



the Swamp Scene

friends of great swamp national wildlife refuge

ISSUE TWENTY NINE
DECEMBER 2008

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FINALLY! A NEW BOOK ALL ABOUT GREAT SWAMP—CHECK IT OUT!

A CONVERSATION WITH AUTHOR STEVEN RICHMAN

By Laurel Gould

Finally! A new book all about the Great Swamp! Published earlier this year, it's called *The Great Swamp: New Jersey's Natural Treasure*. On December 7, author Steven Richman visited the Friends Bookstore & Gift Shop for a book signing. In-between visitors and signatures, I had a chance to talk to Steven about this new book.

Steven Richman has been taking photographs at the Refuge for many years, as many of us have, but the idea for a book about Great Swamp was born during a trip to Florida's Big Cypress National Preserve, where he happened on Clyde Butcher's awesome photographic exhibit in one of the local museums. *(continued on page 5)*

THE GREAT SWAMP: NEW JERSEY'S NATURAL TREASURE BOOK REVIEW

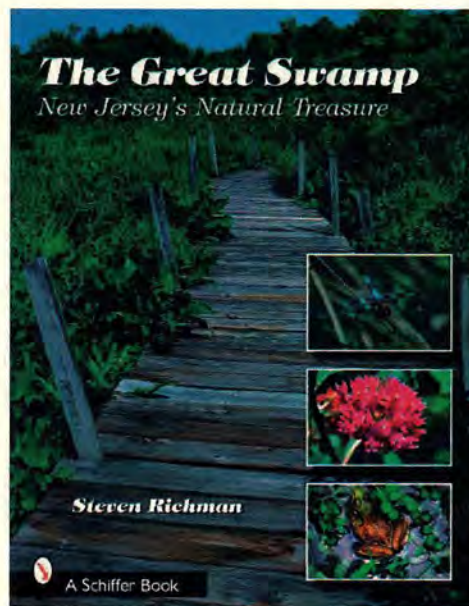
By George Helmke

Steven Richman, a Princeton area attorney, has provided us with an album of over 200 color photographs illustrating the beauty of the Great Swamp. The Great Swamp he describes is the lowland area, which includes Somerset County Environmental Education Center, Morris County Outdoor Education Center, and the National Wildlife Refuge we know so well.

This soft cover book, in large format, although chiefly a book of photographs, also provides concisely written sections on the early history of the swamp, its geology, and the airport plan which didn't materialize. Richman's photographs are excellent. They colorfully illustrate the swamp in its four seasons. Importantly, he devotes a section each on wildlife treasures: mushrooms and fungi, reptiles, birds, insects, wildflowers and mammals. He tells us that he didn't intend the book to be a field guide to these areas of natural history but he does provide the species name with many of the photographs. Unfortunately, mushrooms and fungi, which are beautifully illustrated, are not identified.

Many of us, having a keen interest in natural history, visit the swamp with binoculars, looking for the rare bird, reptile, or mammal. We notice and appreciate the beauty of the place but fail to use our cameras to capture this beauty and preserve it on film or digital memory for future enjoyment. Steven Richman has done us all a favor by providing for us a beautiful book of illustrations of the swamp. His final section, entitled Nature's Gallery, presents photographs showing the surreal aspect of some swamp scenes, suggesting the work of contemporary artists depicting unusual figures in space.

The Great Swamp: New Jersey's Natural Treasure is recommended reading and viewing for everyone. It is available, priced at \$19.95 with a 10% discount for members of Friends of Great Swamp NWR, in our Pleasant Plains Bookstore & Gift Shop.



KEEPING UP WITH FRIENDS & THE REFUGE—NEWS, HIGHLIGHTS & UPDATES

ANNUAL MEETING AND ELECTION OF OFFICERS

The annual meeting of members of Friends of Great Swamp National Wildlife Refuge was held on December 6, 2008 at the Friends' offices on Pleasant Plains Road. Fifty-seven members attended the meeting which was preceded by a pot luck dinner. Treasurer Laurel Gould presented the financial report. President Dennis Branden reviewed the many Friends' accomplishments during the year. Kathy Woodward reviewed the proposed changes to the bylaws, which were then approved by the membership. Dorothy Smullen, chair of the Nominating Committee, presented a slate of candidates for two-year terms as directors. Laura Nally, Pat Giaimo, and Jane Kendall were re-elected and will continue

on the Board; Jack Higgins was elected as a new board member. Dennis Branden, who did not stand for reelection, was presented with a gift in recognition of his service on the Board and as President. Chuck Whitmore, who resigned from the Board earlier this year, was recognized and thanked for all his contributions. Following the meeting, Refuge Manager Bill Koch spoke to the group about the new visitor center, the upcoming Comprehensive Conservation Plan, and other opportunities and issues facing the Refuge.

At the regular Board of Directors meeting on December 10, 2008, the Board elected Laura Nally to the office of President and Susan Garretson Friedman as Vice President.

THANK YOU FOR YOUR DONATIONS

Donations made to Friends of Great Swamp NWR make up a significant portion of the Friends' annual income and allow us to fund a variety of projects and programs which benefit Great Swamp National Wildlife Refuge. Thank you to all who have made these recent donations to the Friends.

- **The Presbyterian Church of Chatham Township** for their generous donation and continued support.
- Wildlife artist **Ron Orlando** for the donation of his wood duck design which appears on this year's t-shirts and sweatshirts and for the donation of 10% of the proceeds from sales of his artwork at Fall Festival.
- **ExxonMobil**, which recognizes volunteer hours donated by employees and retirees through their Volunteer Involvement Program—and to volunteer **Jack Higgins** for directing this donation to the Friends.
- **BASF Corporation**—for their generous donation and continued support.
- All of you who made a pledge during this year's **The Big Sit!**

IN MEMORY OF DOROTHY B. HAWLEY

- Urmi Ghosh

Membership donations

To all of you who added a donation to your membership renewals, thank you:

Father Joseph McGilloway, Robert Furstner, Ruth Yanoff & Charles McLellan, Shirley Richardson, Naomi Epstein, Peter & Sofia Blanchard, James T. & Anne B. Yardley, John F. Cantilli, Carl & Kathy Woodward, Mary Ann Schmit, Bob Hofmann, John & Bea Fagnoli, Daniel & Lisa Lawson, Sister Merris Larkin, Vince & Rosemary Klimas, Angelo Giangerelli, Mary Jane Walsh, John Matis, Marie Ozmon, Geoff & Dawn Buchan, Janet Stadelmeier, Michael Stadelmeier, Angela Waldorf, Kevin Ward, Kevin Ashton, Paul Acomb, Pat Giaimo, Jennifer & Gary McElvany, Allen Marshall, Cynthia Barilla, Doug & Bobbie Arbesfeld, Isa Vogel, Jonathan & Diane Oatis, Esther Warner, Diane & Dixon Peer, Wendy Malmid, Neil & Cathy Borman, William O. Watts.

VISITOR CENTER UPDATE

The opening of the Helen C. Fenske Visitor Center at Great Swamp National Wildlife Refuge has been pushed back to Fall 2009. The project is moving along with the new road, cul-de-sac, parking lot, and some landscaping remaining to be done. However, due to wet and cold weather, paving has been delayed until spring. The new trail loop has been funded and trail construction should begin in the spring.

The exhibits, which are not yet funded, are entering the planning stage. In December a day-long meeting will be held with an exhibit design firm. Refuge staff and representatives from the Friends will work with the firm to outline various exhibit concepts. The de-

sign firm will develop a Conceptual Design for the visitor center with exhibit plans and cost estimates which can be used to launch a fund raising effort.



Pavilion at Helen C. Fenske Visitor Center

AROUND THE REFUGE—WHAT'S HAPPENING... WITH STEVE HENRY, DEPUTY REFUGE MANAGER

Editor's note: With the assistance of Steve Henry, we're introducing a new column to provide current information on happenings, changes, progress, and news at the Great Swamp National Wildlife Refuge. Thank you Steve.

HABITAT MANAGEMENT

This fall, 200 acres of grassland fields were mowed in less than two weeks, thanks in part to new equipment and no major problems. It was one of the most successful seasons ever. Mowing is now being done in October to avoid affecting nests, wildflowers, and butterflies.

The house and outbuildings on the War-nicke property located on White Bridge Road were demolished and the site will be restored with native vegetation. Asbestos was removed from the Quick property barns on Long Hill Road, north of the Wildlife Observation Center. The barns and outbuildings are the next priority for demolition with the house following. Due to interest in the old lumber, the main barn will be salvaged under contract. The barns were actually located in the Wilderness Area, so once they are demolished, the last remaining buildings in the Wilderness Area will be gone.

Atlantic White Cedars: Extensions are being placed on the green net cages as the cedars have grown beyond the original cages. After the trees reach seven feet, they will be out of danger from deer browsing and the cages will be removed. Out of 300 original plantings approximately 150 have survived; meadow voles have girdled and killed the rest.

CHALLENGE COST SHARE GRANTS

The Refuge applied for several Fiscal Year 2009 Challenge Cost Share Grants. These are government grants requiring that the amount awarded be matched by Friends groups or other organizations; the match may be in volunteer hours, money, or a combination of both. Two proposals were funded this year. One was the Friends' new Junior Refuge Manager program which received a \$6,000 grant to be matched by the Friends. The second grant will fund a joint Great Swamp-Walkkill River NWR turtle project to study bog and wood turtles; the project includes locating additional individuals and populations, site restoration and improvement, and the possible relocation of some turtles. This grant was for \$35,000, again to be matched by volunteers and/or donated funds.

With funds from a Fiscal Year 2008 Challenge Cost Share Grant, the Refuge purchased a small modular greenhouse which was assembled by Friends volunteers, interns, and Refuge staff. It is located near the riding arena at the new visitor center. The plan is to use this greenhouse to start native plants for habitat restoration work as well as using native plant seedlings in educational programs.

COMPREHENSIVE CONSERVATION PLAN

The Great Swamp NWR Comprehensive Conservation Plan (CCP) has entered the planning stage. The CCP is a 15-year plan for each Refuge; every national wildlife refuge in the

country is required to complete a CCP by the year 2012. The CCP for Walkkill River NWR has been completed and is awaiting final approval; Great Swamp has four years to complete its plan. Earlier this fall, an issues identification meeting was held which included Great Swamp Refuge staff along with representatives from the Friends. The purpose of the meet-

ing was to develop a list of potential issues of significance for the Refuge—from maintenance to habitat management to visitor services. This list will continue to be refined and expanded through additional internal input,

as well as input from state and regional agencies, subject matter experts, and from the public through the venue of public meetings to be held in 2009. The CCP will be a top priority for the Refuge for the next several years.

PERSONNEL

Marilyn Kitchell is finishing her Master's Degree work on Indiana Bats at William Paterson University. Following graduation, Marilyn will officially assume her new position of Park Ranger, assisting Tom McFadden with visitor services and public use.

A new law enforcement officer has been hired filling the vacancy left by Lori Lauer. His name is **Haralambos Tricoulis**, but he goes by "Tric". Tric come from Fire Island where he worked for the National Park Service. He also has a background in wildlife management. His office is located at the new visitor center.

Lee Bessler started work in September as an Office Automation Assistant. She will be working closely with Michael Johnson on administrative matters as well as greeting visitors and answering phones at the front desk at Refuge Headquarters.

Mel Smith, a long-time maintenance worker at the Refuge, retired in October leaving the Great Swamp/Walkkill River complex down a maintenance position. The next priority will be to fill Mel's position.

The Refuge System recently published a National Staffing Model which identifies the realistic personnel requirements for refuges to operate adequately. The model applies uniformly to all refuges nationwide. The plan calls for Great Swamp to be allocated an additional 3 ½ positions above the current staffing level. The refuge submitted requests for additional visitor services, administrative, biological, and maintenance positions. Funding for these positions will be a future requirement.

"The Comprehensive Conservation Plan will be a top priority for the Refuge for the next several years."

NATIONAL WILDLIFE REFUGE WEEK—2008 CELEBRATIONS AT GREAT SWAMP

Every year in October, Refuges around the country celebrate National Wildlife Refuge Week. This year, during the week of October 12–18, Friends of Great Swamp National Wildlife Refuge sponsored a variety of events and programs.

LIBRARY DISPLAYS SPREAD THE MESSAGE

To highlight National Wildlife Refuge Week, the National Wildlife Refuge System, and the Great Swamp National Wildlife Refuge, the Friends filled display cases in four area libraries with a variety of photos, brochures, posters, decoys, stuffed animals and other materials. Participating libraries included: Library of the Chatham, Parsippany Library, Bernards Township Library, and the Morris County Library. In November, a similar display was set up in the Mountainside Public Library.



Jack Higgins at Mountain-side Public Library

The feedback was enthusiastic and very complimentary; the displays generated considerable attention and interest in the Refuge. Thanks to Judy Schmidt, Kathy Woodward, Dawn DelGuercio, Laurel Gould, Karen English, and Jack Higgins.



Parsippany Library

FOR A SECOND YEAR THE BIG SIT! COMES TO GREAT SWAMP

Starting at approximately 1:30 a.m. on October 12, the Friends sponsored The Big Sit! to kick off National Wildlife Refuge Week. This year, the Friends decided to make this birding event a fund-raiser, seeking pledges for the number of species recorded during the 24-hour period. More than \$1,200 was raised and a total of 63 species of birds were recorded, up from last year's total of 59 species. Great Swamp was one of 33 refuges nationwide to host this annual bird-watching event sponsored by Bird Watchers Digest. (See story on page 10 with complete list of sightings.)



The Big Sit! birders counting from within the 17' circle

SECOND SUNDAY... WITH FRIENDS

On the afternoon of October 12, the Friends' hosted their regular Second Sunday program. Naturalist Dorothy Smullen presented a fascinating and informative slide program about non-flowering plants—the ferns, lichens, mosses and fungi that grow on the Refuge. The program was followed by a guided walk where various species of non-flowering plants were identified and discussed.

SUNSET WALKS ALL WEEK LONG

Sunday evening was the first in a week-long series of Sunset Walks, guided walks into the Management Area of the Refuge where visitors witness the hundreds of migrating ducks which flock into the impoundment areas to spend the night. The weather was beautiful every evening with a full moon rising on October 14 as the ducks descended into the marsh. In addition to seven different species of ducks, sightings were also recorded for snipe, herons, egrets, hawks and owls.



Photo by Steve Burdick

Visitors enjoy Sunset Walk at Pool 2

COMPLETING THE WEEK WITH A HOMESTEAD CLEANUP

On Saturday, October 18, a Homestead Cleanup was scheduled. Sixteen volunteers spent the morning pulling fence from an old sheep farm that recently became part of the Refuge. The morning's work was followed by hot dogs on the grill for all volunteers. All in all, it was a very successful and rewarding National Wildlife Refuge Week.



Volunteers at the semi-annual Homestead Cleanup

FRIENDS OF GREAT SWAMP NWR PHOTO CONTEST—2008 RESULTS

Unfortunately, due to the cancellation of the Fall Festival this past September, the results of the 2008 Friends' Photo Contest were not publicly announced. Here are the winners as selected by volunteer judge Blaine Rothauser.

Twenty-four photographers submitted 95 photos, including five youth photographers (too few for judging). The winners are shown here. Over the years a significant number and variety of fabulous photos have been added to the Friends' Photo Gallery. All of the 2008 Photo Contest entries are available for viewing at: www.gs.lordei.com. Double-click on the Album Photo to enter the gallery, which also includes a selection of photos from prior contests. Thank you to all photographers who participated this year and in past years.

The National Wildlife Refuge Association recently announced their 4th annual Wildlife Refuge Digital Photography Contest to be held this spring. Visit their web site at: www.refugenet.org/contest/2009ContestFlyer.html to download the contest announcement.



First Place: Navjot Singh. Heavy weight champion



Third Place
Robert Lin
Luna moth just
before night
flight



Second Place: Steve Byland. Water snake

A CONVERSATION WITH STEVEN RICHMAN (continued from page 1)

Now things got serious. Steven visited the Swamp frequently to obtain photos from every public area of the Refuge; he came in all seasons to record the wildlife and habitat at every time of year. It took several years for him to gather the photographs he wanted for this new book, and even then, knew there were other shots to be had.

His vision was to create a photographic essay with the purpose of capturing this area visually and conveying a sense of the beauty and isolation of the swamp. He included much of the familiar to give readers a chance to really look closely at things too often taken for granted. Although Steven did a considerable amount of research in preparing the book, he did not intend it to be a field guide. He spent many hours working to identify the various species that he had photographed; however, when he could not be certain he used a more general description. He assures that any errors that may have crept in were purely inadvertent. His objective was not to create a technical manual but to give readers a sense of this special place, showing the diversity of animal and plant life within a relatively confined area. First and foremost, the emphasis was meant to be on the photography and a visual rendering of the Swamp.

Steven talks about one of his favorite spots, the small pond along Long Hill Road, where he visited so often he felt he actually got to know the frogs. His favorite photo in the book is a tree in autumn with a single leaf blowing off in the wind; a chance shot, there one second and then gone. He also talked about his photo of a crane fly laying her eggs. Doing his research later he learned that this gangly-looking insect, resembling an oversized mosquito, has a very limited life span and he realized that he had captured something special—a single moment in the life of this little creature which, with all that is going on in the world, was living her entire life right here.

Steven said he enjoyed the book signing and was really pleased and touched by the comments of Friends and visitors. Steven has published two previous books: *The Bridges of New Jersey* (Rutgers University Press, 2005) and *Mannequins* (Schiffer Publishing, 2005). He is currently working on an urban photography book with a focus on Trenton. Before he left the book signing, he autographed a number of copies of his book which are available for sale in the Friends Bookstore & Gift Shop.



ROADSIDE CLEANUP—NOVEMBER 1, 2008

By Carl Woodward

What do a golf ball, a boogie board, a \$20 dollar bill, \$520 in cancelled checks, a steak knife and 10 empty Shiraz wine bottles have in common? Just ask any of the 21 volunteers who helped with the Great Swamp NWR Fall Roadside Cleanup on November 1, 2008. These items were among the more interesting trash picked up that Saturday morning. In total, the group collected 105 pounds of recyclables and 110 pounds of trash. The volunteers were supported by Refuge staff, who shuttled people to different sites along New Vernon, White Bridge and Pleasant Plains Roads, and collected the accumulated debris. Volunteer

Peter Osborn said "It is my pleasure to donate the \$20 bill I found to the Friends of Great Swamp NWR treasury." The next roadside cleanup will be held in the Spring of 2009. Sign up early.



NOW HERE'S A GOOD IDEA!

When Friends member Holly Dunbar needed a basket of prizes to donate for a Tricky Tray fundraising event to benefit the Somerset County 4-H Youth Development Program, she decided to create a "Great Swamp Basket". Along with a variety of items that she purchased from the bookstore, Holly added some brochures and other information on the Refuge. The fundraiser turned out to be a huge success, and Holly is now planning to create another basket for next year's event on March 1.



Photo by Dorothy Smullen

FRIENDS DECORATE FOR FESTIVAL OF TREES

The tree was titled: "May that which the holiday LEAVES BE GOLDEN". The Friends' Discovery Den Committee pressed real leaves, sprayed them with gold-colored paint, and added dried Queen Anne's lace. There were 17 different Refuge tree species represented.

The Festival of Trees is an annual event sponsored by the Somerset County Park Commission. Over 50 theme-oriented holiday trees, created by local groups, clubs, businesses, and individuals were on display early in December. Visitors were asked to cast votes for their favorites. The Friends tree won third place this year. Congratulations to Dorothy Smullen, Deb Scala, Gail Rapaport, and Judy Schmidt.



Assembling the roof (above) Almost done! (Right)



FRIENDS, INTERNS, REFUGE STAFF CONSTRUCT MODULAR GREENHOUSE

It was described as a giant lego project. All the hundreds of pieces arrived in five huge boxes ready for assembly. First the site was measured and prepared and the base foundation laid in place. Then the roof was assembled. The large enclosed riding arena area at the visitor center served as a perfect construction setting for this work. The walls were then put up and the polycarbonate side panels inserted. Then the roof was "raised" by carrying it outside and setting it on the side panels. Harder than it sounds, but after several days and many hours the volunteers and staff completed the project. The next step is to purchase benches for pots and plants, then plant some seeds... The expectation is that we'll have native plant seedlings growing by next summer.

CHARLIE COTTON—REFUGE VOLUNTEER AND INTERN

Even though it's hard to believe, more than a year has passed since I began volunteering at the Swamp. I started off helping out with roadside cleanups, organizing First Sunday films, spending afternoons helping visitors at the Wildlife Observation Center, and doing odd jobs at the Refuge every Thursday with Steve Henry, Deputy Refuge Manager. My five hours per week at the Refuge were part of Madison High School's Advanced Service Project which allows high school seniors to spend part of their school day giving back to the community at an organization of their choice. At the end of the year, each volunteer is required to lead a group of freshmen in a day-long project that will help fulfill the goals of the volunteer organization. As per these regulations, my school year culminated on a rainy day at the new Visitor Center. My hardy group of freshmen trudged out in the gloom and cut Japanese barberry away from the Visitor Center's future hiking trail. By the end of the day we were thoroughly soaked but well accomplished, having helped restore a part of the Swamp's natural habitat in the worst of weather.

Fortunately the end of the school year was not the end of my tenure at Great Swamp. Since I was not to attend college until February, Steve offered me a three-month internship starting in August which the Friends generously funded. Since August I have been here at the Swamp doing anything and everything that has needed doing. This includes restoring the Garden Club Blind, maintaining Refuge trails, raccoon trapping and relocating to support the waterfowl banding project, spraying Japanese barberry, collecting Indiana bat habitat data, photographing wildflowers, assessing the effect of Refuge management on brushland vegetation with intern Chris Hernandez, helping to erect the new greenhouse, painting gates across the Refuge, and completing

routine maintenance tasks. However, the highlight of my internship was working with wood turtles. As they are a state threatened species, Refuge biologist Colin Osborn protects the turtle nests through the summer and collects the hatch-



Charlie Cotton with wood turtle during Internship at Great Swamp NWR

lings in late August through September to mark them. I assisted with marking these hatchlings, tracked some of the adult turtles using radio telemetry, and even found, marked, and attached a transmitter to an adult male in an area of the Refuge where no turtles had previously been tracked.

In the last year I have learned much: how to use radio telemetry, identify many plants and animals, operate a ride-on mower, complete routine maintenance tasks such as painting, properly document the habitat surrounding a bat roost tree, eradicate invasive plant species from an infested area, and much more. Now I am happy to round out my year by spending every Wednesday with Kenny Kim, a new Madison High School student in the Advanced Service Project program, who will hopefully enjoy learning from his time here as much as I have.



WINNING ARTWORK FOR 2009-2010 FEDERAL DUCK STAMP ANNOUNCED

The winner of the 2008 Federal Duck Stamp Contest is Joshua Spies from South Dakota with his painting of a male long-tailed duck floating with a decoy. This stamp will go on sale in June 2009. In the meantime, you can buy the current Federal Duck Stamp (Joe Hautman's pintail). This is a great way to help purchase new refuge habitat for wildlife, waterfowl, and other migratory birds. Ninety-eight cents of every dollar generated by the sales of duck stamps specifically targets breeding habitat within the National Wildlife Refuge System. If you enjoy the refuge, do your part to help ensure its future—stop by the Friends Bookstore or Refuge Headquarters and buy **your** Federal Duck Stamp.

IT REALLY IS A BLUEBIRD NEST BOX TRAIL

Story and photos by Leo Hollein

While it took a number of years, the bluebirds have finally learned that the Great Swamp National Wildlife Refuge songbird boxes were installed for their benefit. In 2008, for the first time, bluebirds became the most common occupant of the nest boxes by having more nestings (nests with eggs) than tree swallows. As shown in the chart below, tree swallow nestings outnumbered bluebird nestings by over 2.5 to 1 in 2001. The actions that increased bluebird nestings were:

- Pairing the nest boxes on separate posts about 30 feet apart to provide equal opportunity for bluebirds and tree swallows to nest.
- Increasing the distance between pairs of boxes to over 200 yards.
- Locating pairs of boxes in grassy, upland areas (such as around the new visitor center and on the remediated sites) that were not previously used.



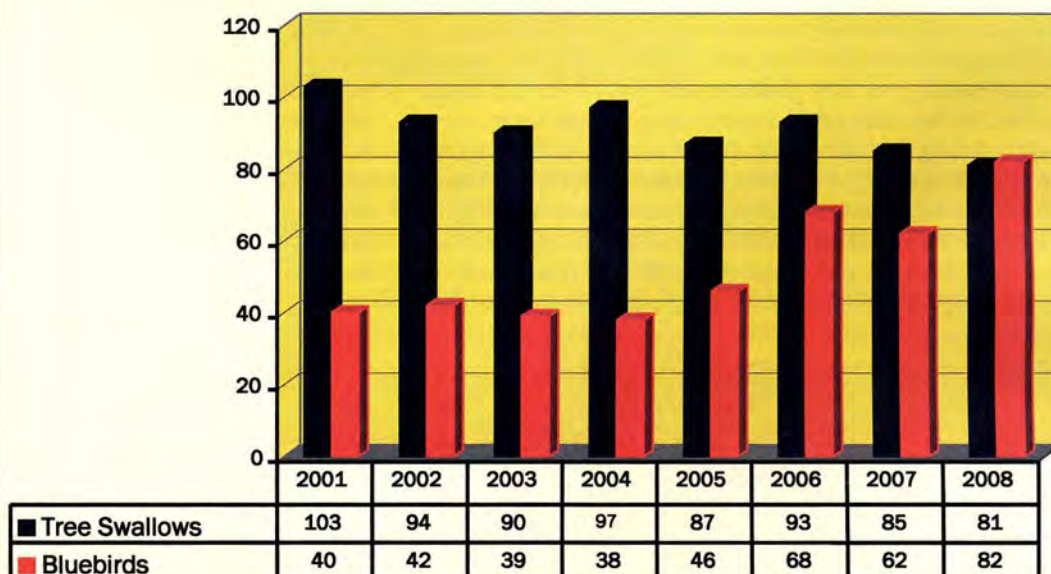
The weather in 2008 was excellent for nesting bluebirds. The

average April temperature was normal at about 52 degrees Fahrenheit. There was adequate rain in May and June to promote vegetative growth and provide a robust bug population that bluebirds used to raise their young. The nesting season was good for all species as nearly 92% of the nest boxes had at least one nesting.

Bluebirds fledged a record 249 young in 2008 (previous high was 231 in 2006) even though there were fewer nest boxes (132) than in any of the previous seven seasons.

Many thanks to Kathy Lawson, Roz Mytelka and Lou Pisane who monitored nest boxes and reported their findings on a weekly basis during the 2008 nesting season.

CHART - BLUEBIRD AND TREE SWALLOW NESTINGS



STUDYING INDIANA BATS: WHAT HAVE WE LEARNED?

By Marilyn Kitchell

As many of you know, I have spent the last two years pursuing my masters degree and studying the summer ecology of federally endangered Indiana bats (*Myotis sodalis*) at Great Swamp. The primary goals of this study were to identify and characterize roosts selected by reproductively active females; to observe behavior such as colony size, roost fidelity, home range size and foraging activity; and to compare results to studies conducted elsewhere in the species' range and to randomly selected trees. With the research behind me, and a copy of the nearly-completed thesis in the hands of my committee, I can finally call the project complete. So what have we learned?

Before the Great Swamp study, most of what was known about the species' summer habits came from research conducted in the Midwest, where populations are largest and where agriculture is a leading industry and a primary land-use. These studies revealed that Indiana bats preferred to roost under the exfoliating bark of dead or dying trees (or the naturally peeling bark of shagbark hickories) in trees with high solar exposure. Females and young congregate in maternity colonies in the summer to pup and raise young, while males remain near the hibernacula (an abandoned mine or cave where they hibernate) or disperse across the landscape in small numbers. Maternity colonies typically use one or more 'primary' trees (used by more than 30 bats on multiple occasions) and many more 'alternate' trees (periodically used by small numbers of bats) during the summer, switching roosts every 2-4 days. Primary trees are usually located in the open, along forest edges or bordering swamps or marshes, for example. According to the literature, colonies can be defined as groups of females and their young that use the same trees throughout the summer, and females had been shown to move up to an average of 686 meters between consecutive roosts. Many studies suggested that bats moving greater distances, or using larger home ranges, were doing so because appropriate

habitat was limiting. Since little research has been conducted outside the Midwest, land managers in the Northeast were left to assume that the species exhibits the same behaviors here, despite there being insufficient evidence to justify this assumption. The work conducted at Great Swamp is the first significant study conducted in the Northeast to be added to this body of knowledge.



Primary roost trees identified at the Refuge

Comparisons in roost selection across studies showed that Indiana bats generally exhibit the same behaviors across their range, roosting under the exfoliating bark of dead or dying trees that are in mid-stage decay, but indicated that bats do not necessarily prefer trees with high solar exposure. In fact, at Great Swamp, canopy cover at roost trees averaged 75%. Furthermore, roost trees were re-used so infrequently that the traditional definition of 'colonies' was not useful in distinguishing groups; only three trees (out of 74) were re-used by bats in 2 years of research, and only one of these qualified as a primary roost. More trees were identified at Great Swamp than had been identified in other studies; bats were moving farther distances between consecutive roosts (on average 1000 meters); used larger home ranges; switched roosts more frequently; and were caught in greater concentrations

as compared to other studies. So what does this all mean?

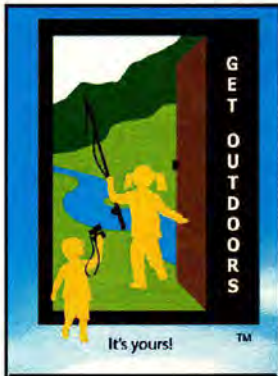
My take on it is that Great Swamp represents optimal habitat for the Indiana bat, more so than in any other study. Rather than moving greater distances because habitat is limiting, bats here are moving farther because they *can*: they have an extensive network of forested stream corridors to traverse, and abundant food resources (aquatic insects) provide them with extensive foraging grounds to sustain these larger movements. The infrequent re-use of known roost trees indicates that suitable roosts are plentiful on the landscape, and frequent roost switching is consistent with theories that suggest roost fidelity (how faithful they are to a roost tree) is inversely related to availability; in other words, the more trees to choose from, the less faithful bats are to any particular tree. Perhaps the best indication that Great Swamp represents optimal habitat is that bats were caught in greater concentrations here than in any other study. The species represented 16% of total captures and 3 maternity colonies were identified in an area less than 9 square kilometers (3.5 square miles).

Assuming that Great Swamp represents optimal habitat and an abundance of suitable roosts, trees used by Indiana bats here may represent an 'ideal' (or as near to it as has been measured) and thus high solar exposure may not be as important as has previously been suggested. Comparisons to 30 random trees, which helped to show where selection by bats was occurring, revealed no difference between canopy cover at random and roost trees. Additional comparisons showed that red maple (*Acer rubrum*, the species most frequently used as a roost) was actually used less than expected, while shagbark hickory (*Carya ovata*) and American elm (*Ulmus americana*) were preferred, as they were chosen far more than their availability would suggest.

In short, Indiana bats have discovered what we already know to be true: Great Swamp is a special place!

"GET OUTDOORS, IT'S YOURS!" GETS KIDS OFF THE COUCH

A new campaign by the Department of the Interior, titled "Get Outdoors, It's Yours!", encourages children, educators and families to experience nature firsthand. The program will provide more information for America's young people about opportunities to get outdoors on national wildlife refuges as well as national parks, national forests and other public lands.



"There is a crisis in America in which our kids are increasingly disconnected from nature," said Interior Secretary Dirk Kempthorne. "We must get children off the couch and outdoors. We must get them to turn off the computers and televisions and turn on to the

power of wild places and wild creatures to lift them up—to rejuvenate body, soul and spirit."

The "Get Outdoors, It's Yours!" initiative will unite all federal land opportunities under one comprehensive platform and encourage the participation of non-profit land partners to develop a seamless portal for information on destinations, programs, special events, and opportunities for educational adventures.

The National Recreation and Park Association and other national nonprofit groups pledged to support the campaign. The groups include American Forests, the Association of Fish and Wildlife Agencies, the City Park Alliance, the National Association of County Park and Recreation Officials, the National Association of State Outdoor Recreation, the National Association of State Park Directors, the National Parks Conservation Association and the National Wildlife Federation.

For more information on the program, go to: www.getoutdoorsitsyours.gov. The web site provides lists of places for all sorts of outdoor activities from biking to wildlife viewing, links to agency web sites for youth, games and other useful materials.

THE BIG SIT!—GREAT SWAMP STYLE

By Pat Giaimo



Not all birds sleep at night! The night time watchers and listeners at THE BIG SIT! on October 12, 2008 heard and identified several birds in the early morning darkness and fog. Some time after midnight, not unexpectedly, the great horned owl gave his identifying hoo, hoo, hoo... and then

the barred owl with its call sounding like "Whooo cooks for you". A little later the Eastern screech-owl was identified by its call. Before 4:00 a.m. there were other birds making their presence known. Canada goose, mallard and wood duck were heard, as was a great blue heron. Why wasn't that tufted titmouse that called still asleep?

In the pre-dawn hour of 5:00 a.m. some water birds became active as the Virginia rail, sora and common moorhen were heard. An American crow and white-throated sparrow were also up early.

As the day began to lighten, there was an increase in calls and visible sightings of the many birds who call Great Swamp home.

6:00 a.m.

Swamp sparrow, killdeer, blue jay, song sparrow, American robin, Eastern towhee, mourning dove, belted kingfisher, gray catbird, red-bellied woodpecker, white-breasted nuthatch, ruby-crowned kinglet, black duck, Carolina wren.

7:00 a.m.

Northern harrier, downy woodpecker, dark-eyed junco, American kestrel, golden-crowned kinglet, Eastern meadowlark, red-tailed hawk, red-winged blackbird, Northern mock-

ingbird, Northern cardinal, Eastern bluebird, Eastern phoebe, common grackle, palm warbler, chipping sparrow, Northern flicker, European starling, yellow-rumped warbler, cedar waxwing, brown-headed cowbird.



8:00 a.m.

American goldfinch, sharp-shinned hawk, red-headed woodpecker, house finch, Cooper's hawk, rusty blackbird.

Then new sightings slowed down and for the rest of the day through 4:00 p.m. sightings included: turkey vulture, white-crowned sparrow, broad-winged hawk, bald eagle, Northern pintail, black vulture, rock dove, common snipe, red-eyed vireo, and purple finch.

As it again became dark, the dedicated bird watchers, some of whom had been there since

1:00 a.m., folded their chairs and their scopes and decided that 63 different species was a very good count.

This year there was a pledge form for those who wished to donate a sum of money for each species seen. The final count of 63 means that over \$1,200 was raised to enhance the bird watching at the new visitor center. A special thanks to Stop & Shop (Lyons Mall, Basking Ridge) for breakfast pastries and hot dog lunch for all the birders.

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 mission of the Friends of Great Swamp National Wildlife Refuge and a wide variety of projects at Great Swamp.

Members also receive the following benefits:

- Periodic Newsletter
- 10% discount in Bookstore & Gift Shop
- Notification of coming 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 Great Swamp pin or patch.



**friends of great swamp
national wildlife refuge**

DECEMBER 2008

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.