



the Swamp Scene

friends of great swamp national wildlife refuge

ISSUE SIXTY
JULY 2019

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WOOD TURTLES ON THE VERGE

By Marilyn Kitchell, Wildlife Biologist, Great Swamp National Wildlife Refuge

WOOD TURTLE, *Glyptemys insculpta*.

Combination of the Greek words *Glyptos*, meaning 'carved', and *emys*, meaning 'freshwater tortoise'; *insculpta*, from the Latin word *insculptus*, meaning 'engraved'. Lives along permanent but shallow, clear-water streams with compacted sand and cobble bottoms. Spends much of its time on land and can be found in deciduous woods, cultivated fields, and marshy pastures, earning it the nickname 'tortoise' (land-dwelling) rather than 'turtle' (water-dwelling). Endemic to North America, it has survived multiple southward glacial encroachments and now ranges from Nova Scotia to Virginia.

The wood turtle wouldn't strike most people as a charismatic creature.

Solitary and silent, with coloration designed for disappearance, the wood turtle was never meant to stand out. For thousands of years the species has existed as a fixture of once-abundant landscapes centered on meandering cobble-bottom streams and the fields and forests that surround them.

And yet, as nondescript as these animals are, a quiet charisma becomes clear to the careful observer. Turtles within a population seem to know each other. They hibernate together. Females acknowledge others with graceful bows of the head, and willingly approach some males while avoiding others. Males patrol their own sections of the stream.

Once you come to know these animals, you can see wisdom in their eyes. You develop a real sense that their absence from the landscape would leave a gaping void in the life of the land, like the passing of a loved one who had been the quiet, steady rock at the center of your daily existence.



Photo: Jessica Piispanen/USFWS

In many places throughout the Northeast, the voids are real and haunting. Wood turtles are on the verge.

Their populations remain as fractured remnants on a landscape interrupted by suburban sprawl. Their streams, degraded by silt and erosion, are often flanked by paved death traps that mercilessly claim young and old with equanimity. The suburbs that have closed in on them bring raccoons, who munch on young hatchlings and full-grown adults alike.

Continued on page 10

PRESIDENT'S CORNER

By Joe Bahniewiczak, President, Friends of Great Swamp National Wildlife Refuge



This year the Friends of Great Swamp NWR will be celebrating its 20th anniversary. If we try to think back to 1999, we will be forgiven if we forgot that in that year there was concern about computers not being able to adjust to the new millennium (Y2K fears), the introduction of the

Euro, and the acquittal of President Clinton. Put in that context, 1999 seems a long time ago and indeed a lot has changed in that time. Google and Facebook were unknown words then; today they are part of our daily vocabulary. We can't imagine life today without our cell phones; did you even have a cell phone 20 years ago?

Certainly one can expect that the Friends of Great Swamp has also changed in the last 20 years. It is not surprising that the Friends membership has grown and that the level of involvement in support of the refuge has increased. But the mission of the Friends has not changed. Our organization has continually worked during that time to partner with the refuge staff in providing stewardship for the nearly 8,000 acres of Great Swamp NWR.

I have been a volunteer at Great Swamp for going on eight years now and have seen the Friends expand its role at the refuge. Seeing the changes in the organization and accomplishments of many of the Friends committees has been noteworthy. With the continuation of the support and volunteerism that the Friends membership shows today, the next 20 years promise great things for Friends of Great Swamp NWR and for the Great Swamp refuge that it helps to care for. The members of the Friends are invited to a celebration of the 20th anniversary at the Visitor Center on August 11th from 4:00–6:00 pm. I hope that you can join the Friends board to celebrate this milestone and reminisce about the past 20 years of Friends history and look forward and dream a little about the future.



SPEAKING OF THE FUTURE... UPDATE ON THE CHANDLER S. ROBBINS MEMORIAL VIEWING PLATFORM



The Friends Blind is gone, but check out the view!
Photo by Matt Heiss



George Robbins (4th from left) and his sister Jane (2nd from left) stopped by to check out the progress on their way from Maryland to New Hampshire. George Solovay is 5th from left.

The Friends Blind at the Wildlife Observation Center has been demolished and work has begun on the new Chandler S. Robbins Memorial Viewing Platform. Thanks to a generous donation from the Robbins family, a new two-level viewing platform is being

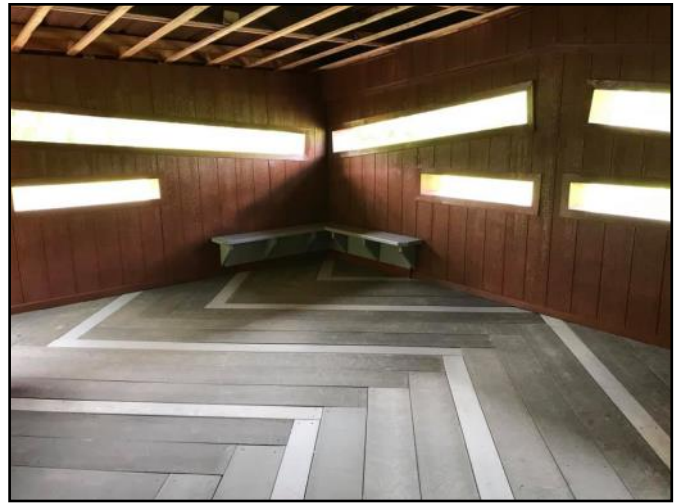
constructed. The lower level will be ADA compliant, raised about four feet off the ground. The upper level, accessible by stairs, will be eight feet above ground which should provide an extensive view of the impoundment (man-made pond) and waterfowl. Volunteer and Friends

Board Member George Solovay is leading the project with an incredible team of dedicated and hard-working volunteers. Oversight and assistance is being provided by refuge staff. It is anticipated that the Robbins Memorial Platform will be completed by year-end.



GARDEN CLUB BLIND GETS A COMPLETE MAKEOVER

By Joe Bahwerczak, Friends President and Member of the Construction Crew, Photos: Left, Dave Katz, Right, USFWS



Since last year, the Friends Construction Committee has been planning, with refuge staff, to renovate the Garden Club Blind at the Wildlife Observation Center. This blind was built more than 50 years ago and was renovated several times, the latest in 2002. The interior of the blind was showing a great need for a sprucing up, with dirt and debris collecting along the bases of the walls and paint peeling from the roof. Renovation work began in early February. Before work could commence, a small footbridge in front of the blind needed to be replaced in order to bring construction material and tools to the blind.

Demolition of the interior began on March 11 and was completed by eight volunteers in a day. The blind is essentially a metal shell with an uneven inside surface. Framing the inside of the blind in order to have smooth straight walls turned out to be a challenge. But the crew was unfazed and

met the challenge. After several weeks, the walls and window openings were framed and by the end of April the paneling on the walls was up. During May, the metal roof was replaced, new flooring installed, and the interior and exterior were painted. The original 1965 project had been commemorated by a large brass plaque which has been refurbished and will be reinstalled.

The renovation was done by volunteers who were led by Construction Committee chair George Solovay. Assisting with the installation of the new roof were refuge staff members Dave Miller, George Molnar and RV volunteer Johnny Roush. Helping to add a final artistic touch to the project was Friends volunteer and board member Jane Bell, who designed skylight-like panels for the ceiling. I hope that you make a point of visiting the Wildlife Observation Center and seeing the blind for yourself.

GARDEN CLUBS WIN NATIONAL AWARD TO BUILD AN OBSERVATION BLIND



In 1965, the Garden Club of Somerset Hills and the Summit Garden Club won the Garden Club of America's founders' fund award (\$3,000) for their proposal to build an observation blind at Great Swamp National Wildlife Refuge. It was one of the first of its design on a national wildlife refuge according to Refuge Manager Richard Rigby. The two garden clubs along with the Morristown Garden Club planted grasses, trees and shrubs to camouflage the shelter.

The blind was destroyed by fire in 1970 and rebuilt in 1972. It was refurbished by Friends of Great Swamp NWR in 2000 with the addition of new benches, carpeting, paint and made handicapped accessible with the installation of a 90-foot ramp.

This photo shows Mrs. John Borman standing outside the new 7 foot high blind. It was Mrs. Borman who headed a team of eight members from the two garden clubs which presented their project proposal. The blind overlooks a large clearing containing five ponds of various sizes and was expected to be especially popular during waterfowl migration season. Reservations were required!

CELEBRATING 50 YEARS OF POTTERY—OR HOW BEES AND RAPTORS LED TO NATURE POTTERY

By Ellen Greenborn, Volunteer and Friends Board Member

Have you seen the beautiful pottery mugs, bowls and tiles in the Friends Nature Shop? Maybe one of these is your favorite coffee mug, or you have given them as gifts and heard the recipient exclaim about the lifelike birds and other creatures painted on them. Friends member Judy Schmidt is the artist behind these creations, and this art represents a journey, circling from clay to beekeeping to birds—and culminating in nature pottery!



Judy first learned about ceramics from her mother, also her Girl Scout leader. Many years later, when Judy's children were in their teens, she took up beekeeping. A problem with the bee hives led her to beekeeping expert Bill Tyndall, whose wife Marge was a potter. Judy had also been taking pottery classes, so she joined Marge's group of potters. It wasn't long before Judy's

husband Bill built her a potter's wheel where she created pottery to be fired with the group in the large gas-fired kiln at the Tyndall's home. One of the potters in the group was Diane Soucy of the Raptor Trust and Judy began volunteering there, deepening her love of birds. When Marge and Bill Tyndall moved away, they gave Judy the kiln, which Bill installed in a shed next to their home. So ceramics and bees came full circle to pottery and birds! And Judy made all types of nature pottery.

For some of Judy's pottery, nature creates the form directly. Judy has made bird baths in the exact shape of fresh rhubarb leaves, cutting around the leaf as the template and forming the bath by curving the clay to hold water. In the same way, she makes leaf-shaped tea bag holders: each one is formed from a specific leaf using this 'pie crust' method.

Other pottery is painted with the images of various creatures that Judy loves in the swamp. Her favorites are wood ducks, chickadees, and all types of frogs!

Judy has shared her love of pottery making with her granddaughter as well as friends from Friends. So the circle of pottery and nature continues on!



Judy Schmidt at her Potter's Wheel



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 re-

quired 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.

SCREECH OWL POPULATION HAS DECLINED

By *Leo Hollein, Volunteer*



Red phase screech owl in nest box (Screech owls are unique in having two color morphs—gray and red.)

The refuge currently has about 190 wood duck boxes in 2,500 acres of the Management Area that are being actively maintained and monitored. These boxes are inspected and cleaned from November through February. The nest box inspection enables the refuge to tell whether ducks have used the box and if any ducklings have hatched.

While the nest boxes were installed for wood ducks,

many other inhabitants of the refuge use them as they either don't know or don't care that the boxes are for wood ducks. Hooded mergansers are another duck that nests in these boxes. House wrens, starlings and great crested flycatchers have also at times nested in these boxes. Gray squirrels, flying squirrels and white footed mice also have been found nesting or roosting in the wood duck boxes.

The refuge has a resident population of Eastern screech owls. Screech owls are not migratory and will remain on their territory all year as long as there are sufficient food resources. Screech owls not only nest in the boxes but also roost in them in the winter. During the winter inspections, any screech owl found roosting is held until the nest box has been cleaned and new wood shavings added. The owl and any prey items

(usually rodents in the winter) that it had stored in the box are returned.

Since 2009 the number of screech owls found during the annual nest box inspections has been recorded. The chart below compares the number of screech owls captured during each of the last ten winters. There is a significant reduction from the average of 15 owls found from 2009 through 2013 to the less than 5 owls captured in the last three winters.

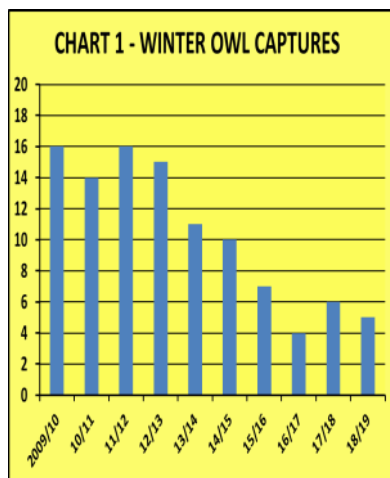
Only a select set of nest boxes are inspected for screech owl nests in April. These are boxes where owls were found in the preceding winter and where owls have nested in prior years. Screech owls in the refuge have nested multiple years in the same nest box. It is possible a few owl nests have been overlooked, but the nesting data is consistent with the decline in screech owls found during the winter nest box inspections.

The refuge has a population of larger owls. This could account for the decline in the screech owl population as this is an owl eat owl world. The barred owl and great horned owl are year round residents of the refuge. Long-eared and short-eared owls are occasional winter residents. All these owls are much larger than the diminutive screech owl and are

known to prey on their smaller cousins. Screech owls are about 8 inches long and weigh about 6 ounces.

The most likely predator of screech owls would seem to be barred owls. While there are no records of barred owl populations in the refuge over time, they and their young are sighted with more regularity than in the past. Barred owls are about 20 inches long and weigh about 1.5 pounds, quite a bit larger.

Eastern screech owls are common and widespread. They populate most of eastern North America as long as the habitat includes sufficient tree cover and an open understudy. They can be found in the suburbs. Barred owls require a more specific habitat. They prefer large mature forests near open water. The



Barred owl (Photo by Rich Hernandez)

habitat in the Great Swamp is ideal for barred owls. They should be able to outcompete screech owls in the refuge—as the data and observations indicate. However, this has minimal, if any, impact on the overall screech owl population in Eastern North America.

FRIENDS CELEBRATE 20 YEARS PART II: YEARS OF GROWTH AND CHANGE, 2007—2012

Compiled by Dave Katz and Laurel Gould

2007



Photo left: Friends host our first “Big Sit!” at the Overlook; final number of species seen or heard from within the 17 foot diameter circle: 59.

- Helen Fenske, champion of the Great Swamp and environmental legend, dies on January 19th. The new Visitor Center is named in her honor.
- Wilderness Area kiosks are purchased by the Friends and erected as an Eagle Scout project by Joey Cowper.
- Marilyn Kitchell begins a two-year Masters project studying the Federally endangered Indiana bat on the refuge.
- GardenKeepers start a new native plant bird feeding garden.
- With acquisition of Bajda property, the refuge grows to 7,725 acres.

2008



Photo left: Friends of Great Swamp NWR travel south for a workday at Supawna NWR to help their Friends group as the refuge has been “destaffed” due to budget cuts.

- Friends celebrate National Trails Day by creating the new Bockoven Trail at the Visitor Center.
- Work progresses on the Helen C. Fenske Visitor Center with an opening planned for Fall 2009.
- For the first time, Eastern bluebirds become the most common occupant of bluebird nest boxes, outnumbering tree swallows.
- Marilyn’s thesis shows Great Swamp is an optimal habitat for endangered Indiana bats.

2009



Photo left: Volunteers celebrate launch of Junior Refuge Manager Program; 28 children participate.

- In conjunction with the 10th annual Fall Festival, the new Helen C. Fenske Visitor Center opened to the public on September 12.
- A new effort to remove Invasive species at the Visitor Center begins with 23 volunteers donating 200+ hours.
- First Advanced Volunteer Workshop held—volunteers receive their Reptiles and Amphibians bar.
- The Great Swamp quilt, created and donated by Marcia Rymer, is permanently displayed in the Visitor Center.
- Friends launch a fundraising campaign by selling engraved commemorative bricks.
- New land acquisitions bring refuge acreage total to 7,768.

2010



Photo left: The Helen C. Fenske Visitor Center is dedicated on October 2. Photo at left (l to r): Bill Koch, Art Fenske, Mark Fenske, Susan Fenske McDonough, Karl Fenske, Tony Leger.

- Friends fund installation of Cornell's eBird Trail Tracker, an electronic bird sightings log, at the Visitor Center.
- In May, Refuge Readers, a new environmental book group, meets for the first time to discuss [A Sand County Almanac](#).
- New permanent exhibits at the Visitor Center are unveiled at Fall Festival, September 2010.
- Friends of Great Swamp NWR starts its own Facebook page.
- A record 254 bluebirds fledge from refuge's nest box trail. New paired box placement is proving successful.

2011



Photo left: New butterfly garden established at the Visitor Center by Friends GardenKeepers committee.

- Friends provide \$15,000 to support wood turtle and bog turtle research at Great Swamp NWR.
- Great Swamp NWR is selected as one of six refuges in the region to participate in the pilot Early Detection/Rapid Response Program to combat invasive plant species. Our own Great Swamp Strike Team is established.
- Bluebird Parking Lot is officially designated with kiosk, memorial bench, and restrooms replacing Friends Bookstore & Gift Shop—our first home—which was demolished in 2010.
- Cameras are installed inside two nest boxes outside the Visitor Center with a monitor in the Exhibit Room providing live action of bluebird and tree swallow nestings.

2012



The volunteer program at Great Swamp NWR, first started in 1982, reaches a cumulative 150,000 hour milestone!

- Visitor Center Pavilion dedicated to the memory of Richard J. Guadagno, a U.S. Fish & Wildlife Service employee, who was aboard Flight 93, hijacked on September 11, 2001.
- The septic mound at the Visitor Center, which was tilled in 2011, is planted with warm season grasses and a native wildflower mix to benefit pollinators.
- Great Swamp bat research revealed increases in numbers of big brown bats and red bats.
- At the end of October, Superstorm Sandy blasts Great Swamp; the refuge is closed for a week following the storm.

THERE'S A WORD FOR THOSE (or, Under the Spreading Pedantry)

By Peter Lebovitz, Friends Volunteer

It can happen to anyone. There you are out in the Wildlife Refuge when you come across, what else, some wildlife. A gathering of like minded birds, animals or perhaps insects. You turn to your companion and remark "Look at all those otters!" A pity you didn't know that a group of otters is called a "romp". And there are collective nouns (as they are sometimes called) for many of the creatures found in our refuge. You may be familiar with "Gaggle of Geese" or "Herd of Deer", but what about hummingbirds, crickets or toads?

The answers to all of these questions can be found in James Lipton's landmark book, *An Exaltation of Larks* (Penguin Books, 1993). In this remarkable work, Mr. Lipton lists thousands of what he prefers to call "terms of ventry" and traces their origins through literature and history. This includes descriptors of people, places, things and, most importantly, critters. To be clear, the book is not intended to be a definitive reference on group nomenclature. Instead, the author's ambition is to encourage richness and imagery in our use of language.

So if you aspire to more colorful descriptions of your wildlife encounters, I have extracted a select list terms that might be of use during a trip to our refuge:

Crackle of Crickets
 Scurry of Squirrels
 Shimmer of Hummingbirds
 Murmuration of Starlings
 Parliament of Owls
 Radiance of Cardinals
 Gatling of Woodpeckers
 Cloud of Bats
 Scold of Blue Jays
 Murder of Crows
 Gaggle of Geese
 Knot of Toads
 Cast of Hawks
 Siege of Herons
 Fall of Woodcock (*rarely seen*)

And of course:
 Swoop of Bicycles



A Plague of Grackles (Photo by Doug Kath)



FALL FESTIVAL AT GREAT SWAMP NWR SATURDAY, SEPTEMBER 14, 10:00 AM—3:00 PM

Going Batty at Great Swamp

Fun activities for kids, walks, river seining, archery, hoverball, partner exhibits ... hot dogs on the grill and the first fall apples. All free!

VOLUNTEERS ARE RECOGNIZED AND CELEBRATED AT 33RD ANNUAL RECOGNITION EVENT

On a perfect June evening, 100 Friends, volunteers, staff and guests met to recognize and celebrate the volunteers of Great Swamp National Wildlife Refuge. It was a new record! A total of 16,900 volunteer hours donated in Fiscal Year 2018 by 285 volunteers. Attendees enjoyed a delicious buffet dinner followed by the awards ceremony. And there was cake! The Friends were formed in 1999 and are celebrating their 20th anniversary.

Visitor Services Manager Jonathan Rosenberg, Friends President Joe Balwierczak, and Deputy Manager Lia McLaughlin all thanked the volunteers for their incredible donation of time, talents, energy, and dedication to the refuge.

Former Congressman Rodney Frelinghuysen made a surprise appearance and congratulated the volunteers on their dedication and passion. In return, retired Refuge Manager Bill Koch recognized the Congressman and his family for their long-time support for this refuge. The head-start wood turtles, recently arrived from their winter “spa” in Massachusetts, also put in an appearance. Attendees all welcomed last year’s hatchlings back to their Great Swamp home.

NOTABLE VOLUNTEER MILESTONE AWARD RECIPIENTS

Awards include a Blue Goose Name Tag, Milestone Hour Pins, and Perpetual Plates on the 500 Hour Honor Board and the 1,000 Hour Blue Goose Honor Board



100 HOUR CLUB

Bill Craine, Rena Craine, Richard Derosier, Patricia Dreikorn, Lynda Goldschein, Matt Heiss, Richard Hiserodt, Susan Katz, Peter Lebovitz, Lynne Marquis, Ernie Mazzarisi, Betty Mills, Ginnie Scott, Tom Smith, Maggie Southwell

150 HOURS

Bill Craine, Rena Craine, Richard Derosier, Allen Dreikorn, Matt Heiss, Richard Hiserodt, Bonnie Langdon, Robert Lin, Ernie Mazzarisi, Ruth Nahm, Alice Qian, Maggie Southwell, Sharon Sperduto, Janet Stadelmeier

250 HOURS

Brenda Bourassa, Bill Craine, Charlie Gould, Tom Gula, Lois Harold, Bonnie Langdon, Robert Lin, Lorraine Novinski, Roberto Reisinger, Gina Smith, Kent Stevens

500 HOURS

Pete Axelrod, Jane Bell, Jim Halsey, Anne Hebenstreit, Dave Katz, Terry Kulmane, Jim Marquis, Johnny Roush, Mary Jane Walsh, Barbara Whitmore

1,000 HOURS

Steve Herdman

1,500 HOURS

Joe Balwierczak, Pat Garvin, Walter Willwerth

3,500 HOURS

George Solovay

6,000 HOURS

Randi Emmer

8,000 HOURS

Kathy Woodward

Congratulations Volunteers!



WOOD TURTLES *(continued from page 1)*



Photo: Kymerical Imagery

Facing substantial declines over the last century, wood turtles have been petitioned for listing under the Endangered Species Act, a decision the U.S. Fish and Wildlife Service must make by 2023.

At Great Swamp NWR, wood turtles are on the verge of something entirely different.

A relic population discovered in May 2006 has been nurtured, tracked, and shepherded toward recovery. A journey 13 years in the making has been supported by \$158,000 in donations from the Friends of Great Swamp NWR, roughly \$150,000 in federal dollars for staff support, and more than a dozen interns, staff and researchers who have tirelessly followed turtle movements. Over 450 young turtles have been released from nests armored against ravenous raccoons by wire cages. Hundreds of radio transmitters have been fitted to dozens of turtles. Absent the support of the Friends group and the refuge's ability to serve as catalyst, none of this could have happened—and any other conservation organization would be hard-pressed to emulate it.

So many questions loomed when we began monitoring in 2006. We built the first artificial nest mound on nearby refuge land, fearing the impending development of the private property where turtles had been discovered nesting. Would the new mound effectively draw adult females? If we introduced females to it, would they return on their own? Could we find and protect enough nests to boost the number of surviving hatchlings?

It worked. We doubled the size of the mound in 2008. In 2010, somewhat miraculously, the private owners of the original nesting site sold their property to the refuge for turtle conservation.

In 2011 we began the head-starting project, following the lead of Dr. Kurt Buhlmann and his prior work with Blanding's turtles. With the help of natural resource students from Bristol County Agricultural High School, about an hour south of Boston, Massachusetts, over 232 "head-starts" have since

been gathered from their natal mounds, spending their first 9 months being hand-fed at summer temperatures while their wild counterparts hunkered down and slept through the winter. They achieved the size of 3-year old turtles in just 9 months of life.

We had more questions. Would 9 months of hand-feeding wipe away their natural instincts? Once released, would they know what to eat, where to roam, or how to survive the first winter they encountered at 15 months of age? Would they learn to recognize "home", or wander off only to be lost to the pavement, the raccoon or the lawnmower? Would they survive at greater rates than their wild counterparts? Would they behave according to their age, or their size?

We have learned so much in the last 13 years. The first head-starts are now on the verge of revealing whether this novel conservation technique can effectively turn the tide for a population in decline.

The young do in fact retain their natural instincts, and more of them do survive—in one analysis, we estimated 48% survival of head-starts compared to an expected 13% among their wild counterparts. As for the adults, we continued to find individuals through 2015, and at our peak had identified 14 females and 4 males from the original population. Ten of those adults have suffered mortality since 2014, a few have lost their radios, and just 6 adult females—and no adult males—remain from that original population. Had we not initiated the head-starting project, we would likely be facing clutches of infertile eggs in the coming years.

However, males from the first class of head-starts began breeding in 2017—at 6 years of age, at least 3 years earlier than we would have expected from their wild counterparts. We wondered whether the young females—slower to mature—would also breed ahead of schedule?

In 2018, at 7 years old, they approached adult size. In 2019, they reached it. Would these females breed—four years earlier than their peers?

In May 2019, Dr. Kurt Buhlmann exuberantly called longtime project lead Colin Osborn with a message: "I have the answer." Female 465 had eggs. Shortly thereafter, Female 464—her sister—joined her. On May 29, the first of their nests was laid—and on June 11, we had a second. Eight year old females from that first class were breeding!

But for all our excitement and all the potential held in those 32 square inches of loose sand on the nesting mound, after 13 years and \$300,000, we still don't know... will they be fertile? Will they hatch?

And so we remain on the verge of yet another answer. Perhaps the charismatic, solitary presence of the wood turtle may yet remain within the landscape at Great Swamp NWR.



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
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THE SWAMP SCENE JULY 2019

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.