The Spruce Moose

A publication of the SUNY-ESF Adirondack Ecological Center

Summer 2009

A bird in the hand…

By Megan Skrip

Out of a silence until now broken only by the occasional buzz of a deer fly comes a sudden flurry of sound: rustling wings, scrabbling feet, urgent clucking — and a muted squealing; the latter not from the bird, but from me.

From a burst of exhilaration to absolute calm on that warm Adirondack afternoon in July 2007, I banded my first ruffed grouse. No previous wildlife experience could match the thrill of that first capture. My master's research officially commenced with gusto.

That summer, I embarked on a study of ruffed grouse and landscape ecology, the first New York study of grouse survival in more than 50 years, and an assessment of the species' ongoing statewide decline. With funding from the New York state Department of Environmental Conservation, I seek to assess the influence of habitat change and configuration at broad spatial scales on grouse fall/winter survival and statewide occupancy changes.

The ruffed grouse population in New York has fallen by more than 75 percent since the 1960s, according to the Breeding Bird Survey. The National Audubon Society calls the popular game bird a "common species in decline." I aim to identify the areas of severest decline and management need across the state, generating prescriptions based on landscape attributes.

Megan prepares to release this radio-collared grouse that will help researchers understand survival and habitat use in New York.

The maturation of the state's forests has been cited widely as the cause of the grouse decline because it is eliminating the best habitat for the bird, which thrives in an early successional, or younger, forest. We seek to understand what drives this phenomenon and the mechanisms that contribute to grouse loss from specific areas. To achieve this goal required monitoring grouse via radio telemetry in areas with varying habitat conditions. We chose as our study sites the Fort Drum Military Installation in Jefferson County and Partridge Run Wildlife Management Area in Albany County.

But, to monitor grouse, you first have to learn to catch them. I had two main tasks as I began graduate school, having never before seen a grouse: learn as much about the ruffed grouse as possible and catch one!

With the help of work-study students and others, I established a suite of traps on HWF in a pilot precursor to autumn trapping. Former AEC staff member Scott Haulton, AEC wildlife biologist Charlotte Demers, and ESF Professor Emeritus Robert Chambers guided my approach to trapping and shaped my expectations. I used trap equipment from the intensive Appalachian Cooperative Grouse Research Project. To say that I learned a lot that summer is an understatement, and when it came to trapping, a lot of my education came through error. I would never today set a trap how or where I did then, but part of the reward of experience is to look back and appreciate how far one has come.

I captured my first grouse at HWF. With the assistance of wildlife technician Jenn Burton, DEC personnel, and student volunteers, over the past two autumns we have captured more than 200! Jenn, serendipitously, helped me check traps on the first day I banded a grouse. She was an ESF senior finishing up the last of

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A bird in the bag…

Probably should say Megan inspects the fit of the bird's radio transmitter while it is safely wrapped in a handling bag.

her credits that summer. She became the wildlife technician in fall 2007 and again in 2008.

Flapping about to free itself, a trapped grouse fans its tail, spreads its wings, and clucks as we approach. We unclip the mesh top of the trap body and reach through to gently pin the bird to the ground, tuck its wings to its sides, and lift it out. We place the bird headfirst in a handling bag, and the grouse will sit there in bewildered silence, in the dark of the opaque canvas, as we carry it to the banding box. To process a bird, we weigh it, examine the feathers to determine age and sex, band it and attach a transmitter. And unlike some of those feisty passerines, the impressively docile ruffed grouse will tolerate the process with quite a resigned air. When the processing (and customary short photo shoot) is complete, we kneel to slowly open the canvas bag, then lean back and smile as the grouse takes to the air like a little feathered rocket.

With the fieldwork now at an end, my survival analyses are nearly complete, with landscape analyses to follow. While the statistical work continues to excite and challenge me, I hope I never forget how it feels to hold a grouse in my hands, its toes gripping my fingers and its solid weighty frame securely clasped between my palms. Since the summer of 2007, I have held scores of them, yet each grouse has left an individual impression. In one's hands, their small bodies are warm and soft, their little faces each so different, but each with a plucky crest, dark beak, and alert brown eyes; some, of course, with suspicious expressions.

In the preface to 1947's *The Ruffed Grouse: Life History, Propagation, Management* (a.k.a. "The Grouse Bible") by Gardiner Bump and others, Bump writes, "To know the grouse is to love it / And loving it, to wish it well." Upon first reading this statement, I considered it a nice sentiment, and a whimsical touch to an otherwise science-filled tome. Two years later, I recognize it as truth. I doubt that any passionate grouse researcher, with many hours spent afield with her study subjects, could feel otherwise.

Megan Skrip is a master's candidate in EFB with Dr. William Porter.

To row, or not to row

By Paul Hai

The ripples from last summer's Caleb Chase guide boat reunion continue to spread.

One of the attendees, Gordon Fisher of Long Lake and Delaware, has hand-carved a guide boat paddle for our Chase boat. And it is not just "a paddle": Carved from flame cherry, it is simply stunning. Most interesting, however, is that it follows Caleb Chase's own design.

One day while volunteering in the Adirondack Museum boat exhibit, Gordon discovered Caleb Chase had hand-carved beautiful, delicate paddles to accompany his guide boats. Gordon began working on boats and boat building after retiring from the engineering field in the 1980s. Since then, he has built several boats from scratch, carved many paddles and written authoritative books on both subjects.

As we continue to move forward with restoration plans for our boat, we are honored and excited to have this paddle, which will one day help our boat navigate the waters of HWF again.

Gordon Fisher hand carves a cherry paddle for the Huntington guide boat and shows off the final result.

bird photo courtesy of Gabe McNett

Calcium:
Building Block for Biodiversity?

SUNY-ESF is leading a two-year investigation of the resistance of the Adirondack ecosystem to acidification..

By Colin Beier

In a world experiencing many types of large-scale environmental changes resulting from human activity, conserving biodiversity requires a strong understanding of how the ecosystems we are currently protecting might respond to these changes and how they might occur in the future. Conservation biologists are looking toward an uncertain future for preserving species and their habitats; and, as a result, new efforts are under way to study these changes and prioritize conservation actions accordingly.

During the 20th century, the Adirondack landscape experienced many changes related to land use, atmospheric deposition, forest diseases, invasive species, and climate. In particular, decades of acidification have left a complex ecological legacy, including soil nutrient deficits, forest decline, and likely loss of regional biodiversity. Such impacts threaten even the most strongly protected places, such as the public Forest Preserve, where acidification remains a serious challenge to conservation of habitats and species.

Many of the ecological changes resulting from acidification can be linked to the depletion of calcium in forest soils. Calcium is an essential nutrient for nearly all forms of life and buffers soils against pH changes from acid rain. When soil calcium becomes depleted, the soil can become acidic and less productive for plant growth. Organisms that depend on calcium for growth and reproduction can be stressed. Snails, salamanders and songbirds, as well as plants such as sugar maple and maidenhair fern, are particularly sensitive to calcium availability in forest soils.

Studies in the northeastern United States and western Europe have shown how depletion of calcium from ecosystems can have damaging effects on biodiversity and productivity. In the Adirondacks, however, the occurrence of patches of naturally calcium-rich bedrock suggests that the impacts of acid rain might be highly variable. We expect that forest communities where calcium is abundant will be more diverse and productive compared to calcium-poor forests. This difference should be apparent even if both communities have been exposed to the same intensity of acid rain.

In other words, we predict calcium-rich forests can function as important natural refuges of biodiversity in a landscape heavily influenced by acid rain. Locating such areas will be important for prioritizing future conservation actions across the Adirondack Park, especially in the protection of private lands, as will the identification of calcium-poor habitats in the Forest Preserve that might experience changes in biodiversity because of acid rain and other factors.

In collaboration with U.S. Geological Survey scientists and with support from the U.S. Forest Service, SUNY-ESF is leading a two-year pilot study to investigate these questions across the Adirondack Park. From our home base at Huntington Wildlife Forest, to Old Forge and other areas of the Adirondacks, we are measuring the diversity and abundance of plant, invertebrate, amphibian and bird populations at research sites where calcium availability has been previously studied. We hope to generate valuable new community-level insights on the impacts of acid rain in the Adirondacks that will aid in prioritizing future conservation policy needs in the region.

The Adirondack Winter Experience

By Neil Patterson

The caravan traveled north on Route 28. The snow was getting deeper and the roads were worsening. Two vans filled with sleepy-eyed teenagers followed my pickup into the entrance of the Adirondack Ecological Center. It had been 15 years since I visited these cabins and picking out my bunk with the rest of the guys was surreal. I chose the exact bed I slept in during the summer of 1995, when I was trapping small mammals for Charlotte Demers and helping the "deer crew." In the morning, several chaperones and I would lead a group of high school students into the same woods where I developed a lasting appreciation for the Adirondacks. This time it was winter and I was as excited as a kid once again.

The trip was the second of many planned under an environmental education project called Migration 2013. The project was started by the Haudenosaunee Environmental Task Force and seeks to provide native high school students in upstate New York with outdoor experiences that build leadership skills and cultivate informed decisions about environmental issues. The project highlights the migration of plants and animals under future climate change scenarios and will culminate in a 1,200+ mile backpacking trek from North Carolina to upstate New York during the summer of 2013. The frozen Huntington Forest served as an appropriate setting for students to become acquainted with a potentially vulnerable environment that could be affected by warming temperatures. Students, parents, and chaperones from Tuscarora, Seneca (Tonawanda), Onondaga, and Mohawk (Akwesasne) communities have participated so far.

After selecting bunks, everyone changed into their winter clothes and prepared for a crash course in snowshoeing. The snow was too deep for travel on foot. We ventured into a recently managed forest to set traps for a small mammal study. Annie Woods led us through the data collection procedures and basic small mammal identification skills, showing us skins and mounts that we could handle and examine.

In the morning, after six representatives of three species were recorded and released, the group set out to the Newcomb Adirondack Park Agency Visitors Interpretive Center to find some otter slides. We found no otters but found plenty of tracks. Later, a small group ventured out to check the ice on Rich Lake. It was 26 inches thick!

At breakfast the next day, Paul Hai showed us a collection of archeological evidence, including a photograph of a dugout canoe unearthed near Arbutus Lake. We then drove to Tupper Lake to visit the Wild Center. Students watched a movie on climate change and saw live otters and a drowsy porcupine. On the way back, we stopped near Long Lake for a short hike through a well-trampled winter deer yard for some tree identification. We walked quietly and spotted six deer. The night was filled with headlamps, charades, and board games.

We awoke to eight inches of fresh powder Saturday. Following breakfast, students were harnessed like sled dogs to heavy toboggans, pulling stoves, food, shelter and bait for a two-mile round trip to the frozen lake. We caught very little through the holes in the ice, but the underwater cameras revealed some close encounters with yellow perch and northern pike. The hot chocolate and hot dogs cooked in the old wooden ice shanty warmed us from the stiff morning winds. Around noon, the sun came out for a glorious afternoon on the ice. After returning to the cabins to clean and share our catch, firewood was pulled by sled to the icy beach for some storytelling around a fire. It was truly an Adirondack Experience not to be forgotten.

The trip was made possible with support from SUNY-ESF's Center for Native Peoples and the Haudenosaunee Environmental Task Force. To find more information on Migration 2013, the Haudenosaunee Environmental Task Force, or the Center for Native Peoples, visit http://tuscaroraenvironment.com/migration2013.aspx or http://www.esf.edu/nativepeoples/

Neil Patterson Jr. (EFB '96) is a member of the Bear Clan of the Tuscarora Nation and an NSF GK-12 graduate student in ESF's Forest and Natural Resource Management Program.

Winter in the Adirondacks brings a world of new experiences and opportunities.

Soccer Teams Help Kick Invasive Honeysuckle

By Annie Woods

The ESF men's and women's soccer teams traveled north to battle the soccer teams at Paul Smith's College last October. Both ESF teams prevailed, with the men and women winning 2-1 and 4-1, respectively. Riding high on their victories, they traveled to the AEC to spend the night at our bunkhouses.

The following morning, after a great breakfast at the dining hall, the 30 soccer team members pitched in to help AEC staff members with service projects. Ten students did a sweep of our three miles of road frontage along Route 28N, picking up six bags full of garbage and one broken microwave oven. The other team members helped in our first effort to remove Japanese honeysuckle, an exotic invasive species, from the AEC office and parking lot area.

Steven Flint of the Adirondack Park Invasive Species Program was on hand to offer advice, expertise, equipment, and manpower. Steven has been battling terrestrial invasive plants in the Adirondacks for a decade and helped us survey our honeysuckle invasion and plan out a management strategy.

We removed the honeysuckle through two methods. One method, generally recognized as the most effective way to remove honeysuckle and prevent resprouting, involved cutting down the honeysuckle with handsaws, then applying glyphosate herbicide to the cut stump, using a paintbrush. The herbicide, a solution containing Round Up Pro™, was painted directly to the fresh-cut cross-section of honeysuckle stems in order not to harm adjacent, native flora. Given the large amount of honeysuckle we removed using this technique, it was surprising to note that Steven only used 2 ounces of herbicide.

The other method involved hand-pulling the honeysuckle using two instruments, a weed wrench and honeysuckle popper. Both help pull the honeysuckle out of the ground using lever action. These methods allowed us to remove most of the plant material including the roots, but roots inadvertently left in the ground can resprout, so we plan to monitor the site to look for new growth in the spring. In two hours, we removed three pickup bed loads full of honeysuckle.

One of the goals outlined in the management plan for Huntington Wildlife Forest is to eradicate invasive species because of the ecological and economic harm they cause. We recognize that a successful eradication program will require a concerted effort and many hours of work. Having many hands around to pitch in made this effort a success. We appreciate all the hard work of the soccer players and Steven Flint and look forward to battling our honeysuckle invasion in the future.

We are also glad that their efforts left the AEC more beautiful. Of their trip to Paul Smith's and the AEC, soccer coach Dan Ramin said, "The trip was a great learning experience and some fine soccer."

Annie Woods is the AEC Educator.

The Spruce Moose

The Spruce Moose is a publication of the Adirondack Ecological Center. The mission of the AEC is to provide an understanding of the Adirondack ecosystem through research. The AEC is located on Huntington Wildlife Forest, a 6,000-ha research facility in Newcomb, N.Y., operated by the SUNY College of Environmental Science and Forestry since 1932.

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Viral Vernal Pools

By Jesse Brunner

In mid-June 2006, just about the time larval spotted salamanders and wood frog tadpoles should emerge from vernal pools onto land as new adults, Stacy McNulty instead stumbled upon a die-off. Scores of dead and dying tadpoles were found in several vernal pools. The juvenile amphibians swam weakly if at all, and their gill areas were red and swollen with blood.

Spotted salamander larvae have external gills and front legs when young. This individual tested positive for ranavirus.

When a die-off occurred again in 2008, I collected several individuals from each pool. I thought that what we were seeing was caused by a virus, a ranavirus. I extracted DNA from these animals and, using primers that recognized a DNA sequence found only in ranaviruses, amplified part of a gene that makes up the viral coat. This was strong evidence that a ranavirus was involved in these die-offs.

Allan Granoff, a virologist at St. Jude's Children's Research Hospital, first isolated an amphibian ranavirus in 1962 while he was following up on a novel hypothesis that tumors, particularly a common renal carcinoma of leopard frogs, were caused by a virus. Granoff did not find the virus he was looking for (a herpesvirus called Lucké tumour herpesvirus, later renamed Rana herpesvirus 1, the first herpesvirus known to cause cancer), but he did isolate a novel virus, which he called Frog Virus 3 (FV3). FV3 became the "type" virus for the genus Ranavirus, a group of DNA-based viruses that infect cold-blooded vertebrates such as fish, amphibians, and reptiles.

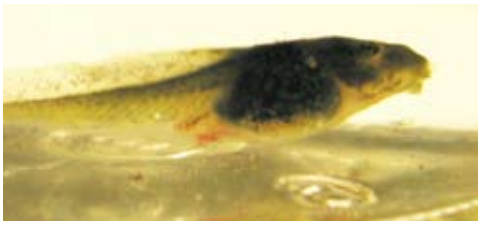
Initially, amphibian ranaviruses were thought to be fairly benign. FV3, for instance, was found in an apparently healthy frog. But a series of disease outbreaks among commercially and recreationally important fish, cultured and wild frogs, and an endangered salamander began to change this view. Ranaviruses have been identified in catastrophic die-offs in aquaculture and in wild populations around the world, although there is little evidence that these viruses cause widespread population declines, unlike the Chytrid fungus that is devastating global amphibian populations.

What we saw in the pools of the Huntington Wildlife Forest, however, makes one wonder. Die-offs can kill every individual in a pool, essentially wiping out a year's reproductive effort. While these amphibians can live for two to five years, successive die-offs might result in local extinctions.

How do these ranaviruses persist long enough to cause successive die-offs if they wipe out their hosts? We know that a ranavirus of tiger salamanders called ATV cannot tolerate drying in pond sediment, so it seems unlikely that this virus persists in the pool itself. Another possibility is that the ranavirus persists in sublethally infected adults. In my dissertation, I demonstrated how chronically infected adult tiger salamanders could reintroduce ATV into ponds in Arizona when they returned to breed, sparking epidemics in the new larval population. Others have shown that FV3, like the one I identified at HWF, can cause sublethal infections in the African clawed frog.

Vernal pools differ in size and hydroperiod and contain a diversity of unique species.

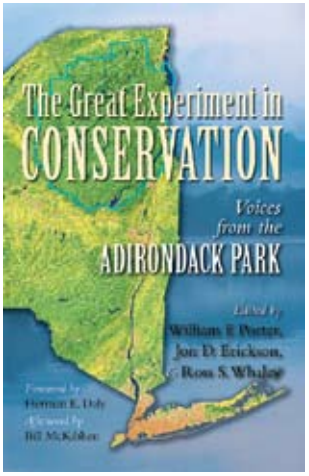
With die-offs occurring in 2008 and 2006, and an unconfirmed instance in 2000, it appears that this ranavirus might be part of the normal dynamics of vernal pool communities. Vernal pools usually exist in semi-connected networks. When the population in a given pool is extirpated because of repeated years of failed breeding or because of ranavirus epidemics, we expect that it will eventually be recolonized by neighboring populations. As long as pathogens like FV3 do not spread between vernal pools readily and the ponds are not isolated by roads or clearcuts, the overall metapopulation persists. And sometimes even a mass die-off does not get every animal; in 2008 some wood frogs survived and metamorphosed in virus-affected pools. Stacy and I will be watching to see what happens to these ponds in 2009.



This wood frog tadpole shows signs of disease as well and will not reach adulthood.

Jesse Brunner is assistant professor of wildlife pathology in ESF's Department of Environmental and Forest Biology.

Voices from the Adirondacks: New Book Unveiled



If there is a single phrase that captures the essence of the Adirondack Park, as a park, in the past 35 years, that phrase may be "trial by fire." At one end of the spectrum are those who see the Park's land-use regulations as insufficient to protect a wilderness resource of increasing global rarity. At the other end are those who see the regulations as an unwarranted intrusion into private enterprise. This polarity of opinion arises not just from differing values, but also from the experiences of the people who have grappled with the issue. The debate over top-down planning versus local decision-making has dominated the lives of Park residents, and non-residents, for over a generation.

Is there wisdom born of implementing far-reaching land-use regulations and the resultant contentious debate? A new book by AEC Director Bill Porter, former ESF President Ross Whaley and Jon Erickson, Associate Professor at the University of Vermont, suggests there is and seeks to capture that wisdom. The book is *The Great Experiment in Conservation: Voices from the Adirondacks*, published by Syracuse University Press. The book draws on civic leaders, agency practitioners and academics to explore the ecological, cultural, and economic cornerstones of Park management. Book contributors describe the successes and failures of the past three decades as state agencies and local governments struggled to balance public and private interests.

The editors and three dozen other authors draw on the history of the debates about conservation in the Adirondack Park to focus on the emerging lessons. They describe how the Park is likely to shape, and be shaped by, new paradigms for regional land management. Contributors to the book include authors Bill McKibben and Philip Terrie; Herman Daly, the father of ecological economics; Adirondack scholars like Craig Gilborn, former Director of the Adirondack Museum; and ESF emeritus faculty Rainer Brocke, and practitioners such as Roger Dziengeleski of Finch, Pruyn Paper Company.

Pulitzer Prize-winning author Adam Hochschild, who reviewed the book for Syracuse University Press, commented, "I'd love to see this important book be required reading for every New York State legislator and opinion-maker. Alive with personal voices, it is also packed with vital information and at times justifiably angry at what we human beings have done to the Adirondacks. It reminds us of what we've lost, of what we can still save, and of what a rare treasure this extraordinary region is."

400-year-old Hemlock found near Arbutus Lake

By Steve Signell

Tree cores exhibit annual growth rings that tell of periods of abundant food, droughts, fire and other events. Cores that pass through the center of a tree allow us to count rings and age the tree. Colin Beier and I have begun a dendroecological study of old-growth forests at Huntington Forest using mainly red spruce and Eastern hemlock. Our goal is to reconstruct presettlement disturbance history, including portions of the Arbutus and Wolf Lake watersheds as well as the Natural Area.

We have cored two dozen spruce and hemlock trees in the Arbutus Inlet area. Most of the larger spruces (12 to 22 inches in diameter) date back to the early 1700s. Only 20 inches in diameter when it fell, one hemlock near the weir dated back to 1611! Although the tree exhibited slow growth for its first 280 years of existence, only reaching about 10 inches in diameter, its growth rate accelerated greatly after 1890. The wider growth rings indicate reduced competition, likely resulting from the selective logging of large spruce that was common to the area at the time.

Most of the samples collected so far show a similar pattern, indicating that the logging events of the late 1800s were widespread, at least within the Arbutus watershed. Analysis of such growth can provide valuable information about the temporal and spatial patterns of forest disturbance. Further analysis is needed to quantify the history of these stands, but it is clear that forest disturbance was much less common and occurred on a smaller scale during presettlement times.

Steve Signell is a research specialist at AEC.

Random moments in history

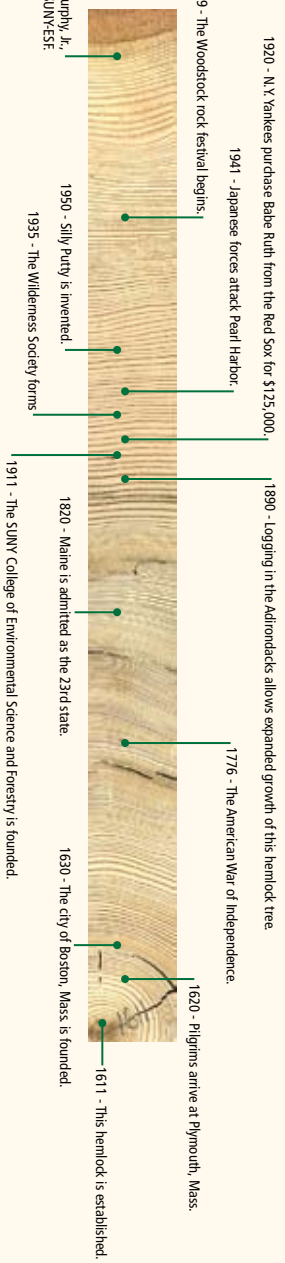



photo curtesy of NYS DEC

Recalling Recollaring: Winter Marten Research

Tracking animal's winter behavior uncovers changes in foraging habits

By Lacey Kreiensieck & Adia Sovie

In January, we began work on a winter project focusing on the behavioral ecology of American marten in the central Adirondacks. As New York state Department of Environmental Conservation interns, we helped trap, collar, locate and backtrack marten. The study is funded by the DEC and aims to collect baseline data on the health and status of martens in the Adirondacks. Our work was primarily on the Huntington Wildlife Forest and Elk Lake area to the east.

One particular day of fieldwork sticks out in our minds: our first marten capture. We had spent a week checking and baiting Tomahawk traps with jelly and sardines. Finally, after about a week of trapping we captured a young male. Our supervisor, Paul Jensen (an HWF alumnus), prepped the radio collar and asked us to put jelly on a stick and feed the marten through the trap for an energy boost. It was at that moment we discovered martens adore Smuckers jelly (at least the strawberry flavor)! Although it was obvious from the perpetual growling the marten did not enjoy our presence, he didn't hesitate to lick off every bit of jelly we offered him.

After we fed the marten, we coaxed him out of the trap and into a mesh bag and capture cone. This safely immobilized the marten while we anesthetized him. We then weighed, measured, sexed, and ear-tagged him (number 5341) and fitted his radio collar. After an hour's recovery it was time for the release. When we opened the trap door with a stick (because getting a quick bite from a feisty marten was a good possibility), he took one glance at us and bolted. Ducking and diving in the snow, as if to wash the human scent off, he loped out of sight.

Lacey Kreiensieck finds a marten captured in a Tomahawk live trap.

Fine-scale habitat use and movements were revealed by backtracking and frequent ground telemetry. We discovered 5341 was hanging around a deer carcass not far from the AEC, but after a few weeks, the marten moved north. Trail cameras set up on the carcass revealed a fisher and two feral cats had moved in and perhaps had forced 5341 out. With aerial telemetry we located the marten north of HWF near Moose pond, nearly seven miles away!

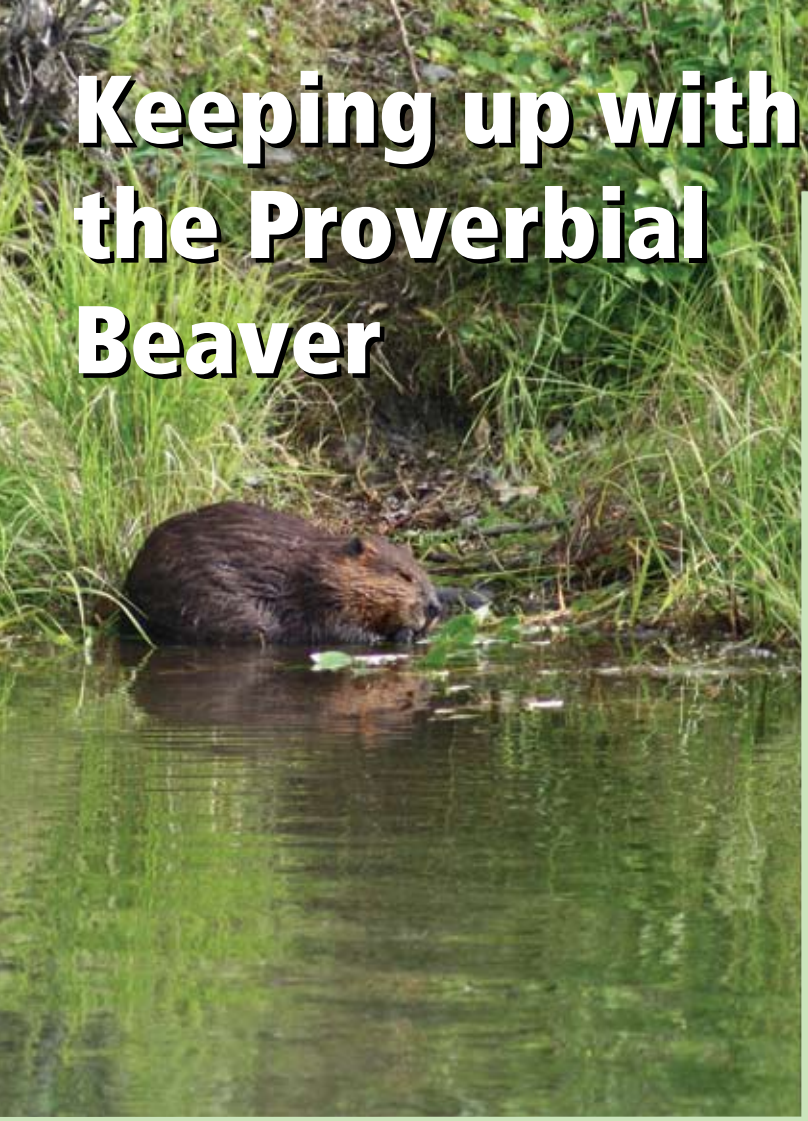
Over the course of the winter we collared five new martens and recollared four martens whose transmitter batteries had quit. Twenty martens were collared, divided evenly between Elk Lake and HWF. In addition to establishing home ranges and life histories we also hope to document how martens respond to fluctuations in the small mammal population. While backtracking we observed martens foraging above snow more often than foraging in the subnivean zone (under the snow). This indicates martens may change their foraging habits to focus on grouse, squirrel, and snowshoe hare when small mammal populations are low, as they were this past winter.

Adia Sovie prepares to release a marten after taking measurements.

Our experience at the AEC has been extremely positive. We have developed and improved many skills. We have seen beautiful country and an abundance of wildlife. Finally, and perhaps most importantly, we have met intelligent, talented and welcoming people who made our stay exceptional. Although we were both sad to leave such a vibrant community, we are excited to move on to new places. If only the snow would hold out a little longer…

Lacey Kreiensieck has a B.S. from the University of Pittsburgh and moved on to California for marten/fisher research. Adia Sovie has a B.S. from the University of Massachusetts, Amherst and switched from carnivore projects to those involving shorebirds.

Keeping up with the Proverbial Beaver



In autumn, beavers gather twigs of trees and shrubs to create a cache, or overwinter food supply, near their den.

Beaver living in this lodge on Deer Lake have created a cache. Once temperatures drop below freezing, the twigs sink below the ice and food is accessible a short distance from the lodge entrance.

By Bill Dunker

The supposedly tireless work ethic of beavers is personified in the classic idiom "busy as a beaver." Since recovering from near extirpation statewide in the early 1900s, beavers are a driving force in New York's ecosystems, particularly in the Adirondacks. The beaver's return to lakes and streams is a conservation success story and can be attributed to wildlife management and the animal's industrious habits.

Beaver ecology and management have been studied since the 1950s at HWF. Beaver colony activity has been monitored annually since 1979 as a part of the Adirondack Long Term Ecological Monitoring Program. The ALTEMP dataset has contributed greatly to understanding the role these ecosystem engineers play in shaping hydrology, nutrient cycling, biodiversity and landscape processes. Monitoring beaver colonies requires persistence and knowledge of the seasonal needs of the animal.

Beginning in early autumn, beavers begin preparations for the cold months to follow. Dams and lodges are constructed or repaired to protect the colony from cold winds, heavy snows and hungry predators. Stems of shrubs and trees, the provisions necessary to survive until spring, are cut, dragged to the water and stored in a food cache near the lodge, turning iced-over ponds into chest freezers. Over time, a colony typically occupies different ponds or shoreline areas within their territory, and a fresh cache signifies current presence.

The success of the ALTEMP beaver surveys can be attributed to their simplicity. All water courses are searched and caches are marked on maps or with GPS units. The search includes the efforts of AEC staff and student volunteers as well as local pilots from Helms Aero Service in Long Lake looking for caches by boat, foot and air. Active sites are added to a spatial database used to estimate changes in the beaver population index and assess beaver impact on wetlands and adjacent upland forests.

In November 2008, nine members of the student chapter of the Wildlife Society at ESF participated in the 29th year of the survey. A chilly blue-sky morning greeted volunteers as they prepared to head into the forest in hopes of finding evidence of activity. While able to cover only a fraction of the total length of stream and lakeshore in one day, the students witnessed a variety of old and new impoundments created by beavers. In 2008, there were 23 active colonies, up from the previous year's 21.

As hard as beavers work to prepare their winter provisions and as obvious as a colony's activity is, finding caches is no easy task. Soggy conditions in flat, flooded stands of timber littered with the remnants of discarded construction materials make foot travel a challenge. It's a thrill to encounter fresh evidence of a midnight snack of poplar, willow, or other preferred woody browse. Regardless of the struggles or the cold feet experienced by searchers, it truly is a treat to observe first-hand the beaver's handiwork.

Bill Dunker has a B.S. in EFB and will continue working with beaver this summer at HWF.

Of Maps and Buried Treasure

By Paul B. Hai

Spend much time at Huntington Wildlife Forest, and sooner or later you'll hear someone joke that somewhere around here, Archer Huntington might have hidden a few of his millions. Truth is stranger than fiction: While not a strong box filled with gold, we have uncovered a treasure. And ironically, while it belonged to Archer and Anna Huntington, it was the College that buried it.

When ESF architect Gary Peden began helping with the renovation of Huntington Lodge, he asked for any drawings we had of the building, both historical and current. We shared what little we had: one layout drawing of the original lodge and three of a set of eight blueprints from the College's 1940 remodeling. Gary soon called to say there might be another fireplace associated with the Trophy Room fireplace structure.

It seemed far-fetched. But once I got the floor plan out, sure enough there was a third gap in the drawn block of the chimney structure, clearly indicating another fireplace. If the drawing was correct, the fireplace would be behind the front hall closet.

An exploratory opening in the rear of the closet wall proved that not only was Gary correct, but that elements of the fireplace still existed. We opened it up along a section of the front arch. The first question was what we would find when the wall came down, followed by what would they have done to seal it, and whether it could be reclaimed. There was a chance we would open the wall and find a nightmare, but we decided to go for it.

What we found was both exhilarating and demoralizing. The fireplace, a fully finished second face of the structure, was still there, but in order to create the closet and the stairway wall the solid granite mantel and most of the right side had been, Smashed. Capital "S" Smashed. And the rubble, with fresh cement, had been used to fill in the fireplace and reshape some support.

Now we needed to find out what was behind the rough jumble of stone and cement filler. Could it be cleaned out? Could it be repaired? Could it ever be used again? The answer to these questions turned out also to be buried, in a way, in Newcomb.

Blair Gregson was born in Schroon Lake but moved to Newcomb many years ago. He's been a stone mason most of his life, and his work is stunning. I knew none of this when I called him to come look at our wrecked fireplace, just that one day at the bank I had been making small talk about stones and geology (a love of mine) and teller Ellie Norton had mentioned her father built fireplaces. I still had his number and gave him a call.

Spending time with Blair looking at stonework is like being with a docent in an art museum: He brings to life the personality of the mason as viewed through his work. We compared the fireplaces in Huntington and Arbutus Lodges, and he highlighted the individuality of the mason who built the great stone fireplace (and its newly discovered sibling): the lines, the approach to placement, the shape of stone selected, the size and depth of the joints. He was confident the fireplace could be salvaged.

Over the winter and early spring, Blair and a two-person crew chiseled out the rubble, fabricated and installed a new damper, rebuilt the smoke shelf, rebuilt the right side of the fireplace, installed a new hearth and most exciting of all, chiseled out and replaced the savaged mantel, including its two bracing stones.

No treasure hunter could ask for more: from crusted coin on the ocean floor to sparkling gold doubloon. Visitors to the renovated Huntington Lodge will now be greeted not by the brilliant gold of coins, but by the warming gold of a welcoming fire. A treasure indeed.

For more on Blair and his work see "The Blair Wall Project," Adirondack Life, annual At Home in the Adirondacks *issue, 2000.*

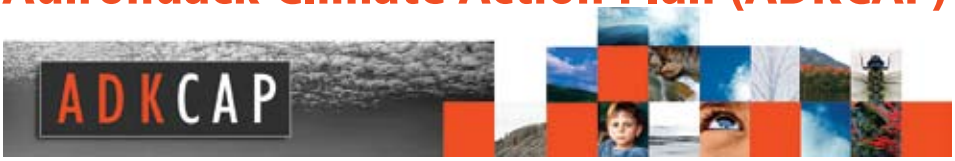
The road to restoration

Before: Filled-in fireplace stones hidden behind former closet.

During: The cemented rubble has been removed.

After: The fireplace is restored once again and is ready to be used.

Adirondack Climate Action Plan (ADKCAP)



A regional carbon and energy reduction strategy

By Kate Fish

The Adirondack Climate Action Plan (ADKCAP) was launched last fall at a conference in Tupper Lake, N.Y. The conference, titled "American Response to Climate Change: The Adirondack Model – Using Climate Change Solutions to Restore a Rural American Economy," was hosted by the Wild Center Nov. 18 and 19, 2008, and was attended by nearly 200 leaders from the region. Attendees worked together to develop a set of recommendations that form the basis of the action plan.

ADKCAP is a strategy to enable the Adirondack region, comprising approximately 20 percent of the land area of New York state, to become energy independent within the next 20 years. Energy independence will focus on electric power generation and stationary fuels and could provide an economic boost for struggling local economies.

Annually, Adirondack people and institutions use more than 46 million gallons of fuel oil and liquid propane gas to heat buildings and water, and approximately 925 million kilowatt-hours of electricity for power and light. The cost of this energy is about $260 million per year for heating and electricity alone; this money leaves the region to purchase fuel produced elsewhere. Energy independence will be achieved through a combination of efficiency, hydroelectric power generation, wind, solar and geothermal, and the sustainable use of forest biomass.

The result will be considerable: It will put people to work. It will involve municipalities across the region as well as the universities and schools. It will engage the tourism industry, which caters to the estimated 9 million people per year who visit the park.

ADKCAP is driven by a partnership of more than 25 institutions in and around the Adirondack region, including SUNY-ESF, Energy $mart Park Initiative, St. Lawrence University, the DEC Office of Climate Change, New York State Energy Research and Development Authority, Adirondack Park Agency, Community Energy Services, Adirondack Economic Development Corporation, Wildlife Conservation Society, The Wild Center, Essex County Department of Planning, and many others. Action Plan components are grounded in data verifiable through an Adirondack Park greenhouse gas emissions audit completed in March and sponsored by the Wild Center.

Six task force groups focus on buildings, renewable energy and biomass usage, forest and land management, transportation, municipalities, and tourism. Through their efforts, the ADKCAP partnership is establishing strategies to reduce carbon usage and create long-term economic improvements throughout the region. A management group coordinates steering committee meetings, fundraising, public outreach and communications through a web site/blog (see www.adkcap.org) and consultation.

The Task Force groups are refining the goals and objectives that came out of the conference and outlining the actions they will take in the next year to implement the action plan. ESF's Colin Beier is working with Dan Spada at APA to spearhead the Forest and Land Management Task Force. Stay tuned for more as the plan takes shape.

News from the Northern Forest Institute

The Northern Forest Institute for Conservation Education and Leadership Training (NFI) has accomplished a lot in the eleven months since its announcement. Much is to come as the NFI is constructed conceptually and programmatically; however in less than a year, NFI:

■ Became a lead partner in organizing and launching Children in Nature, New York (CiNNY), a partnership that brought Richard Louv, the New York Times best-selling author of *Last Child in the Woods* (2005), to Saratoga Springs and the Adirondacks May 1 and 2. The weekend-long event, designed to generate support for a coordinated movement in New York state to address the decrease in children's time spent in nature, drew more than 2000 people and elicited statements of support from the commissioners (or their representatives) of the state departments of health, education, environmental conservation and parks, recreation and historic preservation, as well as Michelle Paterson, the state's first lady. Look for more on CiNNY's efforts in the next newsletter, including the development of a New York Children's Outdoor Bill of Rights.

■ Hired two educational outreach specialists. Annie Woods started last summer, taking on the educational outreach responsibilities and enabling Paul Hai to work on the NFI's first project (see above). Annie stepped down to prepare for a doctoral program and she will be missed. NFI conducted a nationwide search for her replacement. We are excited to announce the hiring of Erin Vinson, who most recently directed the SEEDS program for the Ecological Society of America. Erin starts July 6. Please look for more about Erin online and in our fall newsletter.

■ Partnered with the town of Newcomb to secure funding from the Department of Environmental Conservation's Smart Growth grant program. This award is financing the development of a feasibility study and business plan. NFI has contracted with ConsultEcon of Connecticut. A finished plan is expected in early 2010.

History Lesson:

The Canal at Round Pond

New York's history was forever altered by the canal system built in the 1800s. How different would life have been if a canal had connected Long Lake to the Hudson River? If you take a float plane ride low over Huntington Forest, you may see a curiously straight waterway north of Catlin Lake that is all that remains of a failed plan to enhance travel and commerce in the central Adirondacks.

A manmade waterway was first proposed in 1836 by state geologist Ebenezer Emmons. However, it was Ferand N. Benedict who surveyed the route twice, urging the state legislature in 1845 and 1874 to authorize canal construction. Benedict was instrumental in building the first dam on nearby Round Pond but both of his canal proposals were blocked. Communities along the Raquette River opposed it because water from Long Lake would be diverted east to the Hudson, causing possible economic hardship for loggers and others along the Raquette north toward Potsdam.

Finally, in 1882, entrepreneur Thomas C. Durant started work on the canal. A dam was built to raise the level of Long Lake, and planned locks along the canal would have the ability to lower Round Pond. The Buttercup was the first steamboat to ferry passengers on Long Lake. However, local guides didn't want Durant's steamboats taking their business away. In one night the Buttercup was scuttled and the dam at the north end of Long Lake blown up. This sabotage ended the quest for the waterway.

Divers brought the Buttercup to the surface in 1959; it is displayed behind the Long Lake town hall. The 0.4-mile-long canal can still be seen from the air, stranded in the remote High Peaks Wilderness just north of the HWF boundary. These are all that remain of the water connection that could have profoundly changed how the area was accessed and enjoyed over time, and also perhaps could have changed the research and outreach activities at Huntington Forest today.

Adirondack Course Teams UVM and ESF

ESF students once again gathered at AEC with colleagues from the Rubenstein School of Environment and Natural Resources at the University of Vermont this spring semester. The objective of the course is to explore past and current issues of Adirondack policy and management. Drs. Bill Porter and Jon Erickson led the students on two trips to the AEC. For a first-person account of the initial winter outing, see http://www.uvm.edu/envnr/news_events/envnrnews/March_2009.pdf.

Demers Honored with Sage Award

Charlotte Demers received the R.W. Sage Jr. Memorial Town of Newcomb 2009 Volunteer of the Year Award. Town Supervisor George Canon presented the award and highlighted Charlotte's long record of service on the town Zoning Board of Appeals and her participation in many other activities. Charlotte was pleased to receive "Dick's award," created in 2002 to honor the late AEC associate director and longtime Newcomb volunteer.

Demers joined the staff in 1990. She focuses on population demographics of small mammals and their importance in forested ecosystems.