

## Proposed Designation of the Hirst Ponds Preserve to the Natural Areas System



### Summary and Staff Recommendation October 29, 2019

The Division of Parks and Forestry, Office of Natural Lands Management (ONLM) proposes to designate the New Jersey Natural lands Trust's (Trust) 345-acre Hirst Ponds Preserve in Galloway Township, Atlantic County to the Natural Areas System in order to protect and manage coastal plain intermittent pond ecological community habitat which includes occurrences of the globally rare and state endangered plant Hirst Brothers' Panic Grass (*Panicum (Dichantheium) hirstii*), as well as many other rare plant and animal species.

To qualify for designation to the Natural Areas System, a site must be listed on the Register of Natural Areas and wholly or partially owned in fee or held as a conservation easement by the State (N.J.A.C. 7:5A-1.6(a)). On September 5, 2019, the Commissioner of the NJ Department of Environmental Protection (NJDEP) listed the Hirst Ponds Preserve, wholly owned by the Trust

in fee, on the *Register of Natural Areas* pursuant to N.J.A.C. 7:5A-1.4(d). In order to be listed on the Natural Areas Register the site must include rare species habitat or at least one ecological community, as defined at N.J.A.C. 7:5A-1.3. As noted above, the Hirst Ponds Preserve includes habitat for a significant number of rare plant species as well as a significant ecological community. Pursuant to N.J.A.C. 7:5A-1.3, "Rare species habitat" means habitat for any plant and/or animal species listed, proposed or of candidate status by the Federal government as endangered or threatened throughout the United States pursuant to the Endangered Species Act of 1973, 16 U.S.C. §§ 1531 et seq., and its implementing regulations, 50 CFR §§ 17.11 and 17.12; any plant species listed as endangered or as a species of concern pursuant to N.J.S.A. 13:1B-15.151 et seq. and its implementing rules, N.J.A.C. 7:5C; any animal species listed as endangered, threatened or as a priority wildlife species pursuant to N.J.S.A. 23:2A-1 et seq. and its implementing rules, N.J.A.C. 7:25-4; and any rare plant and/or animal species and/or ecological community recorded in the Natural Heritage Database. "Ecological community" means an interacting assemblage of plants, animals and other organisms, their physical environment and the natural processes that affect them.

Pursuant to N.J.A.C. 7:5A-1.6(b), the ONLM has undertaken a designation study of the Hirst Ponds Register site to assess the appropriateness of designation of all or a portion of it to the Natural Areas System. The enclosed Designation Study recommends that the entire Hirst Ponds Register Site be designated to the Natural Areas System.

### **Staff Recommendation**

The ONLM recommends that the Council approve this designation to the Natural Areas System as proposed. The recommendation of the Natural Areas Council will be submitted to the NJDEP Commissioner for decision.

# Designation Study and Recommendation for Inclusion of the Hirst Ponds Preserve in the Natural Areas System

October 29, 2019

**Name of Site:** Hirst Ponds Natural Area

**Name of Natural Areas Register Site:** Hirst Ponds

**Percentage of Register Site:** 100%

**Acreage:** 345 acres

**Location:** Galloway Township, Atlantic County

## I. MANAGEMENT OBJECTIVE

Preservation of rare coastal plain intermittent pond ecological community which includes occurrences of the globally critically imperiled and state endangered plant Hirst Brothers' panic grass (*Panicum (Dichantheium) hirstii*) and numerous other rare plant and animal species.

## II. EVALUATION OF SIGNIFICANCE AND PROTECTABILITY

### A. Quality – overall quality of the site including:

#### 1. Inherent ability to perpetuate features of concern:

The palustrine intermittent ponds of the coastal plain are dominated by herbaceous vegetation. Populations of rare plant and animal species are often found in coastal plain intermittent ponds. Perpetuating the ponds is currently not a concern but in order to perpetuate the rare species habitat, it may be necessary to prevent woody vegetative succession within the ponds by mowing, brush hogging, selective tree thinning as well as selective herbiciding and prescribed burning. There may also be a need to control offsite stormwater drainage through ditching or plugging.

#### 2. Size of site sufficient to perpetuate features of concern:

The proposed 345-acre natural area provides immediate protection to the coastal plain intermittent ponds of concern in addition to buffers and watershed protection. However, the size of the natural area may still not be sufficient to perpetuate all the features of concern due to potential hydrologic and water quality impacts from existing and future residential development.

3. Size of populations sufficient to assure perpetuation of biotic features:

Since very little research and study has been conducted on the many rare plant species documented in this preserve, little is known about their life history and population biology. However, annual monitoring of the rare plant and animal species that occur within the rare coastal plain intermittent ponds by staff of the New Jersey Natural Heritage Program indicates that the species' populations appear to be of sufficient size to be self-perpetuating. Periodic monitoring and management will be needed to assure their long-term survival, including management to prevent woody succession or invasive plant encroachment.

4. Integrity of site sufficient to illustrate features of concern:

The integrity of the rare coastal plain intermittent ponds and rare species habitats are currently sufficient to illustrate these features of concern, since the conditions to support the natural communities and rare species, including the natural hydrologic processes characteristic of these coastal plain intermittent ponds, continue to be present on site. Threats to endangered plant species' survival include changes in hydrology due to local and regional well water withdrawal, climate change influence in precipitation patterns, invasive species encroachment, and disturbance from off-road vehicles. At this location, off-road vehicles and hydrological changes are currently less of a threat than the other listed threats. The New Jersey Natural Lands Trust (Trust), which owns the preserve, is committed to maintaining a relatively open canopy and addressing invasive species.

B. Diversity – significant diversity of biotic features and number of plant and/or animal species per community:

Within the Hirst Ponds Preserve is a rare coastal plain intermittent pond ecological community known as the Virginia Meadowbeauty-Warty Panicgrass Marsh (*Rhexia virginica* – *Panicum verrucosum* Marsh) coastal plain muck pondshore community (Table 1) which occurs in coastal Massachusetts discontinuously south to Delaware. It occurs on the broad margins of shallow groundwater basins. The substrate is variable, ranging from loamy sand, sandy loam, or sand with an organic layer from 0 to greater than 20 cm in depth.

Table 1: Community classification for rare and common ecological community in the proposed Hirst Ponds Natural Area including state scientific and common names, National Vegetation Classification, and preliminary ranks from NatureServe/NJ Natural Heritage Program for global (G) and state (S) ranks from Breden et al. (2001) and NatureServe (2019):

*Rhexia virginica* - *Panicum verrucosum* Marsh  
 Translated Name: Virginia Meadowbeauty - Warty Panicgrass Marsh  
 Common Name: Coastal Plain Muck Pondshore  
 Unique Identifier: CEGl006264

**Global Status:** G2 - Globally Imperiled

**NJ State Status:** S2 – State Imperiled

**Reason:** This Coastal Plain pondshore community is restricted to shallow seasonally flooded basins of the Atlantic Coastal Plain from Massachusetts to Delaware. On the mid-Atlantic Coastal Plain, agriculture has caused the greatest loss either through filling and/or draining, or indirectly through degradation from fertilizer runoff.

The New Jersey Natural Heritage Database contains documented records for numerous rare plant species (Table 2) and the New Jersey Landscape Project documents habitat for four rare animal species in Hirst Ponds (Table 2). Based on the locational precision of the record and the observation date, all of these species are believed to be extant in the proposed natural area.

Table 2: Rare plants and animals within the proposed Hirst Ponds Natural Area:

Scientific Name	Common Name	Status
<i>Panicum</i> ( <i>Dichanthelium</i> ) <i>hirstii</i>	Hirst Brothers' panic grass	SE
<i>Lobelia boykinii</i>	Boykin's lobelia	SE
<i>Coreopsis rosea</i>	rose-color coreopsis	SC
<i>Ludwigia linearis</i>	narrow-leaf primrose-willow	SC
<i>Paspalum dissectum</i>	mudbank crown grass	SC
<i>Nymphoides cordata</i>	floatingheart	SC
<i>Utricularia purpurea</i>	purple bladderwort	SC
<i>Strix varia</i>	barred owl	ST
<i>Hyla andersonii</i>	Pine Barrens treefrog	ST
<i>Ardea herodias</i>	Great blue heron	SC (BR)
<i>Egretta thula</i>	Snowy egret	SC (BR)

Explanation of Status Codes: SE - Listed as State Endangered

ST - Listed as State Threatened

SC - Plant or Animal Species of Concern in NJ

BR - Breeding

C. Scarcity - relative scarcity or uniqueness of plant and animal species, community types and/or wildlife habitats:

The two ponds on this preserve, Barkwoods and Labounsky ponds, collectively contain two of only four known occurrences of Hirst brothers' panic grass (*Panicum (Dichanthelium) hirstii*) in New Jersey and of only eight known

occurrences in the world. The species was discovered in Barkwoods Pond in 1958 and in Labounsky Pond in 1960 by Frank and Robert Hirst. The species was described as a plant new to science in 1961.

D. Buffers – presence and quality of surrounding buffer areas to provide protection and insure integrity of site:

Within the Hirst Ponds Preserve and proposed natural area, there are buffers to the coastal plain ponds, which are the primary location of the rare species habitat within the natural area. However, natural area features may be partially unbuffered from the effects of residential development on nearby private lands, which can have potential hydrologic and water quality impacts.

E. Threats – direct and indirect factors which currently or potentially threaten natural area resources:

Potential threats to natural area resources include alterations to hydrology, salt water intrusion, invasive plants, and natural succession to woody vegetation. There is no history of illegal ORV use at Hirst Ponds, but this could become a threat in the future. It is recommended that in the event that Hirst Ponds is designated to the Natural Areas System, management activities such as herbicide application, removal of woody vegetation and mowing be recognized as acceptable and ongoing management practices in order to maintain the habitat for the rare plants.

F. Manageability – the ability of the administering agency to adequately manage the site or enter into a management agreement with others to preserve the integrity of the natural features:

Most of the management recommendations noted below (see Preliminary Management Techniques) should be within the ability of staff of the property owner, the Trust, and the Office of Natural Lands Management, its management partners at NJ Forest Service, or their contractors to achieve. Application of these recommendations will not significantly interfere with the passive recreational activities such as hiking and environmental education allowed throughout the natural area.

G. Public welfare - The degree of threat to the public health, safety and welfare which may be encountered as a result of terminating existing uses or activities:

The designation of Hirst Ponds as a State Natural Area will not result in the termination of any existing legal uses or activities. A possible exception includes enforcement of illegal OHV use, if it becomes necessary. Such enforcement will not create threats to the public health, safety and welfare.

- H. Preliminary boundaries – The preliminary boundaries of the natural area (See attached map) may be refined upon adoption of a management plan.

### III. INTERIM CLASSIFICATION – Conservation Preserve

### IV. PRELIMINARY MANAGEMENT TECHNIQUES

Designation of Hirst Ponds to the Natural Areas System will require the development of a management plan. N.J.A.C. 7:5A-1.8, Natural area management plans, indicates that the Department, with the cooperation of the administering agency, shall prepare a management plan for each natural area in the System. The primary purpose of a management plan is to describe the natural features of the area and prescribe management practices and public uses to ensure preservation in accordance with the management objective of the natural area.

Since the development of a management plan may take time, it is recommended that monitoring of woody species succession and rare plant populations within the coastal plain intermittent ponds be conducted regularly to determine the rate of succession, the potential loss of rare species and community habitats, and the need for implementation of management. As needed, the following interim management activities are recommended by the Natural Areas Council for approval on an ongoing basis: mowing, brush hogging, selective tree thinning, selective herbiciding, prescribed burning, and controlling or eliminating offsite stormwater through ditching or plugging.

#### References:

Breden, T.F., Y.R. Alger, K.S. Walz, A.G. Windisch. 2001. Classification of Vegetation Communities of New Jersey: Second Iteration. Association for Biodiversity Information and New Jersey Natural Heritage Program, Office of Natural Lands Management, Division of Parks and Forestry, New Jersey Department of Environmental Protection. Trenton, NJ.

NatureServe. 2019. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: October 17, 2019).

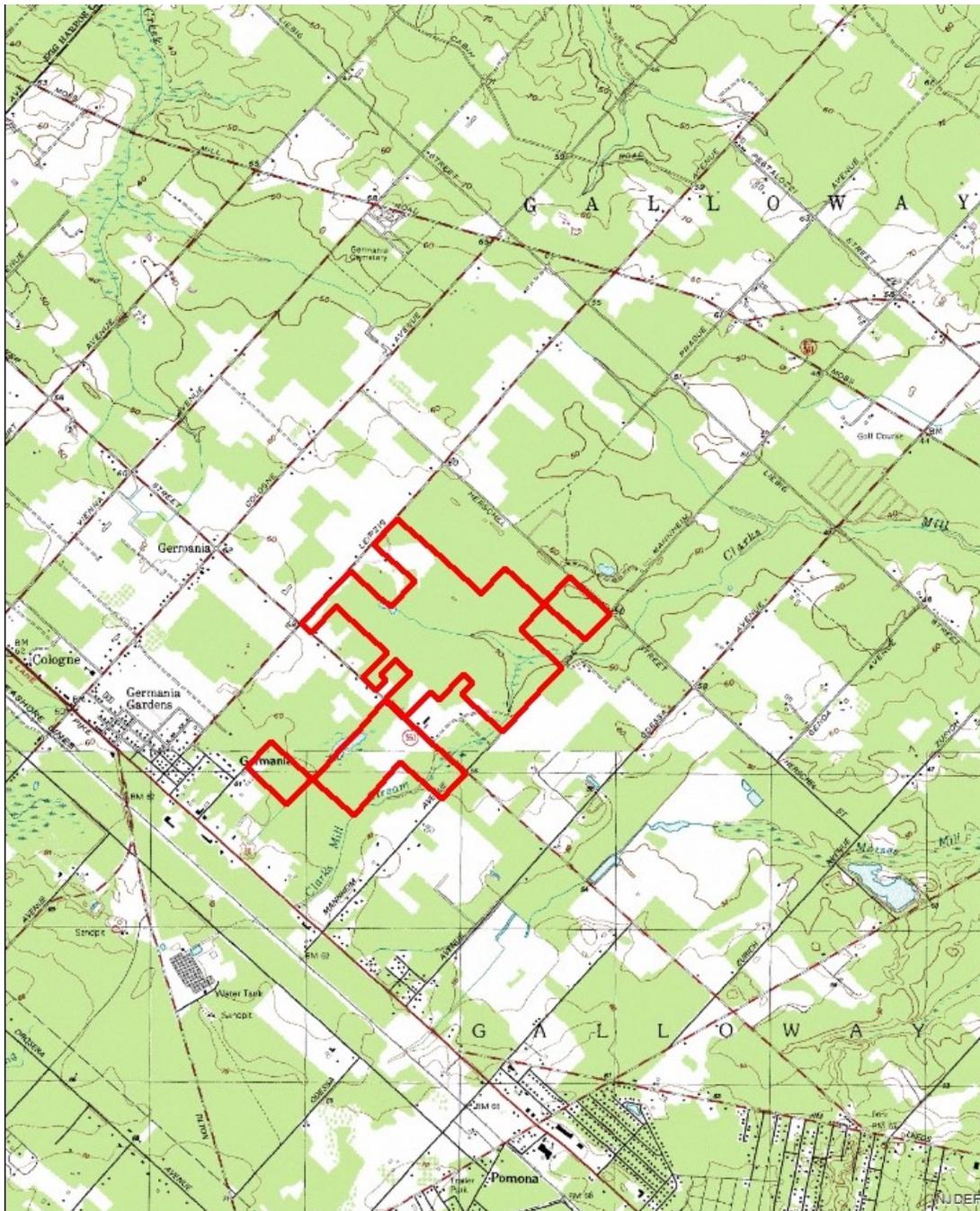


Figure 1: Proposed Hirst Ponds Natural Area, the entire 345-acre Hirst Ponds Preserve, located in Galloway Township, Atlantic County, NJ.