

# NATURAL HERITAGE HARMONIES



WINTER 2008

A publication of the Nongame and Natural Heritage Program

Vermont Fish & Wildlife Department  
Agency of Natural Resources

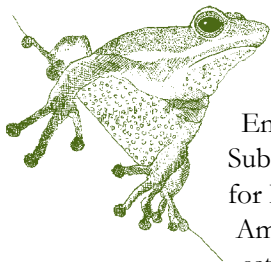
*Conserving Vermont's fish, wildlife, and plants and their habitats for the people of Vermont.*

## Vermont Herp Atlas

When you think about Vermont, it is unlikely you will be thinking about reptiles and amphibians, or “herps.” Although Vermont is home to 19 reptiles and 21 amphibians, the state never attracted as much interest among herpetologists (individuals who study reptiles and amphibians) as the more southern states did.

The first listing for reptiles and amphibians appeared in Zadock Thompson's *Natural History of Vermont* in 1853. It was 127 years later before the next attempt to consolidate information about Vermont's herps was published in Charles Johnson's *The*

*Nature of Vermont* in 1980.



In 1983, the Endangered Species Subcommittee for Reptiles and Amphibians was established. This

committee, subsequently called the Reptile and Amphibian Scientific Advisory Group, recognized the need

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## Fledged But Not Forgotten



**Anthony Vero photographed this immature eagle in August 2007. Its leg band identified it as one of the eagles released from the Dead Creek WMA in 2005.**

The summer of 2007 marked the final year of the Vermont Bald Eagle Restoration Initiative, a project to accelerate the establishment of breeding bald eagles in the Lake Champlain Basin. A total of 29 eaglets from a variety of wild and captive sources in Maryland, Maine, New York, and Massachusetts were cared for and released from a hack site at the Dead Creek Wildlife Management Area (WMA) in Addison during the spring and summers of 2004 through 2006.

We expected approximately 50% mortality in the first year after the fledglings were released. Of the 29 fledged, four eagles have been recovered dead. However, sightings of the eagles fledged from the Dead Creek hack site have kept the hope alive that we will soon have a breeding

population of eagles in the Champlain Valley. If all goes well, our goal will likely be met in the next year or two. We expect the birds that we released in 2004 to be mature enough to begin establishing breeding territories in 2008 at the earliest.

So where are our eagles? Here is an update on sightings:

**August 2007:** Anthony Vero sighted an eagle along the Poultney River near the Narrows WMA in West Haven. It sported two leg bands, one of which was a black 5Z. This was one of our wild orphans from Maryland released in 2005.

**October 2007:** Ted Murin spotted an eagle perched on a snag about one-half mile west of the headquarters building at the Dead Creek WMA.

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# DIVISION UPDATE

## Conservation is all about Relationships!

A few years ago, I was contacted by a landowner in Highgate who had found himself in an unfortunate situation. He had purchased a piece of property that had restrictions which were not disclosed prior to the transfer of the property. The new landowner began harvesting timber from the property only to find that he was, albeit unintentionally, violating the conditions of a land use permit. Suddenly, he was embroiled in an enforcement action with the state.

The property supports deer winter habitat, a lovely marsh where great blue herons, bitterns and waterfowl nest and feed, the headwaters of the Rock River—this is where it literally bubbles out of the ground—and convoluted ledge habitat where bobcats den and find refuge. It is a remarkable place that supports high quality, diverse habitats and some great deer hunting.

The landowner recognized these attributes and had every intention of caring for them. In the end, by working cooperatively with this person, we helped him resolve the violation, realize his timber interests, some minor residential development near the roadway, and the permanent conservation of 110 acres of habitat. This was a great conservation success story that was accomplished by building a relationship of trust and goodwill between the department and the landowner.

We all have many stories like this that stem from our daily efforts as conservation professionals in Vermont. Many of our wildlife management areas are a result of building good personal relationships with landowners. It is because of the relationships with landowners, hunting and fishing organizations, trappers, loggers, conservation organizations and many others that we are successful in representing the public's interests in fish and wildlife conservation in this state. Successful conservation is tied inextricably to good relationships between the hardworking professionals of the department and these other interests.

As the department continues to press forward with implementing the Wildlife Action Plan, endangered species recovery, big game planning, state lands management, and many other important initiatives, success will depend on maintaining and building strong relationships with landowners and organizations that will help us all realize a bright conservation future.

*John M. Austin, Director of Wildlife*



## What's New?

This was a red-letter year for bryophyte research in Vermont! The addition of seven new mosses and two new liverworts to our list, brings our total number of bryophytes occurring in Vermont to 612. Plus the rediscovery of ten species that were known only prior to 1950 makes this an exceptional year for these little-studied plants. The Nongame and Natural Heritage Program now tracks 313 species that are considered to be rare or of uncertain status in the state. The complete list can be found on the new Vermont Bryophyte website at <http://dorothy.allard.googlepages.com/vtbryolist>.

Curious about who calls Vermont home? Check out our website for a complete listing of species, including taxonomy and conservation rankings.

Our website [www.vtfishandwildlife.com/wildlife\\_nongame.cfm](http://www.vtfishandwildlife.com/wildlife_nongame.cfm) includes:

- Vertebrate Animals of Vermont
- Birds of Vermont
- Fishes of Vermont
- Mammals of Vermont
- Reptiles and Amphibians of Vermont
- Rare and Uncommon Animals of Vermont
- Endangered and Threatened Animals of Vermont

At this point we do not have a complete list of invertebrate animals, so invertebrates are only found on the 'rare and uncommon' and 'endangered and threatened' lists. The plant lists also have not been recently revised

but watch for new lists with revised conservation ranks in the coming year. We also expect some name changes for amphibians in a few months so stay tuned.



## Vermont Herp Atlas *continued from page 1*

for a more complete picture of herp distribution in Vermont. It spearheaded the compiling and publishing of the *Preliminary Atlas of Reptiles and Amphibians of Vermont* in 1995.

The goal of the atlas was to provide information about state-wide distribution of individual species based on already collected data, and to serve as a tool motivating others to gather new records by identifying gaps in this knowledge.

Producing the *Preliminary Atlas* required data be gathered, evaluated and entered into a database for producing maps and accompanying documents. Jim Andrews, a research herpetologist at Middlebury College, was contracted to do this task and is still coordinating it today.

Updated maps were produced in 1998, primarily to help direct field efforts toward those species and areas of the state where data was missing. New maps were created and made available on the Vermont Reptile and Amphibian Atlas website (<http://community.middlebury.edu/~herpatlas>) in the fall of 2000. A printed version of the atlas was published in 2001. Maps were updated again in 2005 and are currently available digitally on the website.

The Vermont herp database has grown to over 60,000 records of local reptiles and amphibians and is a valuable source of Vermont herpetological data. This was made possible thanks

to increased survey efforts by a variety of contributors. Contributors include school kids and retirees, novices and professional herpetologists. Over 3,000 individuals, fifteen private organizations, and many government employees and agencies have provided records.

“The atlas is not designed to impress people with how much we know about the distribution of Vermont herps, but rather with how little we know,” explained Andrews. “We have large gaps in our knowledge

of the distribution of many species within Vermont and appreciate any assistance we can get in closing those gaps.”

“Besides, all records eventually

become historic and newer sightings are needed to keep the database up to date,” added Andrews. “Any resident or visitor can contribute valuable distribution information simply by reporting what they saw, when they saw it, and where it was.”

Reports can be forwarded to the atlas by mail, phone, or by using the online reporting system at the atlas website: <http://community.middlebury.edu/~herpatlas/index.html>.

The database resides at Middlebury College and annual updates are transferred to Vermont Fish & Wildlife’s Nongame and Natural Heritage Program.

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## New Herp Posters

Vermont amphibian posters are now available! The two posters include descriptions and photos of all Frog and Salamander species native to Vermont along with the most recent distribution maps. These posters reflect the most reliable and current information available on Vermont amphibians, and complete the set of four posters of all of Vermont’s herptiles.

Each color poster is approximately 23” by 16” and is printed on durable, glossy, heavyweight paper with non-fading inks. The cost is \$10.00, plus \$3.00 postage. All profits help support the Vermont Reptile and Amphibian Atlas.

Get yours today by visiting the Reptile and Amphibian Atlas website <http://community.middlebury.edu/~herpatlas>, emailing [jandrews@middlebury.edu](mailto:jandrews@middlebury.edu), or calling 802-443-5648.



# Tips, Luck, and Good Detective Work: Finding Historic Plant Populations

By Bob Popp

Sometimes it's reassuring knowing that some things stay the same despite the passage of time. Finding historic populations of rare plant species years after they were first discovered (also known as relocating) is an activity of the Vermont Fish & Wildlife Department's Heritage Program that reinforces this feeling.

Historic populations are loosely defined as those species that have not been observed in at least 25 years, and relocating these populations can be challenging. It often involves detective work in deciphering directions on old herbarium labels, or venturing out with only vague descriptions of where to look for these "hidden populations."

But we have successfully found several species, including a population of the state-threatened, Virginia chain fern that was last observed in 1933 "growing between two cliffs west of Rutland." We were also able to relocate the rare, smooth Woodsia from Franklin County based on an 1889 record, and the state-threatened Hooker's orchis from Caledonia County from a 1985 record.

Tips from the public have pointed us in the right direction, as in the case of a population of the state-threatened, ram's head lady's-slipper that was last observed in the 1940s. Chance phone conversations and an email from two separate individuals helped us to narrow this search to a corner of Caledonia County.

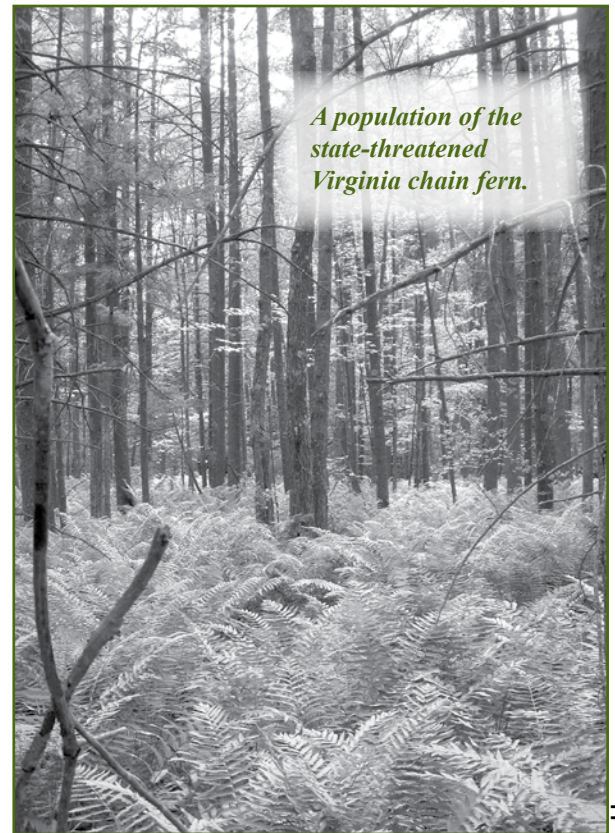
Other times fellow botanists help by leading us to a site. This was how a 1971 record for wild senna, the only population currently known from the state, was relocated. Or someone passes along label information on old herbarium specimens. This latter source led to our relocating populations of two state-endangered species: boreal bentgrass and

Buxbaum's sedge and four populations of rare plants: hyssop-leaved fleabane, purple mountain saxifrage, Scirpus-like sedge, and smooth Woodsia.

Sometimes it requires persistence in determining land ownership, tracking down the owners and obtaining permission to look for the population. Such was the case when we relocated a huge population of the state-endangered white-flowered leafcup from a 1982 record.

Unfortunately, such searches are not always successful.

This summer, members of the Scientific Advisory Group on Flora members visited all seven known sites for the state-threatened fairy slipper orchid. We were unable to locate any individuals of this very rare and elusive member of our flora. But



*A population of the state-threatened Virginia chain fern.*

Bob Popp

knowing full well that many orchids don't flower or even arise above ground every year, we are determined to continue the search this next field season and hope to have positive news in the future. 🍄

## Volunteer Spotlight

By Lilla Lumbra

Ripton resident, Warren King, is quickly becoming an expert on finding where Jacob's ladder grows in his corner of the state. Warren began searching for populations of this rare plant three years ago, when he became a Plant Conservation Volunteer for the New England Wildflower Society (NEWFS).

After receiving NEWFS training, Warren was assigned the task of revisiting sites around Lincoln and Ripton to determine if populations of Jacob's ladder still occurred. The sites he visited were based on historic records dating back to the 1980s.

Soon, Warren began branching out and discovering new sites occupied by

Jacob's ladder. He observed that the plant was sometimes associated with seeps. But seeps are often small and not mapped.

"I began pouring over USGS topo maps to help narrow my search. I found a hillside that had a break in the topo lines and thought it might be a good spot for a seep," explained Warren. "I hiked to the area and was rewarded by finding the largest known population of Jacob's ladder in the state."

But not all of his ventures are successful. This past summer, Warren and Marc Lapin of Middlebury College searched Salisbury Swamp

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# Dying Bats Worry Biologists

Hibernating bats in New York, Vermont and Massachusetts are falling victim to a new disease of unknown origin, known as white-nose syndrome. Last year, some 8,000 to 11,000 bats died at several locations in New York, the largest die-off of bats due to disease documented in North America. This year, an unknown number of bats are at risk.

A white substance found on the bats' noses has been identified as a fungus and is believed to be associated with the disease, but not necessarily the actual cause of death. The dead bats are emaciated, as though starving and autopsies show lung congestion.

In Vermont, the disease has been documented in Morris Cave in Danby and Aeolus Cave in Dorset. Disease bats also were found in a Massachusetts cave recently. Little brown bats are sustaining the largest number of deaths, but northern long-eared, eastern pipistrelle and the endangered Indiana bats are also dying.

“Our primary concern is to limit the disease from spreading further to other caves and mines that have larger numbers of hibernating bats,” said Certified Wildlife Biologist Scott Darling.

Bat populations are particularly vulnerable during hibernation as they congregate in large numbers in isolated caves, making them susceptible to disturbance or disease. Because these bats then migrate as far as hundreds of miles to their summer range, impacts to hibernating bats can have significant implications for bats throughout the Northeast.

“We do not know how the disease is transmitted and whether there are any potential effects on humans,” adds Darling. “We are asking all outdoor recreationists to avoid entering caves or mines, at least until experts have a better understanding of the disease.”

## Our Partners in 2007

*The Vermont Fish & Wildlife Department's Nongame and Natural Heritage Program works cooperatively with many individuals, groups, companies, organizations, and agencies.*

### Agencies:

Green Mountain National Forest  
 Missisquoi National Wildlife Refuge  
 Silvio O. Conte National Fish & Wildlife Refuge  
 Société de la faune et des parcs du Québec  
 U.S. Environmental Protection Agency  
 U.S. Fish & Wildlife Service (Lake Champlain Office and N.H. Endangered Species Office)  
 U.S.D.A. Wildlife Services  
 U.S.D.A. Natural Resource Conservation Service  
 U.S.G.S., VT Cooperative Fish & Wildlife Research Unit  
 Vermont Agency of Transportation  
 Vermont Department of Environmental Conservation  
 Vermont Department of Forests, Parks & Recreation  
 Vermont Military Department

### Contractors, Collaborators and Volunteers:

Robert Abell	Julie Lundgren
Dorothy Allard	Kent MacFarland
Jim Andrews	Bruce MacPherson
Chris Beebe	Neal Martorelli
David Beebe	Ted Murin
Joules Dybicki	Nathan Masse
Brett Engstrom	Tim Masse
Steve Faccio	Ethan Nedeau
Doug Facey	Jared Nunery
Margaret Fowle	Christine O'Brien
Patrick Galois	Kristian Omland
Eric Hanson	Michele Patenaude
Lisa Jablow	Bryan Pfeiffer
Mark LaBarr	Reenie Rice
Marc Lapin	Chris Rimmer
Wendy LaValley	Nat Shambaugh
Eric Lazarus	Tina Scharf
Martin Léveillé	Steve Smith
Michael Lew-Smith	Jean Stefanik

### Organizations:

Audubon Vermont  
 Central Vermont Public Service  
 ECHO – Leahy Center of Lake Champlain  
 Green Mountain Audubon Society  
 Green Mountain Power  
 Hinesburg Land Trust  
 Invasive Exotic Plant Committee  
 Invasive Plant Atlas of New England  
 Keeping Track, Inc.  
 Lake Champlain Land Trust  
 Linking Lands Alliance  
 National Wildlife Federation  
 NatureServe  
 New England Plant Conservation Program Volunteers  
 New England Wildflower Society  
 North American Pollinator Protection Campaign  
 Outreach for Earth Stewardship  
 SmartGrowth Vermont  
 The Nature Conservancy of Vermont  
 Town Forest Project  
 University of Vermont  
 Vermont Caver's Association  
 Vermont Coverts  
 Vermont Electric Power Company  
 Vermont Endangered Species Committee (ESC)  
 Vermont Entomological Society  
 Vermont ESC Scientific Advisory Groups  
 Vermont Family Forest  
 Vermont Institute of Natural Science  
 Vermont Land Trust  
 Vermont Natural Resources Council  
 Winooski Valley Park District

Erin Talmage  
 Elizabeth Thompson  
 William Wright  
 Jane Yagoda  
 Jon Zurit



Bat biologists from throughout the Northeast are evaluating strategies to monitor the presence of the disease and the need to collect specimens for laboratory analyses.

Darling is hopeful that the efforts this winter will yield answers to the many questions facing bat biologists. ➔



*Bats showing the signs of a new deadly disease known as white-nose syndrome*

AL HICKS, NYDEC

## Jacob's Ladder

By Warren King

Eastern or Appalachian Jacob's Ladder (*Polemonium van-bruntiae*) is a rare and very locally distributed flowering plant in Vermont. It occurs in five other states and a Canadian province, and is threatened or endangered in all of them.

It is at home in a variety of sites, all of them wet. Wooded seeps, white cedar swamps, sedge meadows, wet pastures, and roadside ditches are among sites currently occupied. Jacob's Ladder is largely restricted to four towns in Addison County. It is most abundant in Lincoln and Ripton, where it is known from a number of populations or subpopulations, some robust and some weak enough to cast doubt on their persistence.

Jacob's Ladder flowers readily in sunny locations with multiple slender three-foot tall flowering stems topped by a small cluster of attractive sky blue flowers. Shady spots usually support only vegetative plants, characterized by attractive deep green ladder-like compound leaves with small opposite leaflets. One or more Jacob's Ladder species have made their way into ornamental flower gardens.

Why Jacob's Ladder is restricted to just a few locations is not known. It produces flowers and fruits readily and is distributed by wind or water. An experimental population established by the Forest Service on the Green Mountain National Forest is thriving.

A problem in assessing if the Vermont population is increasing, stable, or decreasing is the difficulty of counting the number of individual plants. Plants clone readily. Vegetative parts of adjacent plants are often intertwined and impossible to count without damaging them. Favored plants can produce a half dozen or more flowering stems; counting stems indicates plant vigor but is not a good measure of the number of plants.

Large new subpopulations discovered in the last two years have added appreciably to the total numbers of plants known. Additional subpopulations will surely be found. But the mystery of why this plant has such a limited distribution has not yet been solved.

## Burrowing Redpoll

By Steve Parren

January 2nd was cold and snow light and fluffy. I started shoveling my long driveway before my family awoke. At about 8:30 AM my morning chores were almost done, and I walked out to my bird feeders with seed containers and broom. I got within eight feet of the thistle feeder when I noticed the hungry Common Redpolls were not interested in leaving due to my interruption.

I froze with several sets of eyes bearing down on me. With broom in one hand I stayed put and began to lightly brush away the six-inch snow cliff surrounding the heated birdbath at ground level. After a few strokes a redpoll burst from beneath the snow and flew to a nearby tree. The little guy had likely been snoozing in a snow burrow beside the birdbath.

I imagined this cozy cranny to be a northern finch sauna compared to the two degrees F air temperature.

## Volunteer *continued from page 3*

for evidence of Jacob's ladder and came up empty. Salisbury Swamp is one mile long by one-half mile wide, with limited access. NEWFS provided the information on where to look for the plant based on a 1980s record, and did the leg work to find a willing landowner to allow access to the swamp.

"We located the road described in the record, despite it being seriously overgrown, but found no evidence of Jacob's ladder," explained Warren. "The trip was still rewarding. It was the first botanical look at this swamp in over twenty years."

"The detective work, figuring out how to focus the search, makes it interesting," added Warren. "And finding the plant is very gratifying. It's what keeps me going. I'm already

I was quite pleased with this encounter and my day was a bit brighter as a result. I am now careful not to tamp down the snow around the birdbath after a newly fallen snow. 🐦

## Backyard Wildlife Tip: Keep Your Water Wet

Unfrozen water is difficult to find during the winter. You may see birds dropping into your rain gutters to drink sun-melted water. If you provide water during the winter, wildlife will use it. Change your water often so that the birdbath has water, not ice. Freezing water can crack birdbaths and you might want to switch to an inexpensive pan for the winter. Another option is an electric birdbath heater. The heater turns itself off once the water is warmed or if the bath is dry, which conserves energy.

looking forward to next season. I have six to eight new sites in mind to explore."

Warren doesn't limit his volunteer efforts to plants. He and his wife Barry have been active participants in the Vermont Institute of Natural Science forest bird monitoring program and Audubon Vermont's marsh bird monitoring program for over ten years. Warren has spent 20 years on the board of Otter Creek Audubon, and is a key organizer of Dead Creek Wildlife Day, held every October at the Dead Creek Wildlife Management Area.

Conservation efforts in this state are greatly enhanced thanks to committed volunteers like Warren King. He is proof that if we all give a little, we can do a lot. 🐦

## Fledged But Not Forgotten *continued from page 1*

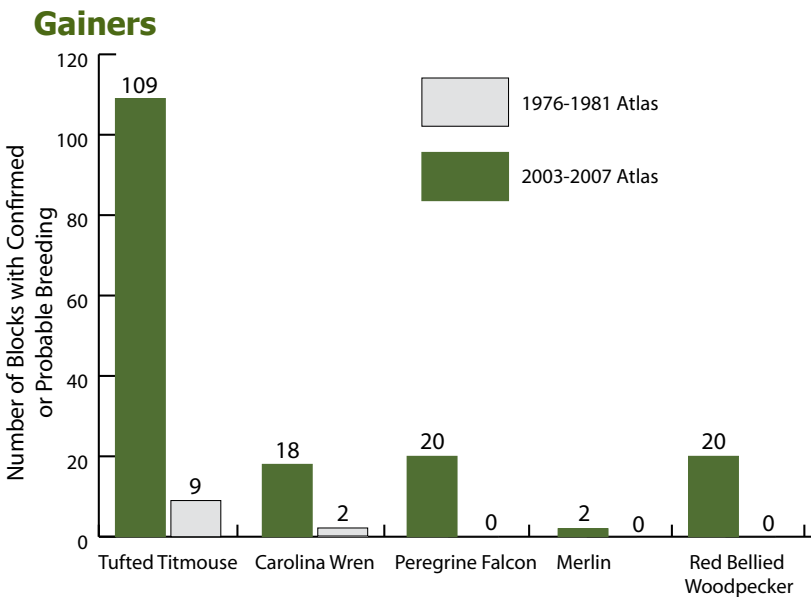
Its band read 7D. This eagle came from Maine and fledged from the Dead Creek WMA hack site in 2004.

**January 2008:** Pete Nye of NY DEC reported three eagles were in Forestburgh, N.Y., an area just a few miles southwest of Monticello, N.Y. in Sullivan County. All three were collected as eaglets from wild nests in Maryland and brought to Vermont to be reared and released. One (7K) fledged in 2005, and the other two (6Y and 6H) fledged in 2006.

Approximately 50 volunteers helped feed and monitor the eaglets during each hacking season, which lasted from early May to late September. Over 4,600 hours of volunteer time were donated to eagle care. The project continued through the summer of 2007, with a primary focus on eagle monitoring and education. ➔

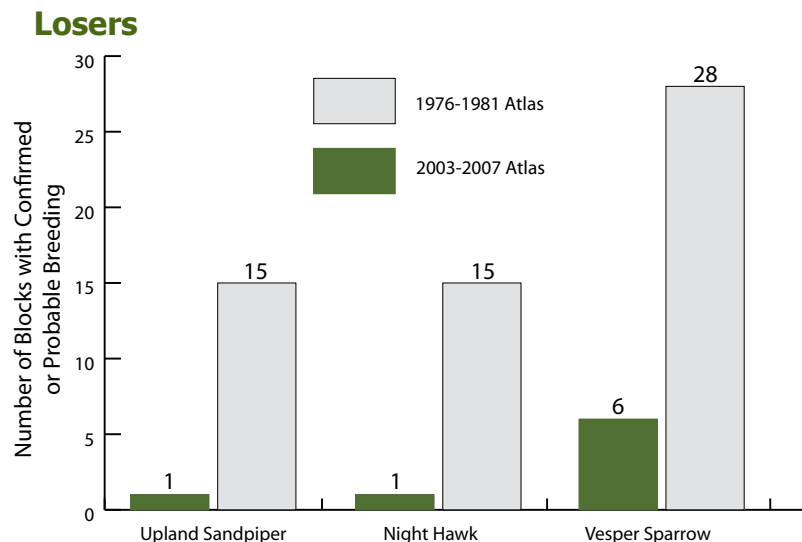
## Vermont Breeding Bird Atlas Results

The Vermont Breeding Bird Atlas was successfully completed in 2007, with a fifth year of field data collection. A total of 200 species was documented during the second Vermont Breeding Bird Atlas, with 180 species confirmed. Fourteen species confirmed in the first atlas were not confirmed in this atlas. However, seventeen species not found breeding in the first atlas were confirmed during the second atlas.



Two of these species, the peregrine falcon and osprey, have recovered through management efforts and were confirmed in multiple blocks.

Here's how a few species compared from the first atlas to the second.



## Plant Conservation Volunteers

The Plant Conservation Volunteers (PCVs) is a program initiated by the New England Plant Conservation Program (NEPCoP) in the late 1990s. NEPCoP is a voluntary alliance of organizations and individuals committed to protecting the native flora of our region. It is administered by the New England Wildflower Society (NEWFS).

PCVs program's mission is to involve interested citizens in activities that promote the conservation of New England's native flora and habitats with a special emphasis on rare species protection. The program became active in every New England state by 2001.

Volunteers monitor rare plants, helping to gain a more current assessment of the status of rare species in New England. NEWFS staff and the state botanist decide which rare plant populations volunteers will monitor. Where PCVs find threats or population declines, the information is used to help determine the best protection strategies.

PCVs are also involved in invasive plant surveys and control projects, habitat management to benefit rare species populations, and general botanical inventories.

To learn more about the PCV program visit: [www.newfs.org/volunteers/conservation-volunteers.html](http://www.newfs.org/volunteers/conservation-volunteers.html)



### Agency of Natural Resources

George Crombie	Agency Secretary
Wayne Laroche	Fish & Wildlife Commissioner
Thomas Decker	Chief of Operations

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**Your Support Makes a Difference!**

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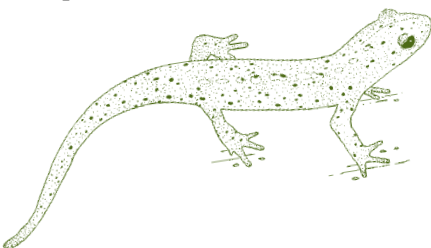
## Vermont Herp Atlas

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The Nongame Wildlife Fund provides financial support for the atlas.

Funding for the atlas project also comes from the sale of atlases and posters. Turtle and snake posters were introduced in 2006 and two new posters featuring salamanders and frogs are now available.

Reptiles and amphibians in Vermont may not have generated much interest early on, but the herp atlas has helped change that by educating Vermonters about the identification, natural history and conservation of Vermont's herps, and involving them in gathering new natural history data on all aspects of herptile life in Vermont. 🐸



**Having "people" at tax time is good, but...**



### HAVING WILDLIFE IS BETTER.

Common loons are more common thanks to donations to the Nongame Wildlife Fund. When you contribute to the Nongame Wildlife Fund on your Vermont income tax you are helping protect and restore Vermont's threatened and endangered wildlife, like bald eagles and black terns.



Look for the loon on line 29A of your Vermont income tax return and please remember to donate.

