

# The SPRUCE MOOSE



A publication of the SUNY-ESF Adirondack Ecological Center

Summer 2008

## \$2.5M Sets a New Course for Historic Carriage House

The Adirondack Ecological Center is about to be transformed. Investments over the next two years will inject \$5.5 million into renovations, additions and new construction to support educational outreach.

“We are delighted to be able to increase our commitment to improving both the stewardship of the natural ecosystems of the Adirondacks and also the vitality of local economies,” said ESF President Cornelius B. Murphy, Jr.

At the heart of the transformation is the Stone Carriage House. Often called the Stone Garage, it has been home to the AEC’s Physical Plant staff for more than 60 years. Plans call for construction of a new facility for Physical Plant followed by renovation of the Stone Carriage House into a teleconference and distance-learning center.

“These facilities will allow us to better serve the North Country and to support our research mission,” said Murphy.

The Stone Carriage House was built by expert masons during the glory days of Adirondack Great Camps. Built entirely of glacial stone and massive hand-hewn beams, the structure served as a garage for the collection of carriages and automobiles that belonged to Archer and Anna Huntington. The building was donated to the college in 1939.

AEC Director William Porter said new construction and the complete renovation of the Carriage House will cost about \$5 million. When completed, the facility will promote educational outreach programs that build on ESF’s long history of research in the region and the ongoing commitment to providing the science that underpins the management of the Adirondack Park.

The conference center will reflect the Great Camp qualities of nearby Huntington and Arbutus lodges, also currently undergoing renovations. State-of-the-art communications equipment will be integrated into teaching and meeting spaces.

“Our vision is an artful marriage of the rustic elegance of the 19th century and the communication technology of the 21st century,” said Porter. “President Murphy challenged us to find ways to reach out to the Adirondack community with our science and to think big.”

Murphy and Porter said the \$2.5 million in funding was secured by state Senators Elizabeth O’C. Little and Joseph A. Griffo and Assemblywoman Teresa R. Sayward, who represent the North Country.

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# Summing up Summer Research: the UMEB Experience



By Stacy McNulty

Several ESF students headed into distant corners of the Adirondacks last summer for their first foray into independent research. They were participating in ESF's National Science Foundation-funded Undergraduate Mentoring in Environmental Biology program, Science and Stewardship in the Adirondacks.

The program is designed to support and mentor biology students from under-represented populations, particularly Native Americans. A second goal is to enable faculty members to become better mentors. The students, who were based at Huntington Wildlife Forest or Cranberry Lake Biological Station, delved into subjects that included sweetgrass, native herbs in deer enclosures, and salamanders.

## Native Grass Restoration

Sophomore Anna Conrad studied sweetgrass, which has cultural significance for the Iroquois because it is used for basket weaving and medicinal purposes, which, in turn, serve as a means of passing on traditional knowledge between generations. Conrad, an environmental biology major, transplanted sweetgrass from ESF's Lafayette Road Field Station to five sites in different habitats at Cranberry Lake Biological Station.

"The main part of my project was to measure the growth/survivorship of the sweetgrass I planted," Conrad said, "though I also took and later analyzed soil samples for pH and nitrogen content, and measured the percent cover of surrounding species in each of my plots."

Conrad showed that cutting surrounding plant species had no significant effect on sweetgrass growth or survival. She also noted that surrounding plant composition was not strongly correlated to survival or growth of sweetgrass.

Conrad found a number of benefits to being involved in UMEB and working with her mentor, Dr. Robin Kimmerer.

"We were given the opportunity to work with a small group of students that acted as a sounding board for our projects," she said. "Not only have I learned valuable information regarding conducting and reporting research, and still continue to through the weekly UMEB seminars, but I have gained a once-in-a-lifetime experience that I will never forget."

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## In search of a cranky turtle

Amy Fox spent the summer wading chest-deep into water to set hoop nets to get close to one of the most ornery creatures in the Adirondacks: the snapping turtle. She investigated turtle population demographics and use of beaver ponds compared to more permanent bodies of water on HWE. She captured 15 snapping turtles, all female, and one painted turtle; typically, more males are caught.

Turtles are threatened by climate change, wetland loss and acid deposition. Climate change may result in a skewed sex ratio, because fewer males are produced from nests with warmer incubation temperatures. Fox and her mentor, Dr. James Gibbs, are sharing her data with DEC herpetologist Al Breisch to aid in turtle conservation efforts.

Fox is now a sophomore and says her career aspirations have been shaped in part by her summer experience at HWE.

"UMEB has prepared me for the process of carrying out research projects," she said. "One of the most valuable things UMEB has given me is a network of people that I can communicate with."

This summer she will work on a project at CLBS, studying the relationship between American beech thicket density and small mammal populations.

## Flowers, fences and foraging deer

Senior EFB major Justina Fedorchuk did her research on native herbs found in deer enclosures. She recorded and compared the size and abundance of the flowers inside the fences with those outside of them.

Her goal was to assess the effect of white-tailed deer on flowering plants. She compared abundance, relative number of flowers, and plant size. There was no difference for many species, but plants of both trillium species were smaller, less abundant and had fewer flowers outside the enclosures, indicating that deer negatively affect some early spring flowers.

"Deer do seem to be an influence," Fedorchuk said.

Amy Fox, above and left, works with snapping turtles in the Adirondacks.

Her mentor, Dr. Greg McGee, has incorporated her results into his studies of land use history and plant communities. He presented the work at the New York State Museum's Biodiversity Research Institute.

For Fedorchuk, the UMEB experience served as a glimpse into graduate school and helped define her plans.

"I am very grateful for the chance to put this project together because it has been a trial run for grad school, proving to me that I want to take some time off before I get a master's degree," she said.

"More importantly, though," Fedorchuk added, "the Adirondacks are spectacular and by working on this project I really spent every day outside admiring the Huntington Forest. I have 30 pictures of trees and the scenery on my cell phone camera to prove it."

### Other UMEB activities last summer:

■ Shavaun Jenkins researched the impact of lime on salamanders at HWF and will share her results with the DEC.

■ Cesar Herrera researched fungi, finding 98 species that were included in the Adirondack All-Taxa Biodiversity Survey.

■ Manuel Santana, a pre-veterinary student at ESE, studied the impact of nitrate on amphibians, looking at tadpole mortality as affected by nitrate concentration.

■ Bill Dunker studied the way plant communities in beaver meadows change and the mechanisms that drive such transformation.



*Cesar Herrera spends his free time drawing on an artist's conk, one of the 98 species of fungi that he found.*

## 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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# Masten House offers unique view of Adirondack history



*The Masten House will offer the AEC new opportunities for programming.*

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Within the next few months, the college will be signing agreements with the Open Space Institute to take over operation and programming for the Masten House at Tahawus. This former executive mansion on Henderson Lake is within easy walking distance of the historic old blast furnace of McIntyre Mines.

"Few places bring together history, economics, ecology, and philosophy as well as the iron ore blast furnace," said Porter. "Perhaps no place better illustrates the way human culture shaped natural conditions a century ago and how nature has been reshaping Adirondack culture since then."

The house is estimated to be worth \$1.7 million. Funding includes an additional \$1 million grant to the Open Space Institute and the college from the Empire State Development Corporation to upgrade facilities.

The Masten House will complement Huntington and Arbutus Lodges and the Carriage House, providing housing and meeting space for professional training programs. These programs will be offered under the auspices of the Northern Forest Institute for Conservation Education and Leadership Training.

In March, Commissioner Peter Grannis of the state Department of Environmental Conservation announced a \$50,000 grant to help prepare a business plan for the new institute. The DEC also committed to help underwrite the program development, providing an initial grant of \$125,000 this summer. Paul Hai, education programs coordinator for the AEC, will lead the new institute.

# Opening New Doors: Student Housing Completed



Some 75 friends and alumni of ESF met at Huntington this past fall to celebrate the completion of two new buildings that will serve as student quarters for the next generation of environmental scientists.

The new bunkhouses complete a phased expansion of student housing and dining facilities near Rich Lake. Through a grant from the National Science Foundation and matching funds from the College, we have invested \$200,000 to upgrade housing facilities. This is a significant step because it means all students will now be housed in modern facilities within walking distance of the Rich Lake Dining Center.

The new facilities are similar in design to the two bunkhouses that replaced the old World War II-vintage metal building. Each of the two new buildings, and the two existing bunkhouses, accommodates 12 to 16 visitors, enabling us to host as many as 64 people at Rich Lake. The bunkhouses were constructed by ESF's own Physical Plant staff through the fall and winter, with cooperation of the Town of Newcomb.

Since the Rich Lake Dining Center was completed in 1992, activity at the AEC has grown an average of 16 percent per year. The research programs for which HWF is best-known – acid deposition, silviculture and long-term wildlife studies of animals such as deer and songbirds – have expanded and today Huntington attracts researchers from dozens of institutions and government agencies.

In addressing those gathered for the dedication, the same theme was echoed by ESF President Cornelius B. Murphy, Jr., N.Y. Assemblywoman Teresa Sayward and Town of Newcomb Supervisor George Canon: The future of the Adirondacks is dependent upon the next generation. What better place for students to stay and learn about science and partnerships than the AEC?

## *Rediscovering a Trophy: Renovation of Huntington Lodge*

Scientists love discovery. So, it was interesting to learn what our new College architect, Gary Peden, found as he put together drawings for the renovation of the AEC's Huntington Lodge.

The tale begins many years ago, when Archer Huntington bought "Mossy Camp" on Ackerman Pond, which he renamed Arbutus Lake. Arbutus Lodge, the former camp kitchen, is one of a handful of remaining structures originally designed and constructed by the famed developer of the Adirondack Great Camps, William West Durant. Huntington added the building we now call Huntington Lodge, complete with its magnificent Trophy Room.

When Archer and Anna Huntington donated the buildings to ESF in the 1930s, the College removed the more dilapidated portions and used many of the materials to rebuild Huntington Lodge. All that remains of the original circa-1911 Huntington Lodge is the Trophy Room. Generations of students have been awed by the Trophy Room, with its soaring ceiling and spectacular fireplace.

But until recently, the staff at the AEC did not know about the gem tucked behind a closet in the lodge. In the 1940 building plans, Peden noticed a second fireplace attached to the Trophy Room stonework. The fireplace once warmed the maid's room and faces the porch entryway. That little piece of history is now part of the plans for the future of Huntington Lodge.

Over the past four years, we have been reaching out to alumni and corporate donors to develop the funding necessary to restore the rustic elegance of Arbutus and Huntington lodges. Our plan is to renovate Huntington Lodge so the kitchen, dining, bath and bedroom areas are once more in keeping with Durant's design. When renovations are complete, Huntington Lodge will be more suitable for professional meetings and intimate gatherings.

Alumni and friends have generously donated more than \$150,000 for the project. Work will be underway this summer, and we hope to have the renovation complete by autumn. Our goal is to recover the old fireplace to make it the centerpiece to the foyer in Huntington Lodge, brightly greeting and warming visitors.



# Spying on Wildlife

By Dominic Chabot

Unmanned aerial vehicles, long used in military spy operations, now promise to aid biologists in their efforts to keep an eye on wildlife. These increasingly affordable and user-friendly aircraft could cut costs, save time, increase accuracy and open new avenues in aerial surveys, which play a major role in wildlife management and research.

As part of my research on the usefulness of UAV technology in wildlife-related aerial survey tasks, I set out in late October to locate active beaver lodges and food caches in the Huntington Wildlife Forest using a new method. Neither my assistant, Gilles Maillet, nor I have a pilot's license, yet we came equipped with our own plane. At first glance, it looks like an ordinary radio-controlled model, but it packs a key upgrade under the hood: Micropilot's MP2028g chip, the world's smallest commercial autopilot system, weighing a mere 28 grams. Using a global positioning system unit and a handful of other miniature onboard instruments, this little chip effectively steers our six-pound, hand-launched sailplane (which is 4 feet long, and has an 8-foot wingspan), more precisely than any human pilot could. Also, it can be programmed to capture aerial photos at heights ranging from 400 to 2,100 feet at specific locations using a digital camera mounted under the wing.

All this cutting-edge technology, however, was powerless in overcoming our largest obstacle: finding places to land. Designed to set down in expansive open fields, the plane had few suitable landing strips on the roads below Huntington's tree canopy. Determined to give our UAV a shot, we finally performed a flight over Adjidaumo Flow, attempting to land it in a nearby meadow, but even this space proved too small and the plane experienced a rough landing.

While our single mission at HWF yielded the desired photos of the cache, the risk of irreparably damaging our aircraft was too steep to carry on. However, there is no ruling out further attempts in the future as we refine our work with this technology.

*Dominic Chabot is a master's candidate in wildlife biology at the Department of Natural Resource Sciences, McGill University, Montreal, Canada*



# Fun with Feces

By Andrea Reinhardt



As an enthusiastic environmentalist and recent transfer to ESF, I was eager to soak up knowledge and utilize the extensive resources ESF provided. These goals, and an interest in small mammals, brought me last summer to the Adirondack Ecological Center, where I had the opportunity to work with a talented wildlife biologist, Charlotte Demers. I assisted in live trapping small mammals and collecting data for my own independent research. I spent the entire summer in the Adirondacks, enriching my mind and pursuing a dream.

My research project, titled "Mycophagy and Small Mammals," combined my interest in small mammals with the mycological world. Consumption of fungi by small mammals in the Northeastern United States is not well studied but it is potentially important ecologically. Both small mammals and fungi play key roles in ecosystem function.

Studying small mammal mycophagy, literally translating to "fungus eating," required collecting hundreds of fecal samples. During a week of small mammal trapping, over 400 Sherman traps were set in three site locations, and checked daily. My data consisted of the fecal matter collected from within these traps. For practical research purposes I narrowed my study to include only feces obtained from mice (*Peromyscus* spp.) and the southern red-backed vole (*Myodes gapperi*).

Working closely with Dr. Thomas Horton, an accomplished mycologist at ESF, I set out to identify the presence of fungal spores within the fecal samples. For weeks, I spent hours in front of a microscope in hopes of collecting significant data. After looking at more than 200 samples, it was evident that my hard work had paid off; fungal spores were plentiful.

As summer came to an end I packed up my supplies: jelly jars, slides and microscope. Despite the change of seasons, my research was just beginning; what began as a summer independent research project has turned into a long-term endeavor, my undergraduate honors thesis. My time in the Adirondacks was far more than fun with feces. It was the beginning of new friendships, countless laughs, valuable lessons learned and, most importantly, the opening of new doors.

*Andrea Reinhardt is an EFB major and was a RWLS undergraduate research intern in 2007.*

## Celebrating a Half-Century of Research



Last August, ESF's Dr. Ralph Nyland guest lectured in the Adirondack Forest Ecology and Management class. After the lecture, a surprise celebration was thrown to honor Dr. Nyland for his 50 years of work on HWF. A certificate of recognition

was presented to him by Dr. William Porter and Dr. Christopher Nowak on behalf of HWF, the AEC, and the Department of Forest and Natural Resources Management at SUNY-ESF.

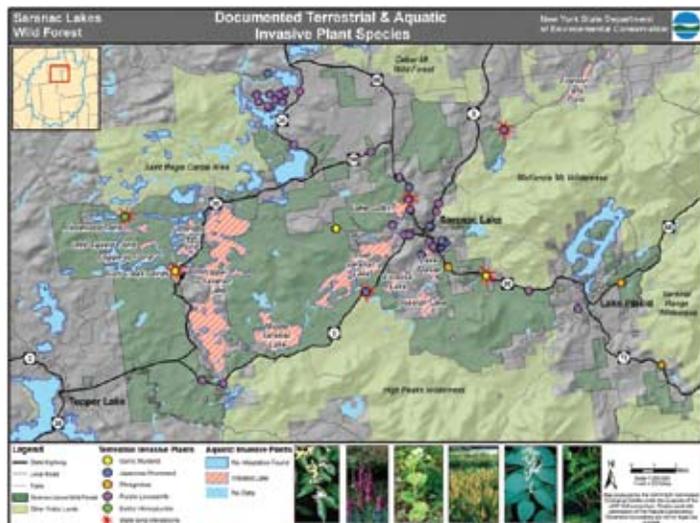
Remarkably, since 1957 Nyland has studied beech bark disease, the impact of white-tailed deer herbivory on forest regeneration, and evaluated even- and uneven-aged silvicultural treatments, among other projects. Nyland has produced a legacy of information and knowledge that will continue to be built upon. The impact he has had on HWF over the last five decades will be visible for many more.

## AEC GIS Specialist Wins Award

Steve Signell received an award in the North East Map Organization Map Design Competition, winning the "Best Design in Small Format Map" category for his portrayal of invasive species around the Saranac Lakes. The award was presented at the NEMO Annual Meeting in NYC in June 2007.

[www.esf.edu/aec/research/ump.htm](http://www.esf.edu/aec/research/ump.htm)

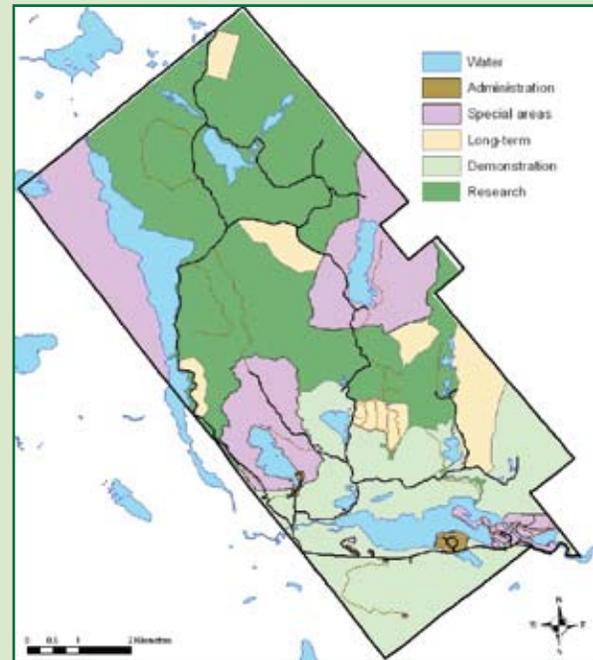
### Congratulations, Steve!



*Invasive plants are widespread in the heavily visited Saranac Lakes region.*

## Huntington Wildlife Forest

### Management Plan Completed



*By Charlotte Demers*

The most recent incarnation of a forest management plan for the Huntington Wildlife Forest was unveiled in January. This document, with its associated maps and database, will guide HWF staff and users with diverse research and educational needs. The plan represented two years of work by a number of HWF staff as well as valuable input from faculty on the main campus in Syracuse. The objectives of HWF as outlined in this plan are to:

- Provide a diversity of forest conditions representative of the broader Adirondack forest in appropriately sized units to facilitate research needs;
- Maintain ecological integrity of the forest;
- Maintain the integrity of active research sites;
- Identify and, where feasible, halt the invasion of exotic invasive species;
- Promote and encourage accessibility to locations valuable to teaching, research and demonstration;
- Identify and protect cultural resources

The plan establishes five management zones on HWF – administrative, demonstration, long-term monitoring, research, and special areas – each with a unique set of management guidelines and recommendations. Administrative zones are housing, office, dining, facilities management, and laboratory areas. Demonstration zones contain naturally occurring or managed stand conditions for educational purposes. Long-term monitoring areas provide the temporal perspective necessary to understanding ecosystem dynamics. The special area designation includes sites that represent significant research investment such as the Natural Area and unique ecological communities. The remainder of HWF is designated as a research zone that will be managed for ecological conditions that represent current and future research needs.

The Natural Resources Management Plan is available on the AEC website at [www.esf.edu/aec/strategicplanning/](http://www.esf.edu/aec/strategicplanning/).



## Origins of an Ecologist

By Colin Beier

Growing up on the Chesapeake Bay in southeastern Virginia, I witnessed the rapid conversion of coastal pine forests and salt-grass wetlands into commercial and residential developments. As this suburban sprawl consumed the coastal plain, changes occurred that went beyond adding superstores and subdivisions. These changes happened because of the loss of water regulation and storage capacity provided by wetlands and forest soils that had been replaced by pavement and well-manicured lawns. In addition, runoff of fertilizers, pesticides, and other chemicals increased, and was no longer filtered by soils before it entered the water supply. Unfortunately, at the time, very few made the connection between these changes, and little action was taken to address them.

Years later, after finishing a master's degree in forest ecology, I returned home to see a dramatically developed landscape, while the impacts on water, wildlife and recreation had intensified. Despite growing awareness of these problems, city leaders did not change the policies and economic incentives for continued development. I realized that ecological research is most valuable if we find a way for it to help people make political, economic, and cultural choices.

With this in mind, I joined a group of interdisciplinary researchers and students to continue education in Alaska, a place that seemed far removed from the Chesapeake in terms of environmental and social change. However, I saw once again the precursors of these changes mostly originated from human actions in the biosphere.

In my research on the Tongass National Forest in Southeast Alaska, I found that the legacy of decades of industrial logging will reduce ecosystem capacity to support key fish and wildlife resources. In the short term, logging provided some positive outcomes (employment, improved roads, increased access for hunting and fishing), but forest regeneration and stream degradation (caused by road and culvert failures) are expected to reduce habitat quality for wildlife and fish populations over the long term.

Examining these types of interactions in linked systems of humans and nature, with a focus on how social choices influence environmental benefits (also known as ecosystem goods and services), will be a major thrust of my research at the AEC. I am also interested in understanding social and ecological tradeoffs associated with wilderness conservation, forest ecosystem responses to climate change and other factors (such as diseases, pests, and invasive species), and policy/management approaches to balancing ecological integrity with economic and cultural well being. As the new ecologist at AEC, I look forward to learning and sharing these perspectives on sustainability – from Alaska to the Adirondacks.

## Following Deer Could Stop Illness in its Tracks

By Matt Smith

The potential spread of disease in any wildlife population can be the cause of major concern to wildlife managers. Chronic wasting disease (CWD), a fatal prion disease found in North American cervids such as white-tail deer, elk, and mule deer, is no exception.

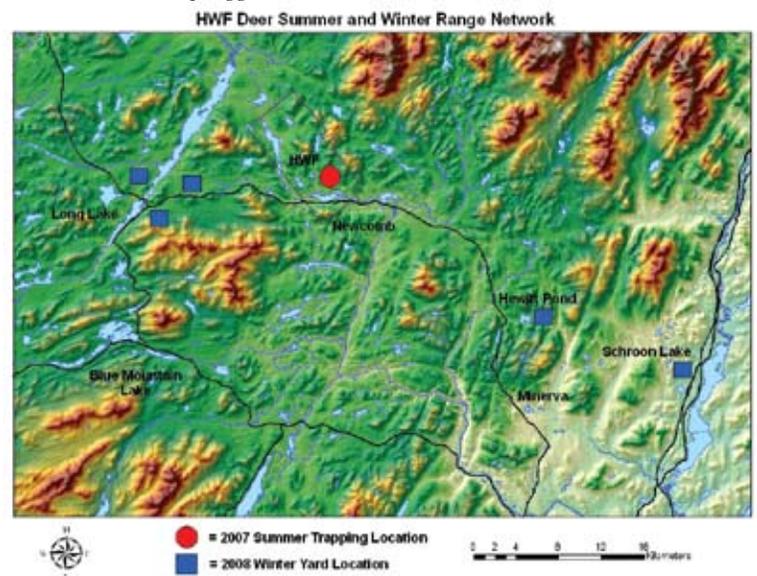
Originally found in the western United States, the disease has moved eastward at an alarming rate. Deer in Oneida County, N.Y., tested positive for CWD in 2005. In response, the New York State Department of Environmental Conservation has funded a research project that aims to create risk assessment models to help develop management practices across the state in the face of further infection and/or disease spread.

My research focuses on white-tailed deer movement and behavior in the Adirondack Park, and the implications of that activity for disease spread. Deer in this region migrate a long distance between summer and winter ranges, a behavior that is not seen in the rest of New York state. This migration is mostly because of the severe winters in the Northern Forest region.

To find out how this long-distance migration could affect the spread of a disease such as CWD, I deployed 12 global positioning system (GPS) collars on white-tailed deer with summer ranges on Huntington Wildlife Forest. I followed these deer to their winter ranges in the towns of Long Lake, Newcomb, Minerva and Schroon Lake. With landowner permission, I deployed 12 more GPS collars on individuals in winter yards used by white-tailed deer from HWF.

We hypothesize that some of the individuals collared in the winter yards will not return to HWF but rather have summer ranges elsewhere, and migration between summer and winter range creates a network of contact among individuals across the landscape. Using the data from our GPS collars, we plan to create a model that will help managers set up efficient management schemes to be used if CWD occurs in the Northern Forest region.

*Matt Smith is a master's candidate in EFB working with Dr. William Porter. He was the 2005 Sage Apprentice.*



# Chase-ing Down Adirondack Guide Boats



On August 23, HWF will host the first Caleb Chase Guide Boat Reunion

More than 130 years ago, Caleb Chase finished working on one of his Adirondack guide boats and, perhaps, took it for a trial run in the lake behind his homestead. He had been building boats for about 10 years, and this one reflected the practical lines of its utilitarian predecessors.

Chase's style would soon evolve, however, resulting in elegant boats intended less for work and more for leisure. Chase would sell these more refined boats to men like William West Durant and Archer Huntington, who would come to own Rich Lake, the very lake where Caleb lived, worked, and tested his boats.

The boat Chase worked on that day in 1874 is unique, not because it is a member of perhaps the largest family of boats produced by a single builder, but because it might be the only boat in the region to have never left its "birth" waters.

The boat described above is the now somewhat forlorn guide boat discovered several years ago in the rafters of the sawmill (see Winter/Spring 2006 Spruce Moose). Since then, there have been interesting developments, perhaps the most exciting of which is that Tim Mullins of North Carolina, a Chase boat owner, donated a set of custom-cast bronze oarlocks to replace the missing originals.

In the meantime, other related events are, well, afloat. Last summer the Adirondack Lakes Center for the Arts came to HWF for a daylong event to learn about HWF research and history, and to enjoy a paddle around Arbutus Lake. Roland and Nina Stearns of Blue Mountain Lake brought their circa 1878 Chase guide boat. It was so striking to see this boat here we had an epiphany: Why not bring more Chase guide boats home for a visit?

To celebrate the rich legacy of these guide boats on our own property, we are inviting back any and all of its relatives to come glide across their native waters once again.

And so this August 23, HWF will host the first Caleb Chase Guide Boat Reunion. We invite all owners of Caleb Chase boats to visit Huntington for a private day of paddling. The day will be an opportunity not only for boats to return here, but for owners to meet and share a special day together while learning about what has been happening at HWF. For additional information please contact Paul Hai at 518.582.4551 x104 or pbhai@esf.edu.



Top: Nina and Roland Stearns in their circa 1878 Chase guideboat. Above: Anna and Archer Huntington on Rich Lake.



The Huntingtons find a hidden cove.



AEC's guideboat in its current condition.

We invite all owners of Caleb Chase boats to visit Huntington for a private day of paddling

## 2010: The Next Reunion

The next Huntington Forest Alumni Reunion will be in August 2010. Renovations to Huntington Lodge and other buildings, combined with activities planned for this summer, have created the need to postpone the reunion for two years. While we will miss seeing old friends and making new ones this summer, we intend to keep hosting reunions in even years.

If you haven't been back to the Adirondacks in a while, please plan a visit. In the meantime, feel free to send reminiscences of your stay at HWF, including photos (please identify people in them) to Stacy McNulty at smcnulty@esf.edu or to the AEC via regular mail.