



Friends of the Great Swamp



FrOGS

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Winter on Pine Island



Photo by Norman McGrath

Walk Along With Us On Our Winter Hike to Pine Island!

Hike Leaders: Rick Saracelli and Judy Kelley-Moberg with the assistance of Kevin Nigey

It was a perfect day for a winter hike with deep snow, sunshine, and seasonable temperatures. Despite a period of record breaking low temperatures the snow covered ice on the river channel was unstable and there had been reports of several people falling through. For safety sake we decided to go out over the floodplain and avoid the river. Rick spent several days cutting a loop trail from the launch area in the Patterson Environmental Park over the flood plain to the east shore of Pine Island and then up and over



the crest of the Island and down to the floodplain again. The snow was still so deep in the broken trail that snowshoes and poles were a must.

Seventeen hikers gathered by the kiosk in the Environmental Park with a wide variety of snowshoes and an equally wide range of experience in using them. After gearing up with a lot of help from fellow hikers we started down the road to the river. Our first stop was near a pile of huge marble blocks. Rick and Judy talked about how they were quarried here by the Beech Island Marble Co. in the late 1800's. Marble is metamorphosed limestone from an ancient sea and this calcium rich bedrock makes the Great Swamp a unique habitat for plants and animals. Judy recalled a tragic ghost story connected to the flooded quarry pits.



Photos by Jay Erickson

Along the floodplain we spoke about the history of beaver in the Great Swamp. Beaver were abundant in the Great Swamp when the Dutch arrived in the 1600's. The local native people traded their fur for European goods and had probably trapped them out of the swamp by 1700. The first white settlers mention the remains of ancient beaver dams in the Great Swamp and made several attempts to drain the wetlands. Seen as useless land, the swamp was often used as a dump. Rick pointed out that not only have the beaver come back to the Great Swamp but they are in the process of changing it from a treed swamp to a marshland. The beaver dams are keeping the water at flood stage all year and drowning the maple and ash trees.



We smelled fragrant Spice Bush twigs as we walked between the leafless red maple and ash trunks locked in the ice. Someone noticed the dark, hemlock shrouded, bulk of Pine Island rising above the trees and exclaimed, "Is that it!" Once we reached the eastern shore of the island, we stopped to listen to the mysterious silence of the place, broken only by the whispery song of papery beech leaves moving in the breeze. The trail curved along the base of the hill to the boulder field and cliffs on the south end of the island. Muddy tracks left by a red fox in a lip of snow on a boulder helped us spot its' den. This led to a discussion of tracks and scent markers.



The trail got narrower and the snow deeper as we moved through a small rise covered with Paper Birch, Shag Bark Hickory and tall Hemlocks. Turning northward the group struggled up the

steep slope of the ridge with snowshoes jammed in impossible angles into the snow covered rocks. The folks in front had to pull up the next in line. Scrambling up the backbone of the island we could feel the west wind on our faces. To the east, through gaps in the trees, we could see Route 22 and the Jehovah's Witness' campus. Judy challenged the hikers to find the only "pine" on Pine Island and didn't believe Rick's assertion that settlers probably called all evergreens (including hemlocks) pine trees. A bobcat had taken advantage of Rick's ridge trail. It left a line of tracks right in the middle of the trail and urine scent markers in the snow along the edge.



At a small clearing on the north end of the ridge the group stopped by an old rusty bedrail sticking out of the snow. They heard the story of the little cabin called "Hawk's Rest" that was

built here by a group of young men from Patterson in the 1930's. They kept journals filled with drawings, poems, hunting and fishing stories and their love for this place. The journals were donated to FrOGS and the originals are now held by the Patterson Historical Society.

Even the metal claws on the bottom of our snowshoes didn't keep us from slipping and sliding down the steep north-slope to the floodplain. Everyone was in good spirits and proud of having made it back to the floodplain despite mechanical mishaps, some scrambling, sliding and sit downs in the snow. The afternoon sun backlit the trees in gold and one of our hikers left her "snow angel" ghost there to join the others that may still linger in that place.

—Judy Kelley-Moberg

Spring Is There, Under the Snow



Take heart winter-weary northerners. Even though all is white and iced, spring is already announcing a return: queen honeybees have been laying the eggs of a new brood for more than a month; sap is dripping in maple buckets and off the tips of broken branches, cardinals sing, and ribbon winged stoneflies dot the snow along the Great Swamp. Spring is literally heating up the ice as skunk cabbage starts to bloom.

A common denizen of our favorite flood plain, Skunk Cabbage, *Symplocarpus fetidus* or "fetid connected fruit", is named for the pungent fragrance of its crushed leaves and for its amazing flower. In February, even under deep snow cover, the purple spathe (the leaf that covers the flower and seeds) pokes through the mud and unfurls. It is thick, swollen, and leathery. Under a speckled maroon and green witch's hat with a swirl, the Skunk Cabbage flower is able to grow through ice

by creating its own heat. This metabolic process (the uncoupling oxidative phosphorylation of its electron transport system) can raise the temperature 20 degrees and more. It melts the frosty ground. It warms the surrounding air with the scent of skunk. Folks who live in the Croton watershed can enjoy its elegant beauty, its bold habits, its welcome green...as soon as the snow melts!

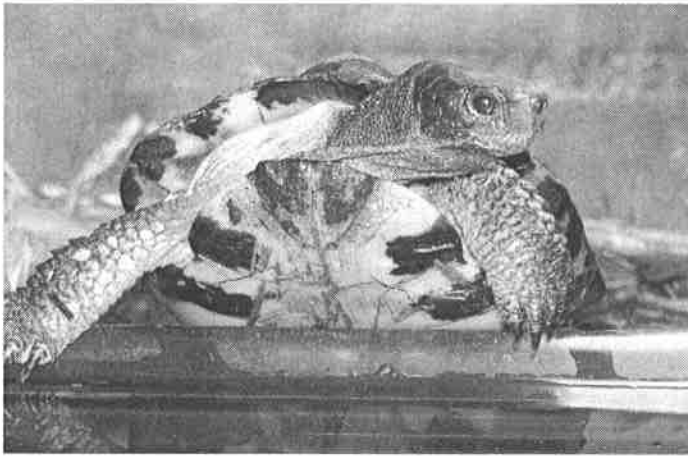
One of the first flowers of spring, the skunk cabbage attracts early carrion flies to its raw meat color and fetid odor. Once inside the warm spathe, insects rove the studded flower ball spreading yellow green pollen. Later the leaves grow on short stalks from a dense root mass arching over and hiding the spathe. In autumn the fertilized flower heads look like dried golf balls amid brown leaves. Before winter begins, the points of new leaves poke through the wetland soil, ready to start the cycle again. Look closely at the illustration for a cut-away view of the special "connected fruit".

Over the ages, the lowly skunk cabbage was a welcome early potherb (after a few boils and rinses). Its roots were mashed as a poultice. Peter Kalm (student of Linnaeus) traveling in Philadelphia in 1749 remarked on its use against scurvy. Rafinesque used a lotion made of skunk cabbage to "cure the itch" in 1830. It is often mentioned that "this is the root that the bear likes to dig and eat"!

—Beth Herr

Saving the Wood Turtles of the Great Swamp

The Great Swamp that most of us see on FrOGS' canoe trips appears to be a bayou like river running through a deeply wooded swamp. However the uniqueness of the Great Swamp can be found not only in the East Branch Croton River portions but in its many tributaries surrounded by scrub-shrub wetlands and wet meadows that are habitat for the Wood Turtle.



Wood Turtles, one of the seven species of turtle that inhabit the Swamp, and a species of "Special Concern" have been the subject of a five year and on-going research project supported by FrOGS. A species of "Special Concern" is a listing at the Federal and State level just a small step away from being designated "Threatened". "Threatened" are those species that have almost reached such low levels of individuals that there is considerable likelihood of their being considered "Endangered" and at risk of extinction. Many observers believe that Wood Turtle numbers may have declined so far as to be within a "threatened" category in rapidly urbanizing southeastern New York.

Michael Musnick has been tracking Wood Turtles in the Great Swamp for the past five years. Along with his volunteers he has discovered and monitored the turtle's nests and placed a wire screen over the newly lain eggs to prevent predation. The screens are removed before the hatchlings emerge. Michael encouraged the Metro-North R.R. to build gravel escape ramps between the tracks so the turtles would not get caught there and expire in the summer heat. In October the streams where

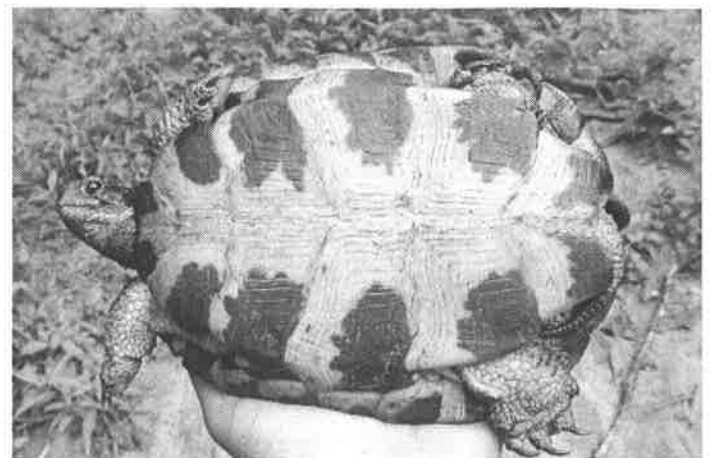
wood turtles congregate are checked to document both numbers and mating activity. In the first four years of the study, Michael and his volunteers monitored twenty-eight turtles with radio transmitters and located over 100 individuals at three sites.

Most of the turtles Michael tracks are females. Tiny radio transmitters glued to their shells send out a signal that Michael picks up with a hand held antenna. For further identification, Michael also incises a notch code on the edge of the shell and photographs the patterns on the turtle's belly plates or plastron.

The Wood Turtle Study has concentrated on answering some of the following questions:

1. Where do the turtles nest?
2. Where do they aestivate? (Aestivation is a semi dormant state in mid-summer when the turtles hide in the grasses and nestle down to avoid the heat.)
3. Where do the turtles go when they hibernate?
4. How far do female turtles travel from their core areas in an effort to find a mate?
5. What areas outside the immediate stream and wetland area do the turtles visit to find food?
6. What are the best methods of hindering nest predators, especially raccoons?

Wood Turtles are generally 5 to 10 inches long with distinctive "red legs". Their rough-looking gray-brown shells are covered with large pyramid-shaped scutes. The light yellow plates on their bellies (the plastron) are edged with a pattern of black blotches that are unique to each individual. They are thought to be fairly intelligent (for a turtle) and are long lived (as much as



50 years). Male turtles mate with females in the streams after they emerge from hibernation in April. The females dig their nests and lay their eggs between May 20th and June 20th. An average of 10 flexible shelled, elliptical eggs per nest, were counted in the study areas. The hatchlings dig their way to the surface in August and September. During the summer, Wood Turtles wander along clear woodland streams through swamps and rest and forage in wet meadows.

Wood Turtles do not begin to breed until they are 10 to 14 years old and hatchling mortality is high. Thus a female losing an entire nest of eggs year after year may not reproduce enough offspring to keep the population viable. Although

the number of juveniles that Michael and his researchers have found is encouraging, this aspect of turtle viability needs additional study. We expect this summer's research to add to the knowledge we have already gathered and help provide some answers about the lives of the Wood Turtles of the Great Swamp.

—By Laurie Wallace



Adopt a Turtle Program

“Adopt a Turtle” and become part of FrOGS’ and Michael Musnick’s 2011 Wood Turtle Research Project.

We are learning about the Wood Turtle’s behavior and habitat requirements with the help of tiny radio transmitters glued to the turtle’s shell. They have helped researchers locate and protect nesting sites as well as monitoring the turtle’s movement throughout the season. The study has grown over time and we are excited about the many new turtles that have been discovered and added to the data base.

As we add more individuals to the study, funds are needed to purchase new transmitters and to repair the old ones. *A new transmitter costs \$173.00!* Miscellaneous costs are also incurred in data collection, compilation and printing. We hope that FrOGS’ members and other interested members of the community will help support the Wood Turtle Project in 2011 by “Adopting a Turtle”. What we are learning about their habitat and their behavior will help protect the future of this wonderful native turtle in the Great Swamp.

The “Adopt a Turtle” program will be presented at Michael Musnick’s “Turtle Talks” at the Pawling Library on March 15th and at the Mahopac Library on March 21st (check the Calendar of Events for more information). *Attendees at these events will be able to sign up to be our first “adopters”.*

There are three levels of adoption

- 1. At the \$50 level** you will receive a Certificate of Adoption and at least two E-Mails during the summer/fall season about the activities of your turtle.
- 2. At the \$100 level** you will receive a Color Picture of the turtle you have adopted, a Certificate Of Adoption, and at least three E-mails during the turtle season
- 3. At the \$150 level** you will receive a Detailed Information Sheet about your turtle from past research, a Color Picture of your turtle, a Certificate of Adoption and monthly E-mail updates on your turtle’s activities.

The Program for FrOGS’ Annual Meeting - Sunday, March 6th “TAHAWUS, TEDDY, and TEAR”

(Mt. Marcy, Teddy Roosevelt, and Lake Tear of the Clouds)

Mac Rand will give a power point presentation on the history of the six million acre Adirondack Park. The majority of Mac’s photographs were taken on trips to the High Peaks Region. His talk will cover the geology of the Adirondacks, why people were drawn to it, some Presidential history, and look at the impact of humans on a “wild” area. We will follow the Hudson from its infancy high in the

mountains to the mighty river we are familiar with in the Hudson Highlands.

Mac Rand taught middle school science for over 20 years and concurrently owned a children’s wilderness summer camp in Ontario. Two years ago he started Great Blue Outfitters in Patterson. One of his goals is to climb all 46 of the High Peaks in the Adirondacks and become a “46’er”!

Calendar of Events

March thru June 2011

MARCH

Saturday, March 5th

"Nature and the Artist"

Nationally known artist and sculptor JILL REYNOLDS will talk about how nature has inspired her "stunning" works in glass from 11 AM to 12 noon at the Dunn Lecture Hall, Trinity- Pawling School, Route 22, Pawling. A "First Saturday" Oblong Land Conservancy event co-sponsored with FrOGS and the Dutchess Arts Council. Check www.facebook.com/oblongland

Sunday, March 6th

FrOGS' Annual Meeting

Mac Rand, of Great Blue Outfitters will give a presentation on the Adirondack Wilderness entitled "Tahawus, Teddy, and Tear" at FrOGS' Annual Meeting, 3 PM, in the Lawlor Building, at the corner of Route 311 and Route 164 in Patterson. (See article on page 5 for more information)

Tuesday, March 15th

"Turtles!, Turtles!, Turtles!"

At 7 PM in the Pawling Library, Michael Musnick will give a power point presentation and update on his Wood Turtle Project. Learn about the fascinating lives of Wood Turtles in the Great Swamp. Help support the turtle study by "Adopting a Turtle" or volunteer to become a citizen scientist in the field.

Monday, March 21st

"Turtles!, Turtles!, Turtles!"

At 7 PM in the Mahopac Library—a repeat of Michael's Pawling Library presentation.

APRIL

Saturday, April 9th

The Putnam County Land Trust Dinner

Support the Land Trust! Enjoy good food, music, a live auction and honor this years' recipient of the

Great Blue Heron Award. Tickets \$60.00 per person before March 30th and \$65.00 thereafter. For reservations call Linda Lund (845) 279-3122 or Judy Terlizzi (845) 228-4520

MAY

Saturday, May 7th

"Birding 101"

An introduction to birding by Audubon Educator Larry Federman at the Slocum/Mostachetti Preserve in Wingdale. For information about this Oblong Land Conservancy "First Saturday" event go to www.oblongland.org and click on events.

Saturday, May 21st

Great Swamp "Ecological Safari"

Join Dr. Jim Utter for a day long adventure through the twists and turns of the "magical" Great Swamp. The trip starts at the Patterson Environmental Park Launch at 8:30 and ends up at Green Chimneys in the afternoon. Learn about the values, threats, and biodiversity of this nationally significant wetland. *This trip is limited to 15 participants!* Lunch, canoes, life jackets and lifeguards are included in the price of the trip. The \$125.00 cost per person is a tax deductible donation to Friends of the Great Swamp or FrOGS. For information and to reserve a place, call Laurie Wallace at (845) 279-8858 or e-mail laurwally@aol.com.

Sunday, May 22 and Saturday June 4th

FrOGS' Canoe Trips

Trips start at the Green Chimneys' launch and include canoes, life jackets, lifeguards and a naturalist. Trip times are: 8:15 AM, 10:15 AM, 1 PM and 3 PM. Prices are \$29 for adult non-members-\$16 for children (6-12) and \$25.00 for adult members-\$12 for member children (6-12). *Reservations are a must as space is limited.* Call Laurie Wallace at (845) 279-8858 to reserve.

Friends of the Great Swamp is an organization dedicated to **Preserving the Great Swamp** through educational programs, scientific projects and special events and making all aware of this wonderful resource in our midst.

The generosity of our members and supporters extends FrOGS reach and effectiveness. Contributions support the efforts of the Education Committee, research and this newsletter.

Name _____

Address _____

Phone Day _____ Night _____

E-Mail Address _____

Suggested Contributions: (All Contributions are tax deductible)

- | | |
|---|---|
| <input type="checkbox"/> Supporter \$25 | <input type="checkbox"/> Contributor \$50 |
| <input type="checkbox"/> Friend \$100 | <input type="checkbox"/> Patron \$250 |
| <input type="checkbox"/> Sponsor \$500 | <input type="checkbox"/> Benefactor \$1,000 |

Send your contribution to: **Friends of the Great Swamp**
P.O. Box 373, Pawling, NY 12564

WE NEED HELP

If you can lend a hand with any of the following, please check off the box and we will call you.

- | | | |
|---|--------------------------------------|-----------------------------------|
| <input type="checkbox"/> Spring Celebration | <input type="checkbox"/> Canoe Trips | <input type="checkbox"/> Other |
| <input type="checkbox"/> Educational Activities | <input type="checkbox"/> Art Show | <input type="checkbox"/> Mailings |



Results of the Biological Study of the Swamp River

Over the past few years development proposals brought to the Towns of Pawling and Dover have lead to increased concern for the health of the 'North Flow' portion of the Great Swamp. The cumulative impact of projects in this vulnerable area could be significant, yet little data is available documenting current water quality conditions in the Swamp River system, making it difficult or impossible to detect changes resulting from a project or predict the significance of such changes. Last winter Friends of the Great Swamp, in cooperation with the Housatonic Valley Association (HVA), began an assessment of the Swamp River's health. Frogs' funded Kelly Nolan's Watershed Assessment Associates "biological assessment" of water quality at seven sites while HVA initiated a complementary "chemical testing" survey of the water at five sites. The results of these two studies will provide an important baseline document of the condition of the Swamp River and its tributaries in 2010.

The Watershed Associates' report indicates the condition of the Swamp River is generally good. Kelly Nolan used standardized D.E.C. procedures for sampling the macro invertebrates (Macros) living at the bottom of the stream. He compared the kinds and

numbers of individuals found at each site with those found in undisturbed streams. Species of aquatic organisms (Macros) differ in their tolerance to specific pollutants or stream conditions. The physical condition of the stream channel and some measures of water chemistry (e.g. pH and conductivity) were also recorded at each sampling site.

These results indicate the Swamp River system is only slightly impacted by land development and the tributaries draining into the River from undeveloped portions of the watershed are very healthy. The single site with severe impact is on Burton Brook as it leaves an agricultural field and the nutrient runoff degrades the stream.

Previous DEC sampling of the Swamp River at Old Route 22 and Mill River at Dover Furnace Road shows an improvement in stream conditions at both sites. Reliable data gathered over time gives us an opportunity to look at the changes in land use that may have lead to this improvement to see if there are lessons to be learned for the future.

—Dr. Jim Utter (edited version)

Benthic Macroinvertebrate Community Results July 2010

Study by Watershed Assessment Associates for Friends of the Great Swamp

Stream	Sampling Site	EPT Richness	Biotic Index	Taxa Richness	Biotic Assess. Profile	Water Quality Impact
Swamp River	Old Rt 22 N of Do Furn Rd	12	4.49	20	6.85	Slight
Swamp River	Corbin Rd Sandy site	7	4.71	20	8.41	Non-impacted
Hiller Brook	Rt 22, AT and RR	10	3.87	25	7.07	Slight
Burton Brook	Dutch Co Rt 21 Sandy site	0	9.03	12	2.04	Severe
Cooperstown Brook	At Mill River	13	2.5	25	8.08	Non-impacted
Mill Brook	Dover Furnace Road	12	2.99	24	7.64	Non-impacted
Unnamed Brook	Murrow Park	9	3.27	22	7.54	Non to slight

- **EPT Richness** is the number of pollution-intolerant mayfly, stonefly, and caddisfly species. The higher numbers indicate healthier streams.
- **Biotic Index** is the number of individuals that belong to pollution-tolerant groups, so higher numbers indicate less healthy, nutrient-enriched streams.
- **Taxa Richness** is the number of different species at a site. Higher values generally indicate healthier streams.
- **Biotic Assessment Profile (BAP)** integrates all the index values and describes the relative water quality condition of the stream using four impact categories: non-impact (no evidence of pollution), slight, moderate, and severely impacted.

Calling for Volunteers to Help with the Wood Turtle Tracking Project

Michael Musnick's Turtle Research relies on volunteers to help monitor key sites for nesting activity, emerging turtles and mating pairs.

Please contact Michael at mmusnick@comcast.net if you can help!

To get started as *citizen scientists* you will need appropriate shoes, a notebook, bug spray, a flashlight and a digital camera. We can partner new volunteers with current volunteers until you know the territory.

We need help at three different sites. The time, the tasks and the equipment may vary for each location.

Site # 1 - (May 15–June 10) Signs of Turtle Nesting

One or two volunteers are needed from 6 PM to 7 PM each night to look for signs of turtle nesting.

Site # 2 - (May 15–June 10) Signs of Turtle Nesting

Some dates are covered but we need more people to check for signs

of turtle nesting from 6 PM to 8:30 PM. Waterproof boots are required when monitoring this site.

Site # 2 - (Early April through late May) Looking for Emergent Juveniles and Adults

Search the wetlands and wet meadows for turtles for an hour or two during the day on Sundays or Mondays.

Site # 3 - (Starting on May 15th) Nest Monitoring

Join Michael for 3 to 4 hours an evening as he monitors nesting females. He will call on the study day with more specific information. This project requires chest waders and lots of patience!

Site # 3 - (September 1 until late October) Mating Pairs Inventory

Spend all or part of a sunny, warm day during September or October, locating and recording information on mating pairs of Wood Turtles.