

# ***HOPKINS MEMORIAL FOREST***

## ***Activities Report***

***2009-2010***



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## **SUMMARY: The Year 2009-10**

Once again, Williams College's environmental field station, Hopkins Memorial Forest (HMF), played host to a wide variety of research and educational activities in 2009-10. In research, Henry Art and a crew of ten students began the fourth iteration of surveys of 400 permanent vegetation plots. In addition, we continued the fifth and final year of our study of amphibian populations at two wooded ponds on the former Buxton Lane parcel. Williams staff and students--in addition to collaborators from nearby colleges and community volunteers--continued to monitor a pitfall trap array surrounding the ponds during the fall of 2009 and again the following spring and summer.

During summer 2010 many of the Forest's other established research projects continued as well. Manuel Morales and his crew continued their work on ant/leaf hopper mutualistic systems. Joan Edward's garlic mustard growth dynamics study was active again with field work continuing on three distinct populations within the Forest. In addition, David Dethier and Jay Racela continued their meteorological and geochemical monitoring activities. The northern saw-whet owl banding station was again open during fall 2009.

During the summer of 2010 Joan Edwards established a study to test the effects of different field management regimes on aster populations in the 3-acre weather station field. Twelve plots were surveyed and staked by HMF personnel and research assistants. The different mowing regimes will be introduced to the site in 2011. In addition, Tufts University masters student Tegan Morgan undertook a second season of data collection at two locations in the Forest as part of her thesis study of site dependent variation in chemical defenses in garlic mustard. Another visiting graduated student, Ashley Thompson of the University of Michigan, came to the forest to gather samples of four species of birch in a study of geographical patterns of genetic diversity in *Betula*.

Concerning management, 2010 was the year in which we enrolled in the Natural Resource Conservation Service's Environmental Quality Incentive Program to implement conservation and timber management measures on our 382 acre Pownal Parcel. This plan will provide funding for maintenance of the access road, timber stand improvements, and early successional habitat management, with the goal of fostering the vigor and diversity of that forested parcel.

Hopkins Forest continued to be a focal point for local and regional educational programming. Williams and Massachusetts College of Liberal Arts (MCLA) Biology classes made regular visits, while programs and workshops were conducted for schools and the general public. In addition, we continued a partnership with Mount Greylock High School, which included consulting with teachers and conducting an on-site workshop for 11<sup>th</sup> graders. Student caretakers were again instrumental in helping us host a variety of public events, highlighted by the Fall Festival, Maplefest and Alumni Day.

### **RESEARCH and MONITORING: Summer 2010 and Ongoing**

Several scientific studies were underway during the past year (Table I).

#### New Research -- Aster Diversity in old-fields

Professor Joan Edwards began to implement a study of old field management using the main weather station field. The design features a grid of twelve 24x24 meter plots on which the effects of three different mowing regimes will be tested: spring mowing, fall mowing and a biennial mowing (Appendix I). The goal is to ascertain the impact of these three distinct treatments on the diversity and vigor of members of the Asteraceae family. This could ultimately suggest best management practices for old fields. The plots have been delineated and staked out and the first mowing treatments will begin in 2011.

#### Birch Genetics

Ashley Thomson--a PhD student in the Department of Ecology and Evolutionary Biology at the University of Michigan--used Hopkins Forest as one of her collection sites across the eastern U.S. for a study on birch genetics. On September 13<sup>th</sup> and 14<sup>th</sup> 2010 Thompson gathered leaf samples (using a mechanical pruning pole) from approximately 30 individuals per species in Hopkins Forest. She

collected samples of black, paper, gray and yellow birch from along the lower and upper loop trails, Taconic Crest Trail and Northwest Hill Road; these samples will be used to extract DNA to assess geographic patterns of genetic diversity.

**Table I.** HMF Student Researchers—Summer 2010.

<u>Student</u>	<u>Supervisor</u>	<u>Project</u>	<u>Source</u>
Matthew Cranshaw '11	Art	Permanent Plot Survey	Biology
David Hansen '11	Art	Permanent Plot Survey	Biology
Nick Lee '11	Art	Permanent Plot Survey	Biology
Mari Lliguicota '11	Art	Permanent Plot Survey	Holloman/Price
Eric Outterson '12	Art	Permanent Plot Survey	Holloman/Price
Dan Nachun '12	Art	Permanent Plot Survey	Holloman/Price
Alex Peruta '11	Art	Permanent Plot Survey	Holloman/Price
Jackie Pineda '12	Art	Permanent Plot Survey	Holloman/Price
Sarah Rowe '13	Art	Permanent Plot Survey	CES
Jennifer Turner '13	Art	Permanent Plot Survey	CES
Kelsie Meehan '11	Edwards	Garlic Mustard	Biology
Holly Dwyer '12	Edwards	Garlic Mustard	Biology
Sabrina Reid '11	Morales	Mutualism	Biology
Maria Galvez '13	Morales	Mutualism	Biology
Rebecca Shoer '13	Morales	Mutualism	Biology
Elizabeth Greiter '12	Racela	Hydro/Meteorology; Lab assistant	CES
Hanna Saltzman '12	Racela	Hydro/Meteorology; Lab assistant	CES

#### Garlic Mustard, Tufts University

Tegan Morton, a Masters student at Tufts University, continued her study on the effect of a geographic mosaic (with regards to soil quality) on defense allocation in garlic mustard (*Alliaria petiolata*). She returned during summer 2010 to sample populations in high nutrient sites in Hopkins Forest in order to compare them with other high and low nutrient sites throughout the state to detect differences in the concentrations of glucosinolates and other defenses between sites. Morton collected soil and leaf tissue samples from individuals at two sites: one near the sugarbush and another near the Beinecke Stand. These samples will be analyzed for genetic relatedness of populations as well as glucosinolates and other chemical defenses.

#### Permanent Vegetation Plot Surveys

During summer 2010, Professor Henry Art and a crew of ten students conducted a re-survey of the Forest Service's original permanent plots. This is the fourth such survey in the 75 year existence of the grid: one by the Forest Service in the 1930s and two others by Art, one in the 1970s and one in the 1990s. The 2010 survey covered approximately 235 of the more than 400 plots in total; the remaining plots will be surveyed during the summer of 2011. In addition to funding by CES, the work in 2010 was supported by the Biology Department and the Holloman Price Foundation.

### Ant/Leaf Hopper Mutualism

During the summer of 2010, Professor Manuel Morales continued to research mutualistic interactions between ants (*Myrmica*) and leaf hoppers (*Publilia*) on goldenrod plants. Morales and his crew of Sabrina Reid '11, Rebecca Shoer '13, and Maria Galvez '13 used the goldenrod fields along Northwest Hill Road for these investigations. In 2010 Morales published the following paper based on this research:

Morales, Manuel. *Model selection analysis of temporal variation in benefit for an ant-tended treehopper*. Ecology. [doi:10.1890/10-1154.1].

### Garlic Mustard--Population Dynamics in Forested Ecosystems

Professor Joan Edwards' study of population dynamics of garlic mustard (*Alliaria petiolata*) continued in 2010. Holly Dwyer '12 and Kelsie Meehan '11 provided the field assistance with this study, collecting growth and recruitment data on established plots in three separate areas in Hopkins Forest: the Beinecke Stand, the former mansion site, and the red oak stand.

### Vernal Pool Amphibian Communities

Spring 2010 saw the continuation of a study begun in 2006 on amphibian use of two vernal pools on the former Buxton Lane property (Figure I). This study aims to ascertain more about movement of *Ambystoma* salamanders and breeding phenology of a variety of amphibian species (Table II). To this end, both pools were again 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 that included Williams students, Hopkins Forest Caretakers and volunteers. This year, the number of recruits of dominant species (wood frogs, spotted salamanders, Eastern newts) seemed to decline from years past. This might have been due, in part, to an atypically hot and periodically dry summer, which drew down water levels and caused one pool to dry out completely from June through September.

The vernal pool study got significant support from outside institutions and community groups -- especially Berkshire Community College (BCC) and Massachusetts College of Liberal Arts (MCLA) -- which provided help with the collection and processing of data, especially during the busy spring migration period.



**Figure 1.** Researchers tending amphibian pit-fall traps.

**Table II.** Amphibians captured in pitfall traps – 2010.

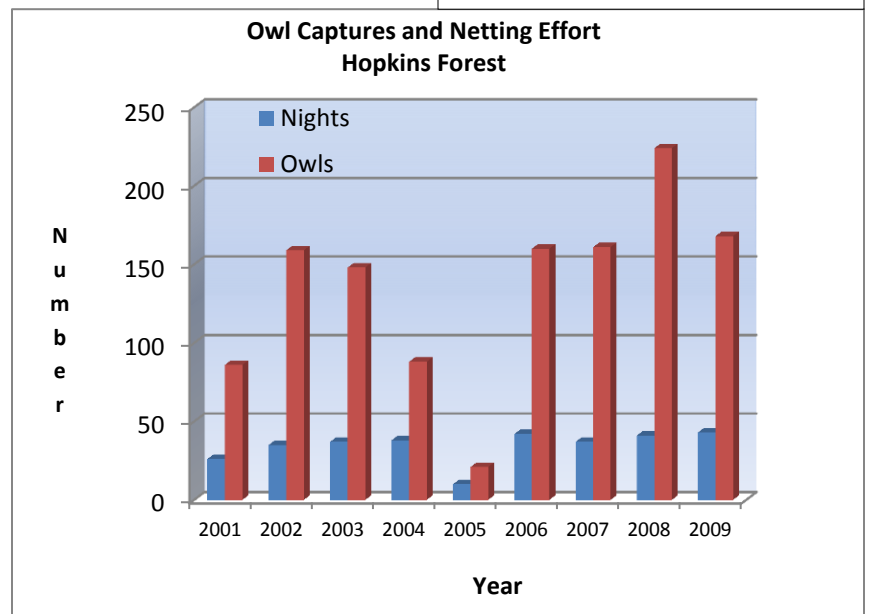
Common Name	Scientific Name	Relative Abundance
Spotted Salamander	<i>Ambystoma maculatum</i>	Abundant
Eastern Newt	<i>Notophthalmus viridescens</i>	Abundant
Red-backed Salamander	<i>Plethodon cinereus</i>	Common
Northern Dusky Salamander	<i>Desmognathus fuscus</i>	Occasional
Two-lined Salamander	<i>Eurycea bislineata</i>	Occasional
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	Rare
Wood Frog	<i>Lithobates sylvaticus</i>	Abundant
Spring Peeper	<i>Hyla crucifer</i>	Common
Green Frog	<i>Lithobates clamitans</i>	Common
American Toad	<i>Anaxyrus americanus</i>	Common
Pickerel Frog	<i>Lithobates palustris</i>	Occasional
Bull Frog	<i>Lithobates catesbeianus</i>	Occasional

Northern Saw-whet Owl (NSWO) Migration Banding

With the assistance of Dr. Ken Schmidt of Texas Tech University, the Northern saw-whet owl (*Aegolius acadicus*) banding station was active once again in autumn 2009. We used a single-tier array of four 12-meter nets (with an audio-lure) along a trail south of the Rosenberg Center to catch migrating owls. The station was open on dry, calm nights from dark until around midnight between September 30<sup>th</sup> and November 19<sup>th</sup> (for a total of 43 nights of operation). During this period we captured and banded 168 saw-whet owls (Figure I). This was the second highest total in the nine year history of this station, trailing 2008's

station record of 224 NSWOs. The HMF station served as the basis for field trips by Williams Biology classes as well as Environmental Science classes and a Zoology class from MCLA. In total, the station attracted 249 registered visitors during the season.

**Figure I.** Northern saw-whet owl captures at HMF station. 2001-09.



Stream Metabolism

In 2010 Elena Traister, Assistant Professor of Environmental Studies at MCLA, completed her dissertation (University of New Hampshire) that incorporated a study on stream disturbance ecology using four brooks in and around Hopkins Forest. Her research examined the individual and combined

effects of substrate size and substrate stability on carbon cycling and macro-invertebrate communities in the streams, including Ford Glen Brook.

### **Breeding Bird Point Surveys**

During June 2010, I sampled singing males at 44 points that were established to monitor breeding bird populations throughout the Forest in 2001. This year there was a decrease in the total number of individuals (428) and species (47) from 2009. Again the ovenbird and the red-eyed vireo were the most abundant species; they were followed by the American redstart, veery and scarlet tanager (Table III). These points will continue to be surveyed on an annual basis.

**Table III.** Most abundant bird species in HMF from point counts 2010.

Rank	Species	Total
1	Ovenbird	84
2	Red-eyed vireo	70
3	American Redstart	39
4	Veery	31
5	Scarlet Tanager	15
5	Wood Thrush	15
7	Chestnut-sided warbler	11
7	Black-capped chickadee	11
7	Rose-breasted grosbeak	11
10	Eastern wood-pewee	9
10	Common yellowthroat	9

### **Watershed/Meteorological Monitoring (Environmental Analysis Lab)**

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 meteorological, hydrological and biogeochemical data in the Forest. Four standard weather stations, two stream gauging stations, and one vernal pool water depth and temperature station, using digital data loggers, ran continuously throughout the year. Data from

the main weather station are streamed to the campus information network and displayed ([www.williams.edu/Geoscience/weather/](http://www.williams.edu/Geoscience/weather/)) along with data from the Taconic Ridge 50-m MET tower and the MSL photovoltaic array. Bi-weekly and monthly collection and laboratory analysis of rain or stream water also continued as part of the ongoing forest geochemical research.

With the help of Todd Gould from OIT, the lab also added a webcam to the main weather station in the forest that can only be accessed from inside the Williams College network (<http://137.165.228.228> username: hmfcam, password: weather). The lab also continues to monitor wind atop the Taconic Ridge using the "real-time" MET tower, which is entering its seventh year of operation ([http://www.williams.edu/resources/sustainability/wind/wind\\_index.php](http://www.williams.edu/resources/sustainability/wind/wind_index.php)).

Hanna Saltzman '12 and Elizabeth Greiter '12 worked as research assistants with Jay Racela during the past summer. During their tenure in the lab, in addition to their regular field and lab research duties, Hanna and Liz investigated the amount of lead in autoclave tape used by the College since it was brought to the College's attention that the lead-containing tape should be considered hazardous waste. They created a poster illustrating their results, which they presented at the science research poster session in August. The lab also provided training and lab research equipment to help support the Hoosic River PCB summer research project of Emily Ury '13 and Alex Lou '13 working out of Professor Jay Thoman's and David Richardson's labs.

This year 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 in late June. The sediment volume removed from the South Branch weir was significantly higher than normal, the second highest load since 1986 and consistent with the wet weather of the past year.

### **Rare Species**

The population of crooked-stem asters (*Symphiotrichum prenanthoides*) along the Hoosic River Trail was surveyed for the fourth year. No other rare plant monitoring was conducted during this period. Three Jefferson Salamanders (*Ambystoma jeffersonianum*) were found, documented and released, as part of the vernal pool study. As mentioned above, no monitoring of Wood turtles (*Glyptemys insculpta*), a Massachusetts Species of Special Concern, was carried out this year.

## EDUCATION and OUTREACH

### Classes

During the fall semester, BIOL/ENVI 203—*Ecology* (Edwards) held several lab sessions at the Forest. The ENVI 102--*Introduction to Environmental Science* class (Cook) used the Forest for some of its laboratory exercises aimed at estimating carbon storage in biomass and soils. In addition, several students incorporated aspects of the vernal pool study for their independent studies, and another team studied the distribution of red-backed salamanders. BIOL 102--*The Organism* also visited the Forest for laboratory exercises on warbler diversity and amphibian development in the spring. In addition, BIOL 220—*Field Botany and Plant Natural History* and *Natural History of the Berkshires* made numerous visits to the forest for field investigations. The Forest also hosted field trips and lab sessions by Biology and Environmental Science classes from Massachusetts College of Liberal Arts and Berkshire Community College. These colleges took part in field activities ranging from saw-whet owl banding to amphibian/vernal pool monitoring (Appendix I).

### Public Outreach

#### Community Events

Once again HMF hosted several events for the public and college communities. The following events were held the past year:

- **Fall Festival**—The Fall Festival was held on Sunday, September 28<sup>rd</sup> and, on a cloudy and somewhat drizzly afternoon, drew approximately 180 visitors. Traditional forest and harvest activities—beam hewing, shake-splitting, cross-cut sawing, apple butter and cider production, and live fiddle music--were featured.
- **Animal Tracking**—Vincent Walsh, of Kawing Crow Awareness Center, led an animal tracking workshop on February 6<sup>th</sup>, which attracted 17 participants, mostly Williams students.
- **Snowshoe Hike** – On February 20<sup>th</sup>, I lead a snowshoe hike to the Taconic Crest Trail, an event that was co-sponsored by the Hoosic River Watershed Association.
- **Maple Festival**— “Maplefest” was celebrated on Saturday, March 13<sup>th</sup>, drawing a good crowd of 200 on a seasonable late winter afternoon. People came to see sugaring exhibits and demonstrations and to taste HMF produced syrup served over pancakes and 'on snow'.
- **Wildflower Walk** – Hank Art led this annual event on Saturday, May 9<sup>th</sup>; approximately 12 people attended.
- **Alumni Day**—HMF again offered a variety of activities, including a bird walk, hikes, and children’s activities during this year’s Alumni Weekend (June 12<sup>th</sup>). Rain forced the canopy walkway to remain closed and generally reduced the attendance at other activities as well.

#### Schools

School groups from around the region made several visits to the Forest for hands-on educational programs; these groups included C.T. Plunkett Elementary, Adams, MA; Buxton School, Williamstown; Williamstown, Elementary (preschool); Braytonville, North Adams; and Mount Anthony, Bennington, VT (Appendix I). Again I visited Mount Greylock High School in June to lead two aquatic biology workshops as part of the “Where I Am” program for 11<sup>th</sup> graders.

## RECREATION

This year numerous hikers, joggers, horse-back riders, skiers, and nature observers took to the trails of the Forest in their recreational pursuits. Fortunately, the year was a quiet one insofar as trespassing

and public use problems were concerned. We have been active with the Taconic Crest Trail (TCT) Consortium, which is dedicated to the stewardship of the TCT.

**Williams Outing Club**

The Outing Club cabin accommodated hostellers regularly during 2009-10. The cabin was also used during *Maplefest* in March. The Outing Club lean-to was used on a few occasions by the Williams Community. The low-ropes course continued to be popular, getting used by community and college members on approximately ten occasions.

**Hunting**

In fall 2009, HMF again hosted its annual 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. Sixty-one hunters, overwhelmingly from Massachusetts, harvested four deer during the twelve day season according to our unofficial sign-in (Table IV). The participation and success rates were among the lowest in many seasons of hunting in HMF. Williams College security officers, along with Williamstown police officers, were hired to provide security during the hunt. Given the costs of administering the hunt and the decline in hunting participation in recent years, we may consider changes in how the program is operated in the coming years.

**Table IV.** Hunting effort and deer harvested at HMF since 1999.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Mean
Permits Issued	110	86	90	86	86	100	93	89	83	66	61	86.4
Total Deer Harvested	13	9	9	20	10	8	10	14	3	4	4	9.5
Success Rate (percent)	11.8	10.5	10.0	23.3	11.6	8.0	10.8	15.7	3.6	6.1	6.6	10.9

**MAPLE SUGARING**

It was a disappointingly quiet spring in the sugarbush in 2010 with sap and finished syrup production held far below what we have come to expect. Indeed, student workers gathered a meager 840 gallons of raw sap, which was boiled into 16 gallons of syrup (Table V). These totals were well behind the previous low recorded in 2007 (Table VI), the season following major forest tent caterpillar defoliations. The warm weather in March (when many nightly temperatures did not fall below freezing) most likely had a negative effect on production this year. During the sugaring season, we again hosted the ‘Maplefest’ celebration, which attracted a solid crowd of community members and Williams students.

**Table V.** Summary of 2010 maple sugaring season (most figures are approximate).

Activity	Quantity
Trees tapped (taps used)	125
Tapping Period (days)	30
Tap Days (total taps x days)	3750
Gallons of Sap	840
Concentration sugar (percent)	2.25
Days (sessions) Boiled	7
Hours (boiling)	32
Gallons Syrup	
Raw Syrup Drawn off	16
Bottled	15.5



**Table VI.** Hopkins Forest Maple Syrup Production 2000-2010.

Year	Beginning Tap Date	Taps	Sap gallons	Sap tons	gallons per tap	Boil Hours	syrup drawn off gallons	syrup bottled gallons	gallons boiled per hr.	syrup drawn off per hour	bottled syrup per tap (gals)	wood burned (cords)
2000	22-Feb	130	1495	6.0	11.5	135	26	23	11.1	0.19	0.18	1.3
2001	23-Feb	125	2170	8.7	17.4	100	44.5	40	21.7	0.45	0.32	2.2
2002	18-Feb	125	2580	10.3	20.6	109	48	40	23.7	0.44	0.32	2.4
2003	4-Mar	135	1625	6.5	12.0	68	34	30	23.9	0.50	0.22	1.7
2004	27-Feb	130	2130	8.5	16.4	93	44	39	22.9	0.47	0.30	2.2
2005	28-Feb	125	1680	6.7	13.4	71.5	37	35	23.5	0.52	0.28	1.9
2006	15-Feb	139	2005	8.0	14.4	72	42	39	27.8	0.58	0.28	2.1
2007	28-Feb	127	1225	4.9	9.6	46	28	26	26.6	0.61	0.20	1.4
2008	25-Feb	125	2760	11.0	22.1	116.5	63	58	23.7	0.54	0.46	3.2
2009	25-Feb	125	1935	7.7	15.5	84	41	40	23.0	0.49	0.32	1.9
2010	25-Feb	125	840	3.4	6.7	32	16	15.5	26.3	0.50	0.12	0.8
Mean	25-Feb	128	1859	7.4	14.5	84.3	38.5	35.0	23.1	0.48	0.27	1.9
Median	25-Feb	128	1935	7.7	14.4	84	41	39	24	0.50	0.28	1.9

## LAND MANAGEMENT

### Forest Management--Vermont Parcel

In 2010 we entered into a contract with the Natural Resources Conservation Service (NRCS) to implement several conservation measures under the Agency's Environmental Quality Incentives Program. This plan will provide us with significant funding for timber stand improvements, road maintenance and wildlife habitat diversity measures on the 382 acre Pownal Tract. Table VII outlines the activities set out in our NRCS-supported conservation plan, which will be completed by 2014. The road maintenance work began in September 2010 with the grading and shaping of the old skid road that provides the primary access to the area. One measure that we were not able to include in the contract in 2010 was prescribed silvicultural burning. We do intend to add this practice for approximately 20 acres of dry oak woods to the contract in the future.

**Table VII.** Practices to be implemented on the Pownal Tract as part of the NRCS Environmental Quality Incentive Program.

Practice	Purpose	Scope
Forest Roads and Trails	Maintenance and restoration of access road	15000 feet
Pest Management	Removal of invasive plants along road	2 acres
Wildlife Habitat Management	Mast tree release for oak	10 acres
Forest Stand Improvement	Thinning, releasing competing trees	30 acres
Early Successional Habitat	Creating clearings for biodiversity on Taconic Ridge	10 acres

In order to reconcile this suite of conservation measures, we filed an amendment to our Forest Management Plan, which is on file with the Vermont Department of Forestry. Adherence to this management plan is one condition of our continued enrollment in the Vermont Use Value Appraisal Program, which we entered in 2004. In the spring of 2010, I visited the parcel with a Bennington County forester to evaluate our management options.

### Wire Bridge Farm

Joel Burrington of Pownal, VT continued to cultivate corn and hay on the HMF's Wire Bridge Farm Parcel and to perform rudimentary maintenance on its access road. Meanwhile, discussions have continued with the owner, who is eager to sell the rest of the parcel to the College should that become possible.

### 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--using quantitative measurements and photography—for the sixth year to detect possible soil erosion. In addition, we sampled six, one square meter plots along the trail to monitor a population of crooked-stemmed aster (*Symphiotrichum prenanthoides*). These plots will be surveyed again next year to detect possible impacts of equestrian traffic on the trail.

The caretaking crew conducted substantial drainage remediation work on the trails, especially the Lower Loop, Carriage Road and Taconic Crest trails, during the summer 2010. To this end they replaced and constructed dozens of waterbars and drainage ditches. We had some assistance from a volunteer group from Rensselaer County, N.Y. that performed some bog bridge maintenance along the Taconic Crest Trail.

In spring 2010, the entry road to the Rosenberg Center was not resurfaced; this decision came from the Facilities Department that cited budget considerations and the mild winter, which left the road less degraded than usual. In May 2010 we hired an arborist to cull dead and dying trees and do some routine pruning along Northwest Hill Road.

## **FACILITIES**

### Rosenburg Center/Moon Barn

The Rosenberg Center was again used for classes, lab set-ups, public events, workshops, and as an exhibit space for visitors. The information technology network, including the 'WiFi' installation, generally functioned well with the support of the Williams Information Technology Department. Once again, the Moon Barn (Figure II) was used for public exhibit space during special events such as the Fall Festival. Due to a shortage of storage space, we continue to use this historic building in part for storage.

### Canopy Walkway

This past year the canopy walkway was open for public visitation several times. Community groups—including "Project Leap" of Bennington, VT-- in addition to Williams programs used the facility, which passed its annual safety inspection in the spring.

### **Caretaking**

As in the past, HMF relied on student caretakers for a major part of its maintenance, upkeep and outreach activities (Table VIII). The fall and spring semesters had a regular crew of eight to ten students, each working about three to six hours per week under the leadership of head caretaker Dan Perez'10.

The fall crew kept busy preparing for and hosting the Fall Festival, keeping up with trail maintenance, gardening and boundary posting. In the spring, a major effort was the redeployment of amphibian trap array as well as the maple sugaring campaign and hosting *Maplefest*. An ad-hoc crew was assembled to assist with sugaring and deployment of the amphibian trap lines during spring break.



**Figure II.** Moon Barn in autumn.

**Tables VIII.** Student caretakers -- academic year 2009-10.

Jacob Levin '10	Abby Martin '11
Margaret Zisser '10	Henry Hall '11
Sharon Ron '10	Hilary Dolstad '11
Daniel Perez '10	Josh Blanco '11
Dan Gura '10	Holly Dwyer '12
Dylan Rittenburg '10	Nari Miller '12
James McCarthy '11	Alec Blanz '12
Stefan Ward-Wheten '11	Uttara Partap '13
Andrew Gaidus '11	James Grzelak '13

A caretaking crew comprised of Stefan Ward-Wheten '11, May Hunter Smith '11 and Jessica Plumbly '13, was employed throughout the summer months. The crew worked on many of the regular summer tasks—mowing, gardening, grounds-keeping, program facilitation, trail and water-bar maintenance and controlling invasive vegetation. In addition, this crew was instrumental in monitoring the pitfall traps for the vernal pool study during the summer months. Our crew did receive occasional assistance from the regional trail crew, consisting of Danniell Gura '10 and Noah Wentzel '12, who were employed by the Williamstown Rural Lands Foundation and Williams Outing Club respectively.

## **MEETINGS/COORDINATION**

### **Affiliations**

National Ecological Observatory Network (NEON): In 2009-10 we continued to hold a seat on the NEON governing board and we are awaiting a decision on Hopkins Forest's candidacy to be a "gradient" site for the Northeast Region (with headquarters at Harvard Forest).

Organization of Biological Field Stations (OBFS): We continue to hold an institutional membership in OBFS, though we did not attend the 2009 annual meeting.

Taconic Crest Trail Consortium: This consortium--which promotes sustainable recreation and coordinates stewardship activities on the 35 mile trail—met in June 2010 to discuss protection and enforcement issues.

Bird Clubs: HMF continued to collaborate with North Berkshire Audubon on bird counts and bird walks. In addition, the Forest continued to be a destination for regional bird-watchers during the fall owl banding season.

## **ADMINISTRATIVE**

### **HMF Users Committee**

The Hopkins Forest Users Committee--charged with oversight and planning responsibilities for the Forest--is comprised of faculty and staff who have vested research or teaching interests in the Forest (Table IX). Under the direction of David Dethier, the committee met and corresponded occasionally to decide management issues including the approval of research proposals, and the Forest Conservation plan for the Vermont Parcel.

**Table IX.** HMF Users Committee--2009-10.

<b>Faculty</b>	<b>Department</b>	<b>Ex-officio</b>	<b>Affiliation</b>
David Dethier, Chair	Geosciences	Jennifer French	CES Director
Hank Art	Biology	Scott Lewis	WOC Director
Joan Edwards	Biology	Jay Racela	CES, Envi. Analysis Lab
David Smith	Biology	Drew Jones	HMF Manager
Manuel Morales	Biology		

**FUTURE – What’s in store for 2010-11?**

The second phase of the fourth major permanent vegetation plot survey will take place during summer 2011. Indeed, a crew of 8-10 students will be hired, under the supervision of Henry Art, to finish sampling the 400 plus permanent plots that began in 2010. The vernal pool study will be discontinued in the coming year and the traps and drift fences will be removed, thus allowing the site to recover from five years of study. Meanwhile, we will begin to analyze the data from the study. Most other research and educational activities will continue. Additionally, we will continue to implement the NRCS supported conservation measures on the Vermont parcel in 2011. This will include working on the lower sections of the road right-of-way and implementing timber stand improvements and habitat diversity patch cuts on the Taconic Ridge.

**APPENDIX I – Non-Williams Organizational Users of HMF 2009-10.**

<b>Organization</b>	<b>Location</b>	<b>Department/Program</b>	<b>Type of Use</b>
Berkshire Community College	Pittsfield	Environmental Science	Vernal pools, owl banding
Massachusetts College of Liberal Arts	North Adams	Environmental Science	Class field trips: vernal pools, owl banding, turtle tracking
Massachusetts College of Liberal Arts	North Adams	Biology	Class Field Trips
University of Michigan	Ann Arbor, MI	Evolutionary Biology	Field Data Collection
Tufts University	Boston, MA	Biology	Plant Research
Hampshire College	Amherst, MA	Biology	Owl Banding
Texas Tech University	Lubbock, TX	Biology	Owl Banding
Hoosic River Watershed Association	Williamstown	Monitoring	Monitoring lab
Bennington County Schools	Bennington, VT	Project Leap	Canopy Walkway
C. T. Plunkett Elementary	Adams	School Classes, Summer Program	Outreach Programs
Williamstown Preschool	Williamstown	General	Outreach Programs
Mount Greylock High School	Williamstown	11 <sup>th</sup> grade	Workshop
Buxton School	Williamstown	Science Class	Vernal Pools
Home School Association	Bennington, VT	Students/Parents	Outreach Programs