

# NATURAL HERITAGE HARMONIES



WINTER 2009

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.*

## Working with Vermont's Utilities to Help Rare, Threatened and Endangered Plants

By Bob Popp

Vermont Fish & Wildlife's Nongame and Natural Heritage Program (NNHP) staff are working with Vermont's utility companies to manage for rare, threatened, and endangered plant species within their right-of-ways (ROWs).

The inadvertent application of herbicides to scrub oak during routine management activities prompted the department to provide location information for all rare, threatened and endangered (R, T, E) plant species to the utilities. We also are developing a management protocol for the state's utility companies to follow to help protect R, T, E species.



Britton, N.L., and A. Brown, 1913. *An Illustrated Flora of the Northern United States and Canada*, 2nd Edition.

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## Returning a Native to the Northeast Kingdom



CEDRIC ALEXANDER

*Thirty-nine spruce grouse were relocated to Victory State Lands in August and September 2008. This is one of the twenty birds fitted with a radio transmitter to track their movements.*

Vermont's Northeast Kingdom is known for its rugged beauty and remoteness. It also is the only place in the state where, if you're lucky, you may spot a spruce grouse. These small, compact birds are generally found in coniferous northern forest habitats. In Vermont, this native species historically occurred at higher elevations or in black spruce bogs and basins in the Northeast Kingdom, including Victory Basin. Currently, spruce grouse are found in low numbers in the Nulhegan Basin.

Vermont Fish & Wildlife began investigating the status of spruce grouse in northern Vermont in 1985. We searched for spruce grouse at known historical localities to

determine the continued presence of the birds at these past sites, and checked other localities that had suitable habitat. In all, 14 sites were searched between 1985 and 1987, with only four localities showing evidence of spruce grouse.

The findings prompted the Agency of Natural Resources to list the spruce grouse as endangered in 1988, and intensified our efforts to document the number and distribution of spruce grouse. We began conducting "call-back" surveys of the four areas with evidence of spruce grouse. By using taped recordings of female spruce grouse vocalizations, we were able to attract and locate the birds either by

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# DIVISION UPDATE

## Habitat Is Still the Key to Successful Conservation

*John M. Austin, Acting Director of Wildlife*

Recently, Vermont Public Radio had a story about wildlife officials in Florida attaching magnets to the heads of alligators as a means of altering their homing instinct. The reason for this experiment was to prevent the alligators from returning to their habitat of origin because it was now developed with neighborhoods. People living in the alligator's former habitat were apparently shocked and disturbed that these large reptiles would return to the community after being relocated.

A few years ago, I recall a similar story about a residential community in California that had developed in a wetland. The residents of this community were distraught at the "noise" created in spring by singing frogs.

Now, perhaps these stories speak to our unusual relationship to reptiles and amphibians, but I think there is an important issue that these stories highlight. Rather than spending the precious time and resources to try and alter an evolutionary trait that has developed over hundreds of thousands of years—an effort I suspect is destined to failure—why not plan the development away from alligator habitat. And, the only surprise with the second story is that the frogs persisted in the wetland in spite of the development.

During the 1980s, the department used the phrase, "Habitat is the Key", to highlight the important connection between habitat conservation and species survival. Some old adages should never be

forgotten. This message is more important today than ever before as we face the continuing challenges of habitat loss and degradation.

Through our emphasis on this conservation principle we have restored common loons, peregrine falcons, and osprey. We are reintroducing spruce grouse into suitable habitat in the Victory basin. We are acquiring unique habitat in Vernon that supports the endangered spotted turtle. We have protected the endangered black racer snake by working with the Vermont Agency of Transportation to manage critical habitat for that species. The list of success stories associated with habitat conservation goes on and on.

As the department and other partner organizations in Vermont move forward with wildlife conservation efforts, we will face new challenges in a new era regarding energy development, increasing use of public lands, new diseases, lack of financial resources, changing population demographics, and a changing climate. As we collectively move into this new era of wildlife conservation, we must not forget this principal – Habitat is the Key to Conservation Success. It always has been and always will be. I hope and trust we can make better decisions and use our limited resources more wisely than was the case with the news stories from other areas around the country.



## Coming soon...

Look for new Natural Community factsheets on the Fish & Wildlife web site. The factsheets are adapted from the natural community guide *Wetland, Woodland and Wildland* by Elizabeth H. Thompson and Eric Sorenson, and highlight each of Vermont's 80 Natural Communities.

What set the factsheets apart from the book is the section on management considerations and guidelines. It has been expanded to provide more information for landowners. The factsheets will be available as printable files on the department's website early this summer ([www.vtfishandwildlife.com](http://www.vtfishandwildlife.com)).

## What's new...

Audubon VT will be working in partnership with Vermont Fish & Wildlife to coordinate the Vermont Peregrine Falcon Recovery Project in 2009. Audubon assumed the role following the Nation Wildlife Federation's (NWF) decision to limit participation in the project. Long-time project coordinator Margaret Fowle and Kathy Wohlfort will coordinate the fieldwork for Audubon on a part-time seasonal basis.

With volunteer help, we will continue our efforts to monitor and protect occupied cliffs in Vermont, and plan to conduct a limited survey in April to locate any new peregrine pairs. Scopes and binoculars will be available again for volunteer use, thanks to the generosity of NWF.

Because of limited funding in 2009, we will rely on volunteers more than ever to monitor breeding sites. Contact Margaret Fowle at [mfowle@audubon.org](mailto:mfowle@audubon.org) for possible volunteer opportunities.

## Return of a Native

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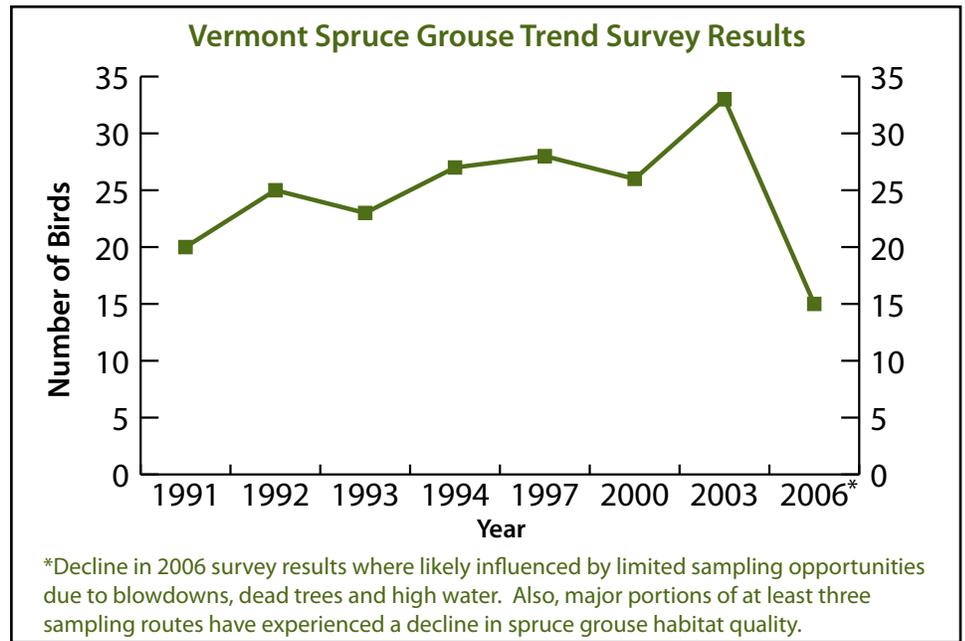
vocal responses or direct sightings. This information helped determine the viability of the population and provided an index of population size for future comparison. We conducted annual “call-back” surveys of our known breeding population in the Nulhegan Basin through 1997, and then switched to a three-year interval for conducting the surveys.

Recovery efforts for Vermont’s spruce grouse increased in August, 2008, when Fish & Wildlife embarked on a State Wildlife Grant funded project to reintroduce the spruce grouse to the Victory Basin. The objective of the project is to reintroduce a separate and stable population of spruce grouse to Victory Basin, and to monitor a sample of the reintroduced birds using radio-collars to evaluate their movements and survival.

Thirty-nine birds were reintroduced to Vermont’s Victory Basin Wildlife Management Area and Victory State Forest during August and September, 2008. Ten males, eight females and 21 chicks were released. Fish & Wildlife personnel traveled to Maine for two weeks in August to trap and relocate spruce grouse from the Moosehead Lake Region. In 12 days of trapping, 24 grouse were captured and released on the Victory State Lands. Fifteen



*Displaying male spruce grouse.*



grouse also were obtained from Quebec and released in Victory in late August and September.

Twenty of the released birds were outfitted with radio transmitters. The birds were tracked through December to learn about their survival, movements, and habitat selection. Of the 20 birds released with radio transmitters, two collars were recovered in the field and we lost contact with five other birds during the study. However, 12 collared birds were successfully tracked during the field season and provided enough data for mapping and some insight on their movements and habitat selection.

Preliminary results showed that although some radioed grouse moved up to a mile from their release site, most remained within Victory Basin. Observations of habitat selection showed the birds fitted with transmitters seemed to shift their foraging strategy once berries became scarce and temperatures dropped. By the end of September and into early October, 2008, the birds had shifted their foraging to conifers, favoring Larch stands.

The project originally called for a minimum of 60 birds to be translocated, but difficulties in

obtaining birds from Quebec meant fewer birds were released. However, the information obtained by tracking the birds is useful and will help improve our management efforts for this endangered species. In the meantime, we’ve continued to keep tabs on those birds with working transmitters. We located ten different birds at Victory Basin in January and February, 2009.

Our plans for the upcoming field season include conducting “call-back” surveys this spring in the Nulhegan Basin and breeding season surveys in Victory to confirm survival of at least some of our released birds. We may also do some July brood surveys in Victory to confirm nesting activity, and we plan on releasing at least 30 more birds from Quebec this summer.

With any luck, future “call-back” surveys will show an increase in spruce grouse abundance, meaning the chances of spotting a spruce grouse in the evergreens of the Northeast Kingdom will improve. 🐾

*Editor’s note: Vermont Public Television’s Outdoor Journal will feature Vermont’s spruce grouse translocation project airing on Tuesday, April 21<sup>st</sup> at 7:30 p.m.*

# What is Good Quality Habitat? The Birdseye View

By Jens Hilke

Several years ago, I was involved in a project to reshoot a series of photos that had been taken from the air just after the 1927 flood.<sup>1</sup> Our team logged many hours in a small Cessna flying the river valleys of Vermont trying to capture the same angles a photographer had used some eighty years ago so we could document the changes in the landscape, creating a matched pair of “then and now” photos.

From a plane the details of the terrain blur and you're left with simply the mosaic of towns, forests and farmland. The more we compared the old photos with the distant terrain viewed from the plane window, the more history blurred as we imagined the changes that had taken place; how early clearing for farming in the 1800s led to the increased flooding and erosion seen in 1927, and how those fields have grown up into the varied habitats we see on the land today.

So, when we ask the question of what is good quality habitat on our land, we should begin by “looking out the plane window.” This “birdseye view” shows the mosaic and patterns of forests and fields on the land as well as the history of a changing landscape. And, certain landscape patterns become quite obvious at this scale.

When we look at our land in Vermont from the air or in aerial photography, we are likely to see broad expanses of forests that haven't

*Editor's note: In the next few issues of Harmonies, we hope to address the question of what is good quality habitat by looking at the issue from a variety of different scales or perspectives. This is a first in a series beginning by looking at wildlife habitat from the birdseye view.*



ERIC SORENSON

*Birdseye view of Vermont shows broad expanses of forests that haven't been built up. These continuous habitat blocks include mixes of different natural communities, from evergreen and deciduous forests to meadows, streams and wetlands.*

been built up. They are bordered by roads and development, but include continuous mixes of different natural communities, from evergreen and deciduous forests to meadows, streams and wetlands.

I call these areas continuous habitat blocks and use them to represent biological diversity. The combination of varied topography, climate and physical features, like bedrock, creates more niches where more wildlife species can find homes. As a result, bigger blocks of continuous habitat have more species diversity than smaller blocks.

This direct correlation allows us to look at our landscape and derive some sense of biological diversity simply based on the size of the blocks. It is not an absolutely comprehensive measure of diversity, however, since many rare species and significant natural communities have been shaped by development but are still important.

But this method does give us a quick and easy sense of where diversity might be greatest. These blocks often include working forests and lands important for recreation, as well as other values that are compatible with wildlife habitat. So, we're not defining

lands that are free from human use, but simply lands that aren't developed. This includes the mix of working lands and lands that don't see much use by people (which are also important to some wildlife species). This concept of continuous habitat blocks allows us to see our land from a landscape perspective and get a quick idea of diversity based on the size of the block.

In many places in Vermont we see “islands” of isolated forests surrounded by development and agriculture. This is forest fragmentation and it is a modern problem with an interesting history. Before colonial settlement, Vermont was almost entirely forested, but by 1850 only about 20 percent of the land was covered with trees. Today, the reverse is true, with forests covering almost 80 percent of the state. But, the forest that has grown back is different than the previous one and is being increasingly surrounded by development. We are losing wildlife habitat as development continues to isolate these blocks and as we hide development within these forest blocks, reducing their quality.

However, there is no minimum or maximum number of acres to define contiguous habitat. It is more

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## Birdseye View

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meaningful to consider the size of the contiguous habitat block, as well as the associated plant and animal species, within the context of the level of fragmentation in the region. The habitat's configuration is also important when identifying contiguous blocks. For example, a forested habitat area with a highly irregular shape and a large amount of forest edge may be less functional for some species than forest habitat of the same acreage with a regular shape.<sup>2</sup>

From our birdseye view we see that many of our forests or continuous habitat blocks are often connected through narrow bands of greenspace.

Sometimes these “connecting lands” follow river corridors and sometimes they are upland. They may include roads, lightly developed lands or even less suitable lands, but they provide a means for wildlife species to cross between big blocks of forests and wetlands, using these areas as corridors. These lands are incredibly important because of this connectivity function, effectively increasing the size of the habitat blocks.

At a landscape scale, we often look at the needs of far-ranging species, such as black bear or moose, as representing a variety of the smaller-ranging species living within the far-ranging species' home range. If we manage enough land to meet the survival needs of these

far-ranging species, we've also provided for the host of smaller-ranging species within that area. Identifying the continuous habitat blocks, as well as connecting these blocks, not only serves these far-ranging species but also brings along a host of lesser-known, smaller-range species.

History also plays a role in our birdseye view. As we look at the same mosaic of forests, fields and development, we must keep in mind that the history of the land use has helped form this mosaic. For example, some of the lands now covered in white pine were badly eroded sheep pasture in the 1800s, and grew back in the pine we see today instead of the mixed hardwoods they'd once been. This serves to remind us that the landscape is constantly changing and reflects the decisions of people for hundreds of years. Our mosaic is in large part a pattern of our own making and has shown many other patterns over the land's long history. The land use decisions we make today of improving or degrading quality wildlife habitat are clearly visible in the patterns of our landscape tomorrow. 🌱



ERIC SORENSON

*In many places in Vermont we see forest fragmentation—“islands” of isolated forests surrounded by development and agriculture.*

## Working with Vermont's Utilities

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Currently one utility company, National Grid, has agreed to retain a consulting ecologist who will locate, flag and provide best management practices for previously known R, T, E species within their ROWs the season before the utility does any management actions. The ecologist's field work is important because most of the NNHP's information about the rare plant species populations is mapped as points, not as specific areas, so the precise location is not known. Also, many of species have not been re-inventoried in several years due to limited staff time.

So why are there an inordinate number of Vermont's rare plants occurring beneath utility lines? Many of our rarest plants are at the edges of their range and not able to compete well under natural conditions. So these species are more likely to persist and thrive in

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### THANK YOU

Biologists, botanists, ecologists, seasonal staff, support staff, game wardens, volunteers, program partners and all Vermonters for your help in conserving Vermont's nongame and natural heritage resources.



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# New Record Set for Bald Eagles Wintering in Vermont

A dedicated crew of eagle observers spotted 30 bald eagles in January as part of Vermont's 2008 Midwinter Bald Eagle Survey and set a new record for the number of bald eagles seen during the survey since it began in 1979.

Fourteen adults, one immature and 12 unknown-aged eagles were observed on nine of the 15 standardized survey routes between January 1 and 15. Observers were unable to age some of the eagles because they were too far out on the ice. Three more eagles were observed during the survey period, but not on the standardized routes. One adult and one immature were spotted at Shelburne Town Beach, and one adult was seen on the Battenkill.

According to Mark LaBarr of Audubon Vermont who served as survey coordinator, the majority of the eagles were spotted between the Champlain Bridge and the Champlain Islands on Lake Champlain, with the highest concentration between the Champlain Bridge and the Charlotte Ferry. Six eagles were observed on the Connecticut River routes.

Bald Eagle numbers declined dramatically throughout most of North America between the 1950s and 1970s. Contamination by the pesticide DDT caused reproductive problems and is generally considered the main cause of the decline. The banning of DDT in North America, an effective reintroduction program and protection of bald eagle breeding and wintering habitat have led to a significant increase in eagles during the past twenty years.

According to Steve Parren, coordinator for the Vermont Fish & Wildlife Department's Nongame and Natural Heritage Program, Vermont's wintering bald eagle numbers are following the Northeast's upward trend. Between 1979 and 1989, an average of two eagles per year was observed during the survey period. During the next ten years, an average of more than nine individuals per year was observed, and

between 2001 and 2006 the average rose to more than 15 eagles per year.

Vermont's Midwinter Bald Eagle Survey is part of a nationwide survey. Audubon Vermont coordinated Vermont's 2008 Midwinter Eagle Survey with field assistance and financial support from the Vermont Fish & Wildlife Department's Nongame and Natural Heritage Program and Nongame Wildlife Fund.

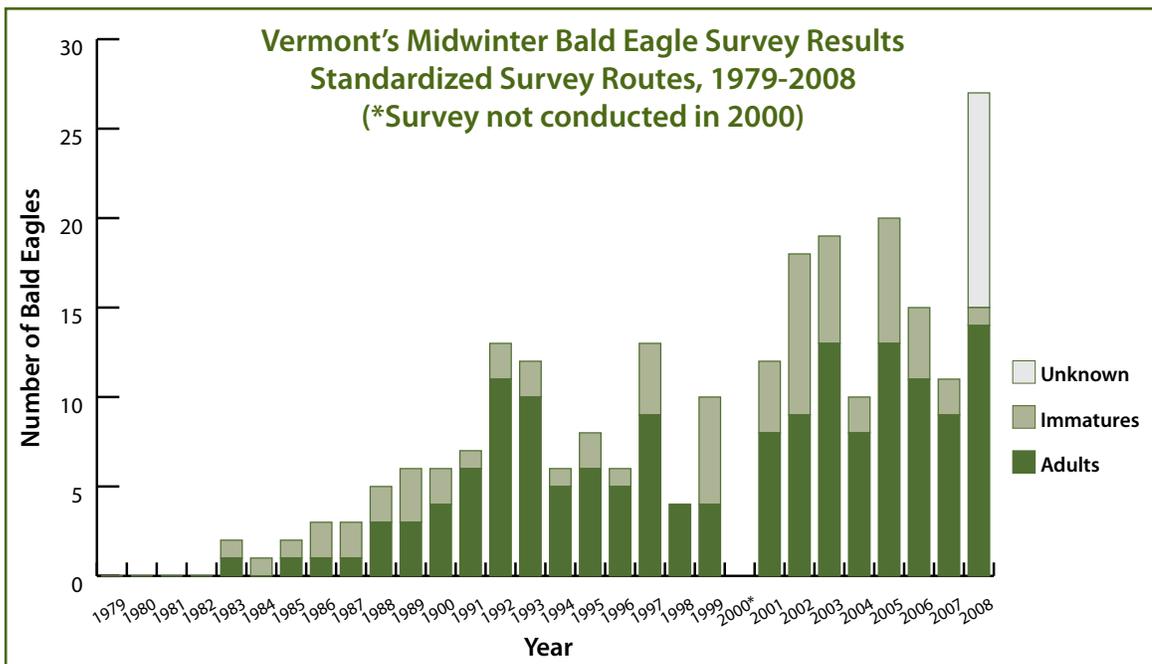
In Vermont, the survey was conducted along the 15 standardized survey

routes between 1979 and 1999. The standardized routes include areas along Lake Champlain, Lake Hontonina and Lake Bomoseen, as well as selected portions of the Missisquoi, Lamoille, Winooski, Connecticut, Battenkill, White, Black, West and Deerfield rivers. Since 2001, partial surveys of selected routes are conducted annually, supplemented by full surveys in alternate years. 🦅



*Mature bald eagle sighted on Lake St. Catherine during the summer of 2008.*

KAREN VELSOR - STARLIGHT PHOTOGRAPHY



## Our Partners in 2008

*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	U.S.D.A. Wildlife Services
Missisquoi National Wildlife Refuge	U.S.D.A. Natural Resource Conservation Service
New York Department of Environmental Conservation	U.S.G.S., VT Cooperative Fish and Wildlife Research Unit
Québec Ministère des Ressources naturelles, et de la Faune	Vermont Agency of Transportation
Silvio O. Conte National Fish and Wildlife Refuge	Vermont Department of Environmental Conservation
U.S. Environmental Protection Agency	Vermont Department of Forests, Parks and Recreation
U.S. Fish & Wildlife Service (Lake Champlain Office and N.H. Endangered Species Office)	

### Organizations:

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

### Contractors, Collaborators & Volunteers:

Robert Abell	Paul Hansen	Kristian Omland
Dorothy Allard	Eric Hanson	Michele Patenaude
J'Amy & Sue Allen	Lisa Jablow	Judy Peterson
Ted Allen	Mark LaBarr	Bryan Pfeiffer
Toby Alexander	Debbie & David LaMontangne	Ann & Chip Porter
Liz Alton	Marc Lapin	Ron Preavy
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Doug Facey	Craig Newman	Kathy Wohlfort
Margaret Fowle	Joanne Nichols	Jane Yagoda
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Amanda Gervais		



*So our wildlife will be here to enjoy tomorrow.*

## Donating to the Nongame Wildlife Fund is a Smart Investment.

Your tax-deductible contribution pays big dividends by helping us:

- Conserve wildlife before they become more rare and more costly to protect.
- Protect clean water and air—making both wildlife and people healthier.
- Conserve wildlife and the places they live for our children and grandchildren.

### It's Easy to Donate:

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*Thank You*





## Nongame and Natural Heritage Program

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## Vermont's Utilities

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disturbed situations such as in old fields, along roadsides, or within utility corridors.

Before human settlement many of these species probably occurred in isolated populations that moved around to colonize areas after fires, windthrow events, or floods created new habitat. Although the current level of fragmentation in the state may actually benefit a number of these rare species, there is also the threat of direct loss caused by road crews, homeowners, developers, and others who take them inadvertently or through a permit.

Utility corridors provide an ideal habitat for rare plants. There is no threat from development, they are managed at four or five year intervals and then only to eliminate the larger woody vegetation, which helps remove competition.

The importance of these utility corridors to the survival and persistence of Vermont's R, T, E plant species makes it critical we reach an agreement with all the state's utility companies. An agreement that allows them to continue their current management along ROWs but with special attention given to areas with R,T, E species. We are optimistic we can work together to benefit Vermont's R,T,E species and the utilities. 🐦

*The state-threatened Low Bindweed, *Calystegia spithamea*, is in the morning glory family and has large white flowers. Although not restricted to growing only in ROWs, with the absence of fire, some of these plants are often found in ROWs.*



GISELA ALPERT