



Wildlines

SUMMER 2011

New Hampshire Fish and Game's quarterly newsletter of the Nongame and Endangered Wildlife Program

Wind Farms and Wildlife

As road construction began this past winter for the development of 33 wind turbines along ridgelines in Millsfield and Dixville, N.H., an area that is home to state-threatened American pine martens, a new study was already underway to look at the impact of wind farms on wildlife. Throughout their range, American marten (*Martes americana*) are winter specialists, requiring mature spruce-fir forests. In New Hampshire, the majority of these forest types occur above 2,700 feet in elevation. Because of their location on windy ridge tops, these habitats are among the most likely

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A California wind farm dominates the landscape.



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New Hampshire Fish and Game
Department

Glenn Normandeau
Executive Director

Wildlines

John Kanter, Nongame and
Endangered Wildlife Program
Coordinator

Allison Briggaman, Writer-Editor
Victor Young, Graphic Design
Jane Vachon, Copy Editor
Rita Boisvert, Data Manager



603-271-2461
www.WildNH.com



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White Nose Syndrome Devastates Bat Populations

Biologists seek summer bat sightings



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Sadly, the winter of 2011 brought more bad news for bats in New Hampshire. Since 2009, when the deadly fungus called White Nose Syndrome (WNS) was first discovered in the state, four of the five largest hibernacula in the state have experienced a 99.5% decrease in the total number of hibernating bats.

In 2009, the combined total for these four mines was 3,230 bats; this year, the same four mines housed only 16 bats total, with one mine completely empty, and several of the bats showing visible signs of WNS. The bats present included one northern long-eared bat, one tricolored bat and 14 little brown bats. An additional 10 bats were also found dead.

On a more positive note, this winter was the second consecutive year that bats were found hibernating in World War II bunkers on state-owned lands. A total of 114 bats were documented this year, which is up from 77 that were counted in 2010. The best news of all was that none of these bats appeared to be affected by White Nose Syndrome.

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A healthy big brown bat hibernates in an old World War II bunker at a New Hampshire state park.

Endangered Species Recovery Champions

Nongame Program wildlife biologists Heidi Holman and Lindsay Webb of the N.H. Fish and Game Department and Steve Fuller, formerly of Fish and Game, received the 2010 Recovery Champion award from the U.S. Fish and Wildlife Service for their work in restoring Karner blue butterflies and their habitat.



Left to right: Heidi Holman, Fish and Game Director Glenn Normandeau, Steve Fuller and Lindsay Webb.

“Recovery Champions are leaders in the conservation of endangered and threatened species of plants and animals across the United States and beyond its borders,” said Acting U.S. Fish and Wildlife Director Rowan Gould. “It is a true measure of a commitment to protect our nation’s biological heritage for future generations by working to recover our

imperiled species of fish and wildlife and plants and the ecosystems on which they depend.”

Holman, Webb and Fuller brought the endangered Karner blue butterfly in New Hampshire from the point of extirpation to its present status as restored in the wild and numbering in the hundreds to low thousands.



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American marten are the focus of a research project being conducted by UNH to study impacts of wind tower development in New Hampshire.

to be developed for wind energy. Despite the growing interest in wind power in the Northeast, there have not been any studies documenting the effects of wind farm development on species such as American pine marten that depend on high-elevation habitats. That is why the Nongame and Endangered Wildlife Program has contracted with the University of New Hampshire (UNH) to conduct pre-construction and post-construction research and track the response of the local American

marten population. The study is partially funded by the wind developer, Granite Reliable Power, as mitigation for potential wildlife impact.

As part of the research, marten were live-trapped last fall, radio-collared and marked with small ear tags. Over the winter, trail cameras were set up and baited with sardines or scent lures to attract marten, allowing researchers to document their presence within the study area. This spring and summer, radio-collared marten are being tracked on a regular basis with traditional ground telemetry to measure seasonal home range size and habitat use. “From our winter field season, we were able to get home ranges for six marten by using the trail cameras and bait,” said Alexej Siren, a graduate student at the University of New Hampshire. “This summer we will continue to gather locations of our collared marten to analyze summer home ranges, and live trap more individuals to determine population size and distribution.”

By conducting the surveys both before and after the wind tower construction, biologists will be able to look at direct impacts to American marten and other wildlife species such as Bicknell’s thrush, a species in greatest need of conservation, according to the N.H. Wildlife Action Plan. In particular, the study will generate information on whether or not pine marten

alter their habitat use in response to the development of wind turbines. Other issues, including the impact of direct habitat loss, habitat fragmentation and disruption of movement, can also be assessed. Together, the Nongame Program and UNH will produce information that may be used to address potential impacts on wildlife from future wind farm development projects in high-elevation habitat. Ideally, study results will be incorporated into future design and location of such facilities.

A final report with conclusions about the effects of the wind tower development on American martens, recommendations for future siting of wind facilities and future research needs is expected to be completed by June 2013.



NH Wildlife Sightings Website Correction

In the Spring 2011 *Wildlines* the web address for the NH Wildlife Sightings website was misprinted. To report your observations of wildlife in New Hampshire, including any reptiles or amphibians, please visit NH Wildlife Sightings online at <http://nhwildlifesightings.unh.edu>

Rare. Fragile. At Risk.

New Hampshire's White Mountain alpine butterflies are in trouble!

by Kristan Patneau, Green Mountain College in Poultney, Vermont

On calm, sunny days, visitors to the White Mountains might be lucky enough to catch a quick glimpse of a rare sight among the rocks. Dull-gray colored White Mountain Arctic butterflies blend in with the lichen-covered rocks they perch on, while bright-orange White Mountain fritillary butterflies fly along wet outcroppings or snowbanks.

At first glance, these butterflies seem ordinary, until one considers that the elevation is over 4,000 feet and the tree-line has all but disappeared from sight. Even more remarkable is that the home of these delicate-winged creatures lies in one of the most inhospitable and unpredictable habitats in the Northeast.

The White Mountain Arctic and the fritillary are two subspecies of butterfly that have become isolated within the alpine zone of the Presidential Range. The White Mountain Arctic lives above 4,921 feet of

elevation in sedge meadows characterized by their host plant, Bigelow's sedge. These butterflies are only active from late June to late July.

Information on the White Mountain fritillary is sparse; however it is known that these butterflies prefer wet meadows or snowbank communities in the alpine zone above 4,000 feet of elevation. No host plant has yet been identified, but caterpillars of species similar to the fritillary tend to feed on dwarf willows, alpine smartweed and violets. Fritillary adults are active from mid-July to mid-September. Both species require two years for full development, but it is unknown how they survive overwintering on these mountains.

Suitable habitat for these rare butterflies depends on ground temperature, moisture and winter snow cover. Global climate change is altering the unique characteristics of alpine habitats. Warming tempera-



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Top: *White Mountain Arctic butterfly*
Above: *White Mountain fritillary*.

tures at these high elevations can allow a northward shift in forest species, plants and animals included. Species that occurred at lower elevations may move uphill and compete with, or even displace, alpine specialist species such as White Mountain Arctic and fritillary butterflies. No one knows how much future warming might affect these rare butterflies. Additional research is urgently needed in order to understand just how rare these species are and to protect them before it is too late.

Fast Facts: Spotted Salamander

Status: Common throughout New Hampshire.

Physical description: Adults are 4.5-7.5 inches long, from head to tail. They have dark-colored black or bluish-black bodies,



© NHFG / VICTOR YOUNG PHOTO

Spotted Salamander
(*Ambystoma maculatum*)

with round yellow spots arranged down the back and sides.

Habitat: Eggs are laid in vernal pools, where the larvae hatch and spend the first 45 days of life. Adults disperse from the vernal pools and spend their time underground or under logs, boards or stones in mixed woodlands with swamps or slow-moving streams, and hibernate in the ground or under rotting stumps.

Range: Ontario east to Nova Scotia and south to Georgia and Texas.

Diet: Larvae eat zooplankton and insect larvae. Adults feed on worms, insects and underground snails.

Threats: Loss of vernal pools for breeding and mortality from crossing roads during migratory seasons.

Lifespan: May live up to 20-30 years.

Fun fact: Spotted salamanders may be seen on warm spring nights as they travel from upland habitats to breeding pools and lay jelly masses containing 100-200 eggs.

How You Can Help

- Donate to conservation organizations, such as N.H. Fish and Game's Nongame and Endangered Wildlife Program, to help fund much-needed research.
- Stay on established trails while in the White Mountains.
- Ask your elected officials to support funding for endangered alpine butterfly research.
- Inform others that these butterflies exist and encourage them to help, too.
- If you spot one of these butterflies, report it to the N.H. Wildlife Sightings website:
<http://nhwildlifesightings.unh.edu>

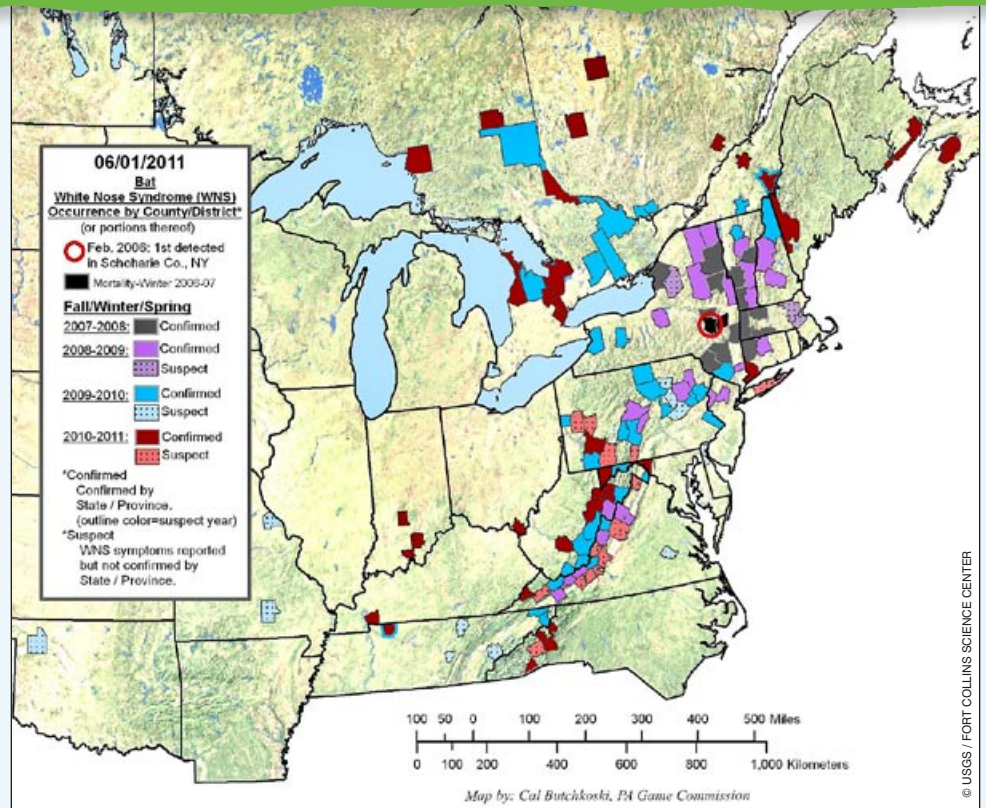
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“Since these bunkers may serve as refuges from WNS for bats, other states will be searching their bunkers, too. We are also seeking ways to entice more bats to use bunkers,” said Nongame and Endangered Wildlife Program biologist Emily Brunkhurst.

Five of the eight bat species found in New Hampshire are affected by WNS, including the state-endangered small-footed bat. “Because females produce just one or two pups a year, the rapid loss of such a large number of bats translates into a crisis in bat populations,” Brunkhurst explained.

Over 1 million bats have died from White Nose Syndrome since it was first found in New York state in 2006. The deadly fungus now extends from Ontario down to North Carolina and from Oklahoma east to Nova Scotia.

Biologists are seeking sightings this summer from N.H. residents and visitors. Many historic summer maternity colonies are now empty of bats. If you have a summer roost on your property, you can help by counting bats as they exit in June, then again later in the summer, to see



how the colony has grown as pups begin flying. Visit www.wildnh.com and click on “Volunteer” for instructions how to count bats for conservation!

White Nose Syndrome has spread rapidly in the U.S. and Canada since it was first discovered in New York in 2006.

SUMMER Wildlife Almanac

JULY

- Look for pickerel and leopard frogs in pastures and fields. Bald eagle chicks fledge from nests.

AUGUST

- On hot summer days, listen for the loud buzz of the dogday harvestfly, a member of the Cicadidae family; they sound like a circular saw cutting through a board.

SEPTEMBER

- Watch for bobolinks, bats and broad-winged hawks as they begin their winter migrations.

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