental conditions change. The best science available should be sought out to keep up to date on climate science and changes in future predictions.

### **8.5.2 Actions and Future Projects**

Below is a list of climate goals and specific projects that can be implemented to improve the climate resiliency at the Sea Girt NGTC to the climate hazards discussed above. These goals and projects were developed with input from the NJDMAVA Master Planner, Energy Manager, Environmental Bureau, and Acting Site Superintended during the revision of the INRMP. Several projects were identified using the process described in the Climate Adaptation for DOD Natural Resource Managers and the INRMP Adaptation Planning Worksheets are presented in Appendix B.

As the DOD and the DA directed multiple installation level offices to address climate change hazard response to include environmental, facilities management, master planning, and energy management and sustainability staff, the successful implementation of many of the below listed goals and projects will require a coordinated and corporative approach using a variety of funding sources.

## **8.6 PROJECT SPECIFIC MANAGEMENT GOALS**

**Changing Climate Sustainability Goal No. 1** Educate site staff and tenants on climate change and climate change hazards at the site.

1. During the annual rare species brief (Rare Species Goal No.1), any general environmental awareness briefs at the site, and NJDMAVA website provide a brief overview of the climate change hazards at the site and offer ways staff, soldiers, recruits, cadets, and tenants can support climate reliance goals. Training topics could include:
  - a. Identify and report mosquito breeding habitat to facility maintenance and EMB staff and present ways to protect staff, cadets, soldiers, and recruits from mosquito borne illness.
  - b. A brief overview of the OSHA National Emphasis Program to reduce worker, cadets, soldiers, staff, and/or recruits' exposures to occupational heat-related illnesses and injuries.
  - c. The warning signs of heat-related illnesses, including directions regarding fluid intake needs depending on activity levels and the adjustment of schedules to avoid dangerous

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levels of heat and humidity when working, training, and/or conducting physical training outside.

- d. Suggesting facility staff and tenants identify and permanently move hazardous and landscaping bulk storage materials, floatable infrastructure like dumpsters, and government owned equipment away from Stockton Lake.

**Changing Climate Sustainability Goal No. 2** Conduct a climate change vulnerability assessment with defined adaptation strategies, integrate climate adaption into master plans, and continue involvement in regional partnerships on climate adaption. This is a supporting project Section 7(a)(1) goal and is dependent on funding.

1. The Energy Manager represents the NJDMAVA on the NJDEP Interagency Council on Climate Resilience (Council). Through New Jersey Executive Order No. 89, the Council, was established to develop short- and long-term action plans that will promote the long-term mitigation, adaptation, and resilience of New Jersey's economy, communities, infrastructure, and natural resources. In addition to these coordinated efforts, the Council will support the development and implementation of the Climate Change Resilience Strategy that will guide and inform State actions to address the impacts of climate change. NJDMAVA should continue to be an active member of the Council to maintain regional climate adaption partnerships, stay abreast of regulatory updates, and voice concerns and provide input to regional regulatory decision makers regarding the impact on the military mission to any proposed rule changes that address climate change.
2. Work cooperatively and on an as needed basis with the NJARNG Master Planner and the Energy Manager to:
  - a. Continue to conduct climate change vulnerability assessments on a reoccurring frequency using the tools described above and any new tools to identify climate change hazards at the site.
  - b. Integrate the results of climate change vulnerability assessments and climate sustainability projects into site master plans, real property development plans, INRMP, Installation Energy and Water Plans, emergency management plans, continuity of operations plans, and standard operating procedures, and
  - c. Conduct energy assessments and audits of site buildings.

**Changing Climate Sustainability Goal No. 3** Continue to research, manage, and support infrastructure related climate sustainability projects. This is a Section 7(a)(1) goal and is dependent on funding.

1. Work cooperatively with the NJARNG Master Planner and the Energy Manager to identify environmental permit requirements early in the planning stages for proposed infrastructure projects related to climate adaption such as new photovoltaic systems, electric vehicle charging station, geothermal heating and cooling systems, micro grids, and/or alternative energy projects.
2. NJDMAVA is currently demolishing and moving infrastructure and buildings out of potential inundation areas along Stockton Lake. Continue to identify infrastructure and buildings for removal and provide environmental support during the removal.

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3. Work with the NJDEP Bureau of Coastal Engineering and the US Army Corps of Engineers to improve coastal resilience by supporting regular beach nourishment projects at the site.
  4. Work with site maintenance staff and tenants to identify and move hazardous and landscaping bulk storage materials, floatable infrastructure like dumpsters, and government owned equipment away from Stockton Lake so, in the event of a flood, those materials and items are not damaged and/or released into the environment.
  5. Work with facility maintenance staff, the Energy Manager, and NJDMAVA Construction Management Bureau staff to:
    - a. Survey for HVAC and refrigeration systems that use highly warming greenhouse gas (GHG) refrigerants, suggest lower GHG warming replacements for those refrigerants during new construction and retrofit and/or replacement HVAC projects, and identify and as required report to regulatory authorities any leaking systems.
    - b. Address increasing temperature and humidity concerns by improving site HVAC system. Such measures include, but not limited to suggesting:
      - i. That the makeup air be preconditioned with a dehumidifier prior to being drawn into the main HVAC system to reduce the potential for mold growth within site buildings.
- ii. Better management of building management control systems through an ongoing process of continuous commissioning which can resolve operating problems and increase occupant comfort while optimizing energy usage.
    - iii. Install utility meters in all buildings to track utility usage.
    - iv. Install Building Managements Systems (BMSs) in buildings and centralize control.
    - v. Increasing building envelope tightness.
    - vi. Reduce solar heat gain through windows and roof.
    - vii. Increase HVAC equipment efficiency with an emphasis on electrification to meet NJ State mandate by installing air or ground source heat pumps, and
    - viii. Increase renewable energy production on site.
  - c. Develop zero waste initiatives through innovated solid waste management and recycling programs.
  - d. Continue to recommend and support stormwater system upgrades along Camp Drive from the campground to the beach parking lot.
  - e. Conduct regular inspection and maintenance of stormwater management features to include green infrastructure stormwater systems.
  - f. Implement the recommendations in the Sea Girt NGTC Stormwater Management Feature Inventory and Maintenance Procedures report.

**Changing Climate Sustainability Goal No. 4** Continue to research, manage, and support natural and cultural resources related to climate sustainability projects. This is a Section 7(a)(1) goal and is dependent on funding.

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1. Develop natural and nature-based infrastructure alternatives. Such projects include:
    - a. Along Stockton Lake lakefront:
      - i. Convert maintained grass and impervious surface remaining after building demolitions to a naturalized landscape consisting of native coastal vegetation and rolling topography, and
      - ii. Modify the Stockton Lake bulkhead by incorporating more natural structures such as tidal pools, crevices, groves, pits, and texture to the bulkhead and when the bulkhead is replaced, work to install a living shoreline along Stockton Lake rather than a bulkhead. Restore the tidally flowed stream along the beach access road by removing most of the rip rap to a more vegetative state.
    - b. Assess the freshwater wetland's ability to absorb floodwaters and develop projects such as planting larger trees to absorb floodwaters. Monitor and perform maintenance on the freshwater wetland by implementing Land and Watershed Goals 1, 3, and 4.
    - c. Improve coastal resilience by adding more natural elements to the dune to add a softer approach to the sea wall especially during any beach nourishment project, and
    - d. Suggesting low impact green infrastructure stormwater design features for any new and retrofitting of exiting stormwater features.
  2. Use electronic tools or models to calculate carbon sequestration of the natural systems at Sea Girt NGTC and use existing knowledge on carbon emissions from the installation to calculate carbon footprint. Develop projects to increase carbon sequestration, lower the site's carbon footprint, and reduce emissions such by:
    - i. Working the New Jersey Youth Challenge Academy, develop a composting and urban gardening program at the dining facility.
    - ii. Converting maintained grass areas particularly around the freshwater wetland to pollinator habitat to reduce maintenance requirements and suitable foraging and resting habitat for Canada geese and brant, and
    - iii. Install a seagrass meadow.
      3. Significantly reduce exposure and/or prevent coastal flooding by creating and implementing the recommendations of a site-specific flood hazard plan.
      4. Work to address increasing temperature concerns for site staff, recruits, soldiers, and cadets by adding trees lining walkway and outdoor training areas to provide shade. Create a landscaping plan to analyze best location for trees on site, and
  5. Continue to address mosquito borne illnesses by conducting surveys for mosquito breeding habitat and cooperating with the Monmouth County Mosquito Commission to conduct sampling for Zika and West Nile Virus and apply pesticide to control mosquito populations.

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## **8.7 POTENTIAL FUNDING OPPORTUNITIES AND COLLABORATIONS**

### **8.7.1 NJBPU Clean Energy Program**

The New Jersey Clean Energy Program provides a Local Government Energy Audit (LGEA) allows local government agencies, state contracting agencies, public agencies, state colleges and state universities, and select non-profit agencies, to examine their facilities and see how they can improve their energy use. The full cost of the audit is subsidized 100% and there are no out-of-pocket expenses associated with services provided under this program (NJBPU, n.d.).

### **8.7.2 New Jerseys' Coastal Ecological Restoration and Adaptation Plan**

The New Jersey Coastal Ecological Restoration and Adaptation Plan (CERAP) is a potential collaborator for coastal resilience projects at Sea Girt NGTC. CERAP is helping to prioritize New Jersey's coastal areas for ecological projects that increase community resilience, ecosystem health, and/or carbon sequestration.

### **8.7.3 NJDEP Regional Greenhouse Gas Initiative**

The NJDEP Regional Greenhouse Gas Initiative (RGGI) is a potential funding opportunity for projects involving urban tree planting, promoting "blue carbon" in coastal habitats (carbon stored by the soils and plants in marine systems), phasedown of highly warming refrigerants, and other carbon footprint reducing projects. NJDEP will release the final plan for the RGGI in Spring of 2023 and investments in climate solutions will begin (NJDEP, 2023b).

### **8.7.4 Resilient NJ**

The NJDEP Resilient NJ program is a potential funding opportunity for climate resilience projects at Sea Girt NGTC. Resilient NJ is an assistance program to support local and regional climate resilience planning. This program seeks to fund up to five innovative regional planning projects that will address gaps in resiliency planning, reach underserved and socially vulnerable populations, and enhance the value and integrity of the ecological, recreational, and economic resources in the regions through a collaborative process (NJDEP, 2023c).

### **8.7.5 DOD Readiness and Environmental Protection Integration Program**

The US DOD Readiness and Environmental Protection Integration (REPI) Program is a potential funding opportunity for climate resilience projects on Sea Girt NGTC. The REPI Program works with federal partners to fund projects that seek to preserve military missions, enhance habitats, increase climate resilience, and ensure military readiness at installations and ranges (DOD, 2023).

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## **SECTION 9**

### **INFORMATION MANAGEMENT PROGRAM**

#### **9.1 PROGRAM DESCRIPTION AND OVERALL MANAGEMENT GOALS**

The CFMO-EMB has developed a GIS that covers all 41 NJARNG facilities, including Sea Girt NGTC. The GIS was first developed in 1998 and 1999 as part of the statewide natural resource planning-level survey project. Since that time, the CFMO-EMB has made several additions and upgrades to the GIS. The GIS serves as an integral part of the overall natural resources management program. The GIS is designed to manage spatially referenced data related to the physical infrastructure, mission activities, natural resources, and other environmental management activities. The program addresses data development, hardware, software, and training needs, as well as general system administration. This program enhances the efficiency with which the NJDMAVA manages its property and natural resources, thereby providing essential support to the military mission.

The overall goal of the program is to support the military mission and Natural Resources Program by providing easy access to accurate information for both management and decision making. Other overall management goals include the following:

- Facilitate access to a multitude of datasets for management and program guidance;
- Provide complete and reliable sources of data for each natural resources program;
- Define, develop, and implement an automated process for maintaining and updating spatial and tabular data; and
- Promote data sharing with other NJARNG/NJDMAVA users and partnering agencies.

#### **9.2 PROGRAM STATUS AND MANAGEMENT ISSUES**

##### **9.2.1 Available Resources**

The NJARNG GIS contains data for 41 NJARNG facilities and 7 veteran's facilities. The data are stored on the NJDMAVA server. Users gain access to the data from their personal computers. Currently, the CFMO-EMB does not have a full-time GIS analyst. Management of the GIS is an additional duty for the Natural Resources Manager.

Available data layers for Sea Girt NGTC include boundary, roads, buildings, streams, lakes, freshwater wetlands, contours, soils, ecological communities, digital orthophotography (color infrared 2017), rare species protection area, noise receptors, storm drains, oil/water separators, secondary containment pads, hazardous waste/materials storage, monitoring wells, and aboveground storage tanks. Complete metadata are included electronically as part of the GIS.

The GIS data were developed from various existing sources of GIS data and site surveys in accordance with the following standards:

- Software Platform – Esri ArcGIS version 10.5;
- Coordinate System – UTM, Zone 18;
- Datum – WGS 84 and NAVD 88;

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- File Naming Conventions – Spatial Data Standards for Facilities Infrastructure and the Environment version 3.10; and
  - Metadata Format – Federal Geographic Data Committee-compliant.

### **9.2.2 Future Data Development**

Future natural resources GIS data development for Sea Girt NGTC will primarily focus on updating rare species information annually. Annual updates will include the following:

- Changes to the rare species protection area described in Section 6.0
- New nesting location for piping plover and least tern;
- Locations of individual seabeach amaranth and seabeach knotweed plants; and
- Integration of invasive plant survey data and invasive plant control efforts.

### **9.3 PROJECT-SPECIFIC MANAGEMENT GOALS**

Project-specific goals for the information management program have been integrated into the goals of the resource-specific management program. Therefore, no project-specific goals are presented for this program.

## SECTION 10

### PLAN IMPLEMENTATION SUMMARY

#### 10.1 OVERVIEW

This section presents estimated staffing and funding requirements for implementation of the Sea Girt NGTC INRMP, as well as the implementation schedule. The NJARNG intends to implement the overall management approach and project-specific goals contained in this INRMP based on authorized funding, resource availability, and time constraints. The NJARNG recognizes the need for an adaptive management approach to address changing land use requirements, natural resources conditions, and other unforeseen factors. Consequently, unforeseen factors might prohibit the NJARNG from implementing some or all of the project-specific goals in accordance with the implementation schedule. In addition, implementation of project-specific goals is contingent upon the availability of funding and other project funding priorities within the DA, NGB, and NJARNG. As discussed in Section 3.0 , the INRMP will be routinely reviewed and updated to address changing conditions.

#### 10.2 STAFFING REQUIREMENTS

##### 10.2.1 NJDMAVA Staff

Table 10-1 and Appendix E summarize NJDMAVA staffing estimates for implementation of project-specific goals contained in the INRMP. Estimated labor hours range from approximately 800 to 1,000 per year for the five-year planning period. It should be recognized that these estimates only include project-specific labor to assist in the prioritization and implementation processes. Labor for routine activities and program administration is not included. Therefore, actual staffing requirements are greater than those presented in Table 10-1.

**TABLE 10-1 NEW JERSEY ARMY NATIONAL GUARD SEA GIRT NGTC STAFFING REQUIREMENTS FOR PROJECT-SPECIFIC INRMP GOALS**

Estimated NJDMAVA Labor Hours							
Program	Labor Sources	2025	2026	2027	2028	2029	5-yr
INRMP Management	CFMO-EMB	120	120	120	120	120	600
Climate Sustainability	CFMO-EMB	120	120	120	120	120	600
Land and Watershed	CFMO-EMB	214	254	144	104	104	820
Fish and Wildlife	Facilities	80	80	80	80	80	400
Rare Species	CFMO- EMB/Facilities	144	198	128	120	128	718
Outdoor Recreation	Facilities	280	296	280	280	280	1,416
<b>Totals =</b>		<b>958</b>	<b>1,068</b>	<b>872</b>	<b>824</b>	<b>832</b>	<b>4,554</b>

Historically, the Natural Resources Manager within the CFMO-EMB has contracted services to implement most project-specific INRMP activities. However, since 2013, project-specific tasks have been performed by CFMO-EMB and intern staff at a greatly reduced rate. For example, in 2014 and 2015 CFMO-EMB and intern staff installed the former southern protection area fencing, conducted biweekly inspection and trash

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removal in the protection areas, biweekly goose fecal counts, and performed a reduced vegetative assessment in the protection areas. Due to staffing issues, in 2016 and 2017, only the former southern protection area fencing was installed, trash removal was limited to monthly events, and the vegetative assessments were not performed. Goose fecal counts were conducted in 2016, 2019, 2020, 2022 and 2023; however, not in 2017, 2018, and 2021. The CFMO-EMB intends to revive contracted support during the years covered by this INRMP.

The Natural Resources Manager is responsible for routine coordination of INRMP activities, program administration, and other conservation related activities at Sea Girt NGTC and other NJARNG facilities, which are not reflected in the project-specific labor estimates provided in Table 10-1. These activities include, but are not limited to, the following: providing input to STEP; coordinating efforts with cooperating agencies, contractors, installation personnel, and the general public; maintaining the NJARNG GIS; providing technical support to internal stakeholders; providing natural resources subject-matter expertise and input to the real property and mission planning processes; supporting the NEPA process; and obtaining environmental permits, when necessary.

The Natural Resources Manager also has responsibility for several other program areas that encompass the other 40 NJARNG and 7 veteran's facilities statewide. Therefore, only a small percentage (approximately 5 to 10 percent) of the Natural Resources Manager's time is allocated to natural resources management at Sea Girt NGTC. The Director of the Sea Girt NGTC and the installation facilities management staff provides logistical and on-site support for implementation of the plan, and as such, is incorporated in estimated NJDMAVA labor hours (Table 10-1).

### **10.2.2 Contractors and Cooperating Agencies/Organizations**

The need for support from contractors and cooperating agencies/organizations has been identified for the following INRMP goals:

- Land and Watershed Management Goal No. 1 – Protect and rehabilitate sensitive wildlife habitats that support threatened and endangered species by controlling invasive plants.
- Land and Watershed Management Goal No. 2 – Minimize visitor and staff exposure to poison ivy through education and management means.
- Land and Watershed Management Goal No. 3 – Prevent introduction and spread of invasive species.
- Land and Watershed Management Goal No. 4 – Monitor and manage the on-site wetland restoration area.
- Land and Watershed Management Goal No. 5 - Improve storm water quality and provide vital pollinator habitat to the site by monitoring and maintaining the two new stormwater basins, two new rain gardens, and the site's stormwater infrastructure.
- Fish and Wildlife Goal No. 1 – Deter resident Canada geese from using the installation.
- Rare Species Goal No.1 – Implement beach management practices and protection measures for rare beach species in accordance with the INRMP, and in cooperation with the USFWS and NJDEP-ENSP.
- Rare Species Goal No. 2 – Conduct annual beach-nesting bird surveys (NJDEP-ENSP/ NJDMAVA or contractor).
- Rare Species Goal No. 3 – Conduct annual seabeach amaranth and seabeach knotweed surveys and implement protection measures.

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- Rare Species Goal No. 4 – Maintain and monitor osprey nesting platform in cooperation with the NJDEP-ENSP and phone company.
  - Rare Species Goal No. 5 – Implement a predator survey and control program for target species in coordination with the NJDEP-ENSP, USFWS, and NJDEP wildlife control staff.
  - Rare Species Goal No. 6 – Implement habitat enhancement for rare beach species in cooperation with the USFWS and NJDEP-ENSP.
  - Rare Species Goal No. 7 – Maintain the Fluker post on the Sea Girt NGTC beach and encourage and monitor citizen science programs.
  - Outdoor Recreation Goal No. 1 – Continue to implement beach access, fishing area, and campground programs for natural-resources-based outdoor recreation.
  - Changing Climate Sustainability Goal No. 1 – Educate site staff and tenants on climate change and climate change hazards at the site.
  - Changing Climate Sustainability Goal No. 2 – Conduct a climate change vulnerability assessment with defined adaptation strategies, integrate climate adaption into master plans, and continue involvement in regional partnerships on climate adaption.
  - Changing Climate Sustainability Goal No. 3 – Continue to research, manage, and support infrastructure related climate sustainability projects.
  - Changing Climate Sustainability Goal No. 4 – Continue to research, manage, and support natural and cultural resources related to climate sustainability projects.

### **10.3 FUNDING REQUIREMENTS**

A summary of funding requirements for project-specific INRMP goals is presented in Table 10-2 and Appendix E. Table 10-2 presents total funding requirements (i.e., equipment and supplies plus contractor support) by program, while Appendix E provides a more detailed breakdown by goal. Project-specific goals requiring significant contractor support generally incorporate supply and equipment funding within contractor funding requirements. Currently, funding requirements for equipment, supplies, and contractors totaling \$2,527,000 for the five-year operational period have been identified for the project specific INRMP goals. Primary funding sources include the Conservation Program and Real Property Operations and Maintenance.

**TABLE 10-2 NEW JERSEY ARMY NATIONAL GUARD SEA GIRT NGTC FUNDING REQUIREMENTS FOR PROJECT-SPECIFIC INRMP GOALS**

<b>Estimated Total Funding Requirements</b>							
<b>Program</b>	<b>Funding Sources</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>5-yr</b>
INRMP Management	STEP	\$52,000	\$7,000	\$7,000	\$7,400	\$52,000	\$125,000
Climate Sustainability	STEP	\$52,000	\$28,000	\$28,000	\$28,000	\$52,000	\$188,000
Land and Watershed	STEP	\$106,500	\$108,500	\$108,500	\$108,500	\$108,500	\$536,500
Fish and Wildlife	STEP	\$88,500	\$86,500	\$86,500	\$86,500	\$86,500	\$434,500
Rare Species	STEP	\$248,400	\$248,400	\$248,400	\$248,400	\$248,400	\$1,242,000
Outdoor Recreation	User Fees	\$0	\$1,000	\$0	\$0	\$0	\$1,000
Totals =		\$547,400	\$479,400	\$478,400	\$478,400	\$547,400	\$2,527,000

**10.4 INRMP IMPLEMENTATION SCHEDULE**

The INRMP implementation schedule is presented below in Table 10-3.

**TABLE 10-3 INRMP SCHEDULE**

<b>Milestone/Deliverable</b>	<b>Projected Timeline -Calendar Days</b>	
General INRMP Management	2025 January 01 - 2029 December 31	
<b>Changing Climate Sustainability Goal No. 1 – Educate site staff and tenants on climate change and climate change hazards at the site.</b>		
1. Provide a brief overview of the climate change hazards at the site and offer ways staff, soldiers, recruits, cadets, and tenants can support climate reliance goals.	February - March (2025-2029)	2023 January 01 31
<b>Changing Climate Sustainability Goal No. 2 - Conduct a climate change vulnerability assessment.</b>		
1. NJDMAVA should continue to be an active member of the Council to maintain regional climate adaption partnerships.	2025 January 01 - 2029 December 31	
2. Continue to conduct climate change vulnerability assessments on a reoccurring frequency.	2025 January 01 - 2029 December 31	

<b>Changing Climate Sustainability Goal No. 3 - Continue to research, manage, and support infrastructure related climate sustainability projects.</b>	
1. Identify environmental permit requirements early in the planning stages.	2025 January 01 - 2029 December 31
2. Identify infrastructure and buildings for removal.	2025 January 01 - 2029 December 31
3. Work with the NJDEP Bureau of Coastal Engineering and the US Army Corps of Engineers to improve coastal resilience.	2025 January 01 - 2029 December 31
4. Identify and move hazardous and landscaping bulk storage materials away from Stockton Lake.	2025 January 01 - 2029 December 31
5. Survey for HVAC and refrigeration systems that use highly warming greenhouse gas and Improve site HVAC systems.	2025 January 01 - 2029 December 31
<b>Changing Climate Sustainability Goal No. 4 - Continue to research, manage, and support natural and cultural resources related to climate sustainability projects.</b>	
1. Develop natural and nature-based infrastructure alternatives along Stockton Lakefront.	2025 January 01 - 2029 December 31
2. Use electronic tools or models to calculate carbon sequestration of the natural systems.	2025 January 01 - 2029 December 31
3. Reduce exposure and/or prevent coastal flooding by creating and implementing the recommendations of a site-specific flood hazard plan.	2025 January 01 - 2029 December 31
4. Address increasing temperature concerns by adding trees lining walkway and outdoor training areas to provide shade. Create a landscaping plan.	2025 January 01 - 2029 December 31
5. Address mosquito borne illnesses by conducting surveys for mosquito breeding habitat.	2025 January 01 - 2029 December 31
<b>Land and Watershed Management Goal No. 1 - Control invasive plants.</b>	
1. Prepare a treatment, restoration, and prevention plan.	2025 January 01 - 2029 December 31
2. Remove Asiatic sand sedge by herbicide application once a year.	July - August (2025 - 2029)
3. Reduce and maintain levels of common reed, poison ivy, cattail and purple loosestrife.	July - September (2025 - 2029)
4. Eliminate all highly invasive shrubs, trees, or vines.	July - September (2025 - 2029)
5. Reduce and maintain established high-priority invasive shrubs, vines, and herbs.	July - September (2025 - 2029)
<b>Land and Watershed Management Goal No. 2 – Minimize visitor and staff exposure to poison ivy.</b>	
1. Control poison ivy vines or shrubs in high-traffic areas while maintaining current levels.	April - September (2025 - 2029)
2. Poison ivy habitat outreach.	April - September (2025 - 2029)
<b>Land and Watershed Management Goal No. 3 – Prevent introduction and spread of invasive species.</b>	

1. Implement periodic inspections.	April - September (2025 - 2029)
2. Review scientific literature and regulatory updates.	January - March (2025 - 2029)
3. Implement procedures for storage and disposal of plant materials.	January - March (2025 - 2029)
4. Implement procedures for clothing and equipment decontamination.	January - March (2025 - 2029)
5. Implement additional BMPs in the invasive species treatment, restoration, and prevention plan.	January - March (2025 - 2029)
6. Educate staff and visitors.	April - September (2025 - 2029)
<b><i>Land and Watershed Management Goal No. 4 – Monitor and manage the on-site wetland restoration area.</i></b>	
1. Maintain the split rail fence.	2025 January 01 - 2029 December 31
2. Maintain the managed wetland to assure proper ecological values and functions.	2025 January 01 - 2029 December 31
3. Maintain three interpretive signs.	2025 January 01 - 2029 December 31
4. Maintain the crushed clamshell walking path.	2025 January 01 - 2029 December 31
<b><i>Land and Watershed Management Goal No. 5 – Improve storm water quality and provide vital pollinator habitat to the site.</i></b>	
1. Develop and maintain a Site wide stormwater infrastructure system maintenance plan.	2025 January 01 - 2029 March 31
2. Maintain the site's stormwater infrastructure system.	2025 January 01 - 2029 December 31
3. Drainage inlet maintenance and inspection.	April - September (2025 - 2029)
4. Develop new stormwater management and surface water quality improvement projects.	2025 January 01 - 2029 March 31
<b><i>Fish and Wildlife Goal No.1 – Deter resident Canada geese from using the installation.</i></b>	
1. Reduce the number of resident Canada geese.	April - September (2025-2029)
<b><i>Rare Species Goal No.1 – Implement management practices and protection measures for rare species.</i></b>	
1. Hold annual meetings or conference calls with the USFWS and NJDEP-ENSP.	February - March (2025-2029)
2. Conduct annual environmental awareness briefings.	February - March (2025-2029)
3. Install rare species protection area fencing and no rake zone signs.	March (2025-2029)
4. Communicate with the ENSP and USFWS biologists regarding rare species monitoring results.	April - September (2025-2029)
5. Implement special management procedures.	April - September (2025-2029)
6. Install interpretative signs.	March (2025-2029)
7. Update the field identification guide at least every three years.	2025 – 2029
8. Conduct annual surveys for Fowler's toad.	April - September (2025 - 2029)
9. Conduct bald eagle, red-tailed hawk, and peregrine falcon surveys.	April - September (2025 - 2029)

10. Install and maintain a Motus Wildlife Tracking System.	April - September (2025 - 2029)
11. Conduct a window bird strike survey.	April - September (2025 - 2029)
12. Prohibit low speed vehicle use on the beach when beach-nesting bird chicks are present onsite.	April - September (2025 - 2029)
13. Utilize environmental DNA (eDNA) analyzation methods to aid in the identification and monitoring of rare species.	April - September (2025 - 2029)
<b>Rare Species Goal No.2 – Conduct annual beach-nesting bird surveys (NJDEP-ENSP/ NJDMAVA or contractor).</b>	
1. Conduct beach-nesting bird surveys from April 1 through August 31.	01 April through 31 August (2025 - 2029)
2. Incorporate data into the NJARNG GIS.	September - March (2025 - 2029)
3. Conduct an annual beach macroinvertebrate study.	May - August (2025 - 2029)
<b>Rare Species Goal No.3 – Conduct annual seabeach amaranth and seabeach knotweed surveys and implement protection measures.</b>	
1. Prepare an annual survey work plan.	January - February (2025 - 2029)
2. Conduct surveys during the last week of June, third week of July, and between August 15 and September 15.	June - September (2025 - 2029)
3. Install and maintain fencing and signs around plants.	June - September (2025 - 2029)
4. Incorporate survey data into the NJARNG GIS.	September - March (2025 - 2029)
5. Continue to evaluate the possibility of partnering with the USFWS.	2025 January 01 - 2029 December 31
<b>Rare Species Goal No. 4 – Maintain and monitor the osprey nesting platform.</b>	
1. Coordinate with the NJDEP-ENSP and phone company regarding design of nesting deterrent.	September - March (2025 - 2029)
2. Coordinate removal of existing nesting materials from the cellular phone tower.	November - December (2025 - 2029)
3. Monitor nesting activity and report findings to NJDEP-ENSP annually.	01 April through 31 August (2025 - 2029)
4. Coordinate with phone company to install a web accessible camera.	September - March (2025 - 2029)
5. Inspect and maintain nesting platform annually prior to March 1.	September - February (2025 - 2029)
6. Remove osprey nests from inappropriate areas.	November - December (2025 - 2029)
7. Continue to maintain the game camera on the osprey nesting platform.	September - March (2025 - 2029)
8. Collect and analyze fish carcasses for lead.	01 April through 31 August (2025 - 2029)
<b>Rare Species Goal No.5 – Implement a predation management program for target species in coordination with NJDEP-ENSP, USFWS and NJDEP wildlife control staff.</b>	
1. Reduce the predator population.	February - September (2025 - 2029)
<b>Rare Species Goal No.6 – Implement habitat enhancement for rare beach species.</b>	
1. Implement dune habitat enhancement measures.	September - March (2025 - 2029)

2. Maintain American beachgrass vegetation cover goals in NPA.	September - March (2025 - 2029)
<b><i>Rare Species Goal No.7 – Maintain the Fluker post.</i></b>	
1. Inspect and maintain Fluker posts annually.	01 April through 31 August (2025 - 2029)
2. Download images annually.	01 April through 31 August (2025 - 2029)
3. Encourage participation in the Fluker Post, Bumble Bee Watch, and Avian Knowledge Network Projects.	01 April through 31 August (2025 - 2029)
<b><i>Outdoor Recreation Goal No.1 – Continue to implement beach access, fishing area, and campground programs for natural-resources-based outdoor recreation.</i></b>	
1. Administer the beach access program.	01 April through 31 August (2025 - 2029)
2. Enforce designated fishing area and trash/bait management procedures.	01 April through 31 August (2025 - 2029)
3. Administer the campground access program.	01 April through 31 August (2025 - 2029)
4. Update the Camp Site Guidance flyer and Fishing Area brochure.	01 April through 31 August (2025 - 2029)
5. Expand onsite birding opportunities.	01 April through 31 August (2025 - 2029)
6. Maintain the clamshell path, wooden boardwalk, and interpretive signage.	01 April through 31 August (2025 - 2029)
7. Update recreational memorandums.	01 April through 31 August (2025 - 2029)

## SECTION 11

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**APPENDIX A - FORMAL AGENCY  
CONSULTATION REQUEST  
LETTER**



**State of New Jersey**  
DEPARTMENT OF MILITARY AND VETERANS AFFAIRS  
POST OFFICE BOX 340  
TRENTON, NJ 08625-0340

PHILIP D. MURPHY  
*Governor*  
*Commander-in-Chief*

TAHESHA L. WAY  
*Lieutenant Governor*

★  
LISA J. HOU, D.O.  
*Brigadier General*  
*The Adjutant General*

November 7, 2023

Mr. Eric Schrading  
Supervisor  
U.S. Fish and Wildlife Service, New Jersey Field Office  
Atlantic Professional Park, Unit 4  
4 East Jimmie Leeds Road  
Galloway, New Jersey 08205

RE: Section 7 Informal Consultation Request  
5 Year Update INRMP for Sea Girt NGTC  
Sea Girt, New Jersey

Mr. Schrading:

We request your concurrence that the proposed 5 year update of the Sea Girt Integrated Natural Resources Plan (INRMP) for the Sea Girt National Guard Training Center (Site), 100 Camp Drive, Sea Girt, New Jersey and the goals, protection measures, and activities listed in the INRMP are not likely to adversely affect and may actually provide a beneficial effect to any Site specific federally listed species identified under the United States Endangered Species Act of 1973 or Migratory Bird Protection Act species.

The Site is owned and managed by the State of New Jersey's Department of Military and Veterans Affairs (NJDMAVA) to support the training and administration activities of the New Jersey Army National Guard (NJARNG) and other tenants at the Site. In general, the Site consists of a mix of built infrastructure, coastal and freshwater habitats, and maintained grass areas. Several federally listed species such the endangered piping

Mr. Eric Schradling, USFWS  
RE: Section 7 Informal Consultation Request  
5 Year Update INRMP for Sea Girt NGTC  
Sea Girt, New Jersey  
November 7, 2023

plover (*Charadrius melodus*) and threatened sea beach amaranth (*Amaranthus pumilus*) are known to occur at the Site while other species such as the endangered northern long-eared bat (*Myotis septentrionalis*), threatened red knot (*Calidris canutus rufa*), proposed endangered tricolored bat (*Perimyotis subflavus*), and candidate monarch butterfly (*Danaus plexippus*) and 41 migratory bird species may use the Site. Detailed description of the Site, its built and natural features, occurrences of listed species, and training activities and missions are presented in Sections 1, 2, and 3 of the INRMP. Also, various figures, photographs, and tables supplement the narratives in those sections.

The INRMP also includes various goals and projects for climate sustainability and the management of land and watershed, fish and wildlife, rare species, and outdoor recreation resources. These goals aim to conserve listed species and their habitats while ensuring the mission of the Site can continue. Each goal is presented in detail in Sections 4 through 8 of the INRMP.

We hope that this letter and the attached INRMP fulfills your need for informal consultation requirements. We request your concurrence that the proposed 5-year update of the Sea Girt INRMP and the goals, protection measures, and activities listed in the INRMP are not likely to adversely affect and may actually provide a beneficial effect to any federally listed species identified under the United States Endangered Species Act of 1973 and Migratory Bird Protection Act species at the Site. If you have any questions or would like to arrange a Site visit, please contact the undersigned at (609) 530-7135 or [charles.appleby@dmava.nj.gov](mailto:charles.appleby@dmava.nj.gov).

Sincerely,

CHARLES APPLEBY  
Chief, Environmental Management Bureau

Attachments:

1. INRMP
2. Errata Sheet

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## **APPENDIX B - CLIMATE CHANGE HAZARD ANALYSIS**

# Department of Defense Climate Assessment Tool Results



**Purpose:** The Standard Assessment presents the results of exposure assessments based on eight (8) climate hazard types for DOD sites. Hazard areas were identified by Congress (NDAA 2018 Section 335 and NDAA 2019 Section 2805) and the Department of Defense Climate Change Adaptation Roadmap (2014) as the hazards of greatest concern for military readiness, mission execution, and infrastructure sustainability.

Exposure to each hazard area is measured using a combination of indicators selected to capture different aspects of exposure. These indicators were selected based on the peer-reviewed literature, and indicator data are from authoritative national datasets, or derived from such datasets. Assessments are conducted for the base time period 1950 to 2005 and for future periods based on the 30-year average from 2035 to 2064 centered on 2050, and 2070 to 2099 centered on 2085. Each time period is assessed using two scenarios, a lower (slower warming) scenario and a higher (faster warming) scenario.

The reports tab, and the nine visualization menus in the Standard Assessment provide the tools to assess future exposure to each hazard, and to projected changes in the underlying indicators. The user can subset the analysis by region, service and department. The Standard Assessment makes assumptions about the risk tolerance of the user, and the relative importance of each indicator to hazard exposure. The user can alter these and other parameters using the tools in the Extended Assessment and Extended Assessment Results tabs.

## Model Interpretation

Model outputs were used in three bins: CONUS, AK, HI, and International. Comparisons across these bins – as for, say, a location in Africa to a location in South Carolina – can be legitimate for the high-level screening questions that this product has been designed to answer, but are not legitimate for closely resolved questions about either historical climate or projected future possible climate. That is to say, this project emphasized the importance of consistent simulation within each of those three domains, which entailed using different sets of GCMs and downscaling methods for each.

Moreover, for all three geospatial bins, as for climate modeling generally, empirical-statistical downscaled modeled outputs will not reproduce the local climate of locations with high accuracy for all variables everywhere. This is because each modeling system was created and averaged for domains larger than the site-specific locations used in this assessment, and were not built or corrected from local observed climate.

For international locations, this means that the accuracy of the historical climatology for some locations, if evaluated against local measurements, is hampered particularly by the lack of accurately observed local data to bound and train the empirical-statistical relationships. Those relationships are better constrained for CONUS, AK, HI, and some regions of Europe and Asia, though even there the model's performance is variable based on the local setting of selected locations – near inland water or mountains or not, or near a coastline, for example. In international locations, as elsewhere, too, climate models and downscaling techniques are better for temperature than for precipitation, and performance varies across sites. The model outputs used in this project in each of the three geospatial bins are the most consistent, complete and available at the time of this project's initiation.

## Instructions

This tab is composed of several visualizations (one per page) that summarize the results of the Standard Assessment exposure assessment. Each visualization examines a different aspect of the results and helps the user better understand the projected exposure to climate change (hazards for the sites) of interest. The visualization pages share a common interface that include the following elements:

- **Filter Dropdown Menus** – Allow the user to filter to a subset of the results (e.g., to focus on a particular department or site). The dropdown menus vary by visualization, but every visualization includes the command and site dropdown menus. The dropdown menu selections persist across pages so that when users navigate to a different visualization they can continue reviewing their results without needing to update the selection on every tab.

The visualizations include several common features:

- One or more legends and/or scale bars explaining the colors and/or shapes used in the visualization. Note that scale bar ranges may change depending on the calculation and selections in the dropdown menus, therefore the same value may be colored differently for different filters and calculations. This is important to consider when comparing to visualizations of other calculations and filter selections.
- Text identifying the source(s) of the data, information about the selected calculation (i.e., the ORness level), any filters selected in the dropdown menus (e.g., the scenario and epoch), and whether the visualization represents data using the Standard Assessment settings (but possibly a different ORness type).
- Hover-over text for certain parts of the visualization that contains more detailed information.

[For questions or support, please contact our helpdesk at \[forquestions@usmcg.mil\]\(mailto:forquestions@usmcg.mil\).](mailto:forquestions@usmcg.mil)  
User must have a .mil email address. Email from outside this domain will not be delivered.  
CUI - Controlled Unclassified Information



U.S. MILITARY ACADEMY  
CONTACT US





Region: Northeast Department: Army Component: Army Guard Installation:   
Site:

## NG Sea Girt NJ NGTC

### Background

**RPSUID:** 7206  
**Installation Name:** New Jersey National Guard  
**Report Date:** 22 November 2022  
**Data Version:** 2.1  
**Location:** New Jersey  
**Area:** 174 acres  
**Department:** Army  
**Service:** Army  
**Component:** Army Guard  
**NCA4 Region:** Northeast



### Historical Extreme Weather and Climate Change Exposure

Historical Extreme Weather Event Occurrence

For historical extremes, this table shows whether the installation, or the immediately surrounding region (small watershed or county, depending on the measure) has experienced this event. No portion of this location is classified as being in the Wildland Urban Interface as defined by the USDA.

Event Type	Has Occurred
Hurricane Frequency	X
Tornado Frequency	X
Ice Storms Occurrence	
Hurricane Wind > 50 Knots	X
Hurricane Maximum Precipitation	X
Ice Jam Occurrence	X

### Damaging Extreme Weather and Wildfire Events, 2000-2021

This shows the damage sustained in the county or counties (for Alaska, NOAA forecast zone) in which NG Sea Girt NJ NGTC is located. The first table shows the total damage by event type since 2000. The second table shows the largest fifteen events across all types recorded at this location since 2000. The data for these tables come from the NOAA Storm Events Database (<https://www.ncdc.noaa.gov/stormevents/>).

Many NWS storm event types (<https://www.nws.noaa.gov/directives/sym/pd01016005curr.pdf>) are broadly similar in impact, but differ along a continuum of magnitudes or geographies (marine vs. land, for instance). In order to provide a readily accessible assessment of damages by type of damage, some NWS storm event type categories are combined for presentation in the Installation Report. More information about that event types represented by the categories below, and event types that were excluded from this analysis, can be found in *Documentation of and Justification for Collapsing NOAA Storm Event Categories* located in the Manuals tab of this tool.

#### Damages from Extreme Weather and Wildfire, 2000-2021

Administrative Unit(s): Monmouth,NJ

Type	# of Events	Property Damage Estimate	Direct Deaths
Wind Damage	288	\$320,739,400.00	0
Coastal Flood	77	\$161,600,000.00	0
Riverine and Lakeshore Flooding	83	\$18,500,010.00	0
Hurricanes, Typhoons and Tropical Storms	4	\$5,600,000.00	0
Tornadoes and Waterspouts	4	\$1,100,000.00	0
Hail	31	\$0.00	0
Cold Temperature Extremes	22	\$0.00	0
Wildfire	5	\$0.00	0
Heat and Heat Waves	30	\$0.00	0
Ice Storms, Freezing Fog and Sleet	3	\$0.00	0
Heavy Rain	29	\$0.00	0
Drought	22	\$0.00	0
Snowstorms	20	\$0.00	0

#### Top Property Damaging Storm Events, 2000-2021

Administrative Unit(s): Monmouth,NJ

Rank	Date	Type	Property Damage Estimate	Direct Deaths
1	10/29/2012	Wind Damage	\$300,000,000.00	0
2	10/29/2012	Coastal Flood	\$150,000,000.00	0
3	08/02/2002	Wind Damage	\$10,200,000.00	0
4	11/13/2009	Coastal Flood	\$10,000,000.00	0
5	08/28/2011	Riverine and Lakeshore Flooding	\$10,000,000.00	0
6	10/14/2005	Riverine and Lakeshore Flooding	\$6,000,000.00	0
7	03/13/2010	Wind Damage	\$5,700,000.00	0
8	08/27/2011	Hurricanes, Typhoons and Tropical Storms	\$5,000,000.00	0
9	07/28/2012	Wind Damage	\$1,015,000.00	0
10	02/17/2003	Coastal Flood	\$1,000,000.00	0
11	04/15/2007	Riverine and Lakeshore Flooding	\$1,000,000.00	0
12	05/27/2001	Tornadoes and Waterspouts	\$1,000,000.00	0
13	08/07/2000	Wind Damage	\$1,000,000.00	0
14	08/21/2011	Riverine and Lakeshore Flooding	\$1,000,000.00	0
15	09/18/2003	Hurricanes, Typhoons and Tropical Storms	\$600,000.00	0

## Dominant Climate Change Hazards

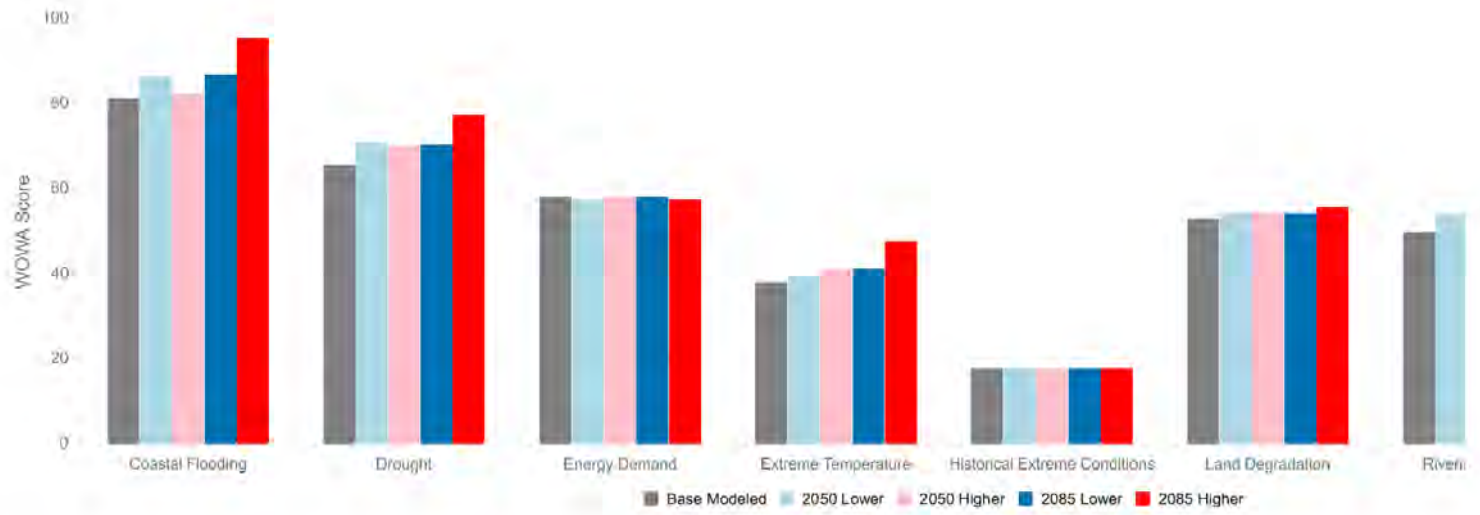
This section explores the dominant climate hazards that NG Sea Girt NJ NGTC is likely to be exposed to in the future, compared to its exposure based on the modeled historical baseline (1950-2005) data. To bracket the range of potential future conditions, the data are presented to two climate epochs (a 30-year average centered on 2050 (2035-2064) and another centered on 2085 (2070-2099). For each epoch, information for two future scenarios\* is provided: a Higher emissions scenario that assumes minimal greenhouse gas mitigation and therefore higher rates of warming and a Lower emissions scenario that assumes more aggressive greenhouse gas mitigation and, therefore, lower rates of warming.

\* The Higher scenario corresponds to representative concentration pathway (RCP) 8.5 used in climate modeling studies, except for Riverine Flood Extent, which represents inundation area resulting from freeboard of 2 ft or 3 ft added to the 1% annual exceedance probability flood elevation.

### Ranked Future Climate Exposure Hazards per Epoch-Emission Scenario (and the hazard's greatest contributing indicator)

Rank	2050-High	2085-High
1	Coastal Flooding (Coastal Flood Extent)	Coastal Flooding (Coastal Flood Extent)
2	Drought (Mean Annual Runoff)	Drought (Mean Annual Runoff)
3	Energy Demand (5-Day Maximum Temperature)	Riverine Flooding (Riverine Flood Extent)
4	Riverine Flooding (Riverine Flood Extent)	Energy Demand (5-Day Maximum Temperature)
5	Land Degradation (Coastal Erosion)	Land Degradation (Coastal Erosion)
6	Extreme Temperature (5-Day Maximum Temperature)	Wildfire (Flash Drought Frequency)
7	Wildfire (Flash Drought Frequency)	Extreme Temperature (5-Day Maximum Temperature)
8	Historical Extreme Conditions (Hurricane Maximum Precipitation)	Historical Extreme Conditions (Hurricane Maximum Precipitation)

The contribution of each hazard to overall exposure through time is also illustrated graphically, below. Note that historical extreme conditions is a static hazard across the future.



## Heat Exposure Hazard

Changing temperatures are the driving force behind all climate change hazards, either directly through factors such as excess morbidity and mortality, or indirectly through changes to drought, wildfire, flooding, coastal inundation, and other hazards.

Indicator ID	Indicator Name	Base	2050 Lower	2050 Higher	2085 Lower	2085 Higher
402	5-Day Maximum Temperature (°F)	92	97	98	98	102
401	Days Above 95°F (days/year)	2	12	16	16	39
405	High Heat Index Days* (days/year)	14	44	53	53	83

\* The Wet Bulb Globe Temperature, cannot be calculated with the data available from climate models, so the National Weather Service Heat Index is provided as an estimate of the combined effects of heat and humidity on people working and exercising outdoors.

## Riverine Flood Inundation Hazard

### Percent Installation Area Inundated

This table shows the percent of the installation boundary that is inundated at the current 1% annual exceedance probability (AEP) riverine flood event, and when freeboards of 2 ft and 3 ft are added to the 1% AEP flood elevation in accordance with 10 USC 2802 and UFC 3-201-01, Civil Engineering. If the values are 0, no part of the installation is subject to riverine flooding. Riverine floodplain maps are available on [Defense Installations Spatial Data Infrastructure \(DISDI\) Portal](#).

Indicator ID	Indicator Name	1% AEP	1% AEP+2 Ft	1% AEP+3ft
301	Riverine Flood Extent	57.8%	82%	96.3%

### Percent of Buildings Inundated Based on DISDI Data

This table shows the percent of the installation buildings likely to be inundated at the current 1% annual exceedance probability (AEP) riverine flood event, and when freeboards of 2 ft and 3 ft are added to the 1% AEP flood elevation in accordance with 10 USC 2802 and UFC 3-201-01, Civil Engineering. If the values are 0, no buildings are flooded by the event.

RPSUID	Total # of Buildings*	Base 1% AEP	1% AEP + 2Ft	1% AEP + 3Ft
7206	67	58% (39)	79% (53)	93% (62)

\* DoD Buildings from DISDI FY19 Buildings Sites Geodatabase

## Coastal Flood Inundation Hazard

### Percent Installation Area Inundated

This table shows the percent of the installation boundary that is inundated at the current 1% annual exceedance probability (AEP) coastal flood event, in accordance with UFC 3-201-01, Civil Engineering. Sea level elevations are based on the Defense Regional Sea Level (DRSL) Lowest and Highest sea level rise curves and a simple bathtub model of inundation. Storm surge is explicitly excluded, and would be in addition to the elevations modeled here. If the values are 0, no part of the installation is subject to coastal flooding or no data are available for the installation DRSL. Coastal inundation maps are available on [Defense Installations Spatial Data Infrastructure \(DISDI\) Portal](#).

Indicator ID	Indicator Name	Base	2050		2085	
			Lower	Higher	Lower	Higher
201	Coastal Flood Extent	52.1%	65.1%	66.4%	77.5%	94%

### Percent of Buildings Inundated Based on DISDI Data

This table shows the percent of the installation boundary that is inundated at the current 1% annual exceedance probability (AEP) coastal surge event (without waves), in accordance with UFC 3-201-01, Civil Engineering. Future sea levels are determined from data in the Defense Regional Sea Level (DRSL) Lowest and Highest sea level rise curves, bracketing the scenarios required by UFC 3-201-01, Civil Engineering. If the values are 0, no buildings are flooded based on the screening-level DCAT information cross-walked with DISDI building data.

RPSUID	Total # of Buildings*	Base 1% AEP	2050 Low	2050 High	2085 Low	2085 High
7206	67	60% (40)	63% (42)	76% (51)	63% (42)	90% (60)

\* DoD Buildings from DISDI FY19 Buildings Sites Geodatabase

## Permafrost

### Area of Installation With Permafrost Hazard Index > 0

The permafrost Hazard Index (Hjort et al. 2018) is an estimate of where permafrost co-occurs with fine, non-gravelly sediment. Permafrost thaw in these locations is likely to result in subsidence and damage to buildings and infrastructure. This indicator is the percent area of the installation where this index is greater than 0, indicating future subsidence hazard from permafrost thaw. A

value of 0 indicates future thaw will not result in infrastructure damage (because the substrate, for example is gravelly) or because no permafrost is currently present (therefore there is also no hazard).

Indicator ID	Indicator Name	Base	2050 Lower	2050 Higher	2085 Lower	2085 Higher
702	Permafrost Hazard Potential	0%	0%	0%	0%	0%

#### Percent of Buildings With Permafrost Exposure Based on DISDI Data

The table below shows the percent of installation buildings located within areas where permafrost modeled to occur today based on USGS 50% likelihood estimate of permafrost extent (Pastick et al. 2015). If the values are 0, no buildings are anticipated to be affected by permafrost thaw. Permafrost extent maps are available on [Defense Installations Spatial Data Infrastructure \(DISDI\) Portal](#).

RPSUID	Total # of Buildings*	Permafrost Likely
7206	67	0% (0)

\* DoD Buildings from DISDI FY19 Buildings Sites Geodatabase

## Climate Change Exposure Overview

This section provides an overview of the key climate change concerns of the region in which NG Sea Girt NJ NGTC is located. Additional information about this region is provided in the Hazard Awareness Tab of the DCAT, and from the National Climate Assessment (<https://nca2018.globaichange.gov/>).

### 4th National Climate Assessment - Key Messages: Northeast

#### [NCA Vol 2 Key Message 1: Changing Seasons Affect Rural Ecosystems, Environments, and Economies](#)

The seasonality of the Northeast is central to the region's sense of place and is an important driver of rural economies. Less distinct seasons with milder winter and earlier spring conditions are already altering ecosystems and environments in ways that adversely impact tourism, farming, and forestry. The region's rural industries and livelihoods are at risk from further changes to forests, wildlife, snowpack, and streamflow.

#### [NCA Vol 2 Key Message 2: Changing Coastal and Ocean Habitats, Ecosystems Services, and Livelihoods](#)

The Northeast's coast and ocean support commerce, tourism, and recreation that are important to the region's economy and way of life. Warmer ocean temperatures, sea level rise, and ocean acidification threaten these services. The adaptive capacity of marine ecosystems and coastal communities will influence ecological and socioeconomic outcomes as climate risks increase.

#### [NCA Vol 2 Key Message 3: Maintaining Urban Areas and Communities and Their Interconnectedness](#)

The Northeast's urban centers and their interconnections are regional and national hubs for cultural and economic activity. Major negative impacts on critical infrastructure, urban economies, and nationally significant historic sites are already occurring and will become more common with a changing climate. The

#### [NCA Vol 2 Key Message 4: Threats to Human Health](#)

Changing climate threatens the health and well-being of people in the Northeast through more extreme weather, warmer temperatures, degradation of air and water quality, and sea level rise. These environmental changes are expected to lead to health-related impacts and costs, including additional deaths, emergency room visits and hospitalizations, and a lower quality of life. Health impacts are expected to vary by location, age, current health, and other characteristics of individuals and communities.

#### [NCA Vol 2 Key Message 5: Adaptation to Climate Change is Underway](#)

Communities in the Northeast are proactively planning and implementing actions to reduce risks posed by climate change. Using decision support tools to develop and apply adaptation strategies informs both the value of adopting solutions and the remaining challenges. Experience since the last assessment provides a foundation to advance future adaptation efforts.

[For questions or support, please contact osd.pentagon.osd-a-s.list.dcat-support@mail.mil](#)

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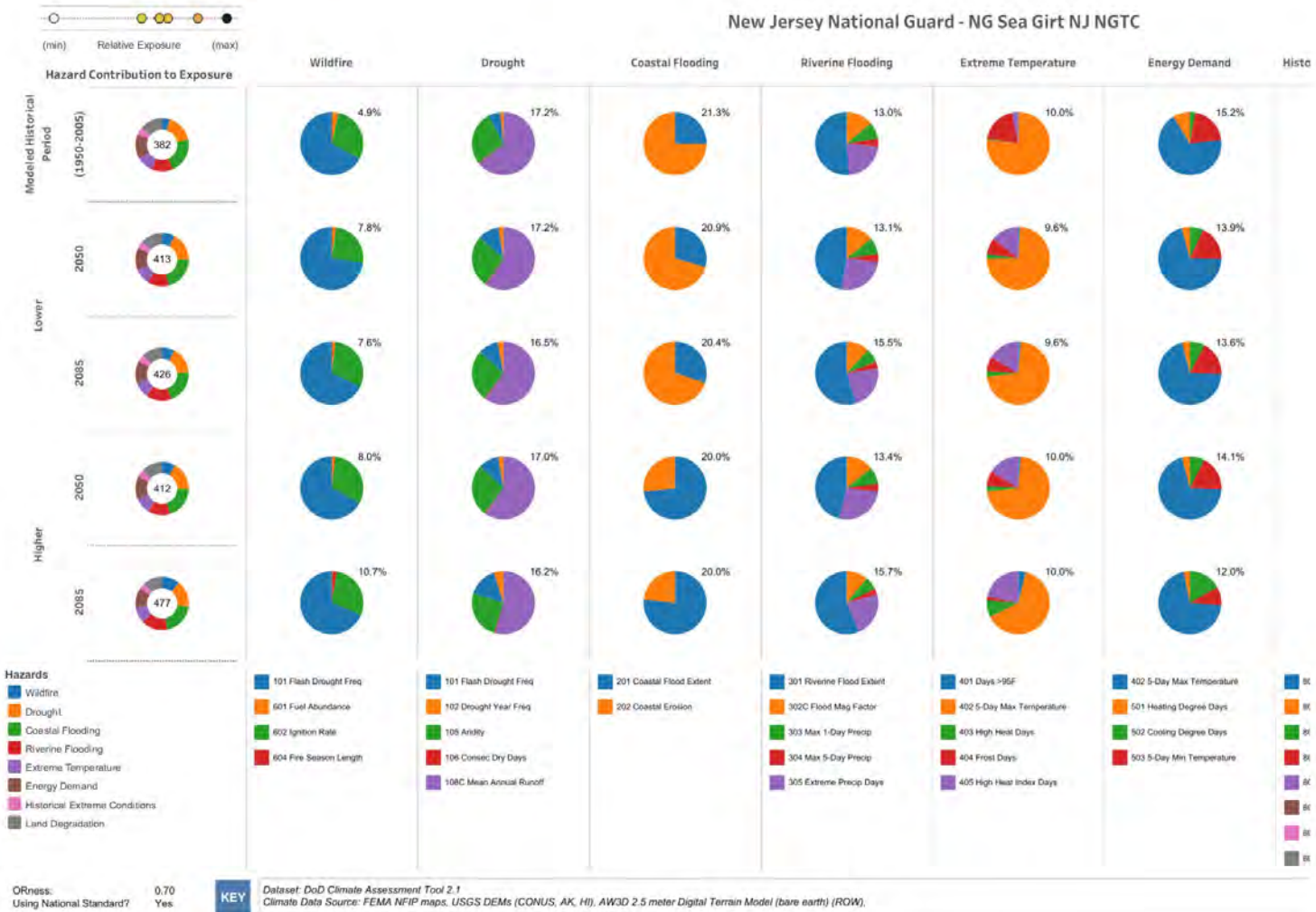


*Purpose:* For the selected site, this visualization provides a one-stop view of overall exposure to climate change. In the first column (Hazards) the pairs of pie charts for Lower and Higher scenarios show how much each hazard type is projected to contribute to site climate effects in 30-year periods of analysis centered on 2050 and 2085 with the WOWA ranking in the center. These four scenario and epoch related WOWA values are also shown in the scale bar above the Hazards column. Each of the four WOWA values are represented as dots on the scale with the minimum and maximum WOWA values for all sites. For each hazard, the pie charts in each column across the page show which indicators contribute the most to the site's exposure to that hazard. Colors shown in each pie chart are depicted in the legend below. Users should keep in mind that this information does not provide insight into the magnitude of the overall exposure of the site. That information may be found in the Relative Exposure, Exposure Level, and Exposure by Hazard and Scenario visualizations, as well as by consulting the absolute values in the Indicator Value visualization. The Site Maps tab provides information on the spatial distribution of coastal and riverine flood risk for each site.

[Tips](#)

Region: (All)    Department: Army    Component: Army Guard    Installation: New Jersey National Guard    Site: NG Sea Girt NJ NGTC    [Download Data](#) You do not have access to download this site

### New Jersey National Guard - NG Sea Girt NJ NGTC



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## DOD Climate Assessment Tool (CONUS/AK/HI) (VA6)

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  - [Dominant Indicator](#)
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**Purpose:** The Relative Exposure visualization shows the sites ranked by their aggregate exposure to the climate hazards in this tool: coastal flooding, riverine flooding, extreme temperature, drought, energy demand, wildfire, and land degradation, as well as hazards from historic extreme weather events. The purpose of this visualization is to compare among and across departments and regions. Drill down to specific hazards and sites in the Exposure by Hazard and Scenario tab. The data presented here are summarized in tabular form in the report Site Ranked by Weighted WOWA Score, found on the Reports tab.

[Tips](#)

Region: (All)  Department: (All)  Component: Army Guard  Installation: New Jersey National Guard  Site: NG Sea Girt NJ NGTC

Relative Exposure Across All Hazards - New Jersey National Guard, NG Sea Girt NJ NGTC



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**Purpose:** The Exposure by Hazard and Scenario allows the user to investigate site exposure to individual hazards by epoch and scenario, and to filter this information by department and region. The user is also able to use the menus to drill down to individual sites to see that site's exposure.

[Tips](#) [?]

Hazard: Coastal Flooding    Region: (All)    Department: Army    Component: Army Guard    Installation: New Jersey National Guard    Site: NG Sea Girt NJ NGTC

Exposure by Hazard & Scenario (Coastal Flooding) - New Jersey National Guard, NG Sea Girt NJ NGTC



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**[Dominant Hazard](#)**

[Indicator Contribution](#)

[Indicator Value](#)

[Dominant Indicator](#)

[Site Details](#)

[Site Maps](#)

[Data](#)

**Purpose:** The Dominant Hazard visualization allows the user to see the largest projected hazard to each site. Although this visualization can provide a screening level assessment of the geographic distribution of exposure to hazards, the user is cautioned that this visualization provides no information about hazards with lower ranks: a site with high exposure to three hazards will only be coded by the highest exposure hazard. Consequently, care should be used in interpreting this visualization, and the information should be analyzed in conjunction with that in the Exposure by Hazard and Scenario visualization.

[Tips](#)

Scenario: Higher  Region: (All)  Department: Army  Component: Army Guard  Installation: New Jersey National Guard  Site: NG Sea Girt NJ NGTC



Dataset: DoD Climate Assessment Tool 2.1

Climate Data Source: FEMA NFIP maps, USGS DEMs (CONUS, AK, HI), AW3D 2.5 meter Digital Terrain Model (bare earth).

ORness: 0.70  
Using National Standard? Yes

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# DOD Climate Assessment Tool (CONUS/AK/HI) (VAB)

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  - Indicator Contribution
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- Site Details
  - Site Maps
  - Data**

**Purpose:** The Data tab provides numerical results that complement the visualizations. Under the WOWA Aggregation Results sub-tab, the WOWA score is presented by epoch-scenario for each hazard for each site. The Drill-Down Analysis sub-tab allows the user to explore how each indicator contributes to hazard exposure at each site. The Sites sub-tab provides a list of sites in the tool by department. Finally, the Indicator Importance Weights sub-tab lists the importance weights for each indicator in every hazard component.

### Model Interpretation

Model outputs were used in three bins: CONUS, AK-HI, and International. Comparisons across these bins - as for, say, a location in Africa to a location in South Carolina - can be legitimate for the high-level screening questions that this product has been designed to answer, but are not legitimate for closely resolved questions about either historical climate or projected future possible climate. That is to say, this project emphasized the importance of consistent simulation within each of those three domains, which entailed using different sets of GCMs and downscaling methods for each.

Moreover, for all three geospatial bins, as for climate modeling generally, empirical-statistical downscaled modeled outputs will not reproduce the local climate of locations with high accuracy for all variables everywhere. This is because each modeling system was created and exercised for domains larger than the site-specific locations used in this assessment, and were not built or corrected from local observed climate.

For international locations, this means that the accuracy of the historical climatology for some locations, if evaluated against local measurements, is hampered particularly by the lack of accurately observed local data to bound and train the empirical-statistical relationships. Those relationships are better constrained for the CONUS and AK and HI and for some regions of Europe and Asia, though even there the models' performance is variable based on the local setting of selected locations - near inland water or mountains or not, or near a coastline, for example. In international locations, as elsewhere, too, climate models and downscaling techniques are better for temperature than for precipitation, and performance varies across sites. The model outputs used in this project in each of the three geospatial bins are the most consistent, complete and available at the time of this project's initiation.

### Calculations - Data Version 2.1

Select a calculation to show the corresponding results below:

ORness	Integrated Type	Calculation Time	Run By
0.70	EACH	2022-10-21 17:39:35	National Standard

[Download this table](#)

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[WOWA Aggregation Results](#) | 
 [Drill-Down Analysis](#) | 
 [Sites](#) | 
 [Indicator Importance Weights](#)

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**WOWA Aggregation Results**

▼  🔍 Row text contains 'sea girt' ✕

<u>RPSUID</u>	<u>Site</u>	<u>Department</u>	<u>Component</u>	<u>State</u>	<u>Region</u>	<u>Installation</u>	<u>Epoch</u>	<u>Scenario</u>	<u>Hazard Name</u> ↑	<u>Hazard Importance Weight</u>	<u>WQWA Score</u>	<u>Data Version</u>
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Coastal Flooding	1	95.33331	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Coastal Flooding	1	86.85211	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Coastal Flooding	1	86.34342	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Coastal Flooding	1	81.25646	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Coastal Flooding	1	82.49998	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Drought	1	65.60372	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Drought	1	77.25665	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Drought	1	70.31359	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Drought	1	70.83697	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Drought	1	70.19291	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Energy Demand	1	57.43858	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Energy Demand	1	57.92301	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Energy Demand	1	57.51261	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Energy Demand	1	58.08013	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Energy Demand	1	58.13761	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Extreme Temperature	1	38.01405	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Extreme Temperature	1	39.52734	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Extreme Temperature	1	47.63407	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Extreme Temperature	1	41.10614	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Extreme Temperature	1	41.12856	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Historical Extreme Conditions	1	17.82399	2.1

7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Historical Extreme Conditions	1	17.82399	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Historical Extreme Conditions	1	17.82399	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Historical Extreme Conditions	1	17.82399	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Historical Extreme Conditions	1	17.82399	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Land Degradation	1	55.59396	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Land Degradation	1	52.90166	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Land Degradation	1	54.14880	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Land Degradation	1	54.33206	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Land Degradation	1	54.09612	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Riverine Flooding	1	65.91234	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Riverine Flooding	1	75.13770	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Riverine Flooding	1	49.83701	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Riverine Flooding	1	53.87135	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Riverine Flooding	1	55.14440	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	Wildfire	1	18.62076	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	Wildfire	1	51.19307	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	Wildfire	1	32.29090	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	Wildfire	1	32.27048	2.1
7206	NG Sea Girt NJ NGTC	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	Wildfire	1	33.16890	2.1

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 User must have a .mil email address. Email from outside this domain will not be delivered.  
 CUI - Controlled Unclassified Information





**Data**

**Purpose:** The Data tab provides numerical results that complement the visualizations. Under the WOWA Aggregation Results sub-tab, the WOWA score is presented by epoch-scenario for each hazard for each site. The Drill-Down Analysis sub-tab allows the user to explore how each indicator contributes to hazard exposure at each site. The Sites sub-tab provides a list of sites in the tool by department. Finally, the Indicator Importance Weights sub-tab lists the importance weights for each indicator in every hazard component.

**Model Interpretation**

Model outputs were used in three bins: CONUS, AK-HI, and International. Comparisons across these bins - as for, say, a location in Africa to a location in South Carolina - can be legitimate for the high-level screening questions that this product has been designed to answer, but are not legitimate for closely resolved questions about either historical climate or projected future possible climate. That is to say, this project emphasized the importance of consistent simulation within each of those three domains, which entailed using different sets of GCMs and downscaling methods for each.

Moreover, for all three geospatial bins, as for climate modeling generally, empirical-statistical downscaled modeled outputs will not reproduce the local climate of locations with high accuracy for all variables everywhere. This is because each modeling system was created and exercised for domains larger than the site-specific locations used in this assessment, and were not built or corrected from local observed climate.

For international locations, this means that the accuracy of the historical climatology for some locations, if evaluated against local measurements, is hampered particularly by the lack of accurately observed local data to bound and train the empirical-statistical relationships. Those relationships are better constrained for the CONUS and AK and HI and for some regions of Europe and Asia, though even there the models' performance is variable based on the local setting of selected locations - near inland water or mountains or not, or near a coastline, for example. In international locations, as elsewhere, too, climate models and downscaling techniques are better for temperature than for precipitation, and performance varies across sites. The model outputs used in this project in each of the three geospatial bins are the most consistent, complete and available at the time of this project's initiation.

**Calculations - Data Version 2.1**

Select a calculation to show the corresponding results below:

OPress	Integrated Type	Calculation Time	Run By
0.70	EACH	2022-10-21 17:39:35	National Standard

[Download this table](#)

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- [WOWA Aggregation Results](#)
- [Drill-Down Analysis](#)
- [Sites](#)
- [Indicator Importance Weights](#)

**Drill-Down Analysis**

Q  Go Actions

Row text contains 'see girl' x

RPSUID	Site	Hazard Name ↑	Dept	Component	State	Region	Installation	Epoch	Scenario	Indicator Short Name	WOWA Contribution	% Contribution	Data Version
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7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	202 Coastal Erosion	60.86950	74.91%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	201 Coastal Flood Extent	20.38696	25.09%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	202 Coastal Erosion	60.86950	70.497%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	201 Coastal Flood Extent	25.47391	29.503%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	202 Coastal Erosion	22.22220	23.31%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	202 Coastal Erosion	22.22220	26.936%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	202 Coastal Erosion	60.86950	70.084%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	201 Coastal Flood Extent	25.98261	29.916%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	201 Coastal Flood Extent	73.11111	76.69%	2.1
7206	NG Sea Girt NJ NGTC	Coastal Flooding	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	201 Coastal Flood Extent	60.27778	73.064%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	108C Mean Annual Runoff	41.96306	63.964%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	106 Consec Dry Days	0.42931	0.556%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	101 Flash Drought Freq	4.10897	6.263%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	102 Drought Year Freq	1.07764	1.643%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	106 Consec Dry Days	0.38188	0.582%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	108C Mean Annual Runoff	41.96104	59.236%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	105 Aridity	18.94294	26.742%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	101 Flash Drought Freq	7.72561	10.906%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	102 Drought Year Freq	1.80381	2.546%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	106 Consec Dry Days	0.40357	0.57%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	108C Mean Annual Runoff	41.96045	59.779%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	105 Aridity	18.64288	26.559%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	101 Flash Drought Freq	7.32056	10.429%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	102 Drought Year Freq	1.86047	2.651%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	106 Consec Dry Days	0.40855	0.582%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	108C Mean Annual Runoff	41.96035	59.676%	2.1

7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	105 Aridity	18.67220	26.556%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	101 Flash Drought Freq	7.22335	10.273%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	102 Drought Year Freq	2.05325	2.92%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	106 Consec Dry Days	0.40444	0.575%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	108C Mean Annual Runoff	41.95937	54.312%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	105 Aridity	19.37247	25.075%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	101 Flash Drought Freq	11.75716	15.218%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	102 Drought Year Freq	3.73833	4.839%	2.1
7206	NG Sea Girt NJ NGTC	Drought	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	105 Aridity	18.07217	27.547%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	502 Cooling Degree Days	1.57095	2.712%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	402 5-Day Max Temperature	40.49309	70.407%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	503 5-Day Min Temperature	11.90823	20.559%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	402 5-Day Max Temperature	39.40879	68.036%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	501 Heating Degree Days	1.80133	3.136%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	503 5-Day Min Temperature	5.42384	9.443%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	502 Cooling Degree Days	9.76144	16.995%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	402 5-Day Max Temperature	40.45198	70.426%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	501 Heating Degree Days	2.27177	3.911%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	502 Cooling Degree Days	4.50313	7.753%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	503 5-Day Min Temperature	10.34424	17.81%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	402 5-Day Max Temperature	40.96098	70.525%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	501 Heating Degree Days	2.30176	3.959%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	502 Cooling Degree Days	4.47140	7.691%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	503 5-Day Min Temperature	10.39464	17.879%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	402 5-Day Max Temperature	40.96982	70.47%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	501 Heating Degree Days	2.41088	4.192%	2.1

7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	502 Cooling Degree Days	4.04585	7.035%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	503 5-Day Min Temperature	10.56281	18.366%	2.1
7206	NG Sea Girt NJ NGTC	Energy Demand	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	501 Heating Degree Days	5.03504	8.693%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	402 5-Day Max Temperature	30.37542	63.768%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	405 High Heat Index Days	10.38560	21.803%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	403 High Heat Days	4.15832	8.73%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	401 Days >95F	1.81570	3.812%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	401 Days >95F	0.50183	1.22%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	403 High Heat Days	1.20496	2.93%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	404 Frost Days	3.04051	7.393%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	405 High Heat Index Days	6.80000	16.534%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Lower	402 5-Day Max Temperature	29.58126	71.924%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	401 Days >95F	0.49313	1.2%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	403 High Heat Days	1.20264	2.926%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	404 Frost Days	3.12029	7.591%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	405 High Heat Index Days	6.70245	16.305%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Higher	402 5-Day Max Temperature	29.58764	71.979%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	401 Days >95F	0.36358	0.92%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	403 High Heat Days	0.89020	2.252%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	404 Frost Days	3.37262	8.532%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	405 High Heat Index Days	5.65757	14.313%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	402 5-Day Max Temperature	29.24335	73.983%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	401 Days >95F	0.06024	0.158%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	403 High Heat Days	0.21782	0.573%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	404 Frost Days	0.89903	1.887%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	404 Frost Days	7.35825	19.357%	2.1

7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	402 5-Day Max Temperature	29.18779	76.782%	2.1
7206	NG Sea Girt NJ NGTC	Extreme Temperature	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	405 High Heat Index Days	1.18995	3.13%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	802 Hurricane Freq	3.09529	17.366%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	801 Tornado Freq	2.12464	11.92%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	804 Hist Drought Freq	0.52641	2.953%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	808 Ice Jam Occurrence	0.02148	0.121%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	803 Ice Storms Occurrence	0.00000	00%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2085	Higher	805 Wildland Urban interface	0.00000	00%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	807 Hurricane Max Precip	7.65044	42.922%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	806 Hurricane Wind > 50knots	4.40572	24.718%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	802 Hurricane Freq	3.09529	17.366%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	801 Tornado Freq	2.12464	11.92%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	804 Hist Drought Freq	0.52641	2.953%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	808 Ice Jam Occurrence	0.02148	0.121%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	805 Wildland Urban interface	0.00000	00%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	Base	N/A	803 Ice Storms Occurrence	0.00000	00%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	807 Hurricane Max Precip	7.65044	42.922%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	806 Hurricane Wind > 50knots	4.40572	24.718%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	802 Hurricane Freq	3.09529	17.366%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	801 Tornado Freq	2.12464	11.92%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	804 Hist Drought Freq	0.52641	2.953%	2.1
7206	NG Sea Girt NJ NGTC	Historical Extreme Conditions	Army	Army Guard	New Jersey	Northeast	New Jersey National Guard	2050	Lower	808 Ice Jam Occurrence	0.02148	0.121%	2.1

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[For questions or support, please contact osd.carlago.osd-a-s.list.dcat.support@mail.mil](mailto:osd.carlago.osd-a-s.list.dcat.support@mail.mil)  
 User must have a .mil email address. Email from outside this domain will not be delivered.  
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## Climate Mapping for Resilience and Adaptation

### Hazard Report

## Extreme Heat

 Census Tract (34025809200) in Monmouth County, New Jersey


 Total Population  
① 1,655

 Non-Hispanic White Population (%)  
3%


 Income Below Poverty in Last 12 Mo (%)  
3%

 Building Codes Hazard Resistance  
① Resistant

 Community Status  
① Not a Disadvantaged Community

 [Explore additional data](#)



 U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

National Risk Index Rating  
Relatively Low



according to the [FEMA National Risk Index](#)

Extreme Heat Annualized Frequency  
① 0.50

Expected Annual Loss Rating  
① Relatively Low

Expected Annual Loss Total (\$)  
① \$2,091.82

### Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max
<b>Temperature thresholds:</b>							
Annual days with maximum temperature > 90°F	13 days 11 - 15	25 days 15 - 36	26 days 16 - 36	33 days 18 - 48	40 days 21 - 56	40 days 23 - 61	68 days 31 - 91
Annual days with maximum temperature > 95°F	3 days 2 - 4	7 days 4 - 12	8 days 4 - 12	10 days 5 - 17	14 days 5 - 24	14 days 6 - 27	34 days 9 - 58
Annual days with maximum temperature > 100°F	0 days 0 - 0	1 days 0 - 3	1 days 0 - 4	2 days 1 - 6	4 days 1 - 9	4 days 1 - 6	13 days 2 - 28
Annual days with maximum temperature > 105°F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1	1 days 0 - 2	1 days 0 - 3	3 days 0 - 12
<b>Annual temperature:</b>							
Annual single highest maximum temperature °F	97 °F 96 - 98	100 °F 98 - 103	100 °F 97 - 103	101 °F 98 - 105	102 °F 99 - 106	103 °F 99 - 107	107 °F 99 - 112
Annual highest maximum temperature averaged over a 5-day period °F	91 °F 90 - 92	94 °F 92 - 97	94 °F 92 - 96	95 °F 93 - 99	96 °F 93 - 99	97 °F 93 - 101	101 °F 94 - 106
Cooling degree days (CDD)	938 degree-days 878 - 1003	1,232 degree-days 1,029 - 1,550	1,261 degree-days 1,047 - 1,472	1,395 degree-days 1,094 - 1,767	1,532 degree-days 1,184 - 1,859	1,559 degree-days 1,172 - 1,947	2,126 degree-days 1,465 - 2,653

N/A = Data Not Available for the selected area

Hazard Report

# Drought

Census Tract (34025809200) in Monmouth County, New Jersey

Total Population  
1,655

Non-Hispanic White Population (%)  
3%

Income Below Poverty in Last 12 Mo (%)  
3%

Building Codes Hazard Resistance  
Resistant

Community Status  
Not a Disadvantaged Community

[Explore additional data](#)



U.S. Climate Resilience Toolkit  
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

National Risk Index Rating  
**No Rating**  
 according to the [FEMA National Risk Index](#)

Drought Annualized Frequency  
2.72

Expected Annual Loss Rating  
No Expected Annual Losses

Expected Annual Loss Total (\$)  
\$0.00

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
		Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
<b>Precipitation:</b>							
Average annual total precipitation	46" 44 - 48	48" 44 - 53	48" 42 - 53	48" 45 - 55	49" 44 - 54	49" 45 - 55	50" 45 - 58
Days per year with precipitation (wet days)	178 days 173 - 182	176 days 169 - 185	176 days 164 - 185	176 days 164 - 188	175 days 162 - 190	176 days 163 - 189	173 days 148 - 193
Days per year with no precipitation (dry days)	188 days 183 - 192	189 days 180 - 197	189 days 180 - 201	189 days 178 - 201	190 days 175 - 204	189 days 176 - 202	193 days 172 - 217
Maximum number of consecutive dry days	12 days 11 - 13	12 days 11 - 14	12 days 11 - 15	13 days 11 - 15	13 days 11 - 15	13 days 11 - 15	13 days 11 - 16
<b>Temperature thresholds:</b>							
Annual days with maximum temperature > 90 °F	13 days 11 - 15	25 days 15 - 36	26 days 16 - 36	33 days 18 - 48	40 days 21 - 56	40 days 23 - 61	68 days 31 - 91
Annual days with maximum temperature > 100 °F	0 days 0 - 0	1 days 0 - 3	1 days 0 - 4	2 days 1 - 6	4 days 1 - 9	4 days 1 - 6	13 days 2 - 28

N/A = Data Not Available for the selected area

## Hazard Report Wildfire

Census Tract (34025809200) in  
Monmouth County, New Jersey

Total Population  
1,655

Non-Hispanic White Population (%)  
3%

Income Below Poverty in Last 12 Mo (%)  
3%

Building Codes Hazard Resistance  
Resistant

Community Status  
Not a Disadvantaged Community

[Explore additional data](#)



U.S. Climate Resilience Toolkit  
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD



### Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
		Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
<b>Precipitation:</b>							
Days per year with no precipitation (dry days)	188 days 183 - 192	189 days 180 - 197	189 days 180 - 201	189 days 178 - 201	190 days 175 - 204	189 days 176 - 202	193 days 172 - 217
Maximum number of consecutive dry days	12 days 11 - 13	12 days 11 - 14	12 days 11 - 15	13 days 11 - 15	13 days 11 - 15	13 days 11 - 15	13 days 11 - 16
Days per year with precipitation (wet days)	173 days 173 - 182	176 days 169 - 185	176 days 164 - 185	176 days 164 - 188	175 days 162 - 190	176 days 163 - 189	173 days 148 - 193
<b>Temperature thresholds:</b>							
Annual days with maximum temperature > 90°F	13 days 11 - 15	25 days 15 - 36	26 days 16 - 36	33 days 18 - 48	40 days 21 - 56	40 days 23 - 61	68 days 31 - 91
Annual days with maximum temperature > 100°F	0 days 0 - 0	1 days 0 - 3	1 days 0 - 4	2 days 1 - 6	4 days 1 - 9	4 days 1 - 6	13 days 2 - 28

N/A = Data Not Available for the selected area

# Hazard Report Flooding

Census Tract (34025809200) in  
Monmouth County, New Jersey

Total Population  
1,655

Non-Hispanic White Population (%)  
3%

Income Below Poverty in Last 12 Mo (%)  
3%

Building Codes Hazard Resistance  
Resistant

Community Status  
Not a Disadvantaged Community

[Explore additional data](#)



U.S. Climate Resilience Toolkit  
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

National Risk Index Rating  
Relatively Low

according to the [FEMA National Risk Index](#)

Flooding Annualized Frequency  
3.67

Expected Annual Loss Rating  
Relatively Low

Expected Annual Loss Total (\$)  
\$5,668.10

Area in a 100-year / 500-year flood zone (%)  
28.21% / 6.04%

Area outside 100-year or 500-year flood zone (%)  
65.74%

Area unmapped/undetermined for flooding (%)  
0.00%

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
		Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
<b>Precipitation:</b>							
Average annual total precipitation	46" 44 - 48	48" 44 - 53	48" 42 - 53	48" 45 - 55	49" 44 - 54	49" 45 - 55	50" 45 - 58
Days per year with precipitation (wet days)	178 days 173 - 182	176 days 169 - 185	176 days 164 - 185	176 days 164 - 188	175 days 162 - 190	176 days 163 - 189	173 days 148 - 193
Maximum period of consecutive wet days	11 days 10 - 12	11 days 9 - 12	11 days 10 - 12	11 days 9 - 13	11 days 9 - 13	11 days 10 - 13	11 days 8 - 14
<b>Annual days with:</b>							
Annual days with total precipitation > 1 inch	6 days 6 - 7	7 days 5 - 9	7 days 6 - 9	7 days 6 - 9	8 days 6 - 9	8 days 7 - 9	9 days 7 - 11
Annual days with total precipitation > 2 inches	1 days 0 - 1	1 days 1 - 1	1 days 1 - 2	1 days 1 - 1	1 days 1 - 2	1 days 1 - 2	1 days 1 - 2
Annual days with total precipitation > 3 inches	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 1
Annual days that exceed 99th percentile precipitation	4 days 4 - 4	4 days 4 - 4	4 days 4 - 4	4 days 4 - 4	5 days 5 - 5	5 days 5 - 5	6 days 6 - 6
Days with maximum temperature below 32 °F	14 days 12 - 17	9 days 3 - 13	9 days 3 - 13	7 days 2 - 12	6 days 3 - 10	6 days 1 - 9	2 days 0 - 6

N/A = Data Not Available for the selected area

Hazard Report

# Coastal Inundation

Census Tract (34025809200) in Monmouth County, New Jersey

Total Population  
1,655

Non-Hispanic White Population (%)  
3%

Income Below Poverty in Last 12 Mo (%)  
3%

Building Codes Hazard Resistance  
Resistant

Community Status  
Not a Disadvantaged Community

[Explore additional data](#)



U.S. Climate Resilience Toolkit  
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

National Risk Index Rating  
Relatively Low

Coastal Inundation Annualized Frequency  
4.44

Expected Annual Loss Rating  
Relatively Moderate

Expected Annual Loss Total (\$)  
\$40,192.38

according to the [FEMA National Risk Index](#)

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
		Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Sea level rise: Percent of selected census tract impacted by global sea level rise	N/A	0%	0%	0%	0%	3%	6%

N/A = Data Not Available for the selected area

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# NJADAPT NJ Flood Mapper

Figure 1. Sea Girt National Guard Training Center with a Total Water Level of 1 ft.



Figure 2. Sea Girt National Guard Training Center with a Total Water Level of 2 ft.



Figure 3. Sea Girt National Guard Training Center with a Total Water Level of 3 ft.



Figure 4. Sea Girt National Guard Training Center with a Total Water Level of 4 ft.

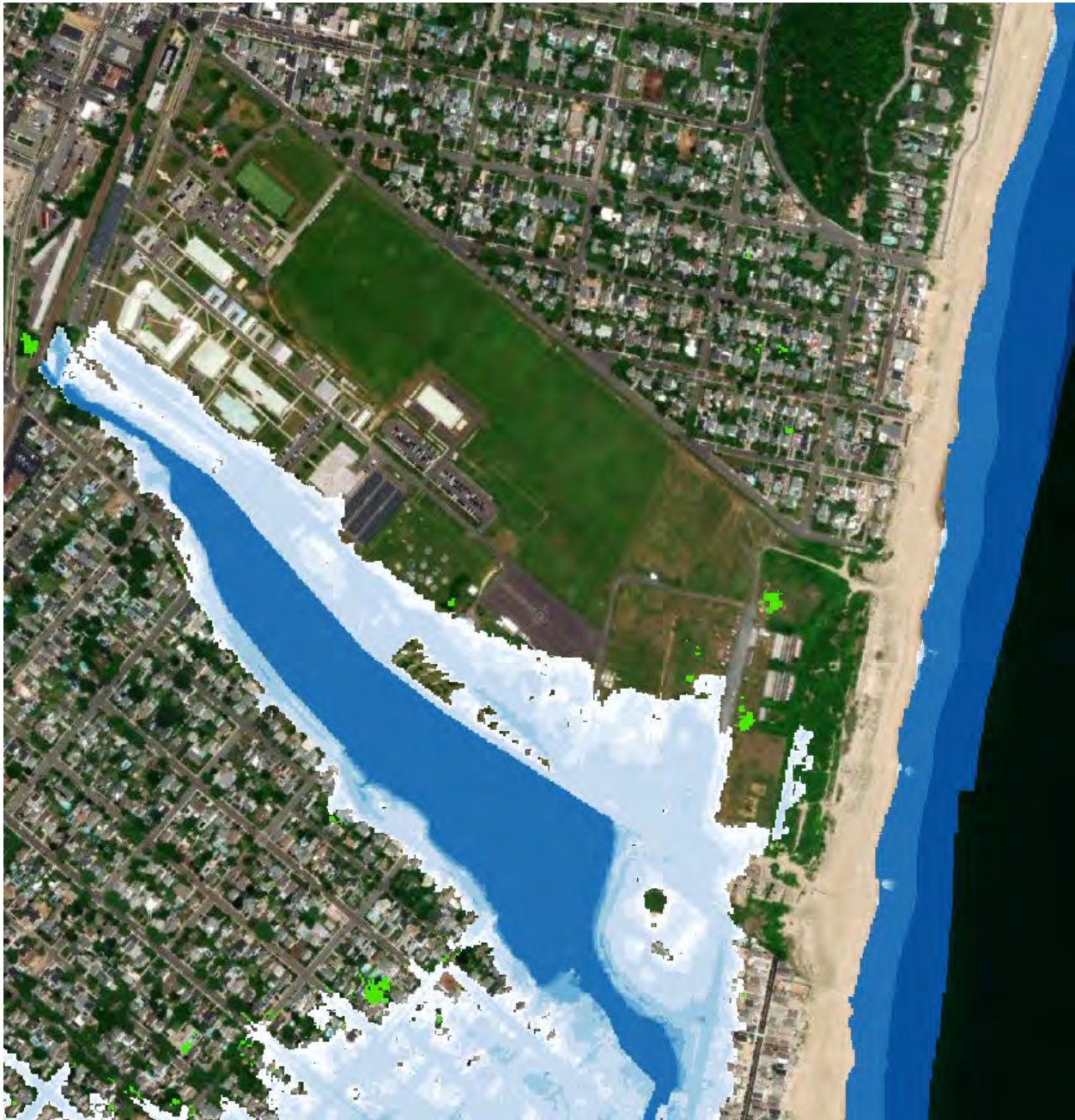


Figure 5. Sea Girt National Guard Training Center with a Total Water Level of 5 ft.



Figure 6. Sea Girt National Guard Training Center with a Total Water Level of 6 ft.



Figure 7. Sea Girt National Guard Training Center with a Total Water Level of 7 ft.




Figure 8. Sea Girt National Guard Training Center with a Total Water Level of 8 ft.



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# INRMP Adaptation Planning Worksheets

Worksheet 1.1. Installation Mission and Requirements <span style="float: right;">  </span>	
Mission and Mission Support Components <i>What are the core mission and mission support components for the installation?</i>	Critical Mission Requirements <i>What are the built and natural features/conditions critical to carrying out and sustaining this installation mission component?</i>
Physical training for National Guard soldiers	One firing range, parade grounds, driver/motorcycle training area, training maneuver areas, helicopter field, impact areas, clear zones, firebreaks, access roads, buildings, utilities, athletic fields, beach habitat for training, medical clinic
Academic training	Regional Training Institute complex with classrooms, auditorium, offices, and billets, general education building, outdoor training areas for demonstration
Stationing - providing residential units for National Guard	Housing buildings, dining facility
Preserve surrounding community and environmental integrity	Wetlands for flood attenuation, beach and dunes for wildlife habitat, Stockton Lake for aquatic bird foraging habitat, rain garden for nutrient runoff attenuation, New Jersey National Guard Militia Museum
Provide a community for soldiers, airmen, sailors in the region	All of the above
Provide facility collaboration with New Jersey State Police, Department of Corrections, Juvenile Justice Commission, and Department of Criminal Justice	Classroom buildings, office buildings

**Worksheet 1.2. Target Resources and Existing Goals**



<b>Target Natural Resources</b> <i>What are the natural resource features (species, habitats, ecosystem processes, etc.) that are the focus of this adaptation planning effort?</i>	<b>Goals/Objectives</b> <i>What are the existing INRMP goals and objectives for the target natural resources?</i>	<b>Associated Program Elements</b> <i>What INRMP program elements are associated with each of the target natural resources?</i>
Beach front	Maintain bathing beach and a sufficient width of the beach to protect dunes	Beach nourishment
Dunes	Control invasive species and poison ivy, maintain beach nesting bird habitat	Herbicide application on invasive plant populations, vegetation monitoring, beach raking, beach nesting bird monitoring
Beach nesting birds (piping plover, least tern, American oystercatcher)	Move the range, seawall, and beach westward to avoid loss of the beach due to sea level rise	Rare species monitoring, macroinvertebrate studies, predator population surveys
Seabeach amaranth and seabeach knotweed	Improve beach and dune habitat for sensitive plants, control invasive plant species that are outcompeting native beach plants	Vegetation surveys
Osprey	Maintain nesting platforms	Osprey nest monitoring
Wetland habitat	Protect and rehabilitate sensitive wildlife habitats that support threatened and endangered species	Wetland restoration monitoring and maintenance, rain garden monitoring and maintenance
Stockton Lake	Improve stormwater management	Replace Stockton Lake bulkhead with a living shoreline, convert adjacent land into green space to provide a riparian buffer
Asiatic sand sedge	>Eliminate the invasive plant from the primary dune areas and prevent reinfestation of the species >Protect and rehabilitate sensitive wildlife habitats that support threatened and endangered species >Prevent introduction and spread	Herbicide application on invasive plant populations during the height of the growing season, frequent monitoring, hand pulling of plants
Canada geese	Deter goose populations and control amount of feces on property	Canada goose hazing, fecal surveys, fecal clean up
Poison Ivy	Minimize visitor and staff exposure to poison ivy through education and management	>Control poison ivy in high-traffic areas >Make >50% of beach visitors and 100% of staff aware of poison ivy habitat presence, benefits, and potential health hazards

**Worksheet 1.3. Planning Scope and Background Information**



<b>Geographic Scope</b> <i>What is the spatial context for addressing climate change in the installation's INRMP planning?</i>	<b>Stakeholders/Partners</b> <i>Who are the key stakeholders and participants to engage in the adaptation planning process, both within DoD and externally?</i>	<b>Available Information/Expertise</b> <i>What existing studies or resources are available for understanding regional or local climate projections and natural resource responses</i>
Sea Girt NGTC	Sea Girt NGTC Residents, NJDMAVA, NJARNG	DoDI, DoD INRMP Implementation Manual, and Climate Adaption for DoD Natural Resource Managers, Appendix I of Planning for Climate Change Impacts to Natural Resources of the 2018 INRMP, Rutgers University Site Profile and Risk Analysis: Sea Girt NGTC, Rutgers University A Climate Change Risk and Resilience Assessment of New Jersey's National Guard Facilities
The State of New Jersey	USFWS - NJ Field Office, NJDEP-ENSP, Conserve Wildlife Foundation of New Jersey	USFWS Species Profiles for threatened and endangered species, NJDEP State Wildlife Action Plan, 2020 New Jersey Scientific Report on Climate Change
Immediate buffer	Borough of Manasquan, Borough of Sea Girt, Monmouth County	

Worksheet 2.1. Climate Concerns and Projections					
Key Climate Concerns	Climatic Factors	Historical/Current Conditions	Trend	Projections	Confidence/Uncertainty
<i>What are the key climate change-related impacts or threats to the installation, and more specifically for the target natural resources?</i>	<i>What are the climatic factors or variables related to those concerns, and which are ecologically relevant for your installation and the resources you are managing?</i>	<i>What are the historical/current values for this climate factor?</i>	<i>What is the trend or directionality for this factor, if known?</i>	<i>What are available projections for this variable?</i>	<i>What is the level of confidence or certainty in the trend or magnitude of change for this variable (i.e., High, Medium, or Low)?</i>
Drought	Temperature (average, max), precipitation (annual)	Historical Temperature Conditions (e.g. prior to 2006) are 3°F lower than present (1). 13 days greater than 90oF. Annual precipitation of 46 inches (6).	Seasonal patterns may result in decreases in average summer precipitation creating greater potential for drought to occur (4). Maximum number of dry days is not likely to increase (6).	Drought is unlikely to affect Sea Girt NGTC (2, 6).	Medium Confidence (4).
Flooding	Precipitation, coastal flood extent, sea-level rise	Annual precipitation has increased at a rate of 2.4 inches per century since 1895 (1). Annual precipitation in New Jersey is expected to increase by 4% to 11% by 2050 (4). Current high tide threshold is 1.8 ft (2).	Extreme precipitation events are likely to lead to more frequent and more intense floods (4). SGNG is vulnerable to winds, precipitation, and the resulting flooding from coastal storm events (4). Sea levels are expected to rise (2).	Sea level rise is expected to surpass 1.8 ft in 2050 and may be equivalent to 3ft by 2100 (2).	High Confidence. (4)

Energy Demand	Temperature (average, max), cooling degree days	Historical Temperature Conditions (e.g. prior to 2006) are 3°F lower than present. (1) Cooling degree days - 938 degree-days (6). Annual days with max temperature above 95oF - 3 days (6).	The mean annual cooling degree days are projected to increase. The cooling degree days are projected to increase. The mean annual heating degree days are projected to decrease as winter temperatures rise. The heating degree days are projected to decrease. (3)	Annual days with maximum temperature above 95oF: 14-34 days in the late century (2070-2099) (6). Cooling degree days in the late century: 1,559-2,126 degree days (6).	Medium Confidence (4).
Extreme Temperature	Temperature (average, max)	Annual days with max temperature above 90oF: 13 days (6). Annual days with max temperature above 95oF: 3 days (6).	Mean annual very hot days (>95 °F) are project to increase, along with a commensurate decrease in mean annual days below freezing, at Sea Girt through the end of the century(3).	Mean annual very hot days (>95 °F) are project to increase, along with a commensurate decrease in mean annual days below freezing, through the end of the century (3). Annual days with max temperature above 90°F: 40-68 days in the late century (2070-2099) (6). Annual days with max temperature above 95°F: 14-34 days in the late century (6).	Medium Confidence (4).
<b>Information Sources</b>	(1) Appendix I of Planning for Climate Change Impacts to Natural Resources of the 2018 INRMP; (2) Site Profile and Risk Analysis: Sea Girt NGTC, dated 2020, prepared by Rutgers; (3) A Climate Change Risk and Resilience Assessment of New Jersey’s National Guard Facilities, dated 2020, prepared by Rutgers; (4) DoD INRMP Implementation Manual and Climate Adaption for DoD Natural Resource Managers; (5) DOD Climate Assessment Tool; (6) Climate Mapping for Resilience and Adaptation Tool.				
<i>List sources of information used to populate this table</i>					

Worksheet 2.2. Climate Vulnerabilities of Target Natural Resources					
Target Natural Resource(s) <i>What are the target natural resources to be evaluated (from Worksheet 1.2)?</i>	Climate-Related Threats			Other Threats <i>What existing or “non-climate” threats to the resource may be exacerbated by or amplified due to projected changes in in climatic factors?</i>	Degree/Reason for Vulnerability <i>Rate the relative vulnerability (e.g., Very High, High, Medium, Low) and describe the reason for that rating.</i>
	Sensitivity <i>How and to what degree might this resource respond (negatively or positively) to expected climate-related changes?</i>	Exposure <i>To what degree is the resource likely to overlap with and be exposed to conditions to which it is sensitive?</i>	Adaptive Capacity <i>Does the target resource have the ability to accommodate, cope with, or adjust to projected changes in climate conditions? If so, how?</i>		
Beach nesting birds	>Requires sparsely vegetated beach habitat with surrounding dune vegetation for nesting. Sea level rise could reduce their suitable nesting habitat.	>High: Habitat loss or degradation from higher sea levels effecting beach habitat	Future artificial beach replenishment would accommodate the natural resource.	>Invasive species located in the wetland and dune areas >Polluted run-off asphalt-paved areas >A change in macroinvertebrate communities, which could influence diets of beach nesting birds	High. The Beach Nesting Birds have a high degree of sensitivity to a number of climatic variables, including increased drought, extreme precipitation/flooding, and other threats (e.g., predation) that may be exacerbated by climate change.

Beachfront and dunes	<ul style="list-style-type: none"> <li>&gt;Beach erosion</li> <li>&gt;Loss of beach nesting bird habitat and dunes</li> <li>&gt;Loss of recreational opportunities for beachgoers</li> <li>&gt;Potential increased flooding from loss of beach dunes and sea wall (long-term)</li> <li>&gt;Climate-related stressors can make coastal vegetation more susceptible to competitive exclusion from invasive plant species.</li> </ul>	>High: Greatly increased due to location adjacent to the Atlantic Ocean.	Adapted to ephemeral hydrology (annual drought), but vulnerable to successive years of drought and lowered groundwater.	Invasive species (i.e. Asiatic sand sedge, poison ivy, purple loose strife, phragmites).	High. Coastal habitat has a high degree of sensitivity to a number of climatic variables, including increased drought, extreme precipitation/flooding, and other threats (e.g., invasive species) that may be exacerbated by climate change. Climate projections suggest a moderate degree of exposure to those risks, but they are moderated to some degree by natural adaptive capacity.
Seabeach amaranth and seabeach knotweed	<ul style="list-style-type: none"> <li>&gt;Sedimentation on dunes from wave action</li> <li>&gt;Sea level rise could flood dune habitat</li> </ul>	>High: Sea-level rise is expected to occur	Future artificial beach replenishment would accommodate the natural resource.	Competition from increased invasive plant coverage	High: Coastal habitat has a high degree of sensitivity to a number of climatic variables including sea-level rise.
Osprey	<ul style="list-style-type: none"> <li>&gt;Nesting platforms on the installation have low likelihood to be effected by climate-related changes</li> <li>&gt;Increased convective storms and damaging winds have potential to damage the nest or nesting platform</li> </ul>	>Low: Increased convective storms are difficult to project, and the chances of the nesting platform snapping or the nest blowing away are low.	This resource does not have the ability to adapt to the projected changes.	None	Low: Increased convective storms are difficult to project, and the chances of the nesting platform snapping or the nest blowing away are low.
Wetland habitat	<ul style="list-style-type: none"> <li>&gt;Increased flooding</li> <li>&gt;Inability to quickly drain floodwaters</li> </ul>	>High: increased flooding is projected to occur.	Maintenance of the wetland and stormwater management features on site enable the wetland to adapt to the changing climate conditions.	None	Medium: Wetland habitat is will likely receive some stress from the increased amount of flooding.

Stockton Lake	>Flooding as a result of sea-level rise is expected to occur.	>High: Sea-level rise is expected to occur	Stockton Lake does not currently have the capacity to adapt to the projected climatic changes. The existing bulkhead will eventually be overtopped from sea-level rise during high tide.	The failure of stormwater features on the site decrease the ability to divert floodwaters into Stockton Lake.	High: Sea level rise is expected to occur and the existing bulkhead on Stockton Lake will be overtopped during high tide according to future projections.
Invasive species and poison ivy	>Invasive species might positively respond to climate-related changes due to habitat loss and disturbance of native plants habitats >Poison ivy is not expected to respond to climatic changes	>Medium: The spread of invasive species has the potential to increase with climatic changes, but is not the only influencing factor. Disturbed habitats increase the potential for their populations to spread.	Invasive species are highly adapted to disturbed environments.	None	>Medium: The spread of invasive species has the potential to increase with climatic changes, but is not the only influencing factor. Disturbed habitats increase the potential for their populations to spread.
Canada geese	>Canada geese present on the site are not expected to change as a result of the predicted climatic changes.	N/A	N/A	N/A	N/A

### Worksheet 2.3. Military Mission Risks from Natural Resource Vulnerabilities

<b>Vulnerabilities of Target Natural Resources</b> <i>List the most consequential natural resource vulnerabilities identified in the last column of Worksheet 2.2.</i>	<b>Risks to Installation Mission Requirements</b> <i>How might this natural resource vulnerability affect the ability of the installation to deliver its military mission (e.g., training, testing, etc.) and long-term sustainment?</i>	<b>Degree of Risk</b> <i>Rate the relative risk this vulnerability poses to the installation's ability to meet its military mission requirements (e.g., Very High, High, Medium, Low).</i>
Beach nesting birds	<u>Regulatory Pressure:</u> Climate-related species declines may impose new regulatory requirements on training activities. <u>Flooding/erosion risk:</u> Potential flooding/erosion that would cause loss of habitat.	<u>Regulatory pressure:</u> Medium <u>Flooding/erosion risk:</u> High
Beachfront and dunes	<u>Regulatory Pressure:</u> Climate-related species declines may impose new regulatory requirements on training activities. <u>Flooding/erosion risk:</u> Potential flooding/erosion that would cause loss of habitat, recreational areas, and beach training areas.	<u>Regulatory pressure:</u> Medium <u>Flooding/erosion risk:</u> High
Stockton Lake	<u>Flooding risk:</u> Potential flooding/erosion that would cause loss of habitat, recreational areas, training areas, and on-site facilities and infrastructure.	<u>Flooding/erosion risk:</u> High
Invasive species and poison ivy	<u>Regulatory pressure:</u> Increased amounts of invasive species and other vegetation will have negative impacts on beach nesting bird breeding populations and rare plant species. Declines in rare species may impose new regulatory requirements on training activities and reduce aesthetic quality of beach for recreational beach users.	<u>Regulatory pressure:</u> Medium

**Worksheet 3. Climate Implications for INRMP Goals and Objectives**



<b>INRMP Goals to Evaluate</b> <i>What are the existing goals for the target natural resources under consideration (from Worksheet 1.2)?</i>	<b>Climate Implications for Existing Goals/Objectives</b> <i>Based on climate concerns (Worksheet 2.1), vulnerabilities (Worksheet 2.2), and mission risks (Worksheet 2.3), how might your ability to achieve</i>	<b>Climate-Informed Goals/Objectives</b> <i>Are there any refinements or updates that may be needed to craft a more climate-informed version of the goal or objective</i>
Replacing the Stockton Lake bulkhead with living shoreline when bulkhead is replaced.	Lack of funding would compromise this goal.	Add beach replenishment and wetland restoration monitoring and maintenance goals.
Moving the firing range, seawall, and beach westward or adding more natural elements to the dune in an effort to address the loss of the beach due to sea level rise.	Reconfiguration of the installation would require extensive design and approvals.	Consider building into goal increased native habitat resiliency for the benefit of Beach Nesting Bird habitat.
Converting the land adjacent to Stockton Lake into green space.	Restoration to support habitat resiliency and ecosystem services still seems feasible considering climate implications.	Goal remains feasible based on available funding.
Ensuring all climate sustainability projects are included in the Site's master plan updates.	"Optimal" was not explicitly defined and can be considered in context of what is feasible under projected conditions	Goal remains feasible; however, objectives and management projects and actions to meet goal are expected to be revised.



**Worksheet 4.1. Identification of Possible Adaptation Strategies and Actions**

<b>Vulnerability/Risk</b> <i>What specific natural resource vulnerability (from Worksheet 2.2) or mission risk (from Worksheet 2.3) is being addressed?</i>	<b>Risk Reduction Strategies</b> <i>What strategies could reduce these vulnerabilities and risks?</i>	<b>Supporting Actions/Projects</b> <i>What actions or projects could be carried out to realize a given strategy?</i>	<b>Rationale and Assumptions</b> <i>How is this strategy or set of actions likely to reduce these vulnerabilities or risks?</i>
<b>Flooding/erosion risk</b>	<u>Strategy 1.</u> Improve coastal habitat system by adding beach replenishment activities and invasive species removal.	1). Actively restore coastal habitat through beach restoration. 2). Develop invasive species removal and revegetation plan. 3). Develop a Stormwater Management Control Plan.	Building up the shoreline should make the coastal habitat more resilient to drought and erosion during flooding.

Worksheet 4.2. Evaluation and Selection of Adaptation Strategies and Actions				
Worksheet Focus		Strategy/Action 1	Strategy/Action 2	Strategy/Action 3
<p><b>Risk:</b> Flooding/Erosion</p> <p><b>Strategy:</b> Improve coastal habitat system by adding beach replenishment activities and invasive species removal.</p> <p><b>Criteria for Evaluation</b>  <i>Identify and list below relevant criteria for evaluating/comparing proposed strategies/actions. Add rows for additional</i></p>		Actively restore coastal habitat through beach restoration.	Develop invasive species removal and revegetation plan.	Develop a site specific Flood Hazard Plan.
Effectiveness at meeting climate-informed natural resource goals	Expansion of coastal habitat by dredging sea bottom.	Medium	High	Low
	Decrease coastal erosion risk.	Medium	High	Low
Effectiveness in meeting other installation objectives	Protect Camp Drive and Wetland Area from flooding/erosion.	Low	Medium-High	Low
	Prevent Flooding along Camp Drive.	Low	Medium	High
Feasibility	Obtaining permits (e.g., CAFRA, LOI, Stormwater).	Medium	Low	Low
	Construction and maintenance cost.	High	High	Low-Medium
RECOMMEND FOR INCLUSION IN INRMP?		Yes	Yes	Yes

**Worksheet 5. Implementation of Adaptation Strategies/Actions**



<b>Recommended Strategies/Actions</b> <i>List strategies/actions recommended for incorporation into the INRMP (from worksheet 4.2).</i>	<b>Responsible Parties</b> <i>Who would have responsibility for or be involved in implementing the strategy/action?</i>	<b>Relationship to Existing INRMP Strategies</b> <i>Does this fit within a current INRMP effort, or is it a new activity/project?</i>	<b>Project Planning Needs</b> <i>What preparations or requirements would be necessary before carrying out the recommended strategies/actions?</i>	<b>Timing and Sequencing</b> <i>When should the action/project be implemented (immediately or at some future time)?</i>
Action 1). Actively restore coastal habitat through beach restoration.	DOD, NJDMAVA, Sea Girt NGTC tenants, USFWS – New Jersey Field Office, NJDEP-ENSP, Conserve Wildlife Foundation, Monmouth County, Borough of Sea Girt, Borough of Manasquan.	Yes, fits within the current INRMP effort.	Moderate degree of planning and coordination.	1-5 year horizon for implementation.
Action 2). Develop invasive species removal and revegetation plan.			Moderately low degree of planning and coordination.	1-2 year horizon for implementation.
Action 3). Develop a site specific Flood Hazard Plan.			Next action will need to focus on engineering design (including permitting, consultation, etc.)	1-2 year horizon for implementation.

## Worksheet 6. Climate-Informed Monitoring and Evaluation



<b>Adaptation Strategies/Actions</b> <i>List the strategies, actions, or projects being implemented that will be the subject of monitoring and evaluation.</i>	<b>Expected Outcomes</b> <i>Include both near and long-term outcomes expected for the action or project</i>	<b>Indicators</b>	<b>Management Triggers</b> <i>What thresholds (based on your indicators) might cause you to adjust management practices or rethink strategies</i>
Action 1). Actively restore coastal habitat through beach restoration.	<ul style="list-style-type: none"> <li>&gt;Increase site resiliency to projected sea-level rise and climate hazards</li> <li>&gt;Maintain beach nesting bird habitats</li> <li>&gt;Protect site resources and services</li> </ul>	<ul style="list-style-type: none"> <li>&gt;Reduced beach erosion rates</li> <li>&gt;Increased beach nesting bird breeding</li> <li>&gt;Flood hazard reduction</li> </ul>	<ul style="list-style-type: none"> <li>&gt;Level of beach erosion which will be monitored through topographic surveys and direct observation</li> <li>&gt;Beach-nesting bird activity</li> <li>&gt;Increased flooding on-site</li> <li>&gt;Inability to perform normal site functions and services</li> </ul>
Action 2). Develop invasive species removal and revegetation plan.	<ul style="list-style-type: none"> <li>&gt;Reduce invasive species populations</li> <li>&gt;Increase rare plant species populations</li> <li>&gt;Maintain appropriate cover percentages for beach nesting birds</li> <li>&gt;Provide foraging and nesting habitat for rare species</li> </ul>	<ul style="list-style-type: none"> <li>&gt;Increased beach nesting bird breeding</li> <li>&gt;Decreased invasive species populations</li> <li>&gt;Increased rare plant species populations</li> </ul>	<ul style="list-style-type: none"> <li>&gt;Invasive species populations increase</li> <li>&gt;Vegetation cover percentages are too high as a result of the vegetation survey</li> <li>&gt;No beach nesting bird breeding activity on site</li> </ul>
Action 3). Develop a site specific Flood Hazard Plan.	<ul style="list-style-type: none"> <li>&gt;Reduction of flooding on site</li> <li>&gt;Resiliency against coastal inundation</li> </ul>	<ul style="list-style-type: none"> <li>&gt;Reduced frequency of pools of standing water on site</li> <li>&gt;Protection of buildings, infrastructure, and natural resources during storm events</li> </ul>	<ul style="list-style-type: none"> <li>&gt;Repeated damage from coastal storms</li> <li>&gt;Frequent site inundation from Stockton Lake and the Atlantic Ocean</li> </ul>

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**APPENDIX C - ECOLOGICAL COMMUNITY  
AFFILIATIONS OF PLANTS  
OBSERVED AT SEA GIRT NGTC**



Code	Scientific Name	Common Name	Native Status <sup>(1)</sup>	Ecological Community													
				Coastal Dune Grass	Coastal Dune Shrubland	Disturbed Successional Dune	Successional / Disturbed	Maintained Lawn /	Hedgerow / Planted Trees	Successional Dune	Herbaceous / Scrub/Shrub	Modified Wetland	Managed Shrub Wetland	Salt Marsh			
CHPO6	<i>Chamaesyce polygonifolia</i>	Seaside spurge	N	•													
CHLE80	<i>Chrysanthemum leucanthemum</i>	Oxeye daisy	A									•					
CIIN	<i>Cichorium intybus</i>	Chicory	A		•		•	•			•	•					
CIAR4	<i>Cirsium arvense</i>	Canada thistle	A, I								•						
CALA5	<i>Cirsium vulgare</i>	Bull thistle	A								•						
COSE	<i>Convolvulus sepium</i>	Hedge bindweed	N								•						
COCA5	<i>Conyza canadensis</i>	Horseweed	N	•							•						
COVA2	<i>Coronilla varia</i>	Crown vetch	A					•			•						
CYES	<i>Cyperus esculentus</i>	Yellow nutsedge	N									•	•				
CYGR2	<i>Cyperus grayi</i>	Gray's flatsedge	N	•													
CYIR	<i>Cyperus iria</i>	Ricefield flatsedge	A											•			
DACA6	<i>Daucus carota</i>	Wild carrot	A, I				•	•	•								
DISA	<i>Digitaria sanguinalis</i>	Hairy crabgrass	A	•				•									
DISE	<i>Digitaria serotina</i>	Crabgrass	A					•									
DITET	<i>Diodia teres</i>	Poorjoe	N	•		•		•						•			
ELUM	<i>Elaeagnus umbellata</i>	Autumn olive	A, I			•				•	•						
ELOC	<i>Eleocharis</i> sp.	Spike Rush sp.										•	•				
ERPEP2	<i>Eragrostis pectinacea</i>	Tufted lovegrass	N	•													
EUAL13	<i>Euonymus alatus</i>	Winged euonymus	A, I					•									
EUCY2	<i>Euphorbia cyparissias</i>	Cypress spurge	A								•						
EUTE7	<i>Euthamia tenuifolia</i>	Slender-leaved	N								•		•				
FEEL	<i>Festuca elatior</i>	Meadow fescue	A								•						
FEOV	<i>Festuca ovina</i>	Sheep fescue	A								•						
FORSY	<i>Forsythia</i> sp.	Forsythia	A, I					•									
FRVI	<i>Fragaria virginiana</i>	Common strawberry	N				•	•									
GALIU	<i>Galium</i> sp.	Bedstraw	N	•							•						
HEHE	<i>Hedera helix</i>	English ivy	A, I				•	•	•								
HIPIP	<i>Hieracium pilosella</i>	Mouse ear	A				•	•									
HICA10	<i>Hieracium pratense</i>	Field hawkweed	A					•					•				
ILOP	<i>Ilex opaca</i>	American holly	N					•									
IVFR	<i>Iva frutescens</i>	Hightide bush	N									•					•

Code	Scientific Name	Common Name	Native Status <sup>(1)</sup>	Ecological Community											
				Coastal Dune Grass	Coastal Dune Shrubland	Disturbed Successional Dune	Successional / Disturbed	Maintained Lawn /	Hedgerow / Planted Trees	Successional Dune	Herbaceous / Scrub/Shrub	Modified Wetland	Managed Shrub Wetland	Salt Marsh	
JUCA3	<i>Juncus canadensis</i>	Canada rush	N								•	•	•		
JUEF	<i>Juncus effusus</i>	Common rush	N									•	•		
JUTE	<i>Juncus tenuis</i>	Path rush	N									•	•		
JUVI	<i>Juniperus virginiana</i>	Eastern red cedar	N		•	•		•	•	•					
KYGR	<i>Kyllinga gracillima</i>	Pasture spikesedge	N											•	
LAAM	<i>Lamium amplexicaule</i>	Henbit	A								•				
LAJA	<i>Lathyrus japonicus</i>	Beach pea	N	•	•						•				
LEMA	<i>Lechea maritima</i>	Beach pinweed	N	•							•				
LEVI3	<i>Lepidium virginicum</i>	Peppergrass	N								•				
LIGUS2	<i>Ligustrum</i> sp.	Privet sp.	A, I			•									
LICA6	<i>Linaria canadensis</i>	Blue toadflax	N	•							•				
LIST2	<i>Liquidambar styraciflua</i>	Sweetgum	N					•							
LOJA	<i>Lonicera japonica</i>	Japanese honeysuckle	A, I		•	•	•	•	•	•	•	•			
LOCO6	<i>Lotus corniculatus</i>	Birdsfoot trefoil	A				•	•			•				
LUNAR	<i>Lunaria</i> sp.	Honesty	N	•											
LYSA2	<i>Lythrum salicaria</i>	Purple loosestrife	A, I									•			
MIVI	<i>Microstegium vinineum</i>	Japanese stiltgrass	A, I									•			
MISI	<i>Miscanthus sinensis</i>	Chinese silvergrass	A, I					•							
MOVE	<i>Mollugo verticillata</i>	Green carpetweed	N	•							•				
MOAL	<i>Morus alba</i>	White mulberry	A, I				•								
MYCE	<i>Morella pensylvanica</i>	Northern bayberry	N	•	•							•			
	<i>Myrica (Morella) cerifera</i>	Southern bayberry									•				
OEOA	<i>Oenothera oakesiana</i>	Oake's evening	N	•	•						•				
PAAM2	<i>Panicum amarum</i>	Bitter panicgrass	N	•							•				
PAVI2	<i>Panicum virgatum</i>	Switchgrass	N								•	•			
PAQU2	<i>Parthenocissus quinquefolia</i>	Virginia creeper	N		•	•	•	•	•	•	•	•			
PALA10	<i>Paspalum laeve</i>	Field paspalum	N										•		
PHAU7	<i>Phragmites australis</i>	Common reed	N, I			•	•	•			•	•	•		•
PHAM4	<i>Phytolacca americana</i>	Pokeweed	N			•	•		•						
PIAB	<i>Picea abies</i>	Norway spruce	A					•							
PIRE	<i>Pinus resinosa</i>	Red pine	N					•							
PIST	<i>Pinus strobus</i>	Eastern white pine	N					•	•						

Code	Scientific Name	Common Name	Native Status <sup>(1)</sup>	Ecological Community												
				Coastal Dune Grass	Coastal Dune Shrubland	Disturbed Successional Dune	Successional / Disturbed	Maintained Lawn /	Hedgerow / Planted Trees	Successional Dune	Herbaceous / Scrub/Shrub	Modified Wetland	Managed Shrub Wetland	Salt Marsh		
PITH3	<i>Pinus thunbergii</i>	Japanese black pine	A						•	•						
PLAR3	<i>Plantago aristata</i>	Bracted plantain	N						•							
PLLA	<i>Plantago lanceolata</i>	English plantain	A, I	•			•		•	•				•		
PLMA2	<i>Plantago major</i>	Common plantain	A						•		•					
PLPS	<i>Plantago psyllium</i>	Sand plantain	A								•					
PLHY3	<i>Platanus hybrida</i>	London plane tree	A						•	•						
POA	<i>Poa</i> sp.	Cool season grass		•							•					
POCU6	<i>Polygonum cuspidatum</i>	Japanese knotweed	A			•	•	•	•	•	•	•				
POHY	<i>Polygonum hydropiper</i>	Water pepper	A											•		
POPE2	<i>Polygonum pensylvanicum</i>	Pennsylvania	N											•		
POPE3	<i>Polygonum persicaria</i>	Ladies thumb	A				•							•		
PODE3	<i>Populus deltoides</i>	Eastern cottonwood	N			•										
POCA17	<i>Potentilla canadensis</i>	Dwarf cinquefoil	N						•							
PRSE2	<i>Prunus serotina</i>	Black cherry	N		•				•	•	•					
PRVI	<i>Prunus virginiana</i>	Choke cherry	N		•					•						
PYRUS	<i>Pyrus</i> sp.	Bradford pear	A, I						•							
QUPA2	<i>Quercus palustris</i>	Pin oak	N				•		•							
RHODO	<i>Rhododendron</i>	Rhododendron	N,A						•							
RHCO	<i>Rhus copallinum</i>	Winged sumac	N		•	•	•				•	•				
RHTY	<i>Rhus typhina</i>	Staghorn sumac	N								•	•				
RHYNC	<i>Rhynchospora</i> sp.	Rhynchospora	N								•	•				
ROPS	<i>Robinia pseudoacacia</i>	Black locust	N				•				•					
ROCA4	<i>Rosa carolina</i>	Carolina rose	N			•										
ROMU	<i>Rosa multiflora</i>	Multiflora rose	A				•									
RORU	<i>Rosa rugosa</i>	Rugosa rose	A, I	•	•	•				•	•	•				
RUBUS	<i>Rubus</i> sp.	Raspberry	N		•	•				•	•					
RUAC3	<i>Rumex acetosella</i>	Sheep sorrel	N			•		•			•		•			
RUCR	<i>Rumex crispus</i>	Curly dock	A								•		•			
SANI	<i>Salix nigra</i>	Black willow	N										•			
SAKA	<i>Salsola kali</i>	Prickly saltwort	A, I	•												
SAOF4	<i>Saponaria officinalis</i>	Soapwort	A	•												
SAAL5	<i>Sassafras albidum</i>	Sassafras	N				•		•							

Code	Scientific Name	Common Name	Native Status <sup>(1)</sup>	Ecological Community												
				Coastal Dune Grass	Coastal Dune Shrubland	Disturbed Successional Dune	Successional / Disturbed	Maintained Lawn	Hedgerow / Planted Trees	Successional Dune	Herbaceous / Scrub/Shrub	Modified Wetland	Managed Shrub Wetland	Salt Marsh		
SCAM2	<i>Scirpus americanus</i>	Three square	N									•				
SCIRP	<i>Scirpus</i> sp.	Bulrush	N									•				
SIPR4	<i>Silene pratensis</i>	White campion	N								•					
SODU	<i>Solanum dulcamara</i>	Bitter nightshade	N								•					
SOCA6	<i>Solidago canadensis</i>	Canada goldenrod	N		•						•		•			
SONE	<i>Solidago nemoralis</i>	Gray goldenrod	N								•					
SOSE	<i>Solidago sempervirens</i>	Seaside goldenrod	N	•	•						•	•				
SOSP2	<i>Solidago speciosa</i>	Showy goldenrod	N										•			
SPAL	<i>Spartina alterniflora</i>	Smooth cordgrass	N													•
SPPA	<i>Spartina patens</i>	Salt meadow cordgrass	N	•							•					•
SPPE	<i>Spartina pectinata</i>	Prairie cordgrass	N								•					
SPRU	<i>Spergularia rubra</i>	Sandspurry	I	•									•			
SPPR	<i>Spiraea prunifolia</i>	Bridalwreath						•								
STHE9	<i>Strophostyles helvula</i>	Trailing wild bean	N	•	•						•					
SYFO	<i>Symplocarpus foetidus</i>	Skunk cabbage	N									•				
TAOF	<i>Taraxacum officinale</i>	Common dandelion	A, I						•	•	•					
TARAX	<i>Taraxacum</i> sp.	Dandelion sp.		•							•					
TAXUS	<i>Taxus canadensis</i>	American yew	N						•	•						
TORA2	<i>Toxicodendron radicans</i>	Poison ivy	N, I	•	•	•	•	•	•	•	•	•				
TRPO	<i>Tragopogon porrifolius</i>	Oyster plant	A								•					
TRAG	<i>Trifolium agrarium</i>	Hop clover	A													
TRAR4	<i>Trifolium arvense</i>	Rabbitfoot clover	A						•		•					
TRRE3	<i>Trifolium repens</i>	White clover	A		•				•							
TRPU4	<i>Triplasis purpurea</i>	Purple sandgrass	N	•							•					
VETH	<i>Verbascum thapsus</i>	Common mullein	A			•	•				•					
VERON	<i>Veronica arvensis</i>	Speedwell	N						•							
VIRE7	<i>Viburnum recognitum</i>	Northern arrowwood	N									•				
XAST	<i>Xanthium strumarium</i>	Cocklebur	N	•	•						•	•				
YUFI	<i>Yucca filamentosa</i>	Spoonleaf-yucca	N	•	•						•					

(1) A=alien, I=invasive or potentially invasive on-site, N=native

Sources: Field Surveys conducted by Parsons 1998 and 1999; Field Surveys conducted by ASGECI 2007-2013

Field Surveys conducted by Brinkerhoff, VHB and CWF 2018-2022.

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## **APPENDIX D - AGENCY CORRESPONDENCE**

## OFFICIAL AGENCY COORDINATION AND CONSULTATION

DATE	AGENCY	DESCRIPTION
02 February 2023	USFWS	Outgoing request for site-visit participation letter.
02 February 2023	NJDEP-FWS-ENSP	Outgoing request for site-visit participation letter.
14 February 2023	USFWS/NJDEP FWS-ENSP	Meeting minutes from the agency coordination site-visit at Sea Girt NGTC.
04 April 2023	NJDEP, Coastal Zone Management	Meeting minutes from federal consistency meeting with NJDEP.
14 December 2023	NJDEP, Coastal Zone Management	Meeting minutes from CAFRA Pre-Application meeting with NJDEP.

## INFORMAL EMAIL CORRESPONDANCE WITH AGENCIES<sup>1</sup>

08 January 2024	NJ Historic Preservation Office	INRMP comments received.
25 January 2024	Monmouth County Division of Planning	INRMP comments received.
26 February 2024	NGB	INRMP comments received.
28 February 2024	USFWS and NJDEP FWS-ENSP	INRMP comments received.

### Notes:

- 1).<sup>1</sup> Providing requested data, providing input to INRMP, etc.
- 2). NGB = National Guard Bureau, Installations and Environment.
- 3). INRMP = Integrated Natural Resource Management Plan.
- 4). NJDEP = New Jersey Department of Environmental Protection.
- 5). NJDEP FWS-ENSP = New Jersey Fish and Wildlife – Endangered and Nongame Species Program.
- 6). USFWS = U.S. Fish and Wildlife Service.
- 7). Copies of informal agency emails are kept electronically in the administrative record.
- 8). Records of outgoing and incoming correspondence for this INRMP are provided in this appendix. The Errata Sheet detailing the agency comments, the NJARNG responses, and any resulting revisions made to the INRMP is also included in this appendix.



NEW JERSEY ARMY NATIONAL GUARD  
Joint Force Headquarters  
3650 Saylor's Pond Road  
Joint Base McGuire-Dix-Lakehurst, New Jersey 08640-5606

2 February 2023

Eric Schrading, Field Supervisor  
US. Fish and Wildlife Service  
New Jersey Field Office  
4 E. Jimmy Leeds Road, Suite 4  
Galloway, New Jersey 08205-4465

Re: Agency Coordination and Site Visit - NJARNG Sea Girt NGTC INRMP Update

Dear Mr. Schrading:

The Sea Girt National Guard Training Center (NGTC), a facility of the New Jersey Army National Guard is in the process of updating its Integrated Natural Resource Management Plan (INRMP) and Record of Environmental Consideration (REC). This document is a 5-year plan which identifies and provides management strategies for the natural resources at this training center. The draft INRMP update is currently under development, and Sea Girt NGTC would like for your agency's cooperation to ensure your agency priorities are taken into consideration and properly addressed in the plan. You will be given the opportunity to review and comment on the INRMP at the draft INRMP stage in 2023, prior to the document being finalized.

Per the Sikes Act, as amended 16 U.S.C. 670a -670f and the Sikes Act Tripartite Agreement (*MOU between the U.S. Department of Defense and the U.S. Fish and Wildlife Service and the association with Fish and Wildlife Agencies for a Cooperative INRMP Program on Military Installations*, July 2013), we seek U.S. Fish and Wildlife Service coordination concerning the conservation, protection and management of Federal Trust Species and other fish and wildlife resources on Sea Girt NGTC. Recognizing that time and resources are limited, we would nonetheless like to ensure that the most accurate and current information is included in this INRMP. To facilitate this need, Sea Girt NGTC would like to extend an invitation for a scoping meeting and a site visit at the training center, which is provisionally scheduled for 14 February 2023 at 10 am. If you cannot attend in person, we can host the scoping meeting via Microsoft Teams. If you are interested in participating in the site visit, please contact Rachael Barr at VHB, our contract support on this update, at 609-751-4159 or [rbarr@vhb.com](mailto:rbarr@vhb.com) no later than 10 February 2023.

Sincerely,

APPLEBY.CHARLES.M  
.1228847409

Digitally signed by  
APPLEBY.CHARLES.M.1228847409  
Date: 2023.02.03 09:09:09 -05'00'

Charles M. Appleby  
Chief, Environmental Management Bureau



NEW JERSEY ARMY NATIONAL GUARD  
Joint Force Headquarters  
3650 Saylor's Pond Road  
Joint Base McGuire-Dix-Lakehurst, New Jersey 08640-5606

2 February 2023

John Heilferty, Chief  
NJDEP Division of Fish and Wildlife Service  
1672 E. Buckshutem Road  
Millville, New Jersey 08332

Re: Agency Coordination and Site Visit - NJARNG Sea Girt NGTC INRMP Update

Dear Mr. Heilferty:

The Sea Girt National Guard Training Center (NGTC), a facility of the New Jersey Army National Guard is in the process of updating its Integrated Natural Resource Management Plan (INRMP) and Record of Environmental Consideration (REC). This document is a 5-year plan that identifies and provides management strategies for the natural resources at this training center. The draft INRMP update is currently under development, and Sea Girt NGTC would like your agency's cooperation to ensure your agency priorities are taken into consideration and properly addressed in the plan. You will be given the opportunity to review and comment on the INRMP at the draft INRMP stage in 2023, prior to the document being finalized.

Per the Sikes Act, as amended 16 U.S.C. 670a -670f and the Sikes Act Tripartite Agreement (*MOU between the U.S. Department of Defense and the U.S. Fish and Wildlife Service and the association with Fish and Wildlife Agencies for a Cooperative INRMP Program on Military Installations*, July 2013), we seek New Jersey Department of Environmental Protection coordination concerning the conservation, protection and management of State Trust Species and other fish and wildlife resources on Sea Girt NGTC. Recognizing that time and resources are limited, we would nonetheless like to ensure that the most accurate and current information is included in this INRMP. To facilitate this need, Sea Girt NGTC would like to extend an invitation for a scoping meeting and a site visit at the training center, which is provisionally scheduled for 14 February 2023 at 10 am. If you cannot attend in person, we can host the scoping meeting via Microsoft Teams. If you are interested in participating in the scoping meeting, please contact Rachael Barr at VHB, our contract support on this update, at 609-751-4159 or [rbarr@vhb.com](mailto:rbarr@vhb.com) no later than 10 February 2023.

Sincerely,

APPLEBY.CHARLES.M.12288474  
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Date: 2023.02.03 11:16:16 -05'00'

Charles M. Appleby  
Chief, Environmental Management Bureau



# Meeting Notes

Date: April 4, 2023

Notes Taken By: Rachael Barr

Place: Teams

Project No.: 21172.02

Re: Sea Girt NGTC INRMP Update – Federal Consistency Meeting with NJDEP

### ATTENDEES:

Name	Affiliation	Email
Rachael Barr	VHB	<a href="mailto:rbarr@vhb.com">rbarr@vhb.com</a>
Jessica Druze	VHB	<a href="mailto:jdruze@vhb.com">jdruze@vhb.com</a>
Bill McBride	NJDMAVA	<a href="mailto:William.McBride@dmava.nj.gov">William.McBride@dmava.nj.gov</a>
James Gardner	NJDMAVA	<a href="mailto:James.gardner@dmava.nj.gov">James.gardner@dmava.nj.gov</a>
Collen Keller	NJDEP	<a href="mailto:colleen.keller@dep.nj.gov">colleen.keller@dep.nj.gov</a>
Janet Stewart	NJDEP	<a href="mailto:Janet.Stewart@dep.nj.gov">Janet.Stewart@dep.nj.gov</a>
Kara Turner	NJDEP	<a href="mailto:Kara.Turner@dep.nj.gov">Kara.Turner@dep.nj.gov</a>

## INRMP Update – Federal Consistency Meeting Purpose:

As part of the five-year revision of the INRMP, we were looking to discuss projects and/or activities that may qualify for a Federal Consistency review rather than obtaining or renewing a CAFRA or General Permit.

### Itemized Discussion Topics

Item No.	Discussion Summary	Action By
1	<ul style="list-style-type: none"> <li>› <b>Existing permits at Sea Girt National Guard (SGNG)</b></li> <li>› CARFA IP (DULR File No. 1344-03-0001.2 CAF120002) Habitat Enhancement, Modification File No. 1344-03-0001.2 CAF180001, Expires July 17, 2023.</li> <li>› FWW 170002 GP-16 (Habitat Create/Enhancement), Expires April 24, 2023.</li> <li>› CZ-GP-2 (Permit No. 1344-03-0001.3 LUP200001) Beach and Dune Maintenance, Expires March 3, 2024.</li> <li>› WFD IP-Commercial/Industrial/Public (Waterfront Development), Expires May 13, 2025.</li> <li>› The GP-2 permit for beach and dune maintenance does qualify for federal consistency and includes the herbicide application for Asiatic sand sedge.</li> <li>› The FWW GP-16 will be required to monitor and maintain the wetland area.</li> <li>› The federal consistency application has no fee, no public notice requirements, 15-day public comment period, and a 60-day review period.</li> <li>› NJDEP provided the following coastal zone management guidance: <a href="https://www.nj.gov/dep/rules/rules/njac7_7.pdf">https://www.nj.gov/dep/rules/rules/njac7_7.pdf</a>.</li> </ul>	NJDMAVA/VHB

<b>Item No.</b>	<b>Discussion Summary</b>	<b>Action By</b>
2	<ul style="list-style-type: none"><li>› <b>The Southern Protection Area (SPA) dune is slowly encroaching on the bathing beach and losing recreational bathing areas.</b></li><li>› Since a dune is a protected resource, a permit for excavating dunes does not exist.</li><li>› NJDEP-approved protective measures to keep the bathing beach sand in place include sand fencing 15-feet from the toe of the dune running parallel to the shoreline.</li><li>› The fencing can be installed on 15 October and removed prior to Memorial Day.</li><li>› The sand fencing is covered under the beach and dune maintenance permit.</li></ul>	NJDMAVA/VHB



# Meeting Notes

Date: February 14, 2023

Notes Taken By: Rachael Barr

Place: NGTC 100 Camp Drive, Sea Girt,  
NJ - Building 7

VHB Project No.: 21172.02

Re: INRMP Update Stakeholder Scoping Meeting Minutes  
Sea Girt National Guard Project No. SG260

## ATTENDEES:

Name	Affiliation	Email
Rachael Barr	VHB	<a href="mailto:rbarr@vhb.com">rbarr@vhb.com</a>
Bill McBride	DMAVA	<a href="mailto:William.McBride@dmava.nj.gov">William.McBride@dmava.nj.gov</a>
Eric Sproesser	DMAVA	<a href="mailto:Eric.Sproesser@dmava.nnj.gov">Eric.Sproesser@dmava.nnj.gov</a>
Sherry Tirgrath	Conserve Wildlife Foundation (CWF)	<a href="mailto:Sherry.Tirgrath@conservewildlifenj.org">Sherry.Tirgrath@conservewildlifenj.org</a>
Liz Silvernail	Conserve Wildlife Foundation (CWF)	<a href="mailto:Liz.silvernail@davey.com">Liz.silvernail@davey.com</a>
Eric Schradling	U.S. Fish and Wildlife - NJFO	<a href="mailto:Eric_Schradling@fws.gov">Eric_Schradling@fws.gov</a>
Emily Heiser	NJDEP	<a href="mailto:emily.heiser@dep.nj.gov">emily.heiser@dep.nj.gov</a>
Kathy Clark	NJDEP	<a href="mailto:Kathy.Clark@dep.nj.gov">Kathy.Clark@dep.nj.gov</a>
John Hallagan	Stockton	<a href="mailto:John.hallagan@stockton.edu">John.hallagan@stockton.edu</a>

## Meeting Purpose:

Discuss the 2023 INRMP update which manages natural resources at the site while ensuring the site's mission can continue.

## Itemized Discussion Topics

Item No.	Discussion Summary	Action By
1	<ul style="list-style-type: none"> <li>› <b>INRMP Preparation Services for the Five-Year Revision.</b></li> <li>› Preparation of ARNG REC.</li> <li>› Endangered Species Act Section 7(a)(1) Consultation.</li> <li>› Preparation of a site wide freshwater LOI application.</li> <li>› Preparation of an updated Sea Girt NGTC Field Identification Guide.</li> <li>› Design of a power system for a Goosebuster Sonic Goose Deterrent System.</li> <li>› Develop a Poison Ivy Control and Revegetation Plan.</li> <li>› Design a Motus Receiver Station and Power Supply.</li> <li>› Incorporate Neighboring Boroughs' Beach Management Plans.</li> <li>› Incorporate Current and Past Survey Results.</li> </ul>	VHB/CWF/DMAVA

Item No.	Discussion Summary	Action By
2	<p>› <b>INRMP Update Goals</b></p> <ul style="list-style-type: none"> <li>› Expand Rare Species Goals #1 and #2 This goal implements beach management practices and protection measures for rare beach species.</li> <li>› Expand Rare Species Goal #4 – This goal aims to address maintaining and monitoring the two osprey nests on site.</li> <li>› Expand Rare Species Goal #7 – This goal authorizes the maintenance of the three Fluker posts on site.</li> <li>› Expand Fish and Wildlife Goal #1 – This goal works to deter resident Canada geese from using the installation.</li> <li>› Expand Land and Watershed Management Goal # 1. This goal attempts to protect and rehabilitate sensitive wildlife habitats that support threatened and endangered species by controlling invasive plants.</li> <li>› Expand Land and Watershed Management Goal #2. This goal attempts to minimize visitor and staff exposure to poison ivy through education and management.</li> <li>› Expand Land and Watershed Management Goal #3. This goal prevents the introduction and spread of invasive species.</li> <li>› Expand Land and Watershed Management Goal #5. This goal aims to improve the functionality of two recently constructed stormwater retention basins which are in a failed state.</li> <li>› Expand Changing Climate Planning Goal #1. This goal encourages the site to conduct a climate change vulnerability assessment and develop defined adaptation strategies.</li> <li>› Expand Outdoor Recreation Goal #1. This goal allows the continued implementation of beach access, fishing area, and campground programs for natural resources based outdoor recreation.</li> </ul>	VHB/CWF/DMAVA
3	<p>› <b>Schedule and Deliverables</b></p> <ul style="list-style-type: none"> <li>› V1 Draft INRMP due to NJDMAVA on 30 March 2023.</li> <li>› V2 Draft INRMP Agency Distribution due 14 days after receipt of comments from the V1 Draft INRMP.</li> <li>› V3 Draft INRMP Agency Distribution due 14 days after receipt of comments from the V2 Draft INRMP.</li> <li>› V4 Draft INRMP Official Version due 14 days after receipt of comments from the V3 Draft INRMP.</li> <li>› V1 Final INRMP Check Copy due 14 days after receipt of comments from the V4 Draft INRMP.</li> <li>› V2 Final INRMP Signature Copy due 14 days after receipt of check copy approval.</li> <li>› V3 Final INRMP Official Copy due 14 days after receipt of all signed versions.</li> </ul>	VHB/CWF/DMAVA

# ATTENDANCE SHEET

- ( ) Pre-Proposal Conference
- ( ) Bid Opening
- ( ) Pre-Construction
- ( ) Progress Meeting
- ( X ) Other: INRMP Scoping and CY23  
Monitoring Season Mtgs

Date: 2/14/2023

Project Number: **SG260 INRMP Update**

Location: **Sea Girt NGTC & Virtual**

NAME	FIRM / ORGANIZATION	PHONE	FAX	EMAIL
Bill McBride	NJDMAVA-CFMO-EMB	609 530 7136	609 530 6880	william.mcbride@dmava.nj.gov
Rachael Barr	VHB	609-751-4159	732-223-3666	rbarr@vhb.com
Sherry Tigraath	CWF	973 303 7893		Sherry.Tigraath@conservewildlifeNJ.
John Hallagan	Stockton U.	573-418-0071		john.hallagan@stockton.edu
Eric Sproesser	DMAVA NGTC	856-288-5361		eric.sproesser@dmava.nj.gov
Eric Schmoing	USFWS - NJFO	(609)382-5272		ERIC_SCHMOING@FWS.GOV
Kathy Clark	NJDEP		virtual	
Emily Heiser	NJDEP		Virtual	
Liz	CWF		virtual	

## Rachael Barr

---

**From:** Hoffman, Steven [DMAVA] <Steven.Hoffman@dmava.nj.gov>  
**Sent:** Tuesday, December 19, 2023 11:56 AM  
**To:** Rachael Barr; Jessica Druze  
**Cc:** Tirgrath, Sherry [DMAVA]  
**Subject:** [External] FW: Sea Girt NGTC Habitat Enhancement Project Pre-application Meeting Follow-up 12/14/23

Good morning Rachael and Jess,

Please see the DEP summarization of our Pre-Application meeting last Thursday 12/14 regarding the CAFRA applications.

I will keep you updated as this process moves along but please let me know if you have any questions or concerns.

Happy Holidays!  
Steven

---

**From:** Lange, Elizabeth [DEP] <Elizabeth.Lange@dep.nj.gov>  
**Sent:** Thursday, December 14, 2023 1:51 PM  
**To:** Eric Zawatski <ezawatski@princetonhydro.com>; Emily Bjorhus <ebjorhus@princetonhydro.com>; Ivy Babson <ibabson@princetonhydro.com>; Appleby, Charles [DMAVA] <Charles.Appleby@dmava.nj.gov>; Hoffman, Steven [DMAVA] <Steven.Hoffman@dmava.nj.gov>; Rumberger, Paul [DMAVA] <Paul.Rumberger@dmava.nj.gov>  
**Cc:** Turner, Kara [DEP] <Kara.Turner@dep.nj.gov>; Liang, Chingwah [DEP] <Chingwah.Liang@dep.nj.gov>; Pittfield, Taryn [DEP] <Taryn.Pittfield@dep.nj.gov>; Stewart, Janet [DEP] <Janet.Stewart@dep.nj.gov>; Golden, Glenn [DEP] <Glenn.Golden@dep.nj.gov>; Davis, Kelly [DEP] <Kelly.Davis@dep.nj.gov>; West-Rosenthal, Jesse [DEP] <Jesse.West-Rosenthal@dep.nj.gov>; Nolan, Katherine [DEP] <Katherine.Nolan@dep.nj.gov>; Pepe, David [DEP] <David.Pepe@dep.nj.gov>; Groskorth-Flynn, Taylor [DEP] <Taylor.Groskorth-Flynn@dep.nj.gov>  
**Subject:** Sea Girt NGTC Habitat Enhancement Project Pre-application Meeting Follow-up 12/14/23

Good afternoon, it was a pleasure meeting with you today about the Sea Girt NGTC Habitat Enhancement Project. Please feel free to forward to the rest of your team that I may have missed!

If you wish to have an additional follow-up meetings, please let our office know and we will coordinate and schedule the meeting accordingly. If you would like to work with the programs directly, we just ask that you keep us copied on any correspondence so we may update our records.

To close out this email, below is a courtesy conceptual summary of possible permits and action items this project may require (but not limited to):

*\*\* this is neither a comprehensive nor a technical summary \*\**

### **Watershed & Land Management:**

*Bureau of Coastal Permitting:* Kara Turner ([Kara.Turner@dep.nj.gov](mailto:Kara.Turner@dep.nj.gov)); *Bureau of Flood Hazard and Stormwater Engineering:* Chingwah Liang ([Chingwah.Liang@dep.nj.gov](mailto:Chingwah.Liang@dep.nj.gov)); *Bureau of Freshwater Wetlands and Highlands Permitting:* Taryn Pittfield ([Taryn.Pittfield@dep.nj.gov](mailto:Taryn.Pittfield@dep.nj.gov))

- Will need to apply for new FWGP 16
- An LOI is currently pending and a site visit was made by T. Pittfield on 11/13/2023. In comparison to the LOI issued in 2012 the wetlands have expanded in the area for additional proposed enhancement likely due to the

previous enhancement activities permitted under a Freshwater Wetlands General Permit No. 16 that recently expired. The current LOI is pending a T&E review to determine the buffer width(s).

- Site already has a valid CGP 2
- DEP will be discussing internally about the need for a CGP 24
  - Work may fall under the current CAFRA mod
- No need for a flood hazard application or review for stormwater compliance

*Office of Coastal Engineering:* Glenn Golden ([Glenn.Golden@dep.nj.gov](mailto:Glenn.Golden@dep.nj.gov))

- OCE has an easement – please send request for easement review to [OCEpermitreviews@dep.nj.gov](mailto:OCEpermitreviews@dep.nj.gov)
- Recommend reaching out to USACE about if the project will trigger a Section 408 review

**Fish and Wildlife:** Kelly Davis ([Kelly.Davis@dep.nj.gov](mailto:Kelly.Davis@dep.nj.gov))

- No concerns at this time

**Historic Preservation Office (HPO):** Jesse West-Rosenthal ([Jesse.West-Rosenthal@dep.nj.gov](mailto:Jesse.West-Rosenthal@dep.nj.gov))

- There are no buildings, structures, sites, objects, or historic districts on or adjacent to the project location that are listed on, or that have been identified as eligible for listing on the New Jersey or National Registers of Historic Places. Although the project setting is sensitive for archaeological sites, based upon a review of information on file at the HPO, the project only has a low potential to affect historic and archaeological remains. Consequently, the HPO does not recommend further consideration prior to permit issuance.
- If additional consultation with the HPO is needed for this undertaking, please reference the HPO project number 24-0214 in any future calls, emails, submissions or written correspondence to help expedite your review and response.

Should circumstances or conditions be or become other than as set forth in the information that was recently provided to the NJDEP, the comments and regulatory requirements provided above are subject to change and may no longer hold true. Statements made within this email are not indicative that the NJDEP has made any decisions on whether the proposed project will be permitted. OPPN looks forward to working with you on the proposed project.

Thanks,

**Elizabeth Lange**

*Environmental Specialist 2*

Office of Permitting and Project Navigation

New Jersey Department of Environmental Protection

401 East State Street

Trenton, NJ 08625-0420

Office: (609) 292-3600

Direct: (609) 940-5615

[OPPN website](#)



## Rachael Barr

---

**From:** Rachael Barr <rbarr@vhb.com>  
**Sent:** Monday, January 8, 2024 1:32 PM  
**To:** Baratta, Meghan [DEP]  
**Cc:** West-Rosenthal, Jesse [DEP]; Connolly, Emma [DEP]; Tirgrath, Sherry [DMAVA]; Hoffman, Steven [DMAVA]; Appleby, Charles [DMAVA]  
**Subject:** RE: [External] RE: Sea Girt NGTC INRMP Update (2023-2027) v3 DRAFT for Comment

Thank you, Meghan!

Please let us know if you have any questions.

**Rachael Barr**  
Project Manager

P 973.776.3748 | M 609.751.4159

[www.vhb.com](http://www.vhb.com)

---

**From:** Baratta, Meghan [DEP] <Meghan.Baratta@dep.nj.gov>  
**Sent:** Monday, January 8, 2024 1:03 PM  
**To:** Rachael Barr <rbarr@vhb.com>  
**Cc:** West-Rosenthal, Jesse [DEP] <Jesse.West-Rosenthal@dep.nj.gov>; Connolly, Emma [DEP] <Emma.Connolly@dep.nj.gov>  
**Subject:** [External] RE: Sea Girt NGTC INRMP Update (2023-2027) v3 DRAFT for Comment

You don't often get email from [meghan.baratta@dep.nj.gov](mailto:meghan.baratta@dep.nj.gov). [Learn why this is important](#)

Thank you Ms. Barr,  
I focused my review on page 2-56 & 2-57 which focused on historic architecture (2.8.2) & archeology (2.8.3) & the language as drafted is appropriate. I copied Jesse West-Rosenthal & Emma Connolly, the HPO reviewers for DMAVA on this email.  
Thank you for the opportunity to review the draft INRMP.

Sincerely,  
Meghan

Meghan MacWilliams Baratta, M.S., CPM  
Supervisor, HPO Project Review Section  
Program Specialist 4  
NJ Historic Preservation Office  
Mail Code 501-04B  
NJ DEP  
PO Box 420  
Trenton, NJ 08625-0420  
609-292-1253

---

**From:** Rachael Barr <[rbarr@vhb.com](mailto:rbarr@vhb.com)>  
**Sent:** Monday, January 8, 2024 9:46 AM  
**To:** Baratta, Meghan [DEP] <[Meghan.Baratta@dep.nj.gov](mailto:Meghan.Baratta@dep.nj.gov)>  
**Subject:** [EXTERNAL] FW: Sea Girt NGTC INRMP Update (2023-2027) v3 DRAFT for Comment

Dear Ms. Baratta.

VHB is excited to share the Draft INRMP v3 Update with you for review and comment.

Attached, please find the Informal Consultation Request Letter. The Draft INRMP and the Errata sheet have been provided at the link below.

<https://vhb-my.sharepoint.com/:f/p/rbarr/Egs8mLLY8YIDiwRPiFM9248BERY-Yct2JmHRSAbvY2AIA?e=d2CrQc>

If you should have any questions or concerns, please don't hesitate to contact us.

Respectfully Submitted,



**Rachael Barr**  
Project Manager



**P** 973.776.3748  
**M** 609.751.4159  
[www.vhb.com](http://www.vhb.com)

1805 Atlantic Avenue  
Manasquan NJ 08736

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VHB Engineering, Surveying, Landscape Architecture and Geology, P.C. | [info@vhb.com](mailto:info@vhb.com)

## Rachael Barr

---

**From:** Schmetterer, David <David.Schmetterer@co.monmouth.nj.us>  
**Sent:** Thursday, January 25, 2024 4:09 PM  
**To:** Rachael Barr; Charles.Appleby@dmava.nj.gov  
**Cc:** O'Connor, Teri; Elias, Geri; Barris, Joe; Honigfeld, Harriet; Bezahler, Melissa; Ettore, Joseph  
**Subject:** [External] Monmouth County Comments on the NJARNG Sea Girt NGTC Draft INRMP Update  
**Attachments:** Monmouth Comments on Errata Sheet\_Sea Girt NJARNG DRAFT INRMP v3\_2024.01.02.xlsx

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

You don't often get email from david.schmetterer@co.monmouth.nj.us. [Learn why this is important](#)

Ms. Barr and Mr. Appleby,

Thank you for providing Monmouth County with the opportunity to read and comment on the update to the Integrated Natural Resource Management Plan.

Members of the Environmental Section of the Monmouth County Division of Planning reviewed the material provided and found it to be a very thorough and interesting document, and have provided comments.

I have entered these comments on the attached project Errata sheet, and provided them on behalf of County Administrator Teri O'Connor, and the County of Monmouth.

We appreciate you and your team keeping us involved and informed and look forward to any future updates or opportunities to participate.

Thank you,

David Schmetterer, PP/AICP  
Assistant Director of Planning  
Monmouth County Division of Planning  
[David.Schmetterer@co.monmouth.nj.us](mailto:David.Schmetterer@co.monmouth.nj.us)  
732/431.7460 x3645

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## Rachael Barr

---

**From:** Walsh, Wendy <wendy\_walsh@fws.gov>  
**Sent:** Wednesday, February 28, 2024 6:18 PM  
**To:** Rachael Barr  
**Cc:** Conover, Ross R; Schrading, Eric; Davis, Christina [DEP]; Heiser, Emily [DEP]; Todd Pover; Lyon, Meaghan S  
**Subject:** Fw: [EXTERNAL] Sea Girt NGTC INRMP Update (2023-2027) v3 DRAFT for Comment  
**Attachments:** Errata Sheet\_Sea Girt NJARNG DRAFT INRMP v3\_2024.01.02\_USFWS.xlsx; Koch and Paton 2014 [shorebird disturbance buffers].pdf; 20220311\_email\_from Walsh\_roseate tern AOI update to include parts of NJ.pdf; Maslo et al 2011 [habitat targets NJ].pdf

You don't often get email from wendy\_walsh@fws.gov. [Learn why this is important](#)

Hi Rachael -

Service comments on the draft INRMP are attached - sorry for the delay in getting these to you. Thank you for the review opportunity.

We appreciate the long and cooperative relationship between Sea Girt NGTC and the Service to manage federally listed species.

Wendy

~~~~~

Wendy Walsh, Senior Endangered Species Biologist (she/her)  
U.S. Fish and Wildlife Service, New Jersey Field Office  
4 E. Jimmie Leeds Road, Suite 4, Galloway, New Jersey 08205  
office phone: (609) 382-5274  
[wendy\\_walsh@fws.gov](mailto:wendy_walsh@fws.gov) or [NJFO ProjectReview@fws.gov](mailto:NJFO_ProjectReview@fws.gov) for new project reviews

---

**From:** Rachael Barr <rbarr@vhb.com>  
**Sent:** Thursday, January 4, 2024 12:36 PM  
**To:** Schrading, Eric <eric\_schrading@fws.gov>  
**Cc:** Tirgrath, Sherry [DMAVA] <Sherry.Tirgrath@dmava.nj.gov>; Hoffman, Steven [DMAVA] <Steven.Hoffman@dmava.nj.gov>; Appleby, Charles <Charles.Appleby@dmava.nj.gov>; Zorn, Abigail [DMAVA] <Abigail.Zorn@dmava.nj.gov>; John Checchio <jchecchio@vhb.com>  
**Subject:** [EXTERNAL] Sea Girt NGTC INRMP Update (2023-2027) v3 DRAFT for Comment

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

**Errata Sheet of Agency Comments  
Updates to 2023-2027 INRMP  
Sea Girt National Training Center  
Sea Girt, New Jersey**

**Errata Sheet of FINAL INRMP May 2024 – Agency Courtesy Copy**

| Source of Comment | Applicable Section;<br>Page; line number    | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NJARNG Response to Comment | Changes Made to Draft INRMP in<br>response to Comment                                                                                  |
|-------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| NJDMAVA           | pg 2, line 21, pg 3, line 18, pg 4, line 14 | The "date" and names under the signature line need to be spaced so they're under the appropriate line                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg2                                         | there has to be a bunch of folks on this signature page. Follow the current one for a list of signatories. It'll be the TAG (lisa hou), Deputy TAG (Yvonne Mays), NGTC Superintendent (Peter Espeut), CFMO (McNamara), then NGB (Erik Gordon)                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg 5 after line 13                          | Copy this after line 13: The INRMP has been written in accordance with various federal, Department of Defense, Army, and National Guard Bureau laws, regulations, and guidance documents and this version includes additional proactive conservation measures so that it acts as a consultation agreement that complies with Section 7(a)(1) of the Endangered Species Act of 1973. However, the signatories recognize that these additional conservation measures are funding dependent and may not be implemented each year, but will not hold the NJDMAVA, NJARNG, and/or the NGTC liable if those projects are not implemented each year. |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg14                                        | there's no assistant adjutant general delete that one                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg 16 line 7 to 16                          | work a ref to the Climate Adaption for DoD Natural Resource Managers guidance doc into these sentences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg 16, line 29                              | Copy this after line 16: Any INRMP that has been written IAW section 7(a)(1) includes additional proactive conservation measures so that it acts as a consultation agreement of the Endangered Species Act of 1973. Proactive conservation projects are indicted as such through out the INRMP. However, the signatories recognize that these additional conservation measures are funding dependent and may not be implemented each year and will not hold the NJDMAVA, NJARNG, and/or the NGTC liable if those projects are not implemented.                                                                                                |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg 20, line 37                              | add new jersey youth challenge academy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg 21, line 18/19                           | check if CWF does youth camp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            | Correct. Addressed and moved sentence to line 16.                                                                                      |
| NJDMAVA           | pg 21, line 17                              | UAV use. Change this sentence to say no UAV's allowed anytime at NGTC and add a similar note to section 6.3.9.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            | Addressed. Added section from 6.3.9 about general management guidelines for aircrafts to lines 22-29 on page 21.                       |
| NJDMAVA           | pg 21, line 33 and 35                       | just call it Building 59 not maintenance building 59 and add "...track and storage shed."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | Addressed. Lines moved to page 22 line 3.                                                                                              |
| NJDMAVA           | pg 21, line 36/37                           | should be "lines" and delete the "further..." sentence. What utilities are you referring too.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed                                                                                                                              |
| NJDMAVA           | pg 25 line 16/17                            | delete the sent about range 5 turning into a urban terrain site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                                                                                              |
| NJDMAVA           | pg 25 line 29                               | extra period here                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                              |
| NJDMAVA           | pg 24 to 26                                 | sent to NGTC to check for accuracy, may have to revise later.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed. Please provide updates to Table 2-1, if required.                                                                           |
| NJDMAVA           | section 2.5                                 | lets reorg this section. Start off the climate section 2.5 with the verbiage in section 2.5.1 to set the regular climate patterns then take the verbiage from 2.5 about climate change and call it 2.5.1 climate change                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed.                                                                                                                             |
| NJDMAVA           | pg 32, section 2.5.2.3                      | spell out DCAT in the first sent of this para.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            | The acronym was already introduced in Section 2.5.1 Climate Change, it would be redundant to introduce it again. No changes were made. |
| NJDMAVA           | pg 32 section 2.5.2.4                       | in the first sent say "...The National Oceanic and Atmospheric Administration's Climate Mapping for Resilience and Adaptation (CMRA) tool..."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed                                                                                                                              |
| NJDMAVA           | pg 32, section 2.5.2.5                      | say "...The Rutgers University NJADAPT..."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed                                                                                                                              |
| NJDMAVA           | pg 35, section 2.5.3.3                      | describe what the WOWA score means                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            | This was already explained in Section 2.5.2.3 when the acronym was introduced. No changes were made.                                   |
| NJDMAVA           | pg 37, section 2.5.4.1                      | say "...tent pad site identified in the Master Plan..."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed                                                                                                                              |
| NJDMAVA           | pg 38, sections 2.5.4.2, 4.3, and 4.4       | lets put the funding section at the end after the goals. So it's 2.5.4.2, 4.4, and 4.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed                                                                                                                              |
| NJDMAVA           | pg 38, section 2.5.4.3.2                    | what projects is SG on the list for? The one with the town? We lost that.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | Addressed and removed.                                                                                                                 |

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| Source of Comment | Applicable Section;<br>Page; line number | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | NJARNG Response to Comment | Changes Made to Draft INRMP in<br>response to Comment                                                                                                                                 |
|-------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NJDMAVA           | pg 38 and 39                             | mention that goals 2, 3, and 4 are Section 7(a)(1) goals and are funding dependent                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            | Added to goals 2, 3, and 4 "This is a Section 7(a)(1) goal and is dependent on funding."                                                                                              |
| NJDMAVA           | pg 42 item 5                             | I think item 5's margins are off move to the left                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed                                                                                                                                                                             |
| NJDMAVA           | pg 48m section 2.7.3                     | add a discussion about the effective and revised base flood elevation flood hazard data ( <a href="https://www.seagirt-nj.gov/office-emergency-management/pages/whats-my-base-flood-elevation">https://www.seagirt-nj.gov/office-emergency-management/pages/whats-my-base-flood-elevation</a> ) and change fig 2.6 to include the revised Bfe ( <a href="https://fema.maps.arcgis.com/apps/webappviewer/index.html?id=e7a7dc3ebd7f4ad39bb8e485bb64ce44">https://fema.maps.arcgis.com/apps/webappviewer/index.html?id=e7a7dc3ebd7f4ad39bb8e485bb64ce44</a> ) |                            | Addressed.                                                                                                                                                                            |
| NJDMAVA           | pg 27 to 49                              | sent to energy manager for review and comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            | Addressed LN's comments.                                                                                                                                                              |
| NJDMAVA           | pg 47, lines 17 and 18                   | are these wet areas on the southside of the parking lot mapped wetlands? If so mention the wetland letters from fig 4-1. if not I don't see where they're called out on fig 4-1.                                                                                                                                                                                                                                                                                                                                                                            |                            | Addressed. It's referring to the two stormwater drainage basins in yellow on Fig 4-1.                                                                                                 |
| NJDMAVA           | pgs 55 to 66                             | can a representative pic be included in each veg community description and wetland area?                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Yes, and addressed.                                                                                                                                                                   |
| NJDMAVA           | pg 58 line 29 and 30                     | delete the ref to hydric soils and plants. They weren't id'd as wetlands and lets keep them that way.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed                                                                                                                                                                             |
| NJDMAVA           | pg 61 line 22                            | the intertidal shore doesn't have a NVC ID?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Correct, the intertidal shore does not have a NVC ID.                                                                                                                                 |
| NJDMAVA           | pg 62, line 15                           | no NVC id for salt marsh?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            | Addressed, added Salt Marsh Formation (M035) to text and Fig 2-7.                                                                                                                     |
| NJDMAVA           | pg 62 section 2.8.3                      | can this section be included/interwoven into section 2.8.2.5 so it's the wetland discussion are in one section?                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                                                             |
| NJDMAVA           | pg 65 line 5                             | Is the "f" in flat top supposed to be lowercase instead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | Addressed.                                                                                                                                                                            |
| NJDMAVA           | pg 66 line 24                            | where's the secondary growth forest near this wetland? SW corner of property? Can the veg community type be mentioned and ref. here?                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | This line is talking about the uplands on the site, not Wetland Area F. A heading for Uplands was added to distinguish it from the wetlands.                                          |
| NJDMAVA           | pg 66 line 33 to 39                      | this is repetitive to the discussion of the dunes in section 2.8.2.2. delete this para and move any info of value to section 2.8.2.2                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Moved dune veg information to section 2.8.2.2                                                                                                                                         |
| NJDMAVA           | pg 62 line 15                            | mention what eco veg community this is                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Added Marsh, Wet Meadow & Shrubland Community.                                                                                                                                        |
| NJDMAVA           | pg 60 line 11 and 12                     | isn't that 3 communities not 2 as mentioned in this section?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            | Added "Palustrine Emergent Wetland (PEM) and Palustrine Shrub/scrub wetland (PSS)"                                                                                                    |
| NJDMAVA           | pg 62 section 2.8.3                      | integrate section 2.8.3 to 2.8.2.5 so all the wetland discussion is in one section and not broken up between the other land types                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed.                                                                                                                                                                            |
| NJDMAVA           | pg 67 line 30                            | say acoustic bat surveys are being conducted in 2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Added this under Biological Surveys, "In 2023, acoustic monitoring for bats was conducted. Data analysis is underway and results will be incorporated into the INRMP when available." |
| NJDMAVA           | pg 67 line 1 and 2                       | mention why the garganey and phalarope are special since we say why plover and terns are in this section                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Added "These species are notable on the site due to their distance outside of the expected native range."                                                                             |
| NJDMAVA           | pg88 line 7 to 9                         | instead of the community types mentioned in the notes and type use the NV SC veg types so it's easier to match up where they are.                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed.                                                                                                                                                                            |

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|-----------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NJDMAVA               | pg 67 Section 2.8.4                      | this section seems to jump around. Like why is section 2.8.4.4 bio surveys buried several subsection in. I think there should be a into subsection that gives a quick overview of all the surveys then summaries the results. And why is bats separate than mammals? or why is the EAB survey mentioned in section 2.8.4.4, but not 2.8.5 the invasive section. EAB and SLF are invasive. there's some repetition too like inspection 2.8.4.2 it talks about plover breeding success over the years but it says the same thing in page 78 lines 21 and 22. lets talk about this section next biweekly mtg. |                            | Repetitive information was removed from this section and distributed into the most appropriate section (i.e. info on oystercatchers was moved into Section 6.2.9). The rare bird survey section was removed and the information was incorporated where appropriate.<br>Regarding EAB and SLF, their survey information belongs in the Insect section 2.8.3.3 and not the invasive section because section 2.8.4 is for invasive PLANTS only. |
| NJDMAVA               | pg 67 Section 2.8.4                      | need a discussion on the rare spp list and how it was generated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            | Added this, "The rare species list was generated by consulting a variety of sources including: the NJDEP Natural Heritage Program report for the site; the USFWS Information and Planning for Consultation (IPaC) species letter; NJDEP Landscape Project data; citizen science sources such as eBird, HerpMapper, NABat, and iNaturalist; and species identified on site during field visits."                                              |
| NJDMAVA               | pg 67 line 17                            | call this section Proposed Wind Turbine Avian and Bat Survey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            | Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| NJDMAVA               | pg 67 line 21                            | add "...surveys and public objection to the project."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| NJDMAVA               | pg 68, line 2                            | mention which wetland letter these spp were seen in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Added "Wetland C"                                                                                                                                                                                                                                                                                                                                                                                                                            |
| NJDMAVA               | pg 68, line 12                           | no foxes taken in 2023?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Seven fox were captured in 2023. Added that into the text.                                                                                                                                                                                                                                                                                                                                                                                   |
| NJDMAVA               | pg 68, line 14                           | call this section Insects, Reptiles, and Amphibian Surveys                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Changed section 2.8.3.4 from "Biological Surveys" to "Insects, Reptiles, and Amphibian Surveys"                                                                                                                                                                                                                                                                                                                                              |
| NJDMAVA               | pg 68 line 31                            | was not suspected rather than not located                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            | Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| NJDMAVA               | pg 68 line 37/38                         | when was there breeding of harrier and kestrel at SG?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Davey says that their reports of northern harrier and american kestrel to NJDEP in 2007/2010 were accidentally recognized as "breeding sitings" and were not breeding sitings, although it is listed in NJ-GeoWeb as such. Harrier and kestrel were removed from this sentence on breeding rare species.                                                                                                                                     |
| NJDMAVA               | pg 68 section 2.8.4.5                    | IPAC lists Northern long eared (FE), tricolored bat (PE), and monarch butterfly (candidate) at SG. There needs to be a narrative about those spp. here and in potential protection measures in section 6.                                                                                                                                                                                                                                                                                                                                                                                                  |                            | Added them to the wildlife table 2-6 and added a section for each of them in Section 6.                                                                                                                                                                                                                                                                                                                                                      |
| NJDMAVA               | pg 70, line 11                           | mention oyster catcher nest attempt this year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Eric Sproesser, DMAVA | pg 24                                    | 11B ALC is 48 course max, 68W is 24. And the 68W MOS Sustainment should be referred to as CMT (Comprehensive Medical Training).                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            | Addressed.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| NJDMAVA               | global on all tables and figures         | don't include them in the word doc then convert them PDF. the figs get pixelated and the tables break up the flow of the text. put the tables on separate pages and make the figs as big as possible so the legends are visible., like fig 2-9 AOC map the AoC legend is so small it's illegible. make it c or d size so the legend is legible. for any table paginate it so the notes aren't alone on a page (ie pg 76 table 2-6) and put the table name and number on all pages if the table is split over pages.                                                                                        |                            | Addressed. All tables placed on separate pages. Fig 2-9 AOC map revised to size D. Figures were made a Pdf file, then inserted to the final v2 report to remove pixelation.                                                                                                                                                                                                                                                                  |
| NJDMAVA               | tables 2-6, 2-7, and 2-8                 | I thought we were going to combine all these into one massive table with multiple columns that tell it's listing status or not, seen onsite y/n, breeding habitat on site y/n, etc. Also, there's duplication of spp like oystercatcher is on table 2-6 wildlife observed onsite and table 2-8                                                                                                                                                                                                                                                                                                             |                            | Combined tables 2-6, 2-7, and 2-8 into the new table 2-5                                                                                                                                                                                                                                                                                                                                                                                     |

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|-------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NJDMAVA           | pg 78 line 29 to 32                                       | we had oyster catchers lay this year.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            | Addressed                                                                                                                                                                     |
| NJDMAVA           | pg 82 table 2-9                                           | maybe put this in an appendix. when were the kestrel and harrier seen breeding onsite?                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Table 2-9 is now Table 2-5. See above comments about harrier and kestrel breeding on site.                                                                                    |
| NJDMAVA           | pg 99 line 16 to 18                                       | need to add climate adaption as a sixth management program areas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed                                                                                                                                                                     |
| NJDMAVA           | pg 99 line 28 to 33                                       | add "...Specifically, the Integrated Training Area Management Program, Integrated Wildland Fire Management, and Forest Management are not addressed. Sea Girt NGTC is not currently classified as an Integrated Training Area Management Program installation based on its size and the type and magnitude of military field training that occurs. The installation lacks forested areas; therefore, forest management and wildland fire is not applicable. The NJDMAVA is attempting to seek a waiver from the DA to develop a wildland fire plan..." |                            | Addressed                                                                                                                                                                     |
| NJDMAVA           | pg 103 line 27                                            | we only have 35 places now not 41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed                                                                                                                                                                     |
| NJDMAVA           | pg 103 line 32 to 35                                      | Biologists from the NJDEP-ENSP, USFWS, contractors specializing in natural resources services, Conserve Wildlife Foundation and interns from Stockton University also provide substantial staffing support for rare species management at Sea Girt. Other possible staffing sources for natural resources programs at Sea Girt NGTC include various NJARNG units on make up orders, temporary NJDMAVA staff, and Sea Girt NGTC maintenance staff.                                                                                                      |                            | Addressed                                                                                                                                                                     |
| NJDMAVA           | pg 104 line 3and 4                                        | HQ AES changed names and I'll get that for you                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed and revised to Army Environmental Program (AEP).                                                                                                                    |
| NJDMAVA           | pg 108 line 6                                             | should be NJDMAVA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed                                                                                                                                                                     |
| NJDMAVA           | pg 109 line 19                                            | check the expiration date of the ditch maint permit. they both can't expire in 2023.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            | Addressed.                                                                                                                                                                    |
| NJDMAVA           | pg 109 lines 21 to 29 and pg 110 line 10 to pg 112 line 7 | Is the part on pg 109 related to the stormwater basins we fixed, as mentioned in pages 110 to 112. message both parts into one section. break the rain garden out into it's own para. Stockton made a management plan for it. I'll have to get it, but it needs to be mentioned here and in the goals. we used legacy funds to make it and that should be mentioned.                                                                                                                                                                                   |                            | Addressed.                                                                                                                                                                    |
| NJDMAVA           | pg 113 line 34 to pg 114 line 2                           | this is the same stuff from section 2.8.3. revise this section to ref section 2.8.3 for more info about the wetland characteristics.                                                                                                                                                                                                                                                                                                                                                                                                                   |                            | Addressed. I removed this paragraph and said to refer to Section 2.8.2. for more information on existing vegetation/ecological communities and detailed wetland descriptions. |
| NJDMAVA           | pg 115 figure 4-1                                         | why is this fig on pg 115? Should be near pg 62                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed. Further details are included in Section 4.2.4 Wetlands Management and shown in Figure 4.1.                                                                         |
| NJDMAVA           | pg 117 section 4.2.6                                      | at the end of this section mention the need to get the various permits to control invasive on the dunes and FWW                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed                                                                                                                                                                     |
| NJDMAVA           | pg 119 line 14/15                                         | mention the results of sticky traps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed                                                                                                                                                                     |

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|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NJDMAVA           | pg120                                                                                                                                             | marry up the qualitative descriptions (ie primary dune) with the NVCS description (ie m057) so it's all consistent and related back to the veg descriptions.                                                                                                                                                                                                                                                                                                                               |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 125 line 33/34                                                                                                                                 | say "...To effectively implement invasive species management on-site, habitat specific treatment, restoration, and prevention plans will be established for the Sea Girt NGTC. These plans..."                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 125 line 16/17                                                                                                                                 | add "...and NJDEP-ENSP and all applicable federal and state environmental permits..."                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 126 line 35                                                                                                                                    | it says 1.8 but no info                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 126 line 35 line 11/12                                                                                                                         | says "...habitat specific treatment..."                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 127 line 1 and 16 and pg 128 line 3 and 27 and pg 129 line 7 and 27 this is a global comment everywhere the priority is the same between goals | i don't think we need to mention that these are priority 2 since it says that on the previous page                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 130                                                                                                                                            | add a 5th and 6th bullet to maintain and expand the plantings along the Stockton Lake bulkhead and seek to create no mow zones and pollinator habitat around the restored freshwater wetlands.                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 126 line 4                                                                                                                                     | insert "...The implementation of any Land and Watershed Management Goals is funding dependent and are considered a ESA Section 7(a)1 activity.                                                                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 135 lines 23 to 37                                                                                                                             | mention what year we hazed when discussing goose observations and DAR results and if ANY trends can be observed. i know you said it's difficult, but at least mention when we hazed.                                                                                                                                                                                                                                                                                                       |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 135 line 5/6                                                                                                                                   | mention which years we hazed. it's mentioned above so maybe combine the two sentences                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 133 section 5.2.2.                                                                                                                             | mention the goose buster design                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 140 line 9                                                                                                                                     | there's some extra spaces after the period.                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 140 line 15/16                                                                                                                                 | at this point i think the INRMP serves as the control plan as it has in the goals conduct surveys, do no mow zones, and haze and addle. delete this line and make "getting a permit a second line after the hazing lines"                                                                                                                                                                                                                                                                  |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 140 line 17                                                                                                                                    | add "...by continuing the DAR and visual surveys and investigating other methods to determine goose populations                                                                                                                                                                                                                                                                                                                                                                            |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 140 line 18                                                                                                                                    | say "...described in the INRMP."                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 140 line 11                                                                                                                                    | insert "...The implementation of any Land and Watershed Management Goals is funding dependent and are considered a ESA Section 7(a)1 activity.                                                                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg144 lines14 to 23                                                                                                                               | i think all this info has been repeated in other parts of the plan. try an move it into the other sections that talk about these spp. also, please fig out the date of the brown thrasher sighting, say suspect fowlers toad breed (I'm not convinced they're fowlers toads until we do the edna studies that's part of a new goal since fowlers toads are very similar to another toad, and we've had more attempted nesting of oyster catchers that need to be mentioned than just 2014. |                            | Addressed. American oystercatcher breeding information was deleted from here and refers the reader to section 6.2.9. Added the last siting of the breeding brown thrasher found on NJGeoWeb (2010).                                      |
| NJDMAVA           | pg 146 table 6-1                                                                                                                                  | do we need this table as it's the similar to the ones earlier?                                                                                                                                                                                                                                                                                                                                                                                                                             |                            | I think it makes sense to leave Table 6-1 as a summary table so you don't have to scroll all the way up to section 2 and then scroll through that table to find information on the species discussed in Section 6. No changes were made. |
| NJDMAVA           | pg147 line 22to24                                                                                                                                 | These sent about no nesting plovers need to be deleted as they don't reflect what has happened in recent years                                                                                                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                                                                                                                |
| NJDMAVA           | pg 147 line 13 to pg 148 line 3                                                                                                                   | since these lines are a summary of plover activity, please reorganize as such maybe in bullet form with a simple summary sent header like "...piping plover activities from 2000 to 2022 can be summarized as..."                                                                                                                                                                                                                                                                          |                            | Addressed. Is it accurate that surveys were not conducted from 2016 to 2018 due to lack of funding? I didn't want to leave a gap of time unaddressed in there.                                                                           |
| NJDMAVA           | pg148 line 4/5                                                                                                                                    | add "...of foxes. However, given the successful fledging of several chicks recently, with active management of predators and habitat enhancement to control vegetation densities and provide materials such as shells to build nest scrapes, the site can support breeding plovers..."                                                                                                                                                                                                     |                            | Addressed                                                                                                                                                                                                                                |

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|-------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NJDMAVA           | pg 148 line 8/10                         | mention we're in the process of hiring a consultant to renew this permit.                                                                                                                                                                                                                                                               |                            | Addressed. Who would I refer to as leading the effort to hire a consultant? "___" is in the process of hiring a consultant to renew a permit."                                 |
| NJDMAVA           | pg 148 line 18/19                        | delete the sent about converting range 5 to a urban training site                                                                                                                                                                                                                                                                       |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 148 line 38.39                        | add "...private residences and proximity to the bathing beach."                                                                                                                                                                                                                                                                         |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 149 section 6.2.2.2.2                 | i think we have fox trapping data from prior to 2019. please mention that here                                                                                                                                                                                                                                                          |                            | Addressed. Only data from 2017 was found because it was mentioned earlier in the document.                                                                                     |
| NJDMAVA           | pg 149 line 13/15                        | work these sent to pg147 line 6/12. they seem to fit better there and not here. maybe say "...given the success of predator control, continued and active use of the ranges, and maintain an active bathing beach as documented in the below sections..."                                                                               |                            | Addressed.                                                                                                                                                                     |
| NJDMAVA           | pg 151 line 29                           | 50 plants? really?                                                                                                                                                                                                                                                                                                                      |                            | This was in the 2018 INRMP. No changes were made.                                                                                                                              |
| NJDMAVA           | pg 152 line 31/32                        | add "...if the USDA and USFWS are interested." to the sentence.                                                                                                                                                                                                                                                                         |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 154 line 3/4                          | i think we had some terns nest in 2019/20/21 or something but no fledges? please check and add that here                                                                                                                                                                                                                                |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pgb155 line 13/14                        | lets delete this sentence. we did look for knotweed when we looked for amaranth those years.                                                                                                                                                                                                                                            |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 157 line 37                           | add "...annually and work to convince the cell tower owner to install nest deterrents and conduct all tower upgrades in accordance with the NJDEPs raptor and osprey nest management guidance document..."                                                                                                                              |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 157 line 26 to 37                     | work the NJDEP raptor and osprey nest management guidance doc into here and ref. it.                                                                                                                                                                                                                                                    |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pgb158 line 22 to27                      | work our pole fire into here                                                                                                                                                                                                                                                                                                            |                            | Addressed. Added language from CWF Monitoring Report from 6/26/23                                                                                                              |
| NJDMAVA           | pg 159 line 6to10                        | what year was it seen                                                                                                                                                                                                                                                                                                                   |                            | This was an observation made by AmyGreene/Davey and was in the original INRMP list. Saltmarsh sparrow was only observed passing through according to Sherry from CWF.          |
| NJDMAVA           | pg 159 line 23/24                        | put the 2023 update here                                                                                                                                                                                                                                                                                                                |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 159 line 31 /32                       | red knots breed in the artic. not NJ maybe say it could be found resting on the beach and/or feeding on the adjacent offsite tidal marsh of Stockton lake.                                                                                                                                                                              |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg160 line 20                            | let's start this section off with a lead in sentence like "beach topography surveys have been conducted periodically from 2008 to 2020 in an effort to better understand the beach's micro topography with an eye to manage it for successful beach nesting shore bird breeding habitat. The results of which can be summarized below." |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 161 line 22 to 32                     | mention that the fluker post was originally started by the uni but has since been sold to "We Make Apps" company in Australia.                                                                                                                                                                                                          |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 161 line 33                           | lets start off this section with a similar sentence from pg 160 line 20                                                                                                                                                                                                                                                                 |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 161 line 32                           | mention that only one post survives after the other two were lost to storms and vehicle collisions and that NJDMAVA intends to reinstall them after the planned beach nourishment in 2023.                                                                                                                                              |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 163 line 1/3                          | the line about being in the becp can be deleted as it's mentioned in section 4.2.5                                                                                                                                                                                                                                                      |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 163 line 5 to 14                      | please add this precautionary area and the plant protection strips to a figure maybe 6-1                                                                                                                                                                                                                                                |                            | Addressed.                                                                                                                                                                     |
| NJDMAVA           | pg 163 line 5 to 14                      | we have to discuss with usfws/njdep what this precautionary area means to us and if they get birds what are we supposed to do. no vehicle area etc.                                                                                                                                                                                     |                            | Addressed.                                                                                                                                                                     |
| NJDMAVA           | pg 163 line 35 to41                      | please add the recreation area and plant strips to fig 6-1                                                                                                                                                                                                                                                                              |                            | Addressed.                                                                                                                                                                     |
| NJDMAVA           | pg 164 line 38/39                        | add "...at Sea Girt NGTC or NJDMAVA HQ in Lawrenceville..."                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                                                      |
| NJDMAVA           | pg 164 line 22 to 27                     | Work in what we're hoping to do to keep the SPA dune in a somewhat consistent location to maintain the bathing beach area as mentioned in the federal consistency application.                                                                                                                                                          |                            | Added "However, measures are being taken to prevent further encroachment of the dune vegetation into the bathing beach area to ensure the site's recreational goals are met. " |

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| Source of Comment | Applicable Section;<br>Page; line number | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                    | NJARNG Response to Comment | Changes Made to Draft INRMP in<br>response to Comment               |
|-------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------|
| NJDMAVA           | pg 165 line 8 to 21                      | add a bullet that if any oystercatcher establishes a nest, we'll either expand the protection area fencing if it's proximate to the protection area or establish a new fence area. we have to figure out a amendable buffer for them                                                                                                                                                                                                       |                            | Addressed                                                           |
| NJDMAVA           | pg 165 line 24                           | what's that little superscript 4 after NPA?                                                                                                                                                                                                                                                                                                                                                                                                |                            | That is a footnote at the bottom of the page. No changes were made. |
| NJDMAVA           | pg 165 line 24 /29                       | say instead "... Beach rake operation is generally prohibited in the "no rake zone" from 15 March through 1 December especially if nesting beach nesting shore birds and/or unfledged chicks are present. However, if nesting shore birds and/or unfledged chicks are not present and after consulting with USFWS and NJDEP-ENSP, raking may occur to remove accumulated debris that has washed up onshore and/or remove any tire ruts..." |                            | Addressed                                                           |
| NJDMAVA           | pg 165 line34                            | say "...emergency vehicles not responding to a bona fide emergency...."                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed                                                           |
| NJDMAVA           | pg 166 line 5                            | add "...If the rare plant is proximate to the established fence, the fence may be expanded to encompass the plant rather the establish a new fence..."                                                                                                                                                                                                                                                                                     |                            | Addressed                                                           |
| NJDMAVA           | pg 168 fig 6-1                           | add the location of the other two fluker posts. i don't think we got knotweed in those other years. please check and revise the legend to reflect when they were onsite. this comment goes with the other spp too. also, there's a fishing area that we need to show too.                                                                                                                                                                  |                            | Addressed.                                                          |
| NJDMAVA           | pg 170 line 3                            | say "...when piping plover nests, unfledged piping plovers, and/or least tern chicks are not present)..."                                                                                                                                                                                                                                                                                                                                  |                            | Addressed                                                           |
| NJDMAVA           | pg 170 line 31/32                        | delete this sent about implementing protection measures. it doesn't seem to have any context and I'd like nail down "rare spp." and what we do when specific spp show up. it's been a complaint from people and i don't want the plan to overreach.                                                                                                                                                                                        |                            | Addressed                                                           |
| NJDMAVA           | pg 170 line 10 to 16                     | we have to add the PT area on the north end of the beach, the NJSP used last year, and add a discussion that their ambulance ATV can't go onto the beach, and they can't run through the no rake zone if there's birds there.                                                                                                                                                                                                              |                            | Addressed.                                                          |
| NJDMAVA           | pg 170 line 15                           | the section ref here is not on the right page. 6.3.10.1 is data sharing.                                                                                                                                                                                                                                                                                                                                                                   |                            | Addressed.                                                          |
| NJDMAVA           | pg 171 line 6 to 8                       | move "...Vehicles are defined as a piece of mechanized equipment used for transporting people or goods, especially on land, such as a car, truck, or cart..." to the section introduction paragraph.                                                                                                                                                                                                                                       |                            | Addressed                                                           |
| NJDMAVA           | pg 171 line 23 24                        | say "...piping plover, least tern, and/or American Oystercatcher eggs and/or unfledged chicks..."                                                                                                                                                                                                                                                                                                                                          |                            | Addressed                                                           |
| NJDMAVA           | pg 171 line 32/35                        | say "...The following protection measures will be implemented when piping plover, least tern, and American oystercatcher eggs and/or unfledged chicks are present..."                                                                                                                                                                                                                                                                      |                            | Addressed                                                           |
| NJDMAVA           | pg 171 line 7/9                          | We should say they can't do PT on the beach when bnb are present.                                                                                                                                                                                                                                                                                                                                                                          |                            | Addressed in 2nd paragraph.                                         |
| NJDMAVA           | pg 172 line 25                           | Add a bullet that says "...Can only be used outside the 100-meter vehicle exclusion zone..."                                                                                                                                                                                                                                                                                                                                               |                            | Addressed                                                           |
| NJDMAVA           | pg 172 line 42                           | say "...observation. A qualified monitor can be employed by a non profit, NJDMAVA, NJDEP, USFWS, NJDMAVA hired consultant, and/or Stockton University provided the NJDMAVA, NJDEP-ENSP, and USFWS all agree that the person meets the qualifications of a Qualified Monitor and will act in the best interest of all parties.                                                                                                              |                            | Addressed                                                           |
| NJDMAVA           | pg 172 line 37 to pg173 line 8           | lets keep it a "qualified monitor." I'm not sure why we made a avian observer and there's no other mention of a QM anywhere else in the plan. combine elements of both bullets into one QM bullet.                                                                                                                                                                                                                                         |                            | Addressed                                                           |
| NJDMAVA           | pg 173 line 29 to 32                     | we have to add some "fledge" requirements for terns and oystercatchers here                                                                                                                                                                                                                                                                                                                                                                |                            | Addressed.                                                          |
| NJDMAVA           | pg 173 line 41                           | add "...2024 and the NJDMAVA is in the process of renewing the permit..."                                                                                                                                                                                                                                                                                                                                                                  |                            | Addressed                                                           |
| NJDMAVA           | pg 174 line 19 to24                      | work in using the beach rake to knock down tire ruts if the chicks aren't there.                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed                                                           |
| NJDMAVA           | pg 174 line 24                           | add a bullet about what we're hoping to do in order to keep the SPA dune in place with the federal consistency...snow fence and rake to SPA boundary mentioned in the permit...                                                                                                                                                                                                                                                            |                            | Addressed.                                                          |
| NJDMAVA           | pg 176, line 6                           | change title to Aviation Operations and add some verbiage about no UAV's allowed on the NGTC.                                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                           |

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|-------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| NJDMAVA           | pg 176 section 6.3.9                     | call this section "Other Helicopter and Flight Operations" and add a para that no unmanned aerial vehicles will be flown at the site regardless of the operator to include but no limited to tenants, law enforcement, military, beach goers, cottage renters, and/or other government entities.                                                                                                                                                                                                                     |                            | Should this section be titled "Aviation Operations" or "Other Helicopter and Flight Operations"? See above comment.<br>Added language about UAV's. |
| NJDMAVA           | pg 179 line 5                            | add "...at Sea Girt NGTC for nearly 20 years..."                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg179 line 23                            | Work in "...funding and staff availability will determine who conducts most of the beach nesting shore bird monitoring and will be discussed during the annual meeting."                                                                                                                                                                                                                                                                                                                                             |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 179 line 21                           | Add "...A combination of staff from the NJDMAVA, NJDEP-ENSP, Stockton University, and/or NJDMAVA consultants shall conduct..."                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 179 line 27                           | say "...Each monitoring group will..."                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 179 line 38                           | say "...Each monitoring group will..."                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg181 line 5to8                          | say "... If funding is available in future years, the NJDMAVA anticipates using interns and contractors to perform these services. These rare species goals are indicated below as ESA Section 7(a)1 activities. If funding is not available in future years, the NJDMAVA will use in house staff to implement a limited number of protection measures. In any event, the NJDMAVA will continue to the best of their ability to implement the INRMP rare species goals in cooperation with the NJDEP-ENSP and USFWS. |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 181 line 8/9                          | we implemented a few of the goals between 2013 and 2017 and I'd like to mention what we did in this section even if we didn't make a summary report. We installed the NPA/SPA fencing, did the annual kick off mtg with the njdep/usfws, did the annual tenants brief, look for amaranth three times a year, and did the veg survey on the beach in 2016.                                                                                                                                                            |                            | Addressed.                                                                                                                                         |
| NJDMAVA           | pg 182 line 37/38                        | delete the sent. about funding.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 183 line 7 to9                        | i think after nearly 20 yrs of managing preds at the site we can draw some conclusions about pred impacts. please revise this sent to say the monitoring efforts at the site for the last XX years have confirmed that foxes have contributed to the loss of plover, tern, and oystercatcher nests. review the years we controlled foxes vs the years we had nests (success or not) and discuss if we had more plover activity when we controlled fox.                                                               |                            | Paragraph updated and added in information about fox reduction and piping plover population improvements.                                          |
| NJDMAVA           | pg 183 line 12                           | change njdep ensp to NJDMAVA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 183 line 20 to27                      | similar comment to above. we have enough info to say predator control helps at this site. maybe merge the content from this para and lines 5/10 to say foxes both birds, we've determined they're a problem at SG, if we control we have more plover activity, and the years we controlled foxes we fledged chicks. if we demonstrate that and document in the INRMP it's more likely to get funding.                                                                                                                |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 184 line 11to 20                      | mention the fox we fitted the GPS collar to and what it showed                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed.                                                                                                                                         |
| NJDMAVA           | pg 184 line 22/23                        | "...these three species have not nested on Sea Girt NGTC property in the years prior to 2019..." That's not entirely true we had terns successfully fledge chicks, oystercatchers lay eggs, and plovers hatch but not fledge. revise that statement to something like they had limited nesting success                                                                                                                                                                                                               |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 184 line 8                            | add what we captured in 2023 and that we tried to gas them                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 183 line 28 to 30                     | mention gassing dens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 185 line 1 to 5                       | mention that the female plover was predated by a suspected falcon                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 185 line 41 to pg 186 line 4          | mention that we thinned a portion of the NPA for the last couple years and spread shells and the birds used it for nesting so that demonstrates thinning and habitat enhancement works.                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 185 section 6.3.12                    | work verbiage regarding managing the SPA dune to keep the size of the bathing beach maximize as mentioned in the federal consistency project                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed.                                                                                                                                         |
| NJDMAVA           | pg 189 fig 6-3                           | put call outs on the graph when the USACOE nourished the beach                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed, only year on the graph that beach nourishment was completed was 2013                                                                    |
| NJDMAVA           | pg 189 line11/12                         | say there's multiple interpretive signs on the beach and boardwalk                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg 190 line 9                            | say "...Event planners and Sea Girt NGTC staff will..."                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                                                                                                          |
| NJDMAVA           | pg190 line 15 to17                       | after this sent say "This event has not been held since, but is being left in the INRMP in case the NJDCA wishes to use the site in the future and protection measures as already agreed to."                                                                                                                                                                                                                                                                                                                        |                            | Addressed                                                                                                                                          |

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|-------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------|
| NJDMAVA           | pg 191 line 1                            | it was the borough that launched the fire works from the NGTC not the NGTC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            | Addressed                                                                                    |
| NJDMAVA           | pg 191 Section 6.4                       | Work this into the first para "...The implementation of most of the Rare Species Goals are funding dependent as most are considered a ESA Section 7(a)1 activity and are indicated as such. However, in the event funding is not available select Rare Species Goals will be implemented..."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed                                                                                    |
| NJDMAVA           | pg 191 GS Goal 1                         | Add a bullet that says "...The natural resource manager shall register for various email listservs from the NJDEP ( <a href="https://public.govdelivery.com/accounts/NJDEP/subscriber/new">https://public.govdelivery.com/accounts/NJDEP/subscriber/new</a> ) regarding natural resources and rare species management and the USFWS Pleasantville Filed Office's Endangered Species Act Update quarterly email update. These listservs provide regulatory updates which helps the natural resources manager keep abreast of new laws, regulations, and rare species listing status..." and another that says "...On an annual basis, the natural resource manager shall obtain a site specific rare species list from the NJDEP Natural Heritage Program ( <a href="https://www.nj.gov/dep/parksandforests/natural/heritage/request.html">https://www.nj.gov/dep/parksandforests/natural/heritage/request.html</a> ) and the USFWS ( <a href="https://ipac.ecosphere.fws.gov/">https://ipac.ecosphere.fws.gov/</a> ). The natural resources manager shall review the lists to identify any new rare species that may occur onsite and take appropriate measures to survey for and develop and implement any protection measures..." |                            | Addressed                                                                                    |
| NJDMAVA           | pg 192 sub goals 7,8,9,10,11, 13, & 14   | Add "...ESA Section 7(a)1 activity" to the end of each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                                                    |
| NJDMAVA           | pg 192 items 8, 9, and 13                | move these projects to rare spp goal 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                                                    |
| NJDMAVA           | pg 193 rare spp goal 2                   | lets call this goal "Conduct Rare Animal, Amphibian, and Insect Surveys" since we're going to expand it beyond beach nesting birds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            | Addressed                                                                                    |
| NJDMAVA           | pg 193 rare spp goal 2                   | Add a project to conduct peridioidic (I don't want to say annual) accoustic surveys for bats and report findings to NABat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed                                                                                    |
| NJDMAVA           | pg 193 rare sp goal 2 sub goal 3         | Add "...ESA Section 7(a)1 activity" to the end of each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Addressed                                                                                    |
| NJDMAVA           | pg 193 line 13                           | Say something like "...Depending on funding availability, these surveys will be conducted by NJDMAVA hired consultants, NJDMAVA staff, NJDEP-ENSP, and/or Stockton University interns. The level of effort and responsible survey agency will be discussed and identified during the annual NJDEP/USFWS meeting...."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            | Addressed                                                                                    |
| NJDMAVA           | pg 193 line 26 and 32/34                 | move the survey plan, annual report, GIS, etc sub goals to rare species goal 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed                                                                                    |
| NJDMAVA           | pg 194 line 1/2                          | delete this goal. i don't know what it's for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed                                                                                    |
| NJDMAVA           | pg 194 rare spp goal 4 sub goal 7        | Add "...ESA Section 7(a)1 activity" to the end of each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Added to each of the subgoals in Goal 4. Did you want them only on subgoal 7 or all of them? |
| NJDMAVA           | pg 194 line 20                           | Add "...ESA Section 7(a)1 activity"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed                                                                                    |
| NJDMAVA           | pg 194 line 22                           | the number bullet starts with 3 and i think it should be 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            | Addressed                                                                                    |
| NJDMAVA           | pg 195 line 3                            | Add "...ESA Section 7(a)1 activity"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed                                                                                    |
| NJDMAVA           | pg 195 rare spp goal 7                   | Let's call this goal Encourage Citizen Science. Add a bullet to encourage participation in MyCoast, eBird, Osprey Watch, & NABat. merge the first three fluker post bullets into one bullet. maybe put the first two bullets under the main fluker post bullet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | Addressed                                                                                    |
| DMAVA             |                                          | Incorporate Microplastic Survey that Stockton U conducted. I provided the reports. Try to place it in the same section as the macroinvertebrate study since both activities can be done during the same site visits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Incorporated into Section 6.3.10.3.                                                          |
| DMAVA             | Section 1.4; page 1-3; line 21           | TYPO: "Section 0contains"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | Addressed.                                                                                   |
| DMAVA             | Table of Contents; between iv and v;     | TOC skips scction 9 and moves from section 8 to section 10, then 11. I believe it should be 8, 9, and then 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed.                                                                                   |
| DMAVA             | Section 2.4.3; 2-12                      | why is there a page break here?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | Addressed.                                                                                   |
| DMAVA             | Section 3.3; line 13-34                  | The list of EQCC members should be bulleted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed.                                                                                   |
| DMAVA             | Section 4.2.1; line 32-39                | Remove paragraph that states the NGTC qualifies for Federal Consistency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            | Addressed.                                                                                   |
| DMAVA             | Section 4.2.5; lines 14-23               | DMAVA was notified by DEP on 12/13/2023 that USACE is mobilizing to the site for beach replenshiment on 12/18/23.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            | Addressed.                                                                                   |

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|-------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DMAVA             | Section 6.3.6 and 6.3.12                 | Federal Consistency Update.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            | The federal consistency discussed in Section 6.3.6 and 6.3.12 for snow fence installation, sand scraping, and beach raking was revised to state those activities will be conducted under Sea Girt Borough's CAFRA GP 2 permit. Page 6-33 and 6-46 through 6-48. |
| DMAVA             | Section 2.3, pg 2-8; lines 18-19         | 2015 had the lowest ammunition record according to table 2-2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 2.4.3; 2-11; line 16             | "Error! Reference source not found."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 2.7.2.2; 2-28; lines 22-24       | Poison ivy, box elder and Virginia creeper are not invasive to NJ. They are native aggressive species that behave like invasives in disturbed habitats. Maybe want to rephrase this line to specify.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 2.7.3.2; 2-37; line 5            | Felis catus*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 2.7.3.2; 2-37; line 9            | Eight fox as of fall 2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 2.7.3.4; 2-37; line 34           | PIPL is federally threatened, state endangered. Not federally endangered                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Table 2-5, pgs 2-39-2-46                 | There are multiple species on this list that also reproduce on site (not all state or fed listed or SC) that aren't bolded. For example, Fowlers toad, ghost crab, red tailed hawk, RW blackbird, tree swallow, white tailed deer. Only listed species and red fox are bolded. Since we aren't documenting breeding habitat/behavior of all species on site, either rephrase to specify just listed/SC species or bold all species that reproduce on site for which evidence exists.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 2.7.4, pg 2-53 - 2-54; line 32   | Repeat of previous comment about poison ivy being native but aggressive/nuisance species, not invasive. It's mentioned in the footnote on 2-54, but discrepancies exist in the report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 4.2.4, pg 4-13; line 40          | Poison ivy and most cattail species in NJ are native but act like invasive species in disturbed areas. Again, just rephrasing the sentence so it says invasive or aggressive/nuisance/noxious instead of just invasive.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 6.2.2.2, pg 6-8; line 15         | Eight fox in 2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 6.3.3.1, pg 6-25; line 2         | "Error! Reference source not found."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 6.3.5, pg 6-32; lines 13-14      | "Error! Reference source not found."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 6.3.11, pg 6-43; line 34         | Eight fox in 2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 6.3.11, pg 6-44; line 26-27      | Eight foxes in 2023; also unsure if gassing was unsuccessful. It was not successful in dispatching collared adult but dens were not excavated to check for kit mortality. May have successfully dispatched kits. We are assuming it successfully targeted kits since the collared fox was visiting those den sites frequently up until the gassing so likely kits were inside.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            | Addressed.                                                                                                                                                                                                                                                      |
| DMAVA             | Section 6.3.11, pg 6-45; lines 30-31     | LETE nest predated in 2022? Source? Is this supposed to be AMOY nest in 2023?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            | AMOY in 2023. Addressed.                                                                                                                                                                                                                                        |
| Monmouth County   | ES-1, Line 29-31                         | The sentence reads "Five natural resources management program areas (land and watershed, fish and wildlife management, rare species management, outdoor recreation, and information management) have been established to address relevant issues at Sea Girt NGTC." It seems to follow that Section 4 is Land and Watershed Management, Section 5 is Fish and Wildlife Management, Section 6 is Rare Species Management, Section 7 is Outdoor Recreation and Section 9 is Information Management. Section 8 is Climate. On Page 1-3, Line 16 through 22 Organization of Plan states that "Section 4.0 through 8.0 described resource-specific management programs at the installation, including management issues and goals. Section 9.0 discusses the information management program". Is the sentence found at ES-1, Line 29-31 supposed to reference section 8, Climate as one of the five natural resource management program areas? |                            | Yes. "Climate" is a new resource program area just added to the INRMP. Text revised to state ("Six natural resource management program areas...") Updated section numbers accordingly.                                                                          |

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| Source of Comment | Applicable Section;<br>Page; line number                                                                                                                                                                                                         | Comment                                                                                                                                                                                                                                                                                                   | NJARNG Response to Comment | Changes Made to Draft INRMP in<br>response to Comment |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------|
| Monmouth County   | On Page 10-2, Line 23-31                                                                                                                                                                                                                         | We suggest that the INRMP goals be listed so they are presented in the same order as the sections of the report - such that the Changing Climate Sustainability Goal No.1-4 are listed after the goals supporting Land and Watershed Management, Fish and Wildlife, Rare Species, and Outdoor Recreation. |                            | Adressed.                                             |
| Monmouth County   | Pg. 4-2, Line 21, Line 25, 27<br>Pg. 4-3, Line 30<br>Pg. 4-7, Line 19, 22<br>Pg. 4-9, Line 5<br>Pg. 6-2, Line 4<br>Pg. 6-3, Line 12<br>Pg. 6-11, Line 13<br>Pg. 6-15, Line 13<br>Pg. 6-33, Line 40, 42<br>Pg. 6-47, Line 14<br>Pg. 6-48, Line 40 | The NJDEP Division of Land Use Regulation, acronym DLUR, has been renamed Division of Land Resource Protection, and is now under the Watershed and Land Management Program. References to DLUR need to be updated.                                                                                        |                            | Adressed.                                             |
| Monmouth County   | Pg. 11-5 Line 23                                                                                                                                                                                                                                 | recommend updating reference 58 and hyperlink.                                                                                                                                                                                                                                                            |                            | Adressed.                                             |
| Monmouth County   | Pg. 2-29, Line 11, 17                                                                                                                                                                                                                            | Redbeckia should be Rudbeckia                                                                                                                                                                                                                                                                             |                            | Adressed.                                             |
| Monmouth County   | Pg. 4-2, Line 16,                                                                                                                                                                                                                                | suggest adding mean high so it reads "flowed by the mean high tide"                                                                                                                                                                                                                                       |                            | Adressed.                                             |
| Monmouth County   | Pg. 4-2, Line 17                                                                                                                                                                                                                                 | suggest changing waterway to waterbody                                                                                                                                                                                                                                                                    |                            | Adressed.                                             |
| Monmouth County   | Pg. 4-4 Line 11                                                                                                                                                                                                                                  | inactive html "404" response.                                                                                                                                                                                                                                                                             |                            | Adressed.                                             |
| Monmouth County   | Pg. 4-5, Line 11                                                                                                                                                                                                                                 | should read "Owen, Little and Associates" not Own                                                                                                                                                                                                                                                         |                            | Adressed.                                             |
| Monmouth County   | Pg. 4-6, Line 32                                                                                                                                                                                                                                 | should read "was prepared by SUEIP" not SUIP                                                                                                                                                                                                                                                              |                            | Adressed.                                             |
| Monmouth County   | Pg. 4-17, Line 29                                                                                                                                                                                                                                | should read "Sea Girt" not "Se"                                                                                                                                                                                                                                                                           |                            | Adressed.                                             |
| NGB               | USFWS<br>Signature Page                                                                                                                                                                                                                          | Unless this paragraph is required by the USFWS, the paragraph preceding the USFWS signature block should be rewritten to reference the Sikes Act, not the ESA, as that is the authority under which INRMPs are developed and implemented                                                                  |                            | Adressed.                                             |
| NGB               | Signature<br>page                                                                                                                                                                                                                                | Recommend you consider reformatting the "Reviewed By" section - it doesn't read well to me as formatted                                                                                                                                                                                                   |                            | Adressed.                                             |
| NGB               | Signature page                                                                                                                                                                                                                                   | ARNG NGB signature box is incorrect. Correct to 1st Line: Anthony Hammett, 2nd Line: Colonel, U.S. Army, 3rd Line: Chief, G-9 Army National Guard                                                                                                                                                         |                            | Adressed.                                             |
| NGB               | Executive Summary/<br>Intro                                                                                                                                                                                                                      | Affirmatively state that Sea Girt NGTC is comprised of State-owned lands                                                                                                                                                                                                                                  |                            | Adressed.                                             |
| NGB               | Table of<br>Contents                                                                                                                                                                                                                             | Your subsections are off from the actual document                                                                                                                                                                                                                                                         |                            | Adressed.                                             |
| NGB               | 1.1                                                                                                                                                                                                                                              | 1-1 Update the ARNG INRMP policy reference to the 2016 version.                                                                                                                                                                                                                                           |                            | Adressed.                                             |
| NGB               | 1.2                                                                                                                                                                                                                                              | 1-2 Recommend condensing this section. Most of the language is already stated in DoD, Army, or ARNG policies. No need to copy here. Rather, reference those policies and focus the language on how those are applied to this specific INRMP.                                                              |                            | Adressed.                                             |
| NGB               | 1-1                                                                                                                                                                                                                                              | Avoid references to the Sikes Act Improvement Act - state "the Sikes Act, as amended "                                                                                                                                                                                                                    |                            | Adressed.                                             |

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| Source of Comment | Applicable Section;<br>Page; line number |         | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NJARNG Response to Comment | Changes Made to Draft INRMP in<br>response to Comment                                  |
|-------------------|------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------|
| NGB               | 1-3                                      | 1-3     | below should be included:<br><br>If CH is currently being listed:<br><br>"The Endangered Species Act (Title 16, U.S.C., Section 1533(a)(3)(B)(i)) grants DoD an exemption from Critical Habitat (CH) designation if the USFWS or NMFS determines the INRMP provides a benefit to the relevant listed species. Benefits may include positive management and/or enhancement of suitable habitat for such species or other effort(s) that benefit the species that is or may be subject to a proposed CH designation. Section X of this INRMP addresses the beneficial management and conservation actions for species XXXXXX that warrant the exemption of lands on Fort/Camp XXX from the proposed designation of CH. The actions identified in the INRMP that provide the benefits to species XXX will be prioritized as critical for funding and implementation. Implementation and benefits of these actions will be discussed during the annual INRMP reviews and/or the five year review for operation and effect "<br><br>If CH may be listed in the future: |                            |                                                                                        |
| NGB               | 2.4.1                                    | 2-11    | Line 7. Should reference Wood include year published?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            | Addressed.                                                                             |
| NGB               | 2.6.3                                    | 48.2-54 | These summary tables could be moved to appendices to condense and focus these sections.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            | DMAVA and VHB decided to keep the tables in the text in order to have less appendices. |
| NGB               |                                          | 2.7     | I think the INRMP needs to stress that Sea Girt is an oasis of natural habitat amongst a sea of overdevelopment inland and along the shore. Not many natural areas for shorebirds to nest in the area other than Sea Girt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed.                                                                             |
|                   | 2.7.2.5.1                                | 2-33    | Line 36, make sure to insert dates in highlighted area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            | Addressed.                                                                             |
| NGB               | 2.7.3.2                                  |         | Para. 3 Duplicate paragraph as in section 4.2.4.1 para.2 Is this paragraph needed in both places.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed. Removed duplicate paragraph in 4.2.4.1.                                     |
| NGB               | 2.8 & 2.9                                |         | If these cultural and restoration sites are already outlined in other documents, reference them and then focus these sections on their management as it relates to the INRMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | Addressed.                                                                             |
| NGB               | 2.8.1                                    |         | GENERAL COMMENT: In future INRMP, consider ensuring Tribes provided opportunity to review INRMP, look at new updated policies and federal guidance existing and forthcoming on incorporating Indigenous Knowledge into Natural Resource Management issues such as Climate Change and Wildland Fire and general resource management.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            | Received. DMAVA to include in next INRMP.                                              |
| NGB               | 2.8.1                                    | 2-55    | Line 16-18 Would remove this sentence, it is not needed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            | Addressed.                                                                             |
| NGB               | 2.8.1                                    | 2-55    | Line 21. Add "and complete Section 106 NHPA consultation prior to project implementation" after the end of last sentence to emphasize need to complete 106 prior to project implementation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed.                                                                             |
| NGB               | 2.8.1                                    | 2-55    | REPLACE SENTENCE AT Line 18-22 to: The NJARNG ICRMP provides the consultation procedures for federally recognized Native American Indian tribal governments to provide meaningful input on actions or policies that might be of tribal interest, including natural resources which may be culturally significant to Tribes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            | Addressed.                                                                             |
| NGB               | 2.8.1                                    | 2-55    | Update DoDI 4710.02 date, it is 24 September 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            | Addressed.                                                                             |
| NGB               |                                          | 3.1     | The opening sentence of the 2nd paragraph has the wrong section referenced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            | Addressed.                                                                             |
| NGB               |                                          | 3.1     | Add the annual INRMP review to the evaluation paragraph. Add the ARNG as a part of the required revision team. Add the 2016 ARNG INRMP policy as one of the guiding documents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            | Addressed.                                                                             |
| NGB               | 4 through 9                              |         | Your goals and management actions are layout well and I especially like how they all include components of planning, implementation, and evaluation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            | Noted.                                                                                 |
| NGB               | 4.3                                      | 4-23    | Is the Spotted Lanternfly Program or the poison ivy plan bullets actual management actions or strategies? They seem more appropriate in your summary paragraph.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            | Strategies, no change made.                                                            |

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|-------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NGB               | 5.2.2                                    | Para. 1 There are two different dates for IPM Plan 2013 and 2019.<br>The current plan is dated 2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                            | Addressed.                                                                                                                                                                                                                                         |
| NGB               | 6.1                                      | 6-2<br>Lines 25-28: Recommend using more definitive language that actions on the installations have no effect on these species. Saying "not expected..." gives the impression that there could be an affect. It appears that are no offshore activities that would rise to the level of "may affect" to these species. Activities seem to be in line with other activities occurring along the beaches. If this is not the case, then identify what actions will be taken to ensure activities at Sea Girt will not likely adversely affect such species. If there is any concern regarding marine mammals, you'll need to comply with the Marine Mammal Protection Act.                                                                                                                                                                                                                                                         |                                                                                                            | Addressed. "These species are not affected by activities occurring at the facility".                                                                                                                                                               |
| NGB               | 6.3,3,1                                  | 6-25<br>Lines 22... This is the information that needs to be focused on. Recommend all the sections with "the following management practices" be consolidated in one section or appendix so they are more easily accessible instead of having to search for them throughout the INRMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Noted.                                                                                                     | Noted.                                                                                                                                                                                                                                             |
| NGB               | 6.2.2                                    | 6-6<br>Lines 3-5: Is there a buffer between the fencing and suitable nesting habitat or is the fencing immediately adjacent to the habitat? If immediately adjacent, maybe adding a small buffer will reduce disturbance from human traffic. The area is small so activity around the borders may have an impact.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                            | The fencing is placed as close as possible to the shoreline to provide an emergency route and to provide the best protection as possible to the bnb.                                                                                               |
| NGB               | 6.2.2                                    | 6-6<br>Top of page. For the domestic dogs and cats preying on the plovers feral, is there any way of penalizing the owners of these animals? I imagine cats and dogs are not allowed on the beach unleashed and unsupervised. Maybe work something out with USFWS to allow you guys to give tickets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                            | DMAVA is coordinating with Sea Girt Borough Police Department to ensure this action is enforced.                                                                                                                                                   |
| NGB               | 6.3.4                                    | 6-30<br>Add the relevant info to "conservation and management" section - permanent prohibition from species protection area, physical training restricted when plover chicks are present (should include nesting activity)...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Add "Rare beach nesting birds are nesting and chicks are present".                                         | Addressed.                                                                                                                                                                                                                                         |
| NGB               | 6.3.9                                    | 6-36<br>Do these flights occur during the nesting season? Is there any concern with elevation and disturbance of nesting plovers?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                            | Yes, and addressed in text.                                                                                                                                                                                                                        |
| NGB               |                                          | 7-1<br>Clarify which office (e.g., DFMWR, Env) is responsible for managing the outdoor recreation program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                            | Addressed to NJDMAVA Environmental Management Bureau (EMB).                                                                                                                                                                                        |
| NGB               |                                          | 7<br>7<br>Do you provide accommodations for disabled individuals to participate in outdoor recreation? If you do not, you need to outline why you are not, as required in the Sikes Act. "(b) ACCESS FOR DISABLED VETERANS, MILITARY DEPENDENTS WITH DISABILITIES, AND OTHER PERSONS WITH DISABILITIES.—(1) In developing facilities and conducting programs for public outdoor recreation at military installations, consistent with the primary military mission of the installations, the Secretary of Defense shall ensure, to the extent reasonably practicable, that outdoor recreation opportunities (including fishing, hunting, trapping, wildlife viewing, boating, and camping) made available to the public also provide access for persons described in paragraph (2) when topographic, vegetative, and water resources allow access for such persons without substantial modification to the natural environment." | Wetland Restoration Area and beach ramp has wheel chair accesibility and is maintained by onsite personel. | Addressed. The wetland restoration area and beach ramp have wheel chair accessibility and is maintained by onsite NJDMAVA personnel. The NJDMAVA Environmental Management Bureau (EMB) is responsible for managing the outdoor recreation program. |
| NGB               |                                          | 8-10, 8-11<br>Are these climate infrastructure management actions actual INRMP projects? While they are good climate resiliency projects, I don't know that they are INRMP projects, since they really don't focus on managing natural resources. I would list them as supporting projects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                            | Added "This is a supporting project Section 7(a)(1) goal and is dependent on funding".                                                                                                                                                             |
| NGB               |                                          | 8.6<br>8-9<br>Would be good to set goal to explore reaching out to Tribes for information helpful to Climate program IAW recent White House guidance on Indigenous Knowledge. Not required, just a suggestion for future INRMP consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                            | DMAVA to note for next INRMP revision.                                                                                                                                                                                                             |
| NGB               |                                          | 10.4<br>10-4<br>See the suggested INRMP implementation table that is an appendix to the ARNG INRM policy. Including ranks and associated STEP projects will aid in justification and updates during the annual reviews.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                            | DMAVA to note the INRMP implementation table that is an appendix to the ARNG INRM policy will aid in justification and updates during the annual review.                                                                                           |

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|-------------------|------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NGB               | General                                  |      | Given that you provide detailed information, strategies and avoidance measures for T&Es, you should identify how proposed/ongoing actions are not likely to adversely affect (NLAA) listed species due to conservation measures being implemented. Goal is to get a concurrence on a "not likely to adversely affect" (NLAA) determination for implementation of the INRMP. | USFW certifies the INRMP.                                                                           | USFW certifies the INRMP.                                                                                                                                                                            |
| NGB               | General                                  |      | There's a lot of historical and background info provided in each section. Recommend focusing on specific land management and conservation efforts, providing status of listed and other at-risk species in area, and planned management/conservation for the listed species. Other info can be dumped in an appendix that can be referenced.                                | Noted for future INRMP.                                                                             | Noted for future INRMP.                                                                                                                                                                              |
| NGB               | GLOBAL                                   |      | Change operational period of the INRMP to FY25-29                                                                                                                                                                                                                                                                                                                           | No change.                                                                                          | The next revision date is 2023-2027.                                                                                                                                                                 |
| NGB               | Preface pages                            |      | Add page numbers (e.g., i, ii, iii) to all preface pages                                                                                                                                                                                                                                                                                                                    |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NGB               | Table 2-5                                | 2-39 | Identify that a number of the species recorded on Sea Girt are either species undergoing 12-month status reviews for listing or are designated as Tier 1 DoD Mission Sensitive Species (MSS). Species are:<br>Little brown bat - 12-month<br>MSS - Cerulean Warbler, Henslow's Sparrow, Atlantic population of Least Tern, and Northern Bobwhite.                           |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NGB               | Table 2-5                                | 2-39 | The table identifies species documented on-site that aren't recorded in the annual EQ T&E survey such as northern long-eared bat (E), tricolored bat (PE), Roseate Tern (E), and monarch butterfly (C). Can ongoing or prosed action affect these species? If so, record these species in the FY24 EQ survey.                                                               |                                                                                                     | DMAVA to note for 2024 EQ Survey.                                                                                                                                                                    |
| NJFW - ENSP       | Signature page 5, line 14                |      | Edit line 14 to "Chief, Endangered and Nongame Species Program"                                                                                                                                                                                                                                                                                                             |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | Signature page 5                         |      | The municipal BMPs are also signed by a state rep for plants (which are not covered by NJFW) so may want to consider that as well. Are any state plant people reviewing the plan?                                                                                                                                                                                           | NJDMAVA believes the USFWS review and signature satifies the plant protection portion of the INRMP. | Noted.                                                                                                                                                                                               |
| NJFW - ENSP       | General Comment                          |      | We are now the NJ DEP Fish and Wildlife, not the NJ Division of Fish and Wildlife. Should be changed wherever it appears in document.                                                                                                                                                                                                                                       |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | Figure 4-2, pg 107                       |      | Poison ivy is a native species that has a high value to wildlife and should not be catagorized as an invasive species. I see this is noted on page 109, but I do not agree with the determination to treat it as an invasive and think that should be reconsidered.                                                                                                         | Poison ivy is not an invasive species, but a nuisance species to humans.                            | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.2.2, pg 134, line 10                   |      | Add an "s" to piping plover                                                                                                                                                                                                                                                                                                                                                 |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.2.2, pg 134, line 14                   |      | Full name is The Conserve Wildlife Foundation of New Jersey                                                                                                                                                                                                                                                                                                                 |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.2.2, pg 134, line 42                   |      | This statement is not true. There may not have been birds and no funding from NJDMAVA, but NJFW - ENSP was surveying the site                                                                                                                                                                                                                                               | Plovers were not observed by FWS, CWF, DEP. Not because of lack of funding.                         | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.2.2.2, pg 136, line 13                 |      | Recommend changing wording throughout from predator control to predation management, which is the more accurate description (ie we are trying to influence predation rates, not predator populations)                                                                                                                                                                       | predation management                                                                                | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.2.4, page 140, line 5                  |      | It is rare to have LETE on breeding beaches into September, rec changing to August.                                                                                                                                                                                                                                                                                         |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.2.8, page 146, line 14                 |      | I don't know the outcome, but the Sept 2023 sentence is out of date.                                                                                                                                                                                                                                                                                                        |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.3.2.2.1, page 151, line 24             |      | I'm not understanding what the unintended consequence to the site's mission is?                                                                                                                                                                                                                                                                                             | Recreational use and beach management.                                                              | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.3.3.1, pg 153, line 10                 |      | After the sentence in line 10, reccomend adding a sentence along the lines of "Protective fencing should include all suitable habitat from the toe of the dune seaward, leaving a swath equivalent to the width of two vehicles from the edge of fencing to the wrack line."                                                                                                |                                                                                                     | Added "Protective fencing should include all suitable habitat from the toe of the dune seaward, leaving a swath equivalent to the width of two vehicles from the edge of fencing to the wrack line". |
| NJFW - ENSP       | 6.3.3.1, pg 153, line 11                 |      | If we are beyond the period where birds are on site (the fall-Dec 1), then it is USFWS that makes a determination about taking down fence prior to Dec 1. This sentence should include them as a decision maker as well.                                                                                                                                                    |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | 6.3.3.1, pg 153, line 29/38              |      | These two bullets seem like they could be combined.                                                                                                                                                                                                                                                                                                                         |                                                                                                     | Addressed.                                                                                                                                                                                           |
| NJFW - ENSP       | Figure 6-1, pg 156                       |      | Support to eliminate the SPA and convert that area, as well as everything outside the NPA, into plant protection strips that are 10% of the beach width (please see USFWS letter for more details).                                                                                                                                                                         |                                                                                                     | Updated figure to eliminate the SPA and convert that area, as well as everything outside the NPA, into plant protection strips that are 10% of the beach width.                                      |

**Errata Sheet of Agency Comments  
Updates to 2023-2027 INRMP  
Sea Girt National Training Center  
Sea Girt, New Jersey**

| Source of Comment | Applicable Section;<br>Page; line number | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                      | NJARNG Response to Comment                                                                                    | Changes Made to Draft INRMP in<br>response to Comment                                                        |
|-------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| NJFW - ENSP       | 6.3.4, pg 158, line 30                   | Would be interested to see the memorandum. Can you share?                                                                                                                                                                                                                                                                                                                                                                                    | Service animals and emotional support animal memo regarding dogs on the beach.                                | Memo is dated July 6, 2022. Submitted copy to DMAVA.                                                         |
| NJFW - ENSP       | 6.3.5, pg 159, line 14                   | Recommendation for vehicles to not drive in front of the NPA "no rake" zone at all, as this is inconsistent with the way municipal protection zones are managed. Although nests may be protected by fence, driving through this area compacts sand and destroys potential habitat for plants and endangers nests that are laid outside fenced areas but are not yet detected by field staff for protection. As always, emergency use exempt. | From the north access road to beach access road, no driving in front of the NPA during the monitoring season. | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.5, pg 161, line 35                   | Add "or their designees" after USFWS. In this situation, we would consider CWF as a designee to make that determination                                                                                                                                                                                                                                                                                                                      |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.10.1, page 167, line 5               | I believe we are over 20 years now, not nearly 20 years                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.10.3, page 169, line 2               | Update to include 2023?                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.11, pg 171, line 14                  | Another note to consider changing to Predation Management throughout                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.11, pg 172, line 2                   | Should include that use of predator exclosures also increase adult mortality                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.11, pg 173, line 43                  | I don't think it was established that a PEFA killed the adult. Suggest changing to avian predator or raptor (it could also have been an owl).                                                                                                                                                                                                                                                                                                |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.11, pg 174, line 11                  | They are not called "fox exclosures" -- either "predator exclosure" or "exclosure"                                                                                                                                                                                                                                                                                                                                                           |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.3.11, pg 174, line 12                  | Again, don't think enough evidence to say falcon. Consider changing to avian predator or raptor.                                                                                                                                                                                                                                                                                                                                             |                                                                                                               | Addressed.                                                                                                   |
| NJFW - ENSP       | 6.4, pg 182, line 25                     | Least Tern chicks (or adults) do not feed on macroinverts in the wrack line                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                               | Addressed to "forage on swash zone macroinvertebrates".                                                      |
| USFWS - NJFO      | ES, p. 6, line 9                         | Can the INRPM rectify the dates covered (2023-2027) with it not getting signed until part way through 2024?                                                                                                                                                                                                                                                                                                                                  | DMAVA is using the same protection measures from the 2018 INRMP until the Draft 2023-2027 INRMP is finalized. | Noted.                                                                                                       |
| USFWS - NJFO      | ES, p. 6, line 6                         | Please reference ESA 7a(1) guidance documents from 2018 and 2023. Further coordination is recommended to determine if the INRMP fully satisfies 7a(1).                                                                                                                                                                                                                                                                                       |                                                                                                               | Added USFW reference documents to page 6.                                                                    |
|                   |                                          | <a href="https://www.fws.gov/sites/default/files/documents/R5%207%28a%29%281%29%20Guidance%20030918_508.pdf">https://www.fws.gov/sites/default/files/documents/R5%207%28a%29%281%29%20Guidance%20030918_508.pdf</a>                                                                                                                                                                                                                          |                                                                                                               | Added USFW reference documents to page 6.                                                                    |
|                   |                                          | <a href="https://www.fws.gov/sites/default/files/documents/federal-agency-obligations-under-section-7-a-1-memo-2024-02-06.pdf">https://www.fws.gov/sites/default/files/documents/federal-agency-obligations-under-section-7-a-1-memo-2024-02-06.pdf</a>                                                                                                                                                                                      |                                                                                                               | Added USFW reference documents to page 6.                                                                    |
| USFWS - NJFO      | 2.2.2, p. 23, lines 25-28                | Move info on flight restrictions to Section 6. Address all classes of aircraft.                                                                                                                                                                                                                                                                                                                                                              |                                                                                                               | Removed from section 2 and discussed in section 6.3.9. Air craft specific to helicopters only.               |
| USFWS - NJFO      | 2.2.3, p. 23, lines 37-38                | The Service may recommend bat surveys prior to demotion of certain structures, such as buildings that have been unused for some time. Please consult with NJFO when planning demolitions.                                                                                                                                                                                                                                                    |                                                                                                               | DMAVA to make note.                                                                                          |
| USFWS - NJFO      | 2.7.2.2, p. 46                           | The Service recommends management of vegetation on both the primary and secondary dunes to limit invasive/non-native species, and to limit taller woody vegetation that may serve as a perch for avian predators of beach-nesting birds                                                                                                                                                                                                      |                                                                                                               | Discussed in Land and Watershed Management Goal No. 3 – Prevent introduction and spread of invasive species. |
|                   |                                          | Although federally listed species (piping plover, seabach amaranth) may occur in low, shifting, sparsely vegetated dunes, dunes are not the primary habitat for these species. Rather the primary habitat is the beach strand seaward of the dune. Tall, steep, stabilized, and/or densely vegetated dunes are generally incompatible with optimal habitat for listed species.                                                               |                                                                                                               | Noted.                                                                                                       |
|                   |                                          | The Service recommends managing the dune and beach strand in accordance with the habitat targets given in Maslo et al. 2011.                                                                                                                                                                                                                                                                                                                 |                                                                                                               | Noted.                                                                                                       |
| USFWS - NJFO      | 2.7.3.1, p. 57, lines 24-40              | Please continue to coordinate with the Service regarding the presence of various bat species on the Sea Girt NCTC property.                                                                                                                                                                                                                                                                                                                  |                                                                                                               | Noted.                                                                                                       |
| USFWS - NJFO      | Table 2-5                                | American oystercatcher, ruddy turnstone, and whimbrel are also Service At-Risk Species in the Northeast Region                                                                                                                                                                                                                                                                                                                               |                                                                                                               | Addressed.                                                                                                   |
| USFWS - NJFO      | 4.2.4, p. 105, lines 38-40               | The Service appreciates and supports past efforts to limit Asiatic sand sedge species. We recommend an ongoing program of surveillance and early detection/treatment to prevent these highly invasive plant species from becoming established in any beach or dune areas.                                                                                                                                                                    |                                                                                                               | Noted and implemented.                                                                                       |
| USFWS - NJFO      | 4.2.4.1, p. 106, lines 15-30             | Poison ivy is a native species that provides food and habitat to migratory birds. Where poison ivy is not in direct conflict with human uses of the NGTC property (e.g., in the dunes), the Service recommends that it be left in place as a component of the native flora.                                                                                                                                                                  |                                                                                                               | Addressed.                                                                                                   |

**Errata Sheet of Agency Comments  
Updates to 2023-2027 INRMP  
Sea Girt National Training Center  
Sea Girt, New Jersey**

| Source of Comment | Applicable Section;<br>Page; line number | Comment                                                                                                                                                                                                                                                                                                                                  | NJARNG Response to Comment                                                                                      | Changes Made to Draft INRMP in<br>response to Comment |
|-------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| USFWS - NJFO      | 5.2                                      | We recommend adding a section to address migratory bird species of conservation concern occurring on NCTC Sea Girt. <a href="https://www.fws.gov/media/birds-conservation-concern-2021">https://www.fws.gov/media/birds-conservation-concern-2021</a>                                                                                    | Noted. DMAVA to add <i>Migratory Birds of Conservation Concern observed at SGNG to next INRMP, Section 5.2.</i> | Noted.                                                |
| USFWS - NJFO      | 6.1, p. 129, lines 20-30                 | We recommend referencing the requirements of both Sections 7a1 and 7a2.                                                                                                                                                                                                                                                                  |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.1, p. 130, lines 11-13                 | The NJFO is now located in Galloway, not Pleasantville. The web site should be updated to <a href="https://www.fws.gov/office/new-jersey-ecological-services/new-jersey-field-office-project-review-guide">https://www.fws.gov/office/new-jersey-ecological-services/new-jersey-field-office-project-review-guide</a>                    |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | Table 6-1                                | Clarify that this tables only lists beach-dependant rare species.                                                                                                                                                                                                                                                                        |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.2.2.1, p. 135, lines 33-41             | Unclear why vegetation management is discussed under Outdoor Recreation                                                                                                                                                                                                                                                                  | Outdoor recreation usage affects the vegetation at SGNG.                                                        | None.                                                 |
| USFWS - NJFO      | 6.2.2.1, p. 135, lines 33-41             | As mentioned in a previous comment, the back beach is the primary habitat for federally listed species, not the dune. Thus, we recommend that the NPA encompass most of the dry beach seaward of the dune, even when unfledged chicks are not present.                                                                                   |                                                                                                                 | Noted.                                                |
| USFWS - NJFO      | 6.2.2.1, p. 135, lines 33-41             | We recommend that the the NPA be extended seaward, leaving only the width of 2 vehicles between the fencing and the mean high water line, to allow emergency vehicle passage at high tide.                                                                                                                                               |                                                                                                                 | Implemented and noted.                                |
| USFWS - NJFO      | 6.2.2.1, p. 135, lines 33-41             | At lower tides, vehicles should be restricted to the wet sand zone.                                                                                                                                                                                                                                                                      |                                                                                                                 | Implemented and noted.                                |
| USFWS - NJFO      | 6.2.2.1, p. 135, lines 33-41             | We recommend no driving (except emergency vehicle response) in front of the NPA as soon as the fence is placed (not just during chick phase). This is consistent with management on municipal beaches.                                                                                                                                   |                                                                                                                 | Implemented and noted.                                |
| USFWS - NJFO      | 6.2.2.1, p. 135, lines 33-41             | Fencing extent should be re-evaluated/adjusted each year in coordination with ENSP.                                                                                                                                                                                                                                                      |                                                                                                                 | Implemented and noted.                                |
| USFWS - NJFO      | 6.2.2.1, p. 136, lines 1-8               | In light of the vegetated condition of the SPA, the Service recommends dropping it as a protected area an instead adopting a plant protection strip<br><a href="https://www.fws.gov/sites/default/files/documents/Plant%20Protection%20Strips.pdf">https://www.fws.gov/sites/default/files/documents/Plant%20Protection%20Strips.pdf</a> |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      |                                          | The strip should run the length of the NGTC beach, interrupted only at the beach entry points.                                                                                                                                                                                                                                           |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      |                                          | Within the NPA, the strip should be at least 25% of the width of the dry beach (e.g., that area should remain fenced and free of vehicles/raking even when bird restrictions are lifted for the year).                                                                                                                                   |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      |                                          | Outside the NPA, the strip should be at least 10 of the width of the dry beach.                                                                                                                                                                                                                                                          |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      |                                          | The strips should be located seaward of the toe of the dune.                                                                                                                                                                                                                                                                             |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.2.2.2, p. 136                          | The Service appreciates and supports past and ongoing predator management efforts.                                                                                                                                                                                                                                                       |                                                                                                                 | Noted.                                                |
| USFWS - NJFO      | 6.2.6, p. 143, lines 10-13               | Rufa red knots also occur on the NJ coast during fall migration (July 1-Nov 30). Outside of Delaware Bay, the main part of the diet is small bivalves such as clams and mussel spat.                                                                                                                                                     |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.2.6, p. 143, lines 24-28               | The Service recommends affording rufa red knots a buffer of at least 400 feet, based on Paton et al. 2014. Larger buffers may be needed for motorized activities                                                                                                                                                                         |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.2.8, page 146, line 14                 | A listing determination is now expected by 9/30/24<br><a href="https://www.fws.gov/sites/default/files/documents/national-domestic-listing-workplan-fiscal-years-2023-2027.pdf">https://www.fws.gov/sites/default/files/documents/national-domestic-listing-workplan-fiscal-years-2023-2027.pdf</a>                                      |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.2.12, p. 147                           | Monarchs may also occur in vegetation portions of the dune or beach beach where nectar plants occur, such as goldenrod species.                                                                                                                                                                                                          |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.2.13, p. 148, lines 1-14               | Please add roseate tern to this list. Service recommendations for this species are provided separately.                                                                                                                                                                                                                                  |                                                                                                                 | Addressed.                                            |
| USFWS - NJFO      | 6.3.2.1, p. 150, lines 5-40              | We recommend annual evaluation of vegetation within the NPA (expanded, as recommended above) and, in coordination with ENSP, mangagement interventions consistent with Maslo et al 2011.                                                                                                                                                 |                                                                                                                 | Implemented and Noted.                                |

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**APPENDIX E - PERMITS, AGREEMENTS, AND  
PROCEDURES**

## **PERMITS, AGREEMENTS, AND PROCEDURES**

1. National Guard Joint Training Center Health & Safety Goose Control Program Standard Operating Guide.
2. Coastal Area Facility Review Act (CAFRA), Authorization for a Coastal General Permit (GP-2) 26 June 2014, DLUR File No. 1344-03-0001.2 CAF 140001 (Purpose: beach and dune maintenance activities).
3. CAFRA Permit Modification Letter, 22 February 2016, DLUR File No. 1344-03-0001.2 CAF180001, Expires July 17, 2023 (Purpose: add NGTC as beach rake operator).
4. NJDEP Freshwater Wetlands Letter of Interpretation – Extension Request, 13 November 2017, DLUR File No. 1300-11-0004.1 FWW170001. NJDEP LOI Modification approved expiration date, 2 August 2022.
5. NJDEP Freshwater Wetlands General Permit for Maintenance and Repair of an Existing Feature (GP-1), 27 October 2011, DLUR File No. 1344-03-0001.1 FWW110001.
6. Freehold Soil Conservation District, NJ Natural Resources Conservation Program, 2 October 2017, Ref # 2017-0650, Certification Letter (Purpose: Erosion and Sediment Control Plan for the Freshwater Wetlands and Coastal Habitat Enhancement Project). Final Report of Compliance issued by Freehold Soil Conservation District on 6 January 2022.
7. NJDEP, DLUR FWGP16 Habitat Create/Enhance Permit and Water Quality Certificate, 25 April 2018, Permit Number: 1344-03-0001.2 FWW170002, Expires April 24, 2023. (Purpose: Freshwater Wetlands and Coastal Habitat Enhancement Plan activities).
8. NJDEP, DLUR CAFRA Individual Permit Extension, 1 June 2018, Original DLUR File No. 1344-03-0001.2 CAF120002, Extension File No. 1344-03-0001.2 CAF80003 (Purpose: construction activities and stormwater management).
9. NJDEP, DLUR Modification to CAFRA Individual Permit, 1 June 2018, Original DLUR File No. 1344-03-0001.2 CAF120002, Modification File No. 1344-03-0001.2 CAF180001 (Purpose: Habitat restoration activities of the Freshwater Wetlands and Coastal Habitat Enhancement Plan).
10. NJDEP, Coastal Zone General Permit (CZ-GP-2) Permit No. 1344-03-0001.3 LUP200001. (Purpose: Beach and Dune Maintenance, Expires March 3, 2024).
11. NJDEP, WFD IP-Commercial/Industrial/Public (Waterfront Development). (Purpose: Authorizes the removal of approximately 962 square feet of sediment below the mean highwater line in a manmade tidal ditch, and the installation of approximately 10.98 CY of rip rap in the ditch for sediment trapping and water quality, Expires May 13, 2025).
12. National Guard Training Center Beach Pass Policy (2023).
13. National Guard Training Center Fishing Permit Guidance Brochure.
14. National Guard Training Center Camper and Beach Handout.

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**APPENDIX F - INRMP IMPLEMENTATION  
SUMMARY**

**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                                                                             | Labor                            | Start Date     | End Date       | DMAVA Labor Hours |           |           |           |           |            | Equipment and Supply Funding |            |            |            |            |                 | Contractor Funding |                |                |                 |                 |                 | Total Funding  |                |                |                 |                 |           | Funding Source |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------|----------------|-------------------|-----------|-----------|-----------|-----------|------------|------------------------------|------------|------------|------------|------------|-----------------|--------------------|----------------|----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-----------------|-----------------|-----------|----------------|
|                                                                                                                                              |                                  |                |                | CY25              | CY26      | CY27      | CY28      | CY29      | 5-yr       | CY25                         | CY26       | CY27       | CY28       | CY29       | 5-yr            | CY25               | CY26           | CY27           | CY28            | CY29            | 5-yr            | CY25           | CY26           | CY27           | CY28            | CY29            | 5-yr      |                |
| <b>General INRMP Management</b>                                                                                                              | <b>CFMO-EMB, Contractor</b>      | <b>Ongoing</b> | <b>Ongoing</b> | 120               | 120       | 120       | 120       | 120       | 600        | \$0                          | \$0        | \$0        | \$0        | \$0        | \$0             | \$52,000           | \$7,000        | \$7,000        | \$7,000         | \$52,000        | \$125,000       | \$52,000       | \$7,000        | \$7,000        | \$7,000         | \$52,000        | \$125,000 | EPR-CON        |
| <b>Changing Climate Sustainability</b>                                                                                                       |                                  |                |                |                   |           |           |           |           |            |                              |            |            |            |            |                 |                    |                |                |                 |                 |                 |                |                |                |                 |                 |           |                |
| <b>Changing Climate Sustainability Goal No. 1 – Educate site staff and tenants on climate change and climate change hazards at the Site.</b> | CFMO-EMB, Facilities, Contractor | 7/1/2025       | 7/1/2029       |                   |           |           |           |           |            |                              |            |            |            |            |                 |                    |                |                |                 |                 |                 |                |                |                |                 |                 |           |                |
| 1. Provide a brief overview of the climate change hazards at the Site.                                                                       |                                  | 1/1/2025       | 12/31/2029     | 30                | 30        | 30        | 30        | 30        | 150        |                              |            |            |            |            |                 | \$13,000           | \$7,000        | \$7,000        | \$7,000         | \$13,000        | \$47,000        | \$13,000       | \$7,000        | \$7,000        | \$7,000         | \$13,000        | \$47,000  |                |
| <b>Totals =</b>                                                                                                                              |                                  |                |                | <b>30</b>         | <b>30</b> | <b>30</b> | <b>30</b> | <b>30</b> | <b>150</b> | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$13,000</b> | <b>\$7,000</b>     | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$13,000</b> | <b>\$47,000</b> | <b>\$13,000</b> | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$13,000</b> | <b>\$47,000</b> | STEP      |                |
| <b>Changing Climate Sustainability Goal No. 2 - Conduct a climate change vulnerability assessment.</b>                                       | CFMO-EMB, Facilities, Contractor | 7/1/2025       | 7/1/2029       |                   |           |           |           |           |            |                              |            |            |            |            |                 |                    |                |                |                 |                 |                 |                |                |                |                 |                 |           |                |
| 1. Continue to be an active member of the Council to maintain regional climate adaption partnerships.                                        |                                  | 1/1/2025       | 12/31/2029     | 15                | 15        | 15        | 15        | 15        | 75         |                              |            |            |            |            |                 | \$6,500            | \$3,500        | \$3,500        | \$3,500         | \$3,500         | \$23,500        | \$6,500        | \$3,500        | \$3,500        | \$3,500         | \$6,500         | \$23,500  |                |
| 2. Continue to conduct climate change vulnerability assessments.                                                                             |                                  | 1/1/2025       | 12/31/2029     | 15                | 15        | 15        | 15        | 15        | 75         |                              |            |            |            |            |                 | \$6,500            | \$3,500        | \$3,500        | \$3,500         | \$3,500         | \$23,500        | \$6,500        | \$3,500        | \$3,500        | \$3,500         | \$6,500         | \$23,500  |                |
| <b>Totals =</b>                                                                                                                              |                                  |                |                | <b>30</b>         | <b>30</b> | <b>30</b> | <b>30</b> | <b>30</b> | <b>150</b> | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$13,000</b> | <b>\$7,000</b>     | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$13,000</b> | <b>\$47,000</b> | <b>\$13,000</b> | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$13,000</b> | <b>\$47,000</b> | STEP      |                |
| <b>Changing Climate Sustainability Goal No. 3 - Continue to research.</b>                                                                    | CFMO-EMB, Facilities, Contractor | 7/1/2025       | 7/1/2029       |                   |           |           |           |           |            |                              |            |            |            |            |                 |                    |                |                |                 |                 |                 |                |                |                |                 |                 |           |                |
| 1. Identify environmental permit requirements early in the planning stages.                                                                  |                                  | 1/1/2025       | 12/31/2029     | 10                | 10        | 10        | 10        | 10        | 50         |                              |            |            |            |            |                 | \$2,600            | \$1,400        | \$1,400        | \$1,400         | \$2,600         | \$9,400         | \$2,600        | \$2,600        | \$2,600        | \$2,600         | \$2,600         | \$9,400   |                |
| 2. Identify infrastructure and buildings for removal.                                                                                        |                                  | 1/1/2025       | 12/31/2029     | 5                 | 5         | 5         | 5         | 5         | 25         |                              |            |            |            |            |                 | \$2,600            | \$1,400        | \$1,400        | \$1,400         | \$2,600         | \$9,400         | \$2,600        | \$2,600        | \$2,600        | \$2,600         | \$2,600         | \$9,400   |                |
| 3. Work with the NJDEP Bureau of Coastal Engineering and the US Army Corps of Engineers to improve coastal resilience.                       |                                  | 1/1/2025       | 12/31/2029     | 5                 | 5         | 5         | 5         | 5         | 25         |                              |            |            |            |            |                 | \$2,600            | \$1,400        | \$1,400        | \$1,400         | \$2,600         | \$9,400         | \$2,600        | \$2,600        | \$2,600        | \$2,600         | \$2,600         | \$9,400   |                |
| 4. Identify and move hazardous and landscaping bulk storage materials away from Stockton Lake.                                               |                                  | 1/1/2025       | 12/31/2029     | 5                 | 5         | 5         | 5         | 5         | 25         |                              |            |            |            |            |                 | \$2,600            | \$1,400        | \$1,400        | \$1,400         | \$2,600         | \$9,400         | \$2,600        | \$2,600        | \$2,600        | \$2,600         | \$2,600         | \$9,400   |                |
| 5. Survey HVAC and refrigeration systems that use greenhouse gas systems.                                                                    |                                  | 1/1/2025       | 12/31/2029     | 5                 | 5         | 5         | 5         | 5         | 25         |                              |            |            |            |            |                 | \$2,600            | \$1,400        | \$1,400        | \$1,400         | \$2,600         | \$9,400         | \$2,600        | \$2,600        | \$2,600        | \$2,600         | \$2,600         | \$9,400   |                |

**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                                                                                                         | Labor                            | Start Date | End Date   | DMAVA Labor Hours |            |            |            |            |            | Equipment and Supply Funding |            |            |            |            |            | Contractor Funding |                 |                 |                 |                 |                  | Total Funding   |                 |                 |                 |                 |                 | Funding Source   |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------|------------|-------------------|------------|------------|------------|------------|------------|------------------------------|------------|------------|------------|------------|------------|--------------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------|
|                                                                                                                                                                          |                                  |            |            | CY25              | CY26       | CY27       | CY28       | CY29       | 5-yr       | CY25                         | CY26       | CY27       | CY28       | CY29       | 5-yr       | CY25               | CY26            | CY27            | CY28            | CY29            | 5-yr             | CY25            | CY26            | CY27            | CY28            | CY29            | 5-yr            |                  |      |
| <b>Totals =</b>                                                                                                                                                          |                                  |            |            | <b>30</b>         | <b>30</b>  | <b>30</b>  | <b>30</b>  | <b>30</b>  | <b>150</b> | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$13,000</b>    | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$13,000</b> | <b>\$47,000</b>  | <b>\$13,000</b> | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$13,000</b> | <b>\$47,000</b> | STEP             |      |
| <b>Changing Climate Sustainability Goal No. 4 - Continue to research, manage, and support natural and cultural resources related to climate sustainability projects.</b> | CFMO-EMB, Facilities, Contractor | 7/1/2025   | 7/1/2029   |                   |            |            |            |            |            |                              |            |            |            |            |            |                    |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                 |                  |      |
| 1. Develop natural and nature-based infrastructure alternatives along Stockton Lakefront.                                                                                |                                  | 1/1/2025   | 12/31/2029 | 10                | 10         | 10         | 10         | 10         | 50         |                              |            |            |            |            |            | \$2,600            | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$1,400          | \$1,400         | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$9,400         |                  |      |
| 2. Use electronic tools or models to calculate carbon sequestration of the natural systems.                                                                              |                                  | 1/1/2025   | 12/31/2029 | 5                 | 5          | 5          | 5          | 5          | 25         |                              |            |            |            |            |            | \$2,600            | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$1,400          | \$1,400         | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$9,400         |                  |      |
| 3. Reduce exposure and/or prevent coastal flooding by creating and implementing the recommendations of a site-specific flood hazard plan.                                |                                  | 1/1/2025   | 12/31/2029 | 5                 | 5          | 5          | 5          | 5          | 25         |                              |            |            |            |            |            | \$2,600            | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$1,400          | \$1,400         | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$9,400         |                  |      |
| 4. Add trees lining walkway and outdoor training areas to provide shade. Create a landscaping plan.                                                                      |                                  | 1/1/2025   | 12/31/2029 | 5                 | 5          | 5          | 5          | 5          | 25         |                              |            |            |            |            |            | \$2,600            | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$1,400          | \$1,400         | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$9,400         |                  |      |
| 5. Address mosquito borne illnesses by conducting surveys for mosquito breeding habitat.                                                                                 |                                  | 1/1/2025   | 12/31/2029 | 5                 | 5          | 5          | 5          | 5          | 25         |                              |            |            |            |            |            | \$2,600            | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$1,400          | \$1,400         | \$1,400         | \$1,400         | \$1,400         | \$2,600         | \$9,400         |                  |      |
| <b>Totals =</b>                                                                                                                                                          |                                  |            |            | <b>30</b>         | <b>30</b>  | <b>30</b>  | <b>30</b>  | <b>30</b>  | <b>150</b> | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$13,000</b>    | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$13,000</b> | <b>\$47,000</b>  | <b>\$13,000</b> | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$7,000</b>  | <b>\$13,000</b> | <b>\$47,000</b> | STEP             |      |
| <b>Changing Climate Sustainability Totals =</b>                                                                                                                          |                                  |            |            | <b>120</b>        | <b>120</b> | <b>120</b> | <b>120</b> | <b>120</b> | <b>600</b> | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$52,000</b>    | <b>\$28,000</b> | <b>\$28,000</b> | <b>\$28,000</b> | <b>\$52,000</b> | <b>\$188,000</b> | <b>\$52,000</b> | <b>\$28,000</b> | <b>\$28,000</b> | <b>\$28,000</b> | <b>\$28,000</b> | <b>\$52,000</b> | <b>\$188,000</b> | STEP |
| <b>Land and Watershed Management</b>                                                                                                                                     |                                  |            |            |                   |            |            |            |            |            |                              |            |            |            |            |            |                    |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                 |                  |      |
| <b>Land and Watershed Goal No.1 - Protect and rehabilitate sensitive wildlife habitats by controlling invasive plants.</b>                                               | CFMO-EMB, Facilities, Contractor | 7/1/2025   | 7/1/2029   |                   |            |            |            |            |            |                              |            |            |            |            |            |                    |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                 |                  |      |
| 1. Prepare treatment, restoration, and prevention plan.                                                                                                                  |                                  | 7/1/2025   | 12/31/2029 | 40                | 0          | 0          | 0          | 0          | 40         |                              |            |            |            |            |            | \$3,500            | \$1,500         | \$1,500         | \$1,500         | \$1,500         | \$9,500          | \$3,500         | \$1,500         | \$1,500         | \$1,500         | \$1,500         | \$9,500         |                  |      |

**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                                                                                  | Labor                            | Start Date | End Date   | DMAVA Labor Hours |           |           |           |           | Equipment and Supply Funding |                |                |                |                | Contractor Funding |                |                 |                 |                 | Total Funding   |                 |                  |                 |                 | Funding Source  |                 |                 |                  |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------|------------|-------------------|-----------|-----------|-----------|-----------|------------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|---------|
|                                                                                                                                                   |                                  |            |            | CY25              | CY26      | CY27      | CY28      | CY29      | 5-yr                         | CY25           | CY26           | CY27           | CY28           | CY29               | 5-yr           | CY25            | CY26            | CY27            | CY28            | CY29            | 5-yr             | CY25            | CY26            |                 | CY27            | CY28            | CY29             | 5-yr    |
| 2. Implement chemical/mechanical controls with Foliar herbicide application May – August but before seeding.                                      |                                  | 5/1/2025   | 8/31/2029  | 0                 | 40        | 0         | 0         | 0         | 40                           | \$1,000        | \$1,000        | \$1,000        | \$1,000        | \$1,000            | \$1,000        | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         | \$6,500         | \$6,500         | \$6,500         | \$6,500         | \$6,500         | \$32,500         |         |
| 3. Reduce and maintain levels of common reed, poison ivy, cattail and purple loosestrife dominance of less than 5 percent total vegetation cover. |                                  | 5/1/2025   | 8/31/2029  | 0                 | 40        | 0         | 0         | 0         | 40                           |                |                |                |                |                    |                | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         |         |
| 4. Eliminate all highly invasive shrubs, trees, or vines that have limited occurrence.                                                            |                                  | 5/1/2025   | 8/31/2029  | 0                 | 0         | 40        | 40        | 40        | 120                          |                |                |                |                |                    |                | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         |         |
| 5. Reduce and maintain established high-priority invasive shrubs, vines, and herbs in coastal dune shrubland and adjacent dune.                   |                                  | 5/1/2025   | 8/31/2029  | 0                 | 0         | 40        | 40        | 40        | 120                          |                |                |                |                |                    |                | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         |         |
| <b>Totals =</b>                                                                                                                                   |                                  |            |            | <b>40</b>         | <b>80</b> | <b>40</b> | <b>40</b> | <b>40</b> | <b>240</b>                   | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b>     | <b>\$1,000</b> | <b>\$25,500</b> | <b>\$23,500</b> | <b>\$23,500</b> | <b>\$23,500</b> | <b>\$23,500</b> | <b>\$119,500</b> | <b>\$26,500</b> | <b>\$24,500</b> | <b>\$24,500</b> | <b>\$24,500</b> | <b>\$24,500</b> | <b>\$124,500</b> | STEP    |
| <b>Land and Watershed Goal No. 2 – Minimize visitor and staff exposure to poison ivy.</b>                                                         | CFMO-EMB, Facilities, Contractor | Annual     | Annual     |                   |           |           |           |           |                              |                |                |                |                |                    |                |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                  |         |
| 1. Control in high traffic areas.                                                                                                                 |                                  | May        | Aug.       | 24                | 24        | 24        | 24        | 24        | 120                          | \$1,000        | \$1,000        | \$1,000        | \$1,000        | \$1,000            | \$1,000        | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         |         |
| 2. Provide awareness to staff and visitors.                                                                                                       |                                  | Mar.       | Aug.       | 40                | 40        | 40        | 40        | 40        | 200                          |                |                |                |                |                    |                | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         |         |
| <b>Totals =</b>                                                                                                                                   |                                  |            |            | <b>64</b>         | <b>64</b> | <b>64</b> | <b>64</b> | <b>64</b> | <b>320</b>                   | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b>     | <b>\$1,000</b> | <b>\$10,000</b> | <b>\$10,000</b> | <b>\$10,000</b> | <b>\$10,000</b> | <b>\$10,000</b> | <b>\$50,000</b>  | <b>\$1,000</b>  | <b>\$1,000</b>  | <b>\$1,000</b>  | <b>\$1,000</b>  | <b>\$1,000</b>  | <b>\$55,000</b>  | STEP    |
| <b>Land and Watershed Goal No. 3 – Prevent introduction and spread of invasive species.</b>                                                       | CFMO-EMB, Facilities, Contractor | 1/1/2025   | 12/31/2029 |                   |           |           |           |           |                              |                |                |                |                |                    |                |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                  |         |
| 1. Annual inspections for early detection.                                                                                                        |                                  | 5/1/2025   | 8/31/2029  | 0                 | 0         | 0         | 0         | 0         | 0                            |                |                |                |                |                    |                | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         | \$2,500 |
| 2. Review scientific literature and regulatory updates to identify up and coming invasive species and update the list of target invasive species. |                                  | 7/1/2025   | 12/31/2029 | 20                | 0         | 0         | 0         | 0         | 20                           |                |                |                |                |                    |                | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         | \$2,500 |
| 3. Implement procedures for storage and disposal of plant materials procedures.                                                                   |                                  | 7/1/2025   | 12/31/2029 | 20                | 0         | 0         | 0         | 0         | 20                           |                |                |                |                |                    |                | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         |         |
| 4. Implement procedures for clothing and equipment decontamination.                                                                               |                                  | 7/1/2025   | 12/31/2029 | 20                | 0         | 0         | 0         | 0         | 20                           |                |                |                |                |                    |                | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000         |         |

**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                                                                | Labor                            | Start Date | End Date   | DMAVA Labor Hours |           |           |           |           |            | Equipment and Supply Funding |                |                |                |                |                | Contractor Funding |                 |                 |                 |                 |                 | Total Funding   |                 |                 |                 |                 |                 | Funding Source |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------|------------|-------------------|-----------|-----------|-----------|-----------|------------|------------------------------|----------------|----------------|----------------|----------------|----------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
|                                                                                                                                 |                                  |            |            | CY25              | CY26      | CY27      | CY28      | CY29      | 5-yr       | CY25                         | CY26           | CY27           | CY28           | CY29           | 5-yr           | CY25               | CY26            | CY27            | CY28            | CY29            | 5-yr            | CY25            | CY26            | CY27            | CY28            | CY29            | 5-yr            |                |
| 5. Implement additional BMPs as identified in the to-be-developed invasive species treatment, restoration, and prevention plan. |                                  | Mar.       | Aug.       | 10                | 10        | 10        | 10        | 10        | 50         |                              |                |                |                |                |                | \$2,500            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000        | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000        |                |
| 6. Educate staff and visitors.                                                                                                  |                                  | Mar.       | Aug.       | 0                 | 0         | 0         | 0         | 0         | 0          | \$1,000                      | \$1,000        | \$1,000        | \$1,000        | \$1,000        | \$5,000        | \$2,500            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$15,000        | \$3,500         | \$3,500         | \$3,500         | \$3,500         | \$3,500         | \$20,000        |                |
| <b>Total=</b>                                                                                                                   |                                  |            |            | <b>70</b>         | <b>10</b> | <b>10</b> | <b>10</b> | <b>10</b> | <b>110</b> | <b>\$1,000</b>               | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$5,000</b> | <b>\$15,000</b>    | <b>\$15,000</b> | <b>\$15,000</b> | <b>\$15,000</b> | <b>\$15,000</b> | <b>\$90,000</b> | <b>\$16,000</b> | <b>\$16,000</b> | <b>\$16,000</b> | <b>\$16,000</b> | <b>\$16,000</b> | <b>\$95,000</b> | STEP           |
|                                                                                                                                 |                                  |            |            |                   |           |           |           |           |            |                              |                |                |                |                |                |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                |
| <b>Land and Watershed Goal No. 4 – Monitor and manage the on-site wetland restoration area.</b>                                 | CFMO-EMB, Facilities, Contractor |            |            |                   |           |           |           |           |            |                              |                |                |                |                |                |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                |
| 1. Maintain the split rail fence.                                                                                               |                                  | 7/1/2025   | 12/31/2029 | 0                 | 40        | 0         | 0         | 0         | 40         | \$1,000                      | \$1,000        | \$1,000        | \$1,000        | \$1,000        | \$5,000        | \$5,000            | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$30,000        |                |
| 2. Assure proper ecological values and functions including wildlife habitat, filtration of nutrients, and reduction of runoff.  |                                  | 7/1/2025   | 12/31/2029 | 0                 | 0         | 0         | 0         | 0         | 0          |                              |                |                |                |                |                | \$5,000            | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$20,000        |                |
| 3. Maintain three interpretive signs.                                                                                           |                                  | 7/1/2025   | 12/31/2029 | 0                 | 0         | 0         | 0         | 0         | 0          |                              |                |                |                |                |                | \$5,000            | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$20,000        |                |
| 4. Maintain the crushed clamshell walking path.                                                                                 |                                  | 7/1/2025   | 12/31/2029 | 0                 | 0         | 0         | 0         | 0         | 0          |                              |                |                |                |                |                | \$5,000            | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$5,000         | \$20,000        |                |
| <b>Totals =</b>                                                                                                                 |                                  |            |            | <b>0</b>          | <b>40</b> | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>40</b>  | <b>\$1,000</b>               | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$1,000</b> | <b>\$5,000</b> | <b>\$20,000</b>    | <b>\$20,000</b> | <b>\$20,000</b> | <b>\$20,000</b> | <b>\$20,000</b> | <b>\$21,000</b> | <b>\$21,000</b> | <b>\$21,000</b> | <b>\$21,000</b> | <b>\$21,000</b> | <b>\$21,000</b> | <b>\$90,000</b> | STEP           |
|                                                                                                                                 |                                  |            |            |                   |           |           |           |           |            |                              |                |                |                |                |                |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                |
| <b>Land and Watershed Goal No. 5 – Improve storm water quality and provide vital pollinator habitat.</b>                        | CFMO-EMB, Facilities, Contractor |            |            |                   |           |           |           |           |            |                              |                |                |                |                |                |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                |
|                                                                                                                                 |                                  |            |            |                   |           |           |           |           |            |                              |                |                |                |                |                |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                |
| 1. Develop and maintain a Site wide stormwater infrastructure system maintenance plan.                                          |                                  | 7/1/2025   | 12/31/2029 | 0                 | 40        | 0         | 0         | 0         | 40         |                              |                |                |                |                |                | \$8,000            | \$7,000         | \$5,000         | \$5,000         | \$5,000         | \$30,000        | \$8,000         | \$7,000         | \$5,000         | \$5,000         | \$5,000         | \$30,000        |                |
| 2. Maintain the Site's stormwater infrastructure system.                                                                        |                                  | 7/1/2025   | 12/31/2029 | 0                 | 0         | 0         | 0         | 0         | 0          | \$2,000                      | \$11,000       | \$3,000        | \$3,000        | \$3,000        | \$22,000       | \$8,000            | \$7,000         | \$5,000         | \$5,000         | \$5,000         | \$30,000        | \$10,000        | \$18,000        | \$8,000         | \$8,000         | \$8,000         | \$52,000        |                |
| 3. Drainage inlet maintenance and inspection procedures.                                                                        |                                  | 7/1/2025   | 12/31/2029 | 0                 | 0         | 0         | 0         | 0         | 0          |                              |                |                |                |                |                | \$8,000            | \$7,000         | \$5,000         | \$5,000         | \$5,000         | \$30,000        | \$8,000         | \$7,000         | \$5,000         | \$5,000         | \$5,000         | \$30,000        |                |



**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                            | Labor                                         | Start Date | End Date | DMAVA Labor Hours |           |           |           |           | Equipment and Supply Funding |            |            |            |            | Contractor Funding |            |                 |                 |                 | Total Funding   |                 |                  |                 |                 | Funding Source  |                 |                 |                  |          |
|---------------------------------------------------------------------------------------------|-----------------------------------------------|------------|----------|-------------------|-----------|-----------|-----------|-----------|------------------------------|------------|------------|------------|------------|--------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|----------|
|                                                                                             |                                               |            |          | CY25              | CY26      | CY27      | CY28      | CY29      | 5-yr                         | CY25       | CY26       | CY27       | CY28       | CY29               | 5-yr       | CY25            | CY26            | CY27            | CY28            | CY29            | 5-yr             | CY25            | CY26            |                 | CY27            | CY28            | CY29             | 5-yr     |
| <b>Rare Species Goal No. 1 - Implement management practices and protection measures.</b>    | CFMO-EMB, Facilities, Contractor, ENSP, USFWS | Annual     | Annual   |                   |           |           |           |           |                              |            |            |            |            |                    |            |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                  |          |
| 1. Annual meeting with USFWS and ENSP.                                                      |                                               | Feb.       | Feb.     | 24                | 24        | 24        | 24        | 24        | 120                          |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 2. Annual env. awareness briefings and qualified monitor training.                          |                                               | Mar.       | Aug.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 3. Protection area fencing and signs.                                                       |                                               | Apr.       | Dec.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 4. Communicate monitoring results.                                                          |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 5. Implement special mgt. procedures.                                                       |                                               | May        | Aug.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 6. Install interpretative signs at both the north and south ends of the NPA.                |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 7. Update the field identification guide at least every three years.                        |                                               | 2023       | 2026     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 8. Conduct annual surveys for Fowler's toad.                                                |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 9. Conduct bald eagle, red-tailed hawk, and peregrine falcon surveys.                       |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 10. Install and maintain a Motus Wildlife Tracking System.                                  |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 11. Conduct a window bird strike survey.                                                    |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 12. Prohibit low speed vehicle use on the beach when beach-nesting bird chicks are present. |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| 13. Utilize environmental DNA (eDNA) analyzation methods.                                   |                                               | Apr.       | Oct.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$22,500 |
| <b>Totals =</b>                                                                             |                                               |            |          | <b>24</b>         | <b>24</b> | <b>24</b> | <b>24</b> | <b>24</b> | <b>120</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b>         | <b>\$0</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$292,500</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$58,500</b> | <b>\$292,500</b> | STEP     |
| <b>Rare Species Goal No. 2 - Conduct annual beach-nesting bird surveys.</b>                 | ENSP, WPWA, CFMO-EMB, Contractor              | Annual     | Annual   |                   |           |           |           |           |                              |            |            |            |            |                    |            |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                  |          |
| 1. Conduct beach-nesting bird surveys.                                                      |                                               | Apr.       | Aug.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$17,500        | \$17,500        | \$17,500        | \$17,500        | \$17,500        | \$87,500         | \$17,500        | \$17,500        | \$17,500        | \$17,500        | \$17,500        | \$87,500         | \$87,500 |
| 2. Incorporate data into NJARNG GIS.                                                        |                                               | Nov.       | Dec.     | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$6,000          | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$6,000          | \$6,000  |

**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                                                                            | Labor                               | Start Date | End Date   | DMAVA Labor Hours |           |           |           |           | Equipment and Supply Funding |            |            |            |            | Contractor Funding |            |                 |                 |                 | Total Funding   |                 |                  |                 |                 | Funding Source  |                 |                 |                  |      |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------|------------|-------------------|-----------|-----------|-----------|-----------|------------------------------|------------|------------|------------|------------|--------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------|
|                                                                                                                                             |                                     |            |            | CY25              | CY26      | CY27      | CY28      | CY29      | 5-yr                         | CY25       | CY26       | CY27       | CY28       | CY29               | 5-yr       | CY25            | CY26            | CY27            | CY28            | CY29            | 5-yr             | CY25            | CY26            |                 | CY27            | CY28            | CY29             | 5-yr |
| 3. Conduct an annual beach macroinvertebrate study.                                                                                         |                                     | Apr.       | Aug.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$31,500        | \$31,500        | \$31,500        | \$31,500        | \$31,500        | \$157,500        | \$31,500        | \$31,500        | \$31,500        | \$31,500        | \$31,500        | \$157,500        |      |
| <b>Totals =</b>                                                                                                                             |                                     |            |            | <b>0</b>          | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>                     | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b>         | <b>\$0</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$251,000</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$50,200</b> | <b>\$251,000</b> | STEP |
| <b>Rare Species Goal No. 3 - Conduct annual seabeach amaranth and knotweed surveys.</b>                                                     | CFMO-EMB, Contractor                | Annual     | Annual     |                   |           |           |           |           |                              |            |            |            |            |                    |            |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                  |      |
| 1. Prepare annual work plan.                                                                                                                |                                     | Apr.       | Apr.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         |      |
| 2. Conduct surveys.                                                                                                                         |                                     | Jul.       | Sep.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$5,500         | \$27,500         |      |
| 3. Implement protection measures.                                                                                                           |                                     | Jul.       | Dec.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         |      |
| 4. Incorporate data into GIS, report to USFWS.                                                                                              |                                     | Nov.       | Dec.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$6,000          | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$1,200         | \$6,000          |      |
| 5. Evaluate partnering with USFWS.                                                                                                          |                                     | Ongoing    | Ongoing    | 16                | 16        | 16        | 16        | 16        | 80                           |            |            |            |            |                    |            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         |      |
| <b>Totals =</b>                                                                                                                             |                                     |            |            | <b>16</b>         | <b>16</b> | <b>16</b> | <b>16</b> | <b>16</b> | <b>80</b>                    | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b>         | <b>\$0</b> | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$81,000</b>  | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$16,200</b> | <b>\$81,000</b>  | STEP |
| <b>Rare Species Goal No. 4 - Maintain, and monitor osprey nesting platform.</b>                                                             | CFMO-EMB, Facilities, Phone Company | Ongoing    | Ongoing    |                   |           |           |           |           |                              |            |            |            |            |                    |            |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                  |      |
| 1. Coordinate activities with ENSP and phone company.                                                                                       |                                     | 1/1/2025   | 12/31/2029 | 24                | 0         | 0         | 0         | 0         | 24                           |            |            |            |            |                    |            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         |      |
| 2. Remove old nests and install deterrents.                                                                                                 |                                     | 2/16/2025  | 2/29/2029  | 0                 | 8         | 0         | 0         | 0         | 8                            |            |            |            |            |                    |            | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$30,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$30,000         |      |
| 3. Monitor nesting activity and report to ENSP.                                                                                             |                                     | Apr.       | Sep.       | 48                | 48        | 48        | 48        | 48        | 240                          |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         |      |
| 4. Coordinate with phone company to install a web accessible camera to observe nesting activities at the nest on top of the cellular tower. |                                     | Feb.       | Feb.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         |      |
| 5. Inspect and maintain nesting platform.                                                                                                   |                                     | Feb.       | Feb.       | 8                 | 8         | 8         | 8         | 8         | 40                           |            |            |            |            |                    |            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         |      |
| 6. Continue to maintain the game camera on the osprey nesting platform.                                                                     |                                     | Apr.       | Sep.       | 8                 | 8         | 8         | 8         | 8         | 40                           |            |            |            |            |                    |            | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$2,500         | \$12,500         |      |
| 7. Collect and analyze fish carcasses for lead.                                                                                             |                                     | Apr.       | Sep.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$30,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$6,000         | \$30,000         |      |
| <b>Totals =</b>                                                                                                                             |                                     |            |            | <b>88</b>         | <b>64</b> | <b>64</b> | <b>64</b> | <b>64</b> | <b>344</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b>         | <b>\$0</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$132,500</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$26,500</b> | <b>\$132,500</b> | STEP |
| <b>Rare Species Goal No. 5 - Implement a predator control program.</b>                                                                      | CFMO-EMB, Contractor, ENSP, USFWS,  | Annual     | Annual     |                   |           |           |           |           |                              |            |            |            |            |                    |            |                 |                 |                 |                 |                 |                  |                 |                 |                 |                 |                 |                  |      |
| 1. Develop annual protocol for population survey.                                                                                           |                                     | Feb.       | Feb.       | 0                 | 0         | 0         | 0         | 0         | 0                            |            |            |            |            |                    |            | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$4,500         | \$22,500         |      |

**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                                                               | Labor                                   | Start Date | End Date  | DMAVA Labor Hours |            |          |          |          |            | Equipment and Supply Funding |            |            |            |            |            | Contractor Funding |                  |                  |                  |                  |                    | Total Funding    |                  |                  |                  |                  |                    | Funding Source |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|-----------|-------------------|------------|----------|----------|----------|------------|------------------------------|------------|------------|------------|------------|------------|--------------------|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|--------------------|----------------|
|                                                                                                                                |                                         |            |           | CY25              | CY26       | CY27     | CY28     | CY29     | 5-yr       | CY25                         | CY26       | CY27       | CY28       | CY29       | 5-yr       | CY25               | CY26             | CY27             | CY28             | CY29             | 5-yr               | CY25             | CY26             | CY27             | CY28             | CY29             | 5-yr               |                |
| 2. Conduct annual population survey.                                                                                           |                                         | Mar.       | Feb.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$12,000           | \$12,000         | \$12,000         | \$12,000         | \$12,000         | \$60,000           | \$12,000         | \$12,000         | \$12,000         | \$12,000         | \$12,000         | \$60,000           |                |
| 3. Prepare annual population management plan.                                                                                  |                                         | Feb.       | Feb.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$12,000           | \$12,000         | \$12,000         | \$12,000         | \$12,000         | \$60,000           | \$12,000         | \$12,000         | \$12,000         | \$12,000         | \$12,000         | \$60,000           |                |
| 4. Conduct predator control measures.                                                                                          |                                         | Dec.       | Apr.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$18,000           | \$18,000         | \$18,000         | \$18,000         | \$18,000         | \$90,000           | \$18,000         | \$18,000         | \$18,000         | \$18,000         | \$18,000         | \$90,000           |                |
| <b>Totals =</b>                                                                                                                |                                         |            |           | <b>0</b>          | <b>0</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>   | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$46,500</b>    | <b>\$46,500</b>  | <b>\$46,500</b>  | <b>\$46,500</b>  | <b>\$46,500</b>  | <b>\$232,500</b>   | <b>\$46,500</b>  | <b>\$46,500</b>  | <b>\$46,500</b>  | <b>\$46,500</b>  | <b>\$46,500</b>  | <b>\$232,500</b>   | STEP           |
| <b>Rare Species Goal No. 6 - Implement habitat enhancement for rare beach species.</b>                                         | CFMO-EMB, Facilities, Contractor, ENSP, | 7/1/2025   | 3/1/2029  |                   |            |          |          |          |            |                              |            |            |            |            |            |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 1. Develop dune vegetation and grading habitat enhancement plan and attain permits.                                            |                                         | 7/1/2025   | 12/1/2029 | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$4,500            | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           |                |
| 2. Implement habitat enhancement measures.                                                                                     |                                         | 12/2/2025  | 3/31/2029 | 0                 | 30         | 0        | 0        | 0        | 30         |                              |            |            |            |            |            | \$4,500            | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           |                |
| 3. Conduct vegetation density and topography monitoring.                                                                       |                                         | 12/1/2025  | 3/1/2029  | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$21,500           | \$21,500         | \$21,500         | \$21,500         | \$21,500         | \$107,500          | \$21,500         | \$21,500         | \$21,500         | \$21,500         | \$21,500         | \$107,500          |                |
| 4. Work with USFWS and USDA to implement a plant propagation program.                                                          |                                         | Apr.       | Sep.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$4,500            | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           |                |
| 5. Maintain American beachgrass vegetation cover goals in NPA.                                                                 |                                         | Apr.       | Sep.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$6,000            | \$6,000          | \$6,000          | \$6,000          | \$6,000          | \$30,000           | \$6,000          | \$6,000          | \$6,000          | \$6,000          | \$6,000          | \$30,000           |                |
| <b>Totals =</b>                                                                                                                |                                         |            |           | <b>0</b>          | <b>30</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>30</b>  | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$41,000</b>    | <b>\$41,000</b>  | <b>\$41,000</b>  | <b>\$41,000</b>  | <b>\$41,000</b>  | <b>\$205,000</b>   | <b>\$41,000</b>  | <b>\$41,000</b>  | <b>\$41,000</b>  | <b>\$41,000</b>  | <b>\$41,000</b>  | <b>\$205,000</b>   | STEP           |
| <b>Rare Species Goal No. 7 - Maintain the Fluker post.</b>                                                                     | CFMO-EMB, Facilities, Contractor, ENSP, | 7/1/2025   | 3/1/2029  |                   |            |          |          |          |            |                              |            |            |            |            |            |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 1. Inspect and maintain Fluker posts annually.                                                                                 |                                         | Apr.       | Sep.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$4,500            | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$4,500          | \$22,500           |                |
| 2. Download images annually.                                                                                                   |                                         | Apr.       | Sep.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$2,500            | \$2,500          | \$2,500          | \$2,500          | \$2,500          | \$12,500           | \$2,500          | \$2,500          | \$2,500          | \$2,500          | \$2,500          | \$12,500           |                |
| 3. Encourage participation in the Fluker Post Research Project, Bumble Bee Watch program, and Avian Knowledge Network program. |                                         | Apr.       | Sep.      | 0                 | 0          | 0        | 0        | 0        | 0          |                              |            |            |            |            |            | \$2,500            | \$2,500          | \$2,500          | \$2,500          | \$2,500          | \$12,500           | \$2,500          | \$2,500          | \$2,500          | \$2,500          | \$2,500          | \$12,500           |                |
| <b>Totals =</b>                                                                                                                |                                         |            |           | <b>0</b>          | <b>0</b>   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>   | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$9,500</b>     | <b>\$9,500</b>   | <b>\$9,500</b>   | <b>\$9,500</b>   | <b>\$9,500</b>   | <b>\$47,500</b>    | <b>\$9,500</b>   | <b>\$9,500</b>   | <b>\$9,500</b>   | <b>\$9,500</b>   | <b>\$9,500</b>   | <b>\$47,500</b>    |                |
| <b>Rare Species Totals =</b>                                                                                                   |                                         |            |           | <b>128</b>        | <b>134</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>614</b> | <b>\$0</b>                   | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$0</b> | <b>\$248,400</b>   | <b>\$248,400</b> | <b>\$248,400</b> | <b>\$248,400</b> | <b>\$248,400</b> | <b>\$1,242,000</b> | <b>\$248,400</b> | <b>\$248,400</b> | <b>\$248,400</b> | <b>\$248,400</b> | <b>\$248,400</b> | <b>\$1,242,000</b> | STEP           |
| <b>Outdoor Recreation</b>                                                                                                      |                                         |            |           |                   |            |          |          |          |            |                              |            |            |            |            |            |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |

**NEW JERSEY ARMY NATIONAL GUARD  
SEA GIRT NATIONAL GUARD JOINT TRAINING CENTER INTEGRATED NATURAL  
RESOURCES MANAGEMENT PLAN IMPLEMENTATION SUMMARY**

| Program and Goal                                                                                      | Labor      | Start Date | End Date | DMAVA Labor Hours |            |            |            |            |              | Equipment and Supply Funding |                 |                |                |                |                 | Contractor Funding |                  |                  |                  |                  |                    | Total Funding    |                  |                  |                  |                  |                    | Funding Source |
|-------------------------------------------------------------------------------------------------------|------------|------------|----------|-------------------|------------|------------|------------|------------|--------------|------------------------------|-----------------|----------------|----------------|----------------|-----------------|--------------------|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|--------------------|----------------|
|                                                                                                       |            |            |          | CY25              | CY26       | CY27       | CY28       | CY29       | 5-yr         | CY25                         | CY26            | CY27           | CY28           | CY29           | 5-yr            | CY25               | CY26             | CY27             | CY28             | CY29             | 5-yr               | CY25             | CY26             | CY27             | CY28             | CY29             | 5-yr               |                |
| <b>Outdoor Recreation Goal No. 1 - Implement beach access, fishing area, and campground programs.</b> | Facilities | Annual     | Annual   |                   |            |            |            |            |              |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 1.Administer beach access program.                                                                    |            | Jun.       | Sept.    | 120               | 120        | 120        | 120        | 120        | 600          |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 2. Designated fishing area.                                                                           |            | Jun.       | Oct.     | 40                | 40         | 40         | 40         | 40         | 200          |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 3. Campground use.                                                                                    |            | Jun.       | Oct.     | 120               | 120        | 120        | 120        | 120        | 600          |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 4. Update camp flyer and fishing brochure.                                                            |            | 3/1/2025   | 4/1/2029 | 0                 | 16         | 0          | 0          | 0          | 16           |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 5. Expand onsite birding opportunities.                                                               |            | Apr.       | Sep.     | 0                 | 0          | 0          | 0          | 0          | 0            |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 6. Maintain the clamshell path, wooden boardwalk, and interpretive signage.                           |            | Apr.       | Sep.     | 0                 | 0          | 0          | 0          | 0          | 0            |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| 7. Update recreational memorandums.                                                                   |            | Apr.       | Sep.     | 0                 | 0          | 0          | 0          | 0          | 0            |                              |                 |                |                |                |                 |                    |                  |                  |                  |                  |                    |                  |                  |                  |                  |                  |                    |                |
| <b>Totals =</b>                                                                                       |            |            |          | <b>280</b>        | <b>296</b> | <b>280</b> | <b>280</b> | <b>280</b> | <b>1,416</b> | <b>\$0</b>                   | <b>\$1000</b>   | <b>\$0</b>     | <b>\$0</b>     | <b>\$0</b>     | <b>\$1000</b>   | <b>\$0</b>         | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>         | <b>\$0</b>       | <b>\$1000</b>    | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$1000</b>      | <b>User</b>    |
| <b>Outdoor Recreation Totals=</b>                                                                     |            |            |          | <b>280</b>        | <b>296</b> | <b>280</b> | <b>280</b> | <b>280</b> | <b>1,416</b> | <b>\$0</b>                   | <b>\$1000</b>   | <b>\$0</b>     | <b>\$0</b>     | <b>\$0</b>     | <b>\$1000</b>   | <b>\$0</b>         | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>         | <b>\$0</b>       | <b>\$1000</b>    | <b>\$0</b>       | <b>\$0</b>       | <b>\$0</b>       | <b>\$1000</b>      |                |
| <b>INRMP Totals =</b>                                                                                 |            |            |          | <b>902</b>        | <b>944</b> | <b>714</b> | <b>714</b> | <b>714</b> | <b>4,340</b> | <b>\$6,000</b>               | <b>\$16,000</b> | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$7,000</b> | <b>\$33,200</b> | <b>\$551,400</b>   | <b>\$452,400</b> | <b>\$452,400</b> | <b>\$452,400</b> | <b>\$497,400</b> | <b>\$1,043,242</b> | <b>\$547,400</b> | <b>\$479,400</b> | <b>\$478,400</b> | <b>\$478,400</b> | <b>\$547,400</b> | <b>\$2,527,000</b> |                |

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**APPENDIX G - RECORD OF  
ENVIRONMENTAL  
CONSIDERATION**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------|
| Enviro Tracking #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>ARNG ENVIRONMENTAL CHECKLIST</b> | State ARNG                                                      |
| Enter information in the yellow shaded areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                                                                 |
| <b>PART A - PROJECT INFORMATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |                                                                 |
| 1. PROJECT NAME:<br>Update to the Sea Girt National Guard Training Center Integrated Natural Resources Management Plan (2025-2029)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                                                 |
| 2. PROJECT NUMBER: (MILCON if applicable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3. DATE PREPARED:<br>1-May-24       |                                                                 |
| 4. DESCRIPTION AND LOCATION OF THE PROJECT/PROPOSED ACTION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |                                                                 |
| a. Location (Include a detailed map, if applicable):<br>Sea Girt National Guard Training Center, 100 Camp Dr, Sea Girt, NJ 08750                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                                                 |
| b. Description:<br>The updated Integrated Natural Resources Management Plan (INRMP) incorporates new survey data and revisions to the existing 2018-2022 INRMP for Sea Girt NGTC. The plan outlines continuing and proposed projects and management goals to provide for natural resources management including natural vegetation communities, wetlands, and rare, threatened and endangered Species (RTE) on the Sea Girt NGTC and takes changing site conditions and variables such as impacts of climate change into account. The INRMP includes all current RTE listed species and relevant Section 7 information. |                                     |                                                                 |
| c. The proposed action will involve (check all that apply):<br><input type="checkbox"/> Training activities/areas <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Natural resource management<br><input type="checkbox"/> Maintenance/repair/rehabilitation <input type="checkbox"/> Real estate action <input type="checkbox"/> Environmental plans/surveys<br><input type="checkbox"/> Innovative readiness training project<br><input type="checkbox"/> Other (Explain):                                                                                                                   |                                     |                                                                 |
| d. Project size (acres):<br>(if applicable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 171                                 | Acres of new surface disturbance (proposed):<br>(if applicable) |
| 5. START DATE of PROPOSED ACTION (dd-mmm-yy): 1-Jan-25      Note: This must be a future date.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                                                                 |
| 6. PROGRAMMED FISCAL YEAR (if applicable):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |                                                                 |
| 7. END DATE (if applicable): 31-Dec-29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                                                                 |
| <b>PART B - DECISION ANALYSIS GUIDE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                     |                                                                 |
| To use a categorical exclusion, the project must satisfy the following three screening criteria: no segmentation, no exceptional circumstances and a qualifying categorical exclusion that covers the project. The following decision tree will guide the application and documentation of these three screening criteria. The criteria were extracted from 32 CFR Section 651.29 and represent the most common screening conditions experienced in the ARNG. NOTE: Each question in Part B must have an applicable block checked for concurrence with REC.                                                             |                                     |                                                                 |
| 1. Is this action segmented (the scope of the action must include the consideration of connected, cumulative, and similar actions)?<br><input type="checkbox"/> YES (go to #30) <input checked="" type="checkbox"/> NO (go to #2)                                                                                                                                                                                                                                                                                                                                                                                       |                                     |                                                                 |
| 2. Is there reasonable likelihood of significant environmental effects (direct, indirect, and cumulative)? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.<br><input type="checkbox"/> YES (go to #30) <input checked="" type="checkbox"/> NO (go to #3)                                                                                                                                                                                                                                                                                        |                                     |                                                                 |
| 3. Is there a reasonable likelihood of significant effects on public health, safety or the environment? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.<br><input type="checkbox"/> YES (go to #30) <input checked="" type="checkbox"/> NO (go to #4)                                                                                                                                                                                                                                                                                           |                                     |                                                                 |
| 4. Is there an imposition of uncertain or unique environmental risks? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.<br><input type="checkbox"/> YES (go to #30) <input checked="" type="checkbox"/> NO (go to #5)                                                                                                                                                                                                                                                                                                                             |                                     |                                                                 |
| 5. Is the project of greater scope or size than is normal for the category of action? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.<br><input type="checkbox"/> YES (go to #30) <input checked="" type="checkbox"/> NO (go to #6)                                                                                                                                                                                                                                                                                                             |                                     |                                                                 |
| 6. Does the project introduce or employ unproven technology? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.<br><input type="checkbox"/> YES (go to #30) <input checked="" type="checkbox"/> NO (go to #7)                                                                                                                                                                                                                                                                                                                                      |                                     |                                                                 |

**PART B - DECISION ANALYSIS (continued)**

7. Will there be reportable releases of hazardous or toxic substances as specified in 40 CFR Part 302? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.  
 YES (go to #30)  NO (go to #8)

8. If proposed action is in a non-attainment or maintenance area, will air emissions exceed de minimus levels or otherwise require a formal Clean Air Act (CAA) conformity determination? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.  
 YES (go to #30)  NO (go to #9)  N/A (go to #9)

9. Will the project have effects on the quality of the environment that are likely to be highly controversial? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.  
 YES (go to #30)  NO (go to #10)

10. Will the project establish a precedent (or make decisions in principle) for future or subsequent actions that are reasonably likely to have future significant effects? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.  
 YES (go to #30)  NO (go to #11)

11. Has federal funding been secured for the Innovative Readiness Training (IRT) project?  
 N/A (go to #13)  YES (go to #13)  NO (go to #12)

12. NOTE: IRT projects not currently funded can secure approved NEPA documentation. However, once funding is secured State ARNG is required to coordinate with ARNG-ILE-T to complete natural and cultural surveys via proponent funding.  
 CONFIRMED (go to #27)

13. Do you have a species list from the U.S. Fish and Wildlife Service that is less than 90 days old?  
 YES (go to #14) **Date of List: 10/31/24**  NO (update species list return to #13)

14. In reviewing the species list, what determination was made by the State ARNG?

- No species present (go to #16)
- No affect (go to #16)
- May affect but not likely to adversely affect (go to #16) **Date of USFWS concurrence: 5/20/24**
- May affect likely to adversely affect (go to #15)

15. Does an existing Biological Opinion cover the action?  
 YES (go to #16) **Date of BO:**  NO (go to #30)

16. Have the Endangered Species Act, Section 7 requirements completed?  
 YES (go to #17) **Date of Documentation: 5/20/24**  NO (complete documentation, return to #16)

17. Does the project involve an undertaking to a building or structure that is 50 years of age or older?  
 YES (go to #18)  NO (go to #20)

18. Has the building or structure been surveyed for the National Register of Historic Places?  
 YES (go to #19)  NO (complete inventory, return to #18)

19. Is the building or structure eligible for or listed on the National Register of Historic Places?  
 YES (go to #20)  NO (go to #20)

20. Does the action involve ground disturbing activities?  
 YES (go to #21)  NO (go to #22)

21. Has an archaeological inventory or research been completed to determine if there are any archeological resources present?  
 YES (go to #22)  NO (complete inventory or conduct research, return to #21)

22. In reviewing the undertaking, under the National Historic Preservation Act (NHPA) (for both above and below ground resources), what determination was made by the State ARNG?

- No 106 undertaking; no additional consultation required under NHPA (go to question #27)
- No properties affected (go to #24) **Date of SHPO Concurrence:**
- No adverse effect (go to #24) **Date of SHPO Concurrence: 1/8/24**
- Adverse effect (go to #23)

23. Has the State ARNG addressed the adverse effect?  
 YES (place date of MOA or existing PA and explanation of mitigation in box below, go to #24)  NO (go to #30)

23a.

**PART B - DECISION ANALYSIS (continued)**

24. Per DoDI 4710.02 did the state ARNG determine that tribal consultation was necessary for this project?

- YES (go to #25)  
 NO (Provide reason in this block 24a, go to #27)

24a. Consultation occurred during the initial Environmental Assessment for implementation of the INRMP; this is an update to the existing INRMP and does not warrant tribal consultation.

25. Did the Tribes express an interest or respond with concerns about the project?

- YES (go to #26)       NO (go to #27)

Date of Documentation:

26. Has the State ARNG addressed the Tribal concerns?

- YES (place date of MOU or explanation of how State ARNG addressed tribal concerns in box below, go to #27)  
 NO (address concerns, return to #26)

Complete only if additional documentation is required in question #26

26a.

27. Does the project involve an unresolved effect on areas having special designation or recognition such as those listed below? For any yes responses go to #30 otherwise go to #28. If any No response is a result of negotiated and/or previously resolved effects please describe resolution in box 27a below.

| TYPE                             | Unresolved Effects? | TYPE                         | Unresolved Effects? |
|----------------------------------|---------------------|------------------------------|---------------------|
| a. Prime/Unique Farmland         | <b>No</b>           | e. Wild/Scenic River         | <b>No</b>           |
| b. Wilderness Area/National Park | <b>No</b>           | f. Coastal Zones             | <b>No</b>           |
| c. Sole-Source Aquifer           | <b>No</b>           | g. 100-year Floodplains      | <b>No</b>           |
| d. Wetlands                      | <b>No</b>           | h. National Wildlife Refuges | <b>No</b>           |

27a.

28. Is this project addressed in a separate EA or EIS review?

- YES (complete table below; go to Part C, Determination)       NO (go to #29)

|                            |                                                                                                                                                  |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Document Title:            | <b>Environmental Assessment for Implementation of an Integrated Natural Resources Management Plan at Sea Girt National Guard Training Center</b> |
| Lead Agency:               | <b>New Jersey Army National Guard (NJARNG)</b>                                                                                                   |
| Date of Decision Document: | 6-Jun-06                                                                                                                                         |

29. Does the project meet at least one of the categorical exclusions listed in 32 CFR 651 App B?

- YES (complete table below; go to Part C, Determination)       NO (go to #30)

|                             |                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| List primary CAT EX code    | D-4: Studies, data collections, monitoring, and information gathering.                                                                                                                                                                                                                                                                              |
| Describe why CAT EX applies | The project provides for updates to the existing INRMP with inclusion of data collected over the term of the previous document, and supports longterm, ongoing natural resource and threatened and endangered species management programs that regularly occur with coordination with federal, state, and local environmental regulatory officials. |

30. At this time your project has not met all the qualifications for using a categorical exclusion under 32 CFR 651. Unless the scope of the project is changed, it will require an Environmental Assessment or possibly an Environmental Impact Statement. If you feel this is in error, please call your NEPA Regional Manager to discuss. If needed, go to Part C Determination.

Additional Information (if needed): As part of the National Environmental Policy Act review process, the New Jersey Army National Guard (NJARNG) has reviewed the proposed project's effect on federally listed species and/or critical habitat that may occur within the project area. As part of this review, the NJARNG carefully reviewed the USFWS's Information for Planning and Consultation (iPaC) website to identify and critical habitat and/or listed species that may occur in the project area. A copy of the iPaC report is attached and presents any listed species and/or critical habitat that may occur in the project area.

After review of the iPaC report and the scope of the proposed project, the NJARNG has concluded that the proposed project will have no effect on any federally listed species and/or critical habitats. In addition, all construction materials and/or construction worker vehicles and equipment will be confined to existing parking areas. Lastly, no on site habitat will be cleared or otherwise impacted under this project. If any of the proposed project condition change, the proposed project's effect on federally listed species and/or critical habitat will need to be reassessed and may require obtaining a new iPaC report.

**PART C - DETERMINATION**

**On the basis of this initial evaluation, the following is appropriate:**

- IAW 32 CFR 651 Appendix B, the proposed action qualifies for a Categorical Exclusion (CX) that does not require a Record of Environmental Consideration.
- A Record of Environmental Consideration (REC).
- An Environmental Assessment (EA).
- A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS).

\_\_\_\_\_

Signature of Proponent (Requester)

\_\_\_\_\_

Environmental Program Manager

\_\_\_\_\_

Printed Name of Proponent (Requester)

Abigail Zorn

Printed Name of Env. Program Manager

\_\_\_\_\_

Date Signed

\_\_\_\_\_

Date Signed

**Other concurrence (as needed):**

\_\_\_\_\_

Signature

\_\_\_\_\_

Signature

\_\_\_\_\_

Printed Name

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Printed Name

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Date Signed

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Date Signed

| Enviro Tracking #:                                                                                                                                                                                                                                                                                                                                                                             | ARNG Record of Environmental Consideration    |                                      | State ARNG                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------|---------------------------------------------|
| 0                                                                                                                                                                                                                                                                                                                                                                                              | Enter information in the yellow shaded areas. |                                      | 0                                           |
| 1. PROJECT NAME:                                                                                                                                                                                                                                                                                                                                                                               |                                               |                                      |                                             |
| <b>Update to the Sea Girt National Guard Training Center Integrated Natural Resources Management Plan (2025-2029)</b>                                                                                                                                                                                                                                                                          |                                               |                                      |                                             |
| 2. PROJECT NUMBER: (MILCON if applicable)                                                                                                                                                                                                                                                                                                                                                      |                                               | 3. DATE PREPARED:                    |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                |                                               | 1-May-24                             |                                             |
| 4. START DATE of PROPOSED ACTION (dd-mmm-yy):                                                                                                                                                                                                                                                                                                                                                  |                                               | 1-Jan-24                             | Note: This must be a future date            |
| 5. PROGRAMMED FISCAL YEAR:                                                                                                                                                                                                                                                                                                                                                                     |                                               |                                      |                                             |
| 6. END DATE (if applicable):                                                                                                                                                                                                                                                                                                                                                                   |                                               | 31-Dec-29                            |                                             |
| 7. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:                                                                                                                                                                                                                                                                                                                                            |                                               |                                      |                                             |
| a. Location (Include a detailed map, if applicable):                                                                                                                                                                                                                                                                                                                                           |                                               |                                      |                                             |
| Sea Girt NGTC (100 Camp Drive Sea Girt NJ) is located along the Atlantic coastline of New Jersey at the south end of the Borough of Sea Girt in southern Monmouth County. The installation encompasses 171 acres. The installation is bounded by Stockton Lake (a tributary to Manasquan River) to the south and the Atlantic Ocean to the east.                                               |                                               |                                      |                                             |
| b. Description:                                                                                                                                                                                                                                                                                                                                                                                |                                               |                                      |                                             |
| The updated Integrated Natural Resources Management Plan (INRMP) incorporates new survey data and revisions to the existing 2018-2022 INRMP for Sea Girt NGTC. The plan outlines continuing and proposed projects and management goals to provide for natural resources management on the Sea Girt NGTC. The INRMP includes all current RTE listed species and relevant Section 7 information. |                                               |                                      |                                             |
| 8. CHOOSE <b>ONE</b> OF THE FOLLOWING:                                                                                                                                                                                                                                                                                                                                                         |                                               |                                      |                                             |
| <input checked="" type="checkbox"/> An existing environmental assessment* adequately covers the scope of this project. Attach FNSI if EA was completed by another federal agency (non-ARNG).                                                                                                                                                                                                   |                                               |                                      |                                             |
| EA Date (dd-mmm-yy):                                                                                                                                                                                                                                                                                                                                                                           |                                               | 6-Jun-06                             | Lead Agency: New Jersey Army National Guard |
| <input type="checkbox"/> An existing environmental impact statement* adequately covers the scope of this project.                                                                                                                                                                                                                                                                              |                                               |                                      |                                             |
| EIS Date (dd-mmm-yy):                                                                                                                                                                                                                                                                                                                                                                          |                                               | Lead Agency:                         |                                             |
| <input type="checkbox"/> After reviewing the screening criteria and completing the ARNG environmental checklist, this project qualifies for a <b>Categorical Exclusion</b> (select below).                                                                                                                                                                                                     |                                               |                                      |                                             |
| Categorical Exclusion Code:                                                                                                                                                                                                                                                                                                                                                                    |                                               |                                      |                                             |
| See 32 CFR 651 App. B                                                                                                                                                                                                                                                                                                                                                                          |                                               |                                      |                                             |
| Categorical Exclusion Code:                                                                                                                                                                                                                                                                                                                                                                    |                                               |                                      |                                             |
| See 32 CFR 651 App. B                                                                                                                                                                                                                                                                                                                                                                          |                                               |                                      |                                             |
| Categorical Exclusion Code:                                                                                                                                                                                                                                                                                                                                                                    |                                               |                                      |                                             |
| See 32 CFR 651 App. B                                                                                                                                                                                                                                                                                                                                                                          |                                               |                                      |                                             |
| <input type="checkbox"/> This project is exempt from NEPA requirements under the provisions of:                                                                                                                                                                                                                                                                                                |                                               |                                      |                                             |
| Cite superseding law:                                                                                                                                                                                                                                                                                                                                                                          |                                               |                                      |                                             |
| *Copies of the referenced EA or EIS can be found in the ARNG Environmental Office within each state.                                                                                                                                                                                                                                                                                           |                                               |                                      |                                             |
| 9. REMARKS:                                                                                                                                                                                                                                                                                                                                                                                    |                                               |                                      |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                |                                               |                                      |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                |                                               |                                      |                                             |
| Signature of Proponent (Requester)                                                                                                                                                                                                                                                                                                                                                             |                                               | Environmental Program Manager        |                                             |
| Brian Holderness                                                                                                                                                                                                                                                                                                                                                                               |                                               | Abigail Zorn                         |                                             |
| Printed Name of Proponent (Requester)                                                                                                                                                                                                                                                                                                                                                          |                                               | Printed Name of Env. Program Manager |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                |                                               |                                      |                                             |
| Date Signed                                                                                                                                                                                                                                                                                                                                                                                    |                                               | Date Signed                          |                                             |
| Proponent Information:                                                                                                                                                                                                                                                                                                                                                                         |                                               |                                      |                                             |
| 10. Proponent: New Jersey Department of Military and Veteran's Affairs                                                                                                                                                                                                                                                                                                                         |                                               |                                      |                                             |
| 11. Address: 101 Eggerts Crossing Rd., Lawrenceville, NJ 08646                                                                                                                                                                                                                                                                                                                                 |                                               |                                      |                                             |
| 12. POC: Brian Holderness - CFMO Federal Deputy                                                                                                                                                                                                                                                                                                                                                |                                               |                                      |                                             |
| 13. Comm. Voice: (609) 530-6733                                                                                                                                                                                                                                                                                                                                                                |                                               |                                      |                                             |
| 14. Proponent POC e-mail: <a href="mailto:Brian.Holderness@dmava.nj.gov">Brian.Holderness@dmava.nj.gov</a>                                                                                                                                                                                                                                                                                     |                                               |                                      |                                             |



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New Jersey Ecological Services Field Office  
4 E. Jimmie Leeds Road, Suite 4  
Galloway, NJ 08205  
Phone: (609) 646-9310

In Reply Refer To:

10/31/2024 13:43:19 UTC

Project Code: 2025-0013583

Project Name: DRGNJ 4848 Sea Girt National Guard Training Center

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the footprint of the project. The action area also includes all areas that may be indirectly affected through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change, chemical exposure,

reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably foreseeable future that would not occur without ("but for") the project that is currently being proposed.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to be addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**New Jersey Ecological Services Field Office**

4 E. Jimmie Leeds Road, Suite 4

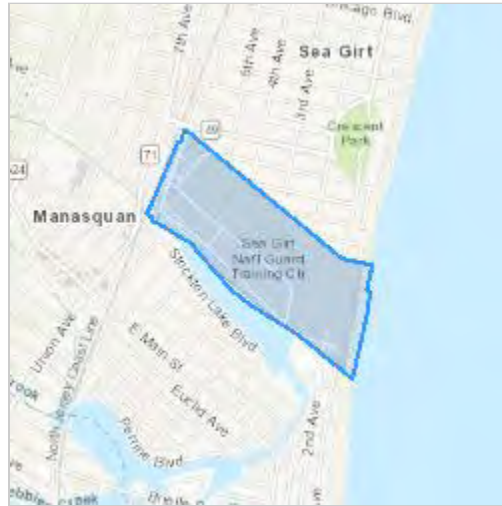
Galloway, NJ 08205

(609) 646-9310

## PROJECT SUMMARY

Project Code: 2025-0013583  
Project Name: DRGNJ 4848 Sea Girt National Guard Training Center  
Project Type: Management Plans Land Management/Restoration  
Project Description: management plan  
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.123728299999996,-74.03704130110124,14z>



Counties: Monmouth County, New Jersey

## ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

**MAMMALS**

| NAME                                                                                                                                                                                                                             | STATUS     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Northern Long-eared Bat <i>Myotis septentrionalis</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a> | Endangered |

**BIRDS**

| NAME                                                                                                                                                                                                                                                                                                                                                                                                          | STATUS     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Piping Plover <i>Charadrius melodus</i><br>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a> | Threatened |
| Rufa Red Knot <i>Calidris canutus rufa</i><br>There is <b>proposed</b> critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>                                                                                                                                  | Threatened |

**INSECTS**

| NAME                                                                                                                                                                                                                 | STATUS    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Monarch Butterfly <i>Danaus plexippus</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a> | Candidate |

**FLOWERING PLANTS**

| NAME                                                                                                                                                                                                                   | STATUS     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Seabeach Amaranth <i>Amaranthus pumilus</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/8549">https://ecos.fws.gov/ecp/species/8549</a> | Threatened |

**CRITICAL HABITATS**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

# USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup> and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

- 
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
  2. The [Migratory Birds Treaty Act](#) of 1918.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

| NAME                                                                                                                                                                                                                                                                                                                                                           | BREEDING SEASON         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Bald Eagle <i>Haliaeetus leucocephalus</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Oct 15 to Aug 31 |

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper

Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

### Breeding Season (■)

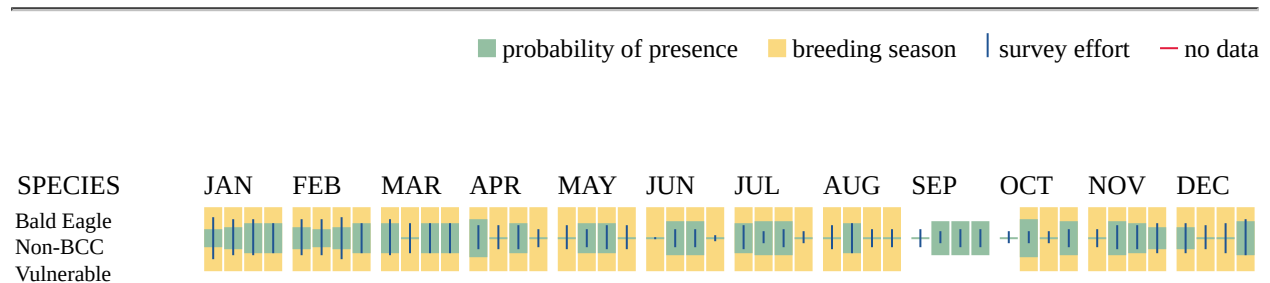
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

### Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

### No Data (—)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

| NAME                                                                                                                                                                                                                                                                                                                                                                                | BREEDING SEASON         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p>American Oystercatcher <i>Haematopus palliatus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/8935">https://ecos.fws.gov/ecp/species/8935</a></p>                                                                                                              | Breeds Apr 15 to Aug 31 |
| <p>Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>       | Breeds Oct 15 to Aug 31 |
| <p>Black Scoter <i>Melanitta nigra</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10413">https://ecos.fws.gov/ecp/species/10413</a></p>            | Breeds elsewhere        |
| <p>Black Skimmer <i>Rynchops niger</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/5234">https://ecos.fws.gov/ecp/species/5234</a></p>                                                                                                                             | Breeds May 20 to Sep 15 |
| <p>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a></p>                                                                                                            | Breeds May 15 to Oct 10 |
| <p>Black-legged Kittiwake <i>Rissa tridactyla</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10459">https://ecos.fws.gov/ecp/species/10459</a></p> | Breeds elsewhere        |

| NAME                                                                                                                                                                                                                                                                                                                                                                                        | BREEDING SEASON         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p><b>Blue-winged Warbler</b> <i>Vermivora cyanoptera</i><br/>           This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br/> <a href="https://ecos.fws.gov/ecp/species/9509">https://ecos.fws.gov/ecp/species/9509</a></p>                                                                                         | Breeds May 1 to Jun 30  |
| <p><b>Bobolink</b> <i>Dolichonyx oryzivorus</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9454">https://ecos.fws.gov/ecp/species/9454</a></p>                                                                                                                      | Breeds May 20 to Jul 31 |
| <p><b>Brown Pelican</b> <i>Pelecanus occidentalis</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/6034">https://ecos.fws.gov/ecp/species/6034</a></p> | Breeds Jan 15 to Sep 30 |
| <p><b>Canada Warbler</b> <i>Cardellina canadensis</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9643">https://ecos.fws.gov/ecp/species/9643</a></p>                                                                                                                | Breeds May 20 to Aug 10 |
| <p><b>Chimney Swift</b> <i>Chaetura pelagica</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9406">https://ecos.fws.gov/ecp/species/9406</a></p>                                                                                                                     | Breeds Mar 15 to Aug 25 |
| <p><b>Common Eider</b> <i>Somateria mollissima</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/10457">https://ecos.fws.gov/ecp/species/10457</a></p>  | Breeds Jun 1 to Sep 30  |
| <p><b>Common Loon</b> <i>gavia immer</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/4464">https://ecos.fws.gov/ecp/species/4464</a></p>              | Breeds Apr 15 to Oct 31 |
| <p><b>Common Murre</b> <i>Uria aalge</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/10453">https://ecos.fws.gov/ecp/species/10453</a></p>            | Breeds Apr 15 to Aug 15 |
| <p><b>Cory's Shearwater</b> <i>Calonectris diomedea</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/10452">https://ecos.fws.gov/ecp/species/10452</a></p>                                                                                                            | Breeds elsewhere        |

| NAME                                                                                                                                                                                                                                                                                                                                                                                           | BREEDING SEASON         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p>Double-crested Cormorant <i>phalacrocorax auritus</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/3478">https://ecos.fws.gov/ecp/species/3478</a></p> | Breeds Apr 20 to Aug 31 |
| <p>Dovekie <i>Alle alle</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/6041">https://ecos.fws.gov/ecp/species/6041</a></p>                              | Breeds elsewhere        |
| <p>Grasshopper Sparrow <i>Ammodramus savannarum perpallidus</i><br/>           This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br/> <a href="https://ecos.fws.gov/ecp/species/8329">https://ecos.fws.gov/ecp/species/8329</a></p>                                                                                      | Breeds Jun 1 to Aug 20  |
| <p>Great Shearwater <i>Puffinus gravis</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/9634">https://ecos.fws.gov/ecp/species/9634</a></p>               | Breeds elsewhere        |
| <p>Gull-billed Tern <i>Gelochelidon nilotica</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9501">https://ecos.fws.gov/ecp/species/9501</a></p>                                                                                                                        | Breeds May 1 to Jul 31  |
| <p>Hudsonian Godwit <i>Limosa haemastica</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9482">https://ecos.fws.gov/ecp/species/9482</a></p>                                                                                                                            | Breeds elsewhere        |
| <p>Least Tern <i>Sternula antillarum antillarum</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/11919">https://ecos.fws.gov/ecp/species/11919</a></p>                                                                                                                   | Breeds Apr 25 to Sep 5  |
| <p>Lesser Yellowlegs <i>Tringa flavipes</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a></p>                                                                                                                             | Breeds elsewhere        |
| <p>Long-eared Owl <i>asio otus</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/3631">https://ecos.fws.gov/ecp/species/3631</a></p>                                                                                                                                      | Breeds Mar 1 to Jul 15  |

| NAME                                                                                                                                                                                                                                                                                                                                                                                | BREEDING SEASON         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p>Long-tailed Duck <i>Clangula hyemalis</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/7238">https://ecos.fws.gov/ecp/species/7238</a></p>        | Breeds elsewhere        |
| <p>Pectoral Sandpiper <i>Calidris melanotos</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9561">https://ecos.fws.gov/ecp/species/9561</a></p>                                                                                                                    | Breeds elsewhere        |
| <p>Prairie Warbler <i>Setophaga discolor</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9513">https://ecos.fws.gov/ecp/species/9513</a></p>                                                                                                                       | Breeds May 1 to Jul 31  |
| <p>Purple Sandpiper <i>Calidris maritima</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9574">https://ecos.fws.gov/ecp/species/9574</a></p>                                                                                                                       | Breeds elsewhere        |
| <p>Razorbill <i>Alca torda</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10461">https://ecos.fws.gov/ecp/species/10461</a></p>                    | Breeds Jun 15 to Sep 10 |
| <p>Red-breasted Merganser <i>Mergus serrator</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10693">https://ecos.fws.gov/ecp/species/10693</a></p>  | Breeds elsewhere        |
| <p>Red-necked Phalarope <i>Phalaropus lobatus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10467">https://ecos.fws.gov/ecp/species/10467</a></p> | Breeds elsewhere        |
| <p>Red-throated Loon <i>Gavia stellata</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/9589">https://ecos.fws.gov/ecp/species/9589</a></p>          | Breeds elsewhere        |
| <p>Ring-billed Gull <i>Larus delawarensis</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10468">https://ecos.fws.gov/ecp/species/10468</a></p>     | Breeds elsewhere        |

| NAME                                                                                                                                                                                                                                                                                                                                                                              | BREEDING SEASON         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p>Roseate Tern <i>Sterna dougallii</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/10661">https://ecos.fws.gov/ecp/species/10661</a></p>   | Breeds May 10 to Aug 31 |
| <p>Royal Tern <i>Thalasseus maximus</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/10471">https://ecos.fws.gov/ecp/species/10471</a></p>   | Breeds Apr 15 to Aug 31 |
| <p>Ruddy Turnstone <i>Arenaria interpres morinella</i><br/>           This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br/> <a href="https://ecos.fws.gov/ecp/species/10633">https://ecos.fws.gov/ecp/species/10633</a></p>                                                                                | Breeds elsewhere        |
| <p>Rusty Blackbird <i>Euphagus carolinus</i><br/>           This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br/> <a href="https://ecos.fws.gov/ecp/species/9478">https://ecos.fws.gov/ecp/species/9478</a></p>                                                                                            | Breeds elsewhere        |
| <p>Saltmarsh Sparrow <i>Ammospiza caudacuta</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9719">https://ecos.fws.gov/ecp/species/9719</a></p>                                                                                                            | Breeds May 15 to Sep 5  |
| <p>Scarlet Tanager <i>Piranga olivacea</i><br/>           This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br/> <a href="https://ecos.fws.gov/ecp/species/11967">https://ecos.fws.gov/ecp/species/11967</a></p>                                                                                            | Breeds May 10 to Aug 10 |
| <p>Semipalmated Sandpiper <i>Calidris pusilla</i><br/>           This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br/> <a href="https://ecos.fws.gov/ecp/species/9603">https://ecos.fws.gov/ecp/species/9603</a></p>                                                                                       | Breeds elsewhere        |
| <p>Short-billed Dowitcher <i>Limnodromus griseus</i><br/>           This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br/> <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a></p>                                                                                                       | Breeds elsewhere        |
| <p>Sooty Shearwater <i>Ardenna grisea</i><br/>           This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br/> <a href="https://ecos.fws.gov/ecp/species/10417">https://ecos.fws.gov/ecp/species/10417</a></p> | Breeds elsewhere        |

| NAME                                                                                                                                                                                                                                                                                                                                                                                  | BREEDING SEASON         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p>Surf Scoter <i>Melanitta perspicillata</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10463">https://ecos.fws.gov/ecp/species/10463</a></p>       | Breeds elsewhere        |
| <p>Thick-billed Murre <i>Uria lomvia</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10700">https://ecos.fws.gov/ecp/species/10700</a></p>            | Breeds Apr 15 to Aug 15 |
| <p>Whimbrel <i>Numenius phaeopus hudsonicus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p><a href="https://ecos.fws.gov/ecp/species/11991">https://ecos.fws.gov/ecp/species/11991</a></p>                                                                                                 | Breeds elsewhere        |
| <p>White-winged Scoter <i>Melanitta fusca</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10462">https://ecos.fws.gov/ecp/species/10462</a></p>       | Breeds elsewhere        |
| <p>Willet <i>Tringa semipalmata</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/10669">https://ecos.fws.gov/ecp/species/10669</a></p>                                                                                                                                | Breeds Apr 20 to Aug 5  |
| <p>Wilson's Storm-petrel <i>Oceanites oceanicus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p><a href="https://ecos.fws.gov/ecp/species/10416">https://ecos.fws.gov/ecp/species/10416</a></p> | Breeds elsewhere        |
| <p>Wood Thrush <i>Hylocichla mustelina</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9431">https://ecos.fws.gov/ecp/species/9431</a></p>                                                                                                                           | Breeds May 10 to Aug 31 |

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

**Breeding Season (■)**

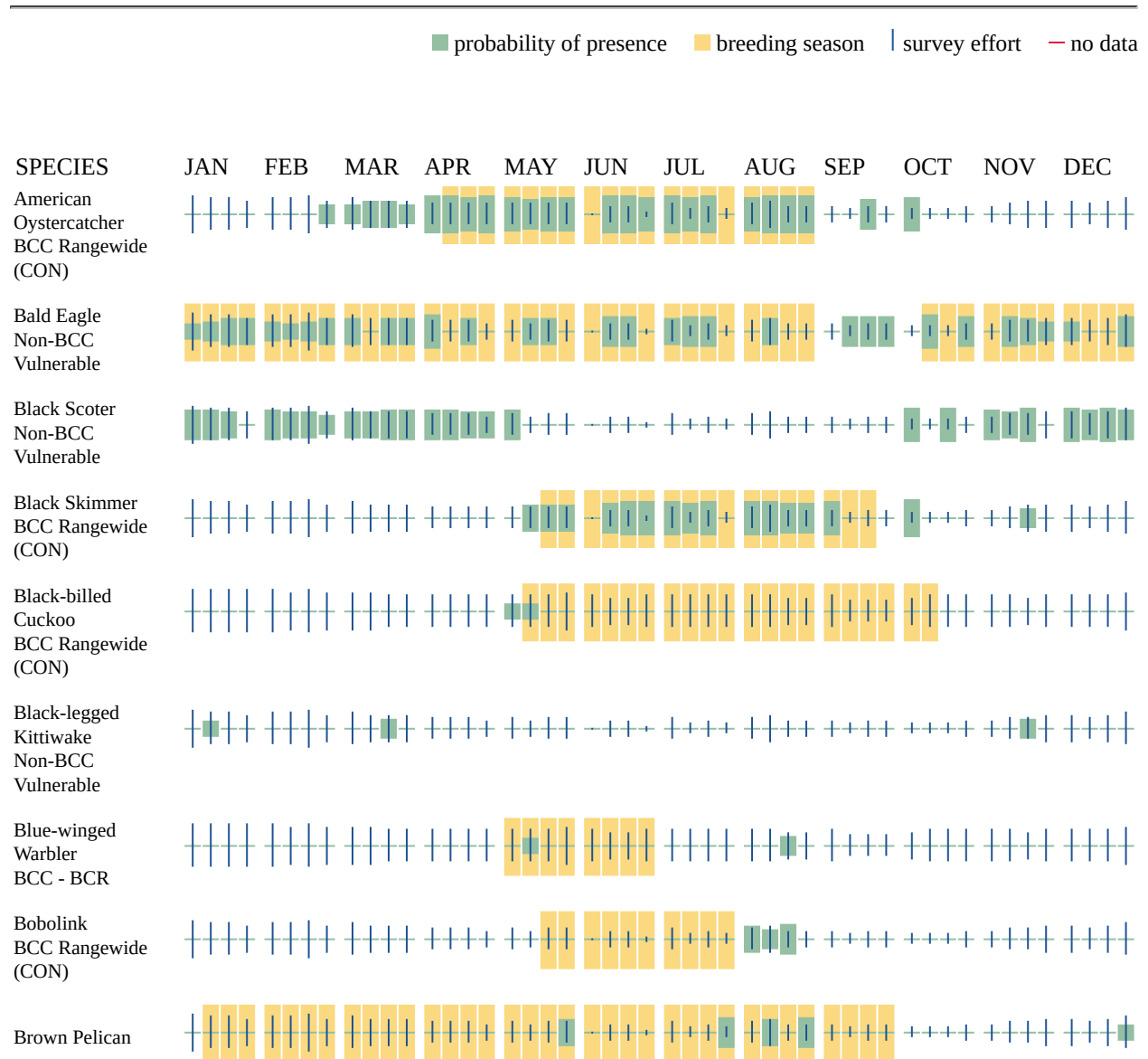
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

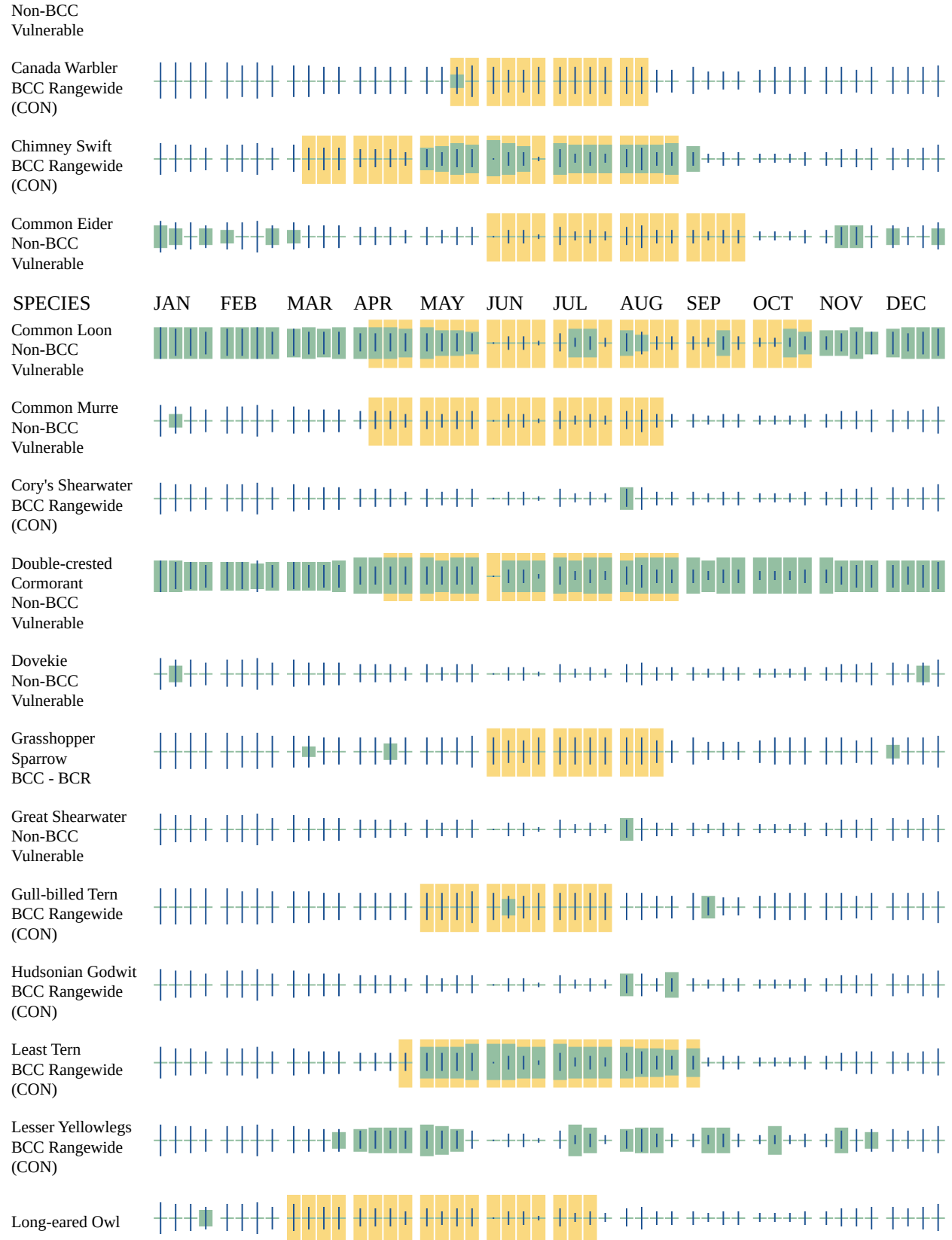
**Survey Effort (|)**

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

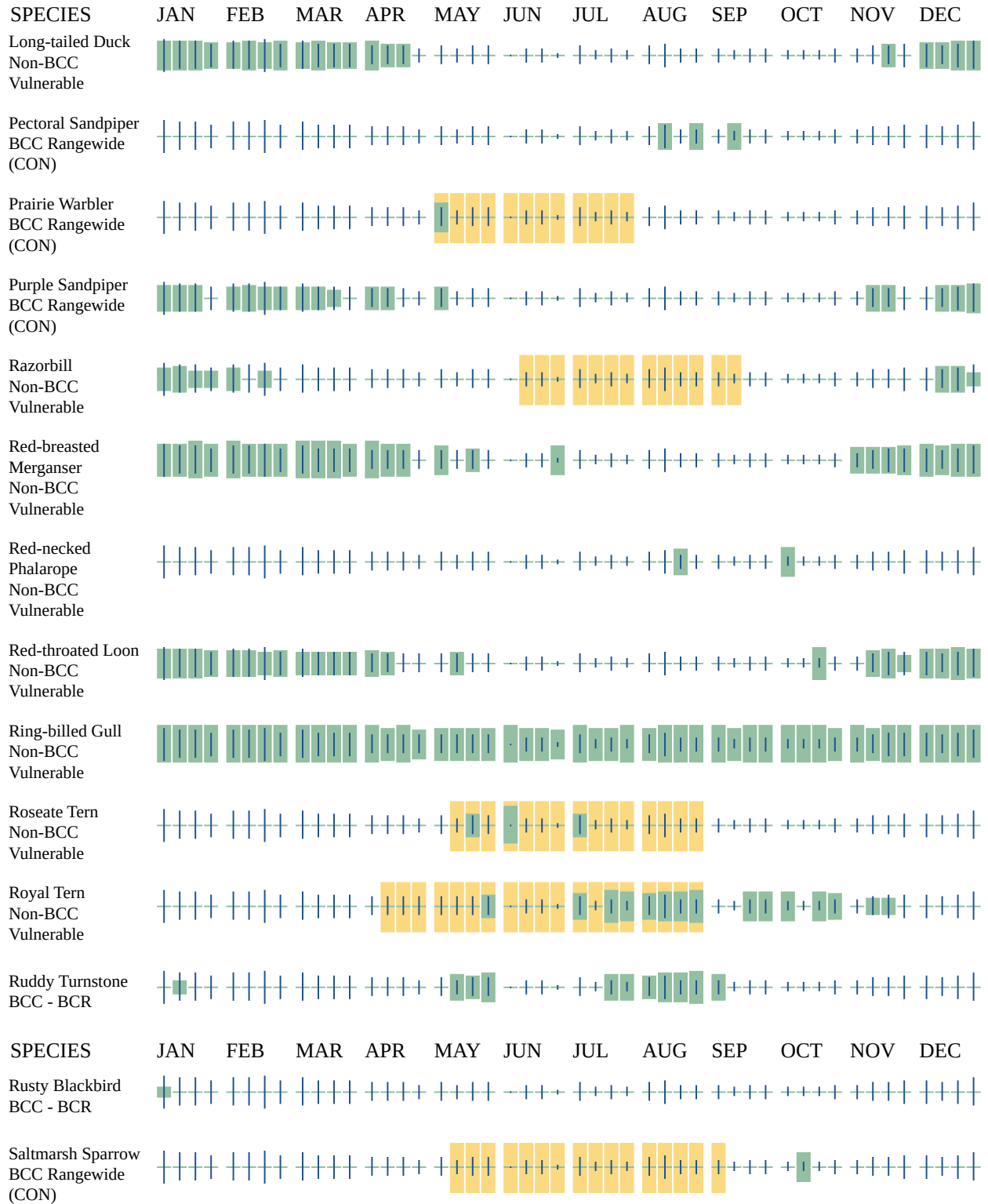
**No Data (-)**

A week is marked as having no data if there were no survey events for that week.





BCC Rangewide  
(CON)





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

# WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

## ESTUARINE AND MARINE DEEPWATER

- E1UBLx6

## FRESHWATER EMERGENT WETLAND

- PEM1C

## ESTUARINE AND MARINE WETLAND

- E2EM1Px6
- M2USN

## **IPAC USER CONTACT INFORMATION**

Agency: Davey Resource Group  
Name: John Pabish  
Address: Davey Resource Group  
Address Line 2: 4 Walter E. Foran Blvd, Suite 209  
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State: NJ  
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**APPENDIX H – INRMP BENEFITS TO FEDERAL  
TRUST SPECIES**

## **INRMP BENEFITS FOR ENDANGERED SPECIES, CRITICAL HABITAT, AND MIGRATORY BIRDS**

Section 4(a)(3)(B)(i) of the Endangered Species Act of 1973 (ESA) prohibits the Secretaries of the Departments of Interior and Commerce from designating as critical habitat any lands or other geographical areas owned or controlled by the DOD, or designated for its use, that are subject to an INRMP prepared pursuant to Section 670a of the Sikes Act (Department of Defense Manual [DODM] 4715.03). This restriction applies if either Secretary determines that a given INRMP provides a benefit to the species for which critical habitat is proposed for designation.

The USFWS uses three criteria to determine if an INRMP provides adequate special management or protection to obviate the need for critical habitat designation:

1. The INRMP provides a conservation benefit to the listed species.
2. The INRMP provides certainty that relevant agreed-on actions will be implemented.
3. The INRMP provides certainty that the conservation effort will be effective.

The federally listed species that have been observed on Sea Girt NGTC include seabeach amaranth (*Amaranthus pumilus*) and piping plover (*Charadrius melodus*), both federally threatened species.

The INRMP provides several goals (listed below) focused on providing a conservation benefit to these protected species.

- Land and Watershed Management Goal No. 1 – Protect and rehabilitate sensitive wildlife habitats that support threatened and endangered species by controlling invasive plants.
- Rare Species Goal No. 1 – Implement beach management practices and protection measures for rare beach species in accordance with the INRMP, and in cooperation with the USFWS and ENSP.
- Rare Species Goal No. 2 – Conduct annual beach-nesting bird surveys.
- Rare Species Goal No. 3 – Conduct annual seabeach amaranth and seabeach knotweed surveys and implement protection measures.
- Rare Species Goal No. 5 – Implement a predator control program for target species in coordination with ENSP, USFWS and NJDEP wildlife control staff.
- Rare Species Goal No. 6 – Implement habitat enhancement for rare beach species in cooperation with the USFWS and ENSP.

Two of these seven goals projects are focused on survey and monitoring work; four focus on direct habitat restoration and maintenance actions; and one is focused on a predator control program for target species. As implemented, these projects will provide key data, information, and habitat protection and restoration activities to maintain and potentially increase species populations and their habitats on Sea Girt NGTC (criterion 1). Appendix E includes the implementation schedule for these conservation efforts (criterion 2). Five of the above-listed projects outline periodic and annual monitoring to both assess protected species population numbers and to provide data for adaptive management of project implementation (criterion 3).

No critical habitat has been proposed or designated for Sea Girt NGTC lands, relative to any federally protected species (described above). Measures included in the INRMP (e.g., to manage and protect wetlands and to control invasive species) will indirectly benefit protected species that occur immediately surrounding

the Sea Girt NGTC, including nearby waterbodies. If future federal listed species occur on Sea Girt NGTC, the installation might be able to avoid USFWS designation of critical habitat by implementing its INRMP through the execution of appropriate projects and activities, in accordance with the specific timeframes identified in this INRMP.

Federal trust species also include migratory birds protected under the Migratory Bird Treaty Act (MBTA) of 1918. Beyond the piping plover since it is also protected by the ESA, migratory birds afforded protection under the MBTA that are occurring or potentially occurring at the NGTC include the least tern and osprey, both of which directly benefit from several NGTC management measures (listed below).

- Land and Watershed Management Goal No. 1 – Protect and rehabilitate sensitive wildlife habitats that support threatened and endangered species by controlling invasive plants.
- Rare Species Goal No. 1 – Implement beach management practices and protection measures for rare beach species in accordance with the INRMP, and in cooperation with the USFWS and ENSP.
- Rare Species Goal No. 2 – Conduct annual beach-nesting bird surveys.
- Rare Species Goal No. 4 – Maintain and monitor osprey nesting platform in cooperation with ENSP and phone company.
- Rare Species Goal No. 5 – Implement a predator control program for target species in coordination with ENSP, USFWS and NJDEP wildlife control staff.
- Rare Species Goal No. 6 – Implement habitat enhancement for rare beach species in cooperation with the USFWS and ENSP.

The above goals include projects to manage and enhance nesting habitat, improve nesting success potential, and collect survey data. In addition to benefitting least terns and osprey, most of the above goals as well as the following goals below benefit other migratory birds listed in Table 2-6 of the INRMP by supporting the ecological integrity of breeding, wintering, and stopover habitats.

- Land and Watershed Management Goal No. 3 – Prevent introduction and spread of invasive species.
- Land and Watershed Management Goal No. 4 – Manage and protect on-site wetlands.