



the Swamp Scene

friends of great swamp national wildlife refuge

ISSUE FORTY ONE
MARCH 2013

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SPRING IS A GREAT TIME TO VISIT GREAT SWAMP

Compiled by Laurel Gould

Here are some of the sightings reported by visitors at the Wildlife Observation Center from 2005 to 2010. Mark your calendars—and come experience the arrival of spring.



MARCH – SECOND TO THIRD WEEK

Listen for the “peent” call of the American woodcock. It’s peak duck season through mid-April, but that “quacking” call you hear may be the wood frogs (left), always in a hurry—calling and mating early—check for egg masses in the vernal pools. The tiny spring peepers produce a deafening spring chorus. Northern water snakes are basking on the tussocks trying to warm up. Ribbon and garter snakes are on the move as are spotted turtles. On a warm day, look for basking painted turtles. The skunk cabbage flower is almost gone by but take a close look at the red glow on the maples—their tiny red flowers.

MARCH—FOURTH WEEK

The Eastern phoebe arrives—look for the wagging tail as it calls its name. Ducks are still active—migrating blue-winged teal are late arrivals. Look quickly as the mourning cloak butterflies flit past; they get an early start by overwintering as adults. The tiny blue spring azure is also an early butterfly. Spring ephemerals begin their brief flowering cycle—the bright yellow trout lily (right) is one of the first to bloom.



APRIL 1–15

Tree swallows (left) appear, seemingly overnight, gracefully swooping through the air. The early warblers—palm and pine arrive. The small blue-gray gnatcatcher can be seen as well as the great egret slowly stalking on the ponds. Bullfrogs and green frogs join the chorus. In the woods, look for the white clouds of the shadbush’s early bloom, before the other trees have leafed out.



APRIL 16–30

The songbird migration is picking up: look for Eastern kingbird, or an early black and white warbler. The mallard is already on her nest. More flowers rush to bloom taking advantage of the intensity of spring sun before trees leaf out, creating shade: carpets of the pink-striped spring beauty (right), star flower, dwarf ginseng, wood anemone.



MAY 1–15

It’s the peak of spring songbird migration—the woods are full of color and sound. Listen for the haunting call of the thrushes. Vireos and brilliantly-colored migrating warblers abound. The tiny ruby-throated hummingbird buzzes past. Spring ephemerals are giving way to showy summer flowers: golden ragwort, the spectacular pinxter azalea, the blue flag iris, the floating yellow spatterdock (left). All too soon, summer arrives.



FRIENDS ANNUAL MEMBER MEETING HELD DECEMBER 1, 2012



The Annual Member Meeting of Friends of Great Swamp National Wildlife Refuge was held at the Helen C. Fenske Visitor Center on Saturday, December 1, 2012 with 69 members in attendance, which constituted a quorum.

Following a fabulous pot luck dinner, with an interesting and varied assortment of excellent food, President Susan Garretson Friedman called the meeting to order. Treasurer Laurel Gould presented a financial overview for FY2012. Susan reviewed the projects and accomplishments of 2012 and outlined new initiatives and plans for 2013.

Based on a recommendation from the Nominating Committee, and in accordance with the Bylaws, the Board had previously approved an increase in the number of Directors from eleven to thirteen members.

The following Directors were re-elected for two-year terms:

Laura Nally
Rich Dufort
Terry Carruthers
Elaine Seckler

The following new Directors were elected for two-year terms:

John Breault
Jen Dawson
Joyce Payeur

Outgoing Board member Jack Higgins was recognized for his many contributions, especially as Outreach Committee Chair. Jack assured everyone that he'll still be around and active!

Following the Business meeting, attendees enjoyed a fabulous photo journey of Great Swamp through the seasons presented by photographer Mike Dzwinczyk.

Regular Board meetings are held on the second Wednesday of each month at 7:00 pm at the Visitor Center. Members are always welcome to attend.

GET MORE INVOLVED COMMITTEE VOLUNTEERS NEEDED!

The Board is actively seeking new members for our Standing Committees, particularly Outreach. If you are interested in getting involved in any of these committees, contact the Committee Chair or any board member—or send an e-mail to: info@friendsofgreatswamp.org.

2013 Friends Board Standing Committees

- Development: Jane Kendall, Chair
- Education: Judy Schmidt and Dorothy Smullen, Co-Chair
- Finance: Rich Dufort, Chair
- GardenKeepers: Karen English, Chair
- Habitat & Wildlife: Rich Dufort, Chair
- Membership: Kathy Woodward, Chair
- Nominating: Dorothy Smullen, Chair
- Outreach: Laura Nally, Chair
- Partnership & Government Relations: Susan Garretson Friedman, Chair
- Public Relations: Elaine Seckler, Chair
- Visitor Services: Laurel Gould, Chair
- Volunteers: Kathy Woodward, Laurel Gould, Co-Chair

OUTREACH COMMITTEE: Help represent the Refuge and the Friends at various partner and community events, frequently held in spring and fall. This is a wonderful opportunity to educate the public about Great Swamp NWR. We distribute maps and information, and engage visitors in some educational aspect of nature such as our "feather game." It's fun and easy—and you'll learn a lot. There is always an experienced volunteer, board member, or staff member present. You can sign up online from the Friends website (Support Us / Volunteer) or send an e-mail to info@friendsofgreatswamp.org.

MEMBERSHIP DOLLARS & DONATIONS AT WORK BUDGET HIGHLIGHTS FOR 2013

The Board has reviewed and approved a budget for Fiscal Year 2013. Here are some of the highlights.

EDUCATION COMMITTEE

- ♦ Educational Frog Pond at Visitor Center.
- ♦ School Bus Trip Transportation.

HABITAT & WILDLIFE COMMITTEE

- ♦ Habitat Restoration Project: This new project provides funding for two habitat interns, tools, and the purchase of native plants for habitat restoration. The Friends are working closely with Refuge Biologist Dorothy Feckse in developing the plan for this project—which also calls for a significant amount of volunteer help!
- ♦ Biology Intern: In addition to the two habitat interns mentioned above, the Friends will fund one biology intern, for the 10th year in a row!
- ♦ For the third year, the Friends will help fund the exciting Turtle Research Project with Dr. Kurt Buhlmann and the "headstart" wood turtles.

VISITOR SERVICES COMMITTEE

- ♦ The Friends will co-fund the construction of an ADA compliant section of the Bockoven Trail. We are also involved in establishing additional trails at the Visitor Center.
- ♦ Three new interpretive signs at the Visitor Center will educate visitors about the Passaic River, the Bockoven Family history, and the value of Vernal Pools.
- ♦ With visitation at the Visitor Center increasing, we will be looking for ways to expand and enhance the exhibits.

We couldn't do it without your support! Thank you!

REFUGE UPDATE.... WITH DEPUTY REFUGE MANAGER STEVE HENRY

ADMINISTRATION/PERSONNEL

Dave Sagan, the refuge's outstanding Visitor Services Specialist, was recently recognized as the Northeast Region's "Sense of Wonder" award winner. The Rachel Carson Sense of Wonder Program recognizes outstanding contributions in the field of interpretation and environmental education within U. S. Fish & Wildlife Service. Quite an accomplishment for such a young employee!

The Friends and the Mushett Family Foundation have again generously agreed to fund **Summer 2013 interns**. The Friends will be funding one biological intern and two "habitat restoration" interns. Mushett will again fund a general intern. Many thanks to both for continuing to provide these outstanding career development opportunities.

Jenny Bohrman, a recent Frostburg University graduate who ran last summer's bat research, has been contracted to continue her work through the winter. Jenny recently gave an excellent presentation on the refuge's bat research at the annual Northeast Bat Working Group meeting and will be doing a series of public programs for school and community groups into the spring. The refuge is currently in discussions with the Friends and two universities about the possibility of hosting additional interns/grad students to conduct bat and impoundment research this summer.

PLANNING

The **Comprehensive Conservation Plan (CCP)** is currently undergoing mandatory solicitor review. Refuge management will be briefing the Regional Director and senior staff in early March. It is anticipated that there will be a draft available for the public, with public meetings, in spring 2013 and the final CCP by late summer. As always, anyone interested in staying informed should contact refuge headquarters and ask to be added to the mailing list. Current information can also be found from the CCP link on the refuge's website.

Budget: We are continuing to operate under a Continuing Resolution, which is essentially flat funding, in lieu of a congressionally approved budget.

INFRASTRUCTURE

Superstorm Sandy blasted the refuge at the end of October. The refuge was closed to the public for a week; it is now fully reopened. Many trees were blown down blocking roads and trails but no major damage was done to infrastructure. Wilderness trails remain blocked in numerous locations. Trail clearing will continue as time and resources allow.

Work continues on plans to resurface **Pleasant Plains Road** from Great Brook Bridge to the cul-de-sac. Plans are also being developed to straighten the sharp bend in the gravel section of the road. An engineering and historical survey of Great Brook Bridge is also underway to evaluate its current condition and suitability for anticipated future needs (buses, heavy equipment, emergency vehicles, pedestrian/cyclist lane). By late-winter we should have a better idea of whether the bridge can be rehabilitated or will need replacement.

Final clearances have been received to demolish the Tenant house and barn near the Visitor Center. Once demolished, the site will be restored to native grassland.

Volunteers continue to do an outstanding job assisting with maintenance including cleaning and repairing wood duck boxes and replacing Atlantic white cedar plastic cages with more durable welded wire.

The refuge recently installed five signs in Warren and Long Hill townships directing traffic from Interstate I-78, exit 40 to existing refuge signs at the Meyersville circle. NJDOT will be installing signs on I-78 within the next couple months. We're excited about the possibility of attracting additional visitors given the high traffic volume on I-78.

PUBLIC USE

The annual Christmas Bird Count was a big success again this year. Nearly 13,000 individual birds from 91 different species were identified on and around the refuge. Special thanks to Pete Axelrod for his many years of dedicated service coordinating the Count.

ANNUAL DEER HUNT

The refuge's annual white-tailed deer hunt was scaled back from five days to three due to Hurricane Sandy and the Nor'easter that followed. We were able to hold the one day youth hunt and two days of the general season. Only 18 deer were harvested—the smallest harvest ever on the refuge.

HABITAT MANAGEMENT

Approximately 200 acres of grasslands were mowed in the fall. The refuge began experimenting with a new technique of leaving a narrow unmowed strip or "feathered edge" between the forest and mowed field. Such "soft" edges have been shown to create excellent ecotonal areas that improve habitat quality. An additional 20 acres of grassland are scheduled to be mowed this winter. Ten acres of brushland are being treated this winter using a more targeted method that leave some shrubs and small trees standing to increase habitat diversity in brushland units.

POPULATION MANAGEMENT

This winter, wood turtle hatchlings were again sent to a special high school in Massachusetts for headstarting. The much larger turtles will be returned this spring and released where they were captured last summer. The Turtle Back Zoo has expressed an interest in our headstarting program and may be involved in the near future. Thanks to generous support from the Friends, Dr. Kurt Buhlmann will be back to assist with turtle research again in 2013.

Bat research will continue again during the summer of 2013 although the focus will shift towards acoustic monitoring instead of mist netting. Last summer's research indicated that acoustic data correlates well with net captures and acoustic monitoring has the advantage of being much less demanding and intrusive than netting.

White-tail deer numbers remain low as a result of last fall's EHD outbreak but are showing signs of rebounding. This fall's record low harvest may boost the recovery rate of the population.

GREAT SWAMP BAT RESEARCH SUMMARY AND FINDINGS

By Jenny Bohrman, *Refuge bat specialist*; photos by Donna Del Guercia

Great Swamp National Wildlife Refuge has accumulated six summers of data on local bat demography, foraging, and roosting behavior since 2006. This past summer, bat specialist Jenny Bohrman, and a team of interns, continued annual inventory and monitoring efforts with the assistance of volunteers and partners.

Along with setting up mist nets (shown below) across the refuge to trap bats,



tracked bats to daytime roosts, and performed evening emergence counts in order to locate large, reproductive colonies and identify the preferred roosting habitats of refuge bats.

Finally, acoustic surveys were conducted (shown right) to record echolocation calls and further document habitat usage by foraging bats. These combined efforts aimed to census resident bat

communities and continue evaluating the impacts of white-nose syndrome (WNS), a rapidly-spreading fungal disease that has been devastating populations of cave-dwelling bats across North America.

Great Swamp NWR's complete mist netting data from 2012 and previous years revealed notable declines in relative captures of little brown bats (formerly the most commonly caught species on the refuge), Indiana bats (a federally endangered species), and northern (long-eared) bats before and after the local outbreak of WNS in the winter of 2008-2009. However, the data also revealed marked increases in numbers of big brown bats and red bats captured in mist-nets post-WNS. These trends suggest that WNS has taken a severe toll on some resident bats, while others appear less susceptible to the epidemic.



Acoustic analyses supported evidence of this shift in species composition; significantly more large-bodied (e.g., big brown and red) bat calls were obtained from acoustic surveys than small-bodied (e.g., little brown, Indiana, and northern) bat calls.

Although historic data documented multiple Indiana bat maternity colonies on the refuge, which offers ideal habitat for the endangered species, only one Indiana bat was captured in 2012, and no substantial Indiana bat roosts were located.

Other radio-tagged species, including little brown and northern bats, were tracked to manmade structures more often than trees. Thus, bat boxes may be a valuable conservation tool that can be incorporated into refuge management to support species facing potential endangerment, such as little brown and northern bats. Dr. Lance Risley and graduate student Melissa Gallo of William Paterson University will be conducting a project this summer (2013) to continue acoustic surveys and potentially assess the use of bat boxes by refuge species.

SECOND SUNDAY, APRIL 14, 1:30—3:00 PM

Join Jenny Bohrman at the Friends' regularly scheduled Second Sunday program where she'll review the results of this research in more detail and answer your questions—about white-nose syndrome, bat populations at Great Swamp, and setting up bat boxes around your home. For all ages. Helen C. Fenske Visitor Center.

BEARS AND PEOPLE—REDUCING CONFLICTS AND LIVING TOGETHER

By Jonathan Rosenberg, Visitor Services Manager, Great Swamp NWR

As winter settles over the refuge, fewer and fewer bear sightings are reported. Lack of food, snow cover, temperature drops, and diminishing daylight have all conspired to send the bears into hibernation. Upon the arrival of spring, hungry bears will emerge from their long sleep, and once again they become part of the Great Swamp landscape.

As refuge visitors traverse the refuge, encounters with bears are inevitable. Such encounters increase the possibilities for conflict between bears and people. Such conflicts can be reduced if both bears and people learn how to live together. Bears have evolved to live with other bears and other species, including people, with a minimum of conflict. So let's do our part and learn some important facts about bears and what we can do to help reduce bear-people conflicts.

DO'S AND DON'TS

- Do not feed bears.
- Don't be a brave photographer by approaching a bear for pictures.
- Do your "homework" and know that you are recreating in bear country and prepare for possible encounters.
- Remain calm, avoid direct eye contact, and never run from a bear. Instead, slowly back away.
- Make sure the bear has an escape route.
- To scare the bear away, make loud noises by yelling, and make yourself look as big as possible by waving your arms.

PLEASE REPORT ALL BEAR SIGHTINGS TO REFUGE HEADQUARTERS OR ANY REFUGE STAFF MEMBER

- The very first point for people to remember about bears is that food and feeding are supremely important to them. Bears eat many of the same things people eat and will readily consume most processed human foods.
- The second thing to remember about bears is they are naturally shy of people; they normally approach people only through curiosity or because their behavior has been altered by previous encounters.
- Bears are large, powerful, and potentially dangerous animals. Please provide them the space they require and do not approach them too closely.

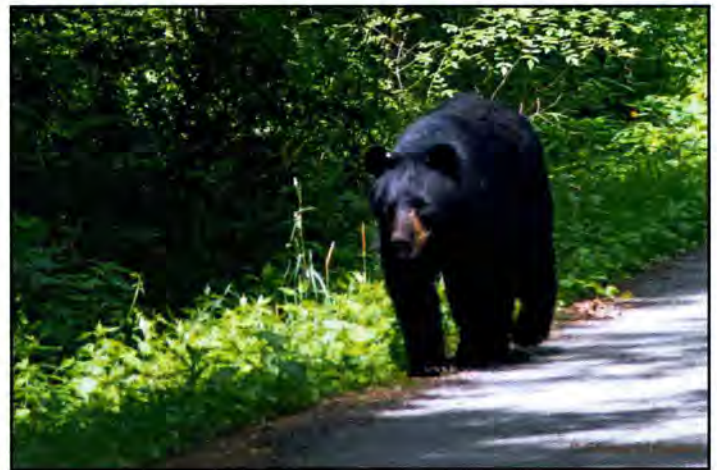


Photo by Tom Gorman

VERNAL POOL RESTORATION PROJECT—TAKE TWO!

By Laura Nally, Friends Board Member and Vernal Pool Crusader!



Vernal Pool Workday, Winter 2012
(l to r) Carly Aulicky, Kathy Woodward,
Laura Nally, Peter Osborn

Last year we began a project, under the guidance of Colin Osborn, Fish & Wildlife biologist, to restore the vernal pool located near the Bockoven Trail at the Visitor Center. Volunteers worked hard over a two-day period to remove trees and brush, but Mother Nature did not cooperate and we did not finish.

On February 5, 2013, the pool was snow-covered, revealing otter tracks and turkey footprints. Six hearty volunteers took advantage of the frozen pool and finished cleaning out the remaining logs and brush. In a few hours we removed enough material to create two large brush piles. Thanks to hardy volunteers Jim Detizio, Don Florio, Steve Gruber, Judy Schmidt, Laura Nally, and staff member Dave Sagan. According to Colin, the pool may need periodic maintenance work to avoid the creation of islands.



The vernal pool habitat for wildlife has been much improved—and we also think the pool looks much better. Take a walk on the Bockoven Trail this spring. Listen for wood frogs and spring peepers and look for tadpoles in the restored vernal pool.

A SIGN OF SPRING—SPOTTED TURTLES ON THE MOVE

By Leo Hollein, Volunteer, and Colin Osborn, Fish and Wildlife Biologist



The petite, attractive spotted turtle (*Clemmys guttata*) is the only member of the genus *Clemmys* that inhabits the Great Swamp National Wildlife Refuge. There used to be two other members of the genus in the refuge but recently both the state threatened wood turtle and the state endangered/federally threatened bog turtle have been reclassified. All three turtles split their lives between land and water. The spotted turtle is not as rare as wood and bog turtles and can be found in the spring in vernal pools, fields or on refuge roads.

The spotted turtle is a small, dark turtle with a shallow domed carapace (upper shell) that has no keel (central raised ridge). It is readily identified by its most distinguishing features—its namesake spots. The scutes (plates that compose the shell) on the carapace have one or more yellow dots or spots. The black head also has yellow spots.

The photo (right) shows the plastron (lower shell) of the spotted turtle. It is not hinged but fits closely with the carapace. There is a black area on each of the plastron scutes. As the turtle ages these areas grow and the entire plastron may eventually be black. As can be seen in the photo, the spotted turtle has growth lines called annuli on the plastron scutes, as do a number of other turtle species. As their name implies,

one new line is produced on a scute each year. It is possible, up to a point, to age spotted turtles by counting their annuli. Once they reach maturity however, most turtles stop producing annuli. Therefore, a turtle with 20 annuli could be more than 30 years old. Spotted turtles in the wild have lived for over 30 years. On very old turtles, the plastron can be worn smooth and the growth lines may not be visible at all.

At maturity the spotted turtle is only about five inches long. Eye color, tail length, and shape of the plastron can be used to determine the gender. The distribution of the spotted turtle ranges from southern Ontario and Maine, south along the Atlantic coastal plain to Northern Florida, and in the upper Midwest from western New York to northeastern Eastern Illinois. It ranges as far south as Central Ohio.

DORMANT WHEN IT'S VERY HOT OR COLD

Spotted turtles prefer shallow wetland habitats that are common in the refuge. They are active during daylight hours. As darkness approaches turtles burrow into mud at the bottom of wetlands or crawl

into mammal burrows. This could be a defense mechanism against nocturnal mammals such as raccoons and skunks that prey on spotted turtles. Spotted turtle are small. Their shells do not provide the same protection as those of box turtles.

Like Goldilocks, spotted turtles like things not too hot and not too cold. Spotted turtles are most active in cool weather especially during the spring. These turtles are dormant during the winter as well as during hot summer weather. They enter aestivation (warm-weather dormancy) if water temperatures exceed 90 degrees (F) by entering muskrat holes or burrowing into the bottom of pools with running water. In the fall they become active again, but less active than in the spring. In the southern part of their range, spotted turtles may not need to hibernate. Here on the refuge, they begin to stir in the spring at water temperatures a few degrees above freezing. Their feeding activity peaks in May when the average monthly air temperature is between 55 and 65 degrees (F).

Spotted turtles are omnivorous scavengers and feed in the water. Usual plant foods include aquatic grasses and algae. Animal foods eaten live, or as carrion, include aquatic insect larva, small crustaceans, snails, tadpoles, salamanders and fish.



Both male and female spotted turtles become sexually mature when their carapace grows to about four inches. This is estimated to take 7 to 10 years. Egg laying takes place in the spring. A female will lay a single clutch a year in the refuge. A clutch contains 1 to 8 white, elliptical eggs with flexible shells. Nests are dug in well-drained areas exposed to full sunlight. Nest sites include grass tussocks and loamy soils of marshy pastures. (continued on p. 7)

SPOTTED TURTLES *(continued from previous page)*

Hatchling spotted turtles are shown at right. As is the case with most turtles, the hatchlings are miniature adults. They can be easily identified by their yellow spots. As the photo illustrates, they are also quite small and only slightly larger than a quarter.

POPULATION STUDY UNDERWAY

Spotted turtle populations are declining in many areas due to habitat destruction, road mortality, and illegal collection for the pet trade. Great Swamp is an excellent, protected habitat that should enable spotted turtles to thrive. A study is underway to monitor their population on the refuge. The survey data will give a good indication of the density of spotted turtles. In time it will provide information on spotted turtle population dynamics, growth rates, survival rates and longevities.

The refuge fish and wildlife biologist, Colin Osborn, has been gathering data on spotted turtles throughout the refuge



Photo by Colin Osborn

since 2008. When a spotted turtle is found, it is photographed, weighed, measured, sexed and aged. The location where it was found is recorded via GPS. The turtle is then marked to identify it if it is found again. This is done by filing a unique pair of grooves on its marginal carapace scutes (scutes on outer edge of the carapace). Making these grooves is painless for the turtle. The marked turtle is always returned to the location where it was found.

Fifty spotted turtles have been marked to date, including 16 adult males, 22 adult females, 12 juveniles.

Five spotted turtles have been documented as being recaptured. All recaptured turtles were found in the vicinity of where they were originally located. A radio-transmitter was attached to an adult male spotted turtle in 2010 to monitor its movements. It was tracked from late September through early December (hibernation). Although this is a small timeframe, some interesting information was collected. For example, within a week of capture, it moved over 150 meters from the fen in which it was captured to a larger emergent wetland. It remained in this area and ultimately settled in to hibernate there two months later. Unfortunately the radio's battery died so the turtle could not be tracked in 2011.

Reference: C.H. Ernst, J. E. Lovich, R. W. Barbour, *Turtles of the United States and Canada*, Smithsonian Institution Press, 1994.

REFUGE READERS CELEBRATES 3-YEAR ANNIVERSARY

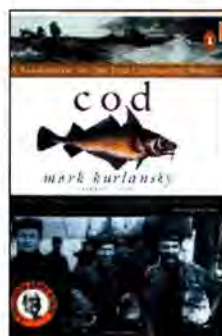
By Kathy Woodward, Friends Board Member

"Inspiring an appreciation of nature through education and outreach" is part of Friends of Great Swamp NWR mission statement. Each year the Friends Board reviews the mission and asks, "What can we do better?" Three years ago, the Board heeded volunteer Gina Smith's request to start an environmental book group.



On May 21, 2010, the new book group, **Refuge Readers**, met for the first time when four people discussed the classic *Sand County Almanac* by Aldo Leopold. The following month, 12 people attended to talk about *Saving the Great Swamp* by Cam Cavanaugh. Since then, the group has grown in numbers, scope, and enthusiasm.

The Refuge Readers book group meets on the third Friday of each month at 2:00 p.m. at the Visitor Center. Volunteers from the group lead and enhance the discussion with maps, illustrations, and biographical information about the author. Member Janis Cole even prepared salt cod appetizers to enrich the appreciation of the book *Cod*, by Mark Kurlansky.



Twice a year the group takes time to choose books for the next six months from participants' recommendations. Selections are wide-ranging from the 19th century *Walden* by Henry David Thoreau to recent best sellers like Timothy Egan's *Worst Hard Times*; from re-

freshing stories like *The Bluebird Effect* by Julie Zickefoose to the chilling *Field Notes from a Catastrophe* by Elizabeth Kolbert; from novels such as *The Hungry Tide* by Amitav Ghosh and *Ishmael* by Daniel Quinn; to dense treatises such as Charles C. Mann's *1491*. A complete list of upcoming and past selections is available on the Friends' web site.

The Friends Board supports the group by purchasing (mostly "used") books, which are available for loan. Members read the books, even when they can't attend the meetings! While the topics are often sobering, there is always laughter amid rays of hope.

Refuge Readers is open to new members, so pick up a book at the Visitor Center and join us. Please let us know if you would be interested in *Refuge Readers II*, to meet on the weekend. The Board is always looking for ways to better fulfill our mission.

DUCK BANDING 2012—THE GREEN-WINGED TEAL WAS “DUCK OF THE YEAR”

Story and photos by Leo Hollein, Volunteer

The 2012 duck banding season was long and had some unique features. The season started July 16 and ended on September 28. For the first time since duck banding began at Great Swamp National Wildlife Refuge in 1970, there were more green-winged teal banded than any other species. In previous years mallards and wood ducks were the two most common ducks banded. American black ducks were usually a distant third. In the last eight years only five green-winged teals were banded. The 61 green-winged teals banded in 2012 were a pleasant surprise and an unprecedented total for the Great Swamp NWR.

In a break from refuge tradition, banding started in mid-July rather than around the first of August. This was done to increase the number of wood ducks banded. This strategy was successful as 35

the banding site. The open water has shrunk, water depth is lower, and vegetation has encroached into formerly open areas. This marshy habitat with plenty of cover and reduced open water area is favored by green-winged teals.

Green-winged teals are small, half the size of wood ducks. Green-winged teal are in eclipse plumage in September. Inspection of their cloaca is required to determine their gender.

Only time will tell if the early influx of teal will be repeated in future years. While the habitat is favorable, green-winged teal could migrate later in the season or find another location as a stopover.

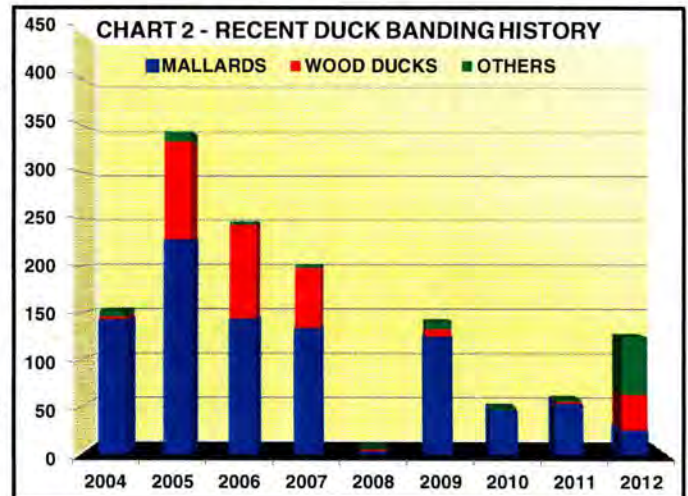
WOOD DUCK BANDING TOTALS REBOUND IN 2012

The 39 wood ducks banded in 2012 were the most since 2007. All but four of the 39 wood ducks were banded in July. There was no significant change in wood duck breeding during this period based on checks of nesting activity in the refuge wood duck nest boxes. One wood duck banded at the Refuge in 2005 was recaptured.

Historically wood ducks were the most commonly trapped and banded duck at the refuge. Wood duck banding totals for the 1970 through 2007 period were 4,037. For the same period 1,810 mallards were banded. In the last nine years many more mallards have been banded than wood ducks.

MALLARD TOTALS LOW FOR 3RD CONSECUTIVE YEAR

Chart 2 presents the duck banding results for 2004 through 2012. Ducks species in the “others” category include American black ducks, black duck X mallard hybrids, green-winged teals, and northern pintails. Northern pintails are



an early migrant at the refuge.

The total number of mallards banded for the last three years has ranged from 25 to 53 ducks. Only 25 mallards were banded in 2012. The average number of mallards banded between 2004 and 2009 was 129. In all but one year in this time period over 100 mallards were banded annually. The duck trapping and banding efforts and procedures were similar over this period. Trapping and banding were done at one site. While mallards inhabit a range of fresh water habitats, they are more common in open waters like lakes than wood ducks or green-winged teals. It seems probable that the shrinking amount of open water accounts for the reduction in the number of mallards trapped and banded in recent years.

RACCOONS WERE PLENTIFUL

The mild winter and spring evidently helped produce a bumper raccoon breeding year. Raccoons are captured in have-a-heart traps baited with cat food



in the vicinity of duck traps. They are then relocated to other parts of the refuge. Raccoons intimidate the ducks

and consume corn bait. A record number of 33 raccoons were trapped and relocated this season.



Green-winged teal in eclipse plumage

out of a total of 39 wood ducks were banded in July. A total of 25 mallards were banded. The total of 125 ducks banded was the highest since 2009.

The green-winged teals that arrived at the refuge in early September were early migrants. Their fall migration peaks in mid to late October. The reason a flock of green-winged teals stopped in the refuge is likely due to the habitat changes that have occurred over the years at

GREAT SWAMP'S OWN PARK RANGER DAVE SAGAN NOMINATED FOR NATIONAL AWARD

From U.S. Fish & Wildlife Service News Stories and Blog Posts, December 22 and 23, 2012



the Pacific Region's Nisqually National Wildlife Refuge Complex, Washington. But what an honor to have been nominated to represent the Northeast Region in this national competition.

MEET RANGER DAVE...

On a recent U.S. Fish and Wildlife Service blog, Dave shared his personal thoughts about the excitement and passion he sees in the young people and families that take part in his programs.

The U.S. Fish and Wildlife Service honors one of its own each year with the "Sense of Wonder" award inspired by conservationist and author Rachel Carson. This year David Sagan, park ranger and visitor services specialist at Great Swamp National Wildlife Refuge in New Jersey, represented the Northeast Region as the 2012 regional nominee for the national awards.

The award celebrates Service employees who have designed, implemented or shown visionary leadership in an interpretive or environmental education program. These exemplary programs help foster a sense of wonder and enhance public stewardship of the wildlife heritage cared for and protected by dedicated Service employees.

Dave attended the Excellence in Interpretation Awards Ceremony in Hampton, Virginia in November 2012, along with nominees from other regions. The national award was presented to Sheila McCartan, visitor services manager for

It was the spring of last year, and I was leading a group of young students from a nearby city along the trail. A young girl stopped suddenly in her tracks. She stood stiff as a board staring at her elbow. A small green inchworm that was dangling from a tree overhead has landed on her elbow. She didn't scream. She didn't brush it off. But she stood fascinated while all the other students began asking me questions about the smallest of creatures—one that I take for granted, seeing it almost every day at Great Swamp National Wildlife Refuge. The students' passion and curiosity, sparked by such a little thing, gave me a new perspective on the experiences that I deem common on the refuge. The moment inspired me to rethink how I lead talks and walks.

A number of these talks and walks are part of our newest program for the community—"Let's go exploring with Ranger Dave." —That's me, Ranger Dave. The monthly program helps reconnect children with nature, a personal

passion of mine because I feel like the days for the many kids playing outside after school are dwindling. The desire to be outdoors has been with me since a young age, cultivated by mentors. I want to pass that passion to the next generation to help protect America's land and wildlife. One of my favorite things to do is to expose a child to the wonders of the world around them.

One of the Ranger Dave programs is focused on animal

ly did find some, the kids' excitement was hard to contain. They wanted to know what it was, where it was going, what it ate, along with many other questions. For me, it is very rewarding to see a child become interested in the outdoors and even more so when you see them come back to the refuge time and time again.

Another one of our recent projects encourages children to explore the natural environment using all five senses. In



tracks. It was great to see the excitement on kids' faces when we headed out in the snow to try to find tracks of some of the animals around the refuge. As a small group of us snuck around the woods trying to find evidence that an animal was there, and actual-

partnership with Friends of Great Swamp NWR, we constructed the Nature Detective Trail. It has 11 stops that include Eye Spy, Earth Music, BARKing, Bramble Ramble, and Let's Get Nosy. All of this get kids outside for hands-on exploration.

LET'S GO EXPLORING WITH RANGER DAVE

Held on the 4th Sunday of each month, 1:30—3:00 pm at the Helen C. Fenske Visitor Center. Upcoming programs:

- ◆ March Sounds of the Swamp
- ◆ April The World of Bears!
- ◆ May Animal Homes
- ◆ June Pollinators—All About Bugs!

Programs include indoor learning activities combined with outdoor exploration. For ages 6 to 12. Come explore!

SUPERSTORM SANDY BLASTS GREAT SWAMP NWR

By Steve Henry, Deputy Refuge Manager

In late October, Hurricane Sandy dealt a mighty blow to coastal and inland areas throughout the north-east and mid-Atlantic including Great Swamp NWR. Several days before the storm struck, refuge staff implemented emergency plans to secure facilities and equipment. Assessment and cleanup operations began at dawn the following morning.

Thankfully Sandy was mainly a wind event unlike Hurricane Irene in 2011, so flooding was not an issue. Advance preparations paid off as damage to facilities was minimized. All buildings suffered minor damage, mainly shingles and siding torn off by the wind. All facilities lost power; some for 12 days, but

the refuge was able to operate on emergency generators, including the new generator recently installed at Headquarters. The biggest impact from the storm was the damage to trees that were blown down across roads, trails, and wires.

To protect public safety, the refuge was closed for a week following the storm while staff and emergency response teams worked tirelessly. Volunteers also assisted in the cleanup effort helping remove debris from roads and rebuilding broken boardwalk at the Wildlife Observation Center. Even before power was fully restored, the refuge was partially reopened to the public. Within a few weeks following the storm, the en-

tire refuge with the exception of the Blue Trail system in the Wilderness Area was reopened. The Blue Trail has since reopened though sections have been re-routed around the worst downfalls. Staff and volunteers will continue clearing wilderness trails with the goal of returning them to their original locations.

The refuge is expecting to receive emergency supplemental funding which will be used to complete remaining repairs. The impacts of superstorm Sandy to the refuge were unprecedented. Advance preparation and quick response greatly lessened the potential consequences. Many thanks to all those whose hard work quickly and safely got the refuge back on its feet.

THE FRIENDS' NATURE SHOP—YOUR SHOPPING SUPPORTS GREAT SWAMP NWR

The Friends of Great Swamp NWR have operated a sales outlet since September 2000. The Friends' Nature Shop, now located in the Helen C. Fenske Visitor Center, offers field guides and natural history books for all ages, nature-themed gift items, Great Swamp logo items, and the works of local artists. The shop is managed and staffed entirely by volunteers and all proceeds from shop sales are used by the Friends to fund a variety of projects and programs at Great Swamp National Wildlife Refuge.

I asked two of the regular volunteers to write a short article publicizing the Nature Shop. They obliged with this poem—which I am delighted to share.

Stop by next time you're in the Swamp and help support the Great Swamp National Wildlife Refuge.

—Laurel Gould, Friends' Nature Shop Volunteer Manager

NEW!



Colorful Car Magnets
Charley Harper Mugs

THE FRIENDS' NATURE SHOP

By Randi Emmer and Ruth Zippler

If for a gift you need to shop
Over to the Visitor Center you should hop.

The Nature Shop, you will find inside
For all the treasures, it's worth the ride.

For gifts from nature or a book
Please come in and take a look.

Searching for something special, no matter what the age?
We have unique items—how about a rain gauge?

Great Swamp items, jewelry too,
Stuffed animals and birds are waiting for you.

Judy's pottery and Charley's mugs
Will guarantee "thank you" hugs.

Socks and T-shirts for sale in red, blue and brown
Other colors too, so come on down.

The proceeds that all this shopping brings
Fund refuge projects and other great things.

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



Friends of Great Swamp
National Wildlife Refuge

THE SWAMP SCENE MARCH 2013

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.