

# **Ecological Significance of the Mount Everett Summit**

## **Preliminary Evaluations and Recommendations for Additional Research and Protection**

Prepared for the  
**Massachusetts  
Department of Environmental Management  
and  
Town of Mount Washington, Massachusetts**

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# TABLE OF CONTENTS

Report Highlights	4
Report on the Plant and Animal Communities of the Mount Everett Summit <i>Robert T. Leverett</i>	
Introduction	6
Study Objectives	8
Study Participants	9
Other Information Sources	9
Data Collection	11
Findings and Conclusions	12
Recommendations	13
A Brief History of the Mount Everett Summit and Comparison with Other South Taconic Summits <i>Eleanor Tillinghast</i>	
Historical References to Mount Everett's Summit	15
Comparison to Other South Taconic Summits	19
Fire and Vegetation-Clearing History	23
Evidence of Early Native Americans On and Around Mount Everett	24
Ecological Assessment of Mount Everett <i>Tom K. Wessels, Ph.D.</i>	30
Lichen Survey of Mount Everett Summit, Southwest Berkshire County, Massachusetts <i>Philip F. May</i>	31
The Macrolepidopteran Fauna of Mount Everett, Massachusetts <i>David L. Wagner</i>	38
Rattlesnakes on Mount Everett <i>Eleanor Tillinghast</i>	42
Mount Everett Field Notes, Tree Core Data, and Report <i>Joseph Choiniere</i>	45
Tree-Ring Data and Observations on Pitch Pine Adaptations <i>David A. Orwig, Ph.D.</i>	48

Tree-Ring Data, Species Identification, and Informal Report on Mount Everett Site Visit, November 7, 1999 <i>Rick Van de Poll, Ph.D.</i>	49
The Pitch Pine Community of Mount Everett: Ecological Context and Importance <i>Sara Webb, Ph.D.</i>	51
Classification of Western Massachusetts Pitch Pine-Scrub Oak Ridgetops <i>Sally Shaw and Frank Lowenstein</i>	53
Additional Information	55
Old Growth Is Where You Find It <i>Robert T. Leverett</i>	79
Preliminary Bibliography: Pitch Pine Ridge Communities of the Northeast With Particular Reference to Mount Everett, Massachusetts <i>Charles V. Cogbill, Ph.D.</i>	82

## Report Highlights

The summit of Mount Everett is covered by approximately 20 acres of dwarfed pitch pines and associated plants.

Compared with the other southern Taconic mountains, Mount Everett has the densest coverage of dwarf pitch pines over the greatest area. Only Race Mountain and to a lesser extent Bear Mountain approximate the pervasive dwarfing, density, and acreage of the pitch-pine community on Mount Everett.

In Massachusetts, dwarf pitch pine communities represent less than one thousandth of one percent of the state's land area.

In New England, similar mountaintop dwarf pitch-pine communities are found only on Mount Cardigan in New Hampshire and Mount Desert Island in Maine. Smaller examples may exist but collectively their contribution is minuscule.

In the northeast, the Shawangunk mountains in New York are the only other locations typically cited for extensive summit dwarf pitch-pine communities.

The 360-degree views from Mount Everett's summit enabled by low vegetation have been described by writers since 1781. A Swedish naturalist noted the unusual barren summits of the South Taconics in 1749.

Since the Mount Everett State Reservation was created by the state legislature in 1908, there have been no reports of fire or clearing that would account for the low vegetation on the summit. Research hasn't been completed on earlier records.

There is evidence of early Native Americans on and around Mount Everett, but so far no references have been found to Native American fire or other vegetation-clearing practices there.

Infrequent fires, less than one in a century, and rugged weather conditions have likely helped create and maintain the extreme dwarfism of the pitch pines for more than 6,000 years.

If palynological research confirms this hypothesis, Mount Everett's pitch pine community would be of key historic importance -- a remnant from the middle Holocene era.

Initial cores of pitch pines on the summit reveal maximum ages of up to 170 years.

The Mount Everett pitch-pine community may be an example of an ancient, stable forest ecosystem composed of relatively young trees.

64 lichen species were collected from Mount Everett's summit over a 12-hour period this fall. Of those, three are considered noteworthy: One is an extremely rare lichen, previously known only from southeast Arizona and Costa Rica. One is apparently new to science. It was found on pitch pine bark.

An expert in Germany will be working this year to describe it, using the Mount Everett sample. The third is a tiny lichen that grows on weathered pinecones still attached to the tree. It has rarely been collected but is not uncommon.

Two rare moth species have been discovered on the summit: One is listed as a Threatened species and another listed as a Special Concern species by the state's Natural Heritage and Endangered Species Program. Three uncommon moth species were also identified, as well as eight species that are rare below southwestern Massachusetts.

Eastern timber rattlesnakes have been observed on Mount Everett, and a rattlesnake den is believed to be located there. Eastern timber rattlesnakes are listed as an Endangered species by the state.

These data and observations are only preliminary because they are based on field trips conducted from September to November of 1999 and so don't take into account the growing season of Spring and Summer.

Nonetheless, the report's contributors believe that the rarity of Mount Everett's dwarf pitch-pine community and the potential for finding other unusual and perhaps unique characteristics with more research mean that the summit should be protected as an undeveloped nature preserve.

The report recommends that more in-depth scientific studies should be conducted on the summit and nothing should be done there that might affect this rare ecosystem.

# **Report on the Plant and Animal Communities of the Mount Everett Summit**

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**December 8, 1999**

## **INTRODUCTION**

Representatives of the town of Mount Washington, Massachusetts contacted me in August 1999 to solicit my help in assessing the ecological importance of the plant community atop Mount Everett in the southern Taconic mountains of southwestern Massachusetts. The contact stemmed from an informal report submitted by forester Dr. Paul Van Deusen calling attention to the dwarf pitch pines growing on the summit of Mount Everett. Dr. Van Deusen suspected that the 15- to 20-acre site of pitch pines might constitute an old-growth community of dwarfed trees, which would make them valuable both as old growth and as a rare plant community. Over the course of a couple of visits Dr. Van Deusen extracted cores from two dead trees for analysis and from tree-ring counts and his observations concluded that the pitch pines were probably between 100 and 200 years old, a fact that subsequent analysis has borne out.

After an initial visit to the summit on September 11, 1999 with Eleanor Tillinghast and Morgan Bulkeley, and accompanied by Holyoke Community College professor Gary Beluzo and my wife Jani Leverett, I realized that the summit plant community was unlike any pitch pine community that I had previously visited. I was fascinated by the old-growth forms I observed in the exquisitely stunted pitch pines. They seemed to be natural bonsai forms. I had observed plenty of what I had considered to be stunted old growth pitch pines in sand-plain communities and on rock ledges, but I had never seen so many fully mature forms rising only one to three meters. I noticed the deep accumulation of organic matter around the pines. I also observed stunting in all other represented species. The stunting appeared to be the product of scant soils, frequent wind, snow and ice sculpting, and inadequate levels of moisture for sustaining growth. My initial impression from that first visit was that the Mount Everett plant community might indeed be an ecological treasure. I coordinated with Mr. William Rivers of the Massachusetts Department of Environmental Management [DEM] and notified Commissioner Peter Webber of my desire to gather data on the plant community. My conversations with Bill Rivers and e-mail communications with Commissioner Webber established the basis for proceeding with plans to obtain assistance from a number of highly respected scientists and naturalists to provide independent inputs. The following e-mail to Commissioner Webber set the stage for a three-month preliminary study of the plant and animal communities atop Mount Everett.

From: Bob Leverett [[SMTP:bleverett1@sphs.com](mailto:SMTP:bleverett1@sphs.com)]  
Sent: Tuesday, September 14, 1999 11:14 AM

To: [Peter.Webber@state.ma.us](mailto:Peter.Webber@state.ma.us)  
Cc: Beluzo, Gary; [orwig@husc.harvard.edu](mailto:orwig@husc.harvard.edu); [brivers@state.ma.us](mailto:brivers@state.ma.us);  
[pvandeus@tufts.edu](mailto:pvandeus@tufts.edu); [cwilliams@vaxa.clarion.edu](mailto:cwilliams@vaxa.clarion.edu);  
[eleanortillinghast@worldnet.att.net](mailto:eleanortillinghast@worldnet.att.net)  
Subject: Mount Everett

Hello Peter:

I thought it would be valuable if I gave you a personal assessment of my recent trip to the summit of Mt. Everett. In the interest of time, I'm sending the communication electronically. I will follow this e-mail with a letter, if you wish.

The trip was made on behalf of both DEM (Bill Rivers) and the citizens of the town of Mount Washington. The trip's purpose was to do a preliminary survey of the plant community on Mount Everett's summit. As you may know, Dr. Paul Van Deusen recently alerted us to the old growth characteristics of the pitch pines at the summit. I have also been made aware of the concerns of the citizens of Mount Washington with respect to potential disturbances to the plant communities on Mount Everett's summit that might result from current DEM plans to refurbish the lookout tower and add telecommunications equipment to the summit.

My HCC colleague Gary Beluzo and I made a preliminary investigation on September 11th. Both of us were quite impressed with what we saw. The pitch pines exhibit the characteristics of advanced age that we've come to expect in ridgetop communities that are continuously exposed to the climatic extremes of heat and drought in the summer, frequent winds in the spring, fall, and winter, and at times, fairly heavy precipitation in all forms. There is some pitch pine regeneration, but the plant community exhibits characteristics of succession that strongly suggest that most of the pitch pines are nearing maximum age for the growing conditions; i.e. we can consider them to be in their old growth phase - as a single species. A few carefully chosen trees need to be cored though and the results will tell the story. I've coordinated our plans with Bill Rivers. Coring also needs to be done for the other principal species of trees.

As a whole, the make up of the Mount Everett summit plant community is indicative of mountain top associations that are dominated by pitch pine, scrub (bear) oak, and gray birch. Altogether I documented fourteen species of trees on the summit - a richer association than I had expected. My current impression is that the Mount Everett pitch pine community is very fragile - not in the context of the hardiness of the individual trees, for they have endured it all, but in terms of the overall habitat that allows pitch pines to be represented on the summit.

In addition to Bill Rivers, our principal contact, we are coordinating our efforts with Harvard Forest, Mass. Audubon, and several key scientists involved in the Ancient Eastern Forest Conference Series, as well as key individuals in the town of Mount Washington. As you know, I am the original architect of and current co-organizer of the Ancient Eastern Forest Conference Series, and as such enjoy a productive association with many of the top forest ecologists in the eastern United States. They have been most generous in lending their expertise in assessing the significance of several plant communities in the Baystate.

Peter, Mount Everett's summit holds the promise of being an ecologically significant place, perhaps very significant, but we need much more input from scientists who are generalists and specialists. We

need input from botanists, forest ecologists, paleo-ecologists, ornithologists, mycologists, lichenologists, etc. to fully put the Mount Everett ecosystem into perspective. As we collect data, Gary and I will routinely forward it to Bill Rivers.

Awareness of the Mount Everett plant community comes at an opportune time as Gary and I continue with our old growth inventory for Bill. There is a more extensive ridgetop community that needs to be examined. Tom Wessels at Antioch New England Graduate School in Keene, NH, suggests that we need to carefully examine the summits of adjacent Taconic peaks such as Race, Frissell, Bear, etc. for comparison with Everett. I had planned to do that as part of the inventory, but it is reassuring to hear the suggestion from Tom. Incidentally, we've found other examples of ridgetop communities that are at least close to meeting our old-growth criteria, but some of these communities are harder to interpret than their protected cove/ravine equivalents. The continuous exposure of plant communities on exposed mountaintops often prevents the development of cohorts of truly advanced-age trees. However, if I read Tom correctly, we're sitting on some ecologically important places that, like Mount Wachusett, have escaped our notice because the harshness of the growing conditions has kept the trees stunted. We're accustomed to stunting in the higher elevations of the Catskills, Adirondacks, Green Mountains, White Mountains, and on Maine's Mount Kathadin, but truthfully, most of us haven't given much thought to natural conditions that might keep forests continuously stunted in southern New England. Our assumption has typically been that the lower and more southerly ridgetops of our part of New England are the way they are due principally to human influence. I have no doubt that is the case for many ridgetops, but not all of them. One of DEM's service foresters has confirmed as much in a recent conversation with Bill.

One final point is that irrespective of the outcome of our investigation, the summit of Mount Everett is a very special place aesthetically, and for many, spiritually. Isolated, high mountain peaks were almost always spiritual places for the Native Americans - and rightly so. I have no doubt that Mount Everett served such a purpose for the Mohicans. We are currently researching the human history of the mountain, European and Native American, and are developing some promising leads. Peter, I would be privileged to keep you and your staff informed of our progress and at the appropriate time would be willing to present you and/or Todd Frederick with a personal briefing. On a final note, Jani and I have done extensive traveling this summer and have visited state parks in about a dozen eastern states. We've been mightily impressed with parks like Hartwick Pines State Park in Michigan, Cook Forest and Ricketts Glen State Parks in Pennsylvania, and Beall Woods in Illinois. We will continue our visits for the remainder of the season and will be putting together a special report for you, courtesy of Friends of Mohawk Trail State Forest. It will be our contribution to helping the Massachusetts state park system, which we are privileged to make.

Bob Leverett

## **STUDY OBJECTIVES**

As a result of the initial visit and subsequent planning, we identified four principal objectives we hoped to meet by obtaining expert analysis from a team of volunteer scientists and naturalists:

1. Assess the old-growth status of the summit pitch pine community;
2. Document native species on the summit and search for unusual, rare, or endangered species of plants and animals;
3. Assess the overall ecological rarity and value of the summit plant and animal communities,



4. Determine the human history of the summit of Mount Everett: pre-settlement, colonial, post-colonial, and modern.

## **STUDY PARTICIPANTS**

Help was immediately forthcoming from key scientists who either visited Mount Everett or sent suggestions to us by e-mail. During the period of mid-September through early November, Mount Everett was visited by the following scientists, naturalists, officials of the town of Mount Washington, and DEM representatives:

Dr. Paul Van Deusen (Forester - Tufts University): 2 visits

Dr. Tom Wessels (Forest Ecologist - Antioch New England Graduate School): 1 visit

Dr. Rick Van de Poll (Mycologist - Antioch New England Graduate School): 1 visit

Philip May (Independent Lichenologist): 12 hours spent on summit over two days

Professor Gary Beluzo (Aquatic/Forest Ecologist - Holyoke Community College): 3 visits

Joseph Choiniere (Naturalist - Massachusetts Audubon Society): 2 visits

Heidi Roddis (Naturalist - Massachusetts Audubon Society): 1 visit

John Foster (Independent Naturalist): 1 visit

Conrad Ohman (Forester - DEM): 1 visit

Dr. David Foster, Dr. David Orwig, Glenn Motzkin (Forest Ecologists - Harvard Forest): 1 visit

Dr. Patricia Swain (MA Natural Heritage and Endangered Species Program): 1 visit

John Knuerr (Photographer): 2 visits

Eleanor Tillinghast (Official - Town of Mount Washington): Many visits

Morgan Bulkeley (Official - Town of Mount Washington): Many visits

Robert T. Leverett (Executive Director - Friends of Mohawk Trail State Forest): 4 visits

Jani A. Leverett (President - Friends of Mohawk Trail State Forest): 1 visit

Robert A. Leverett (Amateur archeologist): 1 visit

## **OTHER INFORMATION SOURCES**

In addition to input from the preceding participants who made field visits, The Nature Conservancy generously offered its data and observations from two recently completed studies of the Mount Everett

summit. Other information about Mount Everett and pitch-pine ecosystems was received via e-mail communications with a number of prominent scientists. These exchanges enabled the study team to reflect on their mission. The following was a particularly important e-mail received fairly early in the study phase that pointed to the need to study Mount Everett over a full cycle of the seasons.

Subject: RE: Mount Everett

Date: Tue, 28 Sep 1999 13:06:32 -0400

From: David Wagner <[dwagner@uconnvm.uconn.edu](mailto:dwagner@uconnvm.uconn.edu)>

Organization: EEB

To: "'[elianortillinghast@worldnet.att.net](mailto:elianortillinghast@worldnet.att.net)'" <[elianortillinghast@worldnet.att.net](mailto:elianortillinghast@worldnet.att.net)>

CC: "'[flouenstein@tnc.org](mailto:flouenstein@tnc.org)'" <[flouenstein@tnc.org](mailto:flouenstein@tnc.org)>

Eleanor,

Thanks for all the information--I have saved copies of everything. When Frank Lowenstein called me yesterday, I immediately thought the best reason to preserve the summit was its beauty and its preeminence in the landscape.

There are a few rare moths but nothing especially remarkable, but taken as a whole the fauna may prove to be substantially important. The most notable moth that we turned up was a large inland population of Gerhard's Underwing (*Catocala herodias*)--a beautiful moth and one that is listed by the State of Massachusetts as Threatened. Mt. Everett has the largest inland population in the State. Previously it was believed to be restricted to extensive scrub oak barrens near the coast. But again, I emphasize, when the community is taken as a whole, we may find that the "bald ecosystem" atop Everett (and Race) contains such a high percentage of elements that are uncommon to rare elsewhere that we will be able to make a strong case for its preservation and management.

Our report on last year's findings should be available within eight weeks. We have almost no data (nor chance of getting data) for early spring and late fall invertebrates. (All summer contract work focuses on things that fly in May to mid September. Costs, weather, and classes all work against me to carry out any sampling early in the season or late in the year.) If you (or anyone else) would be willing to collect moths, beetles, or flies at this time of year it could add significantly to what is known about the mountain. I would be happy to supply equipment, supplies, literature, identifications, etc.

Sincerely,

\*\*\*\*\*

David L. Wagner

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This important information reminded us of the need to develop a two-track approach. We would gather as much data as possible on the pitch pines and those species identifiable during the September – November period. We would gear up for a longer study to be conducted starting in the spring of 2000. This preliminary report is based on the data gathered from September 11 – December 6, 1999. We recognized that a single season would probably not be enough to fully assess the ecological importance of not only Mount Everett's summit, but that of other summits in the southern Taconics that might

harbor similar plant and animal communities. Even though one brief period of visitation would not be adequate to document the fauna and flora of Mount Everett's summit, experienced eyes could make assessments that drew from many years of field experience. So we collected as much data as time would permit, before the onset of cold weather.

## **DATA COLLECTION**

As previously noted, data collection officially began with the September 11<sup>th</sup> visit. With benefit of guidance via the e-mail traffic we were receiving, we quickly settled on the following game plan:

1. Analyze the age structure of the summit's dwarf pitch pines and make comparisons to other pitch-pine communities and the reported longevity of the species;
2. Document as many plant and animal species as possible;
3. Analyze patterns of human and natural disturbance;
4. Research historical sources of information about Mount Everett's summit;
5. Visit the surrounding summits of the southern Taconics for comparison purposes;
6. Assess subjective aspects of Mount Everett's summit such as its panoramic view and relatively pristine nature;
7. Present the results in a formal report with the proper caveats to DEM and study participants.

During the three-month research and study period, Mass. Audubon Wachusett Meadow Wildlife Sanctuary Director Joseph Choiniere and I documented tree and shrub species. We identified fourteen and possible fifteen species of trees within a 20-acre area. Tree cores were extracted by Dr. Paul Van Deusen, Joseph Choiniere, Dr. David Orwig, Dr. Rick Van de Poll, Conrad Ohman, and myself. Philip May collected and analyzed lichen samples. Dr. Rick van de Poll also observed several lichen species and made tentative field identifications. Eleanor Tillinghast did the historical research and visited other southern Taconic summits to enable us to identify the extent of the pitch pine communities elsewhere and the relative uniqueness of the Mount Everett pitch-pine community. It was too late in the season to document many of the herbaceous species growing on the summit. We saw a number of species indicative of mesic to xeric conditions. Tree cores were studied with the use of dissecting microscopes. Harvard Forest laboratories used even more sophisticated techniques to obtain highly accurate ring counts.

The tree cores that I collected, sanded, and ring-counted with dissecting microscope had ages of 98+, 103, 110+, 125+, 150+, and 160+ years. The total pool of cores treated as a single sample consisted of 32. The numeric average of the 32 was 106 years. Some were cores from relatively young trees. Others were partial cores. On my third visit to the summit, I searched for the most mature specimens. The two previous visits to the summit had helped me to home in on the most likely candidates for advanced age. My conclusion is that 150 to 170 years represents the maximum ages of the Mount Everett summit pitch pines.

## **FINDINGS AND CONCLUSIONS**

The attachments to this report contain the specific observations and analyses of the study participants and outside contributors. Their comments speak for themselves. In my judgment, the conclusions I have drawn and presented below are well supported by the inputs of the participants. The reference to present-day existence of rattlesnakes is derived from a note in Joseph Choiniere's study report concerning conversations he had with former Mass. Audubon master naturalist Tom Tynning; an email from Tom Tynning; and, a letter from Frank Lowenstein of The Nature Conservancy to DEM Commissioner Peter Webber.

1. The 15- to 20-acre dwarf pitch pine plant community at the summit of Mount Everett is very rare within the region of New England. It appears to be equally rare throughout the Northeast. Other New England locations where dwarf pitch pines form a similarly conspicuous plant community include the nearby summit of Race Mountain, Mount Cardigan in New Hampshire, and Mount Desert Island in Maine. A smaller number of pitch pines are represented on Connecticut's Bear Mountain, another southern Taconic summit. How rare are these communities? Massachusetts has a land area of over 5,250,000 acres. Assuming that we discover a few more isolated pockets of the dwarf pines in Massachusetts that appear as a community instead of isolated trees on rock outcroppings, it is conceivable that we will eventually confirm between 40 and 50 acres of the dwarf pitch pine. I personally doubt that we will reach that number but, even assuming we did, we would still have only ninety-five ten-thousands of one percent of the land area of Massachusetts covered in dwarf pitch-pine communities; i.e. less than one thousandth of one percent of the land area.
2. The adaptation of pitch pines to the summit of Mount Everett appears to have developed over hundreds of years, even thousands. There may be a genetic component to the extreme dwarfing. A number of scientists have indicated that to be highly likely. The extreme dwarfing reflected in an entire community is more significant than an isolated stunted pitch pine. Experiments have shown that when seeds from the cones of these dwarfs have been planted in highly favorable growing conditions, the offsprings were also stunted.
3. The exact classification of the old-growth status of the Mount Everett pitch-pine community is debatable among experts. Ages of up to 160 years were obtained from the Mount Everett tree cores. The average age is between 110 and 120 years. If the normal maximum age of pitch pines is considered to be 200 years, as reported in various dendrology texts, then the pitch pine community is old growth. If the normal maximum age for the species is considered to be over 300 (perhaps as much as 400), then the Mt. Everett community may not represent an example of a true old-growth pitch-pine community, if such a community can develop for the summit conditions. Given the diminutive nature of the vegetative community, other old growth characteristics are present. Proportionality must be used in making this assessment. Consequently, in my view, the Mount Everett pitch-pine community can be classified as Class 2A old growth (most old growth characteristics present, no post-settlement human disturbance observed or historically recorded). DEM currently extends formal protection to only class 1A old growth (all old-growth characteristics present, no post-settlement human disturbance observed or historically documented, at least five acres in extent). The identification of the pitch pine community as Class 2A old growth does serve to emphasize its mature state and its natural state. Exhaustive historical research confirms that the summit was covered with dwarf pitch pines and bear oaks well back into the 1700s.

4. There are several rare to extremely rare plant and animal species that inhabit or frequent the summit of Mount Everett. Perhaps the single most important of the animal species is the endangered Eastern timber rattlesnake. The shy nature of this species further points to the natural state of the Mount Everett summit. Other rare species include a lichen never before identified and an extremely rare lichen named *Diploschistes badius*, both discovered by lichenologist Philip May. So far, southeastern Arizona and an area of Costa Rica are the only other known habitats for *D. Badius*. Dr. Rick Van de Poll made the field identification of the lichen *Cetraria icelandica*, an alpine to sub-alpine species, located at three places on the summit. Its occurrence on Mount Everett may push the southern limit of the lichen's range. This, again, points to the importance of the summit plant community. Two state-listed rare moths, and several uncommon moths were identified by scientist David Wagner. The Natural Heritage and Endangered Species Program lists several rare species for Mount Everett's summit. These findings are preliminary: clearly much more work needs to be done to be certain all rare and endangered species have been documented.
5. The summit of Mount Everett lies within a general area that is noted for its paucity of human development, its potential as a large scale wildlife sanctuary, and its historical importance to Native Americans. Of equal importance is the fact that Mount Everett lies in one of the very few places in Massachusetts that is not saturated with light pollution. This fact is not appreciated until NASA maps are viewed which clearly show light saturation of the night skies over virtually all of Massachusetts.
6. The summit of Mount Everett has long been recognized as one of the most aesthetic of the Baystate's mountains. The panoramic view of New York's Catskills to the west, the surrounding Taconic ridge, and the Berkshires to the east has inspired visitors for more than 200 years. The relatively pristine nature of the Mount Everett summit distinguishes it from the overburdened summit of the state's highest peak, Mount Greylock.

## RECOMMENDATIONS

1. DEM should institute special protections for the summit of Mount Everett in order to insure that its rare plant and animal species and its unsurpassed vista are fully protected.
2. The unique dwarf pitch-pine plant community of Mount Everett should receive special recognition by the Massachusetts Natural Heritage and Endangered Species Program. This plant community should be valued as a nature reserve and natural state treasure. The fact that the dwarf pitch pine communities cover less than one-thousandth of one percent of the Massachusetts land area means we cannot afford to jeopardize any of what remains.
3. DEM should take no actions that reduce the naturalness of Mount Everett's summit by excluding all kinds of construction and development. Activities, innocently undertaken with good intentions such as those that have compromised the summits of Mount Greylock and Mount Wachusett, should be our guides as what not to do.
4. DEM should undertake or support extended ecological studies of the southern Taconic summits to determine the extent of rare species such as *D. badius*.

5. DEM should monitor activity on the mountain and take every step to protect the rattlesnake communities that use the summit of Mount Everett.

# **A Brief History of the Mount Everett Summit and Comparison with Other South Taconic Summits**

**Eleanor Tillinghast**

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**December 3, 1999**

The purpose of this report is to substantiate four points regarding Mount Everett's summit:

- 1.) For more than two hundred years, Mount Everett's summit has been described as bald, barren, or bare, with a low tree cover that has enabled 360-degree views. Since 1841, that tree cover has been specifically described as pitch or yellow pine (an early alternate name for pitch pine).
- 2.) Among all the south Taconic mountain summits rimming the town of Mount Washington, the density, pervasive stunting, and extensive acreage of the pitch-pine community on Mount Everett's summit is unique, with neighboring Race Mountain a close second.
- 3.) So far, I have not found any record of disturbance of the Mount Everett summit – neither fire nor clearing -- other than cutting and using trails and building fire towers.
- 4.) There is evidence of early Native Americans on and near Mount Everett.

## **1.) Dwarf pitch pines on Mount Everett's summit for more than 200 years**

In his 1846 report to the Massachusetts state legislature on the trees of Massachusetts, George Emerson noted that “[o]n the hills in the southwestern corner of the State, [pitch pines] are still found growing to the height of one hundred feet; and men are living in Massachusetts and Maine, who remember that it was not uncommon to find them of more than a hundred feet in height, and four or five feet in diameter.”<sup>1</sup>

No wonder then that state geologist Edward Hitchcock made special mention of the “numerous yellow [pitch] pines, two or three feet high” and consequent “entirely unobstructed” views from the summit of Mount Everett in his 1841 report on the state's geology to the Governor.<sup>2</sup>

No wonder, too, that Hitchcock was neither the first nor the last to do so. As was noted some fifty years later, “... ‘the Dome’ [Mount Everett] and its contiguous territory was generally visited by

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<sup>1</sup> George B. Emerson, *A Report on the Trees and Shrubs Growing Naturally in the Forests of Massachusetts* (Boston, MA: Dutton and Wentworth, State Printers, 1846), pp. 66-67.

<sup>2</sup> Edward Hitchcock, *Final Report on the Geology of Massachusetts: in Four Parts* (Northampton, MA: J.H. Butler, 1841), p. 238.

admirers of Berkshire scenery some time before [Mount] Greylock.”<sup>3</sup> Scientists, naturalists, and literary figures have been remarking on the barren crown, stunted trees, and 360-degree views from Mount Everett’s summit for more than 200 years.

In 1781, Timothy Dwight, future president of Yale College, hiked up to Mount Everett’s summit and described a 360-degree view that spanned Saddle Mountain (Mount Greylock) to the north, the Catskills to the west, Butter Hill to the southwest, and the Green Mountains and Mount Tom to the east. He lamented that due to the haze he was unable to see New Hampshire’s Mount Monadnock as was possible on a clear day.<sup>4</sup> Only a low tree canopy would have enabled the panoramic views he described.

Ten years after Hitchcock’s report to the Governor, author Nathaniel Hawthorne described the mountain he saw from his Lenox home in 1851: “In the early sunshine of the morning, the atmosphere being very clear, I saw the dome of Taconic with more distinctness than ever before, the snow-patches, and brown, uncovered soil on its round head, being fully visible.”<sup>5</sup>

Nineteenth-century poet Dora Read Goodale rhapsodized about Mount Everett,<sup>6</sup> as did Catharine Sedgwick.<sup>7</sup> English poet Matthew Arnold admired it<sup>8</sup> as did preacher Henry Ward Beecher.<sup>9</sup> Herman Melville and Fanny Kemble Butler signed registers at the mountain’s base and may have written accounts of their excursions.<sup>10</sup>

In 1879, noted author of his day, J.T. Headley was quoted: “Two or three miles from Bash-Bish, is the Dome of the Taghconics, a lofty mountain rising, precisely like a dome, from the ridge of which it forms a part. It is in our estimation, far superior to the Catskill, for you have from a single spot, a perfect panorama below you; you have only to turn on your heel, and east and west, north and south, an almost endless prospect spreads away on the vision. You are the center of a circle at least three hundred and fifty miles in circumference; and such a circle!” He then described the panoramic views.<sup>11</sup>

The 1885 *Gazetteer of Berkshire County* also described the circumferential views from the “dome-like summit of Mt. Everett, or Bald Mountain...”<sup>12</sup>

A wintery photo in the 1893 book *Picturesque Berkshire* shows a man standing perhaps on a boulder next to the tripod marking the apex of Mount Everett surrounded by a sea of frozen trees no taller than his thighs. At the right margin of the photo is a small patch of open ground abutted by trees of perhaps

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<sup>3</sup> Charles F. Warner, ed., *Picturesque Berkshire: Part II – South* (Northampton, MA: Picturesque Publishing Company, 1893), p. 6.

<sup>4</sup> Timothy Dwight, *Travels; In New-England and New-York* (New Haven, CT: 1821), II, p. 377.

<sup>5</sup> Nathaniel Hawthorne, *Passages From The American Note-Books* (Boston, MA: Houghton, Mifflin and Company, 1896), p. 403.

<sup>6</sup> Warner, pp. 6-7.

<sup>7</sup> Evelyn Blum Shearn, *A History of Mount Washington Massachusetts* (1976), pp. 57-58.

<sup>8</sup> Morgan Bulkeley, “Arnold in Stockbridge,” *The Berkshire Eagle*, 7 November 1963.

<sup>9</sup> Morgan Bulkeley, “Henry Ward Beecher,” *The Berkshire Eagle*, 24 December 1964.

<sup>10</sup> Information from Milo Smith’s guest registers, in the collection of Lucile Van Deusen.

<sup>11</sup> Godfrey Greylock [J. E. A. Smith], *Taghconic; The Romance and Beauty of the Hills* (Boston, MA: Lee and Shepard, Publishers, 1879), p. 240.

<sup>12</sup> Hamilton Child, *Gazetteer of Berkshire County, Mass. 1725 – 1885: Part First* (Syracuse, NY: 1885), p. 225.



chest height. Another photo on the same page, labeled “Mount Race, from Mount Everett,” shows what appears to be a thick carpet of pitch pine and scrub oak on Mount Everett’s southeastern slope.<sup>13</sup>

Later in the same book is an entertaining vignette on the travails of reaching Mount Everett’s summit along with a reference to the “scrub oak and dwarfed pines” and a florid description of the magnificent views from “the bare rocks of the highest point”, with the observation that “[f]rom its isolated position, it commands a larger tract of country than many loftier summits.” The author describes views to the “rolling hills beyond” the Housatonic valley, to Connecticut and the mountains of Vermont, to the Catskills, Adirondacks, and Hudson River in the west where “through the distance, you may perhaps distinguish the smoke of a passing steamboat” and to “...the Shawangunk mountains [which] show faint and low down the valley.”<sup>14</sup>

Shortly thereafter, the writings of naturalists again dominate the literature on Mount Everett. In 1899, John Coleman Adams noted that “[the Dome’s] sides are clad in a growth of maples, chestnuts, and birches, as far as the upper ledges where the scrub-oaks and pines compete with the blueberry bushes in the struggle for existence.”<sup>15</sup>

In 1919, Warren Manning, writing to his fellow members of the Mount Everett Committee of the Boston Society of Landscape Architects and the Appalachian Mountain Club, recommended firmly: “I think we should also have [the Mount Everett State Reservation commissioners’] assurance that they will not undertake any improvements on the top of [Mount Everett] that will destroy the exceedingly attractive cushion-shaped, stunted pitch pines or the ground cover of huckle-berries, potentilla tridentata and the chokeberry that covers practically all the soil between rocks.”<sup>16</sup>

Walter Prichard Eaton, a *Berkshire Eagle* columnist, Mount Everett State Reservation commissioner, avid hiker, and property owner at the eastern base of Mount Everett, observed in 1920, “It is a curious fact that on Mount Everett timber-line is practically reached at 2,500 feet. Graylock, fifty miles to the north, does not reach it at 3,500, and it is at something like 4,000 feet in the White Mountains.”<sup>17</sup>

In his 1922 *Flora of Berkshire County*, Ralph Hoffman noted that pitch pine is “...frequent in Sheffield, occasional in Stockbridge, New Marlboro, Sandisfield, Great Barrington; summit of The Dome, Mt. Washington.”<sup>18</sup>

In 1930, Walter Prichard Eaton published another of his many descriptions of the Dome: “On the final path up the peak to the naked, wind-swept summit, I had been preceded by several wild folk. A deer (the hunters didn’t get quite all of them), a cottontail, a fox (maybe after the rabbit), a partridge walking a considerable distance and a red squirrel. It seemed odd that these animals should seek the bleakest, coldest spot in fifty miles, but no doubt the scouring summit wind keeps a food supply exposed. Deer in winter are almost always to be found near the top of the mountain.”<sup>19</sup>

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<sup>13</sup> Warner, p. 93.

<sup>14</sup> Warner, p. 102.

<sup>15</sup> John Coleman Adams, *Nature Studies in Berkshire* (New York, NY: G. P. Putnam’s Sons, 1899), p. 32.

<sup>16</sup> Letter to Members of the Mt. Everett Committee: Boston Society of Landscape Architects, and the Appalachian Mt. Club from Warren H. Manning, 11 July 1919, in the collection of James Whitbeck.

<sup>17</sup> Walter Prichard Eaton, *In Berkshire Fields* (New York, NY: Harper & Brothers Publishers, 1920), p. 163.

<sup>18</sup> Ralph Hoffman, “Flora of Berkshire County, Massachusetts,” *Proceedings of the Boston Society of Natural History*, 36, No. 5 (1922), p. 204.

<sup>19</sup> Walter Prichard Eaton, *New England Vista* (Boston, MA: W.A. Wilde Company, 1930), pp. 77-78.

Eaton was more explicit in the 1938 annual report of the Mount Everett State Reservation Commission, which he authored: “The Dome which is the rounded summit of Mount Everett, is over two thousand six hundred feet above sea-level and from it may be seen panoramic segments of five neighboring states. In itself, this high flung rocky eminence is a natural, primeval rock garden of dwarf, angular pines and of similarly small scaled deciduous trees – many, ancient though they are, hardly higher than a man may reach. Laurel, and small flowering and fruit-bearing shrubs and minute plants follow the design of the main and branching crevices and fissures of the upheaved rock structure.”<sup>20</sup>

In *The Berkshires: The Purple Hills*, a 1948 compilation of nature writings, A. Kenneth Simpson mentioned “...a trail leads through the scrub oaks and dwarfed pitch pine over wind-swept ledges, to the [Mount Everett fire] tower.”<sup>21</sup> George J. Wallace noted “...a small colony [of Bicknell’s thrushes] is nearly always to be found summering in the stunted tree growth skirting the bald Dome.”<sup>22</sup> Bartlett Hendricks wrote “...the view from Everett is one of the Berkshire’s best, and, because of the stunted growth on the summit, it can be enjoyed without climbing the tower.”<sup>23</sup> He wrote also that “the species [of worm-eating warbler] has been seen so frequently about Mount Everett that we have every right to expect its nest will eventually be discovered.”<sup>24</sup>

Although he didn’t make a specific reference to the exposed summit of Mount Everett, New York State botanist Rogers McVaugh made an interesting observation in his 1958 *Flora of the Columbia County Area, New York* that is worth noting here: “The [Bash Bish] ravine as a whole is of special interest, but particularly so on the lower slopes of Bashbish Mountain...because of the presence of a number of plants not found on the surrounding mountain slopes nor in nearby woodlands, plants characteristic for the most part of more northern latitudes or of higher altitudes. Like conditions and like flora are found in our area only near the summit of Mount Everett and on the high hills adjacent to the Rensselaer Plateau.”<sup>25</sup>

In 1964, *Berkshire Eagle* columnist Morgan Bulkeley Sr. described the effect of an ice storm on Mount Everett’s pitch pines: “At the top of the mountain in the mist...the grotesque shapes of low pitch pines loomed like convoluted masses of coral, solid to the rock from which they sprang. Terminal sprigs of pine needles had grown by accretion to cauliflower heads weighing more than a pound. We brought several home to keep in the deep-freeze to convince summer skeptics. Little branching twigs were grown to sizeable deer antlers, blunt-ended as in the velvet.”<sup>26</sup>

According to the 1972 *Berkshire County Landmarks*, “Referred to as ‘The Dome of the Taconics’ and called simply ‘the Dome’ by old-timers, [Mount Everett’s] prominent crown is covered by stunted

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<sup>20</sup> *Treasurer’s Report of the Receipts and Expenditures also County Commissioners’ Report Upon the Affairs of the County of Berkshire For the Year Ending December 31, 1938* (Pittsfield, MA: 1939), p. 81.

<sup>21</sup> A. Kenneth Simpson, “With What the Hills Are Clothed” in *The Berkshires: The Purple Hills* by Roderick Peattie, ed. (New York, NY: The Vanguard Press, Inc., 1948), p. 50.

<sup>22</sup> George J. Wallace, “Four Seasons of Berkshire Bird Lore” in *The Berkshires: The Purple Hills* by Roderick Peattie, ed. (New York, NY: The Vanguard Press, Inc., 1948), p. 98.

<sup>23</sup> Bartlett Hendricks, “Byways to Pleasure” in *The Berkshires: The Purple Hills* by Roderick Peattie, ed. (New York, NY: The Vanguard Press, Inc., 1948), p. 122.

<sup>24</sup> Hendricks, p. 125.

<sup>25</sup> Rogers McVaugh, “Flora of the Columbia County Area, New York,” *Bulletin of New York State Museum and Science Service*, No. 360 (Albany, NY: The University of the State of New York, April 1958), p. 348.

<sup>26</sup> Morgan Bulkeley, “Ice Storm,” *The Berkshire Eagle*, 10 December 1964.

pitch pine and topped by a fire tower. An excellent panoramic view may be had from both the parking area and the fire tower.”<sup>27</sup>

Botanist Pam Weatherbee noted “Dwarf [pitch pine] trees seen on Mt. Everett...” in her 1996 *Flora of Berkshire County Massachusetts*.<sup>28</sup>

This litany of descriptions of the stunted trees on Mount Everett’s summit and the resultant 360-degree vistas is by no means complete. During my research, I have encountered references to many other sources that I simply haven’t had time to find. This winter, I will continue the search. Nonetheless, I think this list gives a strong sense that the dwarfed pitch-pine community on Mount Everett has been there since the town of Mount Washington was incorporated in 1779, and probably earlier.

## 2.) Mount Everett’s pitch-pine community unique among South Taconics

Pehr Kalm, sent by the Swedish Academy of Sciences to America in 1748 to investigate its natural resources sailed up the Hudson River and reported in his June 11, 1749 diary entry that “to the eastward was a high chain of [Taconic] mountains whose sides were covered with woods up to more than half of their height. The summits however were quite barren; for I suppose that nothing would grow there on account of the great degree of heat, dryness, and the violence of the wind, to which that part was exposed.”<sup>29</sup>

In 1829, naturalist Chester Dewey wrote in a book on Berkshire County’s history: “The County was originally well timbered and fruitful in vegetables. Except the higher parts of Taconic Mountain, the hills were, and many still are, covered to their summits.”<sup>30</sup> He was still using the old-fashioned name for the town, Taconic Mountain,<sup>31</sup> and considered the entire elevation one mountain, with Mount Everett as its highest peak.<sup>32</sup> Incidentally, although in his “Catalogue of Plants” in the same book Dewey described the habitat of *Pinus rigida* (pitch pine) as “Plains and low land”, he singled out Taconic Mountain, the town, as a noteworthy site for *Quercus ilicifolia* (scrub oak).<sup>33</sup> A former Williams College professor, he nonetheless named more plants as particular to Taconic Mountain (13) than to Saddle Mountain of which he described Greylock as the highest peak (10).<sup>34</sup>

In the same book, Egremont minister Gardner Hayden observed: “This ridge [around the town] consists mostly of broken ledges of rocks, and but few trees of any considerable size grow upon it.

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<sup>27</sup> Donald Spencer Smith, “Berkshire County Landmarks: An Inventory and Description,” Report for the Berkshire Panel for the Public Environment (Williamstown, MA: Center for Environmental Studies, Williams College, 1972), p. 59.

<sup>28</sup> Pamela B. Weatherbee, *Flora of Berkshire County Massachusetts* (Pittsfield, MA: The Berkshire Museum, 1996), p. 41.

<sup>29</sup> Adolph B. Benson, ed. *Peter Kalm’s Travels in North America: The English Version of 1770* (New York, NY: Dover Publications, Inc., 1964), pp. 329-330.

<sup>30</sup> Chester Dewey, “A General View of the County” in *A History of the County of Berkshire, Massachusetts; in Two Parts* by David Dudley Field, ed. (Pittsfield, MA: 1829), p. 43.

<sup>31</sup> William Francis Galvin, Secretary of the Commonwealth, *Historical Data Relating to Counties, Cities and Towns in Massachusetts* (Boston, MA: The New England Historic Genealogical Society, 1997).

<sup>32</sup> Dewey, “A General View of the County,” p. 18.

<sup>33</sup> Chester Dewey, “Catalogue of Plants Found in the County of Berkshire, MS” in *A History of the County of Berkshire, Massachusetts; in Two Parts* by David Dudley Field, ed. (Pittsfield, MA: 1829), p. 80.

<sup>34</sup> Dewey, “Catalogue of Plants Found in the County of Berkshire,” pp. 43-86.

There is only soil enough intermingled with the rocks to support shrubs from one to three or four feet in height.”<sup>35</sup>

More recently, botanist Rogers McVaugh noted: “East of the Hudson Valley, where the metamorphic rocks predominate, surface exposures of both acidic and calcareous rocks are very frequent. The largest exposures are found on the Taconic Mountains from Mount Fray southward and southeastward. The tops of these mountains form a nearly continuous exposed and dissected rocky ridge for more than 15 km.”<sup>36</sup>

He continued: “On the summits of the high Taconics, the continuous exposures of hard gray schists extend from Mount Fray southward and southeastward for some miles, forming an area quite distinct in vegetational aspect from that of any other part of Columbia County. I am unable to explain the abrupt termination of this area at Mount Fray. North of this mountain the Taconics, including those of equal or greater heights, are all forest or grass covered to their very tops...the peculiar plant-association developed south and east of Mount Fray is wholly lacking, although physiographic and edaphic conditions seem essentially similar.”<sup>37</sup>

He then suggested: “...it is quite possible that the present low shrub association [on the southern Taconic summits] is a more or less permanent physiographic climax. Under natural conditions succession is apparently slow. There is no evidence that the communities of *Arctostaphylos-Potentilla-Aronia-Amelanchier-Prunus* [bearberry-cinquefoil-chokeberry-shadbush-cherry] have been disturbed within historic times. The first two in particular are known throughout their ranges as plants of exposed rocky summits, and it is highly improbable that either could have existed within the limits of any densely forested area. It is equally improbable that the association could have invaded the area *in toto* since the removal of the forest by the white man. In the absence of definite information as to the original covering of these rocky summits, then, it is probable that the present vegetation represents the highest stage of development that has been reached since the retreat of the glaciers.”<sup>38</sup>

Mount Fray lies at the northwest corner of the town of Mount Washington. The mountains to which McVaugh referred rim the town. A MassGIS map of Mount Washington shows that the following mountain summits surrounding the town are open; in all cases the open areas extend SSW: Mount Fray, Prospect Hill, Alander Mountain, Ashley Mountain, and Mount Frissell on the western boundary; and, Mount Everett and Race Mountain on the eastern boundary.<sup>39</sup> I hiked to each of those summits to compare them with Mount Everett’s summit. Although not shown as open on the MassGIS map, for more comparisons I also hiked the summits of Sunset Rock, Cedar Mountain, and Brace Mountain on the west (all in New York), Bear Mountain (in Connecticut), and Mount Bushnell and Jug End in Egremont, thus hiking the outer eastern and western ranges of the Taconics looping around our town. Whenever possible, I used existing trails. Unless noted, I did not hike routes between the summits because my intent was to focus on the open areas classified like Mount Everett on the MassGIS map, and secondarily, to check other Taconic summits for similarities.

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<sup>35</sup> Gardner Hayden, “A History of the Town of Mount Washington” in *A History of the County of Berkshire, Massachusetts; in Two Parts* by David Dudley Field, ed. (Pittsfield, MA: 1829), p. 219.

<sup>36</sup> McVaugh, p. 319.

<sup>37</sup> McVaugh, p. 323.

<sup>38</sup> McVaugh, p. 329.

<sup>39</sup> John Schmidt, “Draft 1997 Land Use Map” (Pittsfield, MA: Berkshire Regional Planning Commission, 14 September 1999).

Using as comparison three aspects of pitch pine coverage at the summit: density, pervasiveness of dwarfed heights, and acreage, I found that Mount Everett's summit is unique among all the mountain summits I hiked. It has the densest coverage of stunted pitch pines over the greatest area. Race Mountain is very similar in the first two aspects but its coverage is confined to a smaller area. However, on its north slope (facing Mount Everett) it has some pitch pines with the thickest trunks I've seen on any of the mountains.

### **Eastern Taconics**

On the eastern Taconics, starting from the south and heading north, Bear Mountain, Race Mountain, Mount Everett, Mount Bushnell, and Jug End Mountain all have pitch pines.

The south, particularly southwestern, slope of Bear Mountain, has broad pitch pine coverage but it is scantier and the heights are more varied. The trunks are also thinner. There are occasional pitch pines spreading laterally over the ground, as is very distinctive on Mount Everett and Race, but the trunks are spindlier. At the southwestern crest just below the summit is a thicket of pitch pines slightly taller than human height but the summit coverage is quite different from that of Everett or Race. Pitch pines of perhaps 15 feet in height mingle with slightly taller oaks and birches. Without climbing the rock monument, it is impossible to see much of a view.

North of Mount Everett lie Mount Bushnell and Jug End Mountain. Bushnell has a long north/south ridgeline that opens slightly toward the east rather like Race but not as consistently open; I couldn't tell exactly where was the summit and so hiked the entire ridgeline. Bushnell has pockets of thick pitch pine along its ridgeline that in some places almost form a series of clumps; one narrow thread extends for about a quarter mile. Many of the trees are about human height, some are taller; there is a noticeable diversity in height, ranging from ground crawlers to perhaps 40 feet. The most exposed trees don't seem as uniformly stunted as on Everett or Race. Some of the taller trees appear to be very old with thick trunks and deeply furrowed bark. They should be cored for age. Although all the pitch pines exist on rocky elevations exposed to sunlight, as is typical throughout the area, my sense while hiking Bushnell was that they were thriving in a greater range of conditions than on the other local summits and ridgelines where pitch pines grow. Bushnell should definitely be studied as part of the pitch pine continuum of Bear, Race, and Everett.

Jug End lies north of Bushnell, at the north end of the eastern spur off Everett. While it certainly has pitch pines along the crest toward its northernmost outcrop, the trees don't match those on Bushnell for age characteristics, height diversity, or frequency. In the open rock at the ridgeline's end, the pitch pines appear almost weedy with thin trunks and sparse needles compared to those on Bushnell.

### **Western Taconics**

On the western Taconics, starting from the south, Brace Mountain, Mount Frissell, and Ashley Mountain do not have any pitch pines on their summits, nor anywhere else that I saw. Nor are there pitch pines on the bluff between Brace and Frissell.

I surveyed Round Mountain with binoculars while standing on Frissell and did not see any pitch pines there, either. Sally Shaw and Frank Lowenstein confirm there are no pitch pines on Round Mountain.<sup>40</sup>

Alander's summit and southwestern slope do not have any pitch pines, based on my hike to the summit and examination of the southwestern slope with binoculars. Frank Lowenstein said Alander Mountain has pitch pines on its ridgeline descending northward to Bash Bish.<sup>41</sup> The northern slope is not visible from the summit because of intervening trees and shrubs.

Bash Bish Mountain's summit is not shown as open on the MassGIS map so it wasn't a priority; nor did I have a chance to hike it. However, Bob Leverett said there are a few scattered pitch pines at its summit.<sup>42</sup> Standing at the Bash Bish Falls overlook (reached from the upper parking lot), I studied the northern slope of Bash Bish Mountain through binoculars but did not see any pitch pines. Upon lowering my binoculars, I realized there was a single pitch pine, perhaps 10 feet tall, standing next to me.

Cedar Mountain is north of Bash Bish Falls and across the Falls Road. It stretches east to west with an impossibly steep south side. Therefore, I surveyed that face by using binoculars from the Bash Bish Falls overlook. There appear to be pitch pines growing in practically vertical conditions. They are not numerous, in fact are quite infrequent overall. Many seem truly stunted, barely clinging to the rock. McVaugh described pitch pines and scrub oaks along its summit<sup>43</sup> but from that angle I could see none. In fact, the trees there seem windswept but of moderate height, and consist of oaks, hemlocks, and a few white pines.

However, because of McVaugh's description I corralled my husband, Morgan Bulkeley Jr., into showing me the route in from West Street to the back side of the summit. Indeed, there are pitch pines scattered sparsely along the extended summit ridge and averaging 20 to 30 feet in height among the comparably sized oaks, birches, and white pines interspersed with scrub oak and huckleberry. There is no view.

Many, many times I have hiked out to Sunset Rock from West Street and never noticed whether or not there are pitch pines. There are. Along the trail, they are occasional and tallish, perhaps of 20 feet maximum height. Out at Sunset Rock there are a few, ranging in height from about neck high to somewhat taller than I. They are thickly choked by scrub oak and laurel. There are also taller pitch pines back down the trail toward Bash Bish and forward on the trail northward to Prospect Hill.

Moderately sized pitch pines (perhaps 15 feet in height) flank the trail up Prospect Hill. The twin-lobed summit is grassy with open ledges rimmed by short pitch pines and dominated by a smothering encroachment of scrub oak. Just off the trail heading north, a few taller pitch pines are tucked back amongst oaks and birches.

The summit of Mount Fray is just north of the town boundary. Like all the other summits on the western Taconics of Mount Washington, Fray's is open to the southwest. Like Prospect Hill, laurel is

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<sup>40</sup> Sally Shaw and Frank Lowenstein, *Classification of Western Massachusetts Pitch Pine-Scrub Oak Ridgetops and Natural Community Inventory of Mount Tekoa in Russell, Massachusetts* (Boston, MA: The Nature Conservancy, 1999), p. 6.

<sup>41</sup> Conversation with Frank Lowenstein, 3 December 1999.

<sup>42</sup> Conversation with Robert Leverett, Fall 1999.

<sup>43</sup> McVaugh, p. 322.

at the summit, as is thick scrub oak and huckleberry. I counted five pitch pines; one closer to the edge and four set back among oak and birch. None is notably dwarfed.

From the Mount Fray summit, the South Taconic Trail drops slightly and heads north. After a short distance is a lovely hamlet of pitch pines protected from the wind by a shallow embankment and reaching a height of perhaps 20 feet. Other pitch pines of approximately the same height are scattered sparsely down the northeastern slope, in contrast to the more customary southern Taconic scene of pitch pines on slopes facing southwest and west.

### **3.) No 20<sup>th</sup>-century records of fires or clearing on Mount Everett's summit**

In searches of twentieth-century records, I have not found any references to fires or clearing (other than for trails and construction of the fire towers) on Mount Everett's summit. I have not yet reviewed earlier records.

None of the sources excerpted in the first section of this report makes any mention of fires or clearing.

Although owned by the state, the Mount Everett State Reservation was managed from its inception in 1908 to 1975 by commissioners appointed by the Berkshire county commissioners. The Reservation commissioners filed annual reports with the state legislature for a few years and then with the county. The county commissioners' office has the annual reports from 1916, 1927 – 1944, and 1946 – 1955. Based on the facts that the principal report writer, Walter Prichard Eaton died shortly thereafter, and that Mount Greylock reports continued to be filed for a few years after that date, and that no reports for either Reservation afterward can be found in the county files, I believe the 1955 report was the last one filed with the county. James Whitbeck, a former Reservation superintendent, has copies of articles reprinting the 1909 and 1911 annual reports, and a copy of the 1918 annual report. He also has copies of the minutes of the annual meetings from 1940, 1942, 1957, 1958, 1959, 1960, and 1964.

Each annual report details the events of the preceding year, including clearing and maintenance projects, fires, fire prevention measures, and weather conditions. The minutes outline future plans.

#### **No Fires**

In none of the annual reports or minutes I reviewed is there any reference to fires on Mount Everett's summit.

A complete list of references to fires in those reports and minutes is as follows. The 1929 report states: "There was a fire in June on Race Mt. but it did not reach our bounds."<sup>44</sup> The 1930 report refers to "the severe forest fire last Spring, which burned clear across the southerly portion of the range, from Boston Corners to the Undermountain Road in Salisbury. A north wind and Sage's Ravine brook enabled the fighters to back fire and keep the flames out of Massachusetts on the east side of the range..."<sup>45</sup> In 1933, there was a small fire on the Elbow Trail, quickly extinguished; "[n]ot more than two acres were

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<sup>44</sup>*Treasurer's Report of the Receipts and Expenditures also County Commissioners' Report Upon the Affairs of the County of Berkshire For the Year Ending December 31, 1929* (Pittsfield, MA: 1930), p. 71.

<sup>45</sup> Letter to the Berkshire County Commissioners from Walter Prichard Eaton, Secretary, Mt. Everett Reservation Commission, 24 December 1930.

burned. It is the first fire we have ever had to report of any consequence.”<sup>46</sup> The 1939 report refers to the “forest fire which broke out in the early morning of July 5 last, on the easterly slope of the Taconic range in the Town of Sheffield – one of those lightning-set blazes...[however, fire fighters] drove the fire back down the ridge and no damage whatever was done to the Reservation.”<sup>47</sup>

I have spoken with Doris Van Deusen Southergill and Lucile Van Deusen, who grew up and live in this area. Neither recalls any fires ever reaching Mount Everett’s summit.<sup>48</sup> Lucile Van Deusen remembers sitting on the Lookout Cabin roof watching the fire described in the 1939 report, but is certain it never reached the upper part of Mount Everett.<sup>49</sup>

Morgan Bulkeley Jr. remembers fighting a fire out on Mount Bushnell in the late 1960s. He doesn’t remember any other fires in the Mount Everett area. Incidentally, he hiked with me to Bushnell and pointed out the approximate site of the 1960s fire. There is no particular indication of pitch pine; it seems to be overgrown with tall, lanky oaks.

William Turner, Egremont fire chief, does not remember any fires in the Mount Everett area, but said he will check his records.<sup>50</sup> Egremont’s fire department handles fires in our town.

The Nature Conservancy confirms there have been no fires on Mount Everett for at least 25 years, based on its research and conversations with local fire chiefs.<sup>51</sup>

### **No Vegetation Clearing**

There is no reference in the annual reports or minutes I reviewed to clearing of vegetation on the summit.

James Whitbeck, Harry Garrett, Thomas Garrett, and Morgan Bulkeley Jr. are the only current town residents I know of who did maintenance work at the Reservation before its management was returned to the state in 1975. I have spoken with each one and have been told none did any clearing on the summit. As Whitbeck said, “there was no need to, it was always short.”<sup>52</sup>

## **4.) Evidence of early Native Americans on and around Mount Everett**

There has been speculation that early Native Americans may have burned vegetation on Mount Everett’s summit in order to improve hunting and berry picking. There is evidence of early Native Americans on and around Mount Everett, although so far I have not found any record of burning or clearing by them.

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<sup>46</sup> *Treasurer’s Report of the Receipts and Expenditures also County Commissioners’ Report Upon the Affairs of the County of Berkshire For the Year Ending December 31, 1933* (Pittsfield, MA: 1934), p. 71.

<sup>47</sup> *Treasurer’s Report of the Receipts and Expenditures also County Commissioners’ Report Upon the Affairs of the County of Berkshire For the Year Ending December 31, 1939* (Pittsfield, MA: 1940), pp. 60-61.

<sup>48</sup> Conversation with Doris Van Deusen Southergill, Fall 1999.

<sup>49</sup> Conversation with Lucile Van Deusen, Fall 1999.

<sup>50</sup> Conversation with William Turner, Fall 1999.

<sup>51</sup> Shaw and Lowenstein, pp. 8, 13.

<sup>52</sup> Conversation with James Whitbeck, Fall 1999.



In deeds with the Dutch and English, the Mohicans claimed territory from the Hudson River eastward to the Westfield River.<sup>53</sup> Although they preferred living along rivers, they hunted in the mountains.<sup>54</sup> They also retreated to the mountains for ceremonies. With its commanding height and vistas, the proximity of rattlesnake dens, and the ceremonial arrow point found close by (described below), it is likely that Mohicans and their predecessors revered Mount Everett as a sacred place.<sup>55</sup>

This is conjecture, however, because I have done very little research on this subject. Nonetheless, I do have a verbal description of an Indian encampment at the north end of the Mount Everett State Reservation and old maps and newspaper articles about an Indian reservation at the north end of town, an Indian trail north of Guilder Pond, and Indian artifacts uncovered near Mount Everett. I also have one eyewitness account and two secondhand eyewitness accounts of an Indian terrace on the eastern slope of Mount Everett.

### **Indian Encampment**

Edward Peck, who surveyed Mount Everett State Reservation for the state in 1965,<sup>56</sup> told William Miles, chairperson of our town's Historical Commission (quoting from Miles's notes and a subsequent telephone conversation) that "A fair share of an Indian encampment site is within the Mount Everett State Reservation, near the extreme northeastern boundary. The site is near the junction of two or three very small streams – when it has rained for some time – and is bisected by the Appalachian Trail and also has nearby the 'point of illumination' (possibly Black Rock), where the Indians signaled with smoke their brethren at lower elevations in times of danger." Peck said he believes Harvey Kreidemaker, Reservation superintendent at the time, showed him a map of that point of illumination.<sup>57</sup> I have seen a map showing Black Rock as an Indian signaling station. This needs more research.

### **Indian Reservation**

In one of his many "Our Berkshires" columns for *The Berkshire Eagle*, Morgan Bulkeley Sr. wrote: "By a recorded deed of April 25, 1724 to a committee of settlers dispatched to Housatanock by the General Court, the Indians 'did reserve to ourselves' a strip of land five-eighths of a mile extending from the Housatonic River along the north border of Sheffield through South Egremont to the New York boundary. On this tract was the small settlement of Skatekook where dwelled Lt. Umpachene and four other families."<sup>58</sup>

Lecturing before the Berkshire Historical and Scientific Society in 1907, H. F. Keith, a professional surveyor and amateur historian of Mount Washington, said: "...Mount Washington, incorporated June 21, 1779, went as far north as Orrin Curtis' house, at the foot of the mountain, or to the north line of the strip known as the 'Indian reservation.'"<sup>59</sup>

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<sup>53</sup> Shirley W. Dunn, *The Mohicans and Their Land 1609 – 1730* (Fleischmanns, NY: Purple Mountain Press, 1994), p. 60.

<sup>54</sup> Dunn, p. 49.

<sup>55</sup> Conversation with Jani Leverett, Massachusetts Director, American Indian Movement, Fall 1999.

<sup>56</sup> Edward C. Peck Sr., "Survey Map of Mount Everett Reservation, County of Berkshire, State of Massachusetts" (October 1965).

<sup>57</sup> Conversation between William Miles and Edward C. Peck Sr., 23 November 1999.

<sup>58</sup> Morgan Bulkeley, "Skatekook," *The Berkshire Eagle*, 23 July 1964.

<sup>59</sup> F. H. Keith, "Mount Washington Historical Address, June 1<sup>st</sup>, 1907," in *Collections of the Berkshire Historical and Scientific Society*, III, No. 4 (Pittsfield, MA: Berkshire Historical and Scientific Society, 1913), p. 321.

An old map attributed to Keith shows the Indian Reservation stretching across the northern end of the original town. The northern boundary of each is the same line. The town's northern boundary was moved south in 1817 so that now the southern edge of the Indian Reservation clips only the northern point of the town. The present road to Egremont travels through the Indian Reservation.<sup>60</sup>

"But by 1736 the Indians were removed from...their entire reservation...The reservation strip was granted to Isaac Vosburg, Arent Gardner, Anderes Karner and John Van Guilder."<sup>61</sup> The town road to Egremont follows Karner Brook from the top of the mountain northward; Guilder Pond is on Mount Everett.

"March 29, 1757, a syndicate of forty proprietors purchased the land [in Mount Washington] of the Indians..."<sup>62</sup>

## **Indian Trail**

The Indian Trail ran from New York across the Mount Washington plateau to Sheffield. Old maps show the Indian Trail, also known as Old Spurr Road or Old Sheffield Road crossing East Street just north of today's Blueberry Hill Farm. From East Street, the trail heads east toward Sheffield; some maps show it running along the north slope of Mount Undine and others show it south of Mount Undine, near Guilder Pond. Keith's map doesn't indicate Mount Undine but does show the trail curving northward and passing north of Guilder Pond and south of Sunrise Rock (which, according to Morgan Bulkeley Jr. and Lucile Van Deusen, is north of Mount Undine). A 1932 "Trail Map of Mt. Everett" for the Mount Everett State Reservation commissioners from surveyor F. M. Lane shows the trail running straight between Mount Undine and Guilder Pond. Peck's 1965 map shows the trail curving northward but doesn't indicate Mount Undine. The BashBish Falls Quadrangle map shows the trail curving northward along Mount Undine's northern slope.

I can't explain the discrepancies, but in all cases, the trail hooks into the Elbow Trail and continues down to Sheffield behind Berkshire School. Lucile Van Deusen says there was a trail from the Indian Trail over Mount Undine to Guilder Pond. She used it frequently but thinks it is overgrown, now.<sup>63</sup>

The written record about the exact line of the Indian Trail's midsection is also somewhat unclear.

Morgan Bulkeley Sr. wrote: "...this was one of the earliest roads in the county. One old map of obscure date shows it as a faint, dotted line labeled 'Indian Trail' leading up through the Bash Bish cut, over the Mount Washington plateau, through the pass between Sunrise Rock and Spurr [Undine] Mountain and down the eastern slope past Black Rock into the Housatonic Valley. Proof of Indian travel is offered by an arrowhead, a long ceremonial point and a flint knife found along the course of the trail.

"A map of 1841 calls the trail, by then a cartway, the Old Spurr Road...Some decades later it served as a public way and narrow town road out of Mount Washington, known as the Old Sheffield Road. It

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<sup>60</sup> Map of Mount Washington attributed to H. F. Keith in a notation on the map, in the collection of Lucile Van Deusen.

<sup>61</sup> Morgan Bulkeley, "Skatekook," *The Berkshire Eagle*, 23 July 1964.

<sup>62</sup> Keith, "Mount Washington Historical Address, June 1<sup>st</sup>, 1907," p. 321.

<sup>63</sup> Conversation with Lucile Van Deusen, 2 December 1999.

was traversed by farm wagons, high-sided charcoal carts, sleighs, cutters, buggies and surreys; but never by an automobile, for the woods closed in on it about 1900.”<sup>64</sup>

Sheffield historian Lillian Preiss noted: “Perhaps the first road build by any settler in Sheffield was constructed as a pack horse trail by Derrick Spoor, a member of an early Dutch family which received an easement for land in Mount Washington under the Westenhook Patent. Spoor...built a cabin on land now owned by Berkshire School. He then made a trail following for the most part an old Indian path to Bash Bish Brook near East Street in Mount Washington, where the rest of his family lived. Now called Elbow Trail, this road is used by people going to Guilder Pond and Mount Everett.”<sup>65</sup>

According to Walter Prichard Eaton: “...just beyond my north boundary, entering first the grounds of the Berkshire School, is an ancient road, leading west from the state highway. It makes directly for the mountain wall, which is here almost precipitous in places, and it can still be followed to the summit of the ridge, an air-line distance of considerably less than a mile, but a rise of almost a thousand feet. You would naturally suppose that it would have to resort to frequent switchbacks in order to make the ascent, more than half of which is contained in the last few hundred yards, yet the switchbacks are few. It makes a long swing to the north, and then a long swing to the south, getting in behind a pine-clad promontory we call the Fiddler’s Elbow, and suddenly emerging triumphant from the pines into the hardwoods of the level shoulder-top. From this point it goes straight west, by a more gradual ascent, passing just north of the summit cone, and beside Guilder Pond.”<sup>66</sup>

## **Indian Artifacts**

In a *Berkshire Eagle* column, Morgan Bulkeley Sr. described an artifact hunt in a field in the Skatekook area: “In the course of several hunts, four of us discovered the illustrated, mostly perfect artifacts plus much broken material and bits of bone and clamshell. Points and chips were about evenly divided between flint and quarts...The concentration of material was dispersed over a strip 40 rods long and 8 rods wide. The small size as well as the location spelled Skatekook.

“The wide variety of projectile points, including triangular, small-stem corner-removed and side-notched, typified the Ceramic or Woodland period and suggested occupation back to its inception about 300 A.D. ...Most interesting find of all were the two...points of the dark flints. The perfect broad point, side-notched with corners removed, is the diagnostic type of the Late Archaic or Stone Bowl period back to 5,000 years ago in New England. The broken stem-end beside it, showing shoulders and a tapering rounded stem, is diagnostic of the Early Archaic with some overlap of the type to Late Archaic. It may well indicate aboriginal occupation of this site back toward 6,500 years ago.”<sup>67</sup>

In another article, he stated: “Of three known finds in Mount Washington, none were hunting tools. One was a stone tomahawk found at Plantain Pond before 1900; another was a black flint knife-blade turned up somewhat later in a vegetable garden beside the town road; and the third was the ceremonial point (herein illustrated) discovered in planting a blueberry field in 1947.

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<sup>64</sup> Morgan Bulkeley, “The Old Wood Road,” *The Berkshire Eagle*, 9 December 1965.

<sup>65</sup> Lillian E. Preiss, *Sheffield: Frontier Town* (Sheffield, MA: Sheffield Bicentennial Committee, 1976), p. 75.

<sup>66</sup> Eaton, *In Berkshire Fields*, pp. 162-163.

<sup>67</sup> Morgan Bulkeley, “Skatekook,” *The Berkshire Eagle*, 23 July 1964.

“This last point of skillfully worked, brown flint was the most startling of all. With a probable three-quarter-inch broken from the tip, it still measured 5 ½ inches in length, and 1 ¼ inch in width, being everywhere less than three-eighths in thickness. Points of such extreme size so finely worked would have broken easily with any rough usage; therefore they are deemed to be ceremonial blades...

“The archaeological potentate of Massachusetts, William S. Fowler, says: ‘Blades of this size are seldom if ever found at camp-site excavations or as surface finds. They may have been made and used expressly as sacrificial burial offerings.’ He attributes them to the Late Archaic culture (3000 B.C. to 300 A.D.)...[This is a] rare surface find of a ceremonial point high in the Berkshire Hills...’<sup>68</sup>

The blueberry field Bulkeley described is part of Blueberry Hill Farm, which is due west of Guilder Pond and lies between two streams. The Indian Trail follows one stream through part of the farm’s northern boundary. The property was owned by Milo Smith, as shown on an 1858 map<sup>69</sup> and in a photo taken some time before 1893.<sup>70</sup> A wood road ran from Smith’s house up to Guilder Pond. An 1893 map shows the road looping around Guilder Pond and returning to East Street farther north; although the Indian Trail isn’t indicated on this map, the road returns over what would have been the Indian Trail.<sup>71</sup>

In 1966, Barbara Bulkeley found a large Indian celt, an ungrooved axhead in the garden next to her house at the western base of Mount Undine. The house is south of the Indian Reservation and about a quarter-mile north of the Indian Trail; part of the old Spoor/Spurr property. In his article about her find, her columnist husband explained: “It was made of hard, fine-grained quartzite, a stone foreign to the mountain-platform of schist but common to the river valley.” He continued with a more thorough description and analysis of how it would have been used and concluded: “This celt, therefore, must have been mislaid or lost by a casual hunting party camping close to the largest of the three sweet-flowing springs just below our garden. Smaller celts are common to camp and village sites of the Woodland Indians. This large size is more characteristic of the stone-bowl or late archaic people.”<sup>72</sup>

Before leaving this subject, “Patience Owen, a widow, married Plantain, the Indian for whom the pond on Mount Washington was named.”<sup>73</sup> Without drawing too close a connection, as noted earlier, Plantain Pond was where a tomahawk was discovered.

## **Indian Terraces**

Morgan Bulkeley Jr.’s maternal grandfather, Earl Van Deusen, told him about seeing an Indian terrace on the eastern slope of Mount Everett.<sup>74</sup>

Surveyor Edward Peck told William Miles that he saw what he believed to be Indian terraces on Mount Everett while doing the Mount Everett boundary survey. He described them as being fairly level places with a curved low stone wall defining the lower elevation of the level area. He doesn’t

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<sup>68</sup> Morgan Bulkeley, “Stone, Ceramics and Iron,” *The Berkshire Eagle*, 13 May 1965.

<sup>69</sup> E. M. M., “Town of Mount Washington Copied From a Map of Berkshire County, Mass. Dated 1858” (1956).

<sup>70</sup> Warner, p. 93.

<sup>71</sup> “Map of Berkshire Hills Massachusetts” (Boston, MA: George H. Walker & Co., 1893).

<sup>72</sup> Morgan Bulkeley, “A Second Look,” *The Berkshire Eagle*, 21 July 1966.

<sup>73</sup> Preiss, p. 9.

<sup>74</sup> Conversation with Morgan Bulkeley Jr., Fall 1999.

remember the exact location of the site.<sup>75</sup> Miles asked why he thought it was an Indian terrace and he explained that the wall had a noticeable curve and wasn't associated with a wood road. I asked Miles why it would be an Indian terrace and not a charcoal pit terrace. He replied it was much easier for colliers to dig into the dirt to create a level spot than to build a stone retaining wall and he had never seen a charcoal-pit terrace with a stone wall.<sup>76</sup>

In a taped interview, James Whitbeck said Alfred Van Deusen, Earl Van Deusen's son, took him to the Indian terrace years ago. Whitbeck showed me the approximate location on a USGS map.<sup>77</sup>

## Other research sources

The information provided in this report is cursory and very incomplete. There are many sources I want to investigate. For example, I want to review winter photos of Mount Everett for evidence of Indian terraces. The now defunct local newspaper *The Berkshire Courier* was published for approximately 163 years, and I want to search it from the beginning for any stories on fire or other disturbances on Mount Everett's summit. H. F. Keith's extensive files on Mount Washington at the Berkshire Historical Society, records of Elizabeth McNaughtan's court case against the state taking of the Dome, and the legislative record preparatory to passage of the 1908 bill creating the Mount Everett State Reservation may all contain useful information about Mount Everett's history. Many botanists have visited the mountain over the past 200 years, and I want to check their herbaria scattered throughout libraries and universities in the northeast. Robert Livingston, an early claimant to land in Mount Washington, was a Hudson River patroon and New York State's secretary of Indian affairs for almost 50 years; his records in the New York State archives could be valuable resources. These and many other sources need to be researched but the few records I've found so far and excerpted here do give a sense of the truly unique dwarf pitch-pine community on Mount Everett.

## The Scrub Pine

Up near the crest it bravely stands  
And holds aloft its needled hands.  
Its roots can find but scanty fare  
Among those rocks so bleak and bare.  
It faces frigid winds and sleet,  
The summer drought and blazing heat,  
The lightning flash, the thunder roar,  
The killing frost and drenching pour.  
Yet there so calm and brave it stands,  
As if in prayer with lifted hands.<sup>78</sup>

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<sup>75</sup> Conversation between William Miles and Edward C. Peck Sr., 23 November 1999.

<sup>76</sup> Telephone conversation with William Miles, 2 December 1999.

<sup>77</sup> Interview with James Whitbeck and Lucile Van Deusen, Mount Washington, MA, 9 January 2000.

<sup>78</sup>D. A. H., "The Scrub Pine" (Braeside, South Egremont: 10 December 1923), newspaper clipping in the collection of Lucile Van Deusen.

# **Ecological Assessment of Mount Everett**

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**December 6, 1999**

The summit of Mount Everett supports a unique community typified by highly dwarfed pitch pine, *Pinus rigida*. Other than Mount Everett and the nearby summits of Race and Bear Mountains, the only other places I have witnessed pitch pine dwarfing like this is on New Hampshire's Mount Cardigan and a few of the summits on Mount Desert Island, Maine. Summit pitch pine communities are not common in New England and ones showing this level of dwarfing are truly unusual.

Within New England this is the second highest stand of pitch pine that I am aware of (2,600 feet) with Mount Cardigan's stand being a couple of hundred feet higher. Of all these dwarfed summit communities, Mount Everett has the highest species richness with respect to woody vegetation. Mount Everett's pitch pines show little or no serotiny in their cones while nearby populations on Race and Bear Mountains have high levels of serotiny, suggesting that Mount Everett's pitch pines are genetically isolated from those to the south on this ridge system.

Infrequent fires (less than one a century) and winter exposure are key factors in the maintenance of this community. Fires reduce competition from red oak, and winter winds and associated ice blasting stunt all species of trees, allowing pitch pines to maintain a prominent presence. It is likely that these conditions have helped maintain this summit community since prior to the hypsithermal more than 6,000 years ago. If this is in fact substantiated by palynological research, Mount Everett's pitch-pine community would be of key historic importance - a remnant from the middle Holocene.

# **Lichen Survey of Mount Everett Summit Southwest Berkshire County, Massachusetts**

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## SUMMARY

Sixty-four lichen species were found on the summit of Mount Everett, Massachusetts, during a twelve-hour period. The summit lichen community has affinities with lichen communities of lowland pitch pine forest, mid-elevation hardwood forest, and upland rock outcrops. With the exception of one very rare lichen and another that is probably undescribed, the species encountered are a subset of typical lichen species of these communities elsewhere in the state. Lichen coverage was moderately high on rock outcrops, low to moderate on trees, and relatively low on soil. Taller trees away from the summit tower had higher coverage and diversity of corticolous lichens than those nearer the tower. Rain wetted rock-dwelling lichens could easily be damaged by extensive foot traffic associated with construction, but this damage can mostly be avoided if workmen do not stray from the construction area. Only one rock-dwelling species is worth concern, but that species is extremely rare and should be protected. Some soil lichens may be temporarily damaged by construction disturbance, but others could be favored. One lichen species growing on pitch pine bark is apparently undescribed. Nothing is presently known about its distribution or abundance except that it is not uncommon on the summit. No other tree- or wood-dwelling species are of concern, and unless trees are bulldozed or herbicides used, the lichens growing on them should be safe.

## INTRODUCTION

The lichens on the summit of Mount Everett were briefly surveyed in late autumn, 1999. The purpose of the survey was to assess lichen diversity within the pitch pine/bear oak/birch community growing on the summit and to see if any unusual lichens were present. The author spent a total of 12 hours on the summit, spread over two days, October 31 and November 1.

The survey was conducted entirely within the area that pitch pine was growing. The survey included lichens growing on trees, on rocks, and on the ground. Lichens on man-made substrates, such as concrete, were excluded.

Standard non-randomized survey methods were used. A reconnaissance was made for major subhabitats. Two major subhabitats were selected: the southwest slope community which featured stunted

pitch pines and dense thickets of bear oak, shrub-size birches, blueberry, and mountain laurel, and the slightly more mesic northern slope community, which featured more red oak and somewhat larger pitch pines. Within the two subhabitats, detailed searches were made for various microhabitats and for concentrations of lichens, and within these, for lichen species not previously recorded at the site. At the end of field work, the area near the summit tower itself and the area southeast of the tower were checked briefly for comparison.

A specimen of each lichen species was collected as a voucher specimen. The identity of each species was later confirmed in the laboratory using microscopy and standard chemical tests, including, in some cases, thin-layer chromatography (TLC). A special effort was made to identify normally sterile species, as these lichens often are important members of the community. A few specimens were sent to specialists for confirmation or identification. Labeled voucher specimens will be placed at the Farlow Herbarium of Harvard University or in the private herbarium of the author.

## LIMITATIONS

Surveys of total lichen diversity are rather sensitive to the amount of time spent in the field and the size and uniformity of the study area. Field time is important because many lichen species are present only as widely scattered individuals. Finding them is partially a matter of chance. This problem is exacerbated by the small size of certain taxa, which requires close inspection of the substrate. Size of the study area influences results in two ways. A larger area usually provides more types of habitats and microhabitats. Within any habitat, a larger area give more opportunities for widely scattered individuals to occur.

In the case of Mount Everett, the total area covered by pitch pine was of modest size, so that most types of habitats and microhabitats were probably found and examined during the course of the survey. However, results should be compared with caution to larger sites with more diverse habitats.

Most of the recorded species were found in the first four hours of surveying. A few additional species per hour were found during the remaining eight hours, up to the very end. Without doubt, additional field time would result in the finding of additional lichen species, perhaps even 30% more. And there is always the possibility of additional rarities. However, the overall picture is unlikely to change.

## RESULTS

Coverage by lichens:

Coverage was not measured, so the following are field impressions. Overall coverage within the study area depended on substrate. The highest coverage was found on the schist ledges, many of which were almost completely covered with lichens.

Coverage of trees was modest and spotty, with some individuals almost devoid of lichens and others having, say, 30%-50% coverage over portions of their trunks. Coverage seemed to be highest (but still modest) on red oaks, followed by pitch pine, low for bear oak and *Vaccinium*, and almost non-existent on birch and mountain laurel. Larger trees generally had higher percentage cover than smaller trees of the same species. Coverage seems to be higher near the periphery of the community and on the north slope, but, if true, this may be due to larger tree sizes. Trunks and low branches had most of the lichen coverage, with relatively low twig coverage.



Copious leaf litter over most of the study area apparently inhibits the growth of ground lichens. Overall coverage was low and patchy, with occasional lichen mats on elevated patches of soil associated with rock ledges. A disturbed soil/pebble lichen community exists on the trampled gravel area surrounding the summit tower.

Species diversity:

Sixty-four species in 39 genera were found in the study area. Of these 20 were found on rock, 35 on bark or wood, and 11 on soil or duff. Some species were found on more than one substrate. Red oaks found at the periphery of the pitch pine forest provided roughly half the diversity of corticolous lichen species. An annotated list of species is attached at the end of the report.

For comparison, here are some species counts for some other New England sites. As mentioned above, caution should be used in interpreting this data, since in all cases the sites are much larger and mostly more diverse in habitat than Mount Everett.

Table 1. Comparison of total lichen diversity at selected regional sites

Site	Size in acres	Field days	Species
Mount Everett, MA (this report)	ca. 12	1.5	64
Shawangunk Mountains, NY, summit areas <sup>1</sup>	ca. 20,000	>10	125 <sup>9</sup>
Mount Greylock, MA (ridge summit areas) <sup>2</sup>	ca. 250	>5	125 <sup>10</sup>
Bartholomew's Cobble, MA <sup>3</sup>	277	0.5	110
Wachusett Mountain, MA (old growth area) <sup>4</sup>	130	11	151
Cape Cod Canal, MA <sup>5</sup>	1,100	20	145
Westover Air Reserve Base, MA <sup>6</sup>	1,500	18	121
Devens Reserve Forces Training Area, MA <sup>7</sup>	4,200	14	173
Katama Plains Conservation Area <sup>8</sup>	129 <sup>11</sup>	6	75

<sup>1</sup>Dirig, 1994, and personal communications; <sup>2</sup>May, P., unpublished data; <sup>3</sup>Harris, R.C., unpublished data; <sup>4</sup> May, 1998; <sup>5</sup>Lay et al., 1995; <sup>6</sup>Kneiper et al., 1995a; <sup>7</sup>May et al., 1998; <sup>8</sup>Kneiper et al., 1995b

<sup>9</sup>based on a site study and on a partially reported species count from a field workshop

<sup>10</sup>partially reported species count from a field workshop

<sup>11</sup>most of the study area was periodically burned

Lichenologists studying old-growth forests in northern New England have counted in four field days 100-120 species growing on living and dead trees only (Selva 1994, 1996). These numbers exclude lichens growing on rocks or on the ground. This compares to 35 found so far at Mount Everett.

A total species counts for a site is only one measure of diversity. Species seen per unit time or per unit area would be other measures. By these measures, Mount Everett would be probably be average for a habitat mixed conifer/hardwood forest and open ledges of comparable elevation.

Noteworthy species:

*Diploschistes badius* was found on a schist outcrop approximately 100 meters southwest of the tower. The identification has been confirmed by Dr. H. Thorsten Lumbsch of Essen, who is the world expert on the genus. *D. badius* is a rare species, previously known only from southeast Arizona and Costa Rica (Lumbsch, 1989; Lumbsch and Elix, 1989). It was segregated from *D. aeneus*, based mainly on differing chemistry. (*D. aeneus* is also rare, with known specimens from South Carolina, California, Sonora, and the West Indies.) *D. badius* is neither small nor inconspicuous, so it probably represents an example of a true rarity, rather than of undercollecting. The number of individuals on the summit of Mount Everett is not known.

*Lecanora minutella* is a tiny lichen that grows on weathered pine cones still attached to the tree. It has rarely been collected because of its small size and because lichenologists have infrequently examined pine cones. The lichen has recently received publicity, so that lichenologists are now inspecting pine cones more carefully. The species turns out to be not uncommon. Thalli were found on approximately ten percent of suitable pitch pine cones from Mount Everett.

Biatoroid-lecanoroid species #1 is small, gray crustose lichen containing atranorin and sometimes possibly also usnic acid. It grows on pitch pine bark. According to Dr. Christian Printzen at Essen, the Mount Everett specimens represent an undescribed species. He will describe it as new during the upcoming year. Dr. Printzen is an expert in the genus *Biatora* s. lat. and has recently examined the type specimens of ca. 500 holarctic species of biatoroid and corticolous lecideoid lichens. The specimens were also seen by Richard C. Harris of the New York Botanical Garden, and by H. Thorsten Lumbsch of Essen. Dr. Harris is the lichenologist most knowledgeable about the crustose lichen flora of eastern North America. Dr. Lumbsch is an expert on the genus *Lecanora*. Nothing yet is known about the distribution or abundance of the species except that it is fairly common in the summit area.

## DISCUSSION

From a lichenological perspective, the summit of Mount Everett may be characterized as a relatively dry, mixed conifer/hardwood forest with many open ledges and small areas of open ground. With two exceptions, the lichen community is unremarkable.

The lichens on the trees represent a subset of those found in the much larger and more diverse pitch pine forest located in the high elevations of the Shawangunk Mountains of New York, plus a few additional species typical of hardwood forests. The lichens on the rocks at Mount Everett summit are typical of those found on siliceous outcrops of similar elevation throughout Massachusetts. Several rock-dwelling species were expected but not found. Some of these are presumably present and will be found with additional searching.

The diversity of ground lichens is lower than expected, undoubtedly due in part to a lack of suitable habitat. Unforested ground is rare on the summit, except in high traffic areas. Patches of duff on or next to rock outcrops are the major substrate for ground lichens. Under the forest canopy, ground lichens mostly get shaded out by leaf litter, and possibly also by the dense shrub layer occurring in parts of the study area.

The diversity of lichens in forest communities depends on a number of factors. These include the variety of substrates available, the variety of habitats and microhabitats available, the wetness and

humidity of the local climate, the amount and type of airborne pollutants, the size of the stand, the history of habitat disturbance, and the ecological continuity of the forest.

In the case of Mount Everett summit, lichen diversity may be limited by the size of the pitch pine forest, by historically high levels of SO<sub>2</sub> air pollution (both from out of state and from the industrial making and burning of charcoal locally), by lack of fog and rainfall compared to higher elevations, by low retained soil moisture, by a history of major and minor fires, and by the lack of a variety of mature hardwood tree species. However, these explanations are necessarily somewhat speculative.

## MANAGEMENT RECOMMENDATIONS

*Diploschistes badius* is a rare lichen whose only other North American localities are in Arizona. Some thought should be given to protecting any other individuals of the species that may be growing on the summit. If construction is planned, then a search should be made for other individuals. If found, these should be protected by preventing disturbance to the rock outcrops they grow on. If no construction is planned, the best policy is probably benign neglect combined with passive methods designed to keep hikers on the trail.

There is a fair chance that the undescribed species growing on pitch pine will turn out to be uncommon or rare. Until this can be determined, the pines should be protected.

Otherwise the lichen community as a whole is unremarkable and requires no special concern. Nevertheless, it can and should be protected in the event of construction. The main danger is of excessive foot traffic over soil lichens and wetted rock-dwelling lichens. Though construction activities may be localized to the tower area, bored workmen will probably want to wander into the forest during breaks or lunch. DEM should restrict foot traffic to the main trails and the construction area and enforce this restriction. Use of the woods as a restroom should likewise be restricted.

Herbicides, pesticides, and fertilizers should be used only with caution in the summit area as all of these are known to adversely affect lichen communities.

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## ANNOTATED SPECIES LIST

In order to make the list easier to read, I have not cited authorities. My comments on abundances are (1) for Massachusetts not Mount Everett, (2) relative to other lichens, and (3) estimates based on limited data.

- Acarospora fuscata** -- common on siliceous rock
- Allocetraria oakesiana** -- fairly common on hardwoods and sometimes conifers
- Biatoroid-lecanoroid species #1** -- apparently an undescribed species, known so far only from Mount Everett, but not necessarily rare (see discussion in text)
- Candelariella efflorescens** -- fairly common on hardwoods
- Cetraria arenaria** -- locally common on sandy soils in the lowlands, rare on ridge tops
- Cladina rangiferina** -- common on sunny soil in upland localities
- Cladonia bacillaris** -- common on duff and bark
- Cladonia coniocraea** -- common on rotted wood and bark
- Cladonia didyma** -- occasional
- Cladonia macilenta** -- occasional on duff and bark
- Cladonia grayi** -- common on soil, duff, and bark
- Cladonia pleurota** -- common on soil
- Cladonia pyxidata** -- occasional
- Cladonia squamosa** -- common on duff
- Cladonia strepsilis** -- occasional on soil
- Cladonia uncialis** -- fairly common on duff
- Dimelaena oreina** -- common on siliceous rock
- Diploschistes badius** -- extremely rare, on rock (see discussion in text)
- Flavoparmelia caperata** -- abundant on hardwoods and conifers
- Fuscidea arboricola** -- a sterile crust on bark, common, but rarely reported
- Fuscidea recensa** -- fairly common on upland siliceous outcrops, occasional on bark
- Graphis scripta** -- common on hardwoods
- Hypocnomyce scalaris** -- common on conifers
- Hypogymnia physodes** -- abundant on conifers, fairly common on hardwoods
- Imshaugia aleurites** -- common on conifers in certain habitats
- Lasallia papulosa** -- common on siliceous boulders and outcrops
- Lasallia pennsylvanica** -- infrequent on siliceous boulders and outcrops
- Lecanora minutella** -- rarely collected but fairly common on weathered cones

**Lecanora pulicaris** -- occasional, on bark  
**Lecanora symmicta** -- common on hardwood twigs  
**Lepraria neglecta** -- abundant on trees and rocks  
**Melanelia subaurifera** -- fairly common on hardwoods  
**Micarea erratica** -- common on pebbles  
**Micarea melaena** -- occasional on trees and rocks  
**Micarea peliocarpa** -- occasional on rocks  
**Mycoblastus fucatus** -- a sterile crust, rarely reported, but occasional  
**Ochrolechia arborea** -- common on hardwoods, occasional on conifers  
**Ochrolechia pseudopallescens** -- infrequent on conifers  
**Parmelia saxatilis** -- fairly common on siliceous rock  
**Parmelia sulcata** -- abundant on hardwoods  
**Parmeliopsis capitata** -- occasional, on conifers and hardwoods  
**Pertusaria trachythallina** -- occasional, on hardwoods  
**Pertusaria velata** -- occasional, on hardwoods  
**Porpidia albocaerulescens** -- common on shaded siliceous rock  
**Porpidia herteliana** -- occasional, on siliceous rock  
**Pseudevernia consocians** -- infrequent, on upland conifers  
**Punctelia rudecta** -- common on hardwoods  
**Punctelia subrudecta** -- occasional, on hardwoods  
**Pycnothelia papillaria** -- locally common on disturbed soils  
**Rhizocarpon grande (= R. eupetraeum)** -- occasional, on siliceous rock  
**Rhizoplaca subdiscrepans** -- occasional, on siliceous rock  
**Scoliciosporum chlorococcum** -- abundant on conifers and hardwoods  
**Stereocaulon glaucescens** -- occasional on rock  
**Stereocaulon saxatile** -- occasional on rock  
**Trapelia involuta** -- abundant on pebbles  
**Trapelia placodioides** -- occasional, on siliceous rock  
**Trapeliopsis flexuosa** -- occasional, on wood or bark  
**Trapeliopsis granulosa** -- occasional, on wood or soil  
**Tuckermannopsis fendleri** -- occasional, on conifers  
**Umbilicaria muehlenbergii** -- occasional, on siliceous rock  
**Usnea strigosa** -- occasional, on hardwoods and conifers  
**Xanthoparmelia conspersa** -- abundant on siliceous rocks  
**Xanthoparmelia plittii** -- occasional, on siliceous rocks

# The Macrolepidopteran Fauna of Mount Everett, Massachusetts

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January 11, 2000

## Report excerpted with permission from The Nature Conservancy

Two Massachusetts state-listed species *Catocala herodias gerhardi* (Threatened) and *Aphareta dentata* (Special Concern) were common in the summit community. Both moths are rare in inland barrens and represent significant occurrences. Populations of three additional barrens moths, with very restricted inland distributions, were discovered: *Euxoa perpolita*, *Sideridis maryx*, and *Xylotype capax*. Eight northern species approach their southern limit in New England atop Mount Everett: *Acrionicta fragilis*, *Diarsia jucunda*, *Diarsia rubifera*, *Eueretagrotis attentus*, *Eurois astricta*, *Hesperumia sulphuraria*, *Perizoma basiliata*, and *Ufeus satyricus*.

Hilltops, especially those that are topographically prominent, serve as rendezvous sites for courtship and mating behaviors of rare invertebrates. The potential importance of Mount Everett in this context is briefly discussed. The report closes with recommendations for future survey efforts.<sup>1</sup>

Although only two of the recovered species are currently listed by the State of Massachusetts...the assemblage taken as a whole is significant and worthy of protection.<sup>2</sup>

### Massachusetts State -Listed Taxa

*Catocala herodias gerhardi*...(Gerhard's Underwing): Gerhard's Underwing was the most common underwing in the trap collections. Prior to its discovery on Mount Everett, this State Threatened species...was thought to be restricted to expansive coastal scrub oak barrens in Massachusetts. Global Rank: G3TS.

The moth is very rare in inland barrens and bald communities...As the larvae of Gerhard's Underwing are scrub oak specialists, this moth's inland distribution is quite restricted in the Northeast, including only those balds with appreciable stands of the host.<sup>3</sup>

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<sup>1</sup> David L. Wagner, *The Macrolepidopteran Fauna of Mount Everett, Massachusetts* (Boston, MA: The Nature Conservancy, 2000), p. 1.

<sup>2</sup> Wagner, p. 2.

<sup>3</sup> Wagner, p. 3.

*Apharetra dentata*...(Blueberry Sallow): This Special Concern species...was very common about the summit...The larvae are specialists on blueberry (*Vaccinium*)...Its distribution appears to be tied to low blueberry heaths where it feeds on either *Vaccinium angustifolium* or *V. pallidum*...<sup>4</sup>

### Other Uncommon to Rare Species

*Euxoa perpolita*...(Polished Dart):...This species of dry grasslands occurs locally over much of Cape Cod and Long Island, but is uncommon to rare inland...McCabe and Weber (1999) regarded it to be among the five most significant captures from the Mount Everett summit community, and suggested that the Polished Dart might be a “good candidate for measuring management or environmental impacts.”<sup>5</sup>

*Sideridis maryx*...(Maroonwing):...The Maroonwing is found across southern Canada, occurring southward to Cape Cod and the New Jersey Pine Barrens. In lower New England it is principally a Coastal Plain species that becomes increasingly scarce in inland towns.<sup>6</sup>

*Xylotype capax*...(Broad Sallow):...The Broad Sallow is a denizen of open, dry, oak woodlands and especially scrub oak barrens. Though common on the Cape and Long Island it is uncommon to rare inland in the Northeast. Native hosts are unknown...In New Jersey the Broad Sallow is associated with a variety of acid soil communities, including scrub oak barrens, dry woodlands, and forested swamps...

McCabe and Weber (1999) describe its distribution as “very spotty in the North.” They also point out that the species has disappeared from many low-lying inland sand barrens in the Northeast.<sup>7</sup>

### Northern Species

Several species occurred on Mount Everett that are rare to absent southward. Their importance, especially if the Mount Everett populations represent disjunct populations, may warrant further attention.

*Acrionicta fragilis*...(Fragile Dagger Moth): This moth may reach its southern limit in New England on Mount Everett. Although to be expected in the Berkshires, there are no records for Connecticut (less than two miles away).<sup>8</sup>

*Diarsia jucunda*...(Smaller Pinkish Dart): A northern moth that ranges southward in the Appalachians to North Carolina. In New England it reaches its southern limit in Litchfield County, Connecticut.<sup>9</sup>

*Diarsia rubifera*...(no common name)...Rings et al. (1992) reported the host as blueberry. It is common in heathlands to the north, but it is quite rare at the latitude of Connecticut.<sup>10</sup>

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<sup>4</sup> Wagner, p. 3.

<sup>5</sup> Wagner, p. 4.

<sup>6</sup> Wagner, p. 4.

<sup>7</sup> Wagner, pp. 4–5.

<sup>8</sup> Wagner, p. 5.

<sup>9</sup> Wagner, p. 5.

<sup>10</sup> Wagner, p. 5.

*Eueretagrotis attentus*...(Attentive Dart): This moth ranges west to the Pacific in Canada; in the East it occurs south to Virginia (in mountains).<sup>11</sup>

*Eurois astricta*...(no common name):...It is a northern species found across Canada from Alaska to Nova Scotia. In New England it appears to reach its southern limit in Berkshire County, Massachusetts, and Litchfield County, Connecticut...Published hosts include alder, birch, blueberry, cherry, maple, spirea, strawberry, viburnum, and willow...<sup>12</sup>

*Hesperumia sulphuraria*...(Sulphur Moth):... Although very local and rare throughout much of lower New England, it is evidently more common to the north, west, and south (in mountains). Many trees and shrubs are reported as hosts: alder, birch, blueberry, cherry, cinquefoil, currant, dogwood, hemlock, huckleberry, larch, New Jersey tea, rose, serviceberry, snowberry, and willow...<sup>13</sup>

*Perizoma basiliata*...(Square-patched Carpet): This species has not yet been recorded from Connecticut. It is common on Mount Greylock and in spruce fir areas across northern New England. The host is not known...<sup>14</sup>

*Ufeus satyricus*...(no common name):...Rings et al. (1992) described the habitat as “oak openings.” The only recorded host is quaking aspen (*Populus tremuloides*), but other members of the genus eat a range of Salicaceae (i.e., *Populus* and *Salix*)...Likely, it is common northward in the Berkshires, and of general occurrence at the latitude of central Vermont and Maine.<sup>15</sup>

## Other

*Enargia mephisto*...(no common name): This moth is rare in lower New England, but is expected to be locally common in the Berkshires and Taconics. Rings et al. (1992) report the host as unknown. Likely it is a *Populus*-specialist, as are New England's other two *Enargia*.<sup>16</sup>

*Archips fervidana*...(Oak Webworm Moth): This microlepidopteran occurs in dry oak woodlands to the north (Vermont) and west (central New York). In lower New England it appears to be closely associated with oak woodlands and scrub oak-pitch pine barrens.<sup>17</sup>

## Discussion

The bald communities of the Taconic Highlands, though small in area, are home to disjunct populations of several barrens species: e.g., *Apharetra dentata*, *Catocala herodias gerhardi*, *Euxoa perpolita*, and *Xylotype capax* (all Noctuidae). Two of these are protected species in Massachusetts. Given their isolation, I would not be surprised to learn that one or more of these populations will be proven to be genomically distinct from the coastal populations of the barren communities of Cape Cod and Long Island.

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<sup>11</sup> Wagner, p. 5.

<sup>12</sup> Wagner, pp. 5-6.

<sup>13</sup> Wagner, p. 6.

<sup>14</sup> Wagner, p. 6.

<sup>15</sup> Wagner, p. 6.

<sup>16</sup> Wagner, p. 6.

<sup>17</sup> Wagner, p. 6.



The summit moth fauna represents a curious and perhaps unique mixture of southern and northern elements. Southern taxa such as *Catocala herodias gerhardi* are able to eke out their existence presumably because of the warm, xeric microclimate in the bald areas on the southwestern facing slopes. Simultaneously, the mountain's macroclimate supports a number of northern taxa that approach their southern limit in New England on the mountain: e.g., *Hesperumia sulphuraria* and *Perizoma basiliata* (both Geometridae), and *Acronicta fragilis*, *Diarsia rubifera*, *Eurois astricta*, and *Ufeus satyricus* (all Noctuidae).

Surprisingly, none of the Lepidoptera that we deem to be rare is a pitch pine feeder. Two plants stand out as being especially important for the maintenance of the summit fauna. Scrub oak is the sole host for *Catocala herodias gerhardi* in the Northeast. A second underwing, *Catocala similis*, is also entirely dependent on the scrub oak that grows near the top of the mountain. The low-growing blueberries are the principal host of *Apharera dentata*, and may also be important for a number of other species, e.g., *Diarsia rubifera*, *Hesperumia sulphuraria*, and *Xylotype capax*.

### **The Importance of Hilltops**

By virtue of the fact that Mount Everett is the tallest peak, as well as the most defined summit in the region, it may have special significance as a mating station for many insects. The highest point on the horizon--being the most reliable topographic feature in virtually any habitat--is used by many insects as a rendezvous site for courtship and mating...Scott noted (1968) that many rare butterflies, which otherwise might have difficulty locating one another, use summits of hills and mountains to initiate mating behaviors. Invertebrates known to hilltop include butterflies (especially papilionids, pierids, nymphalids, lycaenids, and hesperiids), Hymenoptera (e.g., pompilids), and flies (e.g., syrphids, tabanids, cuterebridae, gastrophilids, oestrids, sarcophagids, and tachinids)...<sup>18</sup>

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<sup>18</sup> Wagner, p. 7.

# Rattlesnakes on Mount Everett

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January 13, 2000

There are records of rattlesnakes on Mount Everett and anecdotal references to a rattlesnake den there.

Although I have not been searching for information on rattlesnakes, I have found a number of sources while researching other topics.

*Picturesque Berkshire*, published in 1893, stated:

Mount Everett can be easily reached on foot from the town [of Mount Washington]. One of the pastimes in summer of some of the sporting fraternity of Mount Washington is to catch rattlesnakes along the mountain side where they have dens, and the oil is sold as a remedy for deafness.<sup>1</sup>

In his 1948 description of Mount Everett, A. Kenneth Simpson described an encounter with a rattlesnake at the upper parking lot: "At the log cabin on a rocky ledge overlooking the Housatonic Valley, I once vied with a determined rattlesnake for its occupancy."<sup>2</sup>

On the front cover of the July 8, 1953 edition of the *Berkshire Evening Eagle* was a photograph of Mervin Whitbeck holding a rattlesnake at the end of a pole with the following caption:

RATTLER AT BAY: Mervin Whitbeck of Mount Washington, who catches rattlesnakes for fun, captured this one and three others on Mount Everett recently in company with Bill Pollack, district wildlife manager; Alvah W. Sanborn, director of the Pleasant Valley Sanctuary in Lenox; Selectman Gilbert Isaacson and Collins (Pete) Miles of Copake, N.Y. Two of the rattlers were killed and the other two were donated to the Sanctuary, where they are now on exhibit in double-paned safety-glass pens. They replace two Sanctuary rattlers that died last year, one of them at the hands of an aggressive mouse. Although copperheads have been unofficially reported in this area on several occasions, there is no authentic record of any venomous snakes except rattlers in Berkshire County.<sup>3</sup>

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<sup>1</sup> Charles F. Warner, ed., *Picturesque Berkshire: Part II – South* (Northampton, MA: Picturesque Publishing Company, 1983), p. 81.

<sup>2</sup> A. Kenneth Simpson, "With What the Hills Are Clothed" in *The Berkshires: The Purple Hills* by Roderick Peattie, ed. (New York, NY: The Vanguard Press, Inc., 1948), p. 50.

<sup>3</sup> *Berkshire Evening Eagle*, 8 July 1953, p. 1.

Christopher Rand wrote a book of his year spent living in a cabin near Bear Mountain. He had this to say about rattlesnakes on Mount Everett:

I saw no rattlesnakes either, but they were there. One, with ten rattles, was even found basking, toward the summer's end, on the Appalachian Trail...In July I was told that the rattlesnakes, being shy, had been driven far from the Trail by the hikers, but that was hardly true in this case. A young boy discovered the snake right in the Trail itself, in the stretch where the latter crosses Mount Everett in Massachusetts. And I know of two other rattlers, at least, that were found on the plateau last summer.<sup>4</sup>

In a recent email, herpatologist Thomas Tynning said: "There's no question in my mind that there's a den on Everett; just where it is needs to be determined..." He plans to study the Mount Everett rattlesnakes this summer.<sup>5</sup>

In a letter to DEM Commissioner Peter Webber, Frank Lowenstein of The Nature Conservancy said: "...The Nature Conservancy has conducted extensive studies of the timber rattlesnake on and around Mount Everett."<sup>6</sup>

James Whitbeck, son and grandson of locally famous rattlesnake hunters, said there is a rattlesnake den on Mount Everett. He described it as being on the SSE slope.<sup>7</sup>

Lucile Van Deusen and her sister Doris Van Deusen Southergill encountered a rattlesnake on the Appalachian Trail at the south end of the Mount Everett summit while blueberry picking several decades ago.<sup>8</sup> That would have been near the location Whitbeck described.

Townpeople have numerous stories of rattlesnakes on Mount Everett.

The records of several individuals and institutions might have information about Mount Everett rattlesnakes and den locations.

Raymond L. Ditmars, a curator of the New York Zoological Society (now called the Bronx Zoo), hunted rattlesnakes at Black Rock and other south Taconic mountains for 29 years.<sup>9</sup> He fervently believed in the value of filming his scientific endeavors and amassed a quarter-million feet of film, stored in the Bronx Zoo vault.<sup>10</sup>

Dr. Ditmars's colleague, Elwin R. Sanborn, Chief of the Department of Publications and Photography at the New York Zoological Society, had an extensive collection of scientific photographs.<sup>11</sup>

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<sup>4</sup> Christopher Rand, *The Changing Landscape: Salisbury, Connecticut* (New York, NY: Oxford University Press, 1968), p. 91.

<sup>5</sup> Email from Thomas Tynning, 7 December 1999.

<sup>6</sup> Letter to DEM Commissioner Peter Webber from Frank Lowenstein of The Nature Conservancy, 4 October 1999.

<sup>7</sup> Interview with James Whitbeck and Lucile Van Deusen, Mount Washington, MA, 9 January 2000.

<sup>8</sup> Interview with James Whitbeck and Lucile Van Deusen, Mount Washington, MA, 9 January 2000.

<sup>9</sup> Morgan Bulkeley, "Rattle Tales" *The Berkshire Eagle*, 22 July 1965.

<sup>10</sup> Raymond L. Ditmars, *Confessions of a Scientist* (New York, NY: The Macmillan Company, 1934), p. 140.

<sup>11</sup> Ditmars, p. 223.

Dr. Ditmars's hunting partners were Sheffield residents Harold Roys who lived near the base of Black Rock and Rolls Smith, whom he described as "a keen naturalist [who] would rather hunt rattlers than fish for trout."<sup>12</sup> The Sheffield Historical Society may have some of their records.

Dr. Ditmars's predecessor as the Zoological Society's chief curator, Charles E. Snyder, also hunted rattlesnakes in the area. In 1929, he died of a rattlesnake bite in New York's Ramapo Mountains.<sup>13</sup>

Walter E. Brent, a naturalist from Jamaica Plain in eastern Massachusetts, was apparently knowledgeable about rattlesnakes in the western part of the state. He spoke about local rattlesnakes at a 1903 lecture to the Sandisfield Rod and Gun Club.<sup>14</sup>

Rattlesnake hunters Isaac (Ike) Whitbeck and his son Mervin Whitbeck (both long deceased) apparently did not maintain records of their catches. However, the elder Whitbeck caught rattlesnakes for zoos and museums, such as the Museum of Natural History in Springfield.<sup>15</sup> He also exhibited his rattlers at the annual Great Barrington fair.<sup>16</sup>

Mervin Whitbeck hunted with Kevin McDermott,<sup>17</sup> whose son, Court McDermott, recently retired from Bousquet Ski Area.

Bartholomew's Cobble of the Trustees of Reservations and Pleasant Valley Sanctuary of the Massachusetts Audubon Society received rattlesnakes from the southern Taconics.<sup>18</sup>

In the 1950s, Charles Munson, Forest Fire Observer at the Washburn Mountain fire tower on the western ridgeline of the southern Taconics, was considered one of the best rattlesnake men in New York State.<sup>19</sup>

The Berkshire County Commissioners' office has a collection of historical county records.

The Sheffield Historical Society, Berkshire County Historical Society, and the Berkshire School may also have records of rattlesnakes on Mount Everett.

Historical societies and libraries in Salisbury CT and Copake and Hillsdale NY may have records.

Archives and microfilm from the Springfield Union, Berkshire Courier, Berkshire Eagle and its predecessors, and other regional newspapers should be searched, as well.

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<sup>12</sup> Ditmars, p. 84.

<sup>13</sup> Raymond J. Librizzi, "A Rattlesnake Is a Gentleman," *Berkshire Eagle*, n.d.

<sup>14</sup> Ibid.

<sup>15</sup> David J. Malcolm, "Champion Rattlesnake Catcher," *The Springfield Union*, 6 August 1922.

<sup>16</sup> Raymond J. Librizzi, "A Rattlesnake Is a Gentleman," *Berkshire Eagle*, n.d.

<sup>17</sup> Interview with James Whitbeck and Lucile Van Deusen, Mount Washington MA, 9 January 2000.

<sup>18</sup> *Berkshire Evening Eagle*, 8 July 1953, p. 1.

<sup>19</sup> A. T. Shorey, "We Have Rattlesnakes," *The New York State Conservationist*, February-March 1953, p. 27.

# Mount Everett Field Notes, Tree Core Data, and Report

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December 4, 1999

## Tree Cores

### Procedure

Fourteen increment cores were obtained from pitch pines and two from northern red oaks in the dwarf forests on the S, W, and N sides of the Mt. Everett summit, during two visits: 9/26/99 and 11/7/99. (Three cores were taken by Bob Leverett and given to me for preparation and evaluation.) Two more cores, a white pine and an eastern hemlock, were obtained from Guilder Pond on 11/7/99. All cores were glued, sanded, and ring-counted; growth rates were measured and graphed on a few of the cores.

### Results/Discussion

Pitch pines cored ranged from 4.2" to 8.6" in diameter at coring height (as low as practical). Trees sampled were between 2 and 3 meters in height. Ring counts on pitch pine ranged from 75-135, with conservative estimated ages of 82-145. Pitch pine mean ring count was 101, mean age estimate was 112. The oldest trees appeared to be south and southwest of the fire tower.

Date	ID#	Species	DCH	Rings	Est. Age	Location	Notes
9/26/99	1	Pitch Pine	6.8	124	134	S of tower W of trail	
9/26/99	2	Pitch Pine	4.8	88	101	"	slow growth at center
9/26/99	5	Pitch Pine	7.2	105	120	NW of tower	slow growth at center
9/26/99	6	Pitch Pine	8.6	88	96	along trail 200m S of summit	
9/26/99	7	Pitch Pine	8.4	103	108	same as 6	pith present
11/7/99	1B	Pitch Pine	4.5	100	108	S of tower	
11/7/99	2B	Pitch Pine	5.4	135	145+	way S of tower	heavy resin in center
11/7/99	3B	Pitch Pine	4.2	80	90	SW of tower	
11/7/99	4B	Pitch Pine	8.5	108	130+?	SW 200m+ summit	sap and heart rot
11/7/99	6B	Pitch Pine	8.0	116	126	NW of tower	
11/7/99	8B	Pitch Pine	6.2	75	82	NW of tower	pith present
11/7/99	1LEV	Pitch Pine	4.5	95	105		Bob Leverett
11/7/99	2LEV	Pitch Pine	5.0	122	132		"
11/7/99	3LEV	Pitch Pine	4.6	78	91		"
<b>14 cores</b>			<b>Means:</b>	<b>101</b>	<b>112</b>		

I found these pitch pines difficult to sand, polish and count accurately due to their small sizes. As many as 80 rings per inch were present in many .25-inch areas of the cores. False rings, reaction wood, and resin impregnation lend to this difficulty, but most ring counts are likely only off by 2% or 3%, if at all. Full tree cross-sections I have seen on Mt. Wachusett and discussed in conversations with

Dave Stahle demonstrate that dwarfed pines such as these grow asymmetrically, and growth rate data for a given tree should be based on multiple cores from that same tree. After graphing several of the above cores and noting no clear signs of synchronized periods of high and/or low growth, I abandoned the graphing. I did look at all the pitch pine cores by decade and compared their relative growth rates visually. Ten of the cores appear to have increased growth rates in the 1980's, and a smaller number have increases around 1900-1910. Most other releases revealed in the cores are individual tree events.

About one half of the trees cored show rapid growth rates near their centers, with typical growth curves, but others had "ups and downs" and "slow starts" as well. The considerable variety in ages doesn't fit the theory of "one great pitch pine advents event," but I am puzzled as to why we don't have older trees, as bedrock pitch pines can get older, evidenced by recent cores taken on Wachusett Mt. I also wonder about the lack of dead trees and debris from pitch pine, which I also see on Wachusett. It's probably a complex system of localized releases and remnant trees, but I'd like to see a few older trees. They may be there, or the site may not allow for trees to reach advanced ages due to fire, ice, wind, etc.

## Other Notes

### Birds

Our visits were not in the nesting season, so important bird notes are confined to a few sightings and two exciting birds unearthed in Eleanor Tillinghast's historical research.

I noted Golden-crowned Kinglets feeding in pitch pines, apparently on insects (not the pine cones), on both visits. It was interesting to see these typical coniferous forest birds at eye level in the dwarf forest. I also noted Common Ravens, aerial and soaring around the mountaintops, on both visits.

Of far more interest was the potential presence of two birds, Bicknell's Thrush and Worm-eating Warbler:

Bicknell's Thrush is considered extirpated from Massachusetts, but is still found in high elevation spruce/fir forests in NY, NH, ME, and VT. The only Massachusetts location generally documented to routinely have Bicknell's present was Mt. Greylock, where 6-11 pairs nested between the early 30's and 1960. The population dwindled and was last recorded in 1972. One of Eleanor's historical references, George Wallace's "Four Seasons of Berkshire Lore," reported that Bicknell's was present on Everett: "a small colony is nearly always to be found summering in the stunted tree growth skirting the bald Dome." This is very interesting, and I suppose worth checking out in the nesting season in 2000, although I seriously doubt the birds are still present, given the Greylock population's demise. (By the way, the Greylock population may have disappeared due to increased disruption of the summit since the early 70's.)

Worm-eating Warblers were first confirmed nesting in our state in 1949, on Mt. Everett. (The first singing males were reported in 1923 from Bash Bish.) Again, Eleanor's references point out the presence of these birds on Everett, perhaps before 1949! Currently, Mt. Tom boasts the highest populations of these very rare nesting warblers, but I think Everett has a chance to equal this; again we need to visit during the nesting season.

Wayne Petersen, Mass. Audubon's ornithologist, was very interested in the historical references to these two birds, and in getting back to Everett; I will try to arrange for us to visit the summit in the 2000 nesting season to explore these potentials.

## **Plants**

“The whortleberry bush abounds, and the inhabitants in the vicinity flock to it in the months of August and September to gather the fruit” (from A History of the County of Berkshire, 1829). I was intrigued with Eleanor's historical reference to whortleberry, because one plant sometimes called whortleberry is *Vaccinium vitis-idaea*, also called mountain cranberry. This plant is endangered in Massachusetts and currently found pretty much only on Greylock. A Mt. Wachusett historical colony of the plant has not been relocated and is feared extirpated.

Whortleberry is most often used as a common name for *Vaccinium uliginosum* (Bilberry) which is only found in alpine situations in northern New England and further north, I believe, so that's out. It is possible that Black Huckleberry, *Gaylussacia baccata*, which abounds on Everett, could have been called whortleberry, but the timing of picking the berries in the historical reference seems late for picking huckleberries. (Huckleberries ripen about a week to ten days after blueberries in the Wachusett area, generally July to early August.)

I think its worth continuing to search for mountain cranberry on Everett. Some of the open areas on the north side of the summit looked likely to me, but I was unable to find any plants on our two visits.

## **General**

I consider Mt. Everett a virtually unique environment for Massachusetts due to its size and the extent of the dwarf pitch-pine community on the summit. It hosts some rare and unusual, if not unique species, and has the potential to preserve natural processes which we now know little about but which are important to protect. There may not be enough known about dwarf old-growth forests to evaluate Everett based on OG criteria. Regardless, it should be preserved for its uncommon community and juxtaposition. I believe it is an important piece of the nature of Massachusetts to preserve undisturbed.

Don't forget Tom Tynning's references to Eastern timber rattlesnakes on the summit. This is a state-listed species and worth having the Mass. Natural Heritage and Endangered Species Program involved in protecting its habitat on Mount Everett.

# **Tree-Ring Data and Observations on Pitch Pine Adaptations**

**David A. Orwig, Ph.D.**  
**Forest Ecologist**  
**Harvard Forest, Harvard University**

P.O. Box 68  
Petersham, MA 01366  
orwig@fas.harvard.edu

**November 24, 1999**

I have enclosed observations made by myself, Glenn Motzkin, and David Foster from our visit to Mt. Everett to examine it as a potential study site for our continuing investigations of ridge-top pitch pine /red pine communities in southern New England.

The stunted form of the pitch pine community (1 - 3 m. tall) was very interesting and we certainly consider it to be very rare for Massachusetts.

Upon a cursory reconnaissance of the summit and upper slopes, we found no direct evidence of fire at the site: there were no observed fire scars on the tree boles or lower branches and no soil charcoal. We also found no serotinous cones in our brief investigation of cones from trees on several different locations.

From several tree cores obtained on the summit and upper slopes, we believe that the forest is multiple-aged and includes very recent establishment (young seedlings) up to individuals exceeding 130 years old. This data and lack of fire evidence would suggest that pines are not currently dependent on fire for recruitment and that pines have exhibited successful recruitment up to the present day.

The following ages were obtained from pitch pines: 30,50,67,80,84,118,130, and 134. In addition, a red spruce was aged at 103 and two red oaks were aged at 80 and 90 years, respectively.

A few of the oaks surrounding the summit exhibited multiple stems and clearing for enhanced views can not be ruled out. This, combined with the relatively young ages of the stems would, in our estimation, preclude this site from being classified as true old-growth forest. This does not lessen the significance of the site in any way. To the contrary, the unusual growth form of the pines along with the site conditions and suite of associated species make this site very interesting from an ecological and historical perspective, and definitely worthy of protection. We look forward to studying this site further.



# **Tree-Ring Data, Species Identification, and Informal Report on Mount Everett Site Visit, Nov. 7, 1999**

**Rick Van de Poll, Ph.D.  
Environmental Studies Department  
Antioch New England Graduate School**

rvandepoll@antiochne.edu

**November 13, 1999  
December 12, 1999**

As far as Mt. Everett goes, I have the tree ring data as follows (in order of collection):

Yellow Birch	44 cm dbh	approx. 107 yrs (tough to read this one)
Red Oak	42.5 cm dbh	130 years (the one at the first view)
Pitch Pine	18.5 cm diam at .2 m	55 yrs
Pitch Pine	23 cm diam at .21 m	107 years
Pitch Pine	17 cm diam at .25 m	155 yrs
Pitch Pine	18 cm diam at .2 m	90 yrs
Red Oak	37.5 cm diam at .28 m	100 yrs
Hemlock	76 cm dbh	97 yrs for outer 8.25 cms only!

I concur with most authors in pointing out the fact that Mt. Everett supports a regionally rare natural community on its summit that shows little to no sign of man-induced alteration since initial settlement.

Whereas there are several low summits in New England that support pitch pine communities, dwarfism is extremely rare. Intact natural communities that exhibit little human disturbance are also rare. These two attributes point to the singular conclusion you have suggested in earlier emails, namely, that some type of state protection is warranted.

Shallow, sterile soils and the absence of soil tilth likely continues to dwarf the pitch pines, oaks, and associated tree species on the summit.

Growth rates are extremely low for both dominant species, especially for the red oak which is known to optimize ectomycorrhizal associations with pine species. However, overall mycorrhizal development is likely "stunted" as well; a full estimation of macrofungi, especially those that form mycorrhizal associations with pitch pine and red oak, is suggested during the growing season. This may corroborate the findings of Philip May relative to the comparably low (but unique) diversity of lichen species.

Tree core data suggest that Paul Van Deusen's initial age estimate of 100 - 200 years is correct, and that the relative absence of fire on the summit could result in a significant age extension of the upright pitch pine stems.

The presence of a diversity of age classes among the pitch pines suggests a continuous and self-sustaining natural community atop Mt. Everett. I agree with Tom Wessels in that this likely represents a mid-Holocene “relict” community. However, four to five thousand years of persistence also suggests a carefully mediated balance of natural disturbance and regeneration. The absence of soil charcoal, thick duff layer, and variously aged ‘recruits’ infer greater importance to those disturbance vectors pointed out by Peter Kalm in 1749, namely, “heat, dryness, and the violence of wind.” I might also add that lightning itself could be significant in exposing mineral soil to these apparently genetically consistent individuals atop this exposed summit.

Beyond this, I applaud the work of other researchers in putting together a fine documentary of uniqueness relative to Mt. Everett, and commend your “rallying call” to get all of us together in this regionally significant investigation.

# **The Pitch Pine Community of Mount Everett: Ecological Context and Importance**

**Sara Webb, Ph.D.  
Professor of Biology  
Drew University**

Madison, NJ 07940  
(973) 408-3550  
swebb@drew.edu

**January 5, 2000**

As a forest ecologist with over 15 years of experience working and teaching in a variety of eastern forest types, I offer here some perspectives on the value of the unusual dwarfed pitch pine community of the summit of Mount Everett.

## **OLD GROWTH FORESTS WITH SMALL TREES**

While simplistic definitions of old growth forest call for old trees, some long-established forest types represent intact, natural associations whose trees are not terribly old. The top of Mount Everett appears to support just such an ancient community that is well worthy of protection.

Other old forest ecosystems whose trees are not ancient include the jack pine (*Pinus banksiana*) forests of Minnesota. A fire frequency of 30-90 years keeps the flammable, serotinous-coned jack pine trees young; however, my research shows that jack pine communities harbour extremely high diversity of lichens, wildflowers, and other vascular and nonvascular plants. A long history of forest presence on these sites has provided continuity for accumulation of great diversity including rare species. Likewise, other fire-adapted pines such as lodgepole pines (*Pinus contorta*) of western North America can form long-standing, ancient forests even though the natural disturbance regime of wildfires prevents individual trees from attaining large sizes or old ages.

It is very important that “old growth” not be defined so narrowly as to exclude such forests. This issue of protecting old forests with young trees was much discussed at last year’s Old Growth Definitions Symposium at the Harvard Forest, and is also raised in Mary Byrd Davis’s book “Eastern Old Growth Forests.” Natural disturbance regimes must be accommodated in our efforts to preserve examples of natural ecological communities.

## **PITCH PINE: WHY SPECIAL ON MOUNT EVERETT**

The pitch pine (*Pinus rigida*), like jack pine and lodgepole pine, evolved with fire and yet forms forests unusual and rich in biodiversity. Consider the ecology of this pine. In the heart of its range, pitch pine grows in two types of habitats: the pine barrens of southern New Jersey and Long Island, vast plains of flat sandy soils where pitch pine predominates (even in wetlands within these

regions!), and the ridgetops of northwestern New Jersey and southern New York state (including the Shawangunk Mountains). The ridgetop habitat is what Mount Everett represents. In some places, ridgetops favor pitch pine communities because of frequent lightning strikes and resulting fires. Thus as with jack pine and lodgepole pine forests, individual trees may not be old even where the community has been intact and undisturbed by people for centuries. Note that the mixed ages of the Mount Everett pines suggest origins without fire.

Ridgetop “islands” like Mount Everett have great ecological importance, particularly toward the edge of species’ ranges. The value of outlying communities was recognized by Kentucky which designated pitch pine forests as endangered ecosystems. The genetic changes in isolated populations can prove invaluable to the species at a whole during times of climate change. Moreover, the presence on Mount Everett of both serotinous and non-serotinous pitch pines demonstrates genetic diversity within the local population, as serotiny in pitch pine has a genetic basis. The serotinous pitch pines grow slowly and are otherwise well adapted to the very high fire frequencies (5-10 year return times) of special habitats known as pygmy pine plains. Some believe this race of pitch pines is also highly tolerant of acidic, aluminum-rich soils. In contrast, the non-serotinous pitch pines have faster growth rates and predominate where fire frequencies are lower (10-30 years). As fire frequency decreases yet more across the landscape, oaks increasingly enter into the forest community.

There is little question that the Mount Everett summit includes other plants of biogeographic and ecological interest for the region. The lack of a closed canopy will promote a biota unlike that of denser forests farther down the mountain slopes. Thus, beyond the obvious aesthetic values of this site, the summit also represents a locally unusual, long-standing ecological community of somewhat isolated and naturally evolving populations.

**IN SUM**, the Mount Everett summit encompasses unusual vegetation communities with a high degree of “naturalness” and with significant ecological and genetic value. Although the gnarled trees are not ancient, pitch pines rarely grow much older in even the most pristine and well-established localities of this vegetation type unless unusual circumstances reduced the frequency of natural wildfire. In my judgement, such an unusual ecosystem deserves the most stringent of protection from development, disruption, and fragmentation.

## **REFERENCES**

The bibliography provided by Charles Cogbill is highly relevant to this discussion, particularly references to Collins and Anderson’s “Plant Communities of New Jersey,” Richard Formann’s “Pine Barrens: Ecosystems and Landscapes,” John McPhee’s book “The Pine Barrens,” Mary Byrd Davis’s book “Eastern Old Growth Forests” and articles therein.

# **Classification of Western Massachusetts Pitch Pine-Scrub Oak Ridgetops**

**Sally Shaw and Frank Lowenstein  
The Nature Conservancy**

**November 11, 1999**

## **Report excerpted with permission from The Nature Conservancy**

Pitch pine-scrub oak communities or pine barrens are a rare natural community occurring in the eastern states from Virginia to Maine. Pine barrens are associations of drought-tolerant plants that tend to occur on well-drained sand and gravel deposits and acidic rocky summits. These complex, disturbance-dependent communities are favored by frequent fire, but are subject to succession to white pine and hemlock in the northern regions and oak-pine in the south if the fire factor is removed (Bromley 1935; Bernard & Seischab 1995).<sup>1</sup>

...[R]idgetop pitch pine barrens are thought to be edaphically controlled natural communities which have probably persisted on acidic bedrock at highly xeric sites for millenia (Seischab 1996; Sneddon 1998; Batcher 1994). These communities are deserving of further study in their own right, as they provide habitat for a number of state and regionally rare plant and animal species.

Scattered ridgetop occurrences and side-slope rock outcrop communities can be found in the mountains of Berkshire County, Mount Tekoa and Shatterack in the Connecticut River valley, and in the Blue Hills near Boston. These ridgetop occurrences have some affinity to ridgetop occurrences in Pennsylvania, New York and Vermont (Anderson 1994), but have floristic differences as well, the description of which is outside the scope of this report.

Ridgetop pitch pine-scrub oak occurrences have a far more limited distribution and extent, occur in small to large patches, and approach the northern extent of their range in Massachusetts. Due to their high elevation, xeric habitat, and often steep and rocky terrain, they are less subject to development or logging pressures, and may provide refugia for fire dependent plant species. They are, however, susceptible to human impacts including littering, trampling, fire suppression, and in some areas development of viewing or telecommunications towers (e.g. Mt. Everett). They have received far less study than pitch pine communities on glacial outwash, and their ecology is less well understood (but see Seischab 1996; Bernard 195; McIntosh 1959; Laing 1994; and Patterson 1994).<sup>2</sup>

Vegetation surveys using standard releve methods were conducted in pitch pine communities on Mt. Tekoa and Shatterack Mountain in the Connecticut Valley, and on Round Mountain, Race Mountain, Mt. Everett, Alander Mountain, Black Rock [and Jug End] in Berkshire County...Comparison of pitch

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<sup>1</sup> Sally Shaw and Frank Lowenstein. *Classification of Western Massachusetts Pitch Pine-Scrub Oak Ridgetops and Natural Community Inventory of Mount Tekoa in Russell, Massachusetts* (Boston, MA: The Nature Conservancy, 1999), p. 1.

<sup>2</sup> Shaw and Lowenstein, pp. 1-2.

pine/scrub oak ridgetops in the Connecticut Valley with those in Berkshire County shows some distinct differences in the plant communities...[A scatter] graph shows the Mt. Tekoa plots falling between Shatterack and Black Rock on the first axis, and distributes the remaining Berkshire County occurrences along the second axis. The two groupings suggest the hypothesis that the spread along the first axis may be related to fire history, while that along the second axis is related to site elevation.<sup>3</sup>

To further test the hypothesis that the vegetation groupings...are somewhat related to fire history and elevation, we...correlate[d] environmental variables (including elevation, bedrock geology, aspect and fire history) with species assemblages...[W]hen environmental data is overlaid...on the plots based on vegetation alone...elevation and fire history appear to be the environmental variables most strongly related to plot distribution, although the percent of total variance explained is low.

To test whether other environmental parameters were influencing the plot distribution, we analyzed a subset of 25 plots for which we had complete data for fire history, elevation, bedrock geology, soil depth, percent cover of exposed bedrock and solar radiation index. This analysis did not substantially change the plot distribution, although 10% more variation in the vegetation was explained. Fire history and elevation again appeared to be the strongest environmental gradients, although solar radiation explained some of the distribution...Soil depth and bedrock cover were not strongly related to the major environmental axes.<sup>4</sup>

Similarities in vegetation composition and structure characterize two primary groups of plots. The higher elevation plots (average elevation 605 m.) with less recent fire (>25 years) include all plots on Alander, Mount Everett, Race Mountain, Jug End and Round Mountain (all located in the southwest corner of Berkshire County). These sites also had a lower average canopy height (2.75 m.) with a frequent to dominant occurrence of dwarf pitch pines (showing contorted growth form, low stature, and or multiple stems) and a dense low shrub layer (average 95% cover) including *Quercus ilicifolia*, *Gaylussacia baccata*, *Vaccinium angustifolium* or dwarfed forms of *Pinus rigida*. Species characteristic of these sites, but not of the lower elevation sites include *Maianthemum canadense*, *Potentilla tridentata*, *Pteridium aquilinum*, *Deschampsia flexuosa*, *Acer rubrum*, *Trientalis borealis* and *Viburnum cassinoides*.

The lower elevation pitch pine-scrub oak communities at Mt. Tekoa, Mt. Shatterack and Black Rock (average elevation 304 m.) have taller average canopies (6.5 meters, including taller oaks and white pines, or 5.3 m. including only pitch pines) and a more open understory structure (average 38% cover). Species not found in the plots sampled at the higher elevations, include *Apocynum androsaemifolium*, *Comandra umbellata*, *Schizachyrium scoparium*, *Corydalis sempervirens*, and *Vaccinium pallidum*. [Although Black Rock's] fire history is closer to the other Berkshire ridgetops[, it] shares the following species with Tekoa: *Vaccinium pallidum*, *Betula lenta*, *Melampyrum lineare*, *Kalmia latifolia*, *Carex pennsylvanica*, and *Pinus strobus*. The three Jug End plots are similar in elevation and fire history to Black Rock, although the canopy height and structure of the plots are more similar to the higher elevation sites.<sup>5</sup>

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<sup>3</sup> Shaw and Lowenstein, pp. 3-7.

<sup>4</sup> Shaw and Lowenstein, pp. 8-12.

<sup>5</sup> Shaw and Lowenstein, pp. 13-14.

## Additional Information

There has been an extensive exchange of emails and letters among many scientists, naturalists, and foresters about Mount Everett, some of which are included below. Letters from such organizations as the Appalachian Trail Conference, the Appalachian Mountain Club, and the Massachusetts Audubon Society are not reprinted here but are part of the public record.

The emails and letters are presented in chronological order. Type faces and formats have been standardized, typographical errors have been fixed, and extraneous subjects have been excised; otherwise, the texts are unedited. The carbon copy (cc:) lists have been removed to save space. Originals are available for inspection.

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Subject: Re: Thanks for taking dead-wood sample yesterday  
Date: Mon, 19 Jul 1999 14:18:30 -0400  
From: Paul Van Deusen <pvandeus@tufts.edu>  
To: eleanortillinghast@worldnet.att.net

I sanded the piece of wood from the dead tree this weekend and counted roughly 100 rings. I think it's safe to assume that there must be some pitch pines that are 150 years old on Mt. Everett. According to a book I have, the maximum age is 200 years. Therefore, the Mt. Everett site seems to qualify under Massachusetts protocol as old-growth.

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Subject: old growth pitch pine  
Date: Tue, 27 Jul 1999 09:43:26 -0400  
From: Paul Van Deusen <pvandeus@tufts.edu>  
To: tom.french@state.ma.us

Dear Mr. French:

I am contacting you to determine if the Massachusetts Natural Heritage and Endangered Species Program would have an interest in protecting what seems to be a unique old-growth site in Massachusetts. Specifically, there are about 20 acres of old-growth pitch pine on Mount Everett in Western Mass. Pitch pine typically is expected to live to a maximum of 200 years, and there are many trees at this site that are between 100 and 200 years old.

This is already State-owned land and the trees have no commercial value, which is why I am concerned that they might not be deemed important by casual observers. The center of the site is about 1/4 mile south of the old fire tower on Mount Everett. I am basing my age approximations on knowledge of the species, the appearance of the trees, and experience with dendrochronology.

Paul C. Van Deusen

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pvandeus@tufts.edu  
<http://NCASI1.nerc.tufts.edu:443>

\*\*\*\*\*

Subject: old growth progress  
Date: Tue, 03 Aug 1999 13:34:55 -0400  
From: Paul Van Deusen <pvandeus@tufts.edu>  
To: Eleanor Tillinghast <eleanortillinghast@worldnet.att.net>

I just talked to Bill Rivers with DEM in Amherst. He is in charge of cataloging old-growth in the state. He wants me to send him some information on the pitch pine site and they will send someone out to look at it. They would list it as an old-growth site and then designate it as an area that should be left alone.

He didn't seem to know about the Alander Mtn. Hemlock, so I'll include information on that, too.

Paul C. Van Deusen  
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FAX: (617) 627 3831  
email: pvandeus@tufts.edu

Bill Rivers  
MA-DEM  
PO Box 484  
Amherst, MA 01004



August 6, 1999

Dear Bill,

A section of a topographic map is enclosed that indicates the location of the 2 old-growth sites that we discussed recently. The 2 old-growth locations are:

1) A pitch pine stand on Mt. Everett. The central part of the stand can be found by going to the old fire tower on Mt. Everett and then following the Appalachian trail south for 200 yards. I estimate that the trees are from 100 to 200 years old. It would be rare to find pitch pine older than 200 years. The trees are typically less than 6 feet tall and are growing on rock outcrops, which limits competition from the surrounding oak and azalea shrubs. They exhibit typical old-growth characteristics, i.e. gnarled appearance with large upper stem branches. The extent of this site is about 20 acres.

2) A hemlock stand near Alander Mtn. I cored these trees about 10 years ago with Ed Cook of the Lamont-Doherty Geological Observatory, so their age is well documented. The oldest tree had discernible rings going back to 1620, but the center of the tree was rotten. These trees are in a ravine along Ashley Hill Brook. They start near the intersection of Lee Pond Brook and Ashley Hill Brook and run south along Ashley Hill Brook. I also enclosed a publication where I had used these data to demonstrate a tree ring standardization approach. I suspect that Ed Cook has also published on these data. These trees are confined to the ravine, which is within quite a large section of State forest.

I would appreciate being informed when you are able to visit these sites. Also, I would be happy to arrange to accompany you if that would be useful.

Sincerely,

Paul Van Deusen

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Subject: re: Unique plant communities  
Date: Thu, 12 Aug 1999 10:23:51 EDT  
From: "Swain-FWE, Pat" <Pat.Swain@state.ma.us> (Pat Swain)  
To: <eleanortillinghast@worldnet.att.net>

Dear Ms. Tillinghast,

Thanks for letting me know about Paul van Deusen of NCASI at Tufts University's study of the old growth at Mt. Washington State Forest. I'd need to see a report to know what we should be doing. Both areas are known to us, but more information is always interesting and useful. We've been interested in the scrub oak areas on Mt. Everett, but have not been as concerned about the pitch pine, mostly because pitch pine tends to become established on areas of soil disturbance. It will be interesting to read what the old growth determination involved, and if there is any information on the stand's establishment and soil condition.

You should be aware that NHESP has no regulatory authority over plant communities (rare species are different, and where they occur we are involved on a different level. I am not aware of any rare species in either of these areas.)

Pat Swain

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Patricia Swain Phone: 508-792-7270 x160  
Plant Community Ecologist FAX: 508-792-7275  
Natural Heritage & Endangered Species Program  
Division of Fisheries & Wildlife  
Rt. 135  
Westborough, MA 01581

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Subject: re: Old-growth pitch pine on Mount Everett  
Date: Fri, 20 Aug 1999 11:10:19 EDT  
From: "Swain-FWE, Pat" <Pat.Swain@state.ma.us> (Pat Swain)  
To: <eleanortillinghast@worldnet.att.net>

Dear Ms Tillinghast,

Re Don Reid's thought that NHESP had designated ridgetops as special habitat -- not exactly.

1. We don't use the legal protection language for communities, there is not a "habitat of special concern". Pitch pine / scrub oak communities are a "priority community type", which just means that we focus on protecting and studying them, and encourage other people to do so. It is not a regulatory or legal designation -- the term was purposely picked as having no regulatory implications.
2. Several years ago Natural Heritage put ridgetop pitch pine / scrub oak communities on a list of communities we wanted to know more about. We ended up not funding any focused study. But the Conte refuge did fund The Nature Conservancy to do a comparative study of Conn. Valley and Berkshire pp/so communities. I believe the report is in the process of being written. I've not seen it.

I've forwarded your question about moths to a moth expert, but he's out this week.

NHESP doesn't track mosses. I will forward your request to our botanist (who is also on vacation), to see if he has any mossy contacts. But, dry ridgetop habitats are not the sort of place where mosses abound, and are unlikely to have been studied explicitly. Lichens are more likely, and the botanist may know if the active lichen group has looked at pitch pine ridgetop lichens. They are unlikely to have comparative information even if they've visited a few stands.

Pat Swain

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Patricia Swain Phone: 508-792-7270 x160  
Plant Community Ecologist FAX: 508-792-7275

Natural Heritage & Endangered Species Program  
Division of Fisheries & Wildlife  
Rt. 135  
Westborough, MA 01581

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Subject: Re: Pitch Pines  
Date: Mon, 13 Sep 1999 10:20:15 -0400  
From: David Orwig <orwig@fas.harvard.edu>  
To: "Bob Leverett" <bleverett1@sphs.com>

Hello Bob, how are you doing. Not to sound like I am pumping up my own staff, but feel I am doing a disservice by not including Glenn Motzkin in this discussion. Glenn (which I think you know) is a leading expert on pitch pine communities in the east, his ecological monograph and recent funding to study pitch pine from Long Island northward into Nantucket, the Vineyard, Cape Cod, etc. are just a few of his many accomplishments with Pitch pine. I also mention him because he and I are very interested in the Mt. Everett site as being one of several in a study of pitch pine red pine communities that we are planning for southern New England (Glenn already knew of this site, just didn't know the ages). He will certainly be an asset to this cause. Thanks and take care.

Dave Orwig

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Subject: Re: Pitch Pine  
Date: Sun, 22 Aug 1999 11:36:18 -0400  
From: Karl Davies <kdavies@igc.org>  
Organization: Davies & Company  
To: Johnie Leverett <johnie.leverett@chicopee.com>

You wrote earlier that this is a DWARF pitch pine stand, yes? I just found something on dwarf pitch pine in a paper I wrote years ago on Native American agroforestry practices. See the Indian Agroforestry link in the "where to start" section at <http://www.daviesand.com> (urls being revised). Here's the reference (end of section VI) and some cites:

The precocity and productivity of apple and other tree species have been increased by grafting scions with good fruiting characteristics onto dwarfing rootstocks [82]. Little [46] ascribed the low growth habit of pitch pines in a frequently burned environment to genetic dwarfing. Perhaps dwarfing rootstocks of pine and other species (e.g., shagbark hickory) could be obtained from areas which have experienced frequent fires over long periods.

46. Little S (1972) Growth of planted white pines and pitch seedlings in a south Jersey plains area. Bull NJ Acad of Science 17: 18-23.

47. Little S (1974) Effects of fire on temperate forests: northeastern United States. In: Kozlowski TT, Ahlgren CE, eds, Fire and Ecosystems: 225-250. New York: Academic.

48. Little S, Moore EB (1949) The ecological role of prescribed burns in pine-oak forests of southern New Jersey. Ecology 30: 223-233.

Bob, let me know if you want copies of those papers. They should be here somewhere.

If these really are dwarf pitch pines, they could be of interest to members of the Northern Nut Growers Association (<http://www.icserv.com/nnga>) who are trying to develop Korean pine as a food source in this country. Nearly all the pine nuts you find in stores come from Korean pines growing in China and Russia. The species grows well here too, but is very slow to bear cones/nuts unless grafted. I believe it grafts to pitch pine as well as white pine.

Karl

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Subject: Re: Mount Everett  
Date: Mon, 13 Sep 1999 09:17:26 -0400  
From: twessels@antiochne.edu (Tom K. Wessels)  
To: johnie.leverett@chicopee.com

Don't limit the old growth pitch pine association just to Mount Everett. It is also present on the exposed eastern ledges of Race Mountain and the domed summit of Bear Mountain to the south, plus other smaller pockets. I'd guess that the coverage of this old growth association on the eastern side of this section of the Taconics is in excess of 150 hectares.

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Subject: Mount Everett  
Date: Mon, 13 Sep 1999 22:59:45 -0400  
From: "Johnie Leverett" <johnie.leverett@chicopee.com>  
To: "ELEANOR TILLINGHAST" <ELEANORTILLINGHAST@WORLDNET.ATT.NET>, "Pat Swain" <pswain@state.ma.us>, "BILL RIVERS" <BILL.RIVERS@STATE.MA.US>, "PAUL VAN DEUSEN" <PVANDEUS@TUFTS.EDU>

Hi Eleanor, Bill, Pat, and Paul (hello others):

Eleanor, while the visit to the summit of Mount Everett is still fresh in my mind, I'd like to share my thoughts with you, Bill, Pat, Paul, and the others. First a big thanks to you, Paul Van Deusen, for alerting us to the old growth pitch pine community on the summit of Mount Everett. Paul, your instincts about the significance of the site were almost certainly correct, so we can't thank you enough. Gary Beluzo's and my impression of the summit of Mount Everett is that it is an ecologically significant place, possibly very significant, possibly unique. The advanced age and extensive dwarfing of the pitch pines (their bonzai appearances) and their often almost krumholtz-like character on the rocks represents a far different adaptation of that species than just a response to xeric, mountain top conditions. They are as endearing and as aesthetic as any trees I've seen in Massachusetts. I'm hoping that we can now put together an interdisciplinary team that will include representatives from Mass Audubon (Joe Choiniere, Tom Rawinski, Heidi Roddis), Pat Swain from Natural Heritage, a

lichenologist, a mycologist, an ornithologist, forest ecologists from Harvard Forest (John O'Keefe and Dave Orwig) and of course Gary and myself. I'm also going to consult with pitch pine experts such as Professor Charles Williams and dendrochronologists Ed Cook and Dave Stahle. From what I saw, Mount Everett deserves every benefit of the doubt and we can ill afford to allow others to insensitively press forward in this ecologically sensitive and probably very ecologically important place with development plans until we have thoroughly studied the Mount Everett summit. If I am right, then the summit is far too important to sacrifice to the blight of telecommunications towers, expanded roads, etc. However, strong feelings aside, we need to do some real scientific work on that summit. I think we've got an ecological jewel.

Now to Mount Everett. Beyond the pitch pines, the number of species of trees on the Everett summit surprised me. The following list is cursory and identifies the species as a component of the forest. I do not include the exotics within the fenced in area around the old tower.

Species	Component Status	Old Growth Status
Pitch pine	Major	Advanced ages
Bear oak	Major	Medium to advanced ages for species
Red oak	Medium	Becoming established on the summit - some advanced ages
Gray birch	Medium	Becoming established on the summit
Red maple	Minor	Becoming established on the summit
Mountain ash	Minor	
Quaking aspen	Minor	
White birch	Minor	
Black cherry	Very Minor	
White pine	Very Minor	
Hemlock	Very Minor	
Red spruce	Very Minor	
Striped maple	Very minor	
Witch hazel	Very minor	
Yellow birch	Very minor	

We observed six or seven shrub species in the area. We need to do a complete census. The blue berry community is prolific. The herbs and mosses are much more extensive at the summit than I had expected. The overall plant community on the summit is far more intact and evolved than I had imagined it to be. I had pictured the pitch pine community at an earlier stage of development, but Mount Everett harbors no ordinary pitch pine-bear oak community. Trips to the summit of Connecticut's Bear Mountain and surrounding peaks give a comparison. The summit of Everett has an intact organic layer. Again, I was not expecting that. Given the occurrence of the old pitch pines, the accumulation of organic material on the summit is impressive, almost an anomaly. As a side note, Mount Everett's sides harbor a wealth of old growth and mature re-growth forests. Tad Zebryk, formerly of Harvard Forest, and I dated hemlocks on the east side from 300 to 350 years of age, yellow birch from 250 to 300, black birch from 190 to 210, white pine from 200 to -275 years. I struggled through very mature thickets of mountain laurel - about as mature as I ever see. Lower on the sides of the mountain, one can find a scattering of very mature tulip poplars - some are extremely impressive trees. As a final observation, even if the plant community on Mount Everett's summit should turn out not to be as significant as I think it is (I seriously doubt that will be the case), that fine mountain should

not be degraded by the usual unsightly assortment of communications antennae and structures that we think we have to locate on the summits of prominent mountains. Mount Everett is a special place and should remain so.

We have tragically allowed significant degradation to occur to both the sides and summit of Mount Wachusett at Princeton, MA - the predictable outcome of allowing vested financial interests, with NO sensitivity to the ecological or historical values of the mountain, to get a stranglehold on the mountain. I am committed to doing what I can to prevent a repeat on Mount Everett.

Bob Leverett

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From: WILLIAM MARTIN <NARMARTIN@ACS.EKU.EDU>  
To: <JOHNIE LEVERETT>  
Sent: Monday, September 27, 1999 9:50 AM  
Subject: Re: Mount Everett Pitch Pine

Bob,

Regarding pitch pine forests: Look at literature on the famous New Jersey Pine Barrens; there is at least one book; dwarf forest of sterile sands with fire history. Here in Kentucky, pitch pine communities are one of the endangered forest communities of the state. Because of fire suppression and logging along with confinement to sandy soils on the driest of sites on the Cumberland Plateau, only a few remnants remain. The best representative I know is an open pitch pine forest on Pine Mountain. Associated species are chestnut oak, with an ericaceous understory dominated by mountain laurel and Vaccinium spp. This site was recently purchased by the state and the management agency is trying to figure out the needed prescribed-fire regime; fire history is unknown but the site has one. The trees are not stunted but site productivity is low and growth is slow. Pitch pine forests are fire ecosystems associated with sandy (or coarse-grained) soils on dry sites. An ecological equivalent of the Mount Everett should be the Pine Barren forests. Interesting systems.

I enjoy reading the emails, Bob; keep them coming.

Bill

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Subject: Second Mount Everett Visit  
Date: Mon, 27 Sep 1999 11:15:38 -0400  
From: "Robert Leverett" <Robert.Leverett@sphs.com>  
To: <Peter.Webber@state.ma.us>

Dear Commissioner Webber:

This is an update to keep you personally informed on the progress of our study of the vegetative community on the summit of Mount Everett in the township of Mount Washington, Massachusetts.

Yesterday, representatives of Mass. Audubon surveyed the summit with professor Gary Beluzo and myself. Eleanor Tillinghast, representing the Town of Mount Washington, accompanied us. We took 5 tree cores to develop age profiles on the pitch pines. We'll need one additional visit for that purpose. We also took one core from a northern red oak. We'll be examining the cores over the next few days. Professor Gary Beluzo took GPS coordinates for each cored tree. Interestingly, every tree species shows fascinating growth patterns. The natural bonsai forms of the little pitch pines immediately catch the eye, but the other species are also significant. My son Robert located a completely mature, perfectly formed white birch, no more than 8 feet tall. Contrary to what might be imagined, the little white birch's form is not the least contorted. It is beautifully symmetrical – just miniaturized. Incidentally, John Knuerr, who is a photographer and a Friends of Mohawk Trail State Forest board member, is documenting the vegetative community on Mount Everett for us. We will have plenty of photographic impressions to present at the appropriate time.

What is especially important for you to know is that the vegetation on Everett's summit is a curious blend of species commonly associated with xeric and mesic communities. For example, bunchberry plants grow adjacent to very mature colonies of huckleberry. This suggests a prolonged absence of significant fire on the summit. We are looking for corroboration. Concurrent with our site visits is a detailed survey of historical references to the mountain. So far our search supports our belief that Mount Everett's summit has not been subjected to any recent fires.

As for future site visits, on October 17th, ecologist Dr. Tom Wessels from Antioch New England Graduate School will visit the summit with us and help us interpret signs of more recent and past fires. Before Tom's visit, Dr. David Orwig and Glenn Motzkin from Harvard Forest will probably have visited the summit and added their observations to the till. Dr. Charles Williams from Clarion University of Pennsylvania, and a specialist in pitch pine, will make a visit to assist us. Dr. Rick Van de Poll, a mycologist from Antioch has indicated an interest in assisting us. Like Tom Wessels, Rick Van de Poll would be a valuable addition. He is a seasoned field scientist. Of course, we have excellent botanists like Pam Weatherbee to also help us identify all the plant species on the summit and document any unusual, rare, or endangered ones. I would further expect, and hope, that Dr. Paul Van Deusen, who originally sounded the alarm, would continue to visit the mountain's summit and provide us with his insights.

On this point, I note that the accumulating insights of the scientists, naturalists, and foresters who have supported the study effort to date firmly support the initial opinion of Gary Beluzo and myself that the Mount Everett summit is no ordinary place, and in fact, may be extraordinary. Peter, I would be less than candid if I were to attempt to project the impression that I'm not enthusiastic about the vegetative communities on Mount Everett's summit. However, I am not jumping to conclusions. We will be thorough in this investigation.

On a related subject, on the way to Mount Everett's summit, we walked around scenic Guilder Pond, the State's highest natural body of water, I am told. Guilder Pond is almost completely surrounded by a swath of bonafide old-growth forest. It represents another old growth site that we can add to our list. My preliminary calculations suggest an acreage of between 12 and 16 acres of class 1A old growth. Hemlocks show highly advanced age characteristics. I am anticipating ages in excess of 300 years. My colleague in the old-growth survey that we are doing for Bill Rivers is Professor Gary Beluzo who is an aquatic ecologist. Gary was interested in what he saw at Guilder Pond and hopes to investigate the aquatic communities there. A natural body of water, surrounded almost entirely by old-growth forest,

located near the summit of an historically important mountain is not to be taken lightly. Nor are other features of Everett.

A number of years ago, growing on the east side of Mount Everett, Harvard Forest graduate student Tad Zebryk and I found one of the most fully developed communities of mountain laurel that I had seen. That still holds. Along the drainages, we documented old growth hemlocks, yellow birch, and black birch to great age and significant size. Of course, the rattlesnake community near Black Rock adds significantly to the mountain's overall ecological significance.

The immediate challenge is to learn as much about the plant communities of Mount Everett's summit as we can, as quickly as we can. Our efforts to attract scientists to the mountain are bearing fruit and will confirm its significance, one way or the other. However, we will eventually need to launch a more formal study such as that done for Mount Wachusett. I would propose a joint three way effort to involve Harvard Forest, Mass. Audubon, and Friends of Mohawk Trail State Forest. Friends would map the old growth stands, Mass. Audubon would develop a complete plant census, and Harvard Forest would develop a paleo-ecological profile. According to Tom Wessels, what we conclude for Mount Everett's summit will likely apply to Mount Race.

Peter, a part of my background of which you may be unaware is that I am the retired president of management consulting firm. I held the position of executive vice president and then president for 22 years of Management and Planning Systems Inc. I am no stranger to organizing interdisciplinary efforts and seeking input from many sources to arrive at supportable conclusions. Something you may have surmised by this point is that I am absolutely intolerant of incompetence - an example of which was the woefully inadequate performance of the consultants hired by WMA to implement the proposed ski expansion on Wachusett Mountain. WMA and their consultant let you and Todd Frederick down badly, thereby placing the two of you in an embarrassing and almost untenable position. I for one will always be grateful to you and Todd Frederick for making a principled decision in that front-loaded situation. I well understand the kinds of pressures that were placed on the two of you. A bitter lesson in the unfortunate history of the Wachusett Mountain ski expansion was that WMA's big money did not buy an ounce of competence. Perhaps, it wasn't supposed to, just allegiance. Enough said. However, I assure you that this will not happen on Mount Everett. You and the Commonwealth will receive accurate, objective assessments of the nature of Everett's plant communities from highly experienced field scientists who have no vested financial interests. They stand on their reputations, not on paychecks from their employers. You will know the ages of the pine and oak cohorts, a census of species, their relative rarity, as individuals and as communities, etc. This is my pledge to you.

Bob Leverett  
Executive Director,  
Friends of Mohawk Trail State Forest

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Subject: Mount Everett Pitch Pine  
Date: Mon, 27 Sep 1999 21:08:27 -0400  
From: "Johnie Leverett" <johnie.leverett@chicopee.com>  
To: "Susy Ziegler" <sziegler@geography.wisc.edu>,  
"Chuck Williams" <cwilliams@vaxa.clarion.edu>,  
"Alan White" <WHITE@APOLLO.UMENFA.MAINE.EDU>,



"Tom Wessels" <twessels@antiochne.edu>,  
"Sara Webb" <SWEBB@DANIEL.DREW.EDU>,  
"Stan Warner" <WARNERS@HQ.FORESTRY.STATE.VA.US>,  
"Robert Van Pelt" <abies@olympus.cfr.washington.edu>,  
"Rick Van De Poll" <RVANDEPOLL@ANTIOCHNE.EDU>,  
"Steve Trombulak" <trombulak@msmail.middlebury.edu>,  
"Matt Therrell" <therrell@comp.uark.edu>,  
"Pat Swain" <pswain@state.ma.us>,  
"Rob Stevenson" <rstevenson@umbsky.cc.umb.edu>,  
"Dan Sperduto" <d\_sperduto@gwsmt.dred.state.nh.us>,  
"David Stahle" <dstahle@comp.uark.edu>,  
"Steve Selva" <sselva@maine.maine.edu>

Hello Everyone:

Today Gary Beluzo, Joe Choiniere, Heidi Roddis, John Knuerr, Eleanor Tillinghast, my son Rob and I visited the dwarf forest on the summit of Mount Everett. It was as enchanting as my previous visit and even more interesting. We keep seeing more to fascinate us. Rob found a fully mature white birch that was at most 9 feet tall. The dwarf pitch pines still steal the show. They are from 100 to 200 years of age and you can reach to the top of most, but every tree species on the summit is dwarfed. The Mount Everett forest is truly enchanted. There is a very heavy organic layer on the summit, which is especially interesting, given the dominance of bear oak, pitch pine, northern red oak, and gray birch; i.e. an old fire regime.

We are extremely interested in receiving scientific input on pitch pine communities from as many knowledgeable sources as possible. We suspect that the Mount Everett summit harbors a very ecologically significant plant community that has evolved to reflect a mix of climatic extremes. Presently, everything points in that direction, but we want to leave no stone unturned. Several of the recipients of this e-mail have already agreed to visit the summit and help us with our interpretive work. This e-mail is sent to them to keep them informed. For the rest, any help or direction you could give would be most appreciated by us, but most of all, by that Tolkien-like forest.

Bob

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Subject: Re: [Fwd: Pitch Pine]  
Date: Tue, 28 Sep 1999 07:42:38 -0400  
From: Karl Davies <kdavies@igc.org>  
Organization: PACT  
To: Johnie Leverett <johnie.leverett@chicopee.com>

As I understand it, fire regimes force selection for precocity. It's a matter of species survival. So inasmuch as dwarfing is part of the physiological manifestation of precocity, it would stand to reason that there would be genetic dwarfing in these trees.

Karl

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Subject: Re: Mount Everett Pitch Pine  
Date: Tue, 28 Sep 1999 10:15:09 -0400  
From: Sara Webb <swebb@drew.edu>  
Organization: Drew University  
To: Johnie Leverett <johnie.leverett@chicopee.com>

I would love to see the Mount Everett site. Pitch pine grows in New Jersey not only as the dominant throughout the southern New Jersey pine barrens, on flat sandy soils, but also on ridgetops in northwestern NJ, along what is called the Kittatinny Ridge. The same ridge, formed with and parallel to the Appalachians, is called Blue Mountain in Pennsylvania and the Shawangunk Mountains in NY. In New York the Shawangunks ("Gunks") have pitch pine communities that probably resemble the Mt. Everett site; these have been studied by research associates of the Mohonk Preserve. I think Marc Abrams has done some work there. (My own work in the Gunks has been in mesic deciduous forests, but I've seen the pine "paddies" while on lichen forays).

I am pretty certain that fire is part of these systems; the ridgetops aren't really high enough (at least in NJ) for climatic gradients to explain the xeric vegetation - although obviously the shallow stony soils are also involved. The NJ ridgetop pitch pines that I have seen are not the serotinous races but have cones that open seasonally. Lightning strikes ridgetops more frequently, of course. However we also know that people (European Americans) set fire to the NJ ridges and slopes to promote the growth of blueberries.

So perhaps this info provides some interesting context. Bob I hope you'll send me directions so I can pop up and visit the site. Thanks so much for suggesting that I get involved in studying this place. Who else is planning to do what there? My research plate is very full (as are all these other plates I have spinning!) but I confess to being very intrigued.

Dr. Sara Webb  
Professor  
Biology Department  
Drew University  
Madison, New Jersey 07940 USA  
973-408-3550  
swebb@drew.edu

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Subject: Mt. Everett Tree Cores and Site Visit  
Date: Sat, 02 Oct 1999 10:47:03  
From: Wachusett Meadow <wachusett@massaudubon.org>  
To: Eleanor Tillinghast <eleanortillinghast@worldnet.att.net>,  
Bob Leverett <dbh.guru@chicopee.com>,  
Gary Beluzo <gbeluzo@hcc.mass.edu>, hroddis@massaudubon.org,  
Frank Shea/AMC <kbler@tiac.net>, John Knuerr <jknuerr@rcn.com>

Dear Everetteers;

It was an enlightening visit to Everett's summit on Sunday, with the unique company of each of you and the thought provoking dwarf forest community spread across so many acres. I have had time to prepare and read the 7 tree cores we collected. I also measured (crudely, given the narrowness of these rings!) yearly growth ring width and graphed it by calendar year for all trees cored. I will email excel files with in-depth and full results soon, but for now the basic details are below:

Tree#	Location	Species	Diameter 1' off ground	Ring Count	Est. Age
1	Summit	Pitch Pine	6.75"	124	132
2	Summit	Pitch Pine	4.75	87	101
3	W Summit	Pitch Pine	7.00	ROT	ROT
4	NW Summit	N. Red Oak	11.25	109	117
5	N Summit	Pitch Pine	7.75	98	108
6	S Summit	Pitch Pine	8.60	(89)	ROT pockets
7	S Summit	Pitch Pine	8.40	101	106

The cores have some interesting features. For example, the Northern Red Oak core, which we hit almost dead center on, shows a very slow growth rate at the beginning of its life, with a couple of releases in 1900-1905 and 1915-1920. The oak's growth rate steadily but slowly increases until recently. The pitch pines vary considerably back and forth between slow and more rapid growth periods, with some synchronizations and also some anomalies. One synchronization I see is the time period 1916-1922, and again 1965-1979 when most cores show very slow growth. Some of the pitch pine growth rings are just fractions of a thousandth of an inch. Of course, these results are simply interesting, as we would need more information to piece together what has truly happened up there. The centers for the pines are never symmetrical. Two of the cores included both sides of center (because the trees are so small, I went straight through and out the other side before I realized!), and I found the differences in growth rates on two sides of the same tree interesting.

At first I thought that the larger half of the tree grew exactly the same as the smaller half, with a simple linear adjustment. I'm not so sure now. I have a 7" pitch pine section from a 100 year old pitch pine tree cut for trail work at Wachusett, and I think I see a tendency for the tree to grow on different sides at different rates at different times. I will check with Dave Stahle about this.

This community could be more ancient than the core ages suggest. Several indicators of ongoing long term dwarf forest were present, in my very naïve opinion. I was impressed by the depth of the organic soil layer near the largest trees, and I was careful to ensure that the soil had not accumulated in a depression or due to any concentration factor. Soils were often 8 inches thick to bedrock, and one of the cored trees had organic soils in excess of 11 inches. I have no experience to tell me how long these thick layers take to build up, but I find them interesting and possibly indicative of advanced community age. I found several "rings" of four or more, 4"+D, pitch pines which I feel developed as root or buried branch sprouts from an older, central pitch pine after its demise. Imagine a large and ancient pitch pine whose roots and/or branches sprout (during its life or after it dies, burns, or etc.) The sprouts carry on after the "parent" tree dies. Kind of like the lines of hemlocks which represent ancient nurse trees. What we see is the ring of trees, the continuity. What do you all think? We also observed numerous very large, up to 8"D, roots supporting much smaller trees and sometimes associated with large root collars. These may represent ancient plants which have survived generations

of alternating above ground growth with total pruning by fire, wind, ice, etc. and subsequent regrowth. Robbie's miniature mature birch (paperXgray) was such a tree, and I also observed red oaks and pitch pines with this characteristic. Heidi even suggested that we might core the root systems, which I have sent a message to Dave Stahle about.

Clearly Mt. Everett represents an unusual, if not unique, example of how the physical and biological forces of nature combine to produce a system which works for the spare parts available. I saw the dwarf forest on Everett as not only Tolkienesque but Archaen, something that I imagine could almost be limitless in its tenure on earth (glacial advances notwithstanding). The forces here have created something which is a time-influenced representation of life's flowing creativity.

I look forward to another trip, a few more cores, and discussion with some of the pine and fire experts, as well as with all of you.

Joe Choiniere

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The Nature Conservancy  
Massachusetts Office  
Berkshire Program  
P.O. Box 268  
Sheffield, MA 01257

October 4, 1999

Peter Webber, Commissioner  
Department of Environmental Conservation  
100 Cambridge Street  
Boston, MA 02202

Dear Commissioner Webber:

On behalf of The Nature Conservancy, I want to applaud your recent decision to allow a full-fledged ecological assessment of the summit of Mt. Everett to go forward prior to developing any further uses of the fire tower at the summit. For the last six years, The Nature Conservancy has been developing information about the ridgetop. It appears to be one of the most significant natural resource areas in the southwestern portion of the state, and may well have significance at a larger regional scale. The conservation of these unique natural resources can best be assured through the development of a comprehensive plan for the summit and similar ridgetop areas under DEM ownership, which could address the role of the fire tower in a larger context.

The conservation significance of the summit arises in large measure from the dwarf pitch pine-scrub oak forest that dominates the summit. Such dwarf ridgetop pitch pine-scrub oak communities are known only from the summit of Mt. Everett, the summit of Mt. Race and the Shawangunk mountains of New York State. This is an extremely limited distribution. It is not known whether the dwarfing is genetic or environmental in origin, but observations on Mt. Everett dating back to 1839 characterize the summit as covered by dwarf pines (Weatherbee 1992). This points to an unusual stability in the

structure of this community that bespeaks a strong pattern in environmental conditions. The Nature Conservancy has sampled the vegetation atop Mt. Everett, Mt. Race and a number of other summits in Massachusetts under contract to the U.S. Fish and Wildlife Service; a report that compares these communities is nearing completion (Shaw and Lowenstein, in preparation).

Research scientists from the University of Connecticut and the State Museum of New York have also sampled the summit of Mt. Everett for moths (Wagner and others, in preparation). Their work has identified several regional rarities, and an overall moth fauna that bears strong resemblance to that found at more coastal pitch pine-scrub oak sites.

Finally, The Nature Conservancy has conducted extensive studies of the timber rattlesnake on and around Mount Everett.

The conclusion of each of these studies has been that Mt. Everett is a unique environment with strong significance for rare species and natural communities. Yet the summit area already shows some trampling and disturbance from heavy visitation, as well as both the existing fire tower and a no longer present tower. Prior to committing to the development of a weather station in the existing tower, The Nature Conservancy feels the state should develop a comprehensive conservation plan for the summit.

The study being led by Bob Leverett will form an excellent foundation for such a plan. We stand ready to provide any logistical or scientific support we can, and particularly offer our expertise at turning scientific data into strong conservation planning. Thank you again for your farsighted decision to proceed with this study.

Very truly yours,

Frank Lowenstein  
Geoffrey Hughes Berkshire Program Director

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Subject: Mt. Everett Visit  
Date: Mon, 18 Oct 1999 16:21:57 -0400  
From: "Robert Leverett" <Robert.Leverett@sphs.com>  
To: <twessels@antiochne.edu>

Dear Tom:

We all want to thank you for your generous assistance to us in the study and interpretation of the plant community on the summit of Mount Everett. Your expertise is widely recognized and we are indebted to you for your interest in these upland pitch pine communities of the southern Taconics. I'd like to summarize for all the recipients of this e-mail what we have learned about the Mount Everett plant community. If I may, I would like to make one more request and that is for you and the others to correct any misinformation or premature conclusions on my part as they relate to what you and they have observed on the summit and in our e-mail.

Again, Tom, you have our deepest appreciation for your assistance.

Bob

Observation/Conclusions To Date About the Mount Everett Plant Summit Communities:

1. The pitch pine-bear oak-gray birch-northern red oak community on the summit of Mount Everett occurs very infrequently across the New England landscape. From your experience, outside of a few summits of the southern Taconics, you have encountered this plant association in only one other New England location and that is in Acadia National Park, Maine. The Mount Everett community also occurs on nearby Mount Race and on Bear Mountain in Connecticut. The Mount Everett pitch pines represent the known upper elevational limit of pitch pine growing in New England. The summit of Everett on the latest topographical maps as shown in meters converts to 2608 feet.
2. There is a fair probability that pitch pine has been a constituent of the Everett summit plant association for possibly as long as 6,000 years, however, more work needs to be done to confirm this. The most obvious explanations for pitch pines continued presence is: (1) the glaciated summit of Everett which scraped off all the soil and exposed the weather resistant bedrock, (2) the unusually frequent occurrences of thunder storms and with lightning strikes in the southern Taconics to generate spot fires, (3) the possible wider use of the summit by Native Americans, and (4) the severe winter wind-ice combinations that create sub-alpine conditions and continuously prune back the vegetation.
3. There is a combination of serotinous and non-serotinous cones on the pitch pines indicating the complex interplay of weather elements. The build up of the highly flammable duff layer beneath the pines occurs directly from the resistance to decay of the pine needles and the resin-filled trunks and limbs. The buildup of needles and bark around the base of the pitch pines can be up to a foot deep. This high fuel load permits fires to burn hotly when started. The fires probably occur on a cycle of 100 to 200 years, but this period could possibly be considerably longer (250 - 300 years) on occasion, for the pitch pine community to persist. Extensive areas of huckleberries are a further indication of a fire history of the summit.
4. The plant community is in a gradual state of succession from pitch pine and bear oak to northern red oak, the latter being a more vigorous competitor in the absence of fire.
5. The pitch pines regenerate from seeds and maintain themselves from stump sprouting to a degree. They do not root sprout so there is no clonal reproduction of either the pines or the bear oak.
6. From Eleanor Tillinghast's growing research, no historical records exist of fire on the mountain's summit, though the serotinous cones and the mere existence of pitch pine points to periodic fire. Eleanor's research pushes the fire-free period back to 1908. This does not preclude a few unreported spot fires. Eleanor's research indicates the summit of Everett has been long recognized as the habitat of unusual species.
7. The ages of older pines lie between 100 and 150 years. Cores have now been taken by Paul Van Deusen (2), Joseph Choiniere (4), Bob Leverett-Gary Beluzo (5). and possibly Dave Orwig-Glenn Motzkin. All collected data points to the 100 - 150 year age range.
8. The juxtaposition of dry land and wetland species on Mount Everett is not in and of itself that unusual. There are wet areas on the summit that permit bunchberry and other such plants to exist near the dry areas.

9. So far a total of 14 tree species have been inventoried growing on the summit of Mount Everett along with several shrub species.

10. Other rare or uncommon species that have been documented on the summit of Everett include a couple of species of moths. I do not remember their names. The Natural Heritage Program has the names.

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Subject: Re: Mt. Everett Visit  
Date: Tue, 19 Oct 1999 08:18:55 -0400  
From: twessels@antiochne.edu (Tom K. Wessels)  
To: Robert.Leverett@sphs.com  
References: <s80b492b.036@sphs.com>

Bob,

It was a great morning to amble up Everett. I have a few responses to your synopsis.

This association is uncommon, but scattered throughout exposed uplands of southern and central New England. What makes this pitch pine/bear oak community unique is its physical structure. The only other place I have seen wind-stunted pitch pines like those on Everett is on the granite balds of Mount Desert Island, Maine.

I was quite surprised to see almost no serotiny on Mt. Everett's pitch pines while Bear Mountain's pitch pines (roughly four miles to the south) show high levels of serotiny. This suggests these are genetically different populations and that the fire frequency on Mount Everett may be longer than one or two centuries. This makes me think that although only 300 feet higher, Mount Everett has much greater wind exposure than Bear Mountain. I'm going to see if one of our environmental biology students might want to do a community comparison between these two summits as a master's thesis.

A lot of the red oak on the summit are multiple-trunked. Unless someone cut those oaks to maintain the view (something I doubt for an area of that size) the age of these stems would date back to the last summit fire which I'd guess was sometime in the 1800s. Just because there are no reports of fire on this summit doesn't mean the summit has been fire free. The fuel levels are building up to the point where another summit fire is a possibility.

To see if the pitch pine/bear oak community on this ridge system dates back 6,000 or more years, something that I think it has a good likelihood of doing, I'd core some of the ridgetop wetlands and conduct a pollen study. If you want company to check out any of the other summits on this ridge system, I'm willing and able.

Tom

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Subject: Re(2): Mt. Everett Visit

Date: Wed, 20 Oct 1999 09:56:19 -0400  
From: rvandepoll@antiochne.edu (Rick D. Van de Poll)  
To: Robert.Leverett@sphs.com

Bob;

A couple of thoughts in response to the red pine / pitch pine communities in New England:

1. Red pine is completely absent on the summit of Mount Everett and the answer to what constitutes viable red pine habitat in southern New England is still a puzzle to me, except perhaps as a relict.

Red pine appears to prefer a more "continental" climate in the Northeast, that is, hotter and drier summers where more frequent thunder storms create favorable fire conditions. However, soil drought is a pre-requisite, as is sufficient fuel loading. This limits natural occurrences to outwash plains in the lowlands and thin-soil rocky summits in the higher elevations (we have very few low, rocky ridges as in the Canadian shield). I suspect we'd find more red pine pollen from the hypsithermal period 5,000 years ago throughout the region, although I'd love to hear from someone who has sampled soil cores in lowland sites to confirm this.

2. In her growing research, Eleanor Tillinghast has yet to find any mention of fire of any size on the summit of Everett which seems to correlate with the low number of serotinous cones as observed by Tom. Dave Orwig's data and ours all point to a range of pitch pine ages from about 80 to 150 years. No clear patterns have emerged so far. Also, Dave did not identify any fires scars or charcoal. I don't recall Tom identifying any either.

What strikes me is the lack of an obvious initiation date here. A broad set of age data may help detect a pattern, although it sounds as if we've had multiple, low frequency fires that have gone unnoticed in recent history. Such a condition may be enough to initiate regrowth but not enough to stimulate serotiny. I recall reading from Little's work in the New Jersey pinelands that 45-50 year fire frequency was required for the latter.

3. My sense is that the pitch-pine community is gradually shrinking as the northern red oaks progressively overtop the pines. This was Tom's observation, also. So far, the red oak cores suggest an age range back to perhaps 130 years. We need more datings for the oaks, but I just do not see the age characteristics to suggest any ages over the 120 - 140 year range. Those with long memories of the summit condition say that the establishment of red oak has progressed noticeably in their lifetimes.

How tall are the red oaks? And if their ages overlap with the pines, does this suggest the scattered, low frequency fire regime again?

4. We don't have a grip on the natural fire frequency of Everett or surrounding high points. I really want to get to the top of Frissell which is 2,453 feet elevation and see what it looks like there. I got the feeling that Tom is thinking in terms of 100 to 200 years between fires of any size on the Taconic summits. Maybe longer for the Everett summit.

Just a guess, but I suspect a "Monadnock" type fire history - i.e. a thick cloak of red spruce and fir 8500 - 10,000 BP that blew down and was severely burned, leaving a relatively organic-free summit. Hard to buy the glacial scour theory - i.e. that left the summit basically barren. Might be interesting to



hypothesize about native-set fires as well. Then again, I imagine that most of you folks who have been there have already thought of that.

Rick

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Subject: Re: Peter Kalm's Travels in North America  
Date: Wed, 27 Oct 1999 10:02:13 -0400  
From: "Pamela B. Weatherbee" <pamweath@bcn.net>  
To: eleanortillinghast@worldnet.att.net

Hello Eleanor:

Thanks for your Kalm excerpt. What limits the vegetation on those summits of the Taconics, I think, is more a factor of the kind and amount of soil left by the glacier (very little in this case), the type of bedrock (very acidic), fire either Indian-set or lightning, and the nutrient supply to the vegetation, which would be poor because the summit is flat and there is little movement of nutrients. Mt. Greylock range to the north has higher summits but is still treed quite luxuriantly to the summit and there are very few bare outcrops. Summits there are Schist, I don't know what Mt. Everett's bedrock is, but supposedly Mt. G is an outlier of the Taconic System. Possibly, these lower summits like Alander and Mt. Everett are farther south, lower, were scraped clean by the glaciers, and may also be hotter and drier. I don't think wind is an important factor. But these are all my personal opinions, based on observation and reading. Pine Cobble, here in Williamstown, elev. 1800", has some nice Pitch Pine forest. It has burned a lot in the past, and also the bedrock is Quartzite which very hard, acidic and sterile. Indians burned areas that were good blueberry grounds, as this is a way to perpetuate blueberry fields.

It is an interesting question why the mountain tops are so different. I hear the Bob Leverett thinks the Pitch Pines are old growth, which is wonderful, in many ways.

Pam

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Subject: Re: Mt. Everett, pitch pine ages, and old-growth criteria  
Date: Wed, 03 Nov 1999 09:58:30 -0500  
From: "Robert Leverett" <Robert.Leverett@sphs.com>  
To: <jchris\_haney@twis.org>

Hi Chris:

Thanks ever so much for the information below. It is precisely the kind of input that we need. I am hoping other scientists will share their experiences/knowledge of the species with us. Every bit helps.

DEM has not actually applied age criteria to the pitch pines as of yet. Part of my role is to help them assess the significance of the Mt. Everett summit plant community by assembling the best scientific information available, whatever the final decision. So your input is very, very timely. Thanks again.

I, myself, have vacillated on the age criteria because of the longevity of the pitch pines in the Shawangunks. However, it appears that those ages are very exceptional. At least I've read or heard nothing to the contrary. At this point, the maximum ages we've obtained for the Mt. Everett pitch pines are just under 150 years. I expect that were we to look long enough, we would slightly exceed that number. There are plenty of candidates.

You point to the central problem of applying a "one size fits all" kind of OG criteria. Local conditions must be considered. One only has to look to a few species to see why this is so. As we know, the longevities of bald cypress, northern white cedar, eastern red cedar, and even eastern hemlock span remarkable ranges. Were we to employ Dave Stahle's maximums for bald cypress (1,500 - 1,700 years) and Doug Larson's maximums for northern white cedars (also 1,500 - 1,700 years) in the application of an OG age criterion to stands of those species, then 500 year old trees of either species would fail the OG test. I think we would all recognize the absurdity of going that route.

The problem is that we have far too little understanding of the age ranges to be expected of different species growing in different conditions. DEM certainly needs our help in establishing those ranges. We've really got our work cut out for ourselves.

Thanks again, Chris. Any additional light you can shed for us on the species will be greatly appreciated.

Bob

>>> "Chris Haney" <jchris\_haney@tws.org> 11/02/99 05:24PM >>>

Hi Bob--

Reading some of the responses to your posted message led me to do a bit of sleuthing on the typical ages of mortality and longevity for *Pinus rigida*. In a wonderful little paper authored by Craig Loehle which summarizes life history attributes for many of our eastern trees (1988. *Tree life history strategies: the role of defenses*. *Can. J. For. Res.* 18: 209-222), the typical age of mortality for this pine is listed as 100 years, and the maximum age of mortality listed as 200 years. By these figures, the pitch pines on Mt. Everett would seem to me to qualify as old growth by any reasonable measure. Using some rigid size criterion (either tree or stand area) would be especially questionable on such a confined and exposed site. Sounds to me like DEM's criteria are far too arbitrary for this setting. Indeed, maybe it should serve as a warning to us all of the dangers of employing rigid old-growth thresholds and other cutoffs that are not sensitive enough to the particular canopy species, cover type, etc.

Cheers,

J. Christopher Haney, Ph.D.  
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(202) 429-2641 tel  
(202) 429-3958 fax  
jchris\_haney@tws.org e-mail

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Subject: Re(2): Mt. Everett  
Date: Thu, 04 Nov 1999 07:05:24 -0500  
From: rvandepoll@antiochne.edu (Rick D. Van de Poll)  
To: Robert.Leverett@sphs.com  
References: <s81d78d9.064@sphs.com>

Bob;

Just a couple of thoughts on your invitation to consider an "expanded" definition for old growth relative to the Mt. Everett pitch pines:

I suggest that we do not try to fit the proverbial square peg into a round hole - i.e. the Mt. Everett pitch pines have a distinction that goes far beyond old growth. Their relative uniqueness in New England suggests that we recognize their contribution to biological diversity first, and then their so-called old growth nature second. While this may not fit into a regulatory scheme as far as protection goes, it should. I have been trying to encourage the protection of rare natural communities for quite some time. Short of identifying them and suggesting appropriate management strategies to private landowners, I believe we have a long ways to go to get the comparable protection afforded state or federally listed rare and endangered species.

Short of our upcoming site visit where I might see signs to the contrary, I suggest we look at the maximal ages of the Mt. Everett pitch pines as intermediate relative to their overall potential. Whereas the Shawangunk pines are over twice their age, what evidence do we have that the Mt. Everett pines WON'T get to 3-400 years? What if our histories are not reliably comprehensive and that a "clock-setting" fire did occur 150 years ago? How about the "Saxby's Gale" of 1869? Perhaps we ought to wait around a while and see if these pines keep on going...or don't you think you'll make it to 300?

Rick

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Subject: Progress  
Date: Mon, 08 Nov 1999 16:17:21 -0500  
From: "Robert Leverett" <Robert.Leverett@sphs.com>  
To: <brivers@state.ma.us>, <Leslie.Luchonok@state.ma.us>

Hello Bill and Leslie:

On Sunday, Dr. Rick Van de Poll assisted us in our continued study of the plant community on the summit. We are in his debt as well as the others who have generously donated their time. The period that you and I agreed on for us to do a preliminary study of the plant community atop Mount Everett is quickly drawing to a close. Sara Webb may still visit the mountain in time for me to incorporate her observations in the final study report that I'll soon be putting together for you. In the interim, I want to continue keeping everyone current on our progress. That allows others an opportunity to present new ideas and suggestions to us in time for us to be able to do something with them.

I'll soon request concluding observations from each participant, which will then be made part of the final report. You'll read the exact words of the contributors, not my interpretations. I do not want to misinterpret anyone's conjectures, observations, opinions, conclusions, etc. The final report will be inclusive of all the research that we have done.

Below is a summary of my personal conclusions (strictly mine) at this point.

1. With respect to individual plant and animal species, there are a few uncommon, and maybe rare, species growing on Mount Everett's summit. An in-depth study has a fair probability of finding a few more species.
2. The whortleberry interpretation (mountain cranberry versus huckleberry) is as yet unresolved. The scattered dwarf white birch on the summit may be of the variety *Betula papyrifera* var. *cordifolia*.
3. At least one alpine-subalpine lichen (*Cetraria icelandica*) has been observed by Dr. Rick Van de Poll. A more complete lichen analysis must await the work of Philip May and judging by how many days were required to cover Wachusett Mtn., we probably need a week from a lichenologist to thoroughly botanize the summit.
4. We do not have good data on the mosses on the Mount Everett summit.
5. The old-growth status of the summit is subject to debate and will probably continue to be among members of the scientific community. I remain uncertain in my own mind about the proper old growth classification. Presently, I believe that Class 2B is highly supportable (most old growth characteristics, some human disturbance) with a good chance of eventually moving up to Class 2A (most old growth characteristics, no recognizable human disturbance, except for the area around the tower).
6. Taken as a whole, for New England and maybe the entire Northeast, the plant community on Mt. Everett's summit is rare, if not extremely rare. It is the assemblage of plants, the individual niches they fill, their unusual development, and the overall molding environment, that creates the rare status of the plant communities on Mount Everett and nearby Mt. Race summits.
7. The dwarf pitch pines on and around the summit are among the best representations, if not the best representations, of pitch pine dwarfing known anywhere. This is a strong affirmation of the ecological value of the pitch pine. Other places have stunted pitch pine and isolated dwarf trees, but the pitch pines on the summits of Mt. Everett and nearby Mt. Race form remarkable communities. It is not sufficient to merely state that the pitch pines on the summits of Everett and Race are dwarfed without providing a context. So far as I am aware, the degree of dwarfing on Everett is unsurpassed.
8. At some point between 150 and 200 years ago, there was probably an unrecorded fire that accounts for most of the mature pitch pines that we have dated. These pines are between 100 and 150 years of age. However, historical accounts make it clear that the summit of Mount Everett has been covered in dwarf vegetation for over 200 years, if not considerably longer.

9. Based on current research, the Native American presence on the mountain appears to have been considerable, making it more than just a possibility that summit vegetation was influenced by Native American activity centuries ago.

10. The vegetation communities on the summits of Bear Mountain in Connecticut, Brace Mt. in New York, Mount Frissell, Mt. Ashley, Alander Mt., Mt. Everett, Bash Bish Mt., Cedar Mt., and Fray Mt. in Massachusetts have all been recently examined and the dwarf pitch pine communities are limited to the summits of Everett, Race, and to a lesser extent, Bear.

For me, the views from the summit of Everett are among the best in the Commonwealth. The views westward toward the Catskills are breathtaking. The vistas to the east are inspiring. The bonsai pitch pines are picturesque, if not exotic in appearance. The ambiance of Everett far exceeds that of the better known, but greatly defaced, summit of Mt. Greylock.

Bob

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Subject: Re: Progress  
Date: Tue, 09 Nov 1999 08:31:32 -0500  
From: twessels@antiochne.edu (Tom K. Wessels)  
To: Robert.Leverett@sphs.com

Bob,

Just one clarification. Dwarfed pitch pines like the ones on Everett, and every bit as intriguing, also occur on some of the granite summits of Mount Desert Island, Maine and the north ridge of Mount Cardigan, New Hampshire. Although Mount Everett is not alone, it remains one of a handful of ridgetop dwarfed pitch pine communities which are definitely unusual.

Tom

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Subject: re: Progress Report  
Date: Wed, 24 Nov 1999 13:40:28 -0500  
From: "Robert Leverett" <Robert.Leverett@sphs.com>  
To: <brivers@state.ma.us>, <Leslie.Luchonok@state.ma.us>

Bill and Leslie:

I now have Harvard Forest's and Philip May's reports. I doubt that I'll get any more until just after Thanksgiving. Rick Van de Poll, Tom Wessels, Eleanor Tillinghast, and Joseph Choiniere have indicated that they will be sending reports. Eleanor has two summits yet to check (Ashley and Bash Bish). That will give us a cursory look at all the southern Taconic summits for comparison to Mt. Everett. Sara Webb (Drew University) has agreed to provide a broad overview for us of pitch pine communities to help us put Mt. Everett into context with other sites based on her rather extensive experience.

We now have gotten cores that extend the tree-ring chronology back to 160+ years. Allowing for growth to the base, it now appears that 170 years represents the maximum ages for the summit pines. Given that the average maximum pitch pine age is usually given in Dendrology texts as 200 years, the Mt. Everett trees would seem to meet the age criteria for old-growth pitch pines. However, we know that the Shawangunk pines date to 330 years. Using the latter figure as the maximum longevity, the Mt. Everett trees would probably fall shy of old growth status.

However, I have problems with applying a range-wide maximum longevity to a local area, unless there is uniformity across the range of a species. For example, many of our Berkshire-Taconic old-growth hemlocks are between 175 and 350 years of age. In parts of Pennsylvania, eastern hemlocks commonly live to over 400 years and on occasion exceed 500 years. Applying a maximum longevity of, say, 550 years to our hemlocks, would produce misleading results. Incidentally, extrapolations have produced maximum ages for *Tsuga canadensis* over 600 years. None of us accept those extrapolations.

I'm not 100% confident that the hemlock analogy holds for the Mt. Everett pitch pines, since pitch pine is so disturbance dependent. Either way, it continues to be a close call. What isn't a close call is the rarity of the ridgetop dwarf pitch-pine communities. In that regard, Mt. Everett clearly stands out.

Philip May has found an extremely rare lichen on Mount Everett. He has sent samples all the way to Germany for testing. His report contains all the details. He did one hell of a job for us. Just a few thoughts as we near the end of the study. Happy Thanksgiving to the both of you.

Bob

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Subject: Re: another rattlesnake on Mount Everett  
Date: Tue, 7 Dec 1999 14:40:31 -0500  
From: Tom Tynning <tynning@shaysnet.com>  
To: <eleanortillinghast@worldnet.att.net>

Eleanor:

There's no question in my mind that there's a den on Everett; just where it is needs to be determined, along with a bunch of other items. I have a lead on a funding source for some transmitters and I have a couple of students who might be willing to help me on a project down there next summer, but it'll be a bit before I will know for sure. One BCC student from Sheffield is setting up an Independent Study with me and I'm thinking she might be a good person to try and collate all rattlesnake info from Southern Berkshire county. Would you be willing to let her interview you and others?

Tom

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# Old Growth Is Where You Find It

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*Eastern Old Growth Notes*

Holyoke Community College professor Gary Beluzo and I are in the process of conducting an “official” inventory of old growth sites on lands managed by the Commonwealth of Massachusetts Department of Environmental Management (DEM). We are mapping the boundaries of each site, recommending buffer areas, and building a multi-purpose GIS database for use by the state and research institutions like Harvard University’s Harvard Forest. We have until December 2001 to complete the work. Our project will support the existing old-growth protection policy, promulgated by DEM, and pending legislation, and is motivated by our desire to provide a more permanent level of protection for the old growth. The Massachusetts Audubon Society is the driving force behind the legislation. Gary’s and my mission is to make an intensive search to find any residual old-growth stands that heretofore were missed. As we map, we identify the major species growing on each site, establish formal study plots in the more significant sites, document exemplary features and specimens at all sites, take tree cores to determine average stand age, and rank the sites in terms of their relative ecological, historical, and aesthetic importance.

We are up to thirty-eight old-growth sites and will probably reach forty-five before our inventory is finished, possibly fifty. Neither of us views this project as a contest to bag old-growth sites, but given the amount of territory we have yet to cover, the predicted numbers are not only realistic, but virtually guaranteed. A decade ago, nobody I know, including me, would have thought that so many old-growth sites would have survived in populous Massachusetts. By 1996, I thought I had found them all. However, to keep the number of potential sites in perspective, their combined area will likely not exceed 1,500 acres out of the over 3,000,000 acres of forested lands in Massachusetts and over 5,000,000 of total land in Massachusetts. As a percentage of either figure, old growth in Massachusetts remains exceedingly rare. Even with this qualifier, the mounting number of individual sites is exciting. But how could so many old-growth stands have been missed? The simple truth is contradictory -- they were and they were not. This statement requires explaining.

An old-growth site on private property may be known locally to a few, but remain hidden from both public officials and determined old-growth sleuths for decades. Gary Beluzo, John Knuerr, and I were recently led to one of the best old-growth hemlock stands in the state, which none of us had previously seen. The stand is on private land and is not publicized. I’m told that a similar situation awaits us on our next visit to New Hampshire. Other examples could be cited. Some of these unpublicized old-growth pockets on private land are proving to be highly significant. The lesson I’ve learned is that the lack of publicity, either intentional or unintentional, has kept a surprising number of important old-

growth spots hidden from us. However, the private parcels are the lesser part of the story. There is a much larger, little tapped reserve of eastern old growth in non-commercial stands of stunted trees.

The search strategies we've used to identify potentially lucrative areas and the search images we've employed to spot old-growth candidates, at a distance, have missed an entire class of old growth – the non-commercial pockets lying on steep, dry slopes, on high mountain summits, and in wetlands. These places can be in full view of a major road. As a generalization, we can attribute their slipping through the cracks to our society's preoccupation with wood products – a point of view that settled in the collective consciousness well back in early colonial times. The no nonsense, utilitarian mindset of our ancestors induced a lasting bias toward forests as commercial resources and diverted attention from forested areas not suited to timber harvesting. This persistent bias was rudely shaken in the early 1990s when the "Lord of the Rings" himself, Dr. David Stahle, Director of the University of Arkansas's Tree Ring Laboratory, predicted that a large acreage of non-commercial old-growth forest had survived intact, and strongly admonished us to protect it. Dave and his doctoral candidate Matthew Therrell became the champions of the Cross Timbers community of western Arkansas and Missouri and eastern Oklahoma. I fell in love with the centuries-old post oak communities on a visit to the Frank tract in Oklahoma in October 1995.

But most of us doubted that Dave's old-growth predictive models could be applied broadly, and certainly not to the settled Northeast. Dave suspected otherwise, and he was right. The turnaround for me came upon my recognition of the stunted old-growth chestnut oak-pitch pine communities in the western Taconics, partly in New York, partly in Massachusetts. Then came the stunted northern red oak forests of Wachusett Mountain in central Massachusetts. Now we have old-growth pitch pine, scrub oak, gray birch communities on the exposed ridge top of Mount Everett to investigate with new eyes. Beyond this, Rick Van de Poll of Antioch New England Graduate School is opening the door to fire-successional communities on the central New England monadnocks. All these jewels include the historically important species *Pinus rigida* (pitch pine), and the pine communities are diverse.

Mount Everett is a large dome-shaped peak on the eastern side of the Taconics in southwestern Massachusetts. Its modest 2,608-foot height belies its visual impressiveness and dominance of the surrounding countryside. Everett rises abruptly from the lowlands of the Housatonic River to the east. The base to summit rise is almost 2,000 vertical feet. Mount Everett (or the Dome) is a genuine mountain. More to the point of this article, the rounded summit of Mount Everett harbors a non-commercial old-growth forest that until Dr. Paul Van Deusen sounded the alarm had gone unrecognized. The mountain's summit is subject to extremes of climate, and as a result, a fascinating vegetative community has evolved that includes cohorts of dwarf pitch pine scattered within a thick cover of scrub oak. The community is of unknown origin. References to "yellow pine" on the summit date back to at least 1839. Residents do not recall any fires on the mountain top, and the successional nature of the forest community there speaks to this. Today, northern red oak and gray birch have penetrated the scrub oak and pitch pine along with nine other sparsely represented tree species and five or six shrubs. Blueberries are prolific.

The pitch pine community at the summit of Everett is precariously balanced. The Appalachian Trail crosses the summit and, unfortunately, hikers and casual visitors tend to amble off trail. The community is sensitive to human disturbance. Young pitch pines take root in the cracks of rock and snake along the surface like krumholtz, but since they are young trees they can be easily damaged by being stepped on. The mature pines are 4 to 10 feet tall and their gnarled, twisted forms are exquisitely artistic. The pines form a natural bonsai forest, although a dynamic one. At present, we are guessing



that the Mount Everett pitch pines got their start perhaps 200 years ago. In time, and with the help of Harvard Forest's paleo-ecologists like Dr. David Orwig and Glenn Motzkin, we shall know more.

Apart from trampling by hikers, the pitch pines are potentially threatened by another source. The state, which owns the summit and a good portion of the slopes of Mount Everett, plans to refurbish the old fire tower and to install telecommunications equipment on the summit. This has local protectors of the mountain like Eleanor Tillinghast, her husband Morgan Bulkeley, and other residents of the town of Mount Washington worried. As part of their efforts to protect the mountain, Eleanor Tillinghast and others have been researching the origins of the forest. There are local oral histories of Indian terraces on the mountain. So far, the material is all anecdotal, but the possibilities are promising. There is a good chance that Mount Everett was used, perhaps extensively, by the Mohican Nation of Native Americans, featured in the writings of James Fenimore Cooper. Mount Everett was Mohican territory. Many people in the small town of Mount Washington, Massachusetts are passionate about protecting their mountain, and rightly so. Its treasures are many, and not limited to the pitch-pine community on the summit. The eastern slopes of Mount Everett harbor ancient hemlocks that Tad Zebryk and I dated back in the early 1990s to over 350 years, yellow birch to approximately 300 years, black birch to over 210, and white pine to over 250. We were surprised to find growing on the lower slopes some of the state's finest native tulip poplars. I had read or heard nothing about those trees.

My familiarity with the eastern slopes of Mount Everett does not come from a casual visit or two. On at least a dozen occasions, I have followed the contours around Everett, frequently becoming entangled in the thickets of mature mountain laurel. The physical difficulty of successfully penetrating the laurel is punctuated by thoughts about the whereabouts of possibly surviving rattlesnake colonies. In the laurel, every trunk and branch takes on the form of a snake.

A unique feature on Mount Everett is Guilder Pond, the largest upland body of water in the state. The pond is surrounded by a very mature forest, which lends something of an air of mystery to the surrounding region. One gets the distinct that in the distant past, the pond was an important, secretive place. Perhaps what is most visually obvious about Mount Everett is that it has not been degraded with the usual network of paved roads, parking lots, unsightly towers, slum-like campgrounds, and God forbid, the bane of all noble mountains – downhill ski operations. In fact, the mountain is as close to pristine as we have in Massachusetts. That great sister mountain to the north, Greylock, has not been as fortunate – all the more reason to protect Mount Everett. Yes, the Dome feels like holy ground and a growing number of us intend to see that it stays that way.<sup>1</sup>

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<sup>1</sup> Robert T. Leverett, "Old Growth and Big Trees Are Where You Find Them," *Eastern Old-Growth Notes*, III, No. 3 (Fall 1999), 1.

**Preliminary Bibliography**  
**Pitch Pine Ridge Communities of the Northeast**  
**With Particular Reference to Mt. Everett, Massachusetts**

**Charles V. Cogbill, Ph.D.**  
**Forest Ecologist**

ccogbill@plainfield.bypass.com

**November 3, 1999**

I threw this together to start the process of a proper ecological assessment and hope it shows the depth of work already done on pitch pine on Mt. Everett. Interpretation of the history, vegetation development, botany, ecology, and natural history of the site should follow with more field work. (As a footnote, I've been naturalizing there since the 1950s).

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Additional unpublished sources on Mt. Everett: Tom Siccama and Art Johnson whose classes have been going here with the Litchfield Field School; C.V. Cogbill: Griscom Field Club trip of May 1961 and field notes of reconnaissance on 10 Apr 1976; local botanists/naturalists such as Pam Weatherbee, Alvah Sanborn, Tom Tynning, Frank Lowenstein, Rene Laubach, Tom Rawinski, and Frank Egler who unfortunately is no longer with us.