April's showers bring May flowers to our wooded wetlands, while the warm spring sun brings hikers out to enjoy them. Starting in February, beginning with the red spathe of the skunk cabbage, through the showy Mountain Laurel bloom in June, woodland blossoms try to capture as much sun as possible. They gather the solar energy needed to bring flower to fruit and finish their season before the tree leaves cast their shadow.

There are hundreds of native wildflowers in the Great Swamp, some quite rare. But even the most common are worthy of a closer look. Start with the violet: Dog toothed violet that is...which is really not a violet at all. Also known as trout lily for blooms that announce the trout season, Erythronium americanum is really in the lily family and one of those few to be generally ignored by the white tailed deer. You are likely to find colonies of the mottled brown-green leaves (they look like speckled trout too) in low wet areas.

Lie down to get a close up view of this demure beauty. Its yellow petals are really sepals and those long stamens shed bright red pollen. The edible leaves sprout from white bulbs shaped like teeth and the flowers grow from mature plants whose bulbs are at least two inches down.

When the dog toothed violets fade, the common blue violets follow. Later come yellow, white, purple, and striped variant violets with leaves (which are high in vitamin C and A) of every shape. There are over 50 species in our area, and since they hybridize and can be difficult to identify, marvel instead at their fragrance, beauty and tenacity.

Continued on page 2

Saving the Last of the Bog Turtles—Page 4
A Handful of Violets (continued)

Violets are prolific, growing from rhizomes and producing two types of flowers: Showy spring flowers have wide lower petals, easy landing and lots of nectar for insects to pollinate them. As those flowers ripen they bend over. When the pods mature, the seeds are expelled forcefully, then are taken, eaten, and sometimes planted by ants.

In late summer there is another growth of green and the plants look fresh again. Take a closer look then to see another secret to their success: at the base of the leaves are small greenish flower buds which never open but fertilize themselves and produce even more seeds! So successful, they can be found growing in your lawn and are a gift for your garden. Leave some leaves for the caterpillars of our favorite, large, and colorful Fritillaries. Violets are their only food source and should be encouraged.

The not so shrinking violet:
• is the state flower of New Jersey
• was mentioned frequently by Homer and Virgil stating: ‘...they were used by the Athenians for moderating anger, procuring sleep and to comfort and strengthen the heart.’
• flowers carried brings a change in luck
• flowers mixed with Lavender makes a powerful love sachet
• flowers can be made into candy, jam, jelly, syrup and wine
• was once used as a test for acid or base substances

There is a seasonal parade of wildflowers blooming in the Great Swamp, and a walk there in May will always bring some beauties your way. If you would like to learn more, join our next walk!

Calendar of Events
April thru June 2006
Friends of the Great Swamp (FrOGS) and Putnam Land Trust (PCLT)

APRIL

Sat. Apr 22 7:30 pm
Woodcock Walk
To see the amazing mating flight of the Woodcock.
Jim Utter and Beth Herr - call 228-5635

MAY

Sat. May 6th 9:00 am
Photography Workshop with Norman McGrath
Call Gordon, 855-1917 for details and location
(Donation $ 40)

Sun. May 14th
Mothers Day Wildflower Walk
Bring your camera!
Location to be determined.
Beth Herr (PCLT) 228-5635

MAY (continued)

Sat. May 20th or Sun. May 21st
Ecological Safari
All Day Canoe Trip through the Swamp
Lunch Included, call Evelyn Chiarito, 877-6498
(Donation $75)

Sat. May 27th and Sunday May 28th
FrOGS Naturalist led Great Swamp Canoe Trips
Green Chimneys Beach - call Evelyn Chiarito 877-6498

JUNE

Sat. June 10th and Sun. June 11th
FrOGS Naturalist led Great Swamp Canoe Trips
Green Chimneys Beach - call Evelyn Chiarito 877-6498
SPRING CANOE TRIP 2006

DATES: MAY 27, MAY 28, JUNE 10, JUNE 11

Departures scheduled for: 8:15am  10:15am  1:00pm  3:00pm

Each year Friends of the Great Swamp leads canoe trips on the East Branch Croton River into one of the largest wetlands in New York State. Join us on one of these enjoyable adventures into the Great Swamp and experience this beautiful and valuable resource for yourself. Located less than 70 miles from New York City, this vast swamp is an important source of drinking water for Dutchess and Putnam Counties and New York City. It provides critical habitat for aquatic species as well as for migrating and breeding birds. Audubon New York has designated it an Important Bird Area. The swamp also offers valuable recreational and educational opportunities.

Experience the natural beauty of the swamp. Meet us at the Green Chimney’s Beach on Doanesburg Road (formerly Putnam Lake Road) off Route 22. FrOGS member(s) will point out the plants, birds, and varied uses and values of this vast freshwater wetland. We may see the great blue heron stalking fish, migratory songbirds as they stop to rest or stay to nest, or catch a glimpse of a mink or muskrat.

All level paddlers are welcome. We will provide: Canoes, paddles, life jackets (bring your own if you wish) and a licensed Lifeguard. We suggest you bring bottled water, sunglasses and layered clothing, to accommodate temperature changes. We will canoe rain or shine. In extreme conditions we ask that you call for cancellation and rescheduling information.

$18.00 Adult Member -  $11.00 Child (6 to 14 years)
$22.00 Adult Non-member -  $15.00 Child (6 to 14 years)

FrOGS memberships, T-shirts, caps & maps will be available at registration.
Volunteer paddlers and other helpers are needed and appreciated.
Please let Evelyn know if you can help.

Reservations are a must and
Space is limited so get your reservation early!

For information and reservations contact:
Evelyn Chiarito at (845) 877-6498
or echiarito@aol.com
(please refer to FrOGS canoe trip)

Friends of the Great Swamp P.O. Box 373, Pawling, NY 12564  Email: PawlingS@verizon.net
www.frogs-ny.org
Saving The Last Of The Bog Turtles

Turtles have been on earth since the beginning of the age of dinosaurs nearly 250 million years ago. Their protective shells, long lives, and ability to live on land or water all contribute to their long success. Now these marvelous and endearing creatures are in trouble all over the world, including here in the Harlem and Hudson valleys. The Hudson Valley with 12 turtle species is one of world’s five richest river drainages for turtle species.

Dr. Jim Utter and Naturalist Beth Herr gave a talk about turtles on Sunday, March 19th at the Lawlor Auditorium in Patterson. They stressed things we can do help save our imperiled local turtles.

Bog turtles are listed as “threatened” federally and as “endangered” in New York State. These categories allow some funding and legal protection for the tiny bog turtle, but to truly understand their situation today one must learn from Dr. Jim Utter and his fellow researchers.

Bog turtles, scarcely over three inches long, live in two areas, Appalachia and in northeastern states from Massachusetts to Maryland.

On a map this distribution looks healthy, but in actuality bog turtles survive mostly in small isolated areas. Pennsylvania is their north-eastern stronghold, but New York is also important and the Harlem and Hudson Valleys are major population centers in the State. They are a “responsibility species” for us in the Great Swamp watershed where we have several populations.

The bog turtle requires a very special habitat in which to live and reproduce. Bog turtles do not mate until they are teenagers and then they lay only 1 to 4 eggs, once a year, at best. With luck they will live another 20 years, but they need suitable habitat that is relatively stable over at least several decades. Since the turtles are cold blooded, they depend on open habitat where sunlight can warm them and incubate their eggs which they lay on vegetated hummocks. They also need soft wet substrate in which to burrow for escaping predators and heat, low vegetation that supports the slugs and other invertebrates on which they feed, and sites where they can over-winter below the freeze-line.

An ideal bog turtle habitat is a mucky fen fed by nutrient-poor ground water or springs that flow from limestone or marble bedrock. These low nutrient conditions are not ideal for plant growth so only certain species can thrive and even they grow slowly. Sedges, grass of Parnassus (not really a grass), shrubby cinquefoil, and ladies tresses orchids characterize these wet and nutrient poor habitats. Trees and other tall plants, however, don’t do well in nutrient poor sites, so ferns stay sunny for years.

The muck is a dark organic-rich substrate that retains water and provides a soft moist material for burrowing bog turtles. It develops where ground water saturates the soil through much of the year leading to the depletion of oxygen for the soil microbes which slows them and reduces their decomposition of plant litter. The partially decomposed plant material holds water like a sponge giving “muck” soil its characteristics.
Great Swamp Characters

The last issue of our newsletter highlighted the natural history of bog turtles. This time we take a look at another character who calls the Great Swamp home - the Wood Turtle.

These reptiles should be called River Turtles because they spend so many of their days in the water: brumating for months in the winter, swimming, cruising for mates, and cooling in the hot summer months. They are listed as a species of special concern in New York State. Not only is their habitat shrinking with the number of open space acres, but the pressure from collecting and selling in the pet trade is enormous. Direct removal by humans is the primary threat to the species. Removal can also take the form of road mortality, vandals shooting basking turtles, or just simply incidental collection. In one study (Garber and Burger, 1995) a previously unexploited population of Wood Turtles declined to virtual extirpation within a decade of being exposed to human recreationists.

Wood turtles rarely lay more than ten eggs per year and between 70 to 100% of those eggs are predated upon by raccoons, skunks, and others. Young wood turtles are not sexually mature until ten to fourteen years old. The only advantage the wood turtle has in its favor is its longevity. They are known to live at least 58 years and probably more.

The Great Swamp is one of the few places that the Wood Turtle survives in Putnam County. Its range otherwise extends throughout New York to Canada, west to Pennsylvania, with isolated populations in Iowa and Minnesota, and south to Virginia. The wood turtle’s shell is brownish with a low keel and the scutes usually show well-defined concentric growth rings, giving the shell a “sculptured” appearance. This explains its scientific binomial: Clemmys insculpta.

The Wood Turtle is omnivorous and feeds both in and out of water. The diet includes leaves and flowers of violets, strawberry, raspberry, and willow as well as fungi, slugs, snails, worms and insects. They are slow and deliberate feeders. They have also been observed “worm stomping” or deliberately pounding the ground with forelegs and plastron to drum up a tasty earthworm.

This denizen of the Great Swamp deserves further study. Perhaps you’ll see one on our sponsored canoe trips!

Wood Turtle Protection Project

One of the biggest natural threats to the wood turtle population in this area is the predation of the nest sites by raccoons.

Michael Musnick with the assistance of Roger Erickson and Gordon Douglas spent many nights in June following the female wood turtles to locate their nest sites. Apparently the female turtle has a set of criteria for the location of her nest. She may dig several trial nests before choosing the final site. These false nests were frustrating for the watchers. Once the female digs her nest and lays her eggs (they look like ping-pong balls), she carefully covers the hole. Raccoons seem to be able to locate the fresh nest site (perhaps by smell) and will quickly devour the eggs leaving a scattering of empty shells behind.

Michael places a protective covering over the nest site “the excluder” made of wire mesh to prevent the destruction of the eggs. The eggs laid in June will hatch in 71-79 days and the first hatchlings are just emerging.

(continued on page 5)
The North Flow of the Great Swamp has been the focus area for Michael's protection project. He would like to continue to study the seasonal habits of wood turtles in order to understand their habitat requirements in an effort to better protect this native turtle whose population is under stress.

FrOOGS has supported Michael's study of the wood turtle population in The Great Swamp by providing funding for 10 radio transmitters that will be attached (glued) to the top of the adult turtle's shell and the tracking equipment to locate them. This will enable him to monitor the turtle's movements throughout the year and record their seasonal patterns.

This data will help us understand how to preserve the wood turtle population in the Great Swamp.

Turtle Facts

- The earliest turtles have been found in deposits dating back over one hundred eighty million years. Proganochelys, the most ancient chelonian, could not retract his head and had small teeth; but he carried a bony shell and was unmistakably a turtle.

- Turtles can take in heat and raise their metabolic rate when necessary for such physiological functions as digestion, growth, and reproduction during the season of peak activity; at the other end of the year they are able to thermo regulate downward to a point barely above freezing and sustain life though the long cold season.

- Turtles need sunlight to metabolize vitamins in their diet.

- March, April, and May are the primary months for turtle courtship and mating. Wood turtle eggs are larger than those of painted or spotted turtles. The nest chamber itself is about four inches wide.

- From within a number of hours to several days the developing embryo and its adjacent membrane will rise to the topmost portion of the egg and attach to the inner shell membrane. Following that, any turning of the egg might break the attachment—killing the young embryo.

- Turtles sometimes shed tears as they lay their eggs.

- In winter, a turtle must keep from freezing and yet stay cold enough to maintain a metabolic depression that will enable him to survive for up to six months without drawing a breath.

- The primary stress of hibernation comes from an extremely restricted access to oxygen and the resultant buildup of lactic acid.

- All turtle species are able to absorb oxygen from and release carbon dioxide directly to the water by way of blood vessels in their skin, throat lining, or cloaca. This enables them to go for long periods of time without coming to the surface for air breathing.

- Box turtles dig deeper into earth as winter progresses and may end up as far as two feet below the surface.

- Turtles taken from the wild for observation are best released exactly where they were found...Box turtles displaced a mile or two from their home range are able to find their way back, covering a distance that is fifteen to thirty times the radius of the area in which they have lived. Turtles released farther away have a tendency to head in the direction of their home base, even though they are not able to find their way back from such a distance.

- The eastern box turtle which has been known to surpass the age of one hundred twenty, is the longest-lived vertebrate in North America.

Taken from The Year of the Turtle, by David Carroll, St. Martin's Griffin, New York, 1996. This is a great read: includes a year's worth of journal entries and many pen and ink drawings and water color paintings!
increase the rate of successional change. The nitrates and phosphates that reach the fens from lawn fertilizers, septic systems, agricultural runoff, and other stormwater inputs, convert the nutrient-poor fens with short vegetation into nutrient-enriched gardens with diverse tall vegetation like Joe pye-weed and New York ironweed, followed by shrubs and trees. These changes reduce the chance a bog turtle population will survive on the site.

To compound the problem, the introduced purple loosestrife and phragmites or reed-grass are extremely efficient at taking advantage of these nutrient conditions and they quickly reduce the quality of the bog turtle habitat.

We must preserve and manage bog turtle habitat if they are to survive. With so much human encroachment, the “extinction prone” bog turtle cannot live and reproduce without our help in protecting, and often managing, their habitat. Methods currently being promoted include eliminating stormwater runoff into the fen habitats and reducing the tall vegetation cover in otherwise suitable habitat. FrOGS is a partner with Environmental Defense, US Department of Agriculture, US Fish and Wildlife Service, and New York State DEC in an experiment evaluating the use of controlled grazing to improve bog turtle habitat quality.

Both Herr and Utter urge everyone to learn about the bog turtle’s plight and to educate their friends and political leaders. Only then can we protect this amazing and increasingly rare little creature.

Dr. Jim Utter, an Associate Professor of Environmental Studies at Purchase College, SUNY, works with bog turtles in the Great Swamp while Beth Herr, the Head Naturalist at Ward Pound Ridge Reservation, Westchester County Department of Parks, focuses on wood turtles.

Beth Herr is a trustee of the Putnam County Land Trust. Professor Utter is chairman of Friends of the Great Swamp (FrOGS).

The next newsletter will feature wood turtles, Beth Herr’s specialty.
Senator Vincent Leibell Honored with Audubon New York's William Hoyt Environmental Award

(Left to Right) John Hannon, Al Caccose Audubon-NY, Senator Leibell, David Miller Audubon-NY, Gladys Goldmann Audubon Council, Richard Saravey, Jim Utter

Audubon New York and the Audubon Council of New York State awarded State Senator Vinnie Leibell their highest honor for environmental action by a public official. Senator Leibell received the William Hoyt Environmental Award on March 25, 2006 at Audubon’s Annual Spring Assembly attended by over 100 chapter leaders at the Gideon Putnam Hotel and Conference Center in Saratoga Springs, NY.

Recognized for his leadership on conservation programs in the New York State Senate, Senator Leibell has spearheaded many priority legislative initiatives while serving on the Environmental Conservation Committee. He is a strong supporter of the Senate bill to revise the NYS Freshwater Wetlands Law which includes State protection for wetlands down to one acre in size. Senator Leibell sponsored and successfully promoted the Senate version of a bill providing for State payment of taxes on all State-owned land in Putnam County beginning in 2007. This facilitates the action of FrOGS and others who are working for State protection of critical Great Swamp land, an action that would otherwise take these parcels off the tax rolls.

Senator Leibell, in both words and deeds, is a key advocate for the Great Swamp. He secured critical funding towards three conservation purchases in the Great Swamp Watershed:
- Putnam County Land Trust’s acquisition of the Ice Pond Preserve;
- Hudson Valley Trust’s purchase of 47 acres of Great Swamp wetland and upland buffer adjacent to the refurbished Lawler Building; and
- Putnam County’s purchase of Camp Herrlich which provides security for an important environmental education program while protecting a valuable mature forested slope in the Great Swamp Watershed.

Despite his hectic schedule, he always finds time to take part in FrOGS events and those of our partner organizations promoting Great Swamp activities. At the Art Show last October, he altered his schedule so he could personally present our first Peter Dunlop Awards to the winning high school artists. FrOGS joins Audubon-NY, Bedford Audubon Society, Putnam Highlands Audubon, and Saw Mill River Audubon in gratefully applauding Senator Leibell for his consistent support of actions that improve our environment.

Audubon-NY’s Environmental Award is named in honor of William Hoyt the popular environmental advocate who passed away in 1992 while serving in the State Assembly. Past award recipients include Maurice Hinchey, Congressman Sherwood Boehlert, Assemblyman Richard Brodsky, DEC Commissioner John Cahill, Attorney General Eliot Spitzer, Assemblyman Thomas DiNapoli, and Governor George E. Pataki.
ACTION NEEDED!

For the third straight year the NY State Assembly has passed the revised and strengthened New York State Freshwater Wetlands Law which provides State regulation of wetlands down to one acre in size. The bill is now in the Senate Environmental Committee where it has received strong support the past two years and approval of the 2006 version is expected soon. This legislation is critical to maintaining the health of the Great Swamp because it provides protection for small wetlands in the watershed which are important habitat and help control stormwater runoff, erosion, and pollution from the uplands.

The bill has overwhelming support in the Senate, but bringing it to the Floor for a vote was blocked in 2004 and 2005 by Senate Majority Leader Joseph Bruno. Please write or call Senator Bruno and urge him to bring this important bill to a vote by the full Senate.

Senator Joseph Bruno, Majority Leader
Room 909, Legislative Office Building,
Albany, NY 12247
Phone 518-455-3191

TAKE THE CHALLENGE

Friends of the Great Swamp is an all-volunteer organization and our conservation achievements depend on the participation of our members. We frequently ask for volunteers to help with specific projects such as the Art Show and the canoe trips. For all of you who have helped out at these times we extend our sincere thanks.

If you believe in the goals and activities of FrOGS, have a little time and energy to invest, perhaps have some specialized skills that would help the organization function, and would like to join a warm, friendly committed group of conservationists, think about becoming more active. We need you.

We seek members of committees, volunteers on projects, and additional Board members to help with the following:

- Art Show
- Canoe Trail Maintenance
- Education
- Newsletter and other publications
- Publicity
- Coordinator of volunteers
- Representative of Town of Southeast

Send letter detailing interests, availability, and experience to FrOGS, P.O. Box 373, Pawling, NY 12564

PATTERSON ROTARY CLUB SUPPORTS FrOGS

As part of their Community Service Program, the Patterson Rotary Club recognizes about forty local organizations that provide social benefits to Patterson residents and donates cash awards to support their work. For the past three years they have honored Friends of the Great Swamp for defending this remarkable resource and promoting local understanding of its functions and values to the community.

Since most of Patterson drains into the Great Swamp, what is done anywhere in the Town could affect the health of the Swamp. The support by Patterson Rotary provides an important boost to FrOGS in both recognition and financial support. Their donations have been ear-marked for a stream-monitoring program that will begin this spring.—Thank you Rotarians!

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, the Spring Celebration and this newsletter.

Please consider a tax deductible gift to FrOGS.

Send your gift 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.

- Spring Celebration
- Publicity
- Mailings
- Education Committee
- Art Show
- Other

Name

Address

Phone Day _______ Night _______

E-Mail Address

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