Adirondack Ecological Center

State University of New York
College of Environmental Science and Forestry

William F. Porter, Director

Annual Report

September 1, 2008 – August 31, 2009

Executive Summary

The pace of growth seems to ever accelerate at AEC. Overall use of AEC/HWF was 6,443, up from 5,851 in 2008. A total of 73 research projects were underway and 39 refereed publications were produced in the past year. There were 454 students attending credit-bearing courses conducted in part or entirely at the AEC. The number of people reached via AEC staff public service and professional presentations was 2,150. Combined with non-ESF users, 54 faculty and scientists accessed HWF resources for research and student instruction, up 20% from last year. Efforts toward *Building for the Future* resulted in near-completion of a $350,000 restoration of Huntington Lodge. All furnishings for the Lodge are being provided by Stickley-Audi Furniture through discounts and a matching donation from the company. A lease was signed with Open Space Institute for use of the Masten House, providing a new venue for interdisciplinary educational experiences. An addition to the Rich Lake Dining Center was completed and all dining room furnishing were replaced with funds received through Congressman McHugh and a large grant from the Town of Newcomb. A $154,000 award was received from the National Science Foundation for installation of a wireless Internet system that will provide high-speed access for students in the bunkhouses, and residents in Huntington and Arbutus Lodges, and adjacent buildings, as well as Physical Plant staff at the Stone Carriage House. Further, it will support emerging technologies that use wireless Internet access in the field. The system will involve placing equipment on Goodnow fire-tower that is powered by photovoltaic arrays. New office spaces were completed on the lower level of the AEC headquarters building and a rearrangement of the library and lunch room provided much better work accommodations for graduate students. Finally, on old wire dump on the Arbutus Road was cleaned up with the help of labor from Moriah Shock Incarceration Program. With the help of the Town of Newcomb and the ESF Development Office, a grant was secured through the SmartGrowth Initiative to hire a consultant to provide a marketing and business plan for AEC and the Northern Forest Institute. A new housing and financial data management system was developed on site and an accountant was hired for 15 weeks to install a formal financial reconciliation and reporting procedure. This was coupled with a comprehensive review of dining center operation including food and labor costs, implementation of a survey instrument to document dining satisfaction and liaison with Syracuse University Dining Services to review nutritional content of the AEC menu. Cost containment measures resulted in a 65% reduction in our long-term deficit.

Focus in the upcoming year will be on four major areas: **i**nfrastructure, expanding research programs and initiatives in sustainability, renewable energy and land stewardship, interdisciplinary educational experiences for undergraduate and graduate students, and fund-raising. We look forward to working with Physical Plant staff to begin planning for construction of a new Maintenance Garage and renovation of the Stone Carriage House. A total of $2.5 million has already been secured and a proposal has been submitted for an additional $1 million. We also look forward to working with Forest Operations in the planning of a silvicultural demonstration area, and a significant upgrade to the Goodnow trail and fire-tower. We also look forward to working with Computer Networking Services to improve teleconferencing technologies that will allow greater integration of the AEC experience into curricula across the College.

Challenges ahead relate to ongoing struggles with vehicles and Internet access. While a new all-terrain vehicle is anticipated soon, the fleet of over-the-road vehicles at AEC is now beyond critical stage and most vehicles are no longer suitable for travel on public roadways. Internet use is now reaching peak capacity of our T-1 line and challenges will grow with the implementation of wireless access across the property. Recommendations include purchase of 3 new vehicles in the next 4 years and re-alignment of all AEC vehicles to be part of the ESF College fleet. Recommendations also include establishment of new computer network control systems and provision within the Computer Network Services to ensure proper technical support and planned upgrades of equipment.

Measures of Program Activity

AEC showed substantial growth in college-level instruction, public service and professional outreach. Overall use of AEC/HWF was 6,443 user-days up from 5,851 in 2008. A total of 73 research projects were underway, down from 83 in the previous year and 39 refereed publications were produced in the past year, down from 50 in 2007-08. The AEC saw 12 ESF faculty using HWF resources for research and instruction, down from 35. Combined with non-ESF users, 54 faculty and scientists accessed HWF resources for research and student instruction, up from last year's 44. However, 30 graduate students used the property and staff resources, fewer than last year's 45. There were 454 students attending credit-bearing courses conducted in part or entirely at the AEC, up from 170 in the previous year; 359 college students participated in educational programming with AEC staff, up from 319 in the previous year. Instruction and outreach to secondary schools reached 330 students. People attending workshops and conferences at the AEC numbered 412, approximately the same level as the previous year. The number of people reached via AEC staff public service and professional presentations was 2,884, over twice the number (925) in the previous year.

Progress in Program Development

Infrastructure

Huntington Lodge. The comprehensive renovations of Huntington Lodge are drawing to a close. As of August 31st, remaining work was limited to targeted exterior painting, final seal coats on the Trophy Room floor, installation of storm windows and some additional minor detail work. A hidden fire place has been restored and the porch has been upgraded to provide a foyer and elegant meeting room. Delivery of furnishings, provided by Stickley Audi and Company, is anticipated in mid October. When completed, the building is intended to provide high-quality overnight and meeting-room accommodations. All bedrooms have direct access to bathrooms and there is sleeping space for 8 to 10 people. A formal dining room will seat 8 and the Trophy Room can be set up to serve an additional 7 people. Seating capacity for meetings is 25 to 30. More $300,000 was raised for the project. The Town of Newcomb provided critical funding to finish the project.

Rich Lake Dining Center Addition. The culmination of renovation, addition and upgrades to the Rich Lake Dining Center occurred in July. The work, which included the construction of a 16'x32' addition, installation of a walk-in cooler and freezer, upgrading equipment energy supply from electric to gas and correlated replacement of all kitchen equipment, addition of new time-saving equipment (higher capacity range, new convection oven), replacement of dining tables and chairs, and a completely replaced and upgraded water purification system, marks the end of a major infrastructure improvement initiative funded by grants from Congressman John McHugh and the Town of Newcomb.

Masten House. The lease agreement outlining the use of Masten House and sharing of energy costs between Open Space Institute (OSI) and ESF was signed in August. Bids for the highest priority Energy Conservation Measures (ECMs), as identified by NYSERDA and agreed upon by OSI and AEC/NFI, are currently being sought. These ECMs include augmenting, upgrading and/or replacing all insulation, expected this fall with work to be completed by spring 2010. Planning is advancing to provide wireless broadband Internet access to Masten via an additional cooperative agreement between OSI and ESF, utilizing fire towers owned by each organization. Plans for appropriate furnishings continue to advance as well. This work is supported by a $1 million grant from the Empire State Development Corporation to the partnership of the Open Space Institute and the College. The remote Preston Pond Cabin (pictured), an additional resource available through our partnership with OSI, will provide unique backcountry program experiences.

Business Plan. In collaboration with the Town of Newcomb, AEC hired ConsultEcon of Cambridge, Massachusetts to conduct a market analysis for educational outreach, and to formulate a business operating plan. ConsultEcon has worked with many of the larger science museums in development of educational outreach programs and has direct experience in the North Country through its work with the Natural History Museum (Wild Center) in Tupper Lake. The purpose of the business plan is to assist ESF and its partners, including the Town of Newcomb, in developing market support and revenue and expense projections for AEC and especially the development and operation of the Northern Forest Institute. ConsultEcon will also assist in integrating the above research and analysis along with planning work completed to date, into a business plan format that will guide decision making, actions and expenditures.

Accounting. The AEC has undertaken a comprehensive review of the dining center operation including food and labor costs, implementation of a survey instrument to document dining satisfaction and liaison with Syracuse University Dining Services to review nutritional content of the AEC menu. The financial review was performed under the direction of an accountant hired through a grant for 15 weeks over the summer. We focused on improving the existing financial operations beginning with a thorough assessment of the local accounting system. We created a new system of monthly reconciliation of accounts between SUNY and on-site bookkeeping. We also implemented an inventory system to better analyze costs of the dining hall operation and to provide an accurate means of measuring cost. Finally, we integrated our Access-based system for tracking users and overnight accommodations with our financial reports to provide month-to-month and year-to-year comparisons of the financial position of AEC. Cost containment has already resulted in a 65% reduction in long-term dept.

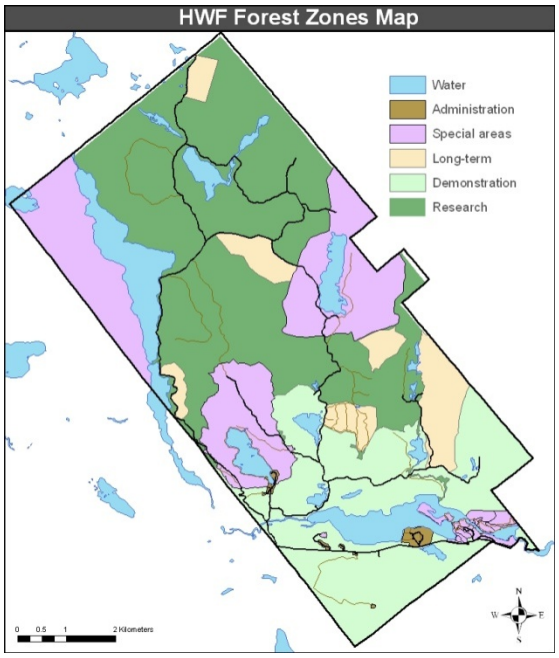
Clean Up. A dump containing metal and wire just east of the Arbutus road was cleaned up with the help of prison labor from Moriah Shock Incarceration Program. This dump likely dated back to the 1940s and included 8 dump truck loads of scrap metal and wire. All was removed to the Newcomb landfill.

Office Reorganization. Space has become an increasing challenge at AEC. To create more productive environments, new offices were constructed with the assistance of Physical Plant staff in the lower level of AEC. The AEC library was moved to the conference room, creating a more attractive environment.

Wireless Internet. A $154,000 award received from the National Science Foundation for installation of a wireless Internet system will soon provide high-speed access for students in the bunkhouses, and residents in Huntington and Arbutus Lodges, and adjacent buildings, as well as Physical Plant staff at the Stone Carriage House (replacing their dial-up service). Further, it will allow wireless access to the Internet directly from the field, facilitating the use of emerging data recording technology. The system will involve placing radio equipment on Goodnow fire tower. The equipment will be powered by photovoltaic arrays. Approval has been granted by the Adirondack Park Agency (Class A jurisdiction because of the involvement of a tower) and we are awaiting final signatures on the permit from Syracuse University. All equipment is now in hand or expected soon and installation and testing is anticipated this fall.

Education

Undergraduate Mentoring in Research. The Undergraduate Mentoring in Environmental Biology (UMEB) program continues to provide ESF undergraduate students underrepresented in field biology with intensive inquiry-testing and outreach experience via a two-year fellowship funded by NSF. The "Science and Stewardship in the Adirondacks" research theme and activities help students develop an appreciation for the cultural context in which environmental research occurs. Ten projects conducted at HWF in 2009 ranged from aquatic food web dynamics to biocontrol of the invasive beech scale, to relation of calcium and vegetation structure, to songbirds among many. Finishing UMEB students shared their results and excitement about science with Adirondack residents, visitors, high school students and colleagues via public events and presentations. UMEB participant Jordan Brown won two awards for his UMEB research poster in 2009. Students connected with biologists at The Nature Conservancy and other stewardship-based organizations to foster career awareness and strengthen student-community-scientist links. The graduation rate for students completing UMEB is 87%, well above the national science/technology rate of approximately 50%. Perhaps the most lasting impact of a summer at HWF is the bonding between individual students who will support each other as they continue to grow as people and professionals.



Silvicultural Demonstration Area. The first large scale implementation of the HWF Natural Resources Management Plan is in progress. Twenty-six demonstration plots, each approximately 2.5 acres in size, are being developed along the Sucker Brook Road. This area has been designated in the Natural Resources Management Plan as one of the Demonstration Zones on the Forest. These plots, designed in collaboration with Forest Properties, will provide examples of forest stand development, silvicultural practices and different forest cover types in easily accessible locations. These plots have been laid out in close proximity to each other to facilitate teaching and instructional activities. Physical Plant personnel have been improving the Sucker Brook road in anticipation of the increased road travel and in preparation for the logging activity that will be necessary during the creation of these plots.

Northern Forest Institute for Conservation Education and Leadership Training (NFI). The The Smart Growth grant program enabled the hiring this May of ConsultEcon, a consultant based in Boston, to develop a market analysis for AEC/NFI. This document, expected in early 2010, will help direct the fiscal and programmatic planning for NFI's development. Partnership development and programmatic planning is currently underway. NFI was also instrumental in

providing leadership for *Children in Nature in New York* hosting meetings in May in Saratoga Springs and Lake Placid.

Research Programs

Collaborative Initiatives. New collaborations are leading toward research thrusts for both basic and applied research relevant to the Adirondack and Northern Forest region**.** Informal discussions are underway involving over 30 collaborators from a variety of academic and management institutions. These include ecological-economic assessment of air pollution (acid rain, mercury) impacts in New York State (with Myron Mitchell and Charley Driscoll), biofuels management for the Northern Forest (with Tim Volk, Adirondack Research Consortium and others); development of ecosystem services research (with Gund Institute at the University of Vermont, McGill University, Virginia Tech and several federal agencies); climate change assessment (with Clarkson University); climate change impacts on forest health and management (with Paul Smiths College, Wildlife Conservation Society and others); invasive species effects on native ecosystems (Adirondack Park Invasive Plant Program and others); linkages of beechnut production and wildlife population ecology and management (DEC and others); and management of American beech (beginning with an ESF-led consortium). AEC staff have given seminars at a range of venues, from local lectures to international conferences, and provided scientific expertise and leadership in several regional research/outreach initiatives, including the Adirondack All-Taxa Biodiversity Inventory (McNulty), and the American Response to Climate Change – Adirondack Conference (Beier). To illustrate in concrete terms, approximately $6 million in research funding has been committed or requested, including:

- **Beier CM** (PI), Mitchell MJ, Gibbs JP, Leopold D, Dovciak M. 2008. Importance of calcium-rich substrates for supporting refugia of biodiversity and productivity in an increasingly acidified landscape. *Northern States Research Cooperative* ($41,543)

- Volk TA, Luzadis V, Amidon TE, **Beier CM**, Malmsheimer R, Bucholz T and others. Biofuels Roadmap for New York State. ESF subcontract to Pace University. *NYS Energy Research and Development Authority* ($135,100)

- Angermeier P, Frimpong E, Bennett EM, **Beier CM**, Limburg KE, Beard D. Spatial relations among conservation practices, aquatic biodiversity, ecosystem services and human well-being. *US Geological Survey – Aquatic Gap Program.* ($265,500)

- **McNulty SA** (PI), **Beier CM**, **Porter WF**. 2008. Unit Management Planning – Geographic Information Systems. *New York State Department of Environmental Conservation* ($115,000)

- **McNulty, SA** (PI), J Castello, and S Teale. The influence of American beech thickets on biodiversity in the northern hardwood forest. *Northeastern States Research Cooperative* ($34,785)

- Mountrakis G, **Porter WF**, **Beier CM**, Zuckerberg B, Zhang L. Using Lidar to assess the roles of climate and land-cover dynamics as drivers of changes in biodiversity. *NASA* ($747,290)

- Patrick, DA and **SA McNulty**. Assessing biodiversity, forest condition and the effects of management in the Northern Forest: protocol development and field trial in Adirondack Park. *Northeastern States Research Cooperative* ($15,000)

- **Porter WF**, **McNulty SA** and A Dechen. A Risk Assessment of a Chronic Wasting Disease Outbreak in New York, *New York State Department of Environmental Conservation* ($1,008,190).

Pending Proposals Involving AEC Staff.

- **Beier CM**, Mitchell M, Erickson J, Driscoll C. Impacts of Acidic Deposition on Ecosystem Services and Human Well-Being in the Adirondack Region, New York. NYS Energy Research and Development Authority ($243,650).

- **Beier CM**, Bennett E, Villa F, Ceroni M, Limburg K. Managing Agricultural Landscapes for Ecosystem Services: Coupling Watershed Regulating Services with Freshwater and Estuarine Services in the Albemarle-Pamlico Basin. Environmental Protection Agency-STAR ($500,000).

- Kimmerer R, Gibbs J, **Beier CM**, Leopold DJ, Luzadis V, Stella J and others. IGERT: "Helping Forests Walk" – Coupling Scientific and Traditional Knowledge to Build Resilience in Coupled Natural and Human Systems Facing Environmental Change. National Science Foundation (~$2,800,000).

- Spada D, **McNulty SA, Hai PB**, and D Patrick. EPA: Detecting and Monitoring Climate Change Effects on Wetlands and Water Quality in the Adirondack Park, NY (~$1,225,000).

Broadening Visibility of AEC

Expanding web-accessible data resources. Through the Adirondack Park Regional Geographic Information System project (formerly UMP-GIS), we continue to make progress toward a relational database. In a truly relational database like Oracle, errors are reduced because information exists in separate tables. For example, if a forest stand on HWF is divided to add a new silvicultural experiment, a traditional "flat file" table containing stand identification, area, and land cover type would need updating. In contrast, a relational database uses a unique identification code common to three stand, area, and land cover tables to maintain relationships. To split the stand, only one update is needed on the identification table, and the area table updates automatically. The benefits of a relational database are several. The database would

allow one-stop access to data from ESF and contributing partners. Users need only a web browser for dynamic queries that return summary tables and maps. Metadata are served side-by-side with data. ESRI ArcGIS will become an optional means for graphical display. Using the free PostgreSQL, GIS software costs would be significantly reduced. Users have customized access permission (read-only, read-write, etc.). Users may download datasets if permitted, but do not need to download datasets for analysis or mapping that then become relics when the data are updated.

Increasing visibility of AEC within the region and across the state. Among our strategic goals is to be the go-to organization for science in the Adirondacks. Two AEC staff now help direct the Adirondack Research Consortium, a non-profit dedicated to research in the region (W. Porter, President, and S. McNulty, Board Member). The full-color *Spruce Moose* newsletter now reaches over 1,000 alumni, colleagues and organizations. Facebook sites were created for HWF alumni and friends as a means of staying connected with students and others. Finally, a new book edited by William Porter, Ross Whaley and Jon Erickson (*The Great Experiment in Conservation: Voices from the Adirondack Park*, Syracuse University Press) captures the ecological, political and economic history of the Adirondacks and seeks to distill the lessons in the 130-year effort to create a new model for regional land-use regulation and land stewardship.

Program Plans for Upcoming Year

Plans for the upcoming year will place primary attention in 6 areas: infrastructure, research programs, Northern Forest Institute, student educational experience, faculty collaboration, and fund-raising.

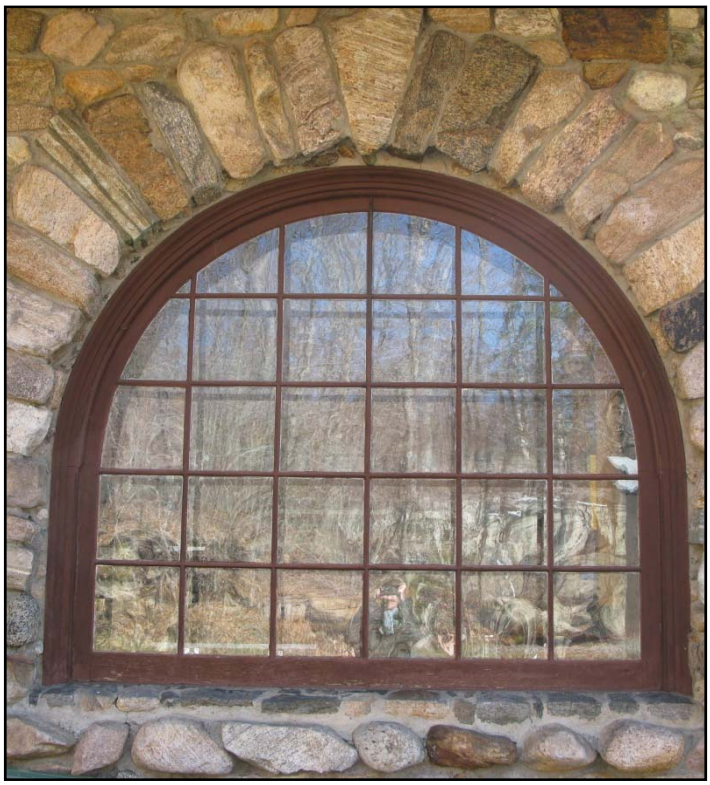
We will continue to invest in improving infrastructure.

> **Installation of photovoltaic and wood-pellet energy sources.** The completion of an energy audit, initiated in 2006 by AEC in partnership with the New York Power Authority, and more recently energized by main campus with the leadership of Mike Kelleher, has resulted in the a number of energy conservation recommendations for improving the energy efficiency of HWF facilities. PV and wood-pellet stoves and furnaces are the primary improvements anticipated in 2010. This effort expands the College's Green mission by decreasing our carbon footprint. The installation of flat-screen displays showing energy use will augment the system allowing integration of a academic program activities.
>
> **Initiate programming in the Masten House**. With a lease in place, and energy conservation work completed by early spring 2010, we anticipate using the Masten House for professional training workshops and educational outreach by summer 2010. This facility is located on the shore of Henderson Lake and the southern access to the High Peaks Wilderness. Importantly, it is also adjacent to the Tahawus open-pit titanium mine, and the historic McIntyre Blast Furnace. This combination offers a superb setting for an interdisciplinary experience linking ecology, economics and ethics. The Open

Space Institute has commissioned a consulting firm to develop of master plan for the area and we anticipate our educational programming will be a central feature.

Upgrade Goodnow Trail and Tower. **T**he fire tower and public trail on Goodnow Mountain will be targeted for upgrade in the coming year under the direction of Forest Operations. More than 7000 people register at the trail head each year and numbers of people actually using the trail and tower is thought to be much greater. The tower is in good shape and needs only minor repairs but the trail has become badly eroded over the years. This trail represents an important point of contact between the College and the general public and we seek to be a role model for stewardship. The College has committed $25,000 to underwrite repairs.

Initiate Carriage House Teleconference Center project. This project was initiated with the 2007-08 appropriation of $2.5 million secured with the help of Senators Elizabeth O'C. Little and Joseph Griffo, and Assemblywoman Teresa Sayward. An additional $1 million has been proposed to Capital Construction Fund for planning and construction of new facility for Physical Plant. Vice President of Administration Joe Rufo has indicated that the design work on the new physical plant facility and renovating the Carriage House is a major College priority. When completed, the facility will promote educational outreach in the region and, specifically, ESF's commitment to making science more accessible to leaders of government and business throughout the Adirondack Park and Northern New York.



We will continue to invest in improving educational experience for students

Educational programs for students will emphasize expansion of our undergraduate research experience and our academic-year residential experiences for graduate students. Our goal is to inspire students to pursue science and leadership so that they are equipped to address the environmental challenges that face the next generation. For undergraduates the core will be an independent research experience that will take

students from designing a study, to collecting data in the field, to computer analysis, to synthesis of implications, to technical writing, to formal presentation. At the close of its third summer, the UMEB program has 14 completed, 10 current and 9 incoming students. There is good potential for a fifth year of funding and planned request for renewal of the four-year program in 2011. We are considering additional opportunities for undergraduate research such as the NSF REU (Research Experience for Undergraduates) program. We will also broaden avenues for graduate residency. The AEC TA position is one such opportunity to enhance graduate teaching and research. All of this will contribute to a new effort to articulate learning outcomes.

For interdisciplinary graduate training, we are actively recruiting and funding a new cohort of graduate students. Four new graduate students (3 PhD and 1 MS) will join Dr. Beier's group in the new *Sustainability Science Lab* at the AEC, which will focus on topics of global change, ecological economics, land-use policy, renewable energy, and community resilience. A larger ESF effort is the preparation of an NSF-IGERT (Integrative Graduate Education and Research Training) proposal led by Dr. Robin Kimmerer which, if funded, will support up to 20 doctoral fellowships over 5 years. Dr. Beier is a major contributor and co-PI on the full proposal. The proposal, entitled *Helping Forests Walk*, was invited by NSF following a highly selective pre-proposal competition (i.e., 60 of 400+ were selected as high priority).

We will continue moving forward with program development for the Northern Forest Institute. Meetings in early fall 2009 with nine key partners will lead to formal partnering on structural and programmatic development. In addition to institutional partnership, a commitment from each partner for modest fiscal support will help finance the development of the first comprehensive educational outreach curriculum, Environmental Ethics. This curriculum will have two programmatic foci: Community, Organizational and Environmental Ethics (professional level) and Social, Political and Environmental Ethics (public level). We are now working to secure funding so that the curriculum can be in place as early as summer 2010.

We will invest in building collaborative relationships with new faculty and student organizations. Newer faculty (including Drs. Brunner, Dovciak, Fierke, Frair, and Stella) have begun to utilize resources at AEC. As just one example, Dr. Dovciak has an MS student remeasuring trees in the Integrated Forest Study site near Arbutus Lake for changes in growth, mortality and response to Beech Bark Disease over the past 20 years. We are reaching out explicitly to student organizations on campus, providing them with opportunities to visit Huntington and seeking to help them achieve their goals for building camaraderie, service and education.

We will seek greater capability for teleconferencing between AEC and campus-based classroom activities. We continue to look for ways to integrate the Adirondack model into many dimensions of the curricula across the College. We are engaging in increased onsite presence by AEC staff. We continue to see significant opportunity for teleconferencing but Syracuse-based technology remains insufficient to allow meaningful

use of this technology. We expect to be using the technology with increasing frequency in our interactions with other institutions in the coming year.

We will continue to invest in visibility across the region

Web-accessible data and resources will be enhanced. With the help of the ESF Office of Communications, content from the *Spruce Moose* will be periodically released to relevant sections of ESF's website to expand our reach across departmental and College web pages. We are now scanning historical data files with the use of optical character recognition software, as well as digitizing images, to enhance the AEC digital data library.

Increase visibility of AEC within the region and across the state. We will work with ESF Office of Communications to produce digital videos of the facilities and programs at AEC in addition to expanding dynamic web content across www.esf.edu. We will determine how best to contract for announcement spots on public radio and public television. AEC is taking a lead role in developing and implementing a *Leave No Child Inside* initiative in New York State (Children in Nature New York). This initiative links the health care professions with the conservation and education communities to advance and advocate for the greater exposure of children to the natural world. AEC's lead role in this endeavor should result in significant exposure for both the AEC and College throughout the state.

We will continue fundraising efforts

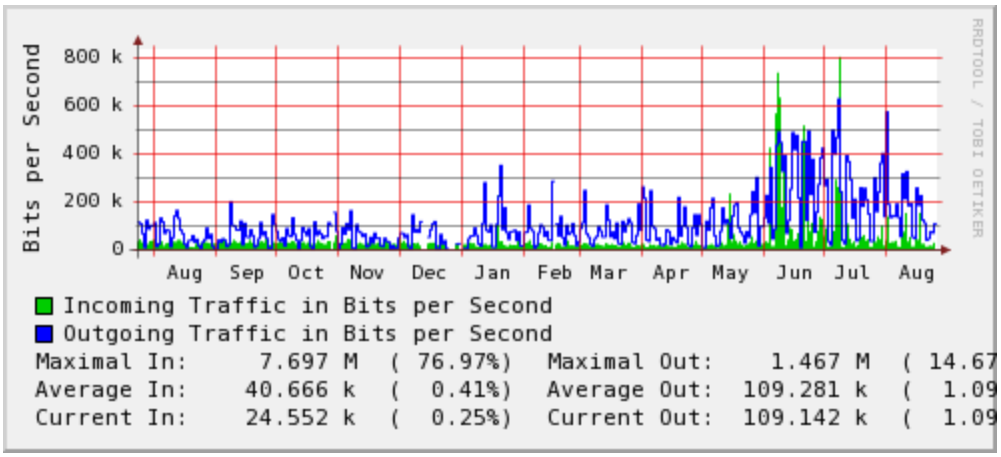
We will expand fundraising to include larger philanthropic foundations. In collaboration with the ESF Development Office and Open Space Institute, we will continue fund-raising efforts for infrastructure and programmatic initiatives. Specific activities this upcoming year will emphasize establishing contact with major philanthropic foundations with the intent of garnering their support for program development. Our goal is to gain sufficient support to hire additional staff for a 5-year period to establish the broad-based research and educational programs we have envisioned in our strategic plan. The Open Space Institute has agreed to assist us in getting in to see program officers. We will also continue to work with the College administration on legislative requests to support the larger capital construction, such as the Carriage House Teleconference and Distance Learning Center.

Challenges and Recommended Solutions

The vehicle situation at HWF is untenable. Of the four vehicles in the photo below, three were removed from service in 2008. No replacements have yet been provided. This has resulted in the College-supported fleet of program vehicles at HWF now numbering just 3 vehicles; a 1997 Suburban, 1995 Ford 2 wheel drive pick-up and the 1987 2 wheel drive pick-up at right. None of these vehicles represent the College professionally, and the frequency and costs of repair often limit their range of travel. As we strive to fulfill our charge to build collaborations across the North Country and stronger connections to Syracuse campus-based programs, vehicles that are suitable for driving long distances, often in challenging snow conditions, are essential. As a result of inadequate replacement/appropriation of vehicles over the past 12 years the AEC has been forced to purchase and maintain its own vehicles. This has created a financially burdensome and unnecessary duplication of services within the college.

> **Recommendation**: We recommend the purchase 3 new vehicles in the next 4 years. Our top priority is AWD SUV-style vehicles capable of carrying at least 5 passengers that is flex-fuel or hybrid. We also recommend that Physical Plant take over maintenance responsibility of the vehicles formerly purchased by academic programs.

AEC Network capacity of our T1 bandwidth is nearing maximum capacity. The incoming and outgoing Internet traffic on the AEC computer system is showing signs that we will need additional capacity within the next 2 years. During the summer months the 800 KB/sec bandwidth is now being reached or exceeded because of the growing number of students, staff and visitors using the Network system and the demand for bandwidth of the programs employed. Many users have personal laptop computers with a variety of software packages installed. It is difficult, if not impossible, to police the usage and software of these machines and prevent them from negatively affecting the performance of the AEC Network's speed. Software programs using Bit Torrent or other peer-to-peer file sharing protocols and live streaming video can quickly exploit all of the bandwidth available. This results in unacceptable slow down in the AEC Network. The immediate consequence is lost resource time for the AEC staff and visiting scientists. The new wireless project that will provide Internet and Network access to the Arbutus and Rich Lake Areas is an important step in improving computer accessibility, but it will also exacerbate the current problem as unsupervised Network access increases.



Bandwidth usage of T-1 access at the AEC. Note spikes during summer months. Data are from Adirondack Area Network.

Recommendation – We recommend purchase of equipment that will allow the AEC Computer System Administrator to enforce Network access and usage policies paired with a subscription to intrusion prevention security service (e.g., Tipping Point Access Control Device; www.tippingpoint.com/products_nac.html). These devices allow the Network Administrator to set band limits, block suspect traffic, enforce access rules, and reduce the risk of malware intrusions. The approximate cost of an Access Control Device is $4,500. An annual fee for an IPS service would be close to $3,000. We further recommend that AEC servers and administrative computers become part of a College-wide replacement plan to ensure that they remain up-to-date.

Staffing Changes

We were pleased to add capacity via talented, energetic people and to reinforce our existing depth on staff.

Erin Vinson is the new Education Outreach Specialist. Erin was formerly the Diversity Programs Coordinator for the Ecological Society of America. Her experience also includes several years teaching science in North Carolina, and working as a park ranger in Maine.

Veronica Hindt graduated from the University of Northern Iowa with a BA in Accounting in December 2007 and a Masters in Accounting in May 2009. During her time at AEC she is serving as an accounting/marketing intern. Her work has included helping to develop a business plan and improving the current accounting system.

Annie Woods was appointed to a Senior Research Support Specialist position on May 1, 2009 to coordinate an NSRC-funded research project (Importance of calcium-rich substrates as refugia of biodiversity and productivity in an acidified landscapes) led by Dr. Colin Beier. In this position, Annie supervises two technicians and oversees data collection, management and analysis.

Summary of Activity

AEC/HWF Resource Use

AEC/HWF resource use in support of research

Total number of research projects	73
ESF faculty involved in research	12
Non-ESF faculty/scientists involved in research	24
Total number of graduate students (ESF and non-ESF)	30
Total number of technicians & student assistants involved in research	23

AEC/HWF resource use in support of instruction

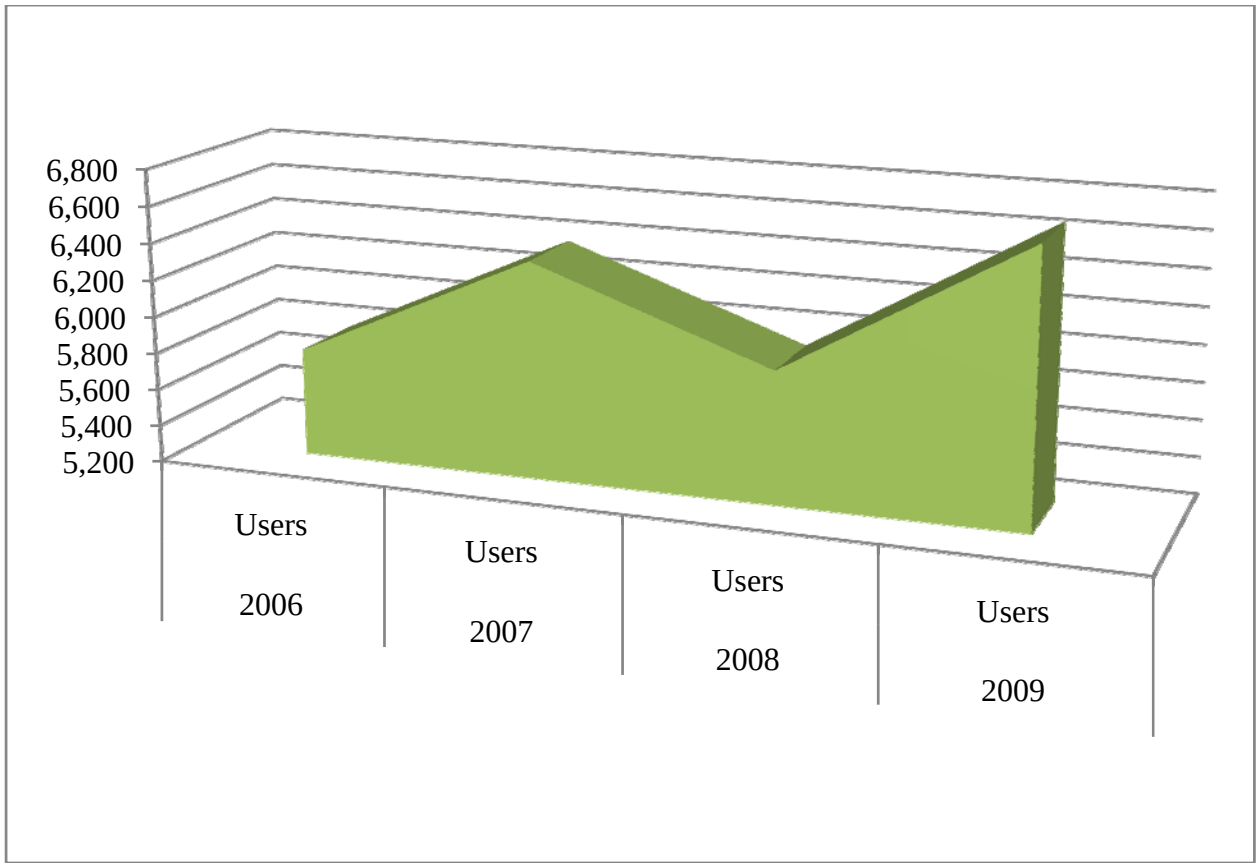
Total number of educational study plans	53
ESF faculty using AEC/HWF resources for student instruction	28
Non-ESF college faculty using AEC/HWF resources for student instruction	26
Students participating in ESF credit courses using AEC/HWF resources	221
College students participating in educational programming at HWF	359
Secondary school students participating in ed. programming with AEC staff	330
Workshop, meeting and conference participants using AEC/HWF resources	412

AEC/HWF Public Service Programs

Attendees at AEC staff public service and professional presentations	2,150
Attendees at Huntington Lecture Series	238
Goodnow Mountain Trail registration	5,495
Visitor's Interpretive Center in Newcomb	27,500

AEC/HWF Total Resource Use

Total number of user days involving AEC/HWF resources	6,443



Annual trend in user days at the Adirondack Ecological Center.

Appendix I. Research and Education Projects

ESF Research Projects Using AEC Resources

Beier

Dendroecology of Adirondack Old-Growth Conifer Forests (with Steve Signell)

Importance of Calcium-Rich Substrates for Refugia of Biodiversity and Productivity in an Acidified Landscape (USDA - NSRC)

Abigail Larkin (MS)
Wilderness perception mapping in the Adirondack Park, New York

Castello

Jonathan Cale (MS)
The effects of beech thickets on northern hardwood forest biodiversity

Dawson

Jennifer Baker (MS)
Adirondack Visitor Study

Driscoll

Carlos Rosales-Zelaya (UMEB -Undergraduate Research)
Effect of acidity and dissolved oxygen on the bioaccumulation of methyl mercury of insects

Dovciak

Lisa Giencke (MS)
Spatial dynamics and effects of beech bark disease on Adirondack forests

Lee Davis, (MS)
Fine-Scale Climate variation and vascular plant range shifts at Whiteface Mountain, Adirondacks, NY

Frair

Christina Boser (MS)
Coyote diet study

Dan Quinn
Coyote predation study

Horton

Annette Kretzer (PhD)
Population genetic structure in *Suillus pictus*

Leopold

Eric Ungberg (UMEB -Undergraduate Research)
Mercury accumulation in carnivorous plants in a biological Mercury hotspot

Lomolino

Larisa Jo Bishop-Boros (UMEB-Undergraduate Research)
Effects of forest edge and anthropogenic noise emissions on foraging effectiveness and summer habitat selection of Adirondack Bats

McHale

Integrated major research instrumentation for real time analysis within an experimental watershed

McNulty

Kevin Jablonski (MS)
Boreal bird population trends, distribution, and habitat association

Chris Lang (UMEB-Undergraduate Research)
Spatial terrestrial disturbance of beaver and its association with aqautic food stock

Jennifer Ma (UMEB-Undergraduate Research)
Effect of calcium availability on the abundance of breeding birds in the Adirondack Park

Caitlin Snyder (MS)
Impacts of nonnative earthworms on terrestrial salamander distribution, abundance and diet

Mitchell

Niazuddin Ahmed (UMEB-Undergraduate Research)
The effects of calcium on the distribution of rusty crayfish

Phil-Goo Kang (PhD)
Variation of stable sulfur and oxygen isotopes of sulfate during various discharge periods in the Arbutus Lake watershed

Lisa Kurian (MS)
The impact of changing climate on winter nitrogen export from a forested watershed of the Adirondack Mountains

Nyland

Articulating two-aged silviculture in northern hardwood stands
Understory beech management

Porter

Chelsea Lynn Reyes (UMEB-Undergraduate Research)
Impact of land use on eastern chipmunk abundance and fitness in the Adirondacks

Megan Skrip (MS)
Fall-winter survival of ruffed grouse (*Bonasa umbellus*) in different landscapes of New York State

Matthew Smith (MS)
Seasonal and long-distance migrations of white-tailed deer and potential impacts on disease in the Adirondacks

Schulz

Pavel Dimens (UMEB-Undergraduate Research)
Comparing bottom-up and top-down control between a stocked lake and an unstocked lake.

Stella

Anna Harrison (MS)
Quantifying riparian zone structure and function to guide management of the northern hardwood forest ecosystem

Stewart

Samson Lau (UMEB-Undergraduate Research)
Comparing the effects of acidity levels on the distribution and dviersity of zooplankton and panfish in Adirondack lakes

Teale

Native *Sirex* species in the Adirondacks

Joelle Chille (UMEB-Undergraduate Research)
The Effects of varying *Chilocorus stigma Densities* on *Cryptococcus fagisuga* populations

Underwood

Catherine Haase (MS)
Future distribution of moose (*Alces alces*) in the Adirondack Park of New York in predicted climate change scenarios

Weir

Brienne Meyer (MS)
Trace Metals in mycorrhizal and saprobic macrofungi

Outside Agency Research Projects Using AEC Resources

Adirondack Park Invasive Plant Program

Hilary Oles

Aquatic Invasive Plant Project

Antioch New England Graduate School

Mark Erler

Bryophyte habitat and over story vegetation inventory of first growth forest stands in the Huntington Wildlife Forest, NY

Biodiversity Research Institute

David Evers

Developing an exposure profile for mercury and calcium in New York songbirds and bats, and understanding methyl mercury availability in herpetofauna of New York

Colgate University

Richard April

Calcium depletion in Adirondack forests affected by acid deposition and its effect on aquatic and terrestrial food chains

Cornell University

Christine Goodale

Marissa Weiss (PhD)

The response of soil carbon to elevated nitrogen deposition in northeastern forests

Steven Wolf

Rachel Neugarten (MS)

Cornell working forest study

Andre Dhondt

Sara DeLeon (PhD)

The effect of polychlorinated biphenyls (PCBS) on song production

Alex Flicker

Krista Capps (PhD)

Linking ecosystem engineers and biogeochemical hotspots: The influence of the North American beaver (*Castor canadensis*) on nitrogen cycling in the Adirondacks

Stefan Long

Native *Sirex* species in the Adirondacks

Jed Sparks

Kirsten Coe (PhD)

Climate change and Adirondack mosses

Institute of Ecosystem Studies

Charles Canham

Watershed-scale analyses of P, N and organic carbon in Adirondack lakes

Long Lake Central School
Maureen Lynch
Hudson Headwaters River Watch

North Carolina University
Robert Jetton, Andrew Whittier (MS)
Assessing genetic diversity of eastern hemlock in the Northern United States and peripheral populations to target priority areas for gene conservation

Mc Gill University
Murray Humphries
Paul Jensen (PhD)
Ecology of American marten in New York State
Ben Tabor (MS)
Black bear ecology in the Adirondacks

National Atmospheric Deposition Program
Mercury Deposition Network
National Trends Network

NYS Department of Environmental Conservation
Paul Jensen
American marten in the Adirondacks
Ben Tabor
Radio collared black bears in the High Peaks Wilderness Area (HPWA) in the Adirondack Park

CUNY/NASA
Marco Tedesco
Radiometric measurements of snow properties in the microwave and NIR regions

SUNY Albany
Jeremy Kirchman
Joel Ralston (PhD)
Population genetics of mountain birds

SUNY- Brockport
Christopher Norment
White-footed mouse population dynamics

SUNY Buffalo
Kenton Stewart
Long-term climate study of lake ice dates

SUNY Cortland

Christopher Cirmo

Archer Creek Watershed / Huntington Wildlife Forest wetlands investigations

SUNY Plattsburgh

Timothy Mihuc

Luke Meyers (MS)

An inventory of mayflies, stoneflies, and caddisflies of NYS

Syracuse University

Charles Driscoll w/Tom Holsen (Clarkson University)

Atmospheric deposition, transport, transformations and bioavailability of mercury across a Northern forest landscape

Land-atmosphere dynamics of mercury and ecological implications for Adirondack forest ecosystems

Amy Sauer (MS)

Mercury Effluxes via Emerging Insects in Wetlands and Possible Effects on Biota Food Web Ecology

Bradley Douglas Blackwell (MS)

Foliar chemistry of the Adirondack Park

Union College

Steven Rice

Nathali Neal (MS)

Modeling photosynthesis in *Pleurozium shreberi*, a common forest floor moss

West Virginia University

Brenden McNeil

Foliar chemistry of the Adirondack Park

US Environmental Protection Agency

Clean Air Status and Trends Network

University of Vermont

Jon Erickson

Survey of public priorities as a guide for future sustainable investment strategies

USDA Forest Service

Casey Krogstad

Forest inventory and analysis project

US Geological Survey

Karen Murray

Mercury cycling and bioaccumulation in stream ecosystems

Doug Burns

Jakob Schelker (MS)

The role of runoff processes in mercury loading to Fishing Brook during snowmelt

Laurel Woodruff (MS)

Mercury cycling in terrestrial and aquatic ecosystems

Greg Lawrence

Sugar maple and acidic deposition

Vermont Fish and Wildlife

Kim Royar

A comparison of fisher harvest in Vermont and beech nut production

Wildlife Conservation Society

Nina Schoch

Adirondack Loon Conservation Program (ALCP)

Eric Wienckowski (Private Research)

History of bathymetric surveying in natural lakes

Appendix II. Refereed Publications, Theses and Dissertations

Allen, E., R. Curran, S.. Halasz, J. Barge, S. McNulty, A. Keal, and M. Glennon. 2009. Adirondack GIS: Resources, Wilderness, and Management. Marguerite Madden, ed. Pages 1135-1168 in the ASPRS Manual of Geographic Information Systems. American Society of Photogrammetry and Remote Sensing, Bethesda, MD. 1352pp.

Beier, C.M., A.L. Lovecraft, F.S. Chapin. 2009. Growth and collapse of a resource system: an adaptive cycle of public lands governance and forest management in Alaska. *Ecology & Society* (in press)

Horton, J.L., B.D. Clinton, J.F. Walker, C.M. Beier, and E.T. Nilsen. 2009. Variation in soil and forest floor characteristics along gradients of ericaceous, evergreen shrub cover in the southern Appalachians. *Castanea* (in press)

Beier, C.M., T.M. Patterson, F.S. Chapin. 2008. Ecosystem services and emergent vulnerability in managed ecosystems: a geospatial decision-support tool. *Ecosystems* 11(6): 923-938

Beier, C.M. 2008. Influence of political opposition and compromise on conservation outcomes in the Tongass National Forest, Alaska. *Conservation Biology* 22(6): 1485-1496.

Beier, C.M., S.E. Sink, P.E. Hennon, D.V. D'Amore, G.P. Juday. 2008. Twentieth-century warming and the dendroclimatology of declining yellow-cedar forests in southeastern Alaska. *Canadian Journal of Forest Research* 38(6): 1319-1334.

Bushey, J.T., C.T. Driscoll, M.J. Mitchell, P. Selvendiran, and M.R.Montesdeoca. "The effect of storm events on factors affecting mercury flux within a northern forest landscape," submitted to Hydrological Processes.

Bushey, J.T., C.T. Driscoll, M.J Mitchell, P. Selvendiran, and M.R. Montesdeoca. 2008. Mercury transport in response to storm events from a northern forest landscape. Hydrological Processes, DOI 10.1002/hyp.7091

Christopher, S.F., M.J. Mitchell, M.R. McHale, E.W. Boyer, D.A. Burns, C. Kendall. 2008. Factors controlling nitrogen release from two forested catchments with contrasting hydrochemical responses. Hydrological Processes, 22:46-62.

Cirmo, C.P. 2006. Adirondack Hydrology: Water as the Fundamental Template. In: Light from an Adirondack Prism: The Great Experiment in Conservation. Syracuse University Press.

Danks Dowling E. 2008. An assessment of the impact of residential development on mammal communities in the Adirondacks, New York. MS Thesis, State University of New York, College of Environmental Science and Forestry Syracuse, NY. 96 pp.

Diggory, A. A. 2008. Using enduring landscape features and a Geographic Information Systto map potential wetlands. MS Thesis, State University of New York College of Environmental Science and Forestry Syracuse, New York. 76 pp.

Driscoll, C.T., K.M. Driscoll, M.J. Mitchell, D.J. Raynal, and K.M. Roy. 2009. Impacts of long-range emissions of air pollution on Adirondack Ecosystems. *In* Porter, W. F., J. D. Erickson and R. S. Whaley, The great experiment in conservation: Voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Driscoll, C. T. (In press). Ecological effects of acidic deposition. Encyclopedia of Ecology.

Erickson, J. D., G. L. Cox, A. M. Woods and W. F. Porter. 2009. Strategies in Bio-Regional Development: Public Opinion and Public Representation. *In* Porter, W. F., J. D. Erickson and R. S. Whaley, The great experiment in conservation: voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Erickson, J. D., W. F. Porter and R. S. Whaley. 2009. Implications of the Adirondack Experiment to a Full World. *In* Porter, W. F., J. D. Erickson and R. S. Whaley, The great experiment in conservation: voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Hurst, J.E. and W. F. Porter. 2008. Evaluation of shifts in white-tailed deer winter yards in the Adirondack region of New York. Journal of Wildlife Management. 72:367-375.

Karraker, N. and G. Ruthig. 2008. Effects of road deicing salt on the susceptibility of amphibian embryos to infection by water molds. Environmental Research 109 (2009) 40–45.

McGee, G.G., M.J. Mitchell, D.J. Leopold and D.J. Raynal. (in review). Effects of tree-fall gap zones on soil nutrients within an old-growth Adirondack northern hardwood forest. Forest Ecology and Management.

McGee, G.G. and R.W. Kimmerer. (in review). Dispersal and establishment regulate epiphytic bryophyte communities in Adirondack northern hardwood forests: evidence from transplants. The Bryologist.

McNeil, B.E., J.M. Read, T.J. Sullivan, T.C. McDonnell, I.J. Fernandez, and C.T. Driscoll. 2008. The spatial pattern of nitrogen cycling in the Adirondack Park, New York. Ecological Applications, 18:438-452

McNulty, S.A., Droege, and Masters, R.D. 2008. Long term trends in breeding birds in an old-growth Adirondack forest and the surrounding region. Wilson Journal of Ornithology. 120:153-158.

Nyland, R. D. 2008. Origin of small understory beech in New York northern hardwood stands. Northern Journal of Applied Forestry, 25(3)161-163.

Ollinger, S.V., C.L. Goodale, K. Hayhoe, J.P. Jenkins. 2008. Potential effects of climate change and rising CO2 on ecosystem processes in northeastern U.S. forests. Mitig Adapt Strat Glob Change, 13:467-485.

Page, B.D. and M.J. Mitchell. (In press) Influences of a calcium gradient on soil inorganic nitrogen in the Adirondack Mountains, New York. Ecological Applications.

Page, B.D. and M.J. Mitchell. (In press) The influence of American basswood (*Tilia americana*) and soil calcium concentrations on nitrification rates in a northern-hardwood forest. Canadian Journal of Forest Research

Page, B.D., T.D. Bullen and M.J. Mitchell. (In press). Influences of calcium availability and tree species on the cycling of Ca isotopes in soil, vegetation, and stream water. Biogeochemistry

Porter, W. F. 2009. A Dark Spot in a Sea of Lights. Pages 3-18. *In* Porter, W. F., J. D. Erickson and R. S. Whaley, The great experiment in conservation: Voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Porter, W. F. (2009). Foundations of the Adirondack Ecosystem and economy: A dark spot in a sea of lights. Pages 3-18. *In* Porter, W. F., J. D. Erickson, and R. S. Whaley, The great experiment in conservation: Voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Porter, W. F. (2009). Wildlife exploitation in the Adirondacks: From beavers to biodiversity. Pages 87-95. *In* Porter, W. F., J. D. Erickson and R. S. Whaley, The great experiment in conservation: Voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Porter, W. F. (2009). Forestry in the Adirondacks: an economy built on a handful of species. Pages 102-113. *In* Porter, W. F., J. D. Erickson and R. S. Whaley, The great experiment in conservation: Voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Porter, W. F. and R. S. Whaley. (2009). Public and private regulation of the Adirondack Park. Pages 227-242. *In* Porter, W. F., J. D. Erickson and R. S. Whaley, The great experiment in conservation: Voices from the Adirondack Park. Syracuse University Press. Syracuse, NY.

Selvendiran, P., C.T. Driscoll, J.T. Bushey and M.R. Montesdeoca. (In press)The role of wetlands in mediating the transport of mercury species in a northern forest landscape. Environment Pollution.

Signell, S., B. Zuckerberg, S. McNulty, and W. Porter. 2008. Development of an Adirondack ecosystem model. Adirondack Journal of Environmental Studies 15:13-17.

Stager, J.C., S. McNulty, C.M Beier, and J. Chiarenzelli. In Press. Historical patterns and effects of changes in Adirondack climates since the early 20th century. Adirondack Journal of Environmental Studies.

Stovall, J., W.S. Keeton, and C.E. Kraft. (In review). Riparian forest-stream interactions: variability of forest structure, light, and periphyton along Adirondack streams. Ecology.

Zuckerberg, B. 2008. Long-Term Responses of Breeding Birds to Climate Change and Reforestation in New York State. PhD Dissertation. State University of New York College of Environmental Science and Forestry, Syracuse, New York. Zuckerberg, B., W. Porter and K. Corwin. (In press). The consistency and stability of abundance-occupancy relationships in large scale dynamics. Journal of Animal Ecology Appendix III. Instruction and Outreach

Zuckerberg, B., A. M. Woods and W. F. Porter. 2009. Poleward shifts in breeding birds in New York State. Global Change Biology. 15:1866-1883.

Zuckerberg, B., W. F. Porter and K. Corwin. 2009. The consistency and stability of abundance-occupancy relationships in large-scale population dynamics. Journal of Animal Ecology,. 78:172-181.

Appendix III. Workshops, Conferences and Meetings

Secondary and Collegiate Outreach (Number of Participants)

Workshops, Conferences and Meetings	
Adirondack Curriculum Project (Hildreth)	10
Adirondack GIS User's Group (McNulty)	25
Adirondack Landowners' Association	32
Adirondack Research Consortium (Thorndike) Fall 2008	10
Adirondack Research Consortium (Porter)Winter 2009	11
Adirondack Research Consortium Annual Conference (Hai)	23
Boreal Birds Meeting	8
Conservation Fund Advisory Board	25
ESF Student Leadership Conference (Woods)	50
Furbearers Workshop (Jensen)	28
Master Forest Owner Volunteer Conference (Gailor)	22
NY Master Forest Owners (McNulty)	30
Planning meeting (Hai)	4
Principles of Interpretive Programming (Hai)	42
Russian Educators Roundtable (Hai)	14
Shingle Shanty Board of Directors Conference Winter 2009	8
Shingle Shanty Board of Directors Conference Fall 2008	12
UMP-GIS Meeting Winter 2008	30
USGS Workshop (Murray) Fall 2008	15
Wilderness First Aid	5
Secondary and Collegiate Outreach	
Career Fair (Hai)	100
Fly Ways program (Hai)	5
French (Hai)	2
Introduction to Wines (Hai)	39
Invasive Species (Hai)	12
NFS Undergraduate Research Mentoring-UMEB Workshop (McNulty)	40
Science Fair Judge (Hai)	16
Small Mammals (Hai)	36
Smithtown High Schools Virtual Field Trip (Woods)	37
Smithtown High Schools Virtual Field Trip (Woods)	37
Wildlife Society ESF Student Chapter (McNulty)	9
Total	**737**

Credit-bearing Courses (Number of Participants)

ESF	
Adirondack Forest Ecology and Management (Nowak/Porter) Summer 2008	15
Aquatic Entomology, Fall 2008(Ringler)	16
Department of Geology Class (Page)	15
Eco-Phenomenology, Spring 2009 (Porter/Patinelli-Dubay)	18
Eco-Phenomenology, Fall 2008 (Porter/Patinelli-Dubay)	16
Environmental and Social Justice, Spring (Porter/Patinelli-Dubay)	11
ESF-UVM (Porter/Lathrop)	26
Geology and Environmental Science (Cirmo)	16
Hudson River Class (Limburg)	9
Haudenosaunee Environmental Task Force (Paterson)	12
Landscape Architecture (Toland)	16
Limnology & Fisheries (Schulz/Limburg)	18
Plant Ecology and Animal Ecology (Corbin)	24
Ranger School (Savage)	30
Wildlife Techniques (Frair - CLBS)	18
Winter Mammalian Ecology (Porter, Demers)	23
Wilderness Management (Dawson)	5
Outside Academic Institutions	
Cortland University	17
Hobart and William-Smith Colleges	46
Houghton College Class	17
King's College	19
McGill University	24
Oberlin College	15
Rutgers University (2 courses)	25
Union College	24
Total	**478**

Appendix IV. Organizations Interacting With AEC

Colleges and Universities

Colgate University
Cornell University
Emory University
Empire State College
Hobart and William Smith Colleges
Houghton College
Kings College
McGill University
North Carolina University
Oberlin College
Paul Smiths College
Plattsburgh State College
Rutgers University
SUNY Albany
SUNY Brockport
SUNY Cortland
SUNY Plattsburgh
SUNY Potsdam
SUNY Ranger School
Syracuse University
Union College
University of Vermont
Vassar College
Wells College
West Virginia University

Elementary and High Schools

Burr and Burton Academy
Indian lake Central School
Long Lake Central School
Marcellus Central School
Minerva Central School
Newcomb Central School
Penn-Yan Central School
Peru Central School
Sackets Harbor Central School
Smithtown Central School, West
Smithtown Central School, East
St. Mary's School
Wells Central School

Local, State, National and International Organizations

Adirondack Architectural Heritage
Adirondack Council
Adirondack Curriculum Project
Adirondack GIS User's Group
Adirondack Landowners' Association
Adirondack Land Trust
Adirondack Mountain Club
Adirondack Museum
Adirondack Nature Conservancy
Adirondack North Country Association
Adirondack Park Agency
Adirondack Park Invasive Species Program
Adirondack Park Visitors Interpretive Centers (Newcomb and Paul Smiths)
Association for the Protection of the Adirondacks
Adirondack Research Consortium
BOCES
Central Adirondack Arts and Sciences Advocacy, Inc
Conservation Fund Advisory Board
Cougar Network
Cranberry Lake Biological Field Station
Empire State Forest Products Association
Finch Paper LLC.
Hudson River Watch
Lamont Doherty Earth Observatory of Columbia University
Natural History Museum of the Adirondacks (The Wild Center)
New York Power Authority
New York State Bluebird Society
New York State Museum
New York State Department of Environmental Conservation
New York State Electric and Gas Corporation
Newcomb Flat Fender Four-Wheel-Drive Club
Newcomb Lions Club
Newcomb Snowmobile Club
Newcomb Chamber of Commerce/Theodore Roosevelt Weekend
Niagara Mohawk Power Corporation
Northern Forest Alliance
Northern New York Audubon
Organization of Biological Field Stations
Research Foundation of SUNY
Resident's Committee to Protect the Adirondacks
Society of American Foresters
Syracuse University Outing Club
Town of Long Lake

Town of Minerva
Town of Newcomb
Upland Forestry
U.S. Agency for International Development
U.S. Environmental Protection Agency
U.S. Forest Service
United States Geological Survey
Wildlife Conservation Society
Wildlife Society-New York Chapter

Appendix V. Huntington Lecture Series

Date	Title	Speaker	Attendance
July 2	Fire Towers and CCC Camps of the Adirondacks: History, Lore and Legacy	Marty Podskoch – Author	24
July 9	Birds of the Adirondacks	Brian McAllister - Adirondack Field Naturalists	41
July 16	People and the Park: How New Yorkers have Shaped the Adirondacks We See Today	Mike Brennan - APA VIC	32
July 23	Wilderness Pioneer Bob Marshall's Adventures in the Adirondacks	Phil Brown - Adirondack Explorer	30
July 30	Where, How Fast and How Far do Adirondack Deer Move? Exciting New Insights from GPS Collars	Matthew Smith - Graduate Student, SUNY-ESF	48
August 6	Coyotes, Deer, and the "Landscape of Fear"	Dr. Jacqueline Frair - SUNY-ESF Faculty and Robin Holevinski - SUNY ESF Graduate Student	23
August 13 -	Minerals of the Adirondack Highlands	Michael Hawkins - New York State Museum	14
August 20	Vernal Pools: Teeming with Life and Mystery	Mary Beth Kolozsvary - Biodiversity Research Institute at NYS Museum	26
Total Attendance			**238**

Appendix VI. Financial Status

(Included only for Provost Bongarten)

We began the previous 08-09 fiscal year at a deficit of ($34,000). We have decreased our deficit by 65% and are currently at ($12,000). The day-to-day procedures associated with account management have undergone a dramatic change. Our increased degree of oversight is a result of the regulatory mechanisms that the AEC accountant has implemented. A set of 6 financial reports are generated each month based on a comprehensive inventory process. This has revolutionized the degree to which we track of expenditures and costs. With this increased level of oversight is smoother and more regular communication with ESF Business Office personnel.

We will review our fee structure in January. The guiding principle is that our rates must be set so that we break even on all ESF users, and show a positive net on non-ESF users.

Long-term ESF users are paying the lowest fee, so they are a place to begin. Our analysis shows that at a fee of $75 per week we are seeing revenue of $3.06 per meal after deducting the overhead costs. Meals cost us $3.09 per meal in July (exclusive of fringe), so we break even with respect to direct costs. Had we been paying fringe, the cost would have been $3.99 per meal in July and we would be losing $0.93 per meal. In August, costs were $3.98 per meal (exclusive of fringe) so we lost $0.92 per meal. Cost would have been $4.88 with fringe and we would have lost $1.82 per meal.

Setting a new fee for ESF users set at the break-even point would be built on the following analysis. If we use August costs because we provided a more diverse food selection, and we anticipate paying fringe, then fees will need to increase to $4.88 to cover our costs. When we include the overhead subtracted from revenue, this means our revenue per meal will need to be $4.88*1.143 = $5.58 to break even.

This gives us a place to begin. When we begin to project into the future, we must also recognize that there are inflation factors that must be included in projecting costs and there are economies of scale at work because the relationship between costs and numbers of users is not directly proportional.