

**Interim Report
State Wildlife Grants
T-11-T-2**

Guidance and Technical Assistance

**Progress Report for Project Year
September 1, 2011 – August 31, 2012**

NJ Department of Environmental Protection

**DIVISION OF FISH AND WILDLIFE
ENDANGERED AND NONGAME SPECIES PROGRAM
P.O. BOX 420
TRENTON, NJ 08625**



STATE: NEW JERSEY

PROJECT NO.: T-11-T-2

PROJECT TITLE: FISH AND WILDLIFE TECHNICAL GUIDANCE

STUDY TITLE: GUIDANCE AND TECHNICAL ASSISTANCE

PROJECT PERIOD: 9/1/2011 – 8/31/2012

OBJECTIVE:

To provide guidance on the projects, proposals, and management plans of others in order to minimize adverse effects and maximize beneficial effects to endangered, threatened, special concern and rare wildlife.

JOB 1: Environmental Review on Behalf of SGCN

OBJECTIVE: To provide review and comment on behalf of endangered and rare wildlife to water and land related proposals under the jurisdiction of other governmental agencies.

This job will provide review and comment upon such things as Environmental Impact Statements and Assessments, applications for State permits, proposals for State management actions affecting rare wildlife habitats, flood control and dredging projects, highway projects, proposed legislation, water supply projects, federal and interstate actions requiring endangered wildlife review, and county/local projects requiring endangered wildlife review, etc.

Key Findings:

- A summary count of project reviews conducted by staff is listed in Table 1.
- ENSP biologists continued to review five major projects proposed by utility companies that entailed the expansions of and/or upgrades to existing rights-of-way and a metering station and railroad. The scope and extent of these applications has continued to demand a major time investment from ENSP staff in order to fully assess the potential impacts to threatened and endangered (T&E) species and advise the Division of Land Use Regulation and the applicants on concerns about habitat loss to T&E wildlife and, where appropriate, provided suggestions on how to avoid or mitigate these impacts. These major reviews were still counted as one review each (in Table 1), but like most long, linear projects, the rights-of-way and railroad projects required a lead review biologist and assistance from other biologists to protect state-listed species. These projects included:
 - PSE&G Roseland-Susquehanna Line
 - Tennessee Gas Pipeline, 300-series
 - Tennessee Gas Pipeline, Northeast Upgrade
 - Tennessee Gas - Spectra Energy, Mahwah Metering Station Upgrade
 - NJ Transit – North Branch
- Staff reviewed specific plans for vegetation control along power line Rights-Of-Ways throughout the state to avoid negative impacts to bald eagle nesting and foraging areas. While the power companies generally abide by standard wildlife timing restrictions regarding vegetation control, the longer bald eagle season and sensitivity of this species necessitates some additional review to assure work is not conducted in the most sensitive areas.
- Staff spent an unusual amount of time in managing and planning to maintain a few bald eagle nest sites free from habitat loss and undue disturbance. These were sites for which significant development(s) are planned, requiring ENSP consultation with many sections of NJ DEP as well as with USFWS staff. For the most part, these consultations will continue into the next year.

- Staff participated in a working group that met once a month to revise the Raritan-Piedmont Wildlife Habitat Plan for forest, riparian, and grassland species.
- Staff spent extensive time working with NRCS biologists on a new Farm Bill program, Working Lands for Wildlife, that focuses on early successional habitat management specifically to benefit golden-winged warblers. ENSP staff worked with NRCS biologists to assess and provide guidance for applicants who wanted to participate in this program.
- Staff spent a significant amount of time working on two committees of the Atlantic States Marine Fisheries Commission. For the Delaware Bay Ecosystem Technical Committee, staff spent time on data analysis, review of reports, stock assessments, harvest model allocation methods, and other information in preparation for bi-annual meetings. For the Adaptive Resource Management (ARM) Subcommittee, staff contributed technical guidance on development of the ARM model and harvest allocation method; implementation of the model to set horseshoe crab harvest quotas in the Mid-Atlantic; provide red knot data to update annual model harvest predictions, recommend changes to the model through an adaptive management approach (~4 year cycle).
- Staff provided data and technical guidance for red knot Critical Habitat Designation and Listing Proposal to USFWS.
- Staff provided assistance to the USFWS to coordinate the Population Assessment and Monitoring session (one of the several workshop sessions); participated in the four-day workshop (February 6-9, 2012) to develop the strategy; provided review and input post-workshop to finalize the strategy. A final Atlantic Flyway Shorebird Conservation Business Strategy is planned to be delivered by Scott Johnston, USFWS Region 5, on November 8, 2012.

Conclusions:

- Within this reporting period over 27 state, federal, and local agencies requested input and advice from ENSP on projects/activities related to SGCNs and their habitat, with 422 reviews completed by ENSP staff. As such, ENSP clearly serves an instrumental role in representing the needs of rare wildlife on behalf of the NJDEP.
- Interstate/flyway organization, particularly when sanctioned by state agencies, have a high likelihood of producing near-term, population-scale benefit for SGCN via standardized methods, comparable trend and other data, prioritized conservation action and regional implementation.

Recommendations:

- This job should continue to be funded on an annual basis job since it allows ENSP to thoroughly consider impacts to endangered, threatened, special concern and nongame wildlife habitat in the course of permit and environmental review.

Table 1. Recipients of the ENSP’s reviews on behalf of endangered, threatened and special concern wildlife, with number of reviews conducted in this segment.

1. State: reviews	
DEP Land Use Regulation Program (Freshwater Wetland Act, CAFRA, Waterfront Development, Stream Encroachment, Highlands Act, Pinelands Act)	157
Division of Watershed Management	3
Office of Program Coordination and Environmental Review	30
Office of Dredging and Sediment Technology	2
Office of Permit Information and Assistance	0
Division of Parks and Forestry	12
NJDEP Review of Activities Proposed for N&HR-Administered Lands and Waters	52
Division of Solid and Hazardous Waste Management	0

Site Remediation Program	1
Bureau of Wastewater Management	2
Bureau of Marine Water Monitoring	0
Office of Water Policy	0
Office of the Commissioner	0
New Jersey Department of Transportation	2
New Jersey Pinelands Commission	0
Office of Policy, Planning and Science	5
Office of Sustainability and Energy	1
Bureau of Land Management	12
NJDFW, Exotic & Nongame Permits Office: Scientific Collecting Permits	59
2. U.S. Government: reviews/consultations	
U.S. Fish and Wildlife Service	21
Army Corps of Engineers	7
Nuclear Regulatory Commission	1
National Marine Fisheries Service	1
National Park Service	4
Natural Resource Conservation Service	9
Environmental Protection Agency	0
Federal Energy Regulatory Commission	2
U.S. Military: Army, Navy, Air Force, Coast Guard	10
3. Interstate Commissions, etc.: reviews/consultations	
Delaware River Basin Commission	0
Atlantic States Marine Fisheries Commission	0
Meadowlands Commission	0
Atlantic Flyway Council	0
US Fish & Wildlife Service, Atlantic Coast Joint Venture	0
Other officially recognized interstate committees and cooperatives	5
4. County and Local Entities: reviews/consultations	
County Mosquito Commissions	6
County and Local Park Commissions	0
Watershed Associations	1
Local and Regional Environmental Commissions	1
5. Private, Non-Profit Conservation Organizations: reviews/consultations	
National Fish and Wildlife Foundation	0
State and county Federations of Sportsmen's Clubs	0
The Nature Conservancy, Natural Lands Trusts, NJ Audubon, etc.	12
Other, direct-contact project reviews	4
TOTAL	422

JOB 2: Policy and Planning Technical Guidance on Behalf of SGCN

Project leader: D. Jenkins, Chief

OBJECTIVE: To advise the New Jersey Department of Environmental Protection, the Governor's Office, and others, with respect to State policies affecting endangered, threatened, special concern and rare wildlife and their habitats.

Key Findings:

- ENSP staff assisted the Department's Office of Legal Services in the review and adoption of revised lists of endangered (N.J.A.C. 7:25-7.13) and nongame (N.J.A.C. 7:25-7.17) wildlife, in January, 2012.
- Staff developed the NJ DEP's Venomous Snake Monitors and Spotters Program document working with internal and external sources. This document became necessary for projects within venomous snake habitat and either became a permit condition issued by NJDEP - Division of Land Use Regulation (DLUR) or as a condition for use or lease of NJDEP-administered lands. The document clearly outlines the required qualifications, performance requirements and application process to develop a list of personnel pre-approved to receive the State's Scientific Collecting permit (required when handling NJ's wildlife).
- ENSP biologists along with staff from the NHR Office, the Division of Parks and Forestry and Office of Natural Lands Management finalized a 5-year plan for Wharton State Forest where a set of "pre-approved" trails will be presented to the Enduro (organized motorcycle events) organizers in November 2012. In addition, ENSP was successful in limiting these events (only between October 15 and April 15) in order to minimize adverse impacts to SGCN. This plan eliminates a case-by-case activity review for events, however the groups will still need to apply for a permit for each event. The plan is to develop 5-year plans for our State Parks in the Pinelands and southern New Jersey because they have the greatest number Enduro events.
- ENSP biologists continued to provide recommendations on key policies and aid the Department in developing and revising regulations that resulted in increased protections for rare wildlife and their habitats.

Conclusions:

- ENSP staff responded to requests by DEP managers for policy review and, in the absence of requests, have alerted policy makers to wildlife and habitat issues that develop in the context of other DEP actions. Both types of ENSP involvement continue to be important to species of greatest conservation need.
- The development of the NJ DEP's Venomous Snake Monitors and Spotters Program document and application process was a necessary step in assisting prospective permittees to locate personnel that will help them meet their permit requirements in a timely manner.
- The development of the 5-year plan with timing restrictions for Wharton State Park will decrease impacts to both Northern pine snakes and timber rattlesnakes while expediting permits and decreasing ENSP staff time spent on these permit. This effort will act to inform new plans for additional state lands where these events take place.

Recommendations:

- ENSP staff should continue its involvement in departmental planning and maintain its role as advisors to the department on the management and protection of species of greatest conservation need.

JOB 3: Reducing, Minimizing and Mitigating the Effects of Roads on SGCN Wildlife

OBJECTIVE: To identify the major problems that roads present to wildlife in New Jersey and work with partners to develop practical approaches to address these problems.

Job 3A. Roads and Wildlife Working Group

Project leader: G. Fowles, GIS Specialist

OBJECTIVE: To establish a group of state and federal agency representative that will work to identify the major problems that roads present to wildlife in New Jersey develop practical approaches to address these problems.

Key Findings:

- ENSP staff organized 12 working group meetings with the core members: ENSP, DLUR, USFWS, and DOT staff in attendance.
 - Representatives from Conserve Wildlife Foundation, the Pinelands Preservation Alliance, the Nature Conservancy, DOT Operations Support and Local Aid were invited and gave talks at different working group meetings over the course of the year on various road/wildlife topics.
 - Experts from DLUR and DOT have spoken at different meetings to discuss land use and DOT regulations (e.g., flood hazard rules, guard rail specs) that should be considered when the working group is designing mitigation strategies.
 - The core working group has discussed 18 potential projects where there were road/wildlife conflicts in situations where: a) new roads were being constructed (N=1), b) where road work was being done on an existing road (N=4), or c) where there was no scheduled road work (N=13). The working group discussed whether there were opportunities to incorporate crossing/barrier structures in the projects, and if so, what type of structures/barriers could be used, how they could be funded, and how to proceed with the planning. Permits were issued for 3 road projects that incorporate wildlife mitigation measures in the final plans. One of the projects was implemented during the reporting period. Members of the working group applied for Transportation Enhancement Program funding for 3 projects.
- ENSP staff converted the existing 'Google Site' working group website to a location on the Conserve Wildlife Foundation of New Jersey's website because DOT staff were having trouble access the Google site. The website houses all information related to the working group including road/wildlife literature, upcoming events (e.g., webinars and conferences), and existing and new mitigation projects in the state.
- Working group members attended roads/wildlife conferences. One working group member attended the DOT Research Showcase in October 2011.
- Progress on populating the database of existing and proposed road crossing projects continues to be slow because the work being done by the Roads and Wildlife Working Group, particularly the DLUR and DOT members, has not been endorsed by upper management within those agencies and so procedures cannot be developed to more effectively track road/wildlife mitigation projects.
- ENSP held a GIS training for approximately 25 DOT environmental review staff in October 2011. Staff trained in basic GIS functionality as well as how to query the Landscape Project mapping and Roads and Wildlife Conflict Shapefile for potential wildlife issues related to upcoming road projects

Conclusions:

- Regularly scheduled monthly working group meetings are sufficient.
- Agency representation within the core working group is adequate to cover the current range of issues we have needed to discuss to move projects forward.
- Invited guest speakers are important to be able to address specialty topics/issues that arise and to reach out to other organizations within the state that are also working on reducing road/wildlife conflicts.
- Progress has been made in incorporating wildlife mitigation measures in road projects during the reporting period.

- Transportation Enhancement Program funding was sought for the first time for road/wildlife projects in New Jersey.
- Many restrictions to internet-based information sources, such as Google, Doodle, SurveyMonkey, have been put in place by DOT and increasingly DEP, yet no alternatives for working collaboratively across agencies have been instituted, resulting in frustration and excess staff time trying to come up with alternatives.
- There were no wildlife-related topics presented at the DOT Research Showcase.
- Tracking road/wildlife mitigation projects can only be accomplished through effective inter-agency cooperation. Engaging upper management is necessary to move forward with creating a comprehensive road-crossing/barrier structure database.
- DOT project review staff were given GIS training so that more effective early review of road project work with shapefiles provided by ENSP could be achieved and so that DOT review staff could learn to create shapefiles of potential road/wildlife conflict areas to distribute to the working group to discuss in upcoming meetings.

Recommendations:

- Continue to organize monthly working group meetings.
- Continue to invite guest speakers to address specialty topics and as an outreach mechanism.
- Continue to consider and pursue funding for road/wildlife mitigation efforts. Pay special attention to monitoring efforts, when possible both pre and post construction, to develop datasets related to the effectiveness of wildlife crossing structures.
- Consider developing an MOA between DEP and DOT to legitimize the work being done by the working group and to work with the respective information technology staff in the agencies to come up with better long-term collaborative tools. In the meantime, continue to maintain the working group website on the Conserve Wildlife Foundation website.
- Submit roads and wildlife research ideas to present at the next annual DOT Research Symposium.
- The working group should continue to explore mitigation efforts that have been effective both within and outside of NJ. Developing an MOA between DEP and DOT might enable DLUR and DOT review staff to devote time to establishing procedures for documenting roads/wildlife mitigation efforts considered in road projects that can more seamlessly populate the database of existing and proposed road crossing projects.

Job 3B. Amphibian Crossing Project - This job was inactive.

Job 3C. Crossing Structures Pilot Project

Project leader: B. Zarate, Senior Zoologist

OBJECTIVE: To investigate the potential of installing under-the-road culverts in a few test locations to serve as a means for wildlife to safely cross under the road.

Key Findings:

- We identified five pilot projects and implementation has been completed on one of them:
 - During the review of a wetlands permit, staff identified the need for an eco-passage along a section of roadway in Bedminster Township, Somerset County. Graduate students from Montclair State University performed a 1-month pitfall trap study along 150 meters of road that documented 613 crossing attempts by 13 species of reptile and amphibian. The Roads and Wildlife Working Group (Job 3A) informed culvert and barrier fencing design and final plans were submitted to the NJDEP by the project applicant for approval. The project has not yet received full approval. The township applied for Transportation Enhancement Program funding to construct the eco-passage, but awards for the funding have not yet been announced. Once installation is complete, Montclair will perform follow-up monitoring.

- Construction of a runway mitigation project on the Warren Grove Gunnery Range in the Pinelands National Reserve has been completed. ENSP partnered with Drexel University and the New Jersey Air National Guard, and received input from the Roads and Wildlife Working Group to design tunnel and fencing structures to prevent Northern pine snake mortality on a new runway construction that bisects pine snake habitat. Digital cameras (n = 12) set in time lapse mode were installed, aimed at the ends of the 6 installed culverts and were operational from June 2, 2012 through the end of the reporting period. There were 364 wildlife visits recorded on the cameras, with snakes, toads, rabbits, and mice being the most common fauna to utilize the culverts.
- Grant funding was sought for both engineering and construction of culvert and fencing at a high priority amphibian crossing site in Byram Township, Sussex County that has been monitored for two annual migration seasons by the Conserve Wildlife Foundation. Awards for the funding have not yet been announced.
- Grant funding was sought for both the engineering and construction of culverts under a township road in Sparta Township, Sussex County that has been identified as a hotspot of bog turtle mortality. Awards for the funding have not yet been announced.
- Permits were approved for the construction of a roadway in Waretown, Ocean Township. The roadway will cross sensitive habitat for Northern pine snakes and many other species. The approved design for the roadway includes specially designed tunnels and barrier walls that will be placed at regular intervals along the roadway (pursuant to Land Use Regulation Permit requirements) to enable reptiles, amphibians and other animals to move successfully from one side of the road to the other and to minimize the potential for road-induced mortality. A detailed monitoring plan was developed by members of the Roads & Wildlife Working Group partnering with Mercer County Community College. Pre and post monitoring will occur for a total of four years. Pre-monitoring has begun during the reporting period and 13 different species of reptiles and amphibians have been identified on the site so far, including the Northern Pine Snake.

Conclusions:

- The Roads and Wildlife Working Group initiated 5 pilot mitigation projects through environmental review of permit applications, communication between working group members, and the identification of road crossing hotspots. On-going projects are related to both existing roadways with known high mortality rates and new construction through areas with habitat and occurrence of rare wildlife species.
- Projects are being documented and all information related to designs, permitting decisions, structure materials, and costs are being posted on the Roads & Wildlife Working Group website and in the road crossing/barrier structure database.

Recommendations:

- Complete the construction, documentation, and monitoring of the five existing pilot projects.
- Implement pre and post monitoring at the pilot project sites.
- Continue to identify project sites through the working group and proceed through the process of implementing those projects.
- Work with state regulators to facilitate road mitigation projects.

Job 3D. Crossing Structures BMP: This job was inactive.

Job 3E. Road Mortality Hotspot Detection

Project leader: G. Fowles, GIS Specialist

OBJECTIVE: To partner with the Department of Transportation to collect dead-on-road wildlife observations that can be used for research and planning purposes.

Key Findings:

- Discussed with the head of DOT maintenance different mechanisms for maintenance staff to collect dead-on-road data. Issues related to their inflexible work procedure and resulting lack of accuracy of any location data they collected made it an untenable option for dead-on-road data collection at this time.
- A wildlife ID guide developed by ENSP for DOT maintenance crews has been finalized, but not used yet by DOT crews.
- Discussions have begun with regional supervisors of Division of Fish & Wildlife's Bureau of Land Management to pilot a dead-on-road data collection project.
- Five GPS enabled digital cameras have been purchased.
- Staff researched dead-on-road specific online data submittal applications and mobile phone apps other states and organizations have instituted.

Conclusions:

- Having DOT maintenance crews assist with the collection of dead-on-road data is not a tenable option at this time. Instead, a pilot project with Bureau of Lands Management staff will be pursued. Select Lands Management staff will be trained, given the wildlife ID guide, and one of the GPS-enabled digital cameras to collect dead-on-road data beginning in the spring 2013.
- Developing a NJ wildlife dead-on-road online submittal application to collect information obtained in the future by DOT as well as the general public may be a viable option.

Recommendations:

- Continue to pursue a pilot dead-on-road data collection project with staff from the Bureau of Lands Management.
- Continue to explore the option of developing a NJ wildlife dead-on-road online submittal application and proceed with its development if feasible.

Job 3F. Connectivity Mapping

Project leader: Gretchen Fowles, GIS Specialist

OBJECTIVE: Develop a map that identifies the key habitat corridors that link existing state lands together and serve a critical role in connecting these large "secured areas" together for wildlife in New Jersey.

Key Findings:

- ENSP staff continued to research and stay abreast of procedures and GIS tools developed by other states that have developed statewide connectivity maps.
- ENSP staff contacted potential partners to form a multi-disciplinary working group to inform the development of the habitat connected plan. ENSP staff presented the project concept to over 25 potential partner agencies/organizations (Table 1) with the ability to provide valuable insight into the design of the corridors and the implementation of actions on the ground. The working group will research, prepare, and coordinate the connectivity mapping analyses, validation, and implementation actions.
- We began developing a website for the Habitat Connectivity Working Group.
- Staff planned the kickoff meeting for the Working Group, which will be held in October 2012.

- ENSP staff purchased and tested equipment and tools that will be needed to validate the connectivity mapping.
 - ENSP staff trained the wildlife detection dog on additional species and will be used for the validation of the connectivity mapping.
- ENSP, with the help of the Roads and Wildlife Working group (Job 3A) and in partnership with the Nature Conservancy, and University of Massachusetts's River and Stream Continuity Project finalized a draft of a New Jersey specific culvert inventory protocol. The protocol will be piloted in 2012-2013, finalized, and then fed into a regional culvert database hosted by University of Massachusetts. The culvert inventory will help identify crossing structures that could be retrofitted or replaced to function effectively as fish and wildlife passages as well as how they may play into identified corridors in the connectivity map.

Conclusions:

- Development of the statewide connectivity mapping has not yet begun until a working group is formed.
- The formation of the working group has begun and staff need to continue to gain support from upper level management in DEP and DOT.
- The Kickoff meeting for the working group is planned for October 2012 and collaborative tools for the working group are being developed.
- ENSP staff are preparing and testing the tools that will be needed for future phases of the connectivity mapping project including validation procedures and a culvert inventory protocol.

Recommendations:

- Continue to establish the working group and pursue meetings with representatives from the highest levels of DEP and DOT prior to the Kickoff meeting.
- Hold the Kickoff Working Group meeting in October 2012 and recruit individuals at the Kickoff meeting for involvement in the core teams: Mapping, Guidance document, and Communication. Have core teams meet in the Fall of 2012 to proceed with work on developing the Habitat Connectivity Plan.
- Complete and release a working group website containing relevant background materials to the invitees for the Kickoff Working Group meeting in advance of the meeting.
- Continue to prepare and test the tools needed for the validation work.
- Finish the pilot project for the culvert inventory protocol, finalize the protocol, and work with partners to incorporate New Jersey culvert data into the regional database hosted by the University of Massachusetts.

Table 1. List of agencies to which ENSP staff has presented the concept of the Statewide Habitat Connectivity Plan pursuant to forming a multi-disciplinary working group to develop the plan.

Federal:

US Fish and Wildlife Service

NRCS

State:

NJDOT: Landscape Architecture & Environmental Solutions, Division of Environmental Resources;

DEP: Green Acres, Office of Ecological Restoration, Parks and Forestry, Office of Science, Division of Land Use Regulation

Other government:

Pinelands Commission,

NJ Highlands Council

Regional planning agencies:

North Jersey Transportation Planning Authority,

South Jersey Transportation Planning Organization

Delaware Valley Regional Planning Commission

Nonprofit organizations:

American Littoral Society, Appalachian Trail Conservancy, Association of New Jersey Environmental Commissions, the NJ Audubon Society, the Conservation Fund, the Conserve Wildlife Foundation, the Highlands Coalition, the NJ Conservation Foundation, NJ Natural Lands Trust, Open Space Institute of NJ, Pinelands Preservation Alliance, the Nature Conservancy, Conservation Resources

Universities:

Rutgers University (Rick Lathrop and Ed Green)

Montclair State University (Meiyin Wu)

Drexel University (Walt Bien)

Rowan University (John Hasse)

The Sustainability Institute at The College of New Jersey

Ramapo College

New Jersey Institute of Technology

Stevens Institute of Technology

JOB 4: Mitigating Bat Mortality at Wind Farms

Project leader: Christina Davis

This job was inactive because the wind farm's contractor, New Jersey Audubon, has not finalized its report and the managers of the Atlantic County Utilities Authority wind farm are not willing to make any adjustments until that report is released and reviewed. ENSP has reached out to New Jersey Audubon on many occasions and the projected release date is now late October 2012.