

FRIENDS OF GREAT SWAMP NATIONAL WILDLIFE REFUGE

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IT'S OFFICIAL! FRIENDS WIN NATIONAL AWARD

The Friends of Great Swamp have been selected as the 2006 Refuge Friends Group of the Year!

This annual award is made by the National Wildlife Refuge Association (NWRA) and the National Fish and Wildlife Foundation "to recognize exceptional contributions made by refuge volunteers and employees...."

In addition to the Friends Group of the Year, the awards include recognition for the Paul Kroegel Refuge Manager of the Year, the Refuge System Employee of the Year, and the Volunteer of the Year. An awards ceremony is planned for March 23, 2006 in Columbus, Ohio.

When she got the call, Friends' President Judy Schmidt spread the word to the other board members: "I have always known that you are the best, most dedicated and hard working Friends Group and soon so will everyone else. I am proud to announce that we have been selected as the 2006 Friends Group of the year."

The official awards letter, signed by Evan Hirsche, NWRA President, stated: "The Friends group of the year award, which includes a \$2,000 check, honors a Friends organization that demonstrates innovation and excellence in advancing the mission of the Refuge System, provides a positive community influence, works as an independent advocate to protect the natural resource, and strives to influence support for the local refuge and the Refuge System as a whole. We feel the Friends of Great Swamp NWR has thoroughly met this criteria and the group is indeed a worthy recipient of this award." See the sidebar for an excerpt from the NWRA Press Release.

Watch for more news and photos from the awards ceremony in the next newsletter and on our Friends web site.

Friends Group of the Year Award, Friends of Great Swamp National Wildlife Refuge, NJ

The Friends of Great Swamp NWR have demonstrated an extraordinary dedication to public outreach and environmental education in support of their urban refuge. The group developed the refuge's Wildlife Tour Route guide and the "Discovery Den" activity room. In addition to welcoming and answering questions for thousands of refuge visitors each year, the Friends host at least two public educational programs a month on the refuge and partner on events hosted by other conservation organizations in the surrounding Great Swamp watershed. Their extensive education and outreach program includes classroom loan of "Swamp in a box" kit containing videos and identification guides, researched, written, and produced by the Friends.



Kids learn about the swamp first-hand

KEEPING UP WITH FRIENDS—NEWS, HIGHLIGHTS & UPDATES

ANNUAL MEMBER MEETING HELD

Thirty-eight members attended the Friends of Great Swamp Annual Member Meeting on Sunday, December 11, 2005. President Judy Schmidt, with help from committee chairs, summarized some of the many accomplishments achieved in 2005 (see story on page 6) and spoke about plans and projects for 2006. Treasurer Laurel Gould reported that in fiscal year 2005, revenues totaled \$28,540.74 with expenses of \$21,685.97. The election of directors was conducted: Pat Giaimo was elected for a one-year term; Laurel Gould, Lisa Molinari, Judy Schmidt, Dorothy Smullen, and Kathy Woodward were all re-elected for 2-year terms. After the meeting was adjourned, the group dug into a pot luck smorgasbord of great food with lively conversation around the tables. The evening concluded as Terry Carruthers presented a fascinating and informative slide show program highlighting birds and birding in Ireland and Europe.

INTRODUCING NEW BOARD MEMBER—PAT GIAIMO

I am pleased to have been asked to join the Board of the Friends of the Great Swamp. For many years I have been visiting the Great Swamp, driving Pleasant Plains Road or walking the boardwalk. There is not much one can do that is more relaxing than leaning on a railing at the Wildlife Observation Center (WOC) and just looking and listening. Most of my visits were mid-week so, although I saw the Bookstore, it was never open when I was there. Then I happened to be birding on a Saturday and went into the store and asked Laurel Gould if they needed volunteers. I was greeted with much enthusiasm. Since then I have been enjoying working in the store, helping this fall at WOC, and doing whatever else I can to assist the swamp. On the Board I expect to have the opportunity to be more involved with the Friends organization and the Great Swamp as it changes and expands. I also think I will continue to have a great time with a fine group of people committed to doing all they can to benefit the Great Swamp.

FRIENDS WEBSITE—REVISED, ENHANCED, REVITALIZED

The Friends of Great Swamp website has a whole new look thanks to Web Site Chair Dennis Branden and Garden State Internet Development (GSID), our new web site hosting and maintenance service. The web site features upcoming events—right on the home page and a “News” section which will feature three news stories, with a new story each month.

All of the content has been revised and the website will be updated on a monthly basis. One of the first things to be added will be more photos to illustrate the many activities and sights of the Refuge. If you haven't visited the web site recently, take a look and add it to your Favorites!

FRIENDS SPONSOR REFUGE INTERN FOR THIRD YEAR

The Friends of Great Swamp will again be sponsoring an intern at Great Swamp for the summer season. Interns have a variety of duties including assisting with Refuge maintenance, wildlife surveys, duck banding, and biological control of invasive plants. The interns learn a lot and gain valuable field work experience; the Refuge benefits from the assistance during the busy spring and summer seasons. With current Federal budget constraints, the intern position would probably not be filled without the funding assistance provided by the Friends of Great Swamp.

ROGER DONAT MEMORIAM

by Judy Schmidt

On Tuesday July 20 1999 eight people voted to establish Friends of Great Swamp; Roger Donat was one of the eight. He faithfully served on the Friends board until his passing last year. Roger was an avid outdoorsman who hunted Great Swamp for many years and saw the need to support the refuge.

Support it he did. In addition to serving on the Board, he also lent his expertise in carpentry to improve the bookstore—from new handrails to ceiling tiles and everything in-between—Roger was always there to help. When we received the grant for the shed at the Wildlife Observation Center, he designed the paneling inside that makes it such a nice place. He was unable to finish the work due to his illness but stopped over many times to see how the job was going. For this and the many other things he did for Great Swamp, we thank Roger and will miss him.

Friends of Great Swamp National Wildlife Refuge

Site Updated: JAN 24, 2006

Welcome

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

- Promoting the conservation of the natural resources of the Refuge,
- Fostering public understanding and appreciation of the Refuge, and
- Engaging in activities that will support the mission of the Great Swamp National Wildlife Refuge.

The Friends of Great Swamp was established in 1999 by local citizens in partnership with the U.S. Fish and Wildlife Service to provide support to the Great Swamp National Wildlife Refuge. The Friends is an all-volunteer organization, supporting the Refuge in a number of ways including increasing and enhancing educational programs and visitor services, providing financial assistance, supplying volunteer services, and helping to strengthen the link between the refuge and the public. We are part of a network of more than 200 Friends groups nationwide, each associated with one or more national wildlife refuges, all committed to improving and protecting our unique refuge resources.

Refuge Facts

Established in 1950, the Great Swamp National Wildlife Refuge was the first refuge to receive wilderness designation (September 9, 1968). It hosts more than 250,000 visits annually.

As part of the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service, the refuge is home to

2006 Photo Contest

The 2005 Friends Photo Contest was the best ever — with 190 entries from 29 photographers — and the 2006 Photo Contest is now underway! Click here to read more about the Photo Contest.

REFUGE NEWS, HIGHLIGHTS & UPDATE

STAFF CHANGES AT GREAT SWAMP

Deputy Refuge Manager Sharon Marino has a new job! Unfortunately for us, it's in the U.S. Fish & Wildlife Service's Regional Office located in Hadley Massachusetts. However, it's a great opportunity for Sharon and although we certainly will miss her here at Great Swamp, she will still be involved with the new visitor center from the regional office end—and with other initiatives that concern our refuge and others in the northeast. We wish Sharon all the best in her new position.

ANNUAL DEER HUNT AT GREAT SWAMP

By Craig Bitler, Refuge Wildlife Biologist

The annual Great Swamp NWR deer hunt was conducted in November, 2005. Seventeen youngsters hunted on the special day for youths and harvested five deer. An additional 145 deer were taken by hunters during the regular four-day season. Harvest numbers have been trending down since the 2002 season when 271 deer were taken.

Since 1999, hunters can only obtain a permit to take a buck by first taking an adult doe and this has made a significant impact on the refuge's adult doe population. One hundred and thirty-three adult does were taken in 2002, 88 in 2003, 84 in 2004, and only 68 in 2005. The goal of the refuge's present hunting program is to reduce the refuge's deer density to about 20 deer per square mile which will allow for the development of a greater forest understory shrub layer for nesting birds and other wildlife species dependent on that type of habitat.

GREAT SWAMP VS. EXOTIC BAMBOO

By Judy Schmidt

Alien invasive plants are one of the greatest threats facing the refuge system, and Great Swamp has its share. Over the years, refuge staff have worked to control purple loosestrife, Japanese barberry and Japanese knotweed. This year the focus was on Japanese stilt grass and exotic bamboo.

Yes, you read that right—bamboo! You say you've never seen it here? Well, it's here and it's taking over at the refuge property on Sassafras Lane. How did it get here? Hidden Valley Nursery was in the approved acquisition area and when the owner wanted to sell, the refuge purchased the land. The area, having been a commercial nursery, has many large rare trees and good upland habitat. There was a renter in the house and it took some years for the refuge to relocate him. During that time the Nursery's bamboo stock escaped its pots and started to spread.

This summer the Friends had a Help in a Hurry day and volunteers, with the help of staff and interns, started to remove the bamboo. It had been cut down the year before and new shoots were growing through the old dead canes, some of which were more than 20 feet long. The new were cut and hauled out along with the old so they all could be chipped. At the end of the day a lot had been done but there was still a lot more to do and no one who worked on the job was looking forward to doing more.

In September, the Friends scheduled our first Refuge Work Day—and we teamed up with the Morris Land Conservancy who coordinated a work day with Toyota employees. On Saturday, September 24, 34 volunteers from Toyota, two

from Morris Land Conservancy and five from the Friends went to work on the bamboo. This was a family work day for the Toyota group and many of them brought their children who worked on their own section of bamboo. Four hours later most of the bamboo had been cut and piled. In the process, a small shed was uncovered! The next step is for the refuge staff to plow and disk the area and in the spring to spray any shoots that survive. Thanks to the help of the Morris Land Conservancy and Toyota we have begun to win the bamboo battle. When we returned to the Bookstore, we all admired the new hybrid Toyota car parked in the lot. It was white and covered with pictures of trees to draw attention to the fact that it is earth friendly. Upon closer inspection we noticed that it wasn't trees on the car — it was bamboo!



Toyota employees and families take a well-earned Bamboo Break

HOMESTEAD CLEANUP— FALL 2005

by Judy Schmidt

Saturday, October 22 was rainy and cold – which might explain why only five volunteers arrived that morning for the fall homestead cleanup. But Craig Bitler was ready with a number of small sites – just perfect for a small crew. The first job was to remove fencing from the pull-off area just outside the Refuge on Pleasant Plains Road. Then, with that warm-up, we moved on to an old farm on Carlton Road to remove more fence. Vines and shrubs had grown over and wound through the fencing over the years and a lot of pulling and cutting was required. By the time we finished, we were very muddy and wet – but the job was done, the property looked better and was certainly much improved for wildlife. After unloading the two trucks full of fencing, Craig took us to another site on New Vernon Road. This was a homestead made famous by the hunter who lived there. Craig told us that the hunter used to put 55-gallon drums up in the trees and then climb in them to hunt. After picking our way around the old foundation of the farm, we carried out large pieces of metal which we put down on the side of the road. While we were waiting for Craig to get the truck, drivers were slowing down to see what we had piled up. John Wilmot suggested we offer the stuff for sale as artifacts from the Great Swamp. (We didn't have any takers).

The next site was just up the road but when we got there it couldn't be found. It was either buried under a pile of gravel or hidden in the vegetation, but in searching around Craig did get to see a golden crowned kinglet up close. We moved on to the next site on Hollywood Road. Once again we were walking around trying to find the debris when suddenly Craig asked if anyone had seen a refuge sign as he wasn't sure we were even on Refuge property at that point. Well, we did find a sign and then Laurel Gould located the debris to be removed – a tire, fencing, plastic buckets, pipes, a motorized lawn sweeper, and a lawn roller. We filled up the trucks again and then went back to the Friends for lunch.

As you can see, we always get a lot done on the homestead cleanups. So much so, in fact, that all of the big sites are clean and now we are working on the smaller ones. While we work, we also get to explore different parts of the refuge, learn a little folklore, see some wildlife, and do something really good for Great Swamp.

DUCK BANDING A SUCCESS IN 2005

Story, chart and photos by Leo Hollein

Under the direction of refuge biologist Craig Bitler, a successful duck trapping and banding season was conducted in 2005 at the Great Swamp National Wildlife Refuge (GSNWR). Nearly 350 ducks were banded and many other ducks were trapped that had been previously banded.

Trapping and banding of ducks was done in the late summer and early fall by refuge staff and volunteers at one location adjacent to Pool 1 in the refuge Management Area. Tall brush on the dike near the trap location was cut and some aquatic vegetation in Pool 1 was removed to make the site more attractive and accessible to ducks. Trapping and banding began in late July and ended in late September. The objective was to trap and band ducks that are local breeders. Discontinuing trapping before the start of the primary migration period in October limited the capture of migratory ducks.

The photo shows the large wire mesh trap set up with some captured ducks. The trap has three separate one way entrances and corresponding holding areas. Large "Have-A-Heart" traps were also located in the grassy areas near the duck trap and baited with cat food. The objective was to capture and subsequently relocate raccoons that may prey on trapped ducks. Twenty-four raccoons were trapped during the season as well as 6 opossums, 3 skunks, 1 fox and a snapping turtle. Processing the trapped skunks was done with care. All mammals captured in the "Have-A-Heart" traps were released in a remote part of the Refuge near the Schmidt residence.



Banding was conducted three days per week

The duck trap was baited with corn daily to attract ducks but only set three days a week at dusk after the ducks had completed feeding for the day. This strategy limits the time the ducks will be confined as they do not enter the traps to feed until dawn. This also reduces the time trapped ducks are subjected to possible attack by raccoons or other predators. When caged and threatened, the ducks put their heads through the wire mesh trying to escape. This makes them easy victims for their predators. In 2005, no trapped ducks suffered predation. When traps are set at dusk, they are visited around 8:00 am the following morning to process any trapped ducks.

Captured ducks that are already banded are released. Naked (unbanded) ducks are processed and banded. The photo on the next page shows a female wood duck being banded. The information recorded for each duck is species, sex and age (hatch-year or adult).



Sex may be determined by coloration of feathers and/or bill. Age may be determined by examining the shape of the upper covert feathers and/or the tail feathers. Inspection of the sexual

organs by separating the feathers of the lower abdomen may also be required in some cases. About 80% of the ducks banded in 2005 were hatch-year ducks that presumably had been born and raised in the GSNWR.

During August and September mallard drakes are in their eclipse plumage that is similar to the hen plumage. Drake mallards do not begin to show traces of green in their head feathers until mid-September when they begin to acquire their breeding plumage. Drake and hen wood ducks in their eclipse plumage are distinguished by plumage coloration around the eyes and throat. The drakes are very plain when compared to their breeding plumage.

Four duck species breed in the Great Swamp NWR. These are wood ducks, mallards, American black ducks and hooded mergansers. All of these species, except hooded mergansers, can be trapped with corn bait. Hooded mergansers feed on fish and other live food; they are not attracted by corn. A few early migrants may show up in September and may be trapped. One northern pintail was trapped and banded during the season. Three green-winged teals were trapped and banded during the second half of September. These were the smallest ducks trapped. They weigh about half as much as wood ducks and about as quarter as much as mallards.

Grackles and red-winged blackbirds also are attracted to the free corn and get trapped. They are allowed to escape on their own when the trap is opened. An individual muskrat and ground hog were caught in the corn traps. Both are vegetarians and did not harm the ducks that were also trapped.

Mallards and wood ducks are most common breeders

The most common breeders in the Great Swamp NWR are wood ducks and mallards. As expected, these species are most often trapped and banded. One hundred and five wood ducks were banded in 2005. Wood ducks are cavity nesters and use the many large nest boxes that are installed and

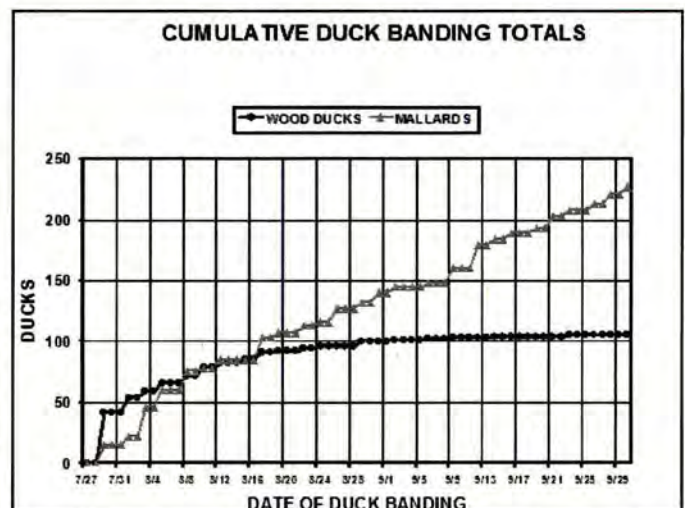
maintained on the refuge. The breeding population of wood ducks in the GSNWR is one of the largest in the Eastern United States. Two hundred and twenty-seven mallards were banded in 2005. In contrast, only 7 American black ducks were banded. Mallards are primarily ground nesters.

The chart below plots the cumulative totals of banded mallards and wood ducks versus time. On the first day of trapping 42 wood ducks were banded but only 6 wood ducks were banded in all of September. Few previously banded wood ducks were trapped in September. As shown in the chart the banding of mallards was evenly distributed throughout the season. Previously banded mallards were commonly trapped throughout the banding season. The difference in banding patterns between wood ducks and mallards is striking. The reason is not certain. Perhaps the much larger mallards inhibit the wood ducks from seeking a free meal as the season progresses. Perhaps the timid wood ducks don't want the free meal enough to risk capture.

Banding data used to guide waterfowl management

Banding and subsequent recovery of bands provides data on life-spans, dispersion, population, reproductive success and migratory patterns. Banding data is used to estimate what portion of the duck population is harvested during hunting seasons. This in turn helps guide waterfowl management decisions as well as measuring their impact.

The metal bands vary in size depending on the duck species. Numbered bands with unique 8 or 9 digits are provided by the US Department of Interior's Bird Banding Laboratory in Laurel, Maryland for use in North America by licensed banders. All banding data as well as recovered band numbers are returned to the Bird Banding Laboratory where a banding database is maintained. Bands from wood ducks banded in the GSNWR have been recovered all along the Eastern seaboard from New Brunswick, Canada to Florida. However, most are recovered in New Jersey and adjacent states. Bands have also been recovered from Ontario and Quebec Provinces as well as most Gulf coast states, Wisconsin, Illinois, Minnesota and Arkansas.



2005—A YEAR OF ACCOMPLISHMENTS FOR FRIENDS OF GREAT SWAMP

It's really has been quite a year. The Wildlife Observation Center, the most popular visitor destination at the Refuge, has never looked better. Our education and outreach programs reached a new level with the development of the Swamp in a Box outreach program, the production of a new Refuge video, and the inexhaustible creativity of the Discovery Den committee with their ever-changing variety of activities, crafts, puzzles and exhibits for our young visitors. Volunteers donated an all-time record 7,765 hours participating in a surprising variety of projects, and we achieved a membership milestone – 300 membership units! The new visitor center is a little closer to becoming a reality thanks to support from the Friends. Take a look at the accomplishments below and know that each and every one of you has had a part – from membership dollars to volunteer hours – it all makes a difference for the Great Swamp National Wildlife Refuge. Thank you.

YOUR \$\$\$ AT WORK

Money comes to the Friends in a variety of ways – from new members and renewals, from Bookstore sales, from grants, and from donations of individuals, visitors, corporations, and foundations. We are proud of the level of support we provide to fund refuge projects, most of which would not otherwise be possible. Just look at what we funded in 2005.

- Co-sponsored the annual volunteer recognition dinner for 95 volunteers, guests, and refuge staff.
- Purchased 100-hour volunteer name tags.
- Provided funds for the Challenge Cost Share (matching) Grant for the new visitor center.
- Provided lunch for families at the Refuge Fishing Derby.
- Funded a summer intern – for the second year in a row.
- Purchased materials to maintain the bluebird trail.
- Funded the Friends web site; published 4 newsletters.
- Sponsored a day-long Fall Festival event for 530 visitors.

At the Wildlife Observation Center (WOC) and Overlook, we...

- Provided materials for new benches for visitors.
- Purchased stain for the blinds and the information shed.
- Purchased and installed a blue goose weathervane.
- Produced a Guide to the Wildlife Tour Route with funding from a Mushett Family Foundation grant.
- Re-printed (yet again!) the popular Tree & Shrub Guide.

VOLUNTEERS MAKE A DIFFERENCE

Sometimes refuge projects require something money can't buy – volunteer resources! Our volunteers are a dedicated and enthusiastic group – and as you can see from the listing below, they are involved in a wide range of activities and projects. They accomplish a great deal for the Refuge and for the Friends, donating their time, expertise, knowledge, and, in many cases, their muscle.

- Fall and Spring homestead cleanups.
- Brush-out of signs along Pleasant Plains Road.
- Invasive species control – GPS mapping, stilt grass removal, bamboo cutting, spraying.
- Wood duck box cleaning, repair, and data collection.
- Participating in bat surveys and frog call surveys.
- Bluebird nest box monitoring and survey data collection.
- Staining the shed, blinds, kiosk, and gate at WOC.
- Woodchipping new trail to Friends blind at WOC.
- Celebrating a "working" Earth Day with AT&T volunteers.
- Achieved a record number of volunteer hours: 7,765 hours – that's nearly 4 full time workers!
- Trail maintenance of wilderness area trails.

- Leading walks, hosting events, giving talks to the public.
- Conducting educational group walks.
- Staffing the Wildlife Observation Center and Overlook.
- Mowing the grass and maintenance of various facilities.
- Writing articles and editing the Friends newsletter.
- Assisting at the annual deer hunt.
- Providing administrative support at Refuge offices.
- Filling bird feeders at the Wildlife Observation Center.
- Serving as a Friends Board or Committee member.
- Participating in meetings on the refuge visitor center.

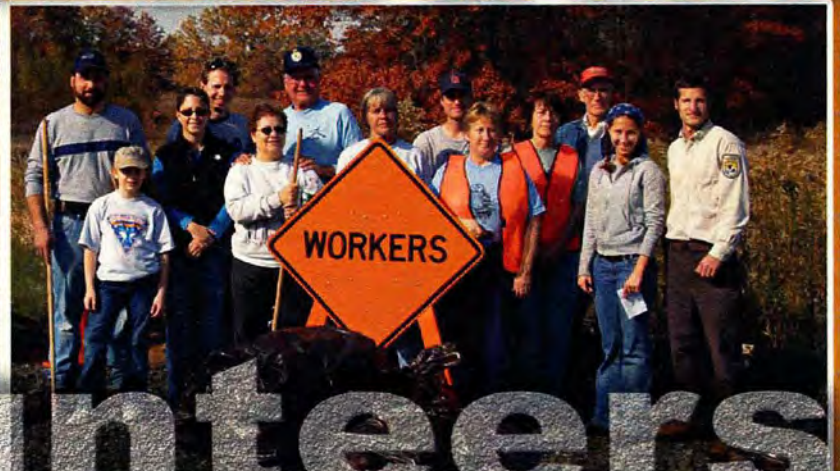
FOSTERING PUBLIC UNDERSTANDING AND APPRECIATION

This key component of our Friends' mission statement is supported by interaction with refuge visitors and the public. These activities require a huge amount of volunteer time and a real commitment, but are critical to our success.

- Coordinated and conducted 23 educational walks for 417 visitors, from school, scout and community groups.
- Hosted ten Second Sunday programs for the public.
- Helped celebrate National Wildlife Refuge Week with daily Sunset Walks and Noon Walks for the public.
- Celebrated International Migratory Bird Day by conducting evening walks in May.
- Hosted Turkey Walk in November.
- Conducted three Volunteer Training Sessions, including the development of a new advanced training program.
- Developed "Swamp in a Box" outreach program.
- Created and produced a new Refuge video.
- Sponsored Junior Duck Stamp contest.
- Sponsored our 6th annual Photo Contest further expanding our digital library, a key source for photos.
- Led the Refuge Rovers on the World Series of Birding to increase appreciation for the Refuge.
- Created monthly activities, crafts, puzzles and displays for the Discovery Den.
- Staffed the Wildlife Observation Center and Overlook for a total of 51 days during the busy spring and fall migration seasons, greeting 9,506 visitors; expanding weekend coverage to include Fridays.
- Staffed the Bookstore & Gift Shop on weekends from September through June, welcoming 3,908 visitors and providing information when Refuge offices are closed.
- Held our 6th annual Fall Festival – when we celebrate the refuge and welcomed 530 new (and old) visitors.
- Completed Wildlife Tour Route Guide.
- Staffed events hosted by our environmental partners.

2005 friends at work

Great Swamp NWR



ENDANGERED INDIANA BATS FOUND IN GREAT SWAMP

Story, chart and photos by Rich Dufort



Juvenile Indiana Bat

It's 9:30 pm. Late May. Pitch black. No moon. I am three quarters of a mile deep on the orange trail in the Great Swamp Wilderness Area off Meyersville Road. I am searching for bats. This end of the trail has been identified by Sharon Marino, Deputy Refuge Manager, as a likely corridor for bats to feed. And it presents an ideal place to mist net the bats, a relatively straight, narrow trail through a canopy of trees. But tonight, I strike out. No bats on this trail tonight, or the next night when I try again. But eventually we will find bats, lots of them, and catch them in mist nets. Seven different species including the rare Indiana bat, the focus of Sharon's project. But more on that later.

My wife, Emily McQueen, and I have volunteered to help Sharon with her project to find and mist net Indiana bats,

a federal endangered species. Indiana bats are known to live in New Jersey and Sharon thinks they may be in the Great Swamp, an area with ideal habitat for bats. If she can find them, it could provide opportunities to manage the swamp habitat in a way to help Indiana bats recover.

On this first night out, I am armed with a Anabat II bat detector, a flashlight, and plenty of mosquito repellent. I am on my own; Emily can't make it this night. (Hint: The first time you go into the swamp at night, take someone with you. Even though there are no creatures that can really hurt you, it still can be a bit scary. Lots of beautiful but new and strange sounds. But remember, the Refuge is off limits after dusk unless you have prior approval. The police do check.)

The bat detector is battery powered, about the size of a brick, nowhere near as heavy. It senses the echolocation calls of bats and converts them to signals in a range audible to the human ear. Bats use echolocation to "see", in a way similar to radar. The manual says that when you become proficient with the detector, you can identify species and the activity they are performing. I am happy just to detect the presence of the bats. And that night, there aren't any. Nor are there any the next night when we go out again.

On other nights and at other sites, however, we find the presence of bats, lots of them. And we aren't the only ones doing this. Sharon and other members of the Refuge staff are also looking for bats. By the end of June, Sharon has four or five sites that are good candidates for mist netting. All with the hope of finding the endangered Indiana bat.

Indiana bats are a federal endangered species. Endangered species are animals and plants that are in danger of becoming extinct. In northern New Jersey, there are three known hibernacula (hibernation dens in caves) for Indiana bats. The estimated state population is about 650 bats. After hibernation, around April, the bats migrate to their summer habitats where they roost under loose tree bark on dead or dying trees in forested areas. The females group together in maternity roosts and raise their young. Sharon's hope is that one of those roosts is in the Swamp.

The only way to know for sure there are Indiana bats in the Swamp is to catch them and visually identify them. To do that, we will go to the locations where bats were detected and set up mist nets. That effort will be led by Professor Karen Campbell of Albright College, with two of her students, assisted by Refuge staff and three Refuge summer interns. Professor Campbell is a bat specialist who began studying bats in graduate school and really knows the subject. Emily and I come along to help however we can, but mostly as a reward for our work with the bat detectors.

A warm night in late June. We are walking a dirt road into one of the "hot" spots, this time in the Management area. Again, it is pitch black. There are about eight of us counting Karen, Sharon, the interns, and students. We are late. The nets are already up. The nets are suspended across the road or, in one case, across a stream. They are about thirty feet high, one inch mesh, with pockets which can catch the bats if they hit the nets and fall. The idea is that the bats fly into the net, become entangled, and can't escape. Our job is to notice them and call the experts (Karen and her students) to remove them from the nets and identify them. Bats may bite if you let them and there is always the danger of rabies. So the handling is left to the experts.

That night, we catch two little brown bats, a male and a lactating female. Little browns are common in New Jersey, but at least we caught something. The bats are weighed, measured, and banded. Emily and I get to stroke their fur while Karen holds them. It is surprisingly soft. Up close, they are cute, hardly the fearsome creatures of the vampire movies.

Bats are not mice with wings. They are more closely related to people than to mice. A bat's wing is very close in structure to a human hand. They have four fingers and a thumb. Their arm is made up of a forearm, an elbow, and an upper arm. The fingers are very long and support a thin leathery skin that makes their wings. A bat can change his wing shape as easily and as quickly as you can move the fingers on your hand.

We don't go out the next night. But the team catches two big brown bats, also a common New Jersey species, and another little brown. But still no Indiana bats. We will be out of town for the next mist netting site so we sign off with Sharon thinking we are through with bats for this year.

It is early August and I receive an excited call from Sharon. The date for the second mist netting was changed. The team is mist netting at a new site, this time in the Wilderness Area. They have been out for two nights and have caught thirty-seven bats, including seven different species and nine Indiana bats. Among the Indiana bats are post lactating females. This means a maternity colony in the Swamp. Sharon has hit the jackpot. The team needs help monitoring the nets for a third night and we jump at the chance.



Adult Red Bat

Another beautiful night. Sharon's directions to the site sounded clear, but we had not been to this site before. She says to look for the cars about a quarter mile in. We drive down a dark road with grass spreading over the hood of our small car. Emily says this better be the place or we may be spending the night in the swamp. But then we see the other cars, a welcome sight.

There is a buzz in the air. Word has spread that there are Indiana bats in the swamp. This time the team is larger including representatives from the NJ Division of Fish and Wildlife and from other Federal refuges. We stay out until about 1:00 am. Not as good a night as the night before, but we still catch seven big browns, three little browns, and two Indiana bats. One of the Indiana bats is in the net I am monitoring. It's exciting. How often do you get to see a member of an endangered species close up?

Having Indiana bats present in the swamp gives Refuge officials the opportunity to manage the habitat to aid the bats recovery. Next year, Sharon plans to expand the mist netting to include additional sites. Miniature radio transmitters will be mounted on captured adult females. They will be tracked to find their breeding colonies and foraging areas. The transmitters are glued to the bat and typically fall off in about twenty-one days.

Indiana bats have their young under the bark of trees, in colonies sometimes as large as one hundred bats. They are known to like shag bark hickory, a tree that is native to the swamp. Sharon wants to make sure the colonies are protected while the bats are present on the Refuge during the summer. And knowing the areas where the bats feed could lead to managing parts of the swamp to create more habitat specific to them

For us, the Indiana bat project has been an adventure. We got to help with a worthwhile activity, learn about and work with bats, and become comfortable with the swamp at night. You can't ask for more than that.

Bat Species	Adult		Juvenile		Total
	Male	Female	Male	Female	
Big brown	3	7	2	5	17
Little brown	3	6	1	5	15
Indiana	1	2	6	2	11
Eastern pipistrelle		2	1	1	4
Northern myotis		1	2		3
Small-footed	1				1
Eastern red	1				1
Total	9	18	12	13	52

Age, sex and species of bats caught this past summer at two sites in the Refuge

2005 PHOTO CONTEST WINNERS ANNOUNCED—2006 CONTEST UNDERWAY

By Blaine Rothauser, *Natural Eyes Wildlife Photography*

The 2005 Friends of Great Swamp Photo Contest was a roaring success! I had the distinct privilege of judging over 150 photographs that beautifully portrayed the natural majesty of our "Greatest of Swamps". The quality of the photography was the best I have seen since I started judging the contest in 2001. This is a reflection of the contest's popularity and bodes well for the future of this competition.

With so many spectacular photographs entered I was challenged to narrow down images that made up my top ten. Images ran the gamut from snow-covered meadows, a smiley red fox, acorn-wielding woodpeckers and herons spearing fish. Wildlife in action seemed to permeate the photographic entries this year. Every nature photographer knows that catching a subject performing a natural act is extremely challenging and requires fortitude and patience. The fact that we got so many action shots of wildlife was an admission to our contestants' stealth. The winning photograph for the Friends (and judge's) Choice category portrayed an eastern kingbird flipping a dragonfly into its beak—caught in mid-toss—truly spectacular.

If you would like to view the winning photographs they are on display at the Bookstore & Gift Shop and on the Friends of Great Swamp web site. Some of the beautiful images will be made into post cards and will be available for purchase from the Bookstore.

Kudos to all the 2005 contest respondents—keep up the great work—get out and photograph the swamp's splendor—don't forget to enter early—I'll be looking forward to another great year.

2005 FRIENDS PHOTO CONTEST WINNERS

Here are the winners of the 2005 Photo Contest; winners received a gift certificate to the Bookstore & Gift Shop and a one-year membership.

Friends Choice

- William Filce—Kingbird flipping dragonfly

Wildlife

- 1st place, Barbara Frankenfield, Red fox
- 2nd place, James Lospinoso, Egret flipping crayfish
- 3rd place, Charles Woodrich, Red-headed woodpecker

Landscape

- 1st place, James Foss, Great Swamp sunset
- 2nd place, Lauren Lozowski, Snow covered trees
- 3rd place, Dave Barbara, Star trails

Photos entered in our 2005 photo contest become part of the Friends Photo Digital Library, a key source for pictures used in projects like the new Great Swamp video, in publications, displays, and on our web site. Thank you to all of the photographers who have submitted photos; we are putting them to good use.



Photo by: Barbara Frankenfield, Red fox

2006 PHOTO CONTEST HAS BEGUN—SO... WHERE IS YOUR CAMERA?

The 2006 Friends amateur photo contest is underway—the deadline is June 30, 2006. Photos must be taken within the Refuge. Entry forms are available on our website, at the Bookstore & Gift Shop, and at Refuge Headquarters. Winners will be announced at the September 9, 2006 Fall Festival. Get that camera out—we'll be looking for you behind the lens!

ANNOUNCING—WILDLIFE REFUGE MAGAZINE

There's a new magazine devoted exclusively to coverage of national wildlife refuges. It covers the critical issues facing refuges today, highlights some of the recreational opportunities at refuges across the country, and features stories about the people and places that make the Refuge System unique among all the federal lands—and includes stunning color photos.

Wildlife Refuge magazine is published by the National Wildlife Refuge Association (NWRA) and is sent free to all NWRA members. For a limited time, NWRA is offering a one-year free introductory membership—just go to their website at www.refugenet.org and click the Free Introductory Membership icon. NWRA provides invaluable support to Friends groups, including a mentoring program for new groups, practical handbooks, sponsorship of the Friends Conference in Washington D.C., grants, and annual recognition awards. Check out the NWRA web site—or stop by the Bookstore & Gift shop and pick up a free copy of the inaugural issue of Wildlife Refuge.

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
Ask about our school or group memberships.

Annual Membership

Membership Type	<input type="checkbox"/> Family - \$25	<input type="checkbox"/> Individual—\$15
Gift	<input type="checkbox"/> Family - \$25	<input type="checkbox"/> Individual—\$15
Renewal?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Donation—Thank You! \$_____

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 . . .



Members are important! Give a gift of membership to a friend.

Memberships help support the Friends' mission and refuge projects at Great Swamp.

Members also receive the following benefits:

- Quarterly Newsletter
- 10% discount in Bookstore & Gift Shop
- Library borrowing privileges
- Notification of upcoming events
- Feeling of accomplishment in supporting the Great Swamp National Wildlife Refuge.

Gift Memberships will include a coupon redeemable at the Friends Bookstore & Gift Shop for a special Friends gift.

Friends of Great Swamp
National Wildlife Refuge

Is an independent, non profit organization
dedicated to

Promoting the conservation of the natural
resources of the Refuge

Fostering public understanding and
appreciation of the Refuge, and

Engaging in activities that will support the mission of the Great Swamp National Wildlife Refuge.

Friends of
Great Swamp
National Wildlife Refuge

FEBRUARY 2006

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

