



the Swamp Scene

friends of great swamp national wildlife refuge

ISSUE SIXTY TWO
MARCH 2020

Highlights

Earth Day—Celebrating 50 Years	3
The Eagle Has Landed	4
Wood Duck Box Report	8
Monarch Initiative at GSNWR	9
It's Official - 568 Refuges	10

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REFUGE ACQUIRES 88 ACRE PRIMROSE BROOK PRESERVE

By Mike Horne, Project Leader, Lenape National Wildlife Refuge Complex

It was 1989. George H.W. Bush was President; the Soviets were pulling out of Afghanistan; the Exxon Valdez was spewing oil into Prince William Sound; Helen Fenske was assistant commissioner of Natural and Historic Resources at the New Jersey Department of Environmental Protection; and the Prudential Insurance Company of America was planning a large corporate campus near the intersection of Routes 10 and 287 in Hanover Township—in a place called Lee Meadows. Lee Meadows, like the Great Swamp, was one of the remnants of Glacial Lake Passaic.

Prudential's project had stalled due to environmental concerns, primarily wetlands impacts and the presence of the State endangered blue-spotted salamander. The only way forward was for Prudential to provide mitigation for those impacts at a number of different locations, one of which was the MacDougall Farm, adjacent to the Great Swamp National Wildlife Refuge.

Continued on page 6

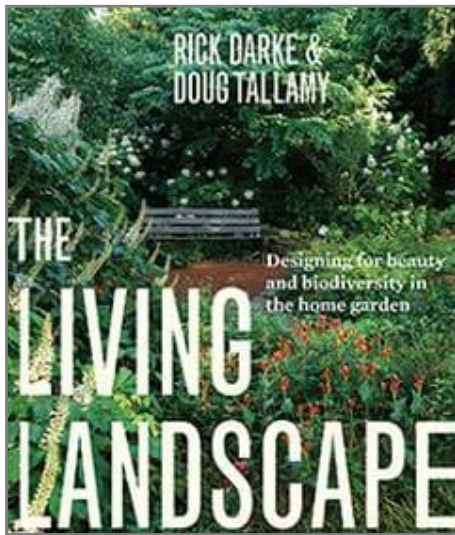


The Primrose Brook forms the eastern edge of the new acquisition

Photo: Lia McLaughlin/USFWS

CATERPILLARS ARE THE ANSWER—THE LIVING LANDSCAPE: A BOOK REVIEW

By Patricia Wells, Refuge Readers Book Group; Photo: Monarch on Goldenrod, Jim Duffy, Friends Photo Contest



Your yard can become part of a nationwide bird sanctuary. A little effort, a little research and a few native plants can have a significant effect on the survival of songbirds. Doug Tallamy, a professor of Entomology and Wildlife Ecology at the University of Delaware, has a simple, but elegant plan to create the nation's largest bird sanctuary by encouraging people to add native plants to their own yards. How would this save the rapidly dwindling songbird population? The answer is simple: *caterpillars*.

Nearly all terrestrial birds, whether seed eaters or insectivores, feed their young caterpillars—lots and lots of caterpillars. As an example, Dr. Tallamy described a study that showed a typical Carolina chickadee feeds a nest of hatchlings 300 to 570 caterpillars per day for 16 to 18 days. This means there needs to be more than 10,000 caterpillars within a limited flight range for the nestlings to

grow into fledglings. If the caterpillar population is too low, the parents can't simply fly further to find more. They are already expending maximum energy and time to capture what is within their limited range.

This is where you and I and our neighbors can make a significant difference. By adding native plants, especially trees and shrubs, we can provide the habitat for caterpillars. Choosing plants that are favored by butterfly and moth caterpillars is particularly helpful.

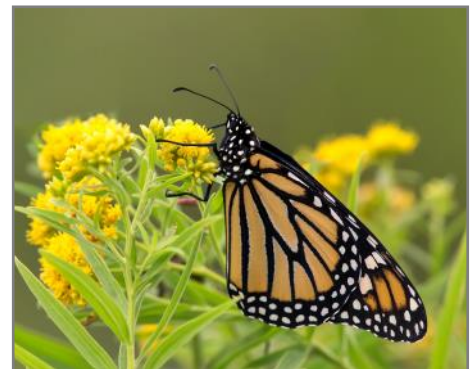
For an understanding of the relationship between wildlife of all ilk and our planted environment, treat yourself to Rick Darke and Doug Tallamy's newest book, "The Living Landscape". This gorgeously photographed book explores the layers of the landscape from the ground layer to the canopy, the communities that live in each layer, and how we can apply this knowledge to our home landscapes.

Tallamy includes a lengthy and extremely readable chart of beneficial native plants for the mid-Atlantic region. He uses symbols to identify a plant's ecological function, including pollen or nectar production; food availability for birds, mammals and caterpillars; nesting sites and wildlife cover; and carbon sequestration. He also includes symbols for landscape functions such as flowers, fall foliage, ground cover, and human food.

Looking through Tallamy's chart, several all-around winners appear with a long row of symbols after their names. The hands-down champions are the oaks—white, scarlet, southern red, burr, black-

jack, chestnut, pin, willow, red, and black. More than 500 species of moth and butterfly caterpillars eat oak leaves. The trees also provide pollen for native bees, and food for breeding, nesting, and migrating birds, as well as mammals. They are highly adept at sequestering carbon. Birches, willows, and maples (exclusive of the invasive alien Japanese maple) support 357, 354, and 286 species of caterpillars respectively.

Among native shrubs, blueberries, pussy willow and native viburnum are prime supporters of caterpillars, birds, and pollinators. The queen of herbaceous perennials is goldenrod and sunflowers are the princesses.



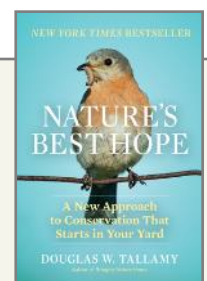
Tallamy also reminds us that adding native plants does not mean we have to eliminate our beloved non-natives. We can still enjoy peonies and irises, roses and rose of Sharon, as long as we counterbalance the foreigners with natives.

So spring is here, the perfect time to add a tree, a couple of shrubs, and some native perennials. The nestlings are hatching!

ADDITIONAL RESOURCES:

- National Wildlife Federation <<https://www.nwf.org/nativePlantFinder/plants>>
- Lady Bird Johnson Wildflower Center <<https://www.wildflower.org/plants-main>>
- Native Plant Society of New Jersey <[npsnj.org](https://www.npsnj.org)>

Just Published—Doug Tallamy. *Nature's Best Hope: A New Approach to Conservation That Starts in Your Own Yard*. Timber Press. 2020. *All of Tallamy's books are available in the Friends Nature Shop at the Helen C. Fenske Visitor Center.*



EARTH DAY CELEBRATES 50 YEARS IN 2020

By Judi DiMaio, Volunteer

Factories were belching black toxic clouds into the air. Dumping chemical waste into streams and rivers was business as usual. The rise of industrialism was seen as being prosperous. There were very few, if any, environmental controls or regulations. The American public took little notice.

However, an environmental movement was slowly brewing. One spark, a few years earlier, was a book published in 1962 by Rachel Carson called *Silent Spring*. This helped raise public awareness of the environmental issues and connections to public health.

This was a time of sit-ins, and the anti-war movement. Wisconsin Senator Gaylord Nelson, an early environmentalist, had an idea. He decided to have a national “teach-in” about air and water pollution and see if he could channel this public energy in another direction. If this worked and people became as passionate about the earth as the war, perhaps it would influence the national political agenda and force action. Senator Nelson recruited others and began to promote environmental events across the country.

What happened then was truly unique. Many people and groups had been fighting these environmental battles separately with little success. But they all shared common values; they cared deeply about the environment, extinction and loss of wilderness. This gave them a voice and in 1970 there was a rare political alignment and Earth Day was supported by both political parties, people from every walk of life, education, business and labor. By the end of 1970 the U.S. Environmental Protection Agency had been created and the Clean Air, Clean Water and Endangered Species Acts were passed. Senator Nelson’s idea had worked and by 1990, only 20 years later, more than 200 million people in 141 countries celebrated Earth Day.

We are now at the 50th anniversary of Earth Day and have come a very long way from the 1970’s. The Great Swamp National Wildlife Refuge is celebrating with several events. In addition to informational displays, there will be a special Second Sunday presentation about plastics and the environment on April 12 at 1:30 p.m. at the Visitor Center. The Friends Nature Shop eliminated plastic bags and uses paper bags decorated by local school children—each one a unique work of art. The shop also carries environmentally-themed items and very cute stuffed animals that are made from recycled plastic. Please stop by and help us celebrate our home—Planet Earth!



earthday.org

DO YOUR PART FOR REFUGES AND FOR CONSERVATION—BUY A FEDERAL DUCK STAMP

It’s not about hunting. It’s actually about buying habitat for waterfowl—and for the songbirds and other wildlife that benefit. Stamp sales, which are used to buy land for refuges, have declined over the past 30 years, a loss of more than \$10 million annually.

Less habitat, fewer birds.

Through the required purchase of duck stamps, hunters have long funded one of the most successful conservation programs ever created. But those of us who visit refuges just to enjoy nature, hike, bird, or take photos are not

required to purchase a stamp. Yet we all enjoy the benefits of wetlands and refuge lands.

It’s really simple. If wetlands become housing developments, shopping malls, and agricultural fields, there are fewer birds or wildlife of any kind. We all must do our share to help sustain wetlands and wetland species for the future.

Stamps are available at the Helen C. Fenske Visitor Center, open daily. Purchase *your* Federal Duck Stamp for \$25 today.



Winner Scot Storm’s painting of a male wood duck appears on the 2019-2020 Federal Duck Stamp.

THE EAGLE HAS LANDED (AGAIN!)

By Jim Mulvey, Volunteer; Photo by Chuck Hantis, Friends Photo Contest

Of the many treasures that the Great Swamp has to offer, there is one that is relatively new. Seven years ago, a pair of bald eagles decided to make the Great Swamp their home. They staked their claim in an isolated white oak tree surrounded by water in the Management Area of the refuge. At the time, one of the eagles was a sub-adult and reproduction efforts were unsuccessful. In 2016, that all changed when the refuge had its first breeding pair of bald eagles since its establishment as a National Natural Landmark in 1966!

This local pair of bald eagles are part of a remarkable recovery that the species has made in New Jersey since the banning of the pesticide DDT in 1972. In 1987, there was only one breeding nest in the entire state. New Jersey now has 190 known nest sites that have successfully fledged young as of last year.

2020 is the fifth straight year that the Great Swamp pair has laid eggs. Our local pair begins their breeding cycle sooner than most eagles that reside in the northern part of New Jersey, laying eggs in mid to late January. This start date is more typical of eagles that reside in slightly warmer climates. Our eagles have fledged young in 3 of the past 4 years, with 2018 being the only unsuccessful year. During that year, the adults were observed bringing food

to the nest shortly after the eggs were to have hatched, but the weather that March was severe and the eaglets did not survive.

Bald eagles mate for life and can live 20 years or longer. They are not sexually mature until they are about 5 years old. An adult bald eagle can be identified by having a fully white head and tail, whereas sub-adults are blotchy, while the young are mostly brown with white patches. When one of the adults is always in the nest, this is a sure sign that they are on eggs. Both sexes will sit on the eggs and they will trade places several times a day. A typical clutch is 2 eggs and their gestation period is 35 days. The young will grow to full size over the course of the next 3 months and will prepare to fledge by “branching”, where they move away from the nest onto nearby branches and flex their wings.

The Great Swamp bald eagles and nest site can be observed from the new Chandler S. Robbins Memorial Viewing Platform at the Wildlife Observation Center. On many occasions, the adult pair of bald eagles are seen interacting with immature bald eagles, which quite possibly are their offspring from previous years. During their successful breeding years, there were 2 Great Swamp eaglets each year, and all successfully fledged with the exception of one during their initial year.



Interestingly, last year the 2 eaglets were significantly different in size during their first 5 weeks. Chris Soucy, Executive Directory at the Raptor Trust, speculates that this may have been the case because 3 eggs were laid and only the first and last hatched. This scenario can be bad news for the younger eagle as the more developed sibling has been known to dominate the food resource. Fortunately, that was not the case last year and both eaglets fledged.

Our resident bald eagles appear to be relatively tolerant of other raptors. Two years ago they were seen interacting near their nest site with another pair. The visiting pair were a full adult and sub-adult (just like our Great Swamp pair started out). This isn't to say that our local pair aren't protective of their young. There was an

incident when a curious, or perhaps hungry, red-shouldered hawk ventured closer than was acceptable to the eagles and it was escorted away in no uncertain terms.

This year, the bald eagles were first observed on their nest on January 20, which would mean that February 24 would have been the latest day that the first egg would hatch. A survey conducted that day noted that the adult was sitting higher in the nest than it had been over the past month, which is a good indicator that the eagle parent is keeping its young chicks protected and warm. At the time of this writing, there was no indication of how many eaglets may have hatched, but if all goes well, we should have another exciting spring at the eagle nest site!

CHANDLER S. ROBBINS MEMORIAL VIEWING PLATFORM—REFUGE BIRDING HOTSPOT

Compiled by Laurel Gould, Volunteer; Photos by Robert Lin, Volunteer

The new Chandler S. Robbins Memorial Viewing Platform has been a busy place since it opened in late October 2019. Visitors have discovered that this new addition provides the best birding on the refuge. Volunteers have been setting up scopes on the platform since late January, sharing awesome bird sightings with visitors. For the past seven weeks, the Sunday volunteers have recorded a total of 42 bird species.

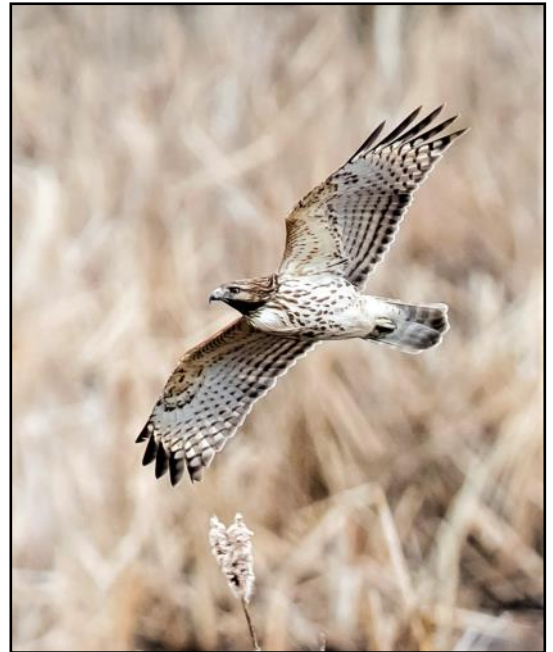
The stars of the show, without question are the bald eagles and the eagle nest, which can be seen from the platform. One of the volunteers reported:

We got very lucky because as soon as we got to the platform a bald eagle landed in a tree right across from the platform. We got the scope focused on the eagle and it didn't move for well over an hour. Everyone who came to the platform got to see the eagle perfectly through the scope. For some of them it was the first eagle they ever saw. Another bald eagle soared around for a while often coming near the platform at treetop level. Both eagles caused a lot of excitement.

Waterfowl species recorded include:

- American widgeon
- Black duck
- Bufflehead
- Canada goose
- Common merganser
- Gadwall
- Hooded merganser
- Mallard
- Mute swan
- Northern pintail
- Ring-necked duck
- Wood duck

The red-shouldered hawk (shown right) has been very visible, even eating frogs in the partially frozen water. Recently, Eastern bluebirds flew in, with a small group easily seen in the tall grasses and bushes close to the platform. The songbird sightings will increase quickly as spring arrives—as will the number of visitors! Good birding!



The new viewing platform was made possible by a generous gift from the Robbins family in memory of Chandler S. Robbins, a preeminent ornithologist and conservationist, who died in 2017.

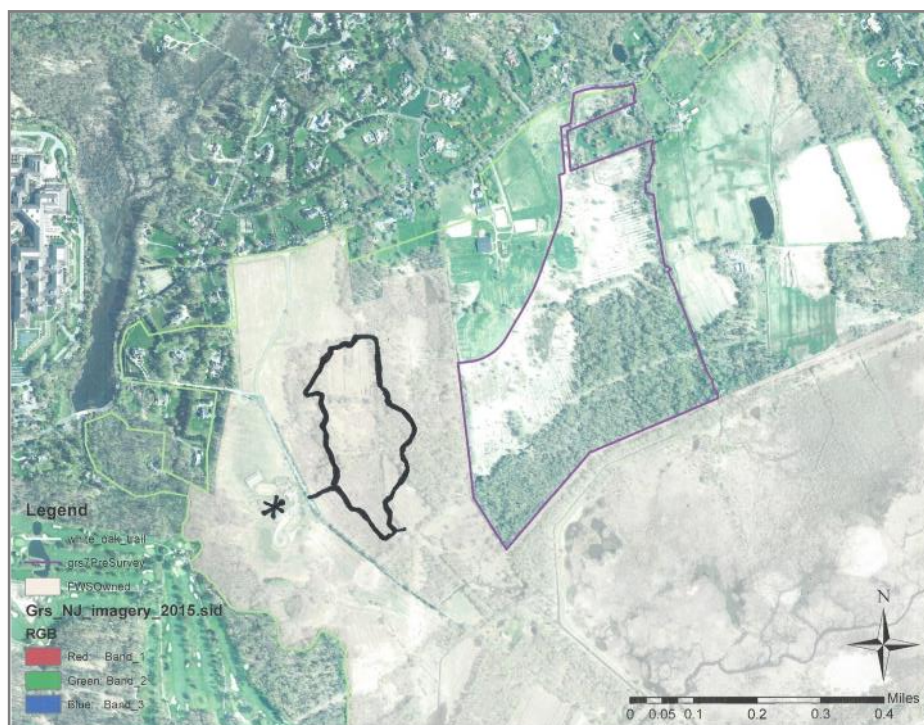
PRIMROSE BROOK ACQUISITION *(continued from page 1)*

The mitigation plan consisted of a habitat restoration effort to replace the forested wetlands that would be lost at the Lee Meadows project site. However, the MacDougall farm was just that—farmland which had been used for agricultural purposes, mainly hay, and not wetland forest. A 10-year plan was put in motion to convert the grass fields, known to support bobolink, into replacement wetland forest habitat. The restoration project cost a great deal of money but was largely ineffective, and Mother Nature might have done a better job by letting it revert naturally. The forest restoration activities there explain the artificial rows of mounds and gullies, the clusters of wood chip hills and the few straggly red maples killed by tree support wires planted by contractors, still visible there today.

On the surface, it would have seemed obvious for the property to transfer to the refuge back then. However, in 1989, parties involved decided that the MacDougall property would be placed with the New Jersey Natural Lands Trust as conservation steward of the Primrose Brook Preserve property.

I first became aware of the land and the story behind it when I got to the swamp as the watershed biologist, back in 1997. Craig Bitler, our wildlife biologist at the time, hunted deer on that land, making me aware of its existence so close to the refuge. Investigating further, I found out from then manager Bill Koch, that he had made overtures to the Trust to transfer the land to the refuge but that repeated efforts, for reasons outside of his knowledge or control, had not gotten a lot of traction.

In 2012, as the manager of the Wallkill River NWR Complex, I began working on the acquisition or management of a couple of Trust parcels in Sussex County. I met the Trust's ecologist and land manager, Martin Rapp, who ironically had spent some time working at the Great Swamp years before as a



White Oak Trail (outlined in black), Primrose Brook Preserve (outlined in purple), the “*” is the site of the Helen C. Fenske Visitor Center

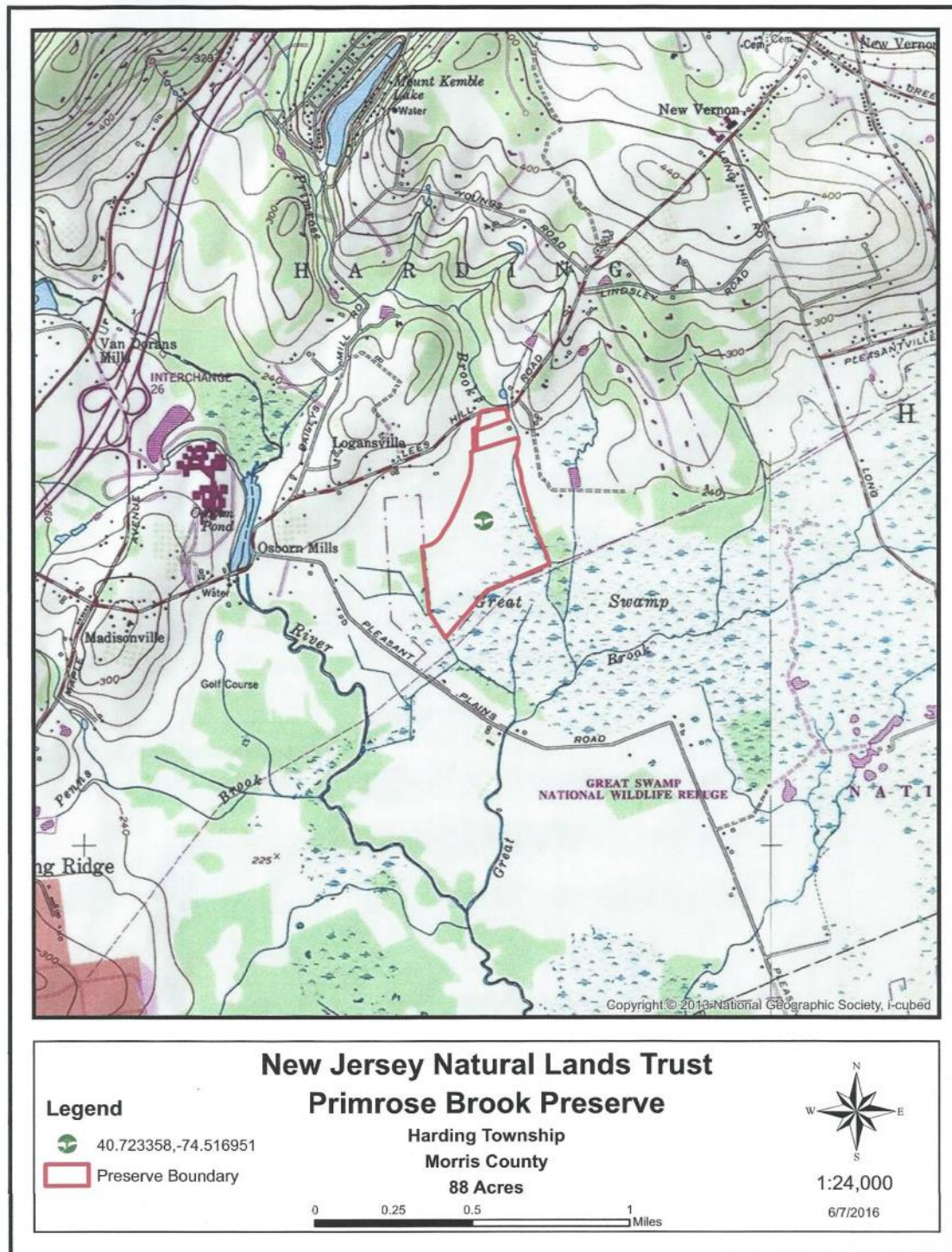
biology aide. He and I had that “former swamper” background in common along with the fact that we both were interested in bog turtle management and raised heritage breed cattle. Marty had Dexters and I have Belted Galloways.

Marty and I began talking about the Primrose Preserve and its potential for becoming part of the Great Swamp NWR. At the time I had no inkling that I would ever be back at the refuge, but you can only talk about cattle for so long before a new topic must be introduced. With my return to the refuge in 2014, I reached back out to the Trust and with the leadership and guidance of Cari Wild and Marty Rapp, we were able to craft a deal that made sense for everyone. The Trust agreed that the Preserve would be more efficiently managed by the U.S. Fish and Wildlife Service through integration of the property into the refuge's habitat and public use programs.

The acquisition of the Primrose Brook Preserve as part of the refuge is one of the most exciting and largest land projects we have done in recent years. At nearly 90 acres, its proximity to the White Oak Trail and Helen C. Fenske Visitor Center provide a number of interesting possibilities. The eastern boundary of the property is the Primrose Brook, a rocky, cobbly-bottom stream, a rare habitat type in the swamp. There is a drainage ditch in the southern portion of the site with emergent forested wetland. There are also some open scrub-shrub areas. Over the next several months we will be taking inventory. Who knows what we will find?

One last thing: If you ever shop at the Wegman's Supermarket off Route 10, pause for a minute and reflect that where you are standing was once a forested wetland and a remnant of a glacial lake that is now all but erased from the landscape.





PRIMROSE BROOK PRESERVE STATISTICS AND DATES

Address: 165 Lees Hill Road, Harding Township, Block 51, Lot 12.01

NJ Natural Lands Trust acquired the property in 1989 from Prudential Insurance Company

U.S. Fish & Wildlife Service purchased in 2019 (Deed dated August 7, 2019, Deed recorded November 26, 2019)

Purchase price: \$560,000

WOOD DUCK BOX INSPECTION REPORT FOR 2019/2020

By *Leo Hollein and Tom Gula, Volunteers*



The annual inspection of the refuge wood duck nest boxes began on November 11 after the deer hunt and concluded on January 15. Wood duck usage of the refuge nest boxes is below historical rates. However, usage rates have stabilized at slightly above 40% for the last five years. The trend of lower duck nesting rates is consistent with the corresponding decrease in wood ducks trapped and banded annually in the refuge. Apparently wood ducks find the refuge habitat less attractive for nesting than in the past.

Volunteers inspected and cleaned a total of 186 nest boxes and added fresh wood chips. The rainfall in Morris County in 2019 was about

15% above average. It seemed to rain heavily nearly once a week during the box inspection period. High water levels in the refuge made getting to many of the boxes more difficult than usual for the volunteers. Six nest boxes available in the 2018/19 season were damaged beyond use by falling trees or had deteriorated to the point that they were no longer serviceable. If the unusable boxes have historically been productive, they will be replaced by existing boxes from unproductive areas. A program to add 5 new boxes per year is planned for 2020. The last new boxes were added in 2016.

Nest boxes are more productive in certain areas. A box is considered used if a duck is

successful in fledging young, lays eggs and/or puts down feathers in the box. Wood ducks do not make nests but use their down feathers as insulation. Wood chips are provided as support for their eggs. Annual reports indicated there is a distinct trend of decreased box usage over time. In 2019 41% of the nest boxes were used by ducks. In peak years from 2005 to 2011 over 70% of the nest boxes were used.

Ducks favor nest boxes near quiescent water and tree cover such as those near Pool 1 and along Primrose Brook adjacent to Pool 2.

Areas more remote from water and in more open areas have less frequent usage.

The decreasing amount of open water is the likely cause of the decline in nest box usage and is being addressed by refuge staff.

There are two other known factors that impact duck usage of a given box. These two factors have become more prevalent as the undergrowth in the refuge increases.

- Ducks need an open flight path to the nest box entrance hole.
- Ducks will not nest in boxes that are surrounded by multiflora rose and other prickly vegetation. Ducklings leave (fall to the ground) their nest within 24 hours of hatching. They need a clear route to follow their mother to water.

Wood duck boxes are also used by Eastern screech

owls. These owls roost in the boxes in the winter and may nest in the boxes in the spring. In the 2010 to 2015 period, more than 10 screech owls were found while inspecting the wood duck boxes. This season, only one owl was found while inspecting the duck boxes. This continues the noticeable decline in screech owl populations in the refuge. The owl was a small brown-phase owl. It had been banded in October 2014 and has been captured every season since then. This owl was at least 6 years old. Only two other screech owls in the banding program are known to have survived this long.

The most likely reason for the decline in screech owls is predation by barred owls.

While there are no records of barred owl populations in the refuge over time, they and their young are seen with more regularity than in the past.

Barred owls are much larger and heavier than screech owls. Screech owls are essentially nocturnal and are rarely seen during the day. Barred owls are occasionally seen roosting in trees during the day.

The habitat in the Great Swamp National Wildlife Refuge is ideal for barred owls as they prefer large mature forests near open water. This is yet another sign of the changing habitat at the refuge.



A REVIEW OF THE MONARCH INITIATIVE AT GREAT SWAMP NATIONAL WILDLIFE REFUGE

By Kathy Woodward, Friends Board Member, Volunteer, and Monarch Initiative Champion



Photo: Maureen Duffy

When the U.S. Fish and Wildlife Service declared monarch butterflies a “species of concern” in February 2015, Dan Ashe, Service Director, stated, “To save monarchs, we all need to take action today.” Friends of Great Swamp NWR and Refuge staff wasted no time moving to action.

Core to monarch survival is milkweed and specific nectar plants. Great Swamp NWR has an abundance of several varieties of native milkweed and many of the necessary flowering plants. But Friends and staff grabbed an opportunity to create specific habitat for monarchs and, in 2015, created a small demonstration garden behind the Visitor Center. The milkweed plants in



the garden were quickly discovered by monarch females. By mid-August, the milkweed plants had so many monarch

caterpillars that, when the leaves of the plants were stripped bare, volunteers relocated caterpillars to the common milkweed plants in nearby fields and purchased additional swamp milkweed plants for the garden.

Education and outreach were also important components of the initiative. The theme of Fall Festival 2015 was “Monarchs on the Move”.

Volunteers wore bright orange tee shirts and 600 visitors enjoyed crafts and interactive displays focused on monarchs, as well as four performances of an original play about the amazing journey of the monarchs.

To end a rewarding year of educating the public on helping to save the monarchs, the Friends Outreach Committee participated in the Somerset County Environmental Education Center's Festival of Trees in December 2015. The “Monarchs Winter In Mexico” themed tree had over 300 paper monarchs, hand decorated by several scout and senior groups, placed together in hibernation on the tree. The ornaments had educational sayings encouraging people such as “Plant Milkweed”, “Garden Organically”, “Be Pesticide & Herbicide Free”, and “Teach Others”.

Efforts continued and expanded in the following years. In 2016, students from Madison High School spent their Community Service Day working on an expansion of the Monarch Milkweed Garden, turning the soil and getting rid of multiflora rose and other deep-rooted plants.

Encouraged by the success and interest in monarchs, in 2017 Friends and staff decided to expand habitat for butterflies, creating new native plant gardens featuring host plants for laying eggs and nectar plants for adult butterflies.



Also in 2017, the Monarch Initiative Committee set up a live display in the Visitor Center with two display cases for caterpillars and chrysalises and a “nursery” for tiny caterpillars. The first caterpillar was brought into the Visitor Center on July 17 and the final butterfly of the year was released on October 11. Three months of flutter excitement and at least 45 monarchs released.

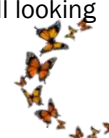
By 2018, volunteers decided to expand their efforts. Habitats in the gardens and around the refuge were expanded and the Pervasive Invasive Team prepared, seeded and watered a Pollinator Meadow behind the Visitor Center.

In 2019, staff mowed the year-old Pollinator Meadow and the Pervasive Invasive Team de-thatched the driest areas. The new native plant pollinator



beds behind the Visitor Center drew in more butterflies, especially monarchs. Friends continued to distribute information about planting pocket gardens to include milkweed and nectar plants for monarchs. By the end of the 2019 season, over 50 monarchs had been released.

It has been an exciting and rewarding five years focusing on habitat improvement, education and outreach. Friends and refuge staff remain deeply committed to monarch education and conservation work. We are all looking forward to the coming monarch season.



THERE ARE NOW 568 NATIONAL WILDLIFE REFUGES!

On November 22, 2019, the U.S. Fish and Wildlife Service announced the establishment of the Green River National Wildlife Refuge in Kentucky, the newest refuge in the National Wildlife Refuge System—and for those of you who are counting—this makes 568!

A ceremony was held in Henderson, Kentucky to celebrate the 10-acre easement that is the beginning of a Conservation Partnership Area with a planning target to purchase or protect 24,000 acres. Future acquisitions will be done by working with willing landowners as opportunities and funding allow. A portion of the funds collected from Federal Duck Stamps will also go toward the purchase of additional acres.

Located along the Green River and Ohio River, goals of the new refuge include:

- Protect and manage wetlands and bottomland forest habitats to support waterfowl, migratory birds, and threatened and endangered species;
- Provide high-quality hunting and sport fishing;
- Provide opportunities for public use and environmental education and interpretation;
- Collaborate with partners to protect and enhance biodiversity and water quality and quantity within the Ohio River and Green River watersheds, benefiting both people and wildlife; and
- Ensure healthy wildlife populations for the benefit of Kentuckians and all Americans.



The Green River NWR will be managed with an emphasis on supporting waterfowl and other migratory birds and providing recreational opportunities for hunters, birders and anglers among others.

And, no surprise – the *Friends of Green River National Wildlife Refuge* held their first board meeting in December 2019 with the mission of supporting acquisitions and resource management activities and quality wildlife dependent recreation for public users. Way to go Friends!



DO YOU LIKE BEING OUTDOORS? DO YOU WANT TO MAKE A DIFFERENCE? JOIN US AND VOLUNTEER!

All activities meet at the Helen C. Fenske Visitor Center.

No registration needed. Opportunities to learn about invasive species and their control and native plant alternatives.

INTRODUCTION TO VOLUNTEERING

Learn about the many volunteer opportunities.

March 28, May 2, June 13: 1:30–3:00 p.m.

PERVASIVE INVASIVE WORK DAYS

Help control invasive plant species and assist with habitat restoration.

Every Thursday, April–October, 9:00 a.m.–Noon

GARDENKEEPER WORK DAYS

Help maintain native plant gardens at the Visitor Center.

Learn from experienced volunteers and master gardeners.
9:00–11:00 a.m.

March 28, April 15, May 2, May 16, May 29, June 13

Come to one, many, or all of the work days. Check the Calendar of Events on the Friends website for more details.



SAVE THE DATE—FALL FESTIVAL AT GREAT SWAMP NWR—SEPTEMBER 26, 2020 CELEBRATING NATIONAL PUBLIC LANDS DAY!

Sponsored by the National Environmental Education Foundation (NEEF), National Public Lands Day helps connect people to public lands and their communities, inspire environmental stewardship, and encourage use of public lands for education, recreation, and general health. We'll celebrate with a full day of outdoor activities, partner exhibits, archery, live-animal displays and free lunch on the grill!

FRIENDS OF GREAT SWAMP NATIONAL WILDLIFE REFUGE MEMBERSHIP APPLICATION

The Friends of Great Swamp is an independent, non-profit organization organized in 1999. Our operations and activities are managed by an all-volunteer Board of Directors. As our mission statement indicates, our focus is Refuge-centric — we support the goals, projects, and mission of the Great Swamp National Wildlife Refuge.

To become a member of the Friends of Great Swamp, fill out the information on this form, and mail with your check to:

Friends of Great Swamp National Wildlife Refuge
32 Pleasant Plains Road, Basking Ridge, New Jersey 07920

ANNUAL MEMBERSHIP APPLICATION

☐ **EASTERN BLUEBIRD—\$15-\$49**

☐ **PAINTED TURTLE—\$50-\$99**

☐ **RIVER OTTER—\$100-\$249**

☐ **MONARCH BUTTERFLY—\$250-\$499**

☐ **WOOD DUCK—\$500 +**

☐ **New Member?**

TOTAL ENCLOSED \$ _____

You may also join online at www.friendsofgreatswamp.org

Name _____

Address _____

City _____

State, Zip Code _____

Phone Number _____

E-Mail Address _____

Gift Membership From: _____

(If this is a gift, please include your full name on the line above so we may notify the recipient)

We need more Friends ...

**Become a Friend Today—or,
Give a gift membership to a friend.**

Thank you



Memberships help support the projects and programs at Great Swamp National Wildlife Refuge.

Membership Benefits

- The Swamp Scene Newsletter.
- A 10% discount in Friends Nature Shop .
- Notifications of upcoming events.
- Satisfaction in knowing you are helping protect wildlife and wild places while safeguarding a national treasure for future generations.

Gift Memberships will include a coupon redeemable at the Friends Nature Shop for a free Great Swamp pin or Great Swamp patch.

Friends of Great Swamp NWR
32 Pleasant Plains Road
Basking Ridge NJ 07920

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THE SWAMP SCENE MARCH 2020

Friends of Great Swamp National Wildlife Refuge
Is an independent, volunteer, non-profit organization
dedicated to

Promoting stewardship of the natural resources of the Refuge,

Inspiring an appreciation of nature through education and outreach,

Engaging in partnership activities that support and enhance the Great Swamp National
Wildlife Refuge and the National Wildlife Refuge System.