

NATURAL HERITAGE HARMONIES



SUMMER 2004

A publication of the Nongame and Natural Heritage Program

Vermont Department of Fish & Wildlife
Agency of Natural Resources

Conserving Vermont's fish, wildlife, and plants and their habitats for the people of Vermont.

Natural Heritage Program Celebrates 20th Anniversary

This fall will mark the 20th anniversary of Vermont's Natural Heritage Program, which tracks populations or occurrences of sensitive or rare species and natural communities. The Nature Conservancy (TNC) was instrumental in developing and promoting a system that could be used nationwide to track rare, threatened, and endangered animals and plants, and natural communities. The tracking method that was developed was based on location, also known as an occurrence.

Liz Thompson was hired by TNC as a botanist and to maintain the new database in Vermont's field office in 1984. Prior to Liz, field data collected in Vermont were sent to TNC's regional office for data entry. TNC successfully convinced the state to adopt the system, and it was transferred to the Agency of Natural Resources in 1987.

Vermont's Natural Heritage Program officially became part of the Fish & Wildlife Department in the fall of 1989. At that time, three state positions were created, including a coordinator/zoologist, a botanist and

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Biologists Study the Bicknell's of East Mountain



Everett Marshall

Bicknell's thrush mist-netted on East Mountain

Three young biologists are braving the rugged terrain of the Montane Spruce-Fir Forest of East Mountain, in East Haven to study the Bicknell's thrush that breeds in this habitat. Tom Bullock, Zach Roe and Dan Britton are part of a three-year project overseen by the Vermont Fish & Wildlife Department's (VFWD) Nongame and Natural Heritage Program, with funding from U.S. Fish & Wildlife Service and The Nature Conservancy, to learn more about the rare Bicknell's thrush population in the Northeast Highlands of Vermont.

"Bicknell's thrush is a habitat specialist with a restricted range and a species of special concern in Vermont," explained Everett Marshall, VFWD biologist and project supervisor. "This project was prompted, in part, by a proposal for placing four wind turbines on the top of East Mountain.

We believe the East Mountain Bicknell's thrush population acts as a source population for other peaks in the region. Our goal is to discover the overall conservation status and needs of Bicknell's in this region and evaluate the effects of wind farm development on the Bicknell's of East Mountain."

The department is working with researchers from the Vermont Institute for Natural Science (VINS) on the project. Lead scientist Chris Rimmer and Steve Faccio of VINS has been studying Bicknell's thrush populations on Mount Mansfield and Stratton since 1992.

"This is a species we knew little about because Bicknell's are incredibly difficult to study," stated Rimmer. "You have to be up on mountain tops

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DEPARTMENT UPDATE

*By Ron Regan,
Director of Operations*

I am pleased to report that a lot of great progress is being made on the development of a Comprehensive Wildlife Conservation Strategy for Vermont. Thanks to the efforts of many department staff, and the expert-knowledge contributions of many partners, we are close to completing our preliminary list of “species of greatest conservation need.”

Each of the 50 states is developing a comprehensive wildlife strategy to comply with a federal grant mandate. So far, Vermont has received over two million federal dollars from this new wildlife grant program. Your contributions to the Nongame and Natural Heritage Program are providing the stateside match to spend many of the federal dollars. New grant monies are helping the department fund important research, inventory and management initiatives for a variety of species including lake sturgeon, black throated blue warblers and timber rattlesnakes, to name a few.

I also want to announce that the Fish & Wildlife Department is fortunate to have hired a new Director for the Wildlife Division — Dr. Craig McLaughlin. Craig comes to Vermont after a long and distinguished career, mainly working with mammals, in Maine and Utah. Craig began work in Vermont on July 12th, and I look forward to Craig’s leadership regarding wildlife conservation policy for the Green Mountain State.

Nongame and Natural Heritage News

The 2004 field season is in full swing and biologists are busy conducting inventories and collecting data. This year, the Vermont Fish & Wildlife Department is participating in over 70 projects involving nongame species, plants and natural communities. Here is an update on a few of our projects.

Birds, Bats and Butterflies

Vermont’s **common loon** breeding population increased again in 2003. The 2003 common loon breeding season produced the largest number of attempted nests, territorial pairs and eggs hatched since record-keeping began in 1978. Forty-four pairs of loons attempted nesting on 41 lakes.

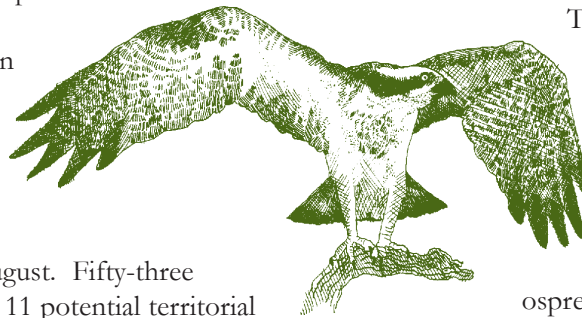
Thirty-eight pairs were successful in hatching 62 eggs, with 45 chicks surviving through August. Fifty-three known and 11 potential territorial pairs were located. The highest concentration of breeding and territorial pairs occurred in the north-central and northeastern parts of Vermont.

“Loonwatch,” an annual statewide loon count, had more than 205 volunteers surveying lakes throughout Vermont on July 19, 2003. This citizen-based project involves assessing the same group of 100 lakes for loons. Volunteers counted 151 adults, no subadults, and 40 chicks. The number of adult loons has almost doubled from the 79 first counted in 1996.

A statute recently passed by legislature will help remove the potential threat of lead poisoning in loons. The bill restricts the sale and use of lead sinkers weighing one-half ounce or less for fishing. The sale of these sinkers is prohibited beginning January

1, 2006, and the use of these sinkers is prohibited beginning January 1, 2007. The bill also calls for a public education program about the threat of lead fishing tackle to wildlife and a sinker exchange program.

Our **osprey** population also set a record in 2003 for number of nest attempts and number of fledged chicks. Seventy-one nesting attempts were observed and 48 were successful. Eighty-four osprey chicks fledged in 2003. Of the 23 unsuccessful nesting attempts, first-time pairs built 13. New nests are often “practice” nests for young pairs that don’t actually lay eggs. These young pairs commonly produce young the following year.



The majority of osprey pairs breed in the mid and upper Lake Champlain wetlands. They prefer to breed near other

ospreys, so they tend to clump in certain areas. Missisquoi National Wildlife Refuge, Sandbar State Wildlife Refuge and the Otter Creek - Dead Creek area are places favored by breeding ospreys. A few breeding pairs also are scattered along the upper Connecticut River Valley and inland in the Northeast Kingdom.

New nest platforms were erected in 2003 to encourage osprey nesting at Chittenden Reservoir and Leffert’s Pond in Chittenden, and Echo Lake in Hubbardton. Platforms also are planned for the South Bay of Lake Memphremagog and for several sites on the Connecticut River.

Vermont’s **peregrine falcon** breeding population declined slightly from last year’s record high of 30 pairs to 29 pairs in 2003. Twenty-six of the 30 territories occupied by pairs in 2002 were reoccupied in 2003. Two new

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territories were established and a pair returned to a previously unused territory in Barton. Twenty-four of the 29 pairs nested, and 16 pairs fledged a total of 39 young. Seventeen nestlings were banded.

Winter bat surveys of caves and mines conducted by Vermont Fish & Wildlife Department (VFWD)

biologist Scott Darling, assisted by New York bat biologists and the Vermont Cavers Association, resulted in two significant findings. Over 100

small-footed bats

were counted in an abandoned mine, making this mine the single largest hibernaculum for this state threatened species. Biologists also located 297 **Indiana bats** in a southwestern Vermont cave. Indiana bats, a state and federally endangered species, have not been documented in this cave since 1950. This is the largest number of Indiana bats found hibernating in a Vermont cave.

Two private Vermont landowners were awarded federal funds from the Private Stewardship Program to construct bat-friendly gates on two caves. These caves serve as existing and potential Indiana bat winter habitat. The funds also will help develop cave management plans to better manage the site for bat habitat. The plan will include managing human visitation so it is compatible with bats.

This summer is the final year of a two-year study on Indiana bats in the Champlain Valley of New York and Vermont. The study is a cooperative venture with the Vermont Fish & Wildlife Cooperative Research Unit and biologists from the VFWD, New York DEC, and the U.S. Fish & Wildlife Service. Twelve female Indiana bats were captured and radio-tagged to locate maternity roost trees

where they have their young and to study their foraging habits.

Numerous volunteers helped count bats as they emerged from their roost trees at dusk. Study sites in New York and Vermont counted at each site as many as 200 female Indiana bats leaving the trees to embark on their night-time foray. The project will increase our understanding of the habitat used by some of the largest maternity colonies in the valley.

The results of the project also will guide the department in developing forest management recommendations for private landowners in the Champlain Valley.

A bat conservation and recovery plan for the state's nine bat species is nearly complete. A new informational pamphlet on safely addressing conflicts when bats are found in houses is now available from the department. It is available by calling (802) 241-3700 or on the website: www.vtfishandwildlife.com.

The Vermont Butterfly Survey completed another year with new additions to the list of species known from the state. The **black**

dash, a small skipper fond of wet meadows and marshes, was reported for the first time. Solid evidence was submitted that the **tawny emperor** and the **spicebush swallowtail** occur in Vermont. The tawny emperor is found with hackberry trees, often along rivers. Caterpillars of the spicebush swallowtail feed on its namesake as well as sassafras. Distributional and abundance information was gathered for all butterfly species to help us assess the status of these colorful and

often mysterious insects.

Turtles and Mussels

Wood turtle hatchlings that spent the winter in the care of Steve Parren, Nongame

and Natural Heritage Program

coordinator, were released this spring. The hatchlings were from nests of three wood turtles in Steve's care. Game wardens had confiscated the adult wood turtles from an individual in the spring of 2003.

Steve now is caring for eggs from a nest of a **spiny softshell turtle**. Spiny softshells depend on beaches for their survival. They need undisturbed sand or cobble beaches to lay their nest. These eggs were rescued from a nest found on a state park beach. The eggs were removed to protect them from being inadvertently destroyed by park visitors. Once the eggs hatch, the hatchlings will be released.

The Missisquoi and Winooski rivers were inventoried in 2003 to determine whether the **elktoe mussel**, a rare species, is found in these waters. The work focused on the middle sections of these long rivers where habitat for this species is most likely to occur. No new populations of elktoe were found. However, the Missisquoi yielded six other mussel species, including the endangered **cylindrical papershell**. The Winooski was much less diverse, with only three species found at scattered locations.

These results are much different than previous inventories of these river systems closer to Lake Champlain, where the habitat supports a greater diversity of mussels. Results of this inventory suggests that the Lamoille River's elktoe population may be unique and isolated in Vermont.

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Natural Communities

The statewide inventory of **hardwood swamps** is now complete. A total of 133 swamps were visited. Our thanks go to the landowners who gave us permission to access their land.

Many new state-significant swamps and many new locations of rare plants were identified. The data collected and subsequent analysis have helped refine the natural community classification. The most substantial change was the description of two new swamp types: **Red Maple-Black Ash Seepage Swamp** and **Red Maple-Sphagnum Acidic Basin Swamp**.

Full reports have been sent to planning and conservation organizations. Letters and site reports have been sent to all participating landowners with state-significant swamps. For a copy of the report, contact Eric Sorenson (802-241-4714 or eric.sorenson@anr.state.vt.us). The report is also available in PDF format on the Fish & Wildlife web site: www.vtfishandwildlife.com.

The **Softwood Swamp Inventory** is still in the field work phase. Potential sites have been identified throughout the state. Field work was conducted in 2003 and additional sites will be visited in 2004 and 2005. Amphibian surveys were conducted at select swamps in 2003. Breeding bird surveys were conducted in June 2004 and will continue in June 2005. The project is scheduled for completion in fall 2006.

The mapping of **Montane Spruce-Fir Forest**, the dominant forests over 2,500 feet in Vermont's mountains, is now complete. Field visits will be conducted during 2004 and 2005 to evaluate and rank the significance of

sites and collect quantitative information on habitat conditions. This project should provide useful information in evaluating potential wind farm projects.

Natural community inventorying and project assessments continue on state lands. Inventorying Groton State Forest and associated Wildlife Management Areas (WMA) and State Parks is one of the larger ongoing



projects. Several high-quality **Black Spruce Swamps** associated with Peacham bog at Groton State Forest have been mapped.

Site visits to review timber sales and trails projects on state lands also have been conducted in order to help protect rare plant and animal species. The sites include Bomoseen State Park, Camel's Hump State Park, Elmore State Park, Maquam Bay WMA, and Podunk WMA.

Plants

The 2003 field season resulted in some exciting finds of endangered, threatened and rare plants. A large new population of the state and federally endangered, **northeastern bulrush** was discovered in a beaver influenced wetland in Windsor County. This is only the second known site in Windsor County.

State endangered **Greene's rush** was located on the Wenlock WMA and a new population of state endangered **golden-seal** was reported to our

program by a volunteer.

A new population of the state threatened **low bindweed** was discovered while inventorying for a Threatened and Endangered permit for another listed species nearby. The rare **seneca snakeroot** and uncommon **purple cliff-brake fern** also were found in the same area.

Other plant finds include the very rare **spring cress**, **white-fringed orchid** and **tapering rush**, and the rare **dwarf mistletoe**, **summer sedge**, and **hairy honeysuckle**.

The state's only currently known population of state threatened **northern wild**

comfrey is doing better since an enclosure was built around the plants to prevent browsing by animals. The number of plants has increased, and four plants flowered with two producing fruit. This is the first time the plants have flowered and fruited in over 10 years. Unfortunately, no plants were observed outside the enclosure.

The findings from last field season produced some promising results. The number of osprey, peregrines and loons continued to increase, prompting the proposed delisting of osprey and peregrine from the threatened and endangered species list. It is your support that helps make successes such as these possible. Your generous donations to the Nongame Wildlife Fund, either through your state income tax form, direct donations, purchasing a Conservation license plate, or making a contribution while purchasing a hunting or fishing license, provide the financial resources we need to do our work. Thank you. You are making a difference.

20th Anniversary

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a data manager. The Nongame Program and Natural Heritage Program merged to form one program in 1991 with a total of four full-time positions. Two more positions, a contract natural community ecologist and a state lands ecologist, were later added to the program. The program also utilizes the expertise of many partners, temporary employees and short-term contractors to accomplish needed work.

“Our approach has emphasized mapping Vermont’s natural communities

and providing the information we gather to state and federal

agencies, conservation organizations, landowners, town planners, and developers,” explained Everett Marshall, department biologist and heritage program data manager. “We discovered a lot about Vermont’s flora while conducting the natural community inventories. And, by helping others identify sensitive species and habitats early in the planning process, conflicts are avoided, saving time and money.”

Since 1989, Vermont’s outstanding natural community occurrences have been inventoried for specific geographic areas including Franklin, Chittenden, Addison, Rutland, Caledonia, and Grand Isle Counties, West River and Memphremagog watersheds, Green Mountain National Forest, Army Corps of Engineers dam sites, and the Appalachian Trail of the National Park Service.

The heritage program also has conducted statewide inventories of natural community types. Completed statewide inventories include calcareous open fens, riverside seeps,

valley clayplain forests, northern white cedar swamps, floodplain forests along Vermont’s major rivers and Lake Champlain, red maple swamps, and lake cedar bluffs. Inventory reports are available from the department by calling Lilla Lumbra at (802) 241-1454 or email: lil.lumbra@anr.state.vt.us.

Natural community base mapping for all the natural community types on state-owned forests, parks and wildlife management areas was initiated in 2001. These maps are used to develop long-range management plans for state lands. More than one-third of all state lands are inventoried and mapped. Timber sales and recreational development on wildlife

management areas are planned to avoid impacting sensitive rare species and

natural communities. Before 2001, land managers had little guidance on how to avoid impacting the quality of these communities.

Over the past twenty years, the heritage program has significantly contributed to the conservation and protection of Vermont’s rare animals and plants and natural communities. The field studies and data collection provide the best-available information for determining if a species should be listed or delisted. The information also assists in developing recovery plans for Vermont’s rarest species. Today, Vermont’s Heritage Program is the centralized source of information



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for others to use when addressing rare, threatened and endangered species, and natural communities.

Come Celebrate Wildlife...

Dead Creek Wildlife Day

Saturday, October 2, 2004 - 9:30 a.m. to 4:30 p.m.

Dead Creek Wildlife Management Area, Addison, Vermont

For more information call

(802) 241-3700 or visit our web site www.vtfishandwildlife.com



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Please donate to the Nongame Wildlife Fund on your Vermont income tax form. Look for the loon icon.

Bicknell's of East Mountain

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that usually have no easy access. The birds are secretive and stay hidden, making them hard to observe. And they prefer a habitat dense with undergrowth on steep rugged slopes.”

VINS research staff and department biologists are spending the next few weeks mist-netting and banding Bicknell's thrush and other species on East Mountain. Female Bicknell's are fitted with transmitters and the males are banded. Biologists use the transmitters to help locate the birds' nests, track daily movements and document territories. Biologists also search for nests of Bicknell's and other species in the study area. A combination of field methods also are used to census the number of Bicknell's and other species at the project site.

Bicknell's were first considered a subspecies of the Gray-cheeked

thrush. In 1995, they were given full species status. They are the size of a large sparrow, with an olive-brown back, buffy throat and gray-to-white underparts. Their chin and flanks are spotted with blackish spots. There are approximately 50,000 Bicknell's thrushes worldwide, compared with populations in the millions for most songbirds. Vermont is home to perhaps 4,000 Bicknell's based on available habitat.

Their breeding range extends from New York's Catskills to the lower north shore of the Gulf of St. Lawrence and east to Nova Scotia. Their habitat is primarily montane forests, dominated by stunted balsam fir and red spruce.

“In Vermont, they're found in the mountain-tops of the Green Mountains and Northern Highlands,” said Rimmer. “They have a fragmented habitat throughout their range because they nest in these sky-islands.”

Tom, Zach and Dan are camping on top of East Mountain until the end of the first year's study period, which is July 30. Their day begins around 4:30 a.m. and ends after 10:00 p.m.

“We open the mist nets when the birds are most active,” explained Zach. “That means opening them from dawn to mid-morning and then again in the late afternoon until dusk. We check the nets for birds every 30 to 40 minutes when they are open.”

Bands are placed on all Bicknell's captured as well as black-poll warblers, yellow-rumped warblers and Swainson's thrushes. The birds are aged, sexed, weighed, measured, and checked for parasites and body fat before being released.

“It is a very long day and we don't get much sleep, but the work is great and we've captured some pretty cool birds, like a black-backed woodpecker and yellow-bellied flycatcher,” stated Tom.