HMF Activities Report--Fiscal Year 2006

SUMMARY—FY 2006

During the early winter 2005-06, Hopkins Forest Manager Drew Jones went on a professional leave of absence in order to visit other biological field stations, meet with their staffs, and observe their facilities and programs. A report on his findings was submitted to the Hopkins Forest Users Committee in August 2006. Tom Merrill served as part time interim manager during Drew's absence, from August 29, 2005 until February 13, 2006.

In late 2005 a team of developers approached the College and Hopkins Forest Users Committee with a proposal to exchange several acres of wetlands for a road right-of-way on the southeastern most corner of HMF. The Users Committee approved in principle this idea, which would transfer about 7 acres to the forest including two vernal (or semi-permanent) pools. This deal is contingent on many factors including environmental and endangered species reviews. As of late 2006, there had been no formal agreements struck and the property's fate remained unknown.

To facilitate the environmental review process for the Alden parcel, Hank Art initiated a study to monitor the amphibian fauna that use the pools, with special attention given to the presence or absence of rare species. This study, which included Williams students, collaborators from several other colleges and community volunteers, continued through the summer of 2006. Thousands of amphibians were captured and released during the study--including several Massachusetts 'Species of Special Concern' Jefferson salamanders--over the six plus months of the study. Students in Computer Science are using data collected in this study to develop a spot recognition program for spotted salamanders.

Many of the Forest's established research projects continued as well, including those on ant/leaf hopper mutualism, garlic mustard growth dynamics, and meteorological and geochemical monitoring. The northern saw-whet owl banding station was open but on a more limited basis during the fall 2005. In addition, during this past year visiting researchers from Tufts University and the University of Pennsylvania undertook studies of above ground carbon sequestration and soil carbon storage respectively. Educational programs continued at the Forest: Biology classes held lab sessions and programs, and workshops were conducted for schools and the general public. As usual, a crew of student caretakers tended the facilities and grounds, and the Forest hosted its normal array of public events, including the annual Fall Festival, Maplefest and Alumni Day.

The Rosenburg Center turned 100 years old this year and was given a new exterior paint job for the occasion. In the late spring of 2006 the forest acquired a new Toyota Tacoma pick-up truck to replace its 13 year old truck.

As in 2005, spring 2006 saw the invasion of forest tent caterpillars, which defoliated up to 75 percent of some forest stands. These caterpillars showed a preference for sugar maple, red oak, white ash, and poplar, and stands comprised by high proportions of these species (including the Beinecke and sugarbush) were affected accordingly. It remains to be seen whether two consecutive years of defoliation will affect maple syrup yields and quality.

ACTIVITIES-RESEARCH and MONITORING

Summer 2006 and Ongoing

Vernal Pool Amphibian Communities

Spring 2006 saw the initiation of a study of amphibian use of the two vernal pools on the Alden property; this study was designed, in part, to provide information for a possible environment review, should a development plan be submitted for this parcel. Hank Art led the design and implementation of this study in which both pools were encircled by a drift-fence pitfall trap array. The traps were monitored twice daily during the spring and once daily by summer and fall crews. Several students were hired to carry out the summer monitoring activities, and Elizabeth Atkinson '07 incorporated the study into her Honors Thesis. In total, more than 1700 spotted salamanders (*Ambystoma maculatum*), 11,000 wood frogs (*Rana sylvatica*), three state-listed (Species of Special Concern) Jefferson salamanders (*Ambystoma jeffersonianum*) and hundreds of individuals of seven other species were captured and released over the six plus months of the study. A student in Computer Science, under the guidance of Andrea Danyluk, worked on developing a spot recognition program during the summer of 2006; this process was continued into the fall of 2006.

This study had a significant level of involvement from other institutions and community organizations, including Berkshire Community College, Massachusetts College of Liberal Arts and the Community

Wetlands Group. These entities provided expertise, students and volunteers to help with the collection and processing of data, especially during the busy spring migration period. This study will likely be continued in 2007.

Ant/Leaf Hopper Mutualism

During the summer of 2006, Professor Morales focused his research primarily on interspecific communication mechanisms between ants (*Myrmica*) and leaf hoppers (*Publilia*) on goldenrod plants. Although much of this work was conducted in the lab, Manuel and his crew of Adriann Mintzmyer '09, Sal Lopez '09, Jesse Greenberg '09 and Nathan Elwood '08 used the fields along Northwest Hill Road to field test some of their experiments on vibrational signaling. These activities were part of Morales' general study on ant-leaf hopper mutualism that has been in effect for five years.

The following paper based on Morales' research in Hopkins Forest was published during the past year:

> Morales, M.A. and A.L.H. Beal*. 2006. The effects of host-plant quality and ant-tending for the treehopper *Publilia concava*. Annals of the Entomological Society of America 99: 545-552.

Garlic Mustard--Population Dynamics in Forested Ecosystems

Joan Edwards' study of the population dynamics of the invasive garlic mustard plant (*Alliaria petiolata*) continued in 2006. Katie Deiber '07 and Jonathan Kuah '07 provided the field assistance with this study, collecting data on established plots in three different areas of Hopkins Forest: the Beinecke stand, the former mansion site, and the red oak stand. This was the tenth year of Dr. Edwards' investigations of the mechanisms of garlic mustard's growth in forests of different ages, its rate of invasion, and its effects on native flora.

Carbon Storage in Soils—University of Pennsylvania

In the summer of 2006 a team of scientists from the University of Pennsylvania led by Dr. Art Johnson began a study of soil carbon in HMF. Their primary interest was to ascertain how soil types and landscape legacies may influence soil carbon storage. HMF is of special interest to this team because of our archives of information on land use histories of many parcels that comprise the current forest, in addition to the geophysical and ecological variety within it. The team dug 46 soil pits (taking samples from each) during the summer of 2006 in different areas including the red oak stand, the Moon Lot and the Vermont border area. Professor Johnson has expressed an interest in having Williams faculty and students more involved in this study in the future.

Tufts Carbon Sequestration Study

Tufts University graduate student Minda Berbeco--working with Biologist Colin Orians in collaboration with Hank Art--began a study of carbon dynamics in the Beinecke Stand (in addition to a site on the Mount Greylock Reservation). The major thrust of this study was to ascertain sequestration and respiration rates. In order to quantify wood densities and concentrations of carbon, nitrogen and lignin, Berbeco used existing growth plots to sample cores of live and dead trees (for which growth data had previously been collected) throughout the Beinecke Stand. Dead woody debris on the forest floor was also sampled. Berbeco may continue to her sampling activities in the Forest in 2007

Sugar Maple Genetics

This past year funding problems forced Tom Baribault, a Research Associate at the University of Vermont's Proctor Maple Research Center, to curtail his sampling of sap sugar content of the trees in the sugar maple plantation. Nevertheless, Baribault, who has several recent years of data from this stand, may resume these activities in the future. This is part of a more comprehensive study to identify the gene (quantitative trait loci) that codes for high sugar content in maples. There are two other known plantations with sibling trees of the one in HMF: one in Vermont and the other in Ohio.

Wood Grain Development in Quaking Aspen

Professor Eric Kramer, of Bard College at Simon's Rock, has completed the initial phase of his study of Indoleacetic Acid (IAA) transport in quaking aspen (*Populus tremuloides*) and, therefore, did not visit HMF during the past year. Dr. Kramer requested that his study site (near Northwest Hill Road) be maintained to accommodate a possible continuation of the work in the future.

Northern Saw-whet Owl Migration Banding

With the assistance of David C. Smith and Elena Traister of MCLA, the Northern saw-whet owl (*Aegolius acadicus*) banding station was open once again in 2005, albeit on a more limited basis. A single-tier array of three 12-meter nets was set up on a trail south of the Rosenburg Center, and an audio lure was used to attract the migrating owls into the nets. The station was open on dry, calm nights from dark until around

midnight between October 1st and October 21 (for a total of 10 net-nights). During this period, 21 saw-whets were captured and banned. The HMF station continues to be one of the major ones of its kind in New England and is associated with a network of more than 50 other stations throughout North America. The station served at the basis for lab activities by BIOL 203—*Ecology* as well as an Environmental Science class from MCLA.

Hay-scented Fern Allelopathy
There was no activity on the field study of the allelopathic mechanisms of hay-scented fern (*Dennstaedtia punctilobula)* during 2006.

Habitat Use of Wood Turtles
This past year, Drew continued a pilot study of the movement and habitat use of wood turtles (*Glyptemys insculpta*), a Massachusetts 'Species of Special Concern' in the Hoosic River Valley. Three turtles were equipped with radio transmitters and tracked during the spring and summer months with the assistance of Nate Joyner, a volunteer from Berkshire Community College. Another student, Alan Silverman of MCLA, began working on the spatial analysis aspects of the study during spring/summer 2006.

Watershed/Meteorological Monitoring (Environmental Analysis Lab)

Once again, the Center for Environmental Studies' Environmental Analysis Lab--under the guidance of David Dethier and Technical Assistant Jay Racela--continued the process of gathering and analyzing meteorologic, hydrologic and biogeochemical data in the Forest. Four weather stations and two stream gauging stations were monitored continuously throughout the year with the aid of digital data loggers. Data from the main weather station continued to be electronically connected to the campus network and data downloads from that station are automated in real time. Jay and his staff also oversaw the operation of the 50-meter anemometer and the monitoring of the thermal spring on the Wire Bridge Farm.
In late July and early August of 2006, the weirs along the South Branch and Main Stem of Birch Brook were dredged and the sediment load weighed by HMF and lab personnel and volunteers. The sediment load removed from the South Branch weir was one of the heaviest in the past two decades, since records have been kept. Elizabeth Kantack '09 and Daniel Perez '09 were hired with CES funding to assist Jay Racela in running the lab during the past summer.

Table I HMF STUDENT RESEARCHERS-Summer 2006

Student	Supervisor	Project	Funding
Elizabeth Atkinson '07	Hank Art	Vernal Pool Amphibian Monitoring	Biology
Charles Soucie '09	Art	Vernal Pool Amphibian Monitoring	Biology
Gilian Tedeschi '09	Art	Vernal Pool Amphibian Monitoring	Biology
Katie Deiber '07	Joan Edwards	Garlic Mustard	Biology
Jonathan Kuah '07	Edwards	Garlic Mustard	Biology
Adriann Mintzmyer '09	Manuel Morales	Mutualism	Biology
Salvador Lopez '09	Morales	Mutualism	Biology
Jesse Greenberg '09	Morales	Mutualism	Biology
Nathan Elwood '08	Morales	Mutualism	Biology
Elizabeth Kantack '09	Jay Racela	Weather/Stream monitoring. Lab assistant	CES
Daniel Perez '09	Racela	Weather/Stream monitoring. Lab assistant	CES

Rare Species

The population of crooked-stem asters (*Symphiotrichum prenanthoides*) along the Hoosic River Trail was monitored for the second year. No other rare plant monitoring was conducted during this period.
Other rare species that have been monitored in the past include:

- Wild Gensing (*Panex quincifolia*)
- Appalachian Brook Crayfish (*Cambarus bartonii*)
- Wood Turtle(*Glyptemys insculpta)*
- Northern Spring Salamander (*Gyrinophilus porphyriticus*)
- Glade fern (*Diplazium pycnocarpon*)

Breeding Bird Point Surveys
During June, Drew surveyed the 44 points that were established in 2001 throughout the Forest to monitor breeding birds. This past year exceeded the previous years in numbers of individuals recorded (530) but not species (45). As in years past, the red-eyed vireo was the most abundant species, followed by the ovenbird, American redstart, veery and scarlet tanager. These points will continue to be surveyed on an annual basis.

Data Management

Chris Warren of the Office of Informational Technology continued to work with HMF researchers to improve the accessibility of HMF data via the internet. Both long term vegetation and meteorologic data can now be accessed via the web; the weather data can be viewed in real time.

TEACHING

During the fall semester, BIOL/ENVI 203—*Ecology* (Morales/Smith) held many lab sessions at the Forest. The spring saw some use of the Forest by classes, including BIOL 302/ENVI 312--*Communities and Ecosystems* (David Smith),ENVI 102--*Introduction to Environmental Science* (Thoman/Dethier/Art) and BIOL 102--*The Organism* (Morales/Ting). The Forest also hosted field trips by classes from Massachusetts College of Liberal Arts, Berkshire Community College and Antioch New England. These colleges took part in field activities ranging from saw-whet owl banding, to wood turtle tracking to amphibian/vernal pool monitoring.

RESOURCES/FACILITIES/CARETAKING

Meteorological Tower
The 50 meter meteorological monitoring (MET) tower, erected atop the Taconic Range on the western flank of the Hopkins Forest in late 2004, continued to capture data on wind dynamics. The tower is equipped with cellular technology to transmit the data to the campus information network. Jay Racela, with the occasional help of the Information Technology Department, kept the system operational throughout the year.

Wire Bridge Farm
David Dethier and his staff continued monitoring discharge and temperature of the thermal spring at the base of Northwest Hill, which now has a small weir and data logger. Meanwhile, Joel Burrington of Pownal, VT continued to cultivate corn and hay on the parcel and keep the road in good operating condition. During the past year, we continued clearing the invasive multiflora rose that was choking off access to the spring and fen.

Timber Management--Vermont Parcel
No management activities were conducted on the Vermont parcel that we enrolled in the Vermont Use Value Appraisal Program in 2004. That parcel is due for some silvicultural improvement in the next few years as set out in its management plan.

Weather Station Field
During 2005/06 the newly expanded weather station field was mowed once and monitored. The field has become well established with an even cover of cold-season grasses that were planted in 2005; it will continue to be mowed until a research/demonstration plan is devised for the site. The Users Committee is slated to undertake this task in the near future.

Permanent Plots
During the summer 2006, student workers continued to re-paint the cruise lines that connect the 400 permanent vegetation monitoring plots of the Forest. The plots are spaced along a grid at one hundred yards (east-west) by two hundred yards (north-south). Only four of the thirteen east-west running cruise lines remain to be re-painted.

Rosenburg Center
The Rosenburg Center, which had its 100th anniversary in 2006, was again used for classes, lab set-ups,

public events, workshops, and as an exhibit space for visitors. Its exterior got a new coat of paint in the spring of 2006 and wireless access points were scheduled for installation in fall 2006.

Farm Museum
Once again, the Moon Barn was used only sparingly as public exhibit space during 2005-06. Due to a lack of adequate shed space in recent years, we have had to use this historic building more for storage than its intended use as an exhibit area; we hope to have more dedicated storage facilities in the future.

Canopy Walkway
This past year the canopy walkway continued to have significant public visitation, although rainy weather curtailed its use somewhat. Several community groups, in addition to Williams programs, used the facility, with the Berkshire Museum sponsoring two such programs. The facility passed its annual safety inspection in the spring.

Vehicle
We purchased a new Toyota Tacoma 4x4 pick-up truck in June 2006 to replace our 13 year old Dodge Dakota. The new vehicle cost $23,024 (including trade-in) but should incur fewer annual maintenance expenses than its aging predecessor.

Roads/Trails
This past year we continued to monitor soil and botanical resources along the Hoosic River Trail as part of a conditional agreement that permits horseback riding on that trail. Nine transects along the trail were surveyed--through quantitative measurements and photography--for a second year to detect possible soil erosion. In addition, we sampled six one square meter plots to monitor a population of crooked-stemmed aster (*Symphiotrichum prenanthoides*). These plots will be monitored again next year to detect possible impacts from increased traffic on the trail.

In August 2006, a contractor conducted restoration work on the lower Ford Glen Brook Trial, which had become seriously degraded in recent years, primarily due to equine use. We expect that the two days of digging drainage structures and re-surfacing should improve this trail's future resiliency.
Once again, the entry road to the Rosenburg Center was resurfaced in the spring of 2006 with funding assistance from the Facilities Departmen

Caretaking

As in the past, HMF relied on student caretakers for a major part of its maintenance, upkeep and outreach activities (Tables II and III). The fall and spring semesters had a regular crew of eight to ten students, each working about 3 to 6 hours per week under the leadership of head caretaker Oliver Burton '06.
The fall crew, working under the supervision of Tom Merrill, kept busy preparing for and hosting the Fall Festival, keeping up with trail maintenance (during a very wet fall), and doing the initial excavations for the 30 paired pitfalls for the amphibian study. In the spring a major effort was to finish the installation of the pitfall/drift-fence array as well as the maple sugaring campaign. The crew was also instrumental in hosting *Maplefest*.

Table II STUDENT CARETAKERS ACADEMIC YEAR 2005-06

Michael Gallagher '06	Liz Gleason '08
Parker Shorey '06	Kim Taylor '08
Oliver Burton '06	Scott McClelland '08
Ben Brown '06	Katie Craig '08
Mary Iaculli '06	Ariel Heyman '08
Elise Henson '06	Emma Bene '09
Ward Schaefer '06	Chris Carrier '09

A summer caretaking crew--consisting of Patrick James Bonavitacola '06 and Patrick Huffer '07, with occasional help from Daniel Perez '09--labored throughout the summer. The crew worked on many of the regular summer tasks—mowing, gardening, equipment maintenance, hosting programs, trail and water-bar maintenance—in addition to invasive weed control on the Wire Bridge Farm and remarking the permanent plot cruise lines.

Table III

TOTAL CARETAKEING HOURS & OUTLAYS
ACADEMIC YEAR 2005-06
Fall 298.50
Spring 407.25
Total 705.75

PUBLIC

Public Outreach

Community Events
Once again HMF hosted several events for the public and college communities. Events were generally well attended and well received by visitors. The following events were held the past year:

• ***Fall Festival***—The Fall Festival was held on Sunday, September 25th and, on an overcast afternoon, drew approximately 150 visitors. Traditional forest and harvest activities—beam hewing, shake-splitting, cross-cut sawing, apple butter and cider production and live fiddle music--were featured.

• ***Fall Family Days***--This was the sixth year that events were planned for the fall family weekend with a guided trail hike held on Saturday, October 22.

• ***Maple Festival***— "Maplefest" was celebrated on Saturday, March 11th. A record turnout of 445 people took advantage of an unseasonably warm March day to come and see sugaring exhibits and demonstrations and to taste HMF produced syrup served over pancakes and 'on snow'.

• ***Amphibian and Reptile Workshop***—On April 9, 2006 we once again hosted a reptile and amphibian day with Tom Tyning of Berkshire Community College. This event, co-sponsored by the Hoosic River Watershed Association, drew a solid crowd of more than 50 people of all ages.

• ***Spring Family Days***—This annual event was scheduled for April 22nd, but was severely curtailed due to rainy weather.

• ***Alumni Day***—HMF again offered a variety of activities, including hikes, trips up the canopy walkway, and children's activities, during this year's Alumni Weekend (June 10th). As usual a good crowd of more than 100 took advantage of a pleasant spring day to partake of the activities.

Seminars
On July 17 we hosted a teacher workshop as part of the Berkshire Museum's summer 2006 series. This program, focusing on ecosystems, included 15 teachers from around Berkshire County. Teachers were introduced to basic concepts of ecosystem dynamics and shown relevant field exercises focusing on the ripple effects of forest tent caterpillar defoliation. In addition, some made a trip up the canopy walkway to observe the effects the caterpillars up high.

Local Schools
School activities were curtailed somewhat during fall 2005 due to personnel issues; however we did host several classes in the spring, mostly for stream-related programs. Once again, participants from the Urban Scholars program visited HMF for a program on stream life in July.

Publicity
The local press published articles announcing the hunting season and community events in the Forest. In addition, the Forest's canopy walkway was featured in an article in the North Adams Transcript in July 2006 and the wood turtle study was featured in an article in the Berkshire Eagle in March.

Recreation

This year numerous hikers, horse-back riders, skiers and nature observers used the trails of the Forest in their recreational pursuits. Owing to the mild winter of 2005-06, the HMF cross-country trails were used sparingly and only groomed once. Fortunately, the year was a quiet one insofar as trespassing and public use problems were concerned. With the exception of some trespass from all-terrain vehicles and mountain bikes on the Taconic Crest the Vermont trails, problems remained minimal.

• **Williams Outing Club**

The Outing Club cabin accommodated hostellers regularly during 2005-06. The cabin was also used during *Maplefest* in March. The Outing Club lean-to was used sparingly by the Williams Community; use by unauthorized persons was not noted this year, although the remoteness of the facility prevents us from monitoring it closely.

The low-ropes course continued to be very popular. Under the direction of Christopher Goh, the Outing Club used the facility often (approximately 15 times with 180 total users) for community and college

members during the past year. Outing Club naturalists scheduled some events in the Forest including a woodcock watch on April 6th 2006.

SPECIAL PROGRAMS

Hunting
As in past years, HMF hosted a special permit deer hunt during the Massachusetts shotgun season. As usual, no hunting was permitted in Vermont, New York or east of Northwest Hill Road, nor was archery hunting allowed. Ninety-three hunters, primarily from Massachusetts, registered 10 (mostly antler-less) deer during the twelve day season according to our unofficial sign-in. Williams College security officers, along with Williamstown police officers, were hired to provide security during the hunt. The season went smoothly with no problems reported.

As in the past, the HMF hunting program was subsidized by the Forest's operating budget (Appendix I). This cost has been reduced somewhat in the past several years through a combination of a fee increase in 2003 and an effort to control security costs. We feel that this expense is necessary to maintain both the level of hunters and security needed to achieve our goals of managing the Forest's deer population in a safe and effective manner.

Maple Sugaring
The spring of 2006 was a good one for maple sugaring, with production exceeding that of the past few years. The tapping period began early, on February 25, and continued through the end of March. A long gap between the initial run and subsequent ones did not seem to affect total production, although we did re-tap some trees due to this unusually long period (three weeks) between runs. Ultimately, a total of 2005 gallons of sap were gathered by student caretakers and boiled into approximately 39 gallons of bottled syrup (both significant increases over 2005--Table IV). Boiling efficiency was good again in 2006 in part due to the significant amount of ice removed from sap on several occasions and in part from recent improvements to the evaporator.

During the sugaring season, we again hosted the 'Maplefest' celebration, which attracted a record number of attendees.

Table IV SUMMARY OF SUGARING ACTIVITIES-2006

Trees tapped	139+*
Tapping Period (days)	44
Tap Nights	5830
Gallons of Sap	2005
Days (sessions) Boiled	9
Hours	72
Gallons (approx.)	
Raw Syrup Drawn Off	42
Bottled	39
Caretaker hours	215.5**
Manager's hours	85**

*Most figures are approximate

+A few trees double tapped

**Not including before and after tapping period

MEETINGS/COORDINATION

Affiliations
Taconic Crest Trail Consortium: There were no meetings of this consortium--which works to promote sustainable recreational use of that 35 mile trail and coordinate management and maintenance activities—during this period.

Hoosic River Watershed Association (HooRWA): Drew continued to serve on the Board of Directors of this local non-profit organization. HooRWA, with new Monitoring Director Kelly Nolan, will use the Rosenburg Center Wet Lab as its monitoring lab starting in the fall 2006. HooRWA, once again co-sponsored the aforementioned reptile and amphibian workshop with Tom Tyning.

Bird Clubs: HMF continued to collaborate with the North Berkshire Audubon Chapter on bird counts and bird walks. In addition, the Forest has become a destination for members of the Hoffman Bird Club during the fall owl banding season.

Conferences/Workshops

Drew attended the following conferences during the past year:

- Northeast Environmental Studies Group Annual Meeting--November 4-6, 2005, Black Mountain, NC.
- Organization of Biological Field Stations, Small Stations Meeting—February 23-25, 2006, Cleveland, OH.
- Massachusetts Natural Heritage Program Endangered Species Review Consultation (for adjoining Alden property)--July 18, 2006, Westborough, MA.

ADMINISTRATIVE

HMF Users Committee

The Hopkins Forest Users Committee is charged with oversight of the management and planning activities for the Forest and its infrastructure. Most of its members--selected from among College faculty, staff and students--have vested research or teaching interests in the Forest (Table V). Under the direction of David Dethier (who will be on leave in 2006-07), the committee met occasionally to decide matters of forest management and policy. This past year Karen Merrill joined the committee as an ex-officio member via her position as Director of the Center for Environmental Studies.

Table V HMF USERS COMMITTEE--2005-06

David Dethier, Chair, Geosciences	Karen Merrill, CES Director
Hank Art, CES Director, Biology	Jay Racela, CES, Environmental Analysis Lab
David Smith, Biology	Scott Lewis Director, Williams Outing Club
Joan Edwards, Biology	Drew Jones, HMF Manager
Manuel Morales, Biology	Tom Merrill, Interim Manager (Fall 2005)

FUTURE

--What is in store for 2006-07?

In the coming year, we will focus on developments with the Alden property as well as continuing to study the vernal pools. In addition we will re-visit some initiatives that were not advanced in the past year due to the managerial absence, including:

- Establish research and demonstration plots on the newly enlarged weathe station field and moving the anemometer tower and other gauges more toward the center.
- Begin to develop a management plan for the Wire Bridge Farm
- Re-establish our affiliation with the Massachusetts Woodlands Cooperative (which has been on hold for the past two years, in part due to the vacancy in the Vice President's office).
- Begin discussions on future directions for the forest vis-à-vis the findings from Drew's tour of other field stations.

We look forward to continuing our collaborations with outside researchers including the teams from Tufts and the University of Pennsylvania while expanding our other research, teaching and outreach programs in the coming year.