



the Swamp Scene

friends of great swamp national wildlife refuge

ISSUE THIRTY THREE
MARCH 2010

Highlights

Atlantic White Cedar Update	4
Learn to Bird By Ear	5
President's Report & Friends Accomplishments	6
Common Musk Turtle	8
The Story of Peat Bogs	9

Board of Directors

Laura Nally	President
Susan Garretson Friedman	Vice-President
Kathy Woodward	Secretary
Laurel Gould	Treasurer
Terry Carruthers	
Karen English	
Pat Giaimo	
Jack Higgins	
Jane Kendall	
Judy Schmidt	
Dorothy Smullen	
Marilyn Kitchell	GSNWR Liaison
Laurel Gould	Editor

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



Printed on recycled paper

GREAT SWAMP QUILT DONATED BY MARCIA RYMER

By Laura Nally

On November 15, 2009, Friends of Great Swamp held a very special program—the unveiling of a magnificent quilt created by Marcia Rymer, formerly of Chatham, NJ. This extraordinary gift highlights the flora and fauna of Great Swamp National Wildlife Refuge. The Friends, the public, as well as quilters from the area were invited to attend this special event.



Marcia was on hand to explain how she designed and created the quilt and to answer questions. Everyone was truly amazed at the workmanship and beauty of the quilt.

Marcia had been an active volunteer and a member of the Friends' Board before moving to New York State six years ago. She had many wonderful memories of the Refuge and, as a quilter of some 40 years, she wanted to create a quilt that could be used for fundraising. She identified the birds that she saw most often at the Refuge, incorporating them into the quilt: bluebird, goldfinch, red-winged blackbird. The flowers around the border represent the four seasons. Winter flowers are depicted along the top, spring flowers on the right, summer flowers along the bottom and fall flowers on the left. A quilt of the swamp would not be complete without frogs and turtles, so they too are represented.

Each bird and flower is hand-appliquéd as is the border. The background is machine stitched and contains hidden figures and subtle shadowing. The design is entirely her own. She started with the birds, which make up the center, and then sized the border for the flowers. It soon became apparent that there were more birds than space on the quilt. She got the idea of stitching them into the background incorporating hidden patterns into the quilt. It is fun and challenging to look for the woodcock, great blue heron, butterflies, and the blue goose that are stitched into the quilt.

For Marcia, the birds represent some of her experiences while she was active in the Friends: spring woodcock walks; cleaning out bluebird boxes; the spotting scope fundraising campaign which used great blue herons to track progress; and the blue goose, symbol of the National Wildlife Refuge System. Marcia notes that there are two birds that should have been included, the wood duck and wild turkey, but there was simply not enough space.



One visitor remarked that Marcia's experiences and love of the swamp would live forever in her quilt. The quilt is on display at the Helen C. Fenske Visitor Center. If you have not had an opportunity to see this wonderful work of art, it is well worth the trip. Hope to see you there.

FRIENDS ANNUAL MEMBER MEETING HELD DECEMBER 12, 2009

The Friends of Great Swamp annual member meeting was held December 12, 2009. Fifty-nine members attended the meeting at the Helen C. Fenske Visitor Center. Following a delicious and diversified pot luck dinner, President Laura Nally welcomed the group and reviewed the Friends' many accomplishments for the year. The following Directors were re-elected for two-year terms: Karen English, Susan Garretson Friedman, Laurel Gould, Judy Schmidt, Dorothy Smullen, Kathy Woodward. Terry Carruthers was elected to fill a board vacancy for a one-year term.

Regular monthly board meetings are held on the second Wednesday of every month at 7:00 pm at the Helen C. Fenske Visitor Center. All members are welcome to attend the meetings. Learn about your organization and let the board know your ideas, suggestions, and special interests.

MEET NEW BOARD MEMBER TERRY CARRUTHERS—IN HIS OWN WORDS

A native of Dublin, Ireland, I was educated at St Vincent's College, Dublin and at Birkbeck College, University of London. I spent 17 years as a park ranger with the Irish National Parks Service and have owned my own specialist tour company since 1991, focusing on walking, wildlife and historical travels. My principal interests are history, birding and ecology, but my other interests include videography, watercolor painting, woodcarving and traditional Irish music (I struggle with the mandolin and concertina).

I am a committed environmentalist and the author of a number of books including 'The Birds of Killarney National Park' (1993), 'Kerry: A Natural History' (1998). I also authored or co-authored scientific publications in journals such as *Irish Birds*, *Bird Study* and *Avian Biology*.

I love the outdoors and travelling, and have a particular fascination with man's historical interaction with and impact on his environment. After two seasons participating in scientific studies on brant geese in the Canadian Arctic and learning about eco-tourism, I developed my own eco-travel business. This has taken me and my clients throughout Ireland, Scot-

land, England and Wales, France, Germany, Italy, Spain, Greece, South Africa and regions of the U.S. and Canada. My wife Pat and I enjoy volunteering for the Refuge and Friends—our input has included roadside clean-ups, leading bird walks, a Second Sunday sketching class, and stocking the bird feeders. I also volunteer for New Jersey Audubon and Habitat for Humanity.



Since moving to the U.S. in 2004, whilst working as a freelance videographer, I completed my Masters degree in Advanced Environmental and Energy Studies and successfully took the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) exams. I recently started a solar company in New Jersey, focusing on exploring the artistic possibilities of solar installations by building unique solar 'sculptures' as artistic, educational, and functional pieces.

THANK YOU FOR YOUR DONATIONS

Donations made to Friends of Great Swamp National Wildlife Refuge make up a significant portion of the Friends annual income and provide funding for a variety of projects and programs which benefit Great Swamp National Wildlife Refuge, its wildlife, and its visitors. Thank you to all who have made recent donations to the Friends.

MEMBERSHIP DONATIONS

To all of you who added an additional donation to your membership renewals, thank you. Mary Jane Walsh, John & Bea Fargnoli, Dan & Lillian O'Brien, James T. & Anne B. Yardley, Mr & Mrs Robert Furstner, Yako & Judith Yafet, Lisa Molinari, Frank & Dot Stillinger, Mr & Mrs Jon Bramnick, Peter & Sophia Blanchard, Esther M. Warner, Barbara Joyce & Stephen Torpie, Doug & Bobbie Arbesfeld, Ursula Sommer, Neil Klingenburg, Marvin & Jean Sebesta, Marisa Wohl, Holly Dunbar, Steve Henry, Ken & Kathy Kopec, Charles & Joanne Foster, David Jacangelo, Anne & Paul Nurse, John Matis, Mike & Carol Newlon, Robert & Linda Loveland, Karen Thompson & Bill Boyle, Caren Cadra & Ed Janos, Jeane & Don McLellan, Janet & Gene Bolla, Paul Ford.

INDIVIDUAL AND CORPORATE DONATIONS

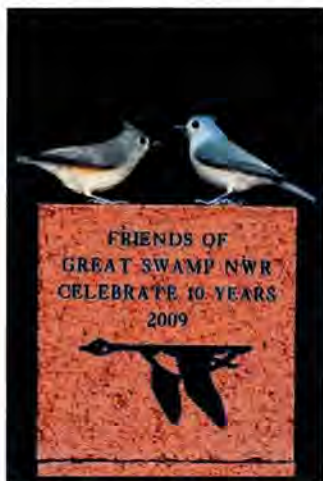
Rodney Frelinghuysen, Robert & Linda Loveland, Katherine Brundige, The Wildwood Foundation.

MATCHING GIFTS

Duke Farms Foundation (Member Holly Dunbar), ITW Foundation (Member David Beechner), Johnson & Johnson Family of Companies (Member William O. Watts), ExxonMobil Foundation (Members and volunteers Leo Hollein, Jack Higgins).

CREATING A PATH TO THE FUTURE... ONE BRICK AT A TIME

FUNDRAISING CAMPAIGN NEARING THE FIRST MILESTONE



The snow is gone from the courtyard patio outside the Helen C. Fenske Visitor Center and the area where commemorative bricks will be laid is visible once again. The Friends Brick Campaign is nearing the 100-brick milestone when the first order will be placed. You have the chance to support the Refuge by buying a brick with your personal inscription on it. But don't delay—be part of the initial order so that your brick will be in the ground this spring.

There are many exciting plans for the Refuge in the works, including expanded education and outreach activities, interactive exhibits, interpretive kiosks, expanded native plant gardens, increased events and activities for all levels and interests. You can help make these and other plans realities for generations to enjoy. Donate a brick. It's a great way to honor someone significant in your life, to give as a special birthday present, or to commemorate your own commitment to the Great Swamp National Wildlife Refuge and all it offers.

Photographer Steve Byland caught these two tufted titmice in serious conversation on the blue goose commemorative brick. Now what do you suppose they're talking about?

SPRING—SUMMER CALENDAR OF EVENTS—NEW PROGRAMS & ACTIVITIES

Thanks to the great ideas generated by members who attended the January Event Planning meeting, the Spring-Summer Friends' Calendar of Events is very full and very exciting. Some new events have been added, there are many returning favorites, and there are some very special activities being planned.

In addition to our popular Second Sunday events, we've added some beginner bird walks as well as wildflower identification walks. By popular demand, we've scheduled a nature photography workshop which will be led by Steve Byland. The first advanced volunteer workshop held last year was so successful that we are hosting two workshops this season—one on invertebrates in May and a summer workshop for rank beginners on grasses, sedges, and rushes. Again this year, we are requiring pre-registration for some events, so check the calendar carefully. One reason for this is that Refuge manage-



*"...a wild poem
dropped from the murky skies
upon the muds of March"*

Aldo Leopold, *A Sand County Almanac*

ment has asked the Friends to limit the size of groups using the Management Area in order to minimize the impact on wildlife and habitat.

Work days to remove invasive plants at the Visitor Center will be held on the second and fourth Thursdays each month from May through October.

And we're starting a book discussion group called the Refuge Readers which will meet the third Friday of each month beginning in May. This informal book group is open to the public; the

selection of the books will be a part of each monthly meeting. The book for May's discussion is the classic *A Sand County Almanac* by Aldo Leopold, which follows the year through the eyes of an early environmentalist.

The April-May events listing is on page 10 of this newsletter; the entire calendar may be found on the Friends website. We hope you'll join us!

CORRECTION: Despite the inclement weather last year, 420 people attended the Fall Festival on September 10, 2009, not the 240 reported in the last issue of Swamp Scene. This year's Fall Festival will be held on Saturday, September 11 and, in addition to a full day of fun family activities, the Friends will hold their first rummage sale. So start packing away those gently used nature-related items and watch for more information.

Calling All Volunteers—Help Wanted

The Refuge needs help with lawn maintenance at a variety of sites.

Flexible hours, April through October.

Weekdays preferred, but some weekend work available.

Training will be provided for use of the mowing tractors and weed-eaters.

If you are interested in helping out, contact Dave J. Miller, 973-417-9550 (cell) or e-mail <dave_j_miller@fws.gov>

Enjoy the outdoors while you help the Refuge staff.

Thank you.

ATLANTIC WHITE CEDAR RESTORATION PROJECT AT GREAT SWAMP

Photo and Story by Leo Hollein

In the summer of 2007, several large groups of volunteers cleared ground, planted, caged, and watered about 350 Atlantic white cedar (*Chamaecyparis thyoides*) seedlings. These cedars are native to the Great Swamp but had previously been extirpated by logging. The plan is to reintroduce the cedars.

The green plastic protective cages readily visible from Pleasant Plains Road surround the cedars. The cages are three feet tall and about 36 inches in diameter. They are anchored around the seedlings with wooden stakes. The top opening is covered with netting. These cages were designed to prevent browsing by white tail deer that are known to enjoy feasting on cedar seedlings. The cages were successful in deterring the deer. However, Murphy's Law struck. Major losses of the cedar seedlings were caused by rodents (mice and voles) girdling the trunks and sometimes topping the cedar saplings. To limit further losses, sleeves made from cutting large plastic soda and water bottles were secured around the base and trunks of the remaining seedlings in the fall of 2007. This retrofit essentially eliminated further rodent damage.

An inventory of the saplings was done in the summer of 2008. About 170 or nearly half of the saplings had survived. About a third of the survivors had doubled in size and outgrew their cages. Volunteer Lou Pisane, an avid gardener before moving to a condo, has assumed the role of cedar guardian. As shown in the photo, Lou is pounding in a stake to anchor a stacked cage arrangement that is intended to keep the deer away from the taller cedars. Lou also led efforts to clear competing vegetation from around the trunks of the surviving cedars and replace broken or damaged support stakes. He repeated this task again in the summer of 2009. Hopefully, most of the cedars will have grown to more than seven feet by the fall of 2010 and will no longer require protective cages.



Volunteer Lou Pisane pounds stake to anchor cedar cage

Atlantic white cedars are a fast growing conifer native to the eastern seaboard of the United States. They prefer wet low-land sites with acidic soil. These cedars develop a dominant center spire that can reach 70 feet. They usually grow in dense stands and have a shallow root system that makes them vulnerable to being toppled by high winds. The cedars propagate by wind dispersal of seeds from small rounded cones that are about ¼ inch in diameter. Typically it takes four or five years for the cedars to develop cones. If all goes well, Atlantic white cedar seedlings should begin to appear in 2012 or 2013. In time there may again be mature stands of Atlantic white cedars in the Great Swamp.

FRIENDS LAUNCH BIRDERS CHALLENGE FOR 2010

By Pat Gaiamo

Calling all birders for the Friends' "Birders Challenge".

- The challenge: How many species of birds can be seen in 2010 in the vicinity of the Helen C. Fenske Visitor Center?
- The area: from the North Gate bridge to Lee's Hill Road.
- The prize: something small, but includes bragging rights.

Birds may be reported from the Visitor Center area as well as Pleasant Plains Road from North Gate bridge to the Refuge access road leading to Lee's Hill Road. There is a notebook in the Visitor Center lobby where you can record first sightings of each species with your initials and date seen or heard.

Birds listed in the Refuge checklist as rare or unusual need two sets of initials for confirmation. The person who has the most *first seen* initials at the end of the year will be acknowledged with a small prize.

We're also holding a contest to see who can guess the final total number of species reported in the Visitor Center area in 2010. Record your estimate in the Visitor Center notebook with the winner again receiving a small prize.

The total number of species recorded in 2009 was 159, a disappointment as the count was significantly down from previous years. Whether this was because of the disruption from the move to the Visitor Center, fewer birders re-

porting their sightings, or fewer birds is unknown. In 2008, the total species count was 176 and in 2006, the first year we started keeping a record, the count was a high of 191. Absent from the list last year were the pied-billed grebe, broad-winged hawk, wood pee-wee, white-eyed vireo. These species were probably around, but not reported. Be sure to report your sightings in 2010 so the numbers go up again. There is a Refuge-wide sightings board inside the visitor center and a log book at the Wildlife Observation Center.

Help us to create a complete and accurate record of bird sightings. It would be sad to learn that we have lost species in the swamp.

ROBERT BEALLE WINS 2009 FEDERAL DUCK STAMP COMPETITION

From U.S. Fish & Wildlife Service Press Release



Robert Bealle an artist from Waldorf, Maryland, took top honors at the 2009 Federal Duck Stamp Art Contest. Bealle's painting of an American wigeon will be made into the 2010-2011

Federal Duck Stamp, which will go on sale June 25, 2010. The U.S. Fish and Wildlife Service produces the Federal Duck Stamp, which sells for \$15 and raises about \$25 million each year to fund wetland habitat acquisition for the National Wildlife Refuge System.

Of the 224 entries in this year's contest, eight entries made it through to the final round of judging in the two-day art contest, the oldest and most prestigious wildlife art competition in America. All waterfowl hunters age 16 and older are required to purchase and carry the current Migratory Bird Conservation and Hunting Stamp—commonly known as the Duck Stamp—but conservationists, stamp collectors and others also purchase the stamp in support of habitat conser-

vation. Ninety-eight percent of the proceeds from the \$15 Duck Stamp go to the Migratory Bird Conservation Fund, which supports the purchase of acres of wetlands for inclusion into the National Wildlife Refuge System.

*Stop by the
Friends Nature Shop
and do your part
for Refuges.*

*Buy a
Federal Duck Stamp.*

Since 1934, the Federal Duck Stamp program has raised more than \$750 million to purchase nearly six million acres of wildlife habitat for the Refuge System. To date, Duck Stamp funds have been used to acquire habitat at hundreds of refuges, in nearly every state in our nation. There are 550 national wildlife refuges spread across

all 50 states and U.S. territories.

A current Duck Stamp can be used for free admission to any national wildlife refuge open to the public. Refuges offer unparalleled recreational opportunities, including hunting, fishing, bird watching and photography. About 1.8 million stamps are sold every year to hunters, collectors and wildlife enthusiasts. *Have you done your part yet?*

TAKE YOUR BIRDING TO THE NEXT LEVEL – LEARN TO BIRD BY EAR

By Laurel Gould

How would you like to double the number of birds you list each time you go out birding? Well, you can—by learning to recognize bird songs and calls.

There are several advantages to identifying a bird by its song. You have a good idea what species you are looking for, and where—mockingbird (high), catbird (low). You can avoid (if you choose) those aching neck muscles from scanning the tree tops. You can tick off the common birds—cardinal, blue jay, titmouse—while you focus on that elusive unknown call. A song or chip note often indicates the presence of a bird which you might otherwise miss. You can identify birds you are unlikely to see—great horned owl or sora. And just think what you can do to your warbler list this spring!

There are several types of audio aids to help you learn bird songs and calls. Which you choose depends on your objective and your knowledge.

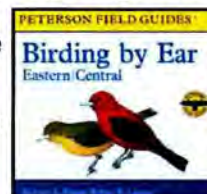
One type plays the songs bird by bird and is often keyed to a companion field guide. This is a great refresher tool if you are getting ready for spring and have some knowledge of the songs. Another type is more of a learning tool. Each bird song is accompanied by a phase, a memory aid to help you



remember the song: *witchety, witchety* (common yellowthroat) or *peter, peter, peter* (tufted titmouse). A good example of this type is John Feith's Bird Song Ear Training Guide. A third category actually provides tutorials. The Birding by Ear series, an example of this type, creates groups of birds with similar vocalizations and clearly points out distinguishing characteristics using techniques such as phonetics, mnemonics, and descriptive words. This takes longer and the number of species covered is less, but it is a real opportunity to master the songs and calls.

Spring is when birds are most vocal—so take your birding, and your enjoyment, to the next level. Buy or borrow a CD and start practicing now. And don't forget the audio CDs for frog and toad calls!

The Friends Nature Shop carries a variety of audio CDs, including the ones mentioned here.



- Peterson Field Guides, Eastern/Central Bird Songs (267 species) organized as a companion to Peterson Field Guide.
- Stokes Field Guide to Bird Songs (372 species) companion to Stokes Field Guide to Birds: Eastern Region.
- Bird Song Ear Training Guide by John Feith (189 species).
- Birding by Ear (Eastern/Central) (86 common birds).
- More Birding by Ear (Eastern/Central) (96 species including 25 species of warblers).

PRESIDENT'S REPORT

By Laura Nally

It is now 2010 and I have completed my first year as President of Friends of Great Swamp NWR. 2009 was a very busy year! Our many activities included the move from the Friends Bookstore and Gift Shop into the Helen C. Fenske Visitor Center, removing invasive species, hosting the Fall Festival, planting a native plant bird feeding garden and much more—thanks to the help of our many volunteers.

Last year, one of the first initiatives of the Board was to review the Friends' Mission Statement which was developed when the Friends were established 10 years ago. Over the years our priorities and our activities have shifted somewhat. This is reflected in our addi-

tion of the phrase *inspiring an appreciation of nature through education and outreach* to the mission statement.

In 2009 we rolled out the Junior Refuge Manager program, which encourages children to learn more about the plants and animals at the Refuge. We will continue the program this spring with the hope of inspiring even more children to appreciate nature.

The Wildlife Observation Center was staffed by volunteers five days each week during the spring and fall migration seasons. We have found that personal contact enhances visitor experiences at the Refuge. Outreach at libraries, schools and festivals throughout the area also gave us the opportunity to

tell more people about the Refuge.

We are staffing the new Visitor Center and the Friends Nature Shop from Thursday through Sunday providing a greater opportunity to welcome visitors to the Refuge and educate them on the opportunities to explore and better appreciate the area.

We hope to continue to expand these activities and to develop new ones. We welcome any suggestions by our members and volunteers that may provide other venues for us to inspire others with an appreciation of nature and the Great Swamp National Wildlife Refuge.

NOTE: The new mission statement appears on the back cover of this newsletter.

FRIENDS EDUCATION & OUTREACH PROJECTS—JUNIOR REFUGE MANAGER & LIBRARY DISPLAYS

Spring at Great Swamp National Wildlife Refuge engages all of the senses—birds and frogs are calling; snakes and turtles are basking; the sun warms visitor and wildlife alike; and the smell is of fresh green leaves. It's also the time the Junior Refuge Manager program starts up again. Launched last year, the program got off to a great start with several new Junior Refuge Managers who were sworn in and received their official badge in 2009. Many more aspiring Junior Refuge Managers got a good start on their Activity Books. This spring, the volunteer Swamp Nature Guides will again be out on the boardwalks at the Wildlife Observation Center to assist. Look for volunteers on April 3, April 18, and May 8. Activity Books may be purchased for \$1.00 at the Wildlife Observation Center and at the Friends Nature Shop in the Helen C. Fenske Visitor Center. Volunteers and Refuge staff at either location can certify pages, award certificates, and swear in new Junior Refuge Managers and pin on their official Junior Refuge Manager badge. Interested? Come and get started this spring.



As a means to educate and inform the public about the Great Swamp and the National Wildlife Refuge System, the Friends have set up a number of displays and exhibits at local libraries. This outreach program was started in the Fall of 2008 during National Wildlife Refuge month with small exhibits at the libraries in Bernards Township, Parsippany, Morris County, and the Chatham. These were very well received and the program expanded in 2009 with exhibits at libraries in Mountainside, Florham Park, Bernardsville, Westfield, Madison, New Providence and Berkeley Heights (pictured right). This year displays are scheduled for Mendham, Cranford, Morristown, Springfield and Warren.

A typical exhibit includes a map of the Refuge, background information on the Swamp, various brochures, and photos

of the birds, frogs, snakes, and turtles that live in the Swamp. These are accompanied by a number of colorful,



fuzzy, "critters" borrowed from the Nature Shop. Colorful brochures from Refuges in New Jersey and other states are also included. The Blue Goose and "T.R." Bear are prominently shown with an explanation of these two symbols. Appropriate large and colorful Refuge posters are also displayed when space permits.

Check out your local library and if you are interested in helping set up a display, let us know.

INVASIVE PLANT REMOVAL PROJECT AT THE VISITOR CENTER

By Kathy Woodward

Removing invasive weeds is not the choice volunteer job for everyone, but last summer, 23 volunteers worked more than 200 hours cutting over 2,300 stems of offending plants. The team members focused on the edges of fields behind the Visitor Center and the fence row along Pleasant Plains Road. Multiflora rose and Japanese barberry, both known for their barbs, comprised the majority of plants removed. On the last day of work, mile-a-minute, a relatively new invasive, was discovered and removed from the drainage area in front of the Visitor Center.

Volunteers were trained to recognize and understand the negative impact invasive plants have on the ecosystem of the Refuge. Working together, participants systematically cleaned areas, sometimes pulling stems and vines from the canopies of trees. The work could be strenuous and scratches were common. A summer intern claimed she told her friends she was working on a cougar banding project! Under the guidance of volunteer Rich Dufort, who holds a pesticide use permit, the helpers coated stems with a mild weed killer to prevent regrowth. Each day, everyone admired the group's progress and appreciated the snacks and camaraderie that kept them coming back.

A walk along Pleasant Plains Road shows there is more work to be done. Willing workers are encouraged to join the 2010



Volunteer Rich Dufort helps lead the effort to remove invasive plants

effort which will be held on the second and fourth Thursday of each month, May through October, from 9:00-12:00. Appropriate work clothes are necessary; tools are provided. Additionally, this year, working with the Friends' Garden-Keepers group, native plants will be germinated and planted in areas where invasive plants have been removed. The Friends are committed to improve the Refuge environment in many ways, including plant by plant.

THE HELEN C. FENSKE VISITOR CENTER HAS BEEN A BUSY PLACE THIS SPRING

Activity at the Helen C. Fenske Visitor Center is picking up as the weather gets warmer and the wildlife emerges. On March 10, turtles were reported basking on logs in the ponds and the skunk cabbage is in full bloom on the Visitor Center trail. Tree swallows are back and the red wings are calling.

Thanks to the many volunteers and Refuge staff, the Visitor Center is open four days a week and it's a fun place to visit. Visitors admire the quilt display or they sit to enjoy the fabulous bird videos donated by photographer Steve Byland. Young children work on crafts in the Discovery Den; this spring the focus was on dinosaurs and a lot of very colorful paper dinosaurs walked out the door. Kids and grown-ups alike are drawn to the scat display and try their skills matching animal *heads and tails*. The Friends Nature Shop is fully stocked with Judy's pottery, Steve Byland photos, hand-crafted jewelry, nature books and field guides, and lots of good stuff for the kids. The permanent displays are in the final design phase and installation is expected this summer.

Volunteer Pat Giaimo gave the following report after a busy February weekend: "Sunday was what a visitor center should be like. A total of 135 people visited; many were families with kids doing the Discovery Den things, making the big wood duck puzzle, and playing with the stuffed animals. The three of us who were staffing were busy talking to people and showing them around the visitor center. It was a busy place."



Striking new Refuge entrance sign on Lee's Hill Road

THE COMMON MUSK TURTLE—AKA “THE STINKPOT”

Story and photos by Leo Hollein

Turtles are ancient animals that evolved a shelled form more than 200 million years ago. They are considered the oldest and most primitive of living reptiles.¹ Most of the turtles found inland in the northeastern United States are aquatic and prefer calm or slow moving water. The Great Swamp National Wildlife Refuge is excellent turtle habitat and is known to support ten different turtle species. The Eastern box turtle (*Terrapene Carolina*) is the only truly terrestrial species. The common snapping turtle (*Chelydra serpentina*) and common musk turtle (*Stenotherus odoratus*) are primarily aquatic and nocturnal. The Refuge has a robust population of painted turtles (*Chrysemys picta*) that are often seen basking in the sun on logs in ponds and waterways. The threatened wood turtle (*Clemmys insculpta*) also known as old red legs, the endangered bog turtle (*Clemmys muhlenbergii*) and the petite, attractive spotted turtle (*Clemmys guttata*) split their lives between land and water. It is also possible that the Eastern mud turtle (*Kinosternon subrubrum subrubrum*) inhabits the Refuge but none have been observed in the last few decades. The NJ Fish and Wildlife listing says that they *historically occurred in Morris County* which encompasses the Great Swamp.

The Refuge also contains introduced turtle species that were most likely released in or near the Swamp by their previous owners. These include the popular pet trade red eared slider (*Trachemys scripta elegans*), the red-belly turtle (*Pseudemys rubriventris*) and the river cooter (*Pseudemys concinna*). These introduced turtles are all native to North America but not to northern New Jersey.

MUSK TURTLES ARE RARELY SEEN ON LAND

The musk turtle is more affectionately known as the *stinkpot*. It has two glands on each side of its body that secrete a smelly musk when the turtle is disturbed. Presumably this provides protection against some predators. It is a small dull colored turtle that can grow up to 5 inches long. Its distinguishing characteristics are a domed carapace



(top shell) and two yellowish lines on its face and neck, above and below the eye, that terminate near its slightly pointed snout. Its nostrils are near the tip of the snout enabling the turtle to breathe while barely surfacing. Since the musk turtle spends most of its time at the bottom of a lake, pond or stream, the carapace is usually covered in part or totally by mud and algae. The plastron (bottom shell) has a single hinge and does not completely cover the underside of the turtle. It has a distinctive yellow and dark gray pattern.

Since musk turtles are small, nocturnal, aquatic, and seldom bask, they are rarely observed on land. Females come ashore 3 to 4 times a season to excavate shallow holes to lay small clutches of 2 to 5 oblong eggs in June and July.¹ A total of 9 to 11 eggs are typically laid in a season and incubate at ambient conditions for 2 to 3 months before hatching in late summer or autumn.



The tiny hatchling (shown below) weighs about a tenth of an ounce and is the size of an acorn. As with other turtles the hatchling resembles its parents. The domed carapace and distinctive yellow face lines are present. The carapace will become smoother as the turtle grows to adulthood.

The musk turtle range covers most of the eastern part of North America from southern Ontario and Quebec Provinces to Florida and westward to central Texas and Wisconsin.¹ They only inhabit still or slow moving fresh water bodies with soft bottoms. They forage at night along the bottom for snails, minnows, crayfish, fish eggs, leeches, aquatic insects, algae and aquatic plants. Musk turtles are also prey for others. Bald eagles, red-shouldered hawks and alligators prey on juveniles and adults. Juvenile remains have been found in largemouth bass, bullfrogs, and water snakes.¹

Musk turtles have lived as long as 55 years in captivity. Recaptured musk turtles are known to have lived 28 years in the wild.¹ In the southern part of their range musk turtles may be active all year long but at the Great Swamp National Wildlife Refuge they hibernate during the winter.

1. C.H. Ernst, *Turtles of the United States and Canada*, Smithsonian Institution Press, 1994.

THE STORY OF PEAT BOGS

Story and photo by Terry Carruthers

Spring, as they say, is in the air. If you are a gardener it means that you can get outside again soon. As gardeners turn their attention to thoughts of spring planting, it is also a good time to review the environmental damage which gardeners might be doing, if inadvertently. Peat is familiar to gardeners, compressed into small pots for seedlings or in bulk as a soil conditioner, compost constituent, or planting mix ingredient. But have you ever stopped to think about where peat comes from?

WHAT IS PEAT?

This crumbly brown material is the dried remains of freshwater vegetation consisting of the un-decomposed remains of a primitive plant called sphagnum moss as well as other mosses, seeds, leaves, and even branches and roots of trees. Peat forms in areas where soils are saturated, and oxygen from the air can't pass through water-saturated soil as fast as it is used up by the early stages of the decay process. Further decay is greatly slowed by the lack of oxygen. As plant remains accumulate faster than they can decompose, peat develops.

Peatlands cover a vast region of the world, particularly in northern regions, where short, cool summers contribute to the slow rate of decay of dead plant material. Peat bogs occur throughout the northern U.S. and in Canada, where peat covers about 270 million acres, almost a quarter of the world's total.

Bogs offer a harsh environment for most plants. Because plant material does not break down into rich humus as in soils elsewhere, bogs are generally poor in nutrients. They are mainly wet and acidic in nature though the surface can dry out during prolonged hot spells. Many of the plants and insects found on bogs are specialists. As nutrients are scarce, some plants have developed carnivorous habits to augment their nutrient intake. Bog-loving species such as sundews, butterworts, bladderworts and pitcher-plant all catch and devour insects as their primary food source.

Peat bogs are also a vital carbon sink. By one estimate, the bogs of Europe, Siberia and North America hold the equivalent of 70 years of worldwide industrial emissions. Globally, peat bogs sequester more carbon than the entire world's tropical rainforests combined. When peatlands are drained, that goes back into the atmosphere as carbon dioxide.

Bogs consist of a mosaic of different habitats, from large open areas to ponds, drainages and areas of drier ground covered in shrubs and small trees. The open areas and the surrounding edge habitat are also important nesting grounds for a myriad of bird species, from sandhill cranes and a variety of shorebirds to warblers, fly-catchers and more.

Most of the peat used in the United States comes from Canada. Peat harvesting is an industrial-scale operation. The bogs are first drained, and the surface vegetation scraped off. The result is a large expanse of sterile landscape. Huge tractor-mounted booms scrape off layers of peat, pile it into mounds, and then turn the mounds occasionally to dry the peat. A spokesman for the Canadian Sphagnum Peat Moss Association (CSPMA) claims it's sustainable: *Harvesting peat bogs actually helps preserve them by saving them from being drained for development.* That's akin to saying that farmland is saved by scraping off the soil cover and selling it for topsoil.

Harvesting of Canadian peat occurs on about 40,000 acres of bogs selected for the thickness of overlying peat, lack of trees, nearness to transportation infrastructure, and other factors. The CSPMA's website refers to the *integrated sustainable management of peatlands* and vigorously promotes the sustainability of peat harvesting. It doesn't mention the downstream damage done to the environment—silting of local rivers, destruction of spawning beds and the environmental cost of



Cut-over bogland in Ireland showing exposed, ancient tree stumps.

trucking thousands of tons of peat across Canada and the U.S.

There are a number of alternatives to peat for gardeners. Traditional methods, many relying on waste organic matter, together with the newer peat alternatives can give equally good if not better results without damaging a valuable habitat. You can easily make your own compost, or your County Shade Tree Commission will deliver small truckloads of rich, composted material to your house for a reasonable fee. An alternative growing medium more popular in Britain than in the U.S. is coir (pronounced *koya*). This is the protective fibrous layer surrounding the hard shell in coconut fruits (*Cocos nucifera*). The fibres are used to make ropes and mats. During the fibre stripping process, the pulp is removed as a waste material. In Sri Lanka, western India, the Philippines and other areas where coir is produced, this residue causes considerable disposal problems and is generally left in piles, occupying valuable land.

Try to avoid buying peat in any form. Make your own compost; it is free, reduces the amount of waste sent to landfill, and avoids the environmental costs of transportation. Try one of the alternatives to peat in use by both amateur gardeners and commercial horticulturists. Gardening sans peat makes better use of waste organic materials while helping to conserve the unique and valuable habitat of the peat bogs.

CALENDAR OF EVENTS AT GREAT SWAMP NATIONAL WILDLIFE REFUGE

APRIL

Saturday, April 3, 1:30–3:30 pm

JUNIOR REFUGE MANAGER DAY

For kids ages 5 to 13. Complete the Junior Refuge Manager Activity Guide and earn a certificate and official Junior Refuge Manager badge. Volunteers will be available to assist. Wildlife Observation Center.

Sunday, April 11, 1:30–3:30 pm

SECOND SUNDAY...WITH FRIENDS—VERNAL POOLS

What is a vernal pool and why is it so important to frogs and salamanders? Come find out with Refuge biological technician Colin Osborn. Helen C. Fenske Visitor Center.

Wednesday, April 14, 9:00–Noon

VISITOR CENTER SPRING CLEANUP & GARDEN DAY

Help us get the Visitor Center spruced up for Spring! Wash windows, clean out gardens, label plants, prune the trail. Brown bag lunch. Helen C. Fenske Visitor Center.

Friday, April 16, 6:30 pm

ANNUAL VOLUNTEER RECOGNITION EVENT

Volunteers celebrate and are recognized at this annual dinner sponsored by the Friends and the Refuge. By invitation.

Sunday, April 18, 1:30–3:30 pm

JUNIOR REFUGE MANAGER DAY

Volunteers will be on hand to assist aspiring Junior Refuge Managers. Wildlife Observation Center. See April 3 for details.

Saturday, April 24, 8:30–Noon

SPRING REFUGE ROADSIDE CLEANUP

Volunteers are needed to pick up litter and debris along Refuge roads. Wear boots & gloves. Meet at Refuge Headquarters, 241 Pleasant Plains Road.

Saturday, April 24, 1:30–2:30 pm

WILDFLOWER IDENTIFICATION WALK

We'll identify some of the early spring wildflowers. Bring your favorite wildflower identification guide or borrow one of ours. Wildlife Observation Center.

MAY

Saturday, May 1, 9:00–Noon

GARDEN DAY AT THE VISITOR CENTER

Join us for a fun and productive morning as we weed, plant, transplant, mulch, or whatever is needed in the native plant gardens at the Helen C. Fenske Visitor Center. No experience necessary; members of the GardenKeepers will be on hand to assist. Brown bag lunch.

Saturday, May 8, 8:00–9:30 am

JUST FOR BEGINNERS BIRD WALK

This is a great time of year to begin birding. Learn key field marks and how to use binoculars. Bring your field guide and binoculars; we will have some loaners available. For beginning birders of all ages. Wildlife Observation Center.

Saturday, May 8, 1:30–3:30 pm

JUNIOR REFUGE MANAGER DAY

Volunteers will be on hand to assist aspiring Junior Refuge Managers. Wildlife Observation Center. See April 3 for details.

Sunday, May 9, 1:30–3:30 pm

SECOND SUNDAY...WITH FRIENDS—YOUR WILD BACKYARD

Find out the who, what, and where of wildlife in your backyard with naturalist Ellen Goldberg. Indoor presentation will be followed by a scavenger hunt for kids... with prizes! Helen C. Fenske Visitor Center.

Thursdays, May 13 & 27, 9:00–Noon

INVASIVE PLANT REMOVAL WORK DAYS IN MAY

Help remove invasive plant species at the Visitor Center. Wear long sleeves and heavy shoes. Tools will be provided as well as training on recognizing invasive plants. This project will repeat on the 2nd and 4th Thursday of each month, May through October. Help make a difference. Come for one or more of the work days. Helen C. Fenske Visitor Center.

Sunday, May 16, 1:30–2:30 pm

WILDFLOWER IDENTIFICATION WALK

Wildlife Observation Center. See April 24 for details.

Friday, May 21, 2:00–3:30 pm

REFUGE READERS—A BOOK DISCUSSION GROUP

Join us as we read and discuss a new book on the 3rd Friday of each month. May's book is the classic *A Sand County Almanac* by Aldo Leopold. Discussion will be facilitated, all you have to do is read the book! Refreshments. Helen C. Fenske Visitor Center.

Saturday, May 22, 9:30–3:00 pm

ADVANCED VOLUNTEER WORKSHOP—INVERTEBRATES & WATER

Presented by Adam Osborn of AmeriCorps. Pre-registration required. Class size limited. Helen C. Fenske Visitor Center.

Sunday, May 23, 5:00–6:30 pm

BEHIND THE SCENES BIRD WALK

Guided walk into the Management Area. Walk leaders: Pete Axelrod and Tom Ostrand. Pre-registration is required and space is limited. Overlook on Pleasant Plains Road.

EVENT INFORMATION

- Programs are free unless donation indicated.
- Registration is not required unless noted.
- Refuge groups tours are available:
Contact Judy Schmidt, 908-647-2508.
- Or we'll bring the Refuge story to your location:
Contact Jack Higgins, 908-232-2921.
- Swamp in a Box information and loan reservations:
Contact Dorothy Smullen, 908-647-5740.

Check our website for complete listing of events.

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 and projects at Great Swamp.

Members also receive the following benefits:

- Swamp Scene Newsletter
- 10% discount in Friends Nature 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 Nature Shop for a free Great Swamp pin or Great Swamp patch.



Friends of Great Swamp
National Wildlife Refuge

THE SWAMP SCENE MARCH 2010

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.