



the Swamp Scene

friends of great swamp national wildlife refuge

ISSUE FORTY SEVEN
MARCH 2015

Highlights

Great Swamp Strike Team	4
It's More Than Just a Duck Stamp	6
Red Knot Gains Protection	7
Meet—Jim Mulvey	9
Red-eared Sliders	10

Board of Directors

Elaine Seckler
President

Susan Garretson Friedman
Vice-President

Kathy Woodward
Secretary

Laurel Gould
Treasurer

John Berry

Rich Dufort

Randi Emmer

Karen English

Jim Mulvey

Larry West

Walter Willwerth

Laurel Gould
Editor

241 Pleasant Plains Road
Basking Ridge, N.J. 07920
973.425.9510
www.friendsofgreatswamp.org



Printed on recycled
paper

BIRDING SKILLS WORKSHOP FOR VOLUNTEERS—A FUN & EDUCATIONAL DAY

Story by Kathy Woodward, Friends Board Member & Volunteer; Photos by Jane Bell, Volunteer

Very soon, many of our volunteers at Great Swamp NWR will have a new *Birds* bar on their volunteer vest. The bars hanging from their Swamp Nature Guide pin are earned by participating in training on a specific subject.

On Saturday, January 31, 2015, 32 volunteers learned about birds and birding so they can interact with Refuge visitors with new knowledge and skills. Mike Anderson, Director at NJ Audubon's Scherman Hoffman Wildlife Sanctuary, taught how to identify many New Jersey birds. In the afternoon, Friends volunteer George Helmke presented information about the history and use of optics. Mini-sessions, led by volunteers, covered the practice of observation skills, eBird Trail Tracker, and a discussion of field guides and bird apps.



Volunteer George Helmke covers the history of optics

veterans to watch birds at the VA Hospital in Lyons. Others will lead bird walks and build awareness of the habitats at the Refuge.

Mary Beth Hansbury said she really enjoyed learning interesting tidbits to share with visitors. "An interesting takeaway was how the feather fad in the millinery industry decimated some bird species. This was responsible for early conservation efforts which eventually led to the creation of the U.S. Fish and Wildlife Service." Tom Ostrand remarked: "George's optics talk was fascinating. I had no idea that the forerunners of modern binoculars were designed nearly 200 years ago. It was also quite an experience to hold the German submarine binoculars—an instrument clearly not very appropriate for birding! The presentation



Role playing typical visitor interactions: Judy DiMaio (left) and Kathy Woodward

In order to earn this Swamp Nature Guide *Birds* bar, each participant must volunteer at least five hours on an approved activity that connects people with birds. Several people will help at the Great Backyard Bird Count, February 13-15, 2015. Carl Woodward described a potential project working with

about the birding apps was all new and very welcome to me; I didn't know there were so many options available, and that they made so much information instantly accessible." "It was a great team effort and lots of fun with nice folks", noted Jane Bell, a committee member and presenter.

GREETINGS FROM THE NEW FRIENDS PRESIDENT



What a remarkable year 2014 was for Friends of Great Swamp. As you recall it was the year of “50-50-15”, (50 years a Wilderness and a NWR and 15 years a Friends Group); another successful and fun Volunteer Recognition event; hosting the first Friends Peer-to-Peer Work-

shop with participation by Refuges from four states; our 15th annual Fall Festival; the retirement of our long time Refuge Manager, Bill Koch; the huge celebration of the 50th Anniversary of the Wilderness Act including a visit from U.S. Secretary of Interior, Sally Jewell; the approval of the Comprehensive Conservation Plan (CCP); the announcement of Great Swamp becoming part of a Refuge complex and the appointment of our new Project Leader, Mike Horne.

And—so many other important projects in 2014 from our extraordinary volunteers! The Strike team, invasive species days, staffing at the Visitor Center and Wildlife Observation Center, building a new trail and observation platform, planting and maintenance of native plant gardens, and donations of memorial benches. A very successful and busy year! I am awed at the participation and enthusiasm of our Friends volunteers and the support of our Friends members who make all of this possible.

On a personal note, 2014 was an educational and fulfilling year for me as a volunteer, board member and recently elected President. I continued my role as Vice President, volunteered in the Visitor Center, and participated in various Refuge projects. In August I had the privilege of attending Friends Academy, a week-long training for Friends leaders which enhanced and broadened my understanding and interest in the National Wildlife Refuge System.

2015 promises to bring more excitement and will provide increased opportunities and need for volunteers, and for funding resources. Some examples: a new trail at the Visitor Center, enhancements at the Wildlife Observation Center, new ADA compliant picnic tables and benches, new scopes near the pavilion and much more.

Although I have participated with Friends for several years, there are many of you that I have not met. When you see me, please introduce yourself. I hope to get to know many more of you in 2015.

Look for more updates from me throughout the year...

Elaine

FRIENDS ANNUAL MEMBER MEETING HELD DECEMBER 6, 2014

The Annual Member Meeting of Friends of Great Swamp National Wildlife Refuge was held at the Helen C. Fenske Visitor Center on Saturday, December 6, 2014 with 64 members in attendance.

Following an always interesting and enjoyable pot luck dinner, President Susan Garretson Friedman welcomed attendees and called the meeting to order. Laurel Gould presented the Treasurer's Report and Susan reviewed the significant projects and accomplishments for 2014.

The following Directors were re-elected for two year terms: Rich Dufort, Randi Emmer, and Elaine Seckler. New to the Board, Jim Mulvey was elected for a two year term (*Jim's bio appears on page 9*). Susan thanked retiring Board member Jen Dawson and recognized Laura Nally, who is also leaving the board, for her ten years of service as a Board member.

The Friends presented a framed commemorative 50th anniversary Wilderness poster to the Refuge which was accepted by Deputy Refuge Manager Steve Henry.

At the regular December Board Meeting, the following officers were elected by the Board: President Elaine Seckler; Vice President, Susan Garretson Friedman; Secretary, Kathy Woodward; Treasurer, Laurel Gould.



Wilderness poster by Monte Dolak

FRIENDS BOARD VOTES TO FUND FISH AND INVERTEBRATE STUDY

The Board has approved \$20,000 to fund a study of fish and invertebrates in the Refuge's impoundments and streams. This new study complements the two-year waterfowl study that was completed in

2014. These projects will aid staff in management decisions associated with Refuge impoundments by providing current assessment of impoundment habitat and the various types of wildlife that utilize these wetlands and other

waterways. The study will be conducted by Frostburg State University, Frostburg, Maryland. The Friends will be scheduling a Second Sunday presentation when research results become available.

REFUGE UPDATE WITH DEPUTY REFUGE MANAGER STEVE HENRY

PLANNING

The Refuge's Comprehensive Conservation Plan (CCP) was finalized on October 1, 2014 marking the end of a four year planning process that involved substantial public input. The CCP is a key document that will guide Refuge management for the next 15 years. The document is available online and can be accessed from the Refuge's homepage. Many thanks to all those who participated in this important process.

BUDGET

In mid-December, the President signed omnibus legislation that funds most federal agencies, including the U.S. Fish & Wildlife Service, through the end of the fiscal year (FY). The Refuge has not yet received its budget allocation but indications are to expect flat funding in FY15.

INFRASTRUCTURE

- Repairs to the Visitor Center exterior are nearing completion. Peeling paint was scraped, primed, and reapplied. Shutters were removed and are being repainted. Some shutters were badly deteriorated and will be replaced. The main door at the top of the ramp was replaced with a heavy-duty steel door. Shingles blown off by Hurricane Sandy were patched as a temporary fix until the roof is replaced. Still pending is the replacement of windows and rotten wood behind the Helen Fenske panel.
- Realignment of the curve at Marsden's Corner has been put on hold until replacement of Great Brook Bridge is ready to move forward. Resurfacing of Pleasant Plains Road from the bridge to the cul-de-sac has tentatively been rescheduled for the summer of 2015.
- Repairs to the roofs of Refuge quarters damaged by Hurricane Sandy have been delayed until spring due to safety concerns over winter weather.
- Construction of a new trail across the street from the Visitor Center will begin shortly. This approximately 1 mile loop will provide additional outdoor opportunities in close proximity to the Visitor Center.
- Many Refuge directional signs will be replaced in the near future. The new signs will specifically mention the "Visitor Center" and replace out-of-date references.

PUBLIC USE / SPECIAL EVENTS

The annual whitetail deer hunt was held on November 1 (youth) and November 5-8 (general). A total of 103 hunters harvested 23 deer, the second lowest harvest in the 41 year history of the Refuge's hunt. This low harvest was due mainly to a late-summer outbreak of bluetongue which caused significant mortality in the Refuge's deer herd.

HABITAT MANAGEMENT

- During 2014, more than 20 volunteers donated 210 hours of time to the Refuge's Invasive Species Strike Team (see *related article on page 4*). Twelve priority invasive plants including new species such as chocolate vine, Japanese angelica tree, and trifoliate orange were targeted for eradication. Approximately 48 acres were treated with a combination of

mechanical and chemical methods. GPS reconnaissance was also conducted to detect possible new invasions. The 2015 season will kick off in April and anyone with interest in invasive plant control is welcome to join.

- Annual brushland management will start in early February with 15 acres targeted for treatment in 2015. Feathered edge and mosaic techniques will continue to be used to further improve habitat quality.
- Spectra Energy, which owns several gas pipelines that cross through the Refuge, has agreed to fund habitat restoration work at a historic bog turtle site. The work, which focuses primarily on invasive plant control, will begin this spring and continue for three years.

POPULATION MANAGEMENT

- The first portion of a two-year research project to develop improved deer monitoring techniques and management models was recently completed. South Dakota State University graduate student Elise Berheim placed 20 baited trail cameras across the Management Area and monitored deer use for two weeks. Elise will return in the spring to conduct visual surveys and will complete a second round of camera monitoring next winter.
- The Refuge also began a second round of deer browse monitoring through work with Dr. Michael Van Clef. Forty browse plots were randomly established throughout the Refuge. The plots will be examined for evidence of deer browse this summer. A similar survey was conducted in 2007-08. It will be interesting to compare the results given that the Refuge's deer population has been reduced as the result of two recent disease outbreaks. It will also be interesting to compare the results of this study with Elise's research.



"Editor's note: This will be Steve Henry's last column. After nine years at Great Swamp NWR, Steve has accepted a position at Loxahatchee National Wildlife Refuge in Florida. We all wish Steve, his wife Mayra and sons Justin and Jordan the very best."

Left to right: Justin, Steve, and Jordan Henry; Photo by Mayra Henry

THE STRIKE TEAM NEEDS YOU!

By John Berry, Volunteer

Do you want to make a difference for Great Swamp species such as American woodcock, little brown bat, and wood frog? Then please consider volunteering for the Early Detection and Rapid Response Strike Team. The mission of the Strike Team is to find and eradicate *emerging* invasive plant species before they have a chance to establish themselves across the Great Swamp. Stopping the spread of these invasives is a critical part of the Refuge's effort to preserve the habitats of animals and plants that make our visits to the Great Swamp so special.

Since the Age of Discovery, plants, animals, fungi, and microbes have been shuffled around the globe. Most of the introduced species don't survive in their new locales. Others survive and reproduce, but with limited success. A few, however, thrive in their new environments, out-competing native species and damaging or destroying local ecosystems. These are the invasives. Left unchecked, invasive species can overrun landscapes, pushing native flora and fauna to the margins—or even completely out of the neighborhood. The Strike Team works to halt this process, thereby protecting or restoring Great Swamp habitat. Most of the

team's efforts go toward habitat protection, which can be difficult to appreciate. Take the case of glossy buckthorn, a highly invasive bush from Europe that has already become widespread in many northeastern parks. In recent years, glossy buckthorn has appeared on the Refuge, most notably along a service road in the Management Area (heading toward impoundments 3A and 3B). This follows the pattern for invasive plants. They typically advance along roads, trails, ditches, and other features of the developed landscape. But they don't stay within these corridors. At some point they begin to spread, invading more pristine habitat. As we would expect, then, the worst part of the buckthorn infestation is along the edges of the service road, and, more ominously, the plant has begun encroaching the forest understory.

To some, the Strike Team's labor may be hard to understand. Over the last three years, volunteers, interns, and staff have dedicated many days to this buckthorn infestation, pulling thousands of seedlings by hand and applying herbicide to the stems of thousands of adult plants. But we rarely find ourselves more than 60 feet from the road. Is this narrow strip of edge habitat so important for Great Swamp animals? No, probably not. Although plenty of insects, birds, and amphibians make a living along the road, this woodland edge doesn't really stand out in the roster of notable Great Swamp habitats. Why spend so much time and effort on such a nondescript area? Because of what lies behind the service road—a mature forest of oaks, maples, and ash with a healthy understory of witchhazel, spicebush, and highbush blueberry. That forest is indeed crucial habitat to many iconic Great Swamp species, from American woodcock and Eastern screech owl to wood frog and northern tree frog.

Clearing glossy buckthorn from the edge of a service road can seem, well, less than glamorous. But when you take a break and look around, listen to the animal life overhead, and imagine the



forest scene later that evening, then the importance of the work becomes clear. By restoring this edge habitat, we're protecting the forest beyond.

The Strike Team's guiding principle can be summed up with the adage, "A stitch in time saves nine." When caught early, an infestation of invasive plants can be controlled and, eventually, eradicated. Wait too long, and the plant will multiply and spread until its eradication becomes impractical, if not impossible. Thankfully, the buckthorn infestation was found in time. Much work remains to be done, but the plant's advance has been stopped and its numbers greatly reduced.

VOLUNTEERS WELCOME!

The Great Swamp Strike Team welcomes new volunteers.

The team works from 9 A.M. to noon on the first and third Fridays of each month, from April through October.

If you're interested, please plan on attending the "opening day" training session at the Helen C. Fenske Visitor Center on

**FRIDAY, APRIL 3
9 A.M. TO NOON**

Jeremy Caggiano, a forester from the New Jersey Audubon Society, will provide an overview of invasive plants in New Jersey and then help participants learn to identify the Refuge's "priority invasive plants," about 15 species that have recently appeared on or near the Refuge.

Join us and make a difference!



Glossy buckthorn (*Frangula alnus*)
Zelimir Borzan, University of Zagreb
Bugwood.org

CONTROL TEAM TARGETS “PERVERSIVE INVASIVES”

By John Berry, Volunteer, Photos by Laurel Gould, Volunteer



Volunteer John Berry tackling “phrag”

Anyone taking a train into New York City has witnessed some of the environmental destruction caused by *Phragmites australis*, or common reed. This Eurasian plant has displaced practically all native flora in what remains of the Meadowlands, once one of the greatest tidal wetlands on the eastern seaboard. Today, a curious commuter sees only a vast, bleak panorama of “phrag,” a landscape stripped of native plants and inhospitable to most of the region’s wildlife. What makes the vista even more depressing is phrag’s near invincibility. Once it has overrun a sizable wetland like the Meadowlands, phrag is practically impossible to eradicate. Pulling the plant by hand or machine is unfeasible. Mowing or burning the plants just spurs vigorous

regrowth. And spraying with herbicide is expensive, difficult, and only partially successful.

Yet here, on a warm day last August, were a dozen members of the Invasives Control Team hiking into one of the Great Swamp’s wetlands to battle an infestation of phrag. For phrag can be beat—if you get the timing right, and if you have enough labor. The time to hit a phrag infestation is early, before the plant has a chance to take over a large area. The reason is simple—the most effective eradication method requires a lot of manual labor. Thousands of reed stems must be “snipped and dripped;” that is, clipped as low to the ground as possible and then carefully dripped with an herbicide solution. It’s painstaking work, but the reward is immeasurable. The invasive plants are killed, while the surrounding native plant community is left unharmed. A wetland is preserved. And this particular wetland is of special significance to the Great Swamp, for it used to be habitat for bog turtles, a federally-listed threatened species and a New Jersey endangered species.

The dedicated volunteers of the Invasives Control Team focus on plant species that are already widespread in the refuge. Completely eradicating such “pervasive invasives” isn’t possible, but they can be eliminated from important habitats. One of the team’s main goals is to restore natural habitat in those parts of the refuge that get the most visitors. So you will often find team members working on trails near the Visitor Center and in fields along Pleasant Plains Road.

Take a moment to enjoy the “triangle” at the Overlook parking lot. A few years ago, this piece of land was populated with various invasive plants, including multiflora rose, Japanese barberry, and autumn olive. No longer. The Control Team has largely succeeded in pushing the invasives out. Now visitors will find an exuberant array of native plant species, from dogwood to goldenrod. And when you go, don’t forget your binoculars and camera, because insects and birds are the first to appreciate the team’s labor.



Purple milkweed at Overlook



Invasives Control Team volunteers restoring wetland

VOLUNTEERS WELCOME!

The Invasives Control Team welcomes new volunteers.

The team works from 9 A.M. to Noon on the second and fourth Thursdays of each month from May through September.

If you’re interested, please contact the team’s leaders, Kathy Woodward and Anne Hebenstreit (info@friendsofgreatswamp.org) or just show up at the Helen C. Fenske Visitor Center for the first workday on

THURSDAY, MAY 14
9 A.M. TO NOON

Join us and make a difference!

IT'S MORE THAN JUST A DUCK STAMP. IT'S A CHAMPION FOR CONSERVATION

By Dan Ashe, Director, U.S. Fish and Wildlife Service

It's sometimes easy to lose hope these days, given the challenges our nation faces and the seemingly intractable political polarization of our society. But President Obama's approval in December of bipartisan legislation raising the price of the federal Duck Stamp is a reminder that we're still capable of great things as a nation.

The federal Duck Stamp program is one of the most successful conservation

initiatives in history. Since the program's creation in 1934, funding from Duck Stamp sales has been used to acquire and permanently

protect more than 6 million acres of vital National Wildlife Refuge System habitat. Much of this wetland and grassland acreage—which supports hundreds of native species of migratory birds, animals and plants—would otherwise have been plowed under or paved over.

Rising land prices have steadily eroded our ability to protect other vulnerable habitat through acquisitions and the purchase of conservation easements on private land. Raising the price of the Duck Stamp from \$15 to \$25 will restore most of the purchasing power that has been lost since the price was last increased in 1991. With the additional funds generated by the increase, we anticipate being able to protect an estimated 17,000 additional acres of habitat every year.

This will also benefit Americans of all ages and backgrounds. All hunters 16 and older are required to possess a valid stamp, but anyone who cares about conservation can buy one. And what's more, lands acquired and protected with Duck Stamp dollars are accessible to everyone—not just for hunting, but for wildlife watching, photography and other outdoor recreation.

A valid Duck Stamp can also be used for free admission to scores of national wildlife refuges that charge admission fees.

Wetlands and associated uplands are as important for people as they are for wildlife. They provide natural protection against flooding and storm surges; filter pollutants from water used for drinking, cooking and sanitation; and support thousands of jobs and local businesses

linked to outdoor recreation and tourism.

Perhaps most importantly, the Duck Stamp price increase represents an emphatic expression of opti-

mism for the future. After all, the stamp itself was born out of far more desperate circumstances.

More than 80 years ago, at the height of the Dust Bowl and the Great Depression, our nation's waterfowl and migratory birds faced devastation. Yet in the midst of ecological collapse, widespread poverty and unemployment, many Americans refused to give up. Led by hunters, they played an instrumental part in the passage of the Duck Stamp Act of 1934.

That success inspired passage of the Wildlife Restoration Act of 1937, which created an excise tax on firearms and ammunition (later expanded to fishing rods, reels and equipment) that has raised more than \$14 billion to support conservation at the state level. These historic conservation achievements laid the foundation for the return of healthy wildlife populations and habitat across the nation.

Hunting groups led efforts to raise the price of the stamp. Organizations such as Ducks Unlimited, the Theodore Roosevelt Conservation Partnership and the National Wildlife Refuge Association mobilized their members in support, and hunters across the nation contact-



ed members of Congress to urge passage. That's why this successful program continues to enjoy strong bipartisan support in Congress and the Executive Branch.

We face enormous conservation challenges in the coming decades and we must confront them as one nation, indivisible. The federal Duck Stamp shows us the way forward. Together, we can ensure that future generations of Americans have access to clean air, clean water and the wonder of our native wildlife and wild places.



Jennifer Miller, from Olean, N.Y., is the winner of the 2014 Federal Duck Stamp Art Contest with this pair of ruddy ducks.

Her artwork will appear on the 2015/16 Federal Duck Stamp which will go on sale in late June 2015.

Federal Duck Stamps are available from the Friends Nature Shop and from Refuge Headquarters.

Be a "Champion for Conservation".

Buy Your Duck Stamp Today!

NEWS FROM THE U.S. FISH AND WILDLIFE SERVICE

BUY TIGER STAMPS AT YOUR POST OFFICE & HELP CONSERVE VANISHING SPECIES



Americans once again can buy the *Save Vanishing Species* stamp at post offices and online. Funds help conserve some of the world's most iconic and threatened species.

The stamp—known as the Tiger Stamp for its image of an Amur tiger cub—works just like a regular postal stamp but sells at a slightly higher price. The additional money goes to the U.S. Fish and Wildlife Service's Multinational Species Conservation Funds, helping conservation of elephants, rhinoceros, tigers, great apes and marine turtles.

The stamp was created in 2011, but sale was congressionally mandated for only two years. At the end of 2013, the Post Office pulled the stamp. Congress passed legislation that now guarantees four more years of stamp availability.

The Tiger Stamp has generated more than \$2.5 million for international conservation from the sale of 25.5 million stamps.

The *Save Vanishing Species* Stamp is now available in U.S. post offices and at USPS.com. The Friends use this stamp on all of our correspondence in order to support these vanishing species. To learn more, visit < www.tigerstamp.com >.

RED KNOT PROTECTED AS THREATENED SPECIES UNDER ENDANGERED SPECIES ACT

Red knots are a robin-sized shorebird who love to gorge on horseshoe crab eggs. They are a long distance migrating bird, traveling more than 9,000 miles twice a year. Their numbers are in steep decline and their future is uncertain. But late last year, the red knot got a helping hand from the U.S. Fish and Wildlife Service when it was designated a threatened species under the Endangered Species Act.

"The red knot is a remarkable and resilient bird known to migrate thousands of miles a year from the Canadian Arctic to the southern tip of South America," said U.S. Fish and Wildlife Service Director Dan Ashe. "Unfortunately, this hearty shorebird is no match for the widespread effects of emerging challenges like climate change and coastal development, coupled with the historic impacts of horseshoe crab overharvesting, which have sharply reduced its population in recent decades."

The red knot is a species familiar to bird watchers in New Jersey. The Delaware Bay is a critical stopover for these birds as they journey from the southern tip of South America. They arrive in May, thin and exhausted from their long journey, just as the horseshoe crabs are spawning. The red knots feast on the eggs to gain strength and energy for the remainder of the journey north.

The overharvesting of horseshoe crabs is a major reason for the decline of this species. This threat is now being addressed by extensive private, state and federal management actions, but other threats, including sea-level rise, coastal development and changing climate conditions are affecting the shorebird's wintering, breeding, and migratory habitats.



Photo: Gregory Breese/USFWS

Learn more about the red knot. Join the Friends for two informative programs:

- Thursday, April 2, 12:30 to 1:30: *Crash: A Tale of Two Species*—a film which examines the relationship of the red knot and the horseshoe crab.
- Second Sunday, April 12, 1:30 to 3:30: Rutgers Professor Emeritus Bob Loveland will present a fascinating look at the horseshoe crab and important conservation and climate change issues affecting this species.

MORE THAN 113,000 ACRES CONSERVED IN THE LAST FISCAL YEAR—INCLUDING A NEW REFUGE

Fiscal Year 2014 saw some growth in the National Wildlife Refuge System.

The Refuge System established one new refuge—Wapato Lake National Wildlife Refuge in Oregon—and added 113,403 acres at 78 national wildlife

refuges and 26 wetland management districts, spanning 40 states.

As of September 30, 2014, the Refuge System includes 562 national wildlife refuges, 209 waterfowl production area counties (managed by 38 wetland management districts), and 50 coordination

areas, spanning more than 150 million acres. Refuge System staff also manage an additional 418 million acres of submerged lands and waters in four marine national monuments.



BIRD BANDING DATA SUGGESTS THAT SCREECH OWLS LEAD SHORT LIVES AT GREAT SWAMP

Story and photos by Leo Hollein

The Great Swamp National Wildlife Refuge began an Eastern screech owl banding program in 2009. This took advantage of the tendency of screech owls to roost in wood duck boxes in the winter and to nest in some boxes in the spring. Screech owls are not migratory. They remain on their



A red and gray pair of nesting screech owls

territory all year as long as there are sufficient food resources. The Refuge has a robust screech owl population and currently has about 200 wood duck boxes in 2,500 acres of the Management Area that are being actively maintained and monitored. These boxes are inspected and cleaned during December, January and February. About 15 owls on average are found during the annual inspections. The owls are banded and returned to their roost box after it has been inspected and cleaned.

In the past five years, 50 adult screech owls have been banded. Twenty four (48%) of these owls have been recaptured at least once. This is a very high percent recapture versus the 15% typical of mallards banded in the Refuge. All recaptures have been close to where the owls were originally captured and banded. Only three of the 24 recaptured owls were not captured in consecutive years but skipped a year between recaptures. This indicates a high annual recovery rate (88%) of banded owls that are known to be alive.

The number of owls banded in the previous winters ranged from seven to 14.

As expected, the largest number of screech owls (14) was banded during the first year of the study in the winter of 2009-10. The number of owls banded in the four subsequent winters ranged from 5 to 10 owls. The expectation was that as time passed there would be more recaptured owls and

fewer banded owls. However, this trend only lasted from year 1 to year 2. The recapture of banded owls never exceeded owls banded until the 2013-14 winter when six owls were recaptured and only five owls were banded. The significant number of owls banded every year suggests that screech owls do not survive long in the Refuge.

HIGH MORTALITY RATES

In captivity screech owls have lived longer than 20 years. The record life time (Bird Banding Lab data base) for an Eastern screech owl in the wild is 14 years and 6 months. This owl was banded as an adult and found dead due to predation. In the Refuge, a screech owl was banded as an adult in January 2010. It has been recaptured in the same area every winter since it was banded. The owl was last captured in November 2013 and is about five years old. Two other owls banded and recovered are about four years old. The age of most adult owls in the Refuge appears to be three years or less.

The most frequently recorded reason for the death of an adult screech owl is collision with a motor vehicle. I have witnessed an owl collision with a car, as well as finding one owl as road kill. Screech owls are nocturnal stealth hunters. They fly quietly and pounce on their prey. They are not swift fliers. Pleasant Plains Road is closed to traffic at night. This should minimize any owl-vehicle collisions in the

Management Area where wood duck boxes are located.

The Refuge, however, does have a healthy population of larger owls that are active at night as are screech owls. This could account for the seemingly higher rate of screech owl mortality as this is an owl-eat-owl world. The barred owl, shown below, and the 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. Eastern screech owls are about eight inches long and weigh about six ounces.

RED AND GRAY COLOR MORPHS ARE EQUAL

Eastern screech owls are unique among North American owl species in having two color morphs—red and gray. These two colors are not determined by age, gender or season. The owls are either red or gray, just as people have either blue eyes or brown eyes. The color morph distribution for the 50 adult owls banded in the Refuge is equal as 25 red and 25 gray owls have been banded. The ratio of red to gray phase screech owls banded is nearly constant from year to year. This even distribution of color morphs in the Refuge is not representative of other areas. Van Camp and Henny found that 80% of the screech owls in Ohio were gray. A probable reason is that gray owls are less conspicuous and less likely to be preyed in areas with long and snowy winters.



INTRODUCING NEW FRIENDS BOARD MEMBER ... JIM MULVEY *Photo by Wendi Mulvey*



The lure of the Great Swamp National Wildlife Refuge took hold of me at an early age. Having grown up in Chatham Borough, the trails, and the adventures that they held, were always just a short distance away. Whether I was passing

through the Great Swamp while on a bike ride, or hiking along Pleasant Plains Road or the boardwalks, the Refuge was precisely that for me—a refuge from the ordinary. It was a place that I could break away from my routine and go on vacation for a few hours on any given day.

I have lived in Gillette for the past 23 years and now those vacations to the Great Swamp have come to include my wife and two daughters. Second Sundays at the old Visitor Center were an event that we looked forward to every month, and my youngest daughter was one of the first to earn her *Junior Refuge Manager* status and badge. As we got to know many members of the Friends of Great Swamp, our involvement increased. We began

participating in cleaning the wood duck boxes, filling the bird feeders, leading Sunset walks during National Wildlife Refuge Week and greeting visitors at the Wildlife Observation Center.

While participating in these events, I soon discovered that the landscape of the Great Swamp was punctuated with many more cool things than initially met the eye. Be it a tree frog in a knot hole, fox kits playing under the boardwalk, or a barred owl glaring stoically from within a grove of conifers, there always seemed to be something to discover if you took the time to look for it. These discoveries prompted me to take up the hobby of photography. The Great Swamp was naturally my go-to place in that capacity and some of my pho-

tos have been recognized in local contests including the Friends' annual event.

When I was approached with the prospect of becoming a member of the Board of Directors for Friends of Great Swamp, I embraced the idea. The Great Swamp is a unique and special place that we are privileged to have and enjoy. The Friends' continued work with Refuge staff ensures that the public has many opportunities to become better educated on the variety of wildlife found in the Swamp as well as what conservation challenges lay before us. My wish as a new member to the Friends Board is that I can continue with the great work that has already been done and become a contributing part of the stewardship that is Friends of Great Swamp.

WOOD TURTLE HEADSTART NEWS FROM DR. KURT BUHLMANN



Kurt Buhlmann reports that the wood turtle headstarts are all growing and doing well at the Bristol County Agricultural High School in Massachusetts. Back here at the Refuge, Emily Scully (biology intern, summer 2014) has been

keeping tabs on the headstarts with radios. Alyssa Frediana (biology intern, summer 2013) is maintaining the summary of all the turtle movement data.

We are looking forward to welcoming back Dr. Buhlmann and the Great

Swamp headstart turtles in May at our Endangered Species Day Program. Watch for more details.

The Friends approved funding for this cutting edge research again in 2015. Results may encourage expanding the concept to other species.

NEW JERSEY JUNIOR DUCK STAMP ART CONTEST

The Friends and staff at Great Swamp NWR are actively supporting the annual Junior Duck Stamp Art Contest this year. The contest is sponsored by the U.S. Fish and Wildlife Service. Students in grades K to 12 are invited to submit original artwork depicting native ducks, geese, or swans. Great Swamp is serving as the local

drop-off point for area artists. The New Jersey contest is coordinated by the Wetlands Institute where the state judging is held in April. The New Jersey Best in Show goes on to compete with winners from all 50 states and a national winner is chosen. That design is used for the Junior Duck Stamp which sells for \$5.00. All entrants receive a certifi-

cate as well as ribbons and awards for winners. Entries will be returned and we are planning a reception and awards ceremony, with a display of the artwork, on June 28 at the Visitor Center. Join us to congratulate and celebrate these young artists who are learning about the importance of our wetlands and our native waterfowl.



2014-2015 National First Place by Si Youn Kim, 16, Tenafly, NJ

REDEARED SLIDERS ARE NON-NATIVE, INTRODUCED TURTLES

Story and photos by Leo Hollein

The Great Swamp National Wildlife Refuge has a range of introduced flora and fauna. While much effort is aimed at removing non-native vegetation, the Refuge also has non-native birds, mammals and turtles. Three introduced turtle species, not native to Northern New Jersey, have been found in the Refuge. These are the red-eared slider, the eastern river cooter, and the redbelly turtle that is also known as the red-bellied turtle or red-bellied cooter.

All three are aquatic, pond turtles that can be observed basking on logs or mounds in ponds during sunny days. They range in size from smallest to largest in the order of red-eared slider, eastern river cooter and redbelly turtle. All of these turtles are native to the United States. However, the historical range of these turtles is to the south and/or west of the Refuge.

Both the red-eared slider and eastern river cooter were sold in pet stores. New Jersey now prohibits their sale but some other states continue to permit sales of pet turtles. Red-eared sliders were likely released into the Refuge by their owners. The historical range of redbelly turtles includes central and south New Jersey. They could have arrived in the Refuge through natural range expansion or they could have been pets that were released.

The eastern river cooter and redbelly turtles have rarely been observed in the Refuge. Their populations are very small. They have not been observed

excavating a hole or laying eggs. As its name suggests, the redbelly turtle has a reddish-orange belly and is quite large for a basking turtle. The cooter is also large but has yellow markings on its carapace (top shell) and a yellow belly.

The most common introduced turtle in the refuge is the red-eared slider. It is definitely breeding in the Refuge as females have been found on land during May and June searching for nesting sites. Females have also been captured carrying eggs. The photo (top right) shows the name sake red marking on the side of the head of the red-eared slider. The painted turtle has a smoother top shell (carapace) than the slider as well as a colorful edge to the underside of its carapace. Red-eared sliders are larger than the painted turtles.

The underside shells or plastrons of the painted turtle and red-eared slider are significantly different. The painted turtle has a solid yellow plastron highlighted by the colorful underside edges of the carapace. The red-eared slider plastron has a yellow and brown pattern.

The painted turtle is the most common pond turtle in the Refuge and this species also has a widespread distribution in North America. It can be found coast to coast as well as in the historic ranges of the three introduced turtles. All three of the introduced turtles have life styles similar to that of the painted turtle and



Red-eared slider



Painted turtle

compete for resources. However, the painted turtle is not likely to be out-competed for resources by these introduced species.

The goal of the Refuge is to remove red-eared sliders on an opportunistic basis as they are a non-native species. Several individuals were found on land and removed this past spring. Both redbelly turtles and cooters are also targeted to be removed from the Refuge. However, they are rarely found.

If you have a pet turtle, or any non-native pet, please do not release it into the Refuge as it could have negative consequences for native species.

Reference: C. H. Ernst, J. E. Lovich & R. W. Barbour, *Turtles of the United States and Canada*, Smithsonian Institution Press.



Underside (plastron) of painted turtle (left) and red-eared Slider (right)



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
241 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
241 Pleasant Plains Road
Basking Ridge NJ 07920



THE SWAMP SCENE MARCH 2015

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.