Field Notes

VERMONT CENTER FOR ECOSTUDIES
UNITING PEOPLE & SCIENCE FOR CONSERVATION

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Uniting People and Science for Conservation

Hispaniola's Montane Forests: Biodiversity Hotspots

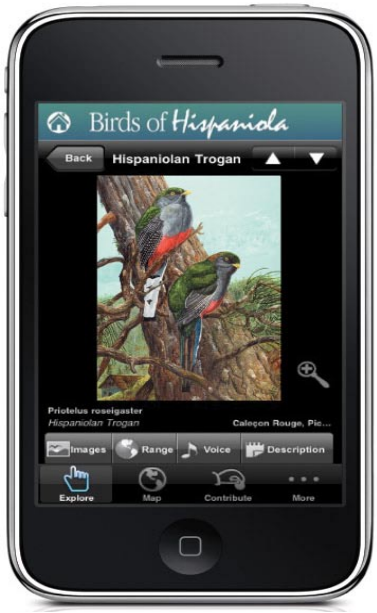
Hispaniola is arguably the Caribbean's most ecologically, climatically, ethnically, and culturally diverse island. Comprised of the adjoining nations of Haiti and the Dominican Republic (DR), Hispaniola's human history is complex, its political turbulence legendary, its environmental legacy now precarious. Too many people in too small a space for too long a time–volatile ingredients that foretell a conservation crisis. However, spectacular biological riches remain, and even flourish, in protected remnants of intact habitat. Many of these lie in mountainous areas, where geographic isolation, varied topography and discrete microclimates have combined to produce extraordinary biodiversity and endemism. Hispaniola's montane forests harbor some of the Caribbean's most distinctive, yet vulnerable, flora and fauna.

Since my exploratory field trip to Sierra de Bahoruco in December of 1994, when I heard my first subdued *'peeer'* calls of a wintering Bicknell's Thrush in dense broadleaf cloud forest at dawn, I have been irreversibly hooked. Hispaniola's montane forests have captivated me in mind, spirit and conservation focus. It's not only that they constitute the primary winter habitat of Bicknell's Thrush, a VCE flagship species–there is much more. The island's high-elevation broadleaf and pine forests harbor no fewer than 21 of Hispaniola's 31 recognized endemic bird species–9 or 10 of these are found in no other habitat types. Several, including La Selle Thrush, Western Chat-Tanager, and Hispaniolan Crossbill, rank among the Caribbean's most rare, at-risk species. The Black-capped Petrel, a small pelagic 'tubenose', may number fewer

CONTINUED ON PAGE 3

© Eladio Fernandez

Found nowhere else in the world, the La Selle Thrush is one of Hispaniola's rarest birds and a top conservation priority.



An iPhone displaying the national bird of Haiti, one of 58 endemic birds featured in the new app, which raises funds for earthquake relief in Haiti.

New iPhone App Raises Funds for Haiti

The vibrant painting of Haiti's national bird, the Hispaniolan Trogon, glowing on the iPhone screen and its "*cock-crow*" call rolling from the speaker offer a welcome contrast to the stark aftermath of January's disastrous earthquake in Haiti. But the partners that joined forces to create *The Birds of Hispaniola* iPhone and iPod Touch application hope that glimmers of avian beauty will raise much-needed funds for humanitarian aid in Haiti.

"With nearly 100 million birders in North America alone, we hope this will be a way for all of us to easily contribute to Haitian relief efforts and learn about the island's amazing birdlife at the same time," said VCE biologist Kent McFarland, who hatched the idea.

The app features 58 bird species and subspecies that are unique, or endemic, to the island of Hispaniola, the birthplace of John James Audubon. With comprehensive information on each, strikingly detailed paintings, and an astounding library of bird songs and calls, *The Birds of Hispaniola* offers an insightful look into some of the most remarkable bird habitats on the planet. At the same time, it provides a powerful tool to support the rebuilding efforts of a nation in great need.

"This project was wholly underwritten by the partners," said Green Mountain Digital Creative Director Charlie Rattigan. "Not a single penny will be charged for our time, effort

CONTINUED ON PAGE 3

Field Notes
Spring 2010 • Volume 3, No. 1

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.

Your support in any amount will help us achieve our conservation mission. All donations are tax deductable

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

VERMONT CENTER FOR ECOSTUDIES
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VCE View

Few sounds on this planet rival the quavering, dissonant song of a Rufous-throated Solitaire. Maybe I'm biased after 16 winters of familiarity with this signature resident of Hispaniola's cloud forests, but my spine tingles every time I hear one. The solitaire is an evocative bird, epitomizing for me these forests' splendor and biological richness, but also their fragility as a cornerstone of Hispaniolan biodiversity.

Lately, I've been thinking as much about people as about birds on Hispaniola. My recent trip to the Dominican Republic reaffirmed the integral role of people in advancing VCE's mission to conserve wildlife. During our 10-day field training workshop in remote Sierra de Bahoruco, I was repeatedly struck by the value of VCE's capacity building work on Hispaniola. Our efforts to monitor and build a knowledge base of bird populations are crucial, of course, to achieve science-based conservation. However, nurturing a new generation of local conservationists may be VCE's most significant undertaking on the island. Our group of 11 students was eager, enthusiastic, and openly appreciative of the opportunity they had. I know some lives were changed over those ten short, but inspiring days.

Conservation invariably comes down to people, and across VCE's diverse slate of wildlife projects, you won't find one without people at its core. Whether you're a citizen scientist, a financial supporter, a professional colleague, a conservation-minded citizen, or all of the above, I know you share our commitment to unite people and science for conservation. For me, the poignant song of a Rufous-throated Solitaire most recently brought home that tenet of our mission. We all have our own personal reminders. Enjoy the coming of spring!

—Chris Rimmer

New Staff

Judith (Jude) Scarl received an AB in psychology and biology from Harvard University in 2002, where she studied vocal communication in captive Cotton-top Tamarins. She received her Ph.D. in behavioral biology from Cornell University in 2008. Her doctoral research focused on sex differences and vocal flexibility in Australian and Costa Rican parrot communication, which involved chasing boisterous pink cockatoos, climbing brittle trees, and being a frequent recipient of enthusiastic finger bites. She has also researched nestling communication and nest structure in Australian White-browed Scrubwrens, vocal preferences in Panamanian Tungara frogs, and prelinguistic communication in human infants.

When Jude is not directing Mountain Birdwatch, she enjoys rock climbing, motorcycle riding, hiking with her dog, reading, and eating copious amounts of sushi.

Sara Zahendra is a transplanted Texan who got her BS in Ecology, Evolution and Behavior from the University of Texas at Austin in 2007. Before moving to New Hampshire, she worked for Bat Conservation International in Austin where she spent her days on speaking engagements, convincing gaggles of Texans that bats are loveable and fascinating creatures. Previous to this stint, she was a teacher, a zoo keeper, and an interpreter. Sara is a lover of all animals, especially insects and her husband, Karl. For now, while working on the Vermont Butterfly Survey, she is thoroughly enjoying her fixation with butterflies.

Sara lives in Lyme, New Hampshire with her husband, three cats and one loveable, enormous dog. She enjoys too many things to list, but most notably running, bantering with Kent McFarland, laughing, and experiencing different cultures through shoestring travel.

Hispaniola's Montane Forests - continued from page 1

than 1,000 individuals worldwide and is known to nest only in limestone cliffs of Haiti and the southwestern DR (see page 4).

The biotic richness of Hispaniola's montane forests is hardly limited to birds. Among plants, there are about 320 species of orchids endemic to the island–Sierra de Bahoruco alone is known to support 166 of these, with at least 32 species found nowhere outside this range! Haiti's Massif de la Hotte on the southwestern Tiburon Peninsula supports the country's only significant remnant of intact forest, mostly in the Macaya Biosphere Reserve. This rugged and remote range is one of the Caribbean's top five Key Biodiversity Areas, yet contains 42 globally threatened vertebrate species. Its amphibian diversity alone has earned la Hotte the dubious distinction of being the world's highest-ranked Alliance for Zero Extinction site, with no fewer than 13 species of Critically Endangered *Eleutherodactylus* frogs unique to the massif. Each of Hispaniola's mountain ranges forms its own epicenter of exceptional diversity, and each faces its own set of conservation pressures.

© Some damn fool

Cloud forest in Haiti's Macaya Biosphere Reserve.

After more than 15 years studying Hispaniola's migrant and resident birds, and collaborating with local partners for the conservation of these species, VCE is honing its focus. We'll use Bicknell's Thrush as an 'umbrella' species to target our efforts on montane forests and their biota. While this hardly breaks new ground for us, it charts a more explicit course, as we seek to maximize the conservation outcomes of our work on Hispaniola. By concentrating research, monitoring, capacity building and on-the-ground management in montane areas, especially those most at risk, we hope to deliver more effective, science-based conservation.

The forthcoming Bicknell's Thrush Conservation Action Plan, due for release in late May by the International Bicknell's Thrush Conservation Group (IBTCG), may provide a timely rallying point for conservation on Hispaniola. The Plan details a number of priority conservation actions for the species' wintering grounds, of which Hispaniola forms the undisputed core. The IBTCG's annual meeting will take place in Santo Domingo this November, with VCE providing primary coordination. We fully intend that this gathering will launch a sustained, international commitment to conservation, one that transcends political boundaries and reaches far beyond Bicknell's Thrush. It all comes down to conserving habitats, and none are more crucial reservoirs for Hispaniolan biodiversity than montane forests.

Time is slipping away for Hispaniola's montane forests. Increasing human encroachment whittles them into smaller and more fragmented patches, while global climate change fundamentally threatens their long-term ecological integrity. An astonishing array of unique life forms is at stake, including 'our' own Bicknell's Thrush. Expansive, virtually pristine tracts remain, especially in the DR, but other areas teeter on the brink. Much hangs in the balance–the spry *'chi-cui'* calls of Narrow-billed Todies, the fervent nocturnal chirps and clucks of endemic tree frogs, the lichen-festooned stands of stately Hispaniolan pines and broad-leafed *'palo de viento'*. VCE and its many partners are rolling up our sleeves.

—Chris Rimmer

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iPhone App - continued from page 1

or materials. All of the funds we raise from the sales of this app will go to help Haiti."

Most of the material for the app came from the popular Princeton University Press field guide, *The Birds of Hispaniola*, while the recordings of bird songs and calls were provided by the Cornell Lab of Ornithology's Macaulay Library, the world's largest archive of natural sounds.

"It was an easy sell to convince each of the partners to contribute," said McFarland. "From the artists and authors to the publishers, designers, and software developers, all leaped at the opportunity to help Haiti."

With materials in hand from the other partners, Green Mountain Digital, creators of natural history guides for mobile devices, and Brisk Mobile, a Canadian mobile application developer, designed and developed the innovative app.

One hundred percent of the app sales will go immediately to relief efforts in Haiti led by Partners in Health and Habitat for Humanity. The funds will directly support on-the-ground efforts to provide medical care and critical supplies to those affected by the earthquake, as well as to long term strategies to rebuild stronger and more sustainable communities in Haiti.

"We chose these two organizations because they have a long history in helping Haiti and have been doing amazing work there since the earthquake—they really need our help," said National Aviary biologist Steve Latta, lead author of the Princeton University Press field guide.

The Birds of Hispaniola app can be purchased at the iTunes Store for $14.95.

Searching Haiti for Diablotin

After difficult logistics and drenching rain foiled our first two attempts in 2006 and 2008 to survey for Black-capped Petrels (*Pterodroma hasitata*) on Pic Macaya (2300 m) in Haiti, would the third time be the charm? This rare seabird is nocturnal, lending it the common name of *Diablotin* (translated as *little devil*), and breeds in remote forested montane areas; both factors contribute to our lack of understanding about this Caribbean endemic. The ground-breaking work of David Wingate in the 1960s, and Charles Woods, Paul Paryski, and others in the 1980s, discovered the only three known breeding sites for this species, of which Macaya was the last-discovered and most remote.

Pic Macaya at 2347 m (7700 ft) is the highest mountain in western Haiti and supports a high diversity of endemic plants, including the large Hispaniolan Pines seen here capping the ridge.

With funding from the U.S. Fish and Wildlife Service, MacArthur Foundation, and Cornell Lab of Ornithology, and help from local partners such as Grupo Jaragua, Fondation Seguin and Audubon Society of Haiti, we had already invested several weeks in 2008 and early 2009 surveying the other two known breeding sites, one at La Visite, 25 km southeast of Port-au-Prince, and the other at Loma del Toro, 60 km further east just across the Dominican Republic border. Surveying for petrels at these sites entailed daytime scouting to select survey locations every few hundred meters along the rugged breeding cliffs, then returning at night to listen for petrels at each survey point. If present, the petrels begin to arrive an hour after sunset and engage in their noisy courtship flights far into the night.

Although frequent high winds, rain, and fog make estimating petrel numbers extremely difficult, along 13 km of escarpment at La Visite we found several aggregations which we estimated contained dozens of calling birds. Especially worrisome at La Visite was the rapid forest clearing for agriculture that has reduced available habitat to a small and fragmented broadleaf forest that now covers less than 240 hectares (about 600 acres). At Loma del Toro we found only a handful of scattered birds, although thankfully the site is reasonably well-protected inside Sierra de Bahoruco National Park. That left Macaya Biosphere Reserve as the last unknown, as the area had not been adequately surveyed since the 1980s. Macaya harbors high plant diversity, particularly in the orchid family, and the most spectacular remnants of Haiti's magnificent pine forest, with some individual pines approaching 1.5 meters in diameter (about 5 feet). This vulnerable island of mountain forest is the source of several rivers and aquifers that nourish agriculture in the plains below and provide clean water critical to the survival of thousands of people in southwestern Haiti.

After four days of rugged hiking, the field crew finally reached the summit of Pic Macaya. Despite this remoteness, men carrying pine boards are often encountered.

Although our 2006 surveys detected two petrel flyovers on adjacent Pic Formon (2200 m), we could not predict what we might find on Pic Macaya to the north. The impact of fires that ravaged the mountain's south slope in the 1990s and again in 2006 was unknown to us. Unknown, too, were long-term impacts of introduced mammals such as rats, which Woods reported in the 1980s as common on Macaya. Petrels nest in natural or excavated cavities under tree roots or rocks, making the nestlings highly vulnerable to introduced rats, cats, mongoose, and even pigs.

Finally, in mid-December 2009, with VCE colleagues Enold Louis Jean and Anderson Jean of Audubon Center of American University of Les Cayes, and Julie Hart, a University of Wyoming PhD student and former VCE Mountain Birdwatch coordinator, we struck out for Pic Macaya. Closely following a team of 15 porters, guides, and trail cutters, we set up successive base camps, first on Pic Formon, and then on the connecting saddle at Macaya's base. On Formon, as during our 2006 expedition, we detected a few fly-overs each evening, roughly an hour after sunset. It seemed that birds were passing over us from the south coast on their way to Macaya. Late on our fourth afternoon, we reached Macaya's summit with just enough time to cut a few hundred meters of trail for surveys that evening.

© Jim Goetz

Treehuggers, Jim Goetz (left) and Julie Hart embracing one of the huge remnant Hispaniolan Pines in Haiti's Macaya Biosphere Reserve.

Listening intently over persistent wind, we thought we could detect petrels to the south at the very limit of hearing—or was the wind playing tricks on us? The next night we surveyed a full kilometer to the north. Again, petrels seemed to be calling at the very edge of hearing to the south towards Pic Formon. On our third night, 16 December, we surveyed two transects, one a kilometer from the summit off to the east, and the other a half kilometer south, down the steep saddle ridge between Formon and Macaya. To the east we detected no activity, but halfway down the saddle we finally heard the haunting calls of several Black-capped Petrels. The birds were wheeling in courtship flights 10-20 meters above our heads, and with the aid of a spotlight we were able to visually identify at least six flying petrels.

This admittedly small number was nevertheless encouraging because it is likely that in December most adult petrels are far at sea fattening up to prepare for impending egg-laying and week-long incubation bouts. It will be important to conduct further surveys at Macaya in November when experienced adults are courting, and in January and February when pre-breeders practice courting. The experience we gained on this expedition will greatly facilitate future surveys.

Although our surveys confirmed the persistence of breeding petrel populations on Hispaniola, the species' exact conservation status is poorly known. We believe that the overall population has dropped to an alarmingly low level, perhaps as few as 1,000 individuals. Our surveys indicate that major conservation hurdles remain, especially due to continuing impacts of deforestation from expansion of grazing, agriculture, and lumber extraction. For example, despite our exhilaration at finding a half dozen petrels and witnessing the summit of Macaya's recovery from the 2006 blaze with a thick regeneration of broadleaf shrubs and small pines, we were dismayed to see scars of a 2008 fire that burned just short of the summit, and a herd of a dozen goats foraging on the steep, scrubby cliffs.

In the wake of the devastating 12 January 2010 earthquake, the human exodus from Port-au-Prince has undoubtedly increased pressure on Haiti's last forest jewels at Macaya and La Visite. Our great collective challenge will be to balance protection of the forest reserves and the critical ecosystem services they provide with the basic needs of tens of thousands of people who depend on them for daily survival.

—Jim Goetz, VCE Research Associate

To learn more about Diablotin, visit the U. S. Fish and Wildlife Service webpage dedicated to this vulnerable species: http://www.fws.gov/birds/waterbirds/petrel/

A Day in the Life of a Tropical Field Biologist

Between early January and mid-April of this past winter, Juan Klavins and I hung our hats in the Dominican Republic's eastern Cordillera Septentrional, where we led VCE's study to determine the distribution and habitat use of Bicknell's Thrush and 9 other avian species in various broadleaf forest types . We worked in, around, and between two scientific reserves: Loma Quita Espuela and Loma Guaconejo. Our daily activities varied widely, and no two days were ever the same. However, our typical routine was to conduct standardized bird surveys for 2-3 hours in the morning and again in the evening. We lived out of our tents and 4WD truck almost continuously. We won't claim to have always been comfortable, well-rested or clean, but on the whole we counted ourselves lucky and content. We often laughed at our good fortune to have a job studying birds in the Dominican Republic! A related field project involved attaching solar geolocators to Bicknell's Thrush in Loma Guaconejo to learn more about the species' migratory patterns and connectivity. The following snippit highlights one of our working days in Guaconejo, specifically February 17, 2010.

© Patrick Johnson

The caseta with wraparound porch in Loma Guaconejo, Dominican Republic.

5 AM–Still dark; the sun not due to rise for another hour and 45 minutes, but we face a 4-km hike to reach our mist nets before first light. Emerging from my tent, I head straight for the truck to prepare a bowl of cereal with supplies from the backseat "pantry." Cereal in bowl, I head to the spigot for some water, which is piped straight from one of the mountain streams that wind through Loma Guaconejo's forests. I pour the water, which is clean and safe to drink, over my cereal and grab a seat on the wraparound porch of the caseta. The morning air is a comfortable 65°F, a welcome change from freezing February mornings in Vermont. I sit quietly eating my cereal under a blanket of stars. A Barn Owl screams from the mango tree nearby, getting my attention. A Limpkin follows with a loud *carrao* from the distant rice fields below.

© Juan Klavins

Author and Field Biologist Pat Johnson with a Bicknell's Thrush.

After finishing my breakfast I enter the caseta, a simple wooden shelter with smooth concrete floors, electricity from a few solar panels on its green metal roof, a bedroom for each of the two park guards who caretake the facility, a small kitchen with a propane stove and meager supplies, 2 wooden desks, a small bookshelf stocked with information on Dominican flora and fauna, a few chairs, a radio, and a map of the reserve displayed prominently on the wall. Inside, Juan is reading by headlamp, quietly enjoying maté, taking care not to disturb our sleeping friends in the rooms a few feet away. He greets me with a nod and a fresh maté. Yerba maté is a plant in the Holly family that is native to subtropical South America. Its leaves are placed into a hollowed-out gourd and covered with hot water to make a tea. Drinking and sharing maté is an important part of many South American cultures, including Jaun's native Argentina.

5:45—José Luis, one of the park guards, awakens and greets us with enthusiasm as he heads over to the radio to switch on his favorite *bachata* station. Bachata is a lively style of music and dance that originated in the Dominican countryside. It has distinctive melodies and arpeggios, and its lyrics, much like country and blues music in the United States, often focus on heartbreak and sadness. It's fun to listen to most of the time and is quite popular in rural areas of the DR, but I prefer the more positive and upbeat *merengue* music. We all have different tastes.

6 AM—Headlamps on, we begin hiking along the former logging trail, steadily climbing to the reserve's higher elevations, where Bicknell's Thrush are numerous. On the way up, as color starts to return to the forest, I hear a Bicknell's Thrush sing near one of our nets. While dawn and dusk *'beeer'* calls are common in winter, we raely hear songs. I think to myself that we may have some luck capturing one today.

6:45—The humid heat has us dripping with sweat when we reach the nets, but we work quickly to open them and place our iPods and speakers nearby; these will broadcast Bicknell's songs and calls in a repeated loop. We turn them on and quickly leave the area. Settling under a 25-m tall cola tree about 75 m away, we sit quietly and wait. Bicknell's Thrush (and many other songbirds) are territorial on their wintering grounds. Birds perceive the iPod recordings as a potential intruder and often respond aggressively by attempting to evict the invader with as much ferocity as a 25-gram bird can muster. If and when this happens, there's a good chance that they'll end up harmlessly entangled in one of our nets.

7:05—We've waited long enough; time to check the nets. Approaching quickly but quietly, we're excited to discover several birds hanging in the trammels – most notable are two Bicknell's Thrushes (which we place in cotton bird bags to bring back to our cola tree), as well as a Black-crowned Palm Tanager, Black-throated Blue Warbler, Worm-eating Warbler, and a Red-legged Thrush, all of which we release on the spot. Once back at the cola tree, we take out our banding and blood sampling equipment and prepare for the banding ritual: banding pliers, size 1B FWS bands, wing ruler, dial calipers, small digital scale, needle, cotton, capillary tubes, vials with lysis buffer, vacutainers, scissors, and a geolocator. We are catching these birds primarily to outfit them with 1-gram geolocators—little solar devices which record the precise time of daily sunrise and sunset wherever the bird may be. This information provides clues as to where the bird has been and when, allowing us to piece together its migratory path and timing. The only catch is that in order to retrieve these data, the bird must be captured again after it has completed its trip north and back again.

© Parick Johnson

Field Biologist Juan Klavins with a Bicknell's Thursh outfitted with a geolocator.

Using lightweight kevlar thread, we carefully attach a geolocator to each bird so it fits like a mini backpack. After banding, measuring, weighing, and collecting a few drops of blood from each, we return then to their territories and silently wish them luck. Satisfied with catching two more Bicknell's Thrush, bringing our total to 12 on this little stretch of trail, we take down our nets, move them to a new location, and get them ready for tomorrow morning.

2 PM—We hike back down to the caseta to find a crew of people busy at work in the outdoor kitchen. It is the family of Ramon, a park guard, and they are preparing *habichuela con dulce*, a delicious Dominican dessert that is traditionally served around Easter. It is a sweet red liquid made of beans, coconut, sweet potatoes, and raisins — we are mesmerized watching Ramon and his family prepare this treat, and absolutely delighted to have them share it with us.

© Juan Klavins

Preparing *habichuela con dulce*, a sweet Dominican dessert traditionally served around Easter.

5 PM—Time to head back out into the woods to conduct our daily point count surveys. Juan and I each survey 4 points for 20 minutes each, recording every bird that we see or hear. Arriving back at the caseta just after dark, tired and sweating, we're again treated to a simple but delicious meal prepared by Ramon – one of our favorite staples here in the DR, rice and beans. We eat until we are full. I take a shower under the spigot and retire for the evening early; tomorrow is sure to be another long day.

—Pat Johnson

VCE News and Events

Migration is a Cycle Too—Biking Jersey for Conservation

Longtime VCE supporter Terry Precision Cycling has created a slick women's biking jersey that touts the importance of bird conservation. Both beautiful and durable, these jerseys let you relish in conserving the very outdoors you enjoy—20% of the profits go towards VCE research. Bikers following you will enjoy the graphic depicting the migration route of Bicknell's Thrush that adorns the back of the jersey. Featuring vibrant colors for high visibility, a full zip front with raglan sleeves and 3 open rear pockets for maximum flexibility. Tell your biking buddies! Go to www.terrybicycles.com and click on "conservation."

VCE Birdathon 2010

When: May 2010

Where: Anywhere

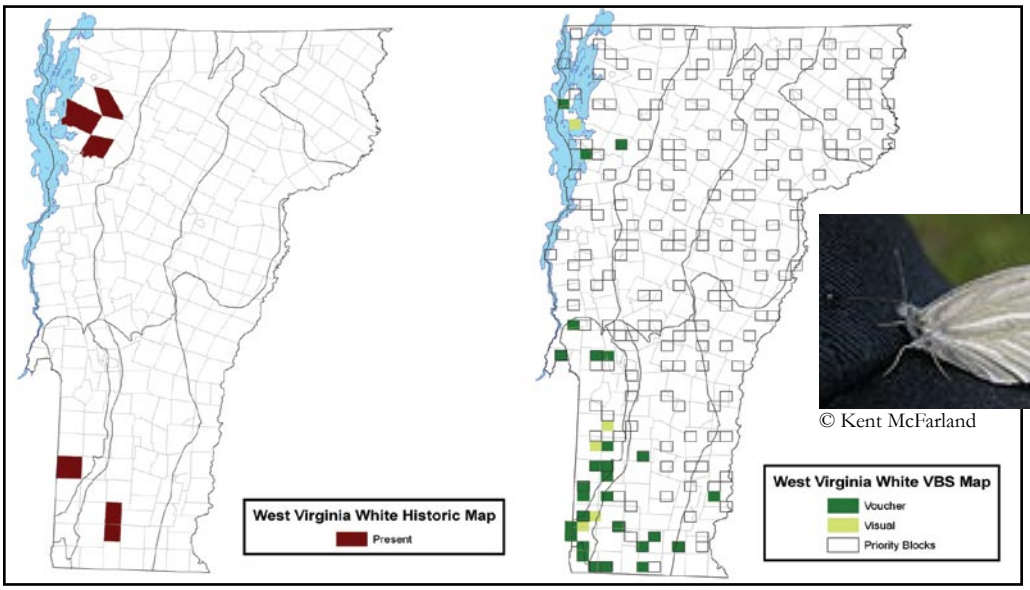
More Info: www.vtbirdathon.org

Once again, Team VCE will take to the field in May to celebrate the return of our migratory birds. We invite you to get out and join us for Birdathon 2010. Form your own Birdathon team and enjoy a spring day outside, or sponsor the VCE team. Either way, your dollars will help VCE accomplish its mission of advancing the conservation of wildlife through research, monitoring and citizen engagement.

The VCE 2009 Birdathon team at Plymouth State Park.

Come See Our Sweet 16!

After thousands of person-hours, both in the field and office, we are proud to announce the roll-out of our "Sweet 16" butterfly species accounts! Visit the Vermont Butterfly Survey link on VCE's website to learn about the 16 Species of Greatest Conservation Need in our state. Photos, links and specifics about where and when to see these rare and threatened species are available, as well as updates on their state and global status. Another step toward butterfly conservation in Vermont!



The Vermont Butterfly Survey revealed that the West Virginia White's distribution in the state (right) is more widespread than previously believed based on historic records (left). The West Virginia White is one of Vermont's 16 Butterfly species of Greatest Conservation Need.

Keep checking the website for updates on Vermont butterfly hot spots, important habitats for "Sweet 16" butterflies, species diversity in the different biophysical regions of Vermont and of course, newly-completed species accounts!

—Sara Zehendra

Volunteer Highlight: Tom Ziobrowski

Volunteers are integral to the success of many VCE projects. From the Vermont Breeding Bird Atlas and the Vermont Butterfly Survey, to long-term monitoring projects such as Mountain Birdwatch and Forest Bird Monitoring, the countless hours contributed by these dedicated individuals allow us to achieve conservation in a cost-effective manner. Moreover, these citizen scientists often share their enthusiasm and knowledge of the natural world with friends and neighbors, helping to nurture a community of informed ecological stewards. In an ongoing effort to thank and acknowledge their contributions, we regularly profile a volunteer in FN.

Last spring, during the pilot year of the Vermont Vernal Pool Mapping Project, nearly 150 volunteers attended four training workshops across northern Vermont to learn about vernal pools and how to help map their distribution in the state. Despite this high turnout, relatively few volunteers actually visited pools in the field and collected data. In fact, of the 85 pools for which data sheets were completed last year, nearly 25 percent were submitted by a single person—Tom Ziobrowski.

Tom credits his interest in the natural world to his mother, who encouraged him to chase butterflies and plant trees in south-central Pennsylvania where he grew up. At the time, he thought her playing records of bird songs was absurd; but now admits that he owns multiple tapes and CDs himself, which he uses every spring to relearn the difference between Black-throated Blue and Black-throated Green warblers.

With broad-ranging interests in natural history, Tom says that he has focused on different things over the years, "typically by what's in front of me or who I'm with." Tom's interest in birds was nurtured on spring bird walks with Charlie Browne and Paul Bengston, and he credits retired biologist William Amos as a "stimulating resource." Tom especially loves winter because of the abundant tracks, "just getting out, there's always something new."

After graduating from Harvard with a degree in history and science, Tom attended the University of Pennsylvania where he received his MD. Shortly after completing his residency, he moved to Danville, where he's lived with his wife for more than 30 years, practicing internal medicine in St. Johnsbury and serving as Danville town moderator.

Tom first got interested in vernal pools while taking a community college course in forest ecology with his mother in the late 1990s. "After reading about vernal pools, my wife and I went up to the pool on our land one rainy April evening and had a great experience, hearing woodcock fluttering nearby and finding a spotted salamander, a brightly-marked, robust creature that I had never even heard of before. I wound up doing a paper on vernal pools for that class, while my mother did hers on bogs. We traveled around the state together visiting all the bogs that were wheelchair accessible." Tom says that the Vernal Pool Mapping Project has stimulated him to get out in the woods, "especially off the usual paths, to find and record pools—on the way there's always something else to experience."

When asked what else he enjoys, Tom lists reading, improving the wildlife habitat on his 20 acres, and music—he sings baritone with the Pumpkin Hill Singers and plays classical guitar. He goes on, "I'm not sure which I prefer: snowshoeing or running my tractor to clear our driveway; either way there are always more tracks to see."

—Steve Faccio

VCE Volunteer, Dr. Tom Ziobrowski at a vernal pool near his home in Danville.

VCE Monthly eNews

If you would like to receive our NEW monthly eNews, email Melissa at mmackenzie@vtecostudies.org

Solving the Mystery of Loons in Winter

Until the 1990s, biologists suspected that most eastern North American loons migrated to southeastern Atlantic waters, with smaller numbers remaining off the coast of New England and Long Island. However, recent studies using satellite telemetry, combined with observations and recoveries of banded loons, have revealed that most northeastern breeders overwinter further north than expected.

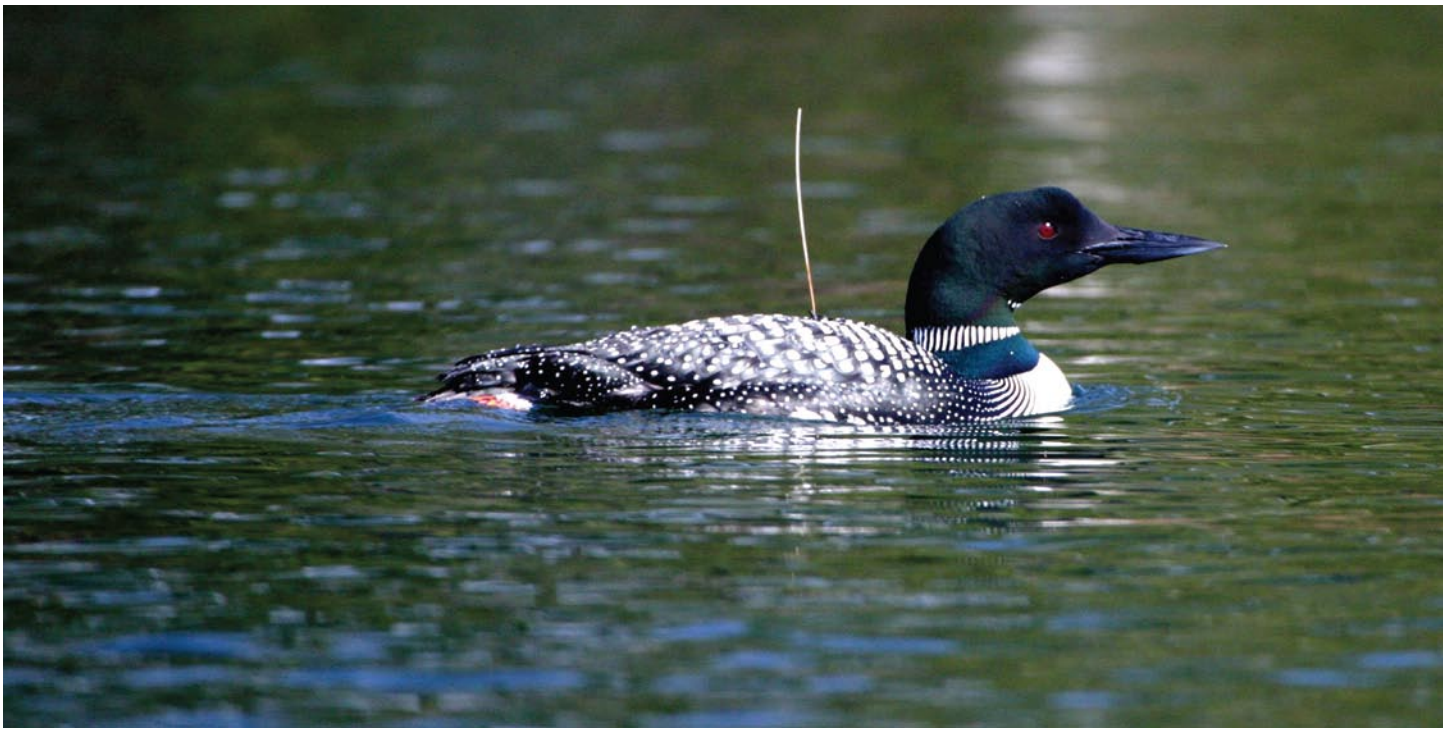
Timing of migration: Ten northeastern loons were radio-tracked using satellite-telemetry between 2003 and 2005. The majority of these birds migrated directly to the coast between late October and late November. Three adults left their breeding lakes in September and moved to nearby larger lakes for up to 6 weeks before continuing eastward to the Atlantic coast. Interestingly, the one juvenile that was tracked took a very different migratory path, leaving its Adirondack natal lake on November 26, moving southeast to stop on several lakes and reservoirs in December and early January, and finally reaching Long Island Sound on January 12.

Migration routes: Most of the 10 northeastern loons with satellite transmitters migrated less than 300 miles to their wintering areas. Stopovers were brief, with only one bird lingering over several days off Long Island, before continuing to southern New Jersey. In contrast, Midwestern loons outfitted with satellite-transmitters staged for several days or longer on the Great Lakes and other water bodies before continuing south. Some loons, however, deviated from the flyways that are typically followed by most aquatic migrant species. A few New York birds flew directly over the Green and Catskill Mountains; some Midwestern loons also took overland routes, utilizing lakes and reservoirs from Indiana to Alabama before reaching southern coastal waters.

Wintering areas: Most loons satellite-tagged in northern New Hampshire and Maine overwintered between Maine and Cape Cod, generally staying along a 10-30 mile section of the coast within 1–6 miles of shore. However, banding recoveries have shown some birds settling as far south as New Jersey. Adirondack breeders tended to winter from Cape Cod to New Jersey, but two banded Adirondack birds moved far south to North Carolina and Florida. To date, no Vermont loons have been tracked to their winter quarters. Northbound flights to breeding lakes in late April or early May are remarkably short, often covering only 1–5 days.

These studies are just beginning to reveal details about loon migration, winter distribution, and non-breeding season conservation concerns (e.g., ocean contaminants and oil spills). Stay tuned for further exciting discoveries about wintering loons, including the ecology of our own Vermont birds. Kevin Kenow of the U.S. Geological Survey's Upper Midwest Environmental Sciences Center coordinated the satellite telemetry studies with assistance from many partners.

—Eric Hanson



Recent studies using satellite radio transmitters have revealed that Common Loons, such as this one in the Adirondacks, spend the winter further north than expected. Most radio-tagged loons from New Hampshire and Maine overwintered off shore between Maine and Cape Cod.

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Field Notes
Vermont Center for Ecostudies
PO Box 420
Norwich, VT 05055

Red Squirrel (*Tamiasciurus hudsonicus*)


© Mollie Faccio

Walking through an otherwise quiet forest, the resounding chatter of a Red Squirrel (*Tamiasciurus hudsonicus)* may insistently inform you that you are "invading" its territory. Red Squirrels are one of the smallest tree squirrels in North America, weighing between 200-250 grams. As its name suggests, this squirrel has reddish fur with a white under-belly and whitish rings around its eyes. Unlike the majority of mammals, Red Squirrels are diurnal, with peaks of activity in the early morning and late afternoon. These animals nest in tree branches or tree cavities; each individual has several nests, and females often move their offspring between nests. Survivorship of juveniles is low, with approximately 22% of squirrels surviving their first year. Red Squirrel predators include several species of raptors, gray foxes, bobcats, coyotes, and weasels.

Fun Facts

-Red Squirrels create caches of food, known as "middens," in late summer and early fall. Middens consist of large piles of shredded cones and stems under trees, with green cones in the middle.

-Its frequent noisy chatter is the basis for one of its common monikers, the "Chickaree."

-While Red Squirrel diets consist mostly of conifer seeds, they are opportunistic feeders, also incorporating mushrooms, berries, and bird eggs and nestlings into their diet. Squirrels may clip mushrooms and place them on tree branches for drying.

-Red Squirrels enjoy maple syrup by "tapping" maple trees by biting into the bark to release sap, returning later to consume the concentrated "syrup" once some of the water has evaporated.

-Red Squirrels are active year-round, and in winter they often travel in tunnels under the snow.

Ecological Interactions

The Red Squirrel is abundant and of little conservation concern throughout most of its range. However, since the conifers on which they feed produce seeds in approximately 3-5 year cycles, squirrel populations fluctuate in response to these seed and cone production cycles. When their target food sources produce a large "cone mast," squirrel populations increase. Since squirrels are also important avian nest predators, when squirrel abundance is high, nestling survivorship may be low for several songbirds within the squirrel's range. In montane forests of the Northeast, prey items include eggs and nestlings of the Bicknell's Thrush, a species of high conservation concern. Beginning in June 2011, volunteers with VCE's Mountain Birdwatch program will systematically survey Red Squirrel populations across the northeastern United States to further document its connection with avian presence and reproductive success.

How You Can Help

Become a Mountain Birdwatch volunteer and help VCE document Red Squirrel and songbird distribution and abundance while enjoying some of the best mountaintop views in the Northeast.

Visit the Mountain Birdwatch webpage to find out more: www.vtecostudies.org/MBW/.