

*Uniting People and Science for Conservation*

## ALPINE BUTTERFLY CONSERVATION

Perched atop New Hampshire's Presidential Range in the alpine tundra are two butterflies that exist nowhere else on earth. The White Mountain Arctic and the White Mountain Fritillary are subspecies endemic to these four square miles of alpine zone. These butterflies are glacial relicts—organisms that were more widespread at the end of the last glaciation but which have since become isolated because of loss of appropriate lowland habitat as the climate warmed.

Macrofossils and pollen from lake sediments on Mt. Washington indicate that the region was deglaciated prior to 13,000 years ago. From 13,000 to 11,750 before present (B.P.), the highest elevations were barren with tundra vegetation covering the valleys, and mean annual temperatures 9 to 18 degrees colder than today. Willows, juniper and birch invaded as tundra gave way to woodlands around 10,300 B.P. For a thousand years temperatures increased to modern levels or slightly above and subalpine forests were established, effectively isolating the alpine vegetation on the mountain summits from the northward retreating tundra vegetation. They remain isolated to this day on these sky islands.

It is hard to imagine butterflies with wing spans of one-and-a-half inches surviving the fierce weather of Mount Washington, but these are especially adapted. Most butterflies complete their life cycle in less than one year. Because alpine summers are short, it takes two years of nocturnal dining on

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© Kent McFarland

A WHITE MOUNTAIN FRITILLARY RESTS ON KRUMMHOLZ AT CRAGWAY SPRING, A POPULAR PULLOFF ALONG THE AUTO ROAD TO VIEW THIS RARE BUTTERFLY.

## YOU ARE WHAT YOU EAT

Life would be so much easier for VCE biologists if only birds could talk. Where did this American Pipit come from? In what kind of habitat did this Bicknell's Thrush spend last winter? And what was this Bobolink eating before it migrated from South America to Vermont?

Answers to questions like these don't come easily. Banding allows us to track the origins and whereabouts of many songbirds, but the low probability of recapturing them allows for precious few results, and tells us nothing about their food and habitat preferences. To learn what birds are eating, we have dissected their droppings and even induced some to regurgitate, which is challenging work with limited returns (not to mention somewhat unpleasant for bird and biologist alike).

Now, building on our success with these conventional methods, VCE is turning to an innovative technique that offers greater insights into songbird ecology and conservation: the chemical analysis of bird tissue. Harmless clipping of

feathers or toenails can reveal vital information about a bird's origins, distribution and diet. It is the next best thing to a talking bird.

"A feather can speak volumes about the hidden life of a songbird," says VCE Director Chris Rimmer.

### Stable Isotopes

Some basic chemistry explains how feathers can reveal their secrets. Take the element hydrogen, for example. Recall from high-school chemistry that a hydrogen nucleus has a single proton. Yet there are trace amounts of another form called "heavy hydrogen," or deuterium. Its nucleus has one proton and one neutron. It is a stable (non-radioactive) version of hydrogen with similar properties. We call these and other naturally occurring elements stable isotopes. They are relatively easy to measure in the environment—in rainwater, oceans, soil, plants, humans, and, by extension, birds and other wildlife.

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## Field Notes

Fall 2008 • Volume 1, No. 2

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The Vermont Center for Ecostudies (VCE) is a nonprofit organization whose mission is to advance the conservation of wildlife through research, monitoring and citizen engagement. With a reach extending from northern New England through the Caribbean to South America, our work unites people and science for conservation.

Our annual appeal will be mailed in mid-November. Your support in any amount will help us achieve our conservation mission.

Field Notes is VCE's biannual newsletter and is free to citizen scientists, donors, and partners.



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# VCE IS ONE YEAR OLD

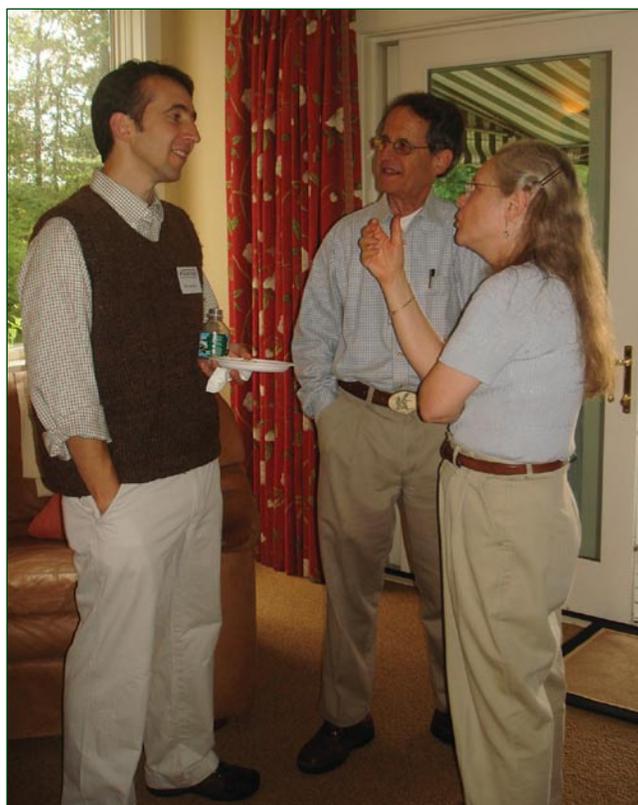
A full year into our existence, VCE has every reason to celebrate. The news at this early but important milestone is uniformly positive—our feet are firmly on the ground, our finances stable, our programs strong, our staff fully energized, and our constituents more engaged than ever. We launched ourselves last October with resolve and optimism, but a healthy dose of apprehension. We knew that the challenges of succeeding as a non-profit would be inherently daunting, especially with current economic vagaries. However, we couldn't ask for more as we round the corner into year two.

In addition to our overall vitality, we can count a number of individual successes over the past year. These include the successful launch of the International Bicknell's Thrush Conservation Group, a rewarding 3-week summer exchange with four partners from Hispaniola, the retooling and expansion of our signature Mountain Birdwatch program, initial compilation of a Breeding Bird Atlas book, cataloguing of >50,000 records for the Vermont Butterfly Survey, implementation of the Vermont Invertebrate Database Alliance, our 20<sup>th</sup> year of the Forest Bird Monitoring Program, and another record year for nesting loons. The list goes on.

For any organization, whether fledgling or long-tenured, it's all about the people. VCE would not be where it is without the remarkable support that has come in so many forms and from so many corners. All of you—our citizen scientists, our conservation partners, our financial supporters, our office volunteers (many of you wear all those hats!)—have played a crucial and much-appreciated role in our success to date. We thank you and are eager to move forward with your continued help.

—Chris Rimmer

ON SUNDAY, SEPTEMBER 28TH, VCE STAFF AND MORE THAN 50 FRIENDS GATHERED TO CELEBRATE A SUCCESSFUL FIRST YEAR. GOOD FOOD, GOOD FRIENDS AND LIVELY CONVERSATION TURNED A RAINY DAY INTO A WARM AND INVITING AFTERNOON. VCE BOARD MEMBER JEFF MARSHALL AND HIS WIFE TERRY GRACIOUSLY HOSTED THE EVENT AT THEIR NORWICH HOME. VCE STAFF TOOK THE OPPORTUNITY TO SHOWCASE OUR CURRENT WORK, INCLUDING RUNNING VIDEOS FROM THE FIELD, A LIVE VERMONT eBIRD FEED, TAGGING OF MONARCH BUTTERFLIES, DISPLAY BOARDS DETAILING THE WORK BEING DONE ON EACH PROJECT, AND (UNFORTUNATELY) A RAINED OUT BIRD BANDING DEMONSTRATION. THE AFTERNOON SPURRED ANIMATED DIALOGUE BETWEEN VCE STAFF AND VOLUNTEER CITIZEN SCIENTISTS. AT RIGHT, SUSAN AND DEAN GREENBERG CONVERSE WITH VCE ASSOCIATE DAN LAMBERT.



© Melissa MacKenzie

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Bigelow's Sedge for White Mountain Arctic caterpillars to mature. It isn't until the third summer that they finally pupate under a rock, emerge from their chrysalis, mate, and lay eggs in late-June to mid-July. Because of their prolonged life cycle, these have some of the longest life spans known for butterflies.

White Mountain Fritillaries fly from late-July until frost in September, mating and nectaring on alpine goldenrod and asters. Caterpillars hatch and begin to mature during the first summer. In their second summer, the caterpillars continue to grow, pupate, and metamorphose into adults (eclose) to start the cycle over again. What plant they feed on is still a mystery, despite more than 100 years of study.

VCE conservation biologist Kent McFarland took the first hard look at the conservation status of these two butterflies for the White Mountain National Forest's 2005 management plan. Although at first blush both species may seem secure on the wild and protected summits, there are several threats to their long-term survival—global climate change, atmospheric pollution, and recreation.

As unique insects that occupy only a small part of the White Mountain National Forest, these butterflies are now formally recognized as "sensitive species." In July, the New Hampshire Fish and Game Department proposed listing the arctic as threatened and the fritillary as endangered. "This proposal reflects the extensive work that biologists from Fish and Game and our partners have put into New Hampshire's Wildlife Action Plan, which has given us the most up-to-date information we've ever had about the state's wildlife," said John Kanter, Supervisor of New Hampshire Fish and Game's Nongame and Endangered Wildlife Program. This was in large part due to McFarland's status report.

The New Hampshire Wildlife Action Plan echoed McFarland's call for a monitoring program to be initiated for these butterflies. This past summer, thanks to support from the Water-



© Kent McFarland

A RARE GLIMPSE OF WHITE MOUNTAIN ARCTICS BREEDING ON THE MONTICELLO LAWN, MT. JEFFERSON.

man Fund and the White Mountain National Forest, VCE teamed up with Ken Hotopp at Appalachian Conservation Biology and Jocelyn Smith, a graduate student from Antioch New England, to determine how best to estimate the two species' population size and monitor their health into the future.

"We have a lot of experience with wildlife monitoring at VCE, but these two butterflies pose a real challenge," said McFarland. "With the world's worst weather, rough terrain, unique life-history traits, and sensitive plant species that don't like boots on them...we knew we had our work cut out for us to come up with a suitable sampling protocol."

Despite an unusually rainy summer even by Mt. Washington standards, the biologists are well on their way to perfecting a monitoring protocol that fulfills their goals. "We were able to try different techniques, get a feel how long each takes, and determine what generally works up there and what doesn't with these butterflies," said VCE seasonal biologist Brendan Collins. The next task is to secure the funding to implement this protocol in the years to come.

—Julie Hart

## VERMONT VERNAL POOL MAPPING PROJECT

In 2009, VCE and Arrowwood Environmental will begin a multi-year project to map potential vernal pools throughout Vermont. Potential pools will be field-checked using a corps of volunteers. In the process, we will develop a GIS layer of potential and known vernal pools, as well as a database populated with biological and physical attributes of each groundtruthed pool. With funding from the Vermont State Wildlife Grants Program, potential vernal pools will be identified using color infrared aerial photographs. Recruited volunteers will be provided with training materials and asked

to field-check potential pools, collect biological and physical data, and report locations of any unmapped vernal pools they find. This information will greatly improve conservation planning, help protect species of conservation concern that depend upon vernal pools, and preserve the ecological values associated with these critical, but often overlooked, wetland habitats. If you're interested in field-checking pools, please contact Steve Faccio at VCE, and watch for more about this project in the spring issue of Field Notes.

—Steve Faccio

So what can deuterium tell us about where an American Pipit might have hatched? Consider water. A small portion of the hydrogen atoms in H<sub>2</sub>O across the planet will naturally be deuterium. And it turns out that the ratio of deuterium to hydrogen in water is predictable in certain regions. In North America this ratio fits a pattern that generally tracks with latitude (see map below). Rainwater falling in Vermont, for example, will contain different deuterium ratios than rainwater falling in Virginia.

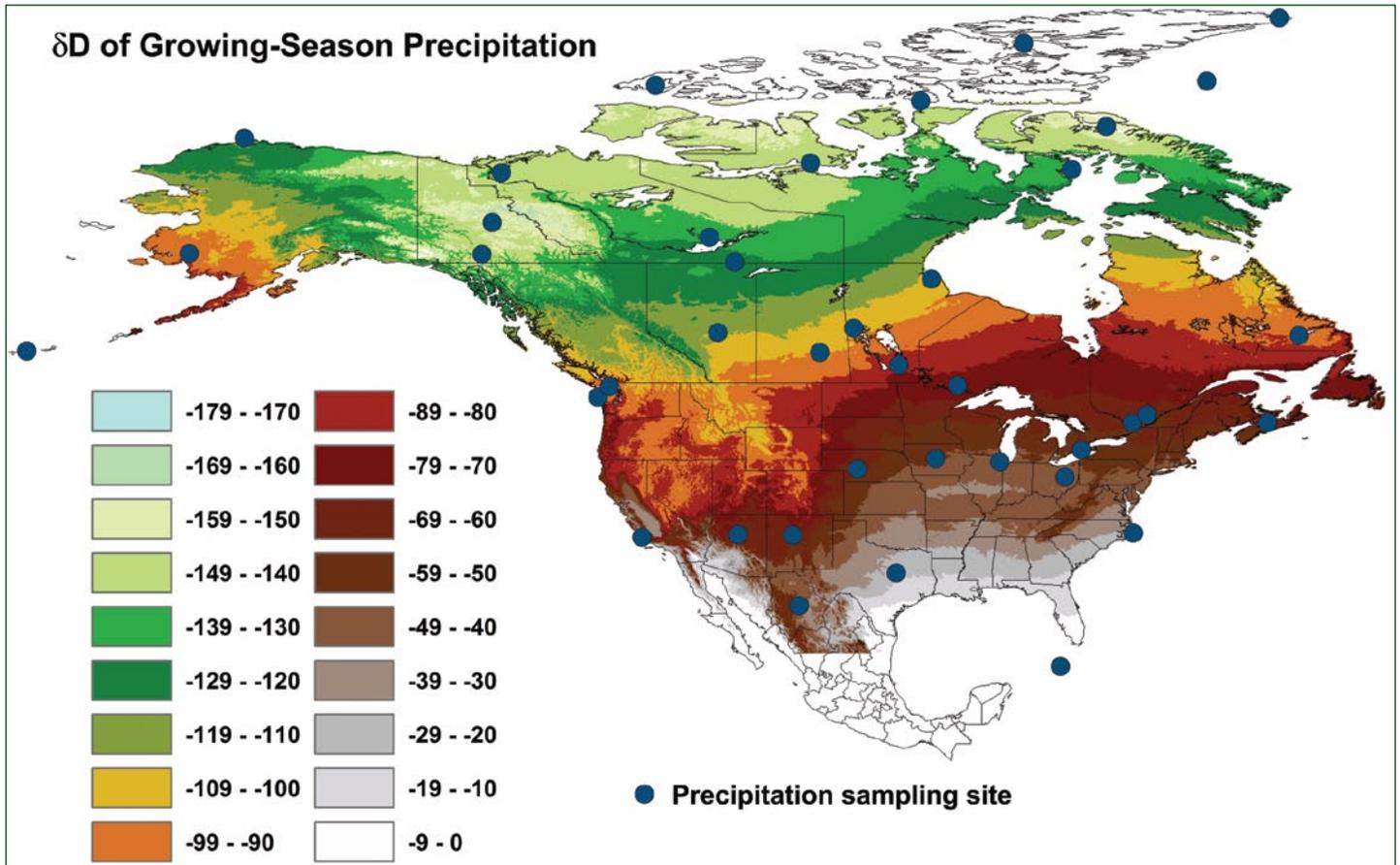
As rainwater passes up the food chain from plant to insect and eventually birds, this ratio of deuterium in rainfall is retained. As a result, a bird's feathers carry deuterium ratios that correspond to the rain falling where those feathers were grown. "In other words, you are what you eat," says Rimmer. "And a bird's diet, which incorporates deuterium, can help tell us where it's been."

### American Pipits

VCE is investigating stable isotopes in several of our songbird research projects. One is a pilot study of American Pipits on New Hampshire's Mt. Washington. The mountain's alpine

zone supports a geographically isolated breeding population of pipits. The bulk of their range extends across the North American arctic and south into the continent's western mountains. Among our goals is to determine whether Mt. Washington's small, disjunct American Pipit population is genetically isolated as well. Are pipits on Mt. Washington largely breeding among themselves or do they intermix with pipits arriving from elsewhere across the breeding range? Without genetic exchange to diversify the gene pool, birds can be more vulnerable to environmental threats and other pressures.

During the 2008 breeding season, VCE biologists located two pipit nests, mist-netted adults and clipped the tip of a secondary (inner wing) feather. Like most songbirds, pipits molt and replace their flight feathers at their breeding sites in late-summer before migration, in what is called the pre-basic molt. Since we know these secondaries were grown in 2007, VCE will be able to analyze their deuterium ratio to determine whether pipits grew them the previous year on Mt. Washington or at another site farther north. If results show the Mt. Washington population to be largely "closed," that is, genetically isolated from other pipit breeding populations



RATIOS OF HYDROGEN STABLE-ISOTOPES (DEUTERIUM) IN GROWING-SEASON PRECIPITATION ESTIMATED ACROSS NORTH AMERICA. MAP AND ACCOMPANYING ARTICLE AVAILABLE ONLINE AT: [HTTP://ENTOMOLOGY.WISC.EDU/~TDMEEHAN/DDP.HTML](http://entomology.wisc.edu/~tdmeehan/DDP.html)

as evidenced by adults returning to breed on Mt. Washington year after year, this might warrant targeted conservation measures.

“If this small patch of alpine habitat doesn’t receive some influx of pipits from elsewhere” says Kent McFarland, VCE conservation biologist, “it could be vulnerable to environmental pressures on this sensitive alpine tundra zone.”

### **Bobolinks**

Stable isotopes also figure into VCE’s continuing research on Bobolink distribution and status across the Americas. With a prestigious grant from the National Geographic Society, VCE is looking at Bobolink dietary preferences during the species’ wintering period in South America.

Welcomed each spring to meadows, pastures and other grasslands across North America, Bobolinks aren’t always well-received winter visitors in South America. There, they feed in commercial rice fields where farmers consider them agricultural pests and use pesticides that are highly toxic to birds.

“It turns out that rice is a bit like fast food,” says Dr. Rosalind Renfrew, a VCE conservation biologist who has spent years studying Bobolinks across the hemisphere. “It’s easy to obtain but may not be so healthy for Bobolinks.”

Bobolinks themselves carry the critical information about what they ate when they arrive each spring in North America. The clue lies in stable isotopes of carbon and nitrogen. The stable isotopes in Bobolink feathers can help VCE determine whether a given Bobolink was feeding in cultivated rice or in native grasslands.

Unusual among songbirds, Bobolinks molt their flight feathers twice a year—the routine post-breeding molt in summer and again on their wintering grounds before migration northward in spring. So we know that Bobolinks migrating to North America each spring are flying on feathers grown during their winter in South America.

Renfrew is sampling feathers from Bobolinks arriving on breeding grounds in Vermont, Nebraska and North Dakota. The isotope ratios in these feathers will be used to investigate how a Bobolink’s choice of winter habitat and its diet are linked to reproductive fitness—the ability to successfully breed and produce healthy fledglings—here in North America.

“In an era of rising air fares, we’re tapping into Bobolink frequent flyer miles,” says Renfrew. “We’re happy to chase birds across the hemisphere, but using stable isotopes saves us time and fuel.”

### **Bicknell’s Thrush**

Stable isotopes also offer VCE new insights into the ecology of our signature mountain bird species—Bicknell’s Thrush—here in North America and on its wintering sites in Hispaniola. As with American Pipits, VCE biologists use a clipped tail feather to examine how Bicknell’s Thrushes distribute themselves across various breeding sites—what’s called natal dispersal. Over the course of our 15 years working on this songbird, we have collected roughly 2,000 feather samples from across its breeding range—from the Gaspé Peninsula in Quebec to the Catskills. Do thrushes that hatch from breeding sites in Quebec disperse to subsequently breed in the Adirondacks?

We have preliminary evidence that there is indeed some beneficial dispersal of Bicknell’s Thrush genes across the breeding range. But stable isotope analyses, using deuterium, will provide more details and allow us to discover whether any populations are genetically isolated. Knowing that will help us design better conservation strategies for Bicknell’s Thrush—either across its entire breeding and wintering ranges or specifically targeting isolated populations.

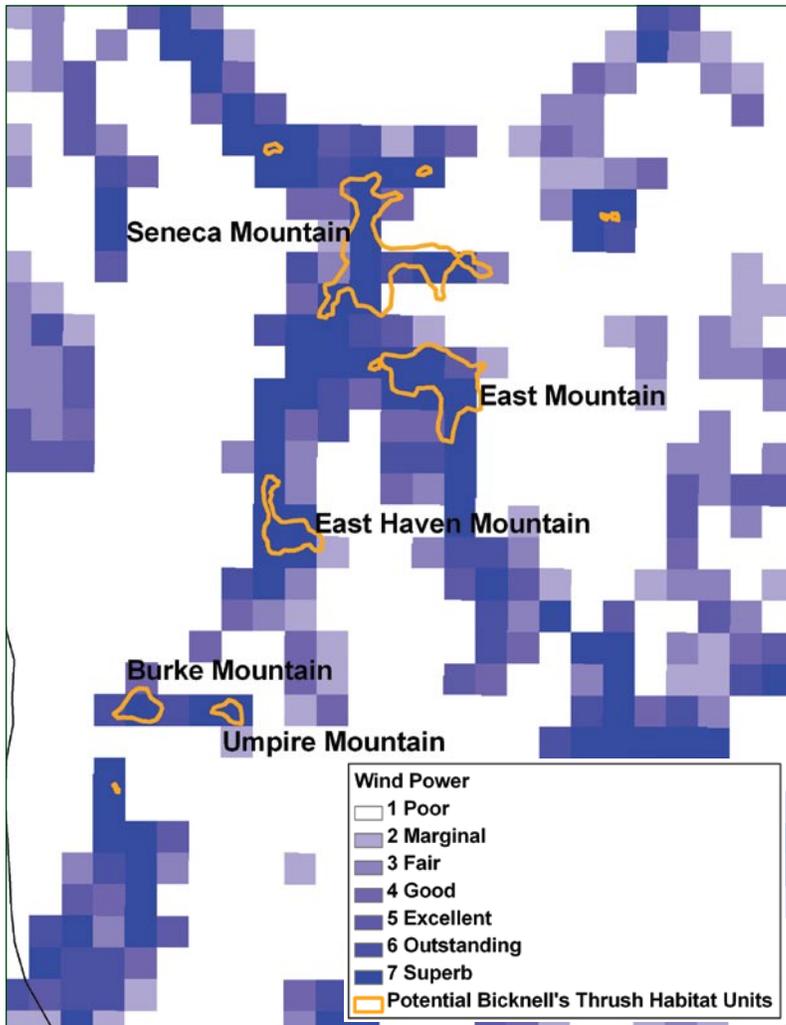
Feathers aren’t the only tissues that speak volumes on a bird’s behalf. So do toenails. VCE has isotopic evidence that wintering Bicknell’s Thrushes may segregate by habitat—in cloud forests, where they can find ample insects for feeding, or lower-quality second-growth habitat, where fruit may comprise a larger part of the winter diet. Our findings also suggest that males may occupy the preferred montane winter habitat and females the less desirable regenerating forest, which may explain the skewed 3:1 male-to-female sex ratio observed on the breeding grounds.

Thrushes arriving on the breeding grounds each spring carry evidence, in their toenails, of the winter habitat they occupied. Deuterium levels will help us determine whether a given thrush was feeding in the montane cloud forests or in lowland habitats. Additionally, an isotope of nitrogen offers insights into whether a bird’s diet was largely fruit or insect. Our intent is to investigate any links between breeding success here in North America and where Bicknell’s Thrushes spend the winter and what they eat. The analysis of stable isotopes in bird tissue is a new and powerful tool that can help us direct conservation efforts.

“It’s fascinating science,” says McFarland, “but our real motivation is improved conservation planning for all these songbirds.”

—Bryan Pfeiffer

# VERMONT WIND RESOURCES



The Department of Energy's Wind Program and the National Renewable Energy Laboratory published a new wind resource map for the state of Vermont in 2007. The map depicts wind speed estimates at 50 meters (164 feet) altitude (above ground level). As a renewable resource, wind is classified according to wind power classes, which are based on typical wind speeds. These classes range from Class 1 (the lowest) to Class 7 (the highest). Wind power Classes 4 and higher (>15.7 mph) are generally considered good resources for generating wind power with large turbines.

We imported this digital map into our Geographic Information System (GIS) to compare our model of potential Bicknell's Thrush habitat to wind resources in Vermont's Northeastern Highlands. Areas with wind resources of Class 4 or higher were located along ridge crests, where most of the thrush habitat is found. We found that nearly 94% of potential Bicknell's Thrush habitat in the Northeastern Highlands falls within areas of Class 4 or higher. Surprisingly, however, thrush habitat accounts for only 7% of the land mass within Class 4 or higher areas, suggesting that 93% of the terrain might be suitable for wind power development without directly disturbing Bicknell's Thrush habitat. These findings, while preliminary, suggest that more detailed analyses, using readily available data, might provide valuable guidance for future siting of wind farm development.

—Kent McFarland

WIND POWER POTENTIAL AND BICKNELL'S THRUSH HABITAT IN THE NORTHEASTERN HIGHLANDS OF VERMONT.

# VERMONT LOON STATS 2008

Summer 2008 marked another record year for Vermont's Common Loon population. Lakes across the state supported 74 known territorial loon pairs. From the 61 nesting attempts, 75 chicks hatched (a record high), and 55 chicks survived to fledgling age as of September 1. Three new nesting pairs were confirmed in 2008: at Derby Pond, the southeastern end of Maidstone Lake, and at the north end of Norton Pond. Despite a wet June, only three nests failed due to flooding. Two adults likely died from lead poisoning, and a third is awaiting necropsy at Tufts University. Volunteers counted a record high number of 225 adult loons statewide on Loonwatch day in July.

—Eric Hanson



© Lee Stewart

# UNEXPECTED DISCOVERY ON STRATTON

VCE's summer 2008 discovery atop Stratton Mountain of an apparent Bicknell's Thrush-Veery hybrid (pictured at right) has generated some scientific and birding 'buzz'. The first clue to this bird's possible hybrid origin was its song, which combined elements of both species. In-hand examination following a mist net capture revealed that the bird (a male) had plumage characters of both species, though it appeared more Veery-like overall. VCE collected a small sample of blood, which we have submitted for mitochondrial DNA analysis to document the bird's maternal roots. This will provide insight (although not conclusive proof) into whether its parents crossed species boundaries and mated. It seems likely that the father was a Veery, the mother a Bicknell's Thrush. **Log on to our website** to listen to "VICK" and see sonograms of its peculiar song.



© Kent McFarland

—Chris Rimmer

## CITIZEN SCIENCE OPPORTUNITIES

If you enjoy watching wildlife and wish to contribute to protecting our natural heritage, then it's time to join the VCE team. Consider becoming a citizen scientist.

Project	Website/email	Leader	Season	Ability
<b>Vermont and Hispaniola eBird</b> Report and explore bird sightings with this online checklist.	<a href="http://ebird.org/content/vt/">ebird.org/content/vt/</a> <a href="http://ebird.org/content/hispaniola/">ebird.org/content/hispaniola/</a> <a href="mailto:kmcfarland@vtcostudies.org">kmcfarland@vtcostudies.org</a>	Kent McFarland	Year-round	Beginner to expert
<b>Mountain Birdwatch</b> Adopt a mountain and survey Bicknell's Thrush and other mountain songbirds.	<a href="http://www.vtcostudies.org/MBW/">www.vtcostudies.org/MBW/</a> <a href="mailto:jhart@vtcostudies.org">jhart@vtcostudies.org</a>	Julie Hart	June	Beginner to expert. Hiking required.
<b>Loonwatch</b> Participate in the annual one-day census of Vermont's breeding loons.	<a href="http://www.vtcostudies.org/loons/">www.vtcostudies.org/loons/</a> <a href="mailto:chanson@vtcostudies.org">chanson@vtcostudies.org</a>	Eric Hanson	mid-July	Beginner to expert
<b>Vermont Loon Recovery Program</b> Help monitor nests and lakes.	<a href="http://www.vtcostudies.org/loons/">www.vtcostudies.org/loons/</a> <a href="mailto:chanson@vtcostudies.org">chanson@vtcostudies.org</a>	Eric Hanson	Spring-Summer	Beginner to expert
<b>Forest Bird Monitoring Program</b> Help track long-term changes in populations of interior forest songbirds.	<a href="http://www.vtcostudies.org/FBMP/">www.vtcostudies.org/FBMP/</a> <a href="mailto:sfaccio@vtcostudies.org">sfaccio@vtcostudies.org</a>	Steve Faccio	June	Able to identify forest birds by sight and sound. Hiking required.
<b>Vermont Breeding Bird Survey</b> Participate in a roadside survey of Vermont's breeding birds and help track population trends.	<a href="http://www.vtcostudies.org/vtbbs">www.vtcostudies.org/vtbbs</a> <a href="mailto:sfaccio@vtcostudies.org">sfaccio@vtcostudies.org</a>	Steve Faccio	June	Able to identify VT breeding birds by sight and sound. Vehicle required.
<b>Vernal Pool Mapping Project</b> Help map vernal pool locations statewide by conducting field visits to potential pools.	<a href="mailto:sfaccio@vtcostudies.org">sfaccio@vtcostudies.org</a>	Steve Faccio	Primarily Spring, also Summer and Fall	Beginner to expert

## VOLUNTEER OPPORTUNITIES

If the above citizen scientist opportunities don't quite fit your style (or even if they do), but you have other skills to offer for the benefit of wildlife, consider volunteering at the Vermont Center for Ecostudies. Our staff are always interested in working with enthusiastic volunteers who have an interest in helping us achieve our conservation mission.

- \* Data entry (banding, bird surveys, bibliography)
- \* Digitizing photos
- \* Digitizing data in GIS
- \* Typing historical field notes
- \* Cataloging photo and slideshow files
- \* Data quality control
- \* Entering historic bird sightings into eBird
- \* Assisting with major mailings

## CITIZEN SCIENCE SPOTLIGHT—JULIE NICHOLSON

*We dedicate this issue of Field Notes to longtime volunteer Julie Nicholson. For 35 years (so far), Julie has contributed countless hours of her time on a myriad of bird research, monitoring, outreach, and conservation projects. She has been a cheerful, dedicated, skilled, and hard-working force in Vermont's birding community. She brings humor and passion to her work, with a presence enjoyed by everyone who comes into contact with her. Birders, researchers, and the larger conservation community in Vermont are forever indebted to Julie for all she has done to bring conservation into the forefront of the state's conscience. We asked Julie to jot down some thoughts and memories from her experiences over the years....*

I was a late-blooming birder. At first, my love of the outdoors made me a casual bird 'watcher'. On our property in Massachusetts way back when, I was tickled to watch the cock pheasant strutting and displaying, completely ignored by his harem while they ate cracked corn we had thrown out for them.

My first experience with serious birding came about because Sally Laughlin noticed how Nic, my husband, and I would take seeds with us when we snowshoed around our property on Church Hill Road in Woodstock. The birds would follow us, landing on our heads and feeding out of our hands. Sally talked me into helping with the bird banding operation started by Rick Farrar on the South Woodstock Country School land.

Thus started my long career of volunteer birding activities.

The bird nets were set up partly in the orchard on the side of a hill and partly in the woods. We recorded the data in an open-sided wooden shelter. The floor was raised about a foot off the ground, which we would sit on between net runs. We had to share the orchard with various farm animals, one of which was an overly friendly, large Billy goat that was determined to see what we were doing. He was not welcome!

We coped with big migration "fallouts" of many songbird species back in the '70's. Birds seemed to be abundant compared to the numbers we saw years later when we banded with Chris Rimmer and others at Bragdon Nature Preserve in Woodstock.

About this time, Rick, Sally and David Laughlin, Andrew Jenison, and many other interested and knowledgeable people decided to establish an institute. They strongly believed that an understanding of the natural world would benefit the people of the beautiful state of Vermont. I volunteered to help Rick in his newly acquired office on Elm Street in Woodstock, where he initiated the Vermont Institute of Natural

Science (VINS). It was interesting signing up members, many of whom became volunteers and, eventually, staff.

Rick suggested that I do a Breeding Bird Census (BBC) on my own 27 acres on Church Hill Road. I agreed and the experience opened my eyes to the remarkable diversity and abundance of birds on this relatively small plot of land.

Sadly though, during the time I lived on this property, I witnessed a sharp decline in the breeding birds. For instance, I had five Least Flycatcher nests where our land bordered the old dump road, but twenty years later in the '90's I could find only one. I did this census for six years.

In 1976 Sally Laughlin asked me to help with the first Vermont Breeding Bird Atlas. I was assigned to a survey area in and around my own property, so I had a good start that first year using data from my BBC. I really loved this work. Being out early in the morning in beautiful surroundings and getting to know birds by their song or chip notes was very satisfying. Later we were worried that some local survey areas were insufficiently covered, so I did additional atlasing in Woodstock and Plymouth with Patsy Highberg for company. We had a lot of fun together.

Once while atlasing, I was jumping from rock to rock to cross to an island in the Ottauquechee River where I believed Spotted Sandpipers were nesting. I slipped and fell, jamming my finger between a rock and my binoculars. By chance, I had a dentist appointment later that morning with David Laughlin. I showed him my finger and he said since I had injured it in the interest of science and conservation, that he would take an X-ray in case it was broken. Luckily, all was well.

Beginning in 1984, not long after the Atlas, I helped Annette Gosnell, who coordinated the 5-year project, do her Landgrove Breeding Bird Survey route. She would come by for me at 2.30 a.m. so we could be at our starting point by first light. I must say it was often a hilarious drive with Annette dressing or undressing as we traveled. I was on the receiving end of various unmentionable garments flung my way while she kept her eye on the road. Annette was one of many special friends I made through birds. She now lives in Maine and we still enjoy birding trips together.

A good deal of my work with VINS entailed assisting with the Records of Vermont Birds (RVB), a quarterly statewide bird report. I helped launch RVB back in 1973 and was involved (with a couple of breaks) until we moved to computer reporting via Vermont eBird in 2003. Although RVB took up a lot of time and entailed large quantities of paper work,

it was good for me to be occupied with something other than the manual work I was doing with Nic at our newly-built house: stacking wood, gardening, landscaping, grading, and putting in stone terraces.

I was truly impressed by the faithfulness of the many RVB contributors from all over Vermont. Some people reported regularly four times a year for 20 years! I felt as though I was old friends with some participants whom I never even met.

During the years before VINS built its rehabilitation facilities on Church Hill for raptors, dickie birds, and other creatures, what did they do with them? You guessed it, they brought them down the road to me. We had robins, waxwings, even a flicker that embarrassed us by seemingly finding endless things of interest to eat in our Rya rugs. Also there was George the young Barred Owl, whose presence meant the refrigerator was loaded with mice that had to be cut up. But he was surprisingly playful and fun.

After a session with a baby porcupine that had to be fed with a bottle, we wondered ‘what next?’ Mary Holland, who brought the porcupine down to us, wrote “Julie takes on all these stray birds and critters, and most any time one can see her walking around, bottle in hand.” Many friends accused me of imbibing by day.



JULIE NICHOLSON RIDING HER BIKE IN WOODSTOCK, VERMONT, IN 1995.

Another opportunity to volunteer came about when Sally started the Woodstock Christmas Bird Count (CBC) in 1975. She and Ed Hack laid out a survey circle and roped me in the following year. I later became co-compiler of the Woodstock CBC with Sally, and I continue in that role to this day.

More recently, I was thrilled when the VINS Conservation Biology Department decided to carry out the second Vermont Atlas, meaning I would again be able to devote more time to field work. These last few years with the two Atlas projects, the Vermont Butterfly Survey and the Vermont Breeding Bird Atlas, have been the most fun and rewarding experiences of my volunteer career. These projects made me feel like I really had an impact on conservation. In particular, during the first year of the Butterfly Survey I became familiar with a whole new family of insects, along with Anne Aversa, a fellow volunteer. We were contributing to knowledge of the location, elevation, flight periods, etc.—little known characteristics of butterflies in Vermont.

I was asked what advice I would give to someone just beginning to get involved with volunteer work in conservation. My answer is be prepared to get hooked and spend a lot more time than you ever intended! But not to worry, you will never regret it.

When the VINS biologists branched out on their own and formed what is now the Vermont Center for Ecostudies (VCE), my allegiance went with them. I admire the important work they are doing in Vermont and beyond, such as in the Dominican Republic, Haiti, and Bolivia. They are a great group of incredibly hard-working, dedicated people, working with biologists in those countries who are struggling to preserve what is left of crucial habitat for birds and other wildlife. I am convinced they will have a lasting impact on whatever they tackle.

I have learned so much from innumerable people while working with the VCE biologists and the other volunteers with whom I joined forces. Although I don’t have a mentor per se, I must especially thank George Clark of Norwich, with whom I often searched for breeding birds during the second Atlas. George is so knowledgeable about birds in general and has such phenomenal hearing, that he is not only an inspiration, but great fun to be with.

I’ll probably continue to volunteer as needed, but I’m hoping to spend more time just wandering in the countryside and exploring nature with all it has to offer. There is still so much to discover....

—Julia Nicholson

# HISPANIOLA EXCHANGE: AN INTERVIEW

During July, the Vermont Center for Ecostudies (VCE) hosted a 3-week exchange of a Dominican and three Haitian colleagues, as part of VCE's long-term commitment to biodiversity conservation on Hispaniola. The team visited the Cornell Lab of Ornithology, Manomet Center for Conservation Sciences, and the Museum of Comparative Zoology at Harvard. They assisted with Bicknell's Thrush field work on Stratton Mountain and American Pipit research on Mount Washington. They had the opportunity to watch Fourth of July celebrations in Woodstock, VT, ice skate, go canoeing and kayaking, and experience the extreme weather on Mount Washington. VCE conservation biologist Julie Hart interviewed our friends about their experience here.

## Enold Louis Jean

Only days before arriving in Vermont, Enold finished his Master's research in Guadeloupe. He is originally from Les Cayes, Haiti, where he and Anderson are active members of the local Audubon chapter. Enold worked closely with Chris Rimmer during recent field expeditions in Haiti.



All portraits © Julie Hart

What was your favorite cultural experience?

It was very interesting to go kayaking and canoeing. This experience stimulated us to appreciate nature and the environment more than ever.

How did the experience help advance your career in conservation?

We learned and practiced some new conservation techniques. It was an opportunity to observe and learn about new species at Stratton Mountain, Mount Washington, the Museum of Comparative Zoology at Harvard University. Also, meetings with several eminent scientists who work in conservation biology generated ideas that are very useful and improved our knowledge.

In your opinion, what is the single most important thing potential partners in the U.S. can do to help conservation efforts on Hispaniola?

The single most important support that our U.S. partners can give us to help conservation on Hispaniola is to provide additional funding and improve educational opportunities for capacity building of Dominicans and Haitians who are committed to live on the island and work in collaboration with national and international organizations.

## Robert Ortiz

Robert has been working on Hispaniolian conservation with Chris Rimmer for the last five years. He is the curator of birds at the Museum of Natural History in Santo Domingo, Dominican Republic.



What was your favorite cultural experience?

During our stay in the U.S., I visited the states of Vermont, New Hampshire, Massachusetts, and New York. Overall, the people in Vermont, where I spent most of my stay, were very friendly and interested about the problems in our countries and our cultures. It was really inspiring to see an almost generalized conscience about conserving their natural resources in many ways, like recycling, consumption of organic products, visiting natural areas, supporting conservation campaigns, and media coverage of environmental issues.

What have you been telling your friends and family about the experience?

I have been telling them about the care and attention that VCE staff and our head coach, colleague, and friend Christopher Rimmer and his family extended to me during my stay. I have also described the health of the natural resources (forests, wetlands, landscapes), the capacity to coordinate meetings, the respect for arriving at meetings on time, the generalized conscience to take care of natural resources, the dedication to conservation efforts, the respect for the law, and the most important stuff: food and beverages, especially the delicious cheeses, Vermont maple syrup, organic buffalo burgers, and Long Trail beer.

In your opinion, what is the single most important thing potential partners in the U.S. can do to help conservation efforts on Hispaniola?

- 1) Advisory support. To update and build the commitment of people and institutions involved in conservation.
- 2) Field training. Focus on building and improving the capacity of biology students and others with an interest in becoming field technicians committed to conservation. We have a lot of things to do concerning research and education. Investigators will need well-trained people so we can achieve the goals of surveys and other studies.

3) Cultural exchanges. For other people who can make the most of opportunities like this. Explaining the advances and experiences in different projects implemented in a specific location, motivating them and offering the chance to update their knowledge and share experiences. They, like I did, will have the chance to gain new ideas and methods to apply in their countries, reinforcing their potential.

**Abdel Abellard**

*Abdel joined us after he completed his Master's degree in sustainable development and conservation biology at the University of Maryland. He is originally from Ouanaminthe, Haiti.*



What surprised you the most during your stay?

The most surprising experience for me was the fact that we were so very welcome during our trip. Also, it surprised me to learn that some of the world's best-known scientists are enthusiastic about us and are willing not only

to help us achieve conservation in Hispaniola, but also want us to succeed.

Do you have hope that Hispaniola can regain some balance between economic development and conserving biodiversity? What is the single most important step that must occur for that to happen?

I do, but the most important step is law enforcement (stop allowing politics to rule over conservation issues). We need to be more serious about these issues, it is really a matter of to be or not to be. We know exactly what should be done.

Did the trip inspire you to further your career in conservation? How?

Of course. I met people who are not only dedicated to conservation on the Island but also who are encouraging us and will be there for us whenever we need advice and direct help.

How did the experience help advance your career in conservation?

I think that, with my experiences, such as on Stratton and Mount Washington, I am a very important resource for con-

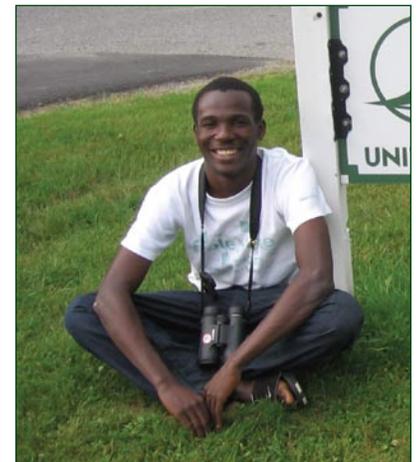
servation in Haiti. There are not many people in Haiti who know or could do well what we learned during the field trip. So this experience helped us strengthen our knowledge and could help us do a better job in Macaya and La Visite (priority sites for the conservation of Black-capped Petrel).

**Anderson Jean**

*Anderson is from Les Cayes, in southwestern Haiti. He spent a month at Cornell University monitoring Tree Swallows prior to spending three weeks with VCE.*

Did the trip inspire you to further your career in conservation? How?

Yes, it inspired me to empower others by sharing what I have learned, working beside communities that require the most attention. This experience increased my skills and opened my eyes to focus on studying Important Bird Areas and trying to connect to community leaders in order to understand the need of every community living close to protected areas. I now have more skill in problem solving and know more birds, and I hope to find some appropriate conservation techniques for resident endemic birds.



What steps are you planning to further your career in conservation?

I want to help identify Important Bird Areas in Haiti, create a bird atlas for the country, and determine the breeding ranges of resident species.

**LOG ON TO [WWW.VTECOSTUDIES.ORG/HISPBIRD/TRAINING.HTML](http://WWW.VTECOSTUDIES.ORG/HISPBIRD/TRAINING.HTML) TO VIEW PHOTOS FROM THE CONSERVATION EXCHANGE.**

What was your favorite cultural experience?

My favorite cultural experiences were the Independence Day celebration and getting to know many new colleagues and friends.

## AMERICAN PIPIT (*ANTHUS RUBESCENS*)

The American Pipit is an inconspicuous, slender, ground-dwelling songbird of open habitats. Superficially resembling sparrows in size and color, pipits can be distinguished by their thin bill and tail-bobbing behavior. Pipits breed in high alpine meadows of western mountains and on the arctic tundra of Alaska and Canada. In the Northeast, small, isolated populations inhabit the alpine tundra zones of New Hampshire's Presidential Range, Mt. Katahdin in Maine, and the Chic Choc Mountains of Quebec's Gaspé Peninsula.

Formerly known as the Water Pipit (*Anthus spinoletta*), a wide-ranging species occurring from Great Britain and Scandinavia to the high mountains of Europe and central Asia, recent taxonomic studies revealed that the North American, eastern Siberian, and Greenland races were a distinct species.

In autumn, loose flocks of pipits migrate south throughout North America, frequenting shorelines, marshes, stubble fields, and mudflats. In Vermont, small to moderate-sized flocks begin to show up in late August, and peak in late October before departing by the second week of November



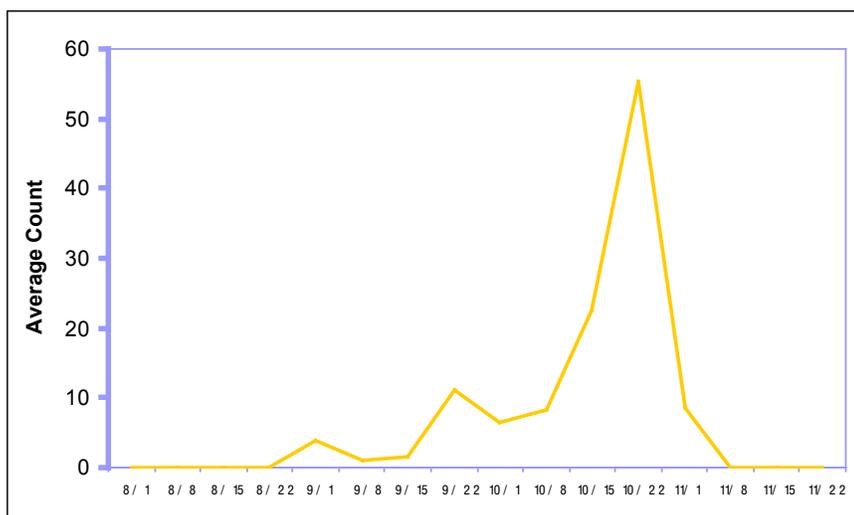
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ONE OF THE ADULT AMERICAN PIPITS CAPTURED DURING A PILOT STUDY ON MOUNT WASHINGTON IN 2008.

(see chart below). Pipits overwinter in the southern U.S. and Mexico south to northern Central America.

### Conservation Status

Although the American Pipit is widespread across arctic tundra and alpine regions of western North America, the isolated populations here in the Northeast may be at risk. It is unknown if the Mt. Washington, Katahdin, and Gaspé populations are genetically linked with the large, contiguous population ranging from Newfoundland across arctic Canada. If not, these small pockets of breeding birds may be unique subspecies deserving of conservation attention. This past summer, VCE biologists and partners conducted a pilot study on Mt. Washington, collecting blood and feather samples from adults and young at two nests. Laboratory analyses are underway, and we hope results will provide information about population connectivity (see cover article), and whether or not expanded research is warranted.



AVERAGE WEEKLY COUNTS OF AMERICAN PIPITS IN VERMONT, AUGUST TO DECEMBER, 2004-2008. DATA PROVIDED BY VERMONT eBIRD.