



**Abbott
Marshlands
Stewardship
Council**

**Annual Report
2013 – 2014**

**ABBOTT
MARSHLANDS**





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Abbott Marshlands Stewardship Council

Annual Report 2013 – 2014

*“In every season,
the abundance of
the Marshlands
is easy to see...”*

Introduction

The Abbott Marshlands Stewardship Council was formed in October 2011 with the signing of the cooperating stewardship agreement by the following organizations:

- State of New Jersey, Department of Environmental Protection
- State of New Jersey, Department of Transportation
- New Jersey Transit
- Delaware & Raritan Canal Commission
- County of Mercer
- Township of Hamilton
- City of Trenton
- PSEG
- D&R Greenway Land Trust
- Friends for the Abbott Marshlands

The purpose of the Council is to support the goals and vision of the signatories in preserving the Abbott Marshlands, based on the *Cooperative Stewardship Plan – Hamilton – Trenton – Bordentown Marsh 2010*, namely:

- Protection and preservation
- Stewardship
- Education
- Marsh identity and interpretation
- Coordinated management and organization

This report highlights the activities and achievements of the Council, its committees, and its members during the past year of implementing its plan.





Tulpehaking Nature Center: Staffed and Open!

After years of detailed planning, archaeological surveys, and construction, the Tulpehaking Nature Center has been completed and is open to the public. The Abbott Marshlands are a prime setting to explore nature, and the programs at the Tulpehaking Nature Center will offer multiple ways for the public to connect with this amazing environment. Following the framework outlined by the Interpretive Plan for the Abbott Farm National Historic Landmark and the Cooperative Stewardship Plan, programs at the new nature center will:

- Showcase the rich cultural and natural resources of the Abbott Marshlands. This will increase the awareness and understanding of this valuable place.
- Encourage visitors to explore, observe, discover and become involved with the environment through educational and recreational opportunities.
- Support the tradition of the Abbott Marshlands as a place of active scientific research, promoting science literacy, critical thinking and understanding of environmental issues and actions.
- Inspire people to take an active interest in the Marshlands and its ongoing stewardship.

The Tulpehaking Nature Center will be a premier environmental education facility for the region's residents, organizations, and inner



The new Tulpehaking Nature Center includes a beautiful gazebo for outdoor educational activities, meetings, or simply enjoying the natural beauty of the area.

city and surrounding schools in the Trenton and Mercer County area. Programs at the nature center will aim to cultivate an active community of public involvement at the marsh, where recreation, volunteerism, scientific inquiry, and education take place, where the public takes an active role in supporting and preserving the marshlands that enrich their lives.

Leading the educational initiatives at the Nature Center will be Kelly Rypkema, the newly hired manager of the Nature Center. Kelly joins the Mercer County Park Commission, bringing with her 15 years of experience in environmental education, volunteer management, and environmental program development. "I'm honored to have an opportunity to achieve this vision in concert with the Mercer County Park Commission, the Cooperative Stewardship Council, and partners. Together we can create a rich experience for visitors that promote understanding and stewardship of the extraordinary place that is the Abbott Marshlands." Kelly holds a Master's degree in Biology with a focus on ecology and animal behavior.

The official opening of the Nature Center is scheduled for October 7, 2014.

An oasis of natural beauty, the Abbott Marshlands are a unique urban natural area rich with natural and historical significance.

The wetlands are as environmentally productive as a tropical rainforest. In addition to providing habitat for wildlife, they perform the essential services of containing floodwaters, recharging groundwater, and removing pollutants from the air and water.





The Abbott Marshlands are significant for their natural history as well as their archaeology and cultural history. Native American use of the region dates to 13,000 years ago, and because of its archaeological significance as the largest Middle Woodland Indian site in the Northeast, the Abbott Farm National Historic Landmark was designated in 1976 by the US Department of Interior. The first Europeans settled here beginning in the early 1680s, and the Watson House, the oldest building in Mercer County, was built in 1708. In addition, Revolutionary War boats were sunk in Crosswicks Creek and Joseph Bonaparte, Napoleon's brother, lived on the bluffs near Bordentown from 1816–1832. An important local figure was Charles Conrad Abbott, naturalist and archaeologist, who is widely known for his many books and articles about wildlife and his contributions to archaeology.



Architecture and Archaeology of the Tulpehaking Nature Center at the Abbott Marshlands

The vision of a nature center at the Abbott Marshlands was set in motion when the D&R Greenway Land Trust Inc. received Green Acres development grants in 2004 and 2005 and Mercer County agreed to match them. It was opportune that at the same time a residential property adjacent to the Roebling Park entrance on Westcott Avenue came on the market. In May of 2006, Mercer County acquired the property containing a ranch style house and two small unimproved lots next to the house. This location, situated at the entrance to Roebling Park and on already improved land, meant that a center would not need to be built in the environmentally sensitive marsh.

The *Marsh Nature and Interpretive Center Master Plan* was completed in September of 2007 by SSP Architecture Group. It provides a conceptual plan for transforming the house into an educational and interpretive center and also grasped the importance of building a center that would interpret the rich cultural and environmental resources of the Abbott Marshlands.

Construction of the center, while still protecting the Landmark's rich cultural resources, created a challenge. A further challenge was the need for soil remediation due to past pesticide use on the property.

These two concerns had opposite solutions, minimal soil disturbance and soil removal. Before the Center could be built there was much to learn about the site.

The initial research involved a Phase I and Phase II archaeological survey, reported on by Hunter Research in May 2009. This study included archaeological fieldwork involving systematic shovel tests and excavation units across the property, along with background research and analysis of the fieldwork. The report and its findings were used to guide the design of the Center so that the disturbance of archaeological resources found at the site was minimal, and suspected burial sites were avoided.

With this information SSP prepared an extensive *Alternatives Analysis Report, August 2010* that included seven design options. The options ranged from the initial concept plan from the Master Plan, which was a large addition containing two classrooms, rest rooms and a lobby on a traditional foundation, to the option of building nothing at all.

The option that was chosen and approved by the State Historic Preservation Office minimized the project effects on archaeological resources, accommodated the Site Remediation Action Work Plan and met the program needs of the Center. The design contains several important elements to limit soil disturbance and the impact on archaeological resources. The footprint of the original concept design was reduced by removing the restrooms and the lobby from



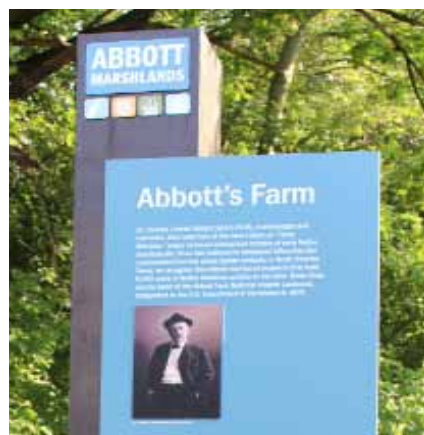
the addition and incorporating these element into the existing structure. But the most interesting element was the foundation system. Instead of a traditional slab foundation, the design uses an alternative foundation system that condenses structural support onto key “piling” (e.g., column) locations. This methodology reduces overall site impact and lessens soil disturbance. Pits were dug by a team of archaeologists. Then columns were constructed on footings with a platform constructed on top of the columns, and the classroom addition was built on this new surface. This design also made provision for archaeological monitoring of contractor excavations and was flexible enough that if significant culture resources were found, the placement of the pits and columns could be adjusted.

The process also included a Consultation Plan with the NJ Commission on American Indian Affairs. This has initiated crucial dialog and a partnership with the American Indian community towards providing authentic programming and resources.

This extensive but important process was essential for the protection of the archaeological resources. It also taught us many new things, reinforced the value of the resources, and established new partnerships. This development of the Tulpehaking Nature Center has its own interesting narrative, but the center will also be a home for the many stories of the Abbott Marshlands.

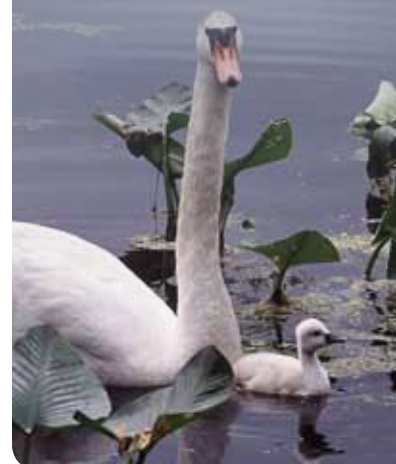
Abbott Marshlands Way-finding and Interpretive Signage

The new logo and branding will be displayed on new signs throughout the Abbott Marshlands. NJ DOT has made over 20 way-finding signs with the Abbott Marshlands logo that will lead visitors to several destinations. Thank you to NJDOT for these signs, and to Hamilton Township and Bordentown City who have agreed to install them. Interpretive signs will also be installed by Mercer County at the new Tulpehaking Nature Center and Roebbling Park. Mercer County is in the bidding process for these interpretive signs. The successful bidder will provide unit prices for the family of signs as outlined in the Abbott Marshlands Branding and Signage Guidelines. The County sign contract will also be available to state and local governments. This will provide uniformity and branding recognition through the Abbott Marshlands. Partners will work with the education committee for location and content of interpretive signs.



New interpretive signs lead visitors to the beauty of the Abbott Marshlands

In every season, the abundance of the Marshlands is easy to see. During spring, wildflowers blanket the forest floor and the cacophonous chorus of Spring Peepers can be heard. Wood Ducks swim from hiding place to hiding place, as orioles build their nests high in trees, often overhanging the water, and warblers return from their southern wintering grounds.



Marshes and ponds are home to Beavers and Muskrats. They build lodges for shelter, the tops of which may also be used as nest sites by Canada Geese or Mute Swans. River Otter have been seen along Crosswicks Creek and Watson's Creek. Squirrels and Chipmunks are active during the day, but other common woodland mammals such as Raccoons, Red Foxes, and Opossums are rarely seen because of their nocturnal habits. The presence of White-footed Mice is made evident by clumps of germinating seeds that were cached by the mice as food for winter. White-tailed Deer are present, but still relatively uncommon.

Many kinds of animals contribute to a diverse Marshland fauna, some so small they are invisible to the naked eye.



Education Committee Report

GOAL – EDUCATION

Use the Abbott Marshlands as an educational site integrating the natural and human history with uniqueness of these urban wetlands in order to foster knowledge, understanding and action. Work with the Tulpehaking Nature Center to promote Abbott Marshlands education.

The Abbott Marshlands Education Sub Committee consists of 11 members representing all levels of education from elementary school through university graduate studies and pertinent fields of study including science, natural history, history, art and archaeology. The committee met in August, September, October and December of 2013 and in April, May and June of 2014.

The early meetings in 2013 concentrated on completing the membership of the committee, interpretative signs for the marsh, on researching contact with state and federal Indian tribes, and on looking at exhibits at other centers regarding tribes and history of an area. A letter to the tribes, describing the development of an educational program on the history and archaeology of ancient tribal homelands, was finalized and mailed in May 2014.

The committee also concentrated on the strategic goal of Identifying and determining the needs of target audiences using the marsh. The committee drew up a list of target audiences and researched the type of questionnaire that would give the information needed to build a useful educational program at the Tulpehaking Nature Center. Distribution of the survey has started, and will be on going through 2014.

For 2014-15, the committee will work on a second strategic goal to develop integrated experiential educational programs. The task will be to develop educational school-based programs which align with the Common-Core- Curriculum. A school advisory subcommittee that includes curriculum administrators and teachers will be established to help accomplish this goal.

The committee will also continue to work on Interpretative signs, distributing, collecting and evaluating audience questionnaires, assisting in Nature Center and Ellarslie, *Abbott Marshlands – More than Meets the Eye*, exhibits, and assisting in setting up World Rivers Day in 2014 and 2015.



Stewardship Committee Report

GOAL – STEWARDSHIP

Maintain the integrity of the natural and cultural resources of the Abbott Marshlands through good stewardship practices following resource management guidelines

The Abbott Marshlands Stewardship subcommittee has been tasked with moving ahead with the lofty goals of the Cooperative Stewardship Plan. The subcommittee is currently comprised of members representing Hamilton Township Environmental Commission, NJ Department of Transportation, NJ State Park Service, Mercer County Parks, D&R Greenway and interested public. In an effort to engage local support, a letter explaining the goals and missions of the stewardship committee along with an invitation to join the committee was sent to townships, cities and municipalities located within the Abbott Marshlands area.

The committee's first task was to review the goals outlined in the Cooperative Stewardship Plans and collect pertinent information that has previously been researched within



Deliotte employees roll up their sleeves to help keep the Marshlands clean

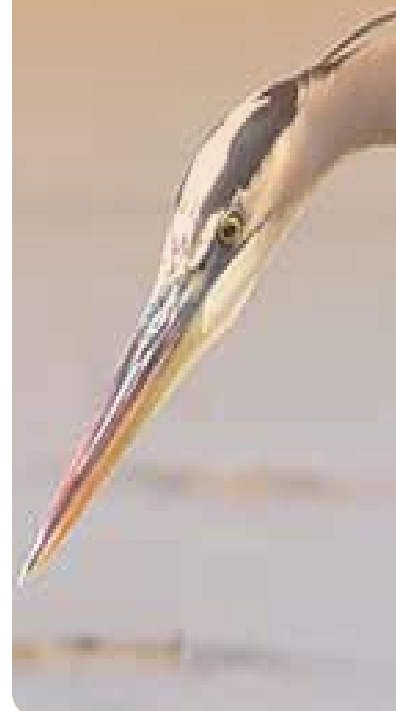
the marshlands. The committee to date has compiled Invasive Species Reports, maps of contaminated sites found in the marshlands, Soil Conservation District information, contacts for feral animal issues, Wildlife Action Plan, and information on local community environmental committees.

Control of invasive species is charged as a priority action within the Cooperative Stewardship Plan and the subcommittee has decided that this will be the first task that will be undertaken. In 2010 D&R Greenway conducted an invasive species survey of the Marsh, which provides useful information on location and species occurrences. The survey report stated the next step of the assessing invasive species would be to complete inventories on D&R Canal State Park, islands in the created wetland, and tidal marsh and swamps. A local ecologist, Alyce Herha, has volunteered her services in surveying the remaining areas in need. After the committee reviews the data, it will assess where eradication efforts would be best placed.

A construction debris pile was discovered along Lambertson Road by Duck Island in June. Through investigation, the NJ State Park Police were able to find the offenders and issue tickets for the violation. Also in the month of June, thirty employees of the Deliotte Company joined forces with the staff of the D&R Canal State Park to clean up flood debris found along the marsh edges by the Divine Word Ministries clearing out 11 tires and 11 cubic yards of debris.

The Marshlands are distinguished by a rich variety of bird life. The varied habitats support many resident and migrating species. Of the 245 species reported, more than 100 have been observed nesting here.

Waterways and ponds of the Marshlands support fish-eating birds such as mergansers, kingfishers, Osprey, egrets, herons, and even Bald Eagles. In winter, these areas host many wintering ducks, including Gadwalls, Ruddy Ducks, Ring-necked Ducks, Green-winged Teals, wigeons, Northern Shovelers, and Northern Pintails.



The Friends were honored in receiving the Dr. Ruth Patrick Award Excellence in Education from the Water Resources Association of the Delaware River Basin in April. Mary Leck accepted the award on behalf of the Friends. She noted in her remarks that education at the marsh has been a story of connections, one stage leading to another and that ecological research, beginning in the 1970s, as well as archaeological surveys and research, have informed many educational programs. Also, over the years many committed volunteers have provided programs.



Groups involved in trash pickups both on land and along waterways during the fall and spring: the Sierra Club, Bordentown Yacht Club, NJ Watershed 20 Ambassadors (an AmeriCorps Program), American Heritage Girls Troop NJ316, Sathya Sai Spiritual Center of Bridgewater, students from Rider University and Bordentown HS, Friends for the Abbott Marshlands, and many volunteers. All told, more than 200 bags of trash, many tires, and other debris were removed.

The Stewardship subcommittee meets quarterly at the D&R Canal State Park Office. If you would like additional information regarding this committee or are interested in participating please contact Stephanie Fox at the D&R Canal State Park at dnrnaturalist@verizon.net.

Activities of the Friends for the Abbott Marshlands

A major goal has been achieved with the completion of the Tulpehaking Nature Center and its scheduled opening in October. This is due to the efforts of and support of many partners including the Friends.

During the year, the Friends led 7 paddling trips, 15 field trips, and 4 trash pickups. In addition, a group of 60 Lalor School 5th graders had a field trip to the marsh. (Lalor School is within walking distance of Spring Lake). Additional groups that received pre-trip guidance prior

to visits were Rider University's General Biology labs (5 sections) and the Hunterdon Central Regional High School Environmental Science classes (47 students and chaperones), who also visited the nearby Hamilton Water Treatment Plant. The Friends also gave three talks about the marsh to regional groups, including a 4th grade class, a garden club, and a local environmental commission.

In anticipation of the Voices for the Abbott Marshlands juried photography exhibit, Friends members assisted with two trips for photographers.

The History Weekend in April included a light rail trip through the marsh, an archaeological walk at Joseph Bonaparte's Point Breeze, and open houses at the Watson House and Bow Hill Mansion. At the last, Dan Aubrey read a portion of his novella about Anne Savage, Bonaparte's mistress who lived there.

Trash pick-ups, noted above, on land and by canoe, involved more than 90 volunteers. Others who walk the trails on a regular basis help with ongoing trash removal.

The Friends welcomed Kelly Rypkema as manager/ naturalist of the Tulpehaking Nature Center. The Friends executive committee is exploring how to best integrate mission-related goals with Nature Center programming, and have decided to focus on building membership and a volunteer corps.



Friends have been involved with planning:

- Voices for the Abbott Marshlands, A Juried Photography Show (venues – Ellarslie and the Tulpehaking Nature Center).
- The *Abbott Marshlands – More than Meets the Eye*, an exhibit at Ellarslie – the City Museum of Trenton (September 20 – November 16). This exhibit will include Voices for the Abbott Marshlands photographs, art works in other media, artifacts from the Abbott Farm National Historic Landmark, and nature displays. Programs at the marsh and at Ellarslie will complement the exhibit and the opening of the nature center.
- World Rivers Day programs (September 28th).
- Programs for the opening of the Tulpehaking Nature Center (October 7th).

Friends provided support for development of Spanish versions of the nature center visitor/user survey and the Friends brochure, and since June 2013 have paid for storage of a herbarium case, books, photographs, and other materials while the nature center was being renovated. A small grant for Rutgers' student research project was also approved.

The water trail signs, installed in 1999, proved difficult to maintain (e.g., trees have fallen over) in recent years. The Friends have replaced the critical sign at the junction of Watson's Creek and Crosswicks

Creek. The sign designed and made by Zienowicz Signs was installed on July 7th. Other remaining nonfunctional signs will be removed.

Friends have joined the Coalition for the Delaware River Watershed.

Goals for 2014 through 2015

The Abbott Marshlands Stewardship Council has identified the following goals for the upcoming year:

- The creation of a recreation and Marsh identification and interpretation committees.
- The establishment of goals for the education and stewardship committees.
- The creation of exhibits that raise awareness of the Tulpehaking Nature Center.
- The cultivation of partnerships with the Friends for the Abbott Marshlands and other concerned stakeholders to preserve and protect this culturally rich natural oasis.

To learn more about the Abbott Marshlands and its history, or to review the cooperative stewardship plan, you can visit the Friends of the Abbott Marshlands at marsh-friends.org or the Mercer County Park Commission at mercercountyparks.org.

Doctor Ruth Patrick was a pioneer in studying the health of freshwater streams and rivers. She was an adviser to presidents and the recipient of distinguished science awards, was one of the country's leading experts in the study of freshwater ecosystems, or limnology. She achieved that renown after entering science in the 1930s, when few women were able to do so. Dr. Patrick's pioneering research, was later dubbed the 'Patrick Principle.' It became the fundamental means to measure and understand human impacts on the environment. She determined that biological diversity was an important indicator of the environmental health of a stream or other body of water, and is key to understanding the problems affecting an ecosystem.

The eminent Harvard biologist Edward O. Wilson has called Dr. Patrick the foremost authority on America's river systems and "a pioneer environmental activist." For seven decades, she has championed environmental protection, mentoring future scientists and inspiring many others by the example of her life and work.



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