

Statement of Purpose

The New Jersey Natural Lands Trust was created by the Legislature in 1968 as an independent agency with the mission to preserve land in its natural state for enjoyment by the public and to protect natural diversity through the acquisition of open space. The Trust preserves land primarily by donations of open space through acquisition of title in fee simple or of conservation easements, and manages its properties to conserve endangered species habitat, rare natural features, and significant ecosystems. The Trust invites passive use by the public for recreational or educational purposes wherever such use will not adversely affect ecological communities and biological diversity.

The Trust also recognizes that ownership and management alone are not enough to achieve its mission. Public education is an integral function of protecting natural diversity. The Trust distributes information designed to convey a conservation ethic for the protection of open space and its natural values.

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Cover: Winter scene at the Bear Creek Preserve

Cover Photo Credit: Martin Rapp Cover Design Credit: Roman Senyk

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In 2011...

he New Jersey Natural Lands Trust brought approximately 146 new acres under Trust stewardship, making the Trust responsible for over 26,000 acres managed as a system of more than 120 preserves throughout the state.

The acquisitions represented additions to the Bear Creek, Buttermilk Bridge, Great Piece Meadows, Hamilton, Hardwick Meadows and Pomona Woods preserves.

Critical Habitat Protected at Hardwick Meadows!

he Hardwick Meadows Preserve is focused around a calcareous fen wetlands system with extensive braided stream channels fed by spring and seepage areas, limestone sinkhole ponds, and buttonbush swamps. When the Trust created the preserve in 2006, it also established a Hardwick Meadows Project Area defining a 432-acre area it hopes to eventually preserve. This Project Area encompasses the Hardwick Meadows Natural Heritage Priority Site with some buffer areas. In 2011, the Trust added 58 acres to the preserve, increasing the preserve to 221 acres and putting the Trust more than halfway towards its goal. The newlyacquired area is immediately adjacent to the existing preserve and provides management access along Stillwater Road, but most importantly it includes portions of the calcareous fen system. A family farm owned by the Crismans for over 150 years, this back portion of the farm no longer served the family's needs. The property includes a mature hardwood forest with sugar maple, oak and hemlock. Long-tailed salamander, a threatened species, was discovered in a small vernal pond during a recent inspection of the property. But the open wetland habitat was what most interested the Trust. A large, nearly pristine, open grassy wetland was known habitat for some



John Crisman at the Hardwick Meadows Preserve

very rare plant species. Already staff is searching this rare fen ecosystem for other species.

Fens are generally described as groundwater-fed wetlands dominated by grassy, sedgy and herbaceous vegetation in early stages, and by shrubby vegetation in later stages. Calcareous fens occur in areas of calcareous (calcium-rich) groundwater seepage. These fen habitats are often distinct from surrounding areas, and frequently support lush vege-



Rare plants on newly acquired property at Hardwick Meadows Preserve

tation and unique assemblages of plants.

Indeed, the Hardwick Meadows calcareous fen supports over 30 different plant species of global and state rarity, some of them relict species that were left behind when the glacial ice fronts receded. One such relict species is spreading globe flower. This species is rarely seen in eastern North America and survives at only about 40 widely scattered sites, making Hardwick Meadows Preserve a biodiversity hotspot.

The preservation of Hardwick Meadows protects these rare plants from pollution, development and fragmentation threats, but calcareous fen wetland systems are sensitive to many environmental changes, making continued threats from invasive plant species and other vegetative change real and significant. Because of this site's biodiversity value and the serious threat from invasive plant species, proper monitoring and management of this site continues to be a high priority for Trust staff.

Southern Pine Beetle Strikes South Jersey Preserves

The southern pine beetle, also commonly known as SPB, is a pest that foresters in the southeastern United States have had to grapple with for decades. While the southern pine beetle made a quick New Jersey appearance in 2001, in 2010 it seemed to settle in and damage large acres of New Jersey pines.

When the southern pine beetle hit New Jersey in 2010 it hit hard, with more than 14,000 acres of pines in southern New Jersey killed. Fortunately, in 2011 the impact was less than anticipated, possibly because pine trees were less stressed due to abundant rainfall. The DEP, State Forestry Service, estimates that nearly 7,000 acres were lost to pine beetle infestations in 2011, far less than in 2010, a year of low precipitation.

By the end of 2011, approximately 26 municipalities in Atlantic, Cape May, Cumberland, Gloucester and Salem counties had hundreds of southern pine beetle infestations, while spotty activity had been detected in areas as far north as Ocean County. State Forestry Service fears that, left untreated, approximately 80 percent of all New Jersey pine forests could be impacted by southern pine beetle within 10 years.

Considering the damage they inflict, surprisingly southern pine beetles are smaller than a grain of rice. Tree infestations are marked by the sudden onset of yellowish needles that quickly turn brown, and they are not usually recognizable until whole stands are affected. On close inspection, the bark of infested trees may show numerous excretions of yellowishwhite sap oozing from tubes that the beetles bore into the bark. The excretions can look like chewing gum stuck to the tree.

In southern states several methods have proven effective in suppressing SPB populations. State Forestry Service has recommended two of those methods in New Jersey to date: the Cut-and-Leave and Cut-and-Salvage methods. Cut-and-Leave downs the infested and buffer pine trees and leaves all cut material on site, with tree slash cut to below three feet



Aerial view of affected pine stands in Atlantic County, New Jersey

high. This method is most appropriately and effectively used on small infestations that are approximately 25-50 trees in extent. Cut-and-Salvage downs infested and buffer pine trees and the cut material is removed from the site. This method is used on larger sites where slash can pose a wildfire hazard.

Based on State Forestry Service's recommendations, the Trust voted last June to authorize southern pine beetle suppression activities on its preserves using the Cut-and-Leave method provided that: (1) crews will only use hand equipment; (2) no new roads will be constructed; and (3) Trust staff will be notified before work begins at a Trust preserve.

The Trust authorized the Cut-and-Leave treatment on four affected areas of the Hamilton Preserve totaling 12 acres in 2011. Crews cut live and infected pine trees in a buffer area adjacent to trees already killed by the beetle. The trees were directionally felled to halt the beetle's advance. Foresters considered the work effective at stopping the beetle's advance through the forest. This persistent pest, however, is expected to continue to threaten forests not only in Trust preserves but in pine forests throughout southern New Jersey. The Trust hopes continued modest cutting efforts will make a difference in reducing the population of southern pine beetle in New Jersey.



Distribution of southern pine beetle



Beetle tracks under the bark of an affected tree



Excretions of yellowish-white sap oozing from tubes that the beetle bore into the bark

Happy Trails at Milford Bluffs

In the spring of 2011, the Trust completed all requirements for a federal Recreational Trails Program grant for the Thomas F. Breden Memorial Preserve at Milford Bluffs. In this preserve's early days, utilizing a number of old unmarked roads as hiking trails seemed adequate for public use. Visitors to the site could ramble across the preserve, enjoying scenic vistas of the Delaware River, open meadow habitat and quiet paths. As it happens, news of the preserve quickly spread among hiking enthusiasts, and more visitors came to enjoy the Bluffs. Trail improvements to accommodate the numerous users became necessary. So, in 2010 the Trust submitted a federal Recreational Trails Program grant proposal for trail upgrades, including limited parking, marked trails and trail maintenance to make for a more enjoyable outing for all visitors.

The Hunterdon Land Trust Alliance, already assisting with grassland habitat management at the Bluffs, wanted to be part of this trail effort too. It recommended trail routes and offered help in other ways, including creating a trail brochure with map which can easily be downloaded from the Trust's website at http://www.njnlt.org/pdf/tfbreden-brochure.pdf or the Hunterdon Land Trust Alliance's website at http://hlta.org/guides.php.

As a match for the federal grant, a number of volunteers from the Milford Presbyterian Church attended a volunteer trails day on Saturday May 14, 2011. Sixteen volunteers participated for four hours of brush clearing and trail maintenance work and improved 0.75 miles of trails through the woods. Workers accomplished extensive brush clearing, removal of fallen trees, improvements to eroded and washed out locations and installation of trail markings. Their efforts far exceeded the 20 percent match requirement for the grant. With volunteer help from these neighbors and other users, a great new trail system is in place. A new mower acquired through this grant has been put to use in grooming an additional one mile of field edge trails at this preserve. The mower has made trail maintenance much more reliable. Already groups like the Hunterdon Hiking Club have come to explore the new trails at the Bluffs.



Trail-clearing volunteers from the Milford Presbyterian Church



Extensive brush clearing to improve trails at Thomas F. Breden Preserve at Milford Bluffs

Rare Animal Species Discovered During Bear Creek Inventory

As reported last year, in the early spring of 2010 the Trust selected the firm Environmental Solutions LLC to conduct a year-long inventory of plants, reptiles and amphibians, butter-flies and moths, and ecological communities and then propose natural resource management recommendations for the Bear Creek Preserve. The 643-acre preserve, located in Allamuchy and Frelinghuysen Townships, Warren County, hosts a wide variety of habitats and landscapes.

The inventory was completed after the 2011 summer season, and it confirmed the Trust's suspicions--Bear Creek Preserve is a biodiversity hotspot! One of the biggest surprises was the discovery of the federally and state-endangered dwarf wedgemussel, Alasmidonta heterodon. This tiny 1.5 inch invertebrate is found in freshwater rivers and streams. While its once robust population was prevalent along the eastern seaboard from Canada to North Carolina, it has disappeared from Canadian waters and dramatically decreased in the United States, leading to its classification as endangered. Like a canary in a coal mine, decreases in the dwarf wedgemussel population can herald bigger problems.

As the US Fish & Wildlife Service noted in a December 2005 fact sheet on dwarf wedgemussel:

Human beings also are sensitive to metals, fungicides, herbicides, insecticides and fertilizers in the water. With the same sensitivities, dwarf wedgemussels serve as a signal of a river or stream's health. Their presence or absence indicates the health of a natural ecosystem. If the water is too silted or polluted for dwarf wedgemussels, it is not good for people, either. Lining stream banks with natural vegetation helps to buffer the flow of pollutants and control erosion, protecting both the water and the endangered dwarf wedgemussels living in it. Ensuring the survival of dwarf wedgemussels maintains healthy aquatic habitats for aquatic residents as well as the rest of us.

Other interesting results from the biodiversity inventory included the discovery of a great assortment of plants, some new to the preserve and others threatened or endangered. In all 469 plant species were identified of which 11 are listed as rare in New Jersey. Also, correlated to the habitat quality was the discovery of multiple species of herptiles. Vernal ponds and fens were key habitats



Federally- and state-endangered dwarf wedgemussel.

for the state-endangered blue-spotted and state-threatened long-tailed salamanders, as well as more common species. Dragonflies were another highlight of the inventory. The consultant documented many species flying across open wetlands and other quality habitat types. Many of these are being considered for possible listing as endangered in New Jersey.

The report included many recommendations for future management, some of which Trust staff has already acted upon. These included a recommendation to improve stream flow conditions through the removal of a beaver dam to benefit the dwarf wedge mussel. The biodiversity inventory is expected to serve as a handy reference document to better manage the Bear Creek Preserve.



Freshwater stream habitat for dwarf wedgemussel at Bear Creek Preserve

Petty's Island Update

The Trust has taken some exciting initial steps to provide educational programming on the island to the extent permissible under the terms of the conservation easement. Once the island is fully remediated and transferred to the Trust in fee, public access will be more freely provided. Until then it must be conducted in a supervised manner. Toward that end, the Trust issued a Request for Proposal (RFP) to seven potential bidders for one-year (renewable for four additional one-year terms) of educational programming. The Trust received two responsive bids, and on October 1, 2011 awarded the educational programming contract to the New Jersey Audubon Society (NJAS) along with its two subcontractors, the Delaware RiverKeeper (Mr. Fred Stine) and Mr. Robert Shinn. Working with NJAS staff, Trust staff has been constructing a trail from a staging road along the existing road to the southern point of the island (depicted in green on the Petty's Island Vision map),

which is expected to be ready for its first visitors in April of 2012. Amongst other things, such as curricula development, NJAS has committed to numerous educational/interpretive programs at Petty's Island involving local public and charter schools, scout groups, birding groups and others. If you have any questions regarding Petty's Island educational programming, please contact Ms. Dale Rosselet, Vice President for Education, NJAS, at 609-861-1608, ext. 14.

The Trust is in the process of preserving a mainland parcel owned by the Camden County Municipal Utilities Authority (CCMUA) directly across the channel from Petty's Island Preserve. The Trust has been working with CCMUA and the New Jersey Department of Environmental Protection (DEP) to preserve the CCMUA property and to determine the permitting limitations of siting the Petty's Island Cultural and



View of Philadelphia skyline from Petty's Island trail

Education Center at this location. In 2012, the Trust will be contracting for a feasibility study to evaluate three potential locations for the center as depicted on the Petty's Island Vision Map: at the CCMUA parcel on an existing asphalt area that fronts 36th Street; at Petty's Island almost immediately as you come off of the bridge; and at the location of the existing office building on Petty's Island.

After evaluating the feasibility study, the Trust will enter into a design contract seeking a few designs for each of the three potential locations, all of which will represent environmentally sensitive "green" buildings, which meet Gold LEED (Leadership in Energy and Environmental Design) standards. The LEED system awards points for incorporating green building practices, such as natural ventilation, passive solar heating and cooling, daylighting, use of recycled and recyclable materials, reliance on renewable energy sources and a host of strategies to reduce environmental impacts. The Trust will request that at least one potential design for each location utilize recycled shipping containers, which we think would be emblematic of Petty's industrial past.

Other plans at Petty's Island include the design, development, and phased installation of a series of interactive wayside



Trail used as part of educational programming at Petty's Island



Petty's Island Vision Map

exhibits at or near the locations shown on the Petty's Island Vision Map. We envision that there will be roles for a variety of stakeholders to help the Trust tell the full story of Petty's Island, and to address ecological, historical and cultural issues through these wayside exhibits.

The Trust plans to convene additional Petty's Island stakeholder meetings as options and proposals are advanced. The Trust greatly appreciates the input from all of the stakeholders who volunteered their valuable time to exchange ideas on their vision for Petty's Island. As we've mentioned many times before, the Trust looks forward to reclaiming Petty's Island as a genuine urban nature preserve.



Freshwater pond at Petty's Island

New Trust Staffer Helps with Maps and Management

Working mindfully to preserve some of the best and most unique ecological properties in the state, the Trust has assembled a portfolio of quality conservation lands. The acres managed by the Trust have grown to over 26,000 from Cape May to High Point. With over 100 individual preserves in its care, land management must use information technology and digital-age innovation to visualize and locate all its holdings accurately on paper as well as on the ground. Tried and true, first hand knowledge of each preserve has always been important to land management of Trust preserves. Being familiar with local landmarks, property boundaries and other features of the preserves, having walked and explored Trust properties over many years, is helpful when neighbors, hunters or other visitors call for information. This is how the Trust has always done its work.

In 2011 the Trust took a look at its preserves from another perspective. How do they look on the computer screen to a digital user? In 2011, the Trust decided to hire a part-time GIS Land Steward to completely update our preserve mapping. The intention was to make maps and details of each preserve available to the public though our website. Joseph Steinfeld, a graduate from Rutgers University with a BS in Ecology and Natural Resources, was selected for the position. Joe has considerable experience in GIS computer mapping and set out to advance this mapping project. He helped the Trust transition into updated computer mapping software, anticipating needs and offering recommendations for making better and more useful maps. It is hoped that users will be able to download a map of any of the Trust's more than 100 preserves directly from the internet by summer 2012.

Joe is also contributing to field work. He has been involved in habitat management projects and assisted with in-field data collection for wetlands assessments. He has worked hard on trail construction projects at Milford Bluffs and Petty's Island. Next, he will be coordinating needed improvements to Crossley's Thomas Hampton Memorial Trail. This will involve structuring volunteer help from scout groups, hunters and neighbors to repair the 1.5-mile self-guided hiking trail. The trail has been damaged by illegal dirt bike use and now needs some directed attention to again make it welcoming and informative for visitors.



GIS Land Steward Joe Steinfeld

Signs of the Times

Getting to know the Natural Lands Trust preserves in your community can offer neighbors and visitors a wonderful outdoor opportunity. However, unless curious enough to observe the tan and green preserve signs posted along road boundaries, preserves may go unnoticed to passers-by. That would be unfortunate because our preserves are open to the public for hiking and other passive outdoor activities and offer a great way to explore nature.

Rustic wooden preserve signs have now been created at some preserves to make surrounding communities more aware of our preserves. The idea is basic: the preserve is part of the community and a simple sign identifies its location for all to see. Budd Lake Bog Preserve in Mt. Olive Township received its first sign thanks to the help of the Girl Scout Daisy Troop #4242. The scouts contacted the Trust to offer their services on how they could help the community learn of the preserve. Many of these scouts and their friends saw these woodlands from their school bus windows, never knowing it had a name. The scouts donated portions of the proceeds from their fall product and cookie sale to help with this project. They painted the lettering and, with help from scout leaders, hung the Budd Lake Bog Preserve sign in the spring of 2011. Over the course of the year the girls in Troop #4242 learned about Budd Lake Bog and its history and participated in projects to foster awareness of this resource.

When Beverly Mazzella, a former Real Estate Coordinator for the Trust, called to inquire about volunteerism, she put us in touch with her granddaughter, Danielle Ross, of Monsignor Donovan High School in Tom River. Danielle wanted an outdoor-oriented volunteer service project to meet her school requirements and she took to work at painting two signs for preserves near her home. Now Crossley and Clamming Creek preserves also have wooden signs bringing added attention to these preserves.



Hunting Update

During the 2011-2012 hunting seasons over 3,900 hunters registered to hunt at Trust preserves through its website: www.njnlt.org. The Trust allows deer hunting only at many of its preserves to protect biodiversity. The deer population in New Jersey is far greater than the ecosystem can sustain. Over-browsing by deer depletes native vegetation resulting in various threats to animal and plant habitat, such as decreased food sources and increased invasive plants.

In order to hunt at selected Trust preserves, hunters access the Trust's website, electronically submit information to the Trust and print their own hunter registration letter with the required accompanying map. In 2011, the Trust became able to sort hunter registrations by preserve. Using this information, Trust staff may reach out to hunters registered at a specific preserve to determine their interest in volunteering to help with clean-ups and trail maintenance projects at that preserve. Also, starting in 2011 the Trust implemented a "lottery" system for the ever-popular limited hunting opportunities at our Limestone Ridge Preserve and Thomas F. Breden Preserve at Milford Bluffs. Many hunters were pleased with the new system, say-

ing it appeared fairer than the first-come, first-served system used in the past.

It is important to note that the Trust does not allow hunting for waterfowl, small game, turkey or bear, as it believes that only deer over-browsing poses a threat to biodiversity. In addition, Sunday bow hunting is not authorized on Trust preserves. The Sunday bow hunting law permits bow hunting on Sundays on state wildlife management areas and private property during deer season. The new law does not apply to Trust preserves as they are neither wildlife management areas nor private property.

While hunting on Trust preserves, all rules and regulations in the New Jersey Division of Fish and Wildlife game code must be followed. Hunting deer by bow and arrow, shotgun or muzzleloader are acceptable, depending on the preserve. No target shooting or discharge of weapons other than for deer hunting purposes is permitted. Permanent deer stands are not allowed, and portable deer stands, while allowed, must be removed after the hunting season is complete or are subject to confiscation by the Trust.



New Jersey Natural Lands Trust, Hunter Registration page

Thanks to Our Donors and Volunteers

he Trust would like to acknowledge and thank its many volunteers for their invaluable contributions to the maintenance of Trust preserves. If you are interested in becoming a Trust volunteer monitor or attending a workday, please contact the New Jersey Natural Lands Trust at 609-984-1339, or email NatLands@dep.state.nj.us.



Donations

The New Jersey Natural Lands Trust gratefully extends its thanks to the following who have donated land, funds or services to the Trust in 2011 to help preserve and protect New Jersey's natural diversity:

Shirley Chapman Girl Scout Daisy Troop #4242 Danielle Ross Hunterdon Land Trust Alliance Milford Presbyterian Church

For more information about how you can make a donation to further the Trust's mission to acquire, preserve and manage natural lands for the protection of natural diversity, please call 609-984-1339.

The New Jersey Natural Lands Trust financial report is available upon request.



"Peregrine Falcon"



"Gentian"

Sale of Stefan Martin Prints Benefits Trust

In 1984, the Trust commissioned a series of limited edition prints created exclusively for the Trust by New Jersey wood engraver Stefan Martin. Each of the three prints highlights an object of the Trust's preservation efforts: the State-endangered Peregrine Falcon, titled

"Peregrine Falcon;" a northern New Jersey stream habitat titled, "Morning Stream;" and a grouping of three Pine Barrens Gentian, titled "Gentian." After Stefan Martin's death in a 1994 fishing accident, a fellow artist noted that Martin was "absolutely one of the most important artists in New Jersey. He won many awards, was nationally known, and very well-loved."

Unframed prints are \$150 each, or \$400 for all three (a \$50 savings). Remaining as of this writing are 203 "Peregrine Falcon," 127 "Morning Stream," and 18 "Gentian" prints. To order, contact the Trust at 609-984-1339, or email NatLands@dep.state.nj.us and indicate which print or prints you would like to order and your name and phone number. We will get back to you with ordering details.



"Morning Stream"

The New Jersey NATURAL LANDS TRUST

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An 11-member Board of Trustees sets policy for the Trust. Six members are appointed by the Governor from the recommendations of a nominating caucus of conservation organizations, and five members are State officials.

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