

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.

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.

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

NCASI
Department of Civil Engineering
Tufts University
Medford, MA 02155

phone 617-627-2228, FAX 617-627-3831
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
NCASI
Department of Civil Engineering
Tufts University
Medford, MA 02155

phone 617-627-2228, FAX 617-627-3831
pvandeus@tufts.edu
<http://NCASI1.nerc.tufts.edu:443>

NORTHEAST REGIONAL CENTER
Department of Civil Engineering
Tufts University
Medford MA 02155
(617) 627 2228
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

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

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

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

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

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

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

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.

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

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

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

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

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

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

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

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

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.

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

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

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

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@twos.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.
Ecology and Economics Research Dept.
The Wilderness Society
900 17th Street, NW
Washington, DC 20006
(202) 429-2641 tel
(202) 429-3958 fax
jchris_haney@tws.org e-mail

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

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

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

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

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
