



*e*NTS

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eNTS: The Magazine of the Native Tree Society

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The Native Tree Society (NTS) is a cyberspace interest groups devoted to the documentation and celebration of trees and forests of the eastern North America and around the world, through art, poetry, music, mythology, science, medicine, wood crafts, and collecting research data for a variety of purposes. This is a discussion forum for people who view trees and forests not just as a crop to be harvested, but also as something of value in their own right. Membership in the Native Tree Society and its regional chapters is free and open to anyone with an interest in trees living anywhere in the world.

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I want to remind the readers of this magazine that the articles presented here are only a part, usually just the beginning, of the discussions being held on our BBS at <http://www.ents-bbs.org> . The full discussion can be read by clicking on the link embedded in the title of each individual article. - Edward Frank

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New England Trip

by **tomhoward** » Sat Sep 01, 2012 12:46 pm

NTS, Here is a narrative of the New England trip my brother Jack Howard and I took in Aug. 2012:

Jack Howard and I traveled through New England from Aug. 14-22, 2012. We had nearly perfect weather, warm (but not hot) and sunny.

Our first stop was Northampton, MA, where we visited some sites associated with Sylvia Plath. We explored Childs Park, and I tested the measuring equipment Ed Frank loaned me (Nikon Prostaff 440 laser rangefinder, clinometer) along with the scientific calculator I bought. I measured some of the beautiful White Pines in Childs Park to heights of 108.9 ft., 84.6 ft., 105.4 ft. (2 trees same height), 120 ft.

We also walked by the house on Elm St. (MA route 9) where Sylvia Plath and Ted Hughes lived from 1957-58. The big White Pine that I saw next to this house Oct. 14, 2011 (and about which I wrote a poem that was published in Plath Profiles this year) was gone, a stump in its place. We saw a lot of storm damage in Northampton, and this tree was probably a storm victim. It was a big White Pine, easily over 100 ft. tall.

We next explored Look Park, and its glorious White Pines, especially the Totem grove (with a totem pole at edge), a site Bob Leverett knows well. I tested the equipment there, and came up with 2 White Pines taller than Bob's measurements. I got 141.8 ft. on the tree that Bob listed as tallest, and 143.6 ft. on another White Pine rising out of the brush. I'm sure that Bob's measurements are the most accurate – the figures I got are, no doubt, errors due to misreading the angle to the top of the tree on the clinometer, and to my inexperience with this equipment. I would acquire a lot more proficiency with the equipment at the Bowdoin Pines in Brunswick, ME.

We also spent some time at Smith College, saw some interesting trees there like Zelkova, Sycamore, but it was already evening, and we had to look for a place

to eat dinner.

On Aug. 15, we went to eastern Massachusetts, to sites associated with Sylvia Plath in her home area – she was born in Boston, and spent much of her life in the Boston area. We stopped by her home in Wellesley, MA, where she lived from 1942-1957 (except when she was at Smith College in Northampton MA, Cambridge England, and other places), a nice white house in a beautiful tree-filled neighborhood, with a row of tall White Pines on one side. Then we went across Boston to Winthrop, where Plath lived from 1936-1942, in something like a magical childhood by the sea, which she writes movingly about in her poem "Point Shirley" and memoir "Ocean 1212W". It was beautiful there by the ocean – and also by Logan Airport, where we watched planes take off and land, some planes flying right over our heads.

Aug. 16, we visited the Endicott Pear Tree in Danvers, the oldest European tree in the New World, planted by Puritan leader John Endicott about 1632. We last saw that tree in Apr. 2010 when it was in bloom; this time we saw it in leaf, and fruit. It is a very small but gnarled old tree, no more than about 15 ft. tall. Otherwise, the old tree looks the same as last time, but the 2 Scots Pines that flanked the Pear Tree in 2010 are gone now.

We next spent some time in Salem, before heading for Maine on Aug. 17. We took I-95 north into Maine, and long before we left MA, we were traveling through a vast fragrant sunny forest of White Pine. The Maine Welcome Center on I-95 is in a lovely fragrant grove of White Pine with some Pitch Pine.

We stayed in Maine from Aug. 17-21, basing ourselves in the Brunswick area, where we surveyed the awesome Bowdoin Pines, and the glorious tree-filled campus of Bowdoin College. See separate report about the Bowdoin Pines, filed under Maine.

We also explored the Pemaquid Peninsula, where we had spent so many happy times in childhood. We went to Colonial Pemaquid State Historic Site, where since 1965, there has been a major archaeological dig, in which the remains of one of the earliest and

most important English colonies in the New World, have been uncovered. Over 100,000 artifacts have been dug out of building foundations nearly 400 years old, and many of these artifacts are displayed in an excellent museum on the site. We went to this site many times in childhood. The oldest house foundations at Pemaquid have been dated to about 1625, but the site was settled by seasonal fishermen from 1612 or earlier. The Pemaquid Colony was the site of the first pirate raid in New England in 1632 (about which I wrote my children's novel *The Treasure of Norumbega*), and the town at Pemaquid was destroyed twice by Native Americans – first in 1676 (rebuilt in 1677), and again in 1689. Pemaquid was the site of 4 English colonial forts, a fort built about 1630 (also used as tavern and trading house, raided by pirates 1632, destroyed 1676), Fort Charles 1677-1689, Fort William Henry, built as a “strong” stone fort in 1692, destroyed by the French in 1696 (the fort was surrendered after the French fired a few mortar rounds into it; a replica of the stone tower of this fort was built in 1908, and contains an excellent military history museum – the tower replica is a prominent local landmark), and Fort Frederick 1729-1775.

The forest of the interior of the Pemaquid Peninsula is mostly White Pine and Red Oak, with lots of Red Maple, Paper Birch, some Hemlock, Red Spruce, Balsam Fir. Closer to the ocean the forest changes to picturesque boreal-looking stands of mostly rugged Red Spruce, some White Spruce and Balsam Fir. The trees are not very tall, but they have lots of character, due to stormy sea winds sculpting their branches.

We went to Pemaquid Point, one of the most dramatic places on the coast, where the open ocean meets the rocky shores, waves crashing on rocks in rough weather, a famous lighthouse (built 1835 – it is on the Maine state quarter), with rugged Spruce forest behind the rocky shore. One could spend hours watching the sea, the ceaseless coming and going of the waves up and down the rocks, and the air is wondrously fresh, and fragrant of the sea. Monhegan Island, 12 miles out to sea, looked much closer due to the clarity of the air.

We also stopped at Pemaquid Pond, a beautiful 6-mile long lake in the interior of the Pemaquid

Peninsula, on the shores of which we spent so many magical summers so long ago. Its shores and islands are still lined with tall fragrant 2nd growth White Pines about 80-100 ft. tall (I measured a White Pine near the public boat launch near the northern end of the lake to 102.6 ft.).

On Aug. 21, we reluctantly left Maine, traveled to Killington, VT. On the way we explored the awesome Ordway Pines of Norway, ME, the biggest and tallest trees we would see on our trip (see separate report, filed under Maine), and we also went to the Tamworth Big Pines, NH (see separate report, filed under New Hampshire).

On Aug. 22, we visited Gifford Woods State Park (see separate report, filed under Vermont), and then returned to North Syracuse.

Tom Howard

[Bowdoin Pines, Brunswick, ME, Aug. 2012](#)

by **tomhoward** » Sat Sep 01, 2012 1:07 pm

NTS, From Aug. 17-21, 2012, my brother Jack Howard and I stayed near Brunswick, ME as a center point for our explorations of mid-coast Maine. We passed through the famous Bowdoin Pines several times. This was our first trip to this part of Maine in nearly 40 years, but we went to this part of Maine every summer in childhood. One of the highlights of these childhood trips was the passage through the Bowdoin Pines on what used to be US Route 1. Route 1 now bypasses Brunswick, and the old route through the Pines has been re-numbered Maine Route 24.

The Bowdoin Pines are on the east side of the beautiful campus of Bowdoin College, and in that part of the campus towering White Pines are everywhere to be seen. The Bowdoin Pines are still as spectacular as they were to us as children.

This post is, in a sense, an answer to the ENTS report

made by John Knuerr in 2006, to my knowledge the only survey report made about this site by our group. In 2006 John Knuerr found that the Bowdoin Pines were in poor condition in what seemed to be a sewage outflow. There could have been a severe storm that caused the conditions he described.



Passage through Bowdoin Pines ME 24

When Jack and I visited the Bowdoin Pines in Aug. 2012, they were as glorious as ever, an extraordinarily beautiful forest of tall healthy White Pines, and the air was filled with the wondrously spicy and cleansing fragrance of White Pine. There are hundreds, possibly thousands, of these tall rough-barked trees in this stand, which is said to cover about 33 acres. The main route through them (State Route 24 now) is breathtakingly grand, a passage of about one fourth mile (at most) with masses of towering White Pines reaching high into the sky. This

is possibly the Northeast's closest equivalent to California's Avenue of the Giants, an even more spectacular sight than the road through the Tamworth Big Pines in New Hampshire, which The Sierra Club Guide to the Ancient Forests of the Northeast says is the closest equivalent to that famous California road through the Redwoods. The approach to the Bowdoin Pines from the east across the open airfield of the former Brunswick Naval Air Station is most impressive; the Pines are seen to be reaching dizzying heights from far away, a mighty green wall of rugged windswept trees. They seem to be much taller than they actually are, so charismatic are they. This passage through the Bowdoin Pines is a sight every ent must see.

ME 24 (also known as Bath Rd.) goes east-west. Another impressive route through the Pines goes north-south along the east edge of the main part of the Bowdoin College campus. This road is ME Route 123 (also known as Sills Dr.). Rough-barked White Pines tower along both sides of this road. To the west (on the campus), the Pines rise out of a grassy lawn, but to the east the Pines form a dense forest canopy. There are several trails going through this part of the forest, and through the midst of this part of the forest, a dirt road goes to a stadium (called Wheeler Field), with Pines creating an aesthetically beautiful effect as they soar over a gate.

Google Maps provides an excellent view of the site. Unfortunately, little information is available at the college about the Pines.

The Pines do not seem to have grown very much in the past 40 years. My father and I surveyed the Pines with a tape measure in Aug. 1970, and the largest Pine then was 9 ft. 8 in. in circumference at breast height. The largest Pines today seem to be no larger.

In the idyllic early evening of Aug. 17, Jack and I explored the Pines between ME 123 and Wheeler Field. The air felt wonderfully fresh and pine-scented. Ed Frank loaned me a laser rangefinder (Nikon Prostaff 440) and clinometer, and I recently bought a scientific calculator, so I used the NTS method with sine function to measure trees. I measured the following trees in this section:

White Pine	104.7 ft.
White Pine	106.8 ft. + highest point not visible
White Pine	99 ft.
White Pine	104.8 ft.
White Pine	104.3 ft.
White Pine	102.3 ft. 19" dbh (more slender than most)
White Pine	105 ft.
White Pine	102 ft. near ME 123
White Pine	25.1" dbh
White Pine	29" dbh one of the bigger ones
White Pine	24.5" dbh, typical tree, by ME 123

The golden evening light made this part of the Pines especially magical.

The White Pines in this section seem to average 100-105 ft. tall; as we would discover Aug. 20, these are nowhere near the tallest Pines. Throughout this stand, there is plentiful White Pine reproduction, with young White Pines of all sizes. Other trees seen (all beneath the White Pine canopy) include Red Maple, Norway Maple, Sugar Maple, Red Oak, Black Cherry, Balsam Fir, Red Spruce, Hemlock. Ground cover includes Bracken Fern, Wild Sarsaparilla, Partidgeberry.

On the campus west of ME 123, several White Pines have number tags, like "702", "707" – they might be part of classroom scientific studies. Bowdoin College cares for the Pines, has signs by them saying, "No Parking Preserve Our Pines".

On Aug. 20, a perfectly beautiful sunny summer day, the type of weather that brings out the healing fragrance of White Pine, Jack and I made a more extensive exploration of the Bowdoin Pines. There are some fairly large picturesque Pitch Pines mixed in with the White Pines on the lawns of the eastern part of the campus.

We measured the following trees:

White Pine	97.4 ft. slender tree in lawn with others like it, east of Smith Union
White Pine	91.5 ft. east side of ME 123

Then we measured the Pines along the awesome ME

24 corridor:	
White Pine	108.4 ft.
White Pine	115.7 ft. south side ME 24
White Pine	114.4 ft. north side ME 24
White Pine	125.4 ft. in woods south side ME 24 – Jack spotted this one
White Pine	126.4 ft. 30 in. dbh south side ME 24, biggest dbh measured, but there are bigger ones
White Pine	126.6 ft. north side ME 24, tallest tree measured
White Pine	115.7 ft. south side ME 24
White Pine	28.5" dbh south side ME 24

I also got some age data – counted 189 rings on a White Pine stump on north side ME 24, about 10" radius.

I don't believe that we found the largest, tallest, or oldest trees. The tallest trees seem to be near the southeast end of the Pines where ME 24 enters the grove from the open fields to the east. The tallest White Pines could easily be about 130 ft. tall (but should not be much taller than that). The largest Pines seem to be about 3 ft. dbh, and the oldest could be over 200 years old. This is an old 2nd growth stand that has been steadily developing old growth characteristics, especially the rugged twisted crowns of many of the lofty White Pines.

After we left the ME 24 corridor, we explored more of the Pines to the south toward Wheeler Field:

White Pine	96 ft. near stadium, forked upper crown
White Pine	27" dbh by edge of Pines Cemetery, which is a cleared area just south of ME 24, west of where the awesome ME 24 passage through the Pines begins – Pines Cemetery has a large open-grown Norway Spruce.
White Pine	93.3 ft. + top not visible 19.2" dbh, in woods between ME 123 and Wheeler Field
White Pine	100.8 ft. same area
White Pine	27.2" dbh, by trail, same area

There are groves of large White Pines elsewhere on

the Bowdoin campus. I measured a typical one in a group in a lawn on College St. to 93.5 ft.



ME 123 Pines Cemetery to right of Pines

The terrain is flat and easy, and the Pines soaring everywhere over your head, make you feel like you are in a vast living cathedral.

I am enclosing 2 pictures of the Bowdoin Pines taken by Jack Howard with his cellphone camera.

Tom Howard

[Ordway Pines, Norway, ME Aug. 21, 2012](#)

by **tomhoward** » Sat Sep 01, 2012 1:13 pm

NTS, Jack Howard and I visited this grove on this beautiful sunny day. Ordway Pines is featured in The Sierra Club Guide to the Ancient Forests of the Northeast, as the site of the greatest White Pines in Maine. This is a realistic claim, and Bob Leverett has measured a White Pine there to 152.5 ft. in 2006 or later, the tallest accurately measured tree in Maine. These huge towering White Pines are an awesome sight, soaring high into the sky far, far over our

heads. We had to keep craning our necks to look up into the crowns so far above us.



3 Great White Pines

The approach to this grove was quite unassuming, through an ordinary neighborhood, till we came to a sign saying "Ordway Grove" by a small dirt parking lot on Pleasant St. in Norway across from near the intersection of Pleasant St. with Maple St.

A trail leads into the grove, through a patch of Japanese Knotweed (I believe, called "Mexican Bamboo" in the site brochure). There are also native plants like New England Aster, which was starting to bloom. The trail enters the grove by an old stone wall, by which a large Red Oak grows. So far not very impressive. But go a few steps up the trail and the great Pines appear, seeming to be impossibly tall, far taller and larger than the Bowdoin Pines. These were the largest and tallest trees we saw on our New

England trip.



White Pine over 140 ft. tall next to snag

There are not very many of these great White Pines, maybe 20 or 30 trees, in densely packed groups. The big Pine area covers about 2 or 3 acres of the 9-acre Ordway Grove. The big Pines are easily over 200 years old, with the oldest possibly 300 years old or more. They have rough bark to high in the canopy, rugged old windswept crowns as typical of great old growth White Pines. The area where the old Pines grow has classic old growth characteristics like snags, coarse woody debris (old downed logs in varying states of decay), pit and mound topography, various types of Fungi. The rest of the Ordway Grove is mainly 2nd growth.

White Pine is the dominant tree in the oldest part of

Ordway Grove. Associate trees include Hemlock (some big trees), Beech, Yellow Birch, Sugar Maple, Red Maple, Striped Maple, Red Oak.

I measured several trees, and due to difficulties in seeing the tops, as trees are in leaf, could not see the highest points of the trees. Hence, the heights listed here are lower than the actual heights of the trees.

Trees measured:

White Pine	135 ft. +
White Pine	straight up shot at least 120 ft. to lower crown, 32.4" dbh, this tree next to White Pine snag
White Pine	in group of 3 tall White Pines, straight up shot, at least 135 ft. into crown
White Pine	140.4 ft. by Ice Road Trail, snag next to this tree
White Pine	143 ft. in same group
White Pine	141.7 ft. in same group
White Pine	128.2 ft.
White Pine	37.5" dbh, rough bark to lofty height
White Pine	137.2 ft. fairly slender
White Pine	132 ft. in group of 3
White Pine	141.5 ft. across Main Trail from biggest White Pine
White Pine	140 ft. + (could not see top, tree taller), 48" dbh, biggest tree in grove, biggest tree seen on New England trip
White Pine	about 120 ft. at edge of younger White Pine group
Red Oak	31.9" dbh, by Main Trail

After reluctantly leaving this glorious grove, Jack and I continued west toward New Hampshire, on our way back to North Syracuse. The route west, on ME route 117 to US route 302 toward New Hampshire, went through some very beautiful country, with low mountains, lakes with shores lined with tall White Pines. Along the roads were seemingly countless groves of tall fragrant rough-barked White Pines well over 100 ft. tall. It was an enchantingly beautiful drive, and towns like Bridgton, ME, Fryeburg, ME are filled with big tall White Pines. Large picturesque Pitch Pines are mixed among the White Pines in some places.

We pulled off of Rt. 302 in Bridgton (to get a tail gating truck off our back), and stumbled across beautiful Shorey Park by Highland Lake. In this park was a grove of tall White Pines rising out of a lawn, and I measured an average one, no taller than its neighbors, to a height of 124.4 ft. There are White Pines like this everywhere in this western part of Maine.

I am enclosing 2 pictures of the Ordway Pines taken by Jack Howard with his cellphone camera.

Tom Howard

[Tamworth Big Pines, ME, Aug. 21, 2012](#)

by **tomhoward** » Sat Sep 01, 2012 1:15 pm

NTS, After leaving the Ordway Pines of Norway ME, Jack Howard and I went in search of the Tamworth Big Pines of NH, a stand of trees much celebrated by NTS. Since we were unfamiliar with the area, it took us a long time to find the Tamworth Pines. Despite careful planning with Google Maps and so forth, it took us over an hour to find the site. We were searching for what The Sierra Club Guide to the Ancient Forests of the Northeast calls “the Northeast’s version of California’s Avenue of the Giants” (page 243), a mile-long stretch of road through towering White Pines. We were also looking for a big sign for the Big Pines Natural Area. We assumed that the road is NH Route 113A, and we drove several times up and down this road without seeing this awesome passage through the Pines or the sign. We finally decided to stop by a small sign saying “Big Pines Trails” (or something like that) in an area where there were some tall White Pines by the roadside. Jack talked to a hiker who said that the sign had blown down in a storm, and they hadn’t bothered to replace it, and that this fairly unimpressive spot was the site called “Big Pines Natural Area”, but he didn’t seem to be aware of any really big Pines.

Jack and I walked on a trail to a bridge over the Swift River. The forest seemed to be 2nd growth Conifer-Northern Hardwood, with only a few big White Pines, nowhere near as impressive as the Ordway Pines we’d just left. The forest was quite beautiful, but there seemed to be fewer White Pines than in all the woods we’d seen since leaving the Ordway Pines. I measured a big White Pine by the Swift River to a height of only 96.4 ft. We saw that the trail continued on the other side of the river from the road, but we had neither time, nor the right footwear to explore further. So I’m certain that we missed the truly great White Pines hiding scattered through the woods.

We returned to the car parked alongside NH 113A. It was along the road near the car that we saw the greatest number of White Pines. They are tall, beautiful trees, but rather slender, and fairly far apart, not the awesome massing of towering trees I’d been led to expect. ME 24 through the Bowdoin Pines of Brunswick, ME is more impressive. I did measure a few trees along this less than a mile stretch of road in NH:

White Pine	124.5 ft.	
White Pine	122.9 ft.	36.7” dbh
White Pine	125.2 ft.	this tree right next to the car
White Pine	128 ft. –	tallest tree measured at site

We continued on to our next stop, Killington, VT, arriving there by dark. Because of stops at this site and Ordway Pines, heavy traffic, winding roads, construction, it took us over 10 hours to get from Brunswick to Killington.

Tom Howard

[Re: Tamworth Big Pines, ME, Aug. 21, 2012](#)

by **tomhoward** » Sat Sep 01, 2012 6:35 pm

Robert Leverett wrote: The big Tamworth Pines are on a loop trail - not those near the water. You missed the big ones. I've got to get back up there and re-

measure what is likely the largest single-trunk white pine we have in New England.

Bob, You're right - we did miss the big ones. They are an awesome sight, I'm sure, and I really need to see the biggest one. We simply had neither time nor proper footwear to take the loop, so we definitely need to get back to Tamworth.

Tom

[Gifford Woods State Park, VT, Aug. 22, 2012](#)

by **tomhoward** » Sat Sep 01, 2012 1:17 pm

NTS, Jack Howard and I visited this accessible old growth forest on the last day of our New England trip. It is on VT Route 100 just north of US 4, in some of Vermont's most beautiful high country. Before went to Gifford Woods, we drove up to the main ski area at the base of Killington Peak (4141 ft.) – the air felt fresh and crisp, and it was glorious to see forest climbing the mountains (as well as ski lifts) with Spruce-Fir forest on the mountain tops.

The contrast with the enclosed and much warmer hardwood forest of nearby (and not all that much lower) Gifford Woods could not have been greater. At Gifford Woods were large Sugar Maples everywhere, and there was no feeling of being in the mountains. The day had rapidly become very warm. Gifford Woods is an impressive place, but not as awesome as I was led to believe. Sugar Maple dominates, and other trees include Hemlock, Yellow Birch, Beech (with Beechdrops on roots), White Ash, Striped Maple (common). There are shrubs like Canada Yew, Hobblebush.

Gifford Woods has 2 excellent interpretive trails, one identifying trees (and underestimating average heights, like Sugar Maple 80 ft.) and other plants (herbs like Blue Cohosh, False Solomon's Seal, Interrupted Woodfern. The other interpretive trail is called the Old Growth Trail, and it is the best old

growth forest interpretive trail I've ever seen, with illustrated signs explaining old growth characteristics in a way that can be easily understood. If there were signs like these in the old growth forests here in and near North Syracuse, the signs would be vandalized by obscene graffiti, destroyed, or stolen in no time.

The forest these signs interpret, however, is nowhere near as impressive as its sister site in my area, the Liverpool School Maple Grove. There are more openings than canopy, and many old stumps. The forest is very highly disturbed. Yet there are some really old trees here. We saw the huge ancient snapped off Hemlock Adam Rosen said in his post (about my New England trip) that could be 500 years old – it could be, but is maybe 300-400 years old? An interpretive display contains the cross-section of a tree I couldn't identify (it had no bark) on which I counted 301 rings on about 14" radius (a park worker said it was a Hemlock log with 240 rings). Elsewhere on the trail I counted 200 rings on a 14" radius cross-section 40.5 ft. above the base of a Hemlock fallen across the trail.

Some trees measured:

Sugar Maple	105.6 ft. +	36.1" dbh –
tallest tree measured at Gifford Woods, by trail near road, possibly 110 ft. tall, couldn't see highest point		
Sugar Maple	82.6 ft.	more typical of trees here
Sugar Maple	84.9 ft.	
Sugar Maple	98.7 ft.	by entrance road –
Sugar Maples around the 1930s park building seem to be about 90-95 ft. tall.		

We did not have time to see the best of the Gifford Woods old growth. Adam Rosen, The Sierra Club Guide, and Joan Maloof's Among the Ancients recommend the woods across VT 100 from the main part of the park. This narrow area between the road and Kent Pond is said to be a trackless old growth forest, where the biggest Sugar Maples grow. We drove by that area, saw a forest with scattered fairly large Sugar Maples with Kent Pond right nearby. Well, maybe next time, but from the road the trees did not look exceptionally large.

Tom Howard

[Re: Why do we find trees so rapturous?](#)

by **Joe** » Sat Sep 01, 2012 3:48 pm

I suggest that Huxley's concept of a "reducing valve" is more than that- it's an "interpretation valve"- if all it did was reduce input, that might not do much for us, but as we live, we keep building and modifying an interpretation valve- so that all the input is not just filtered but transformed into meaning, which is just as often wrong as right- so that it adds confusion and misunderstanding- so by reducing that valve, we can clear some of the fog out of our brains- the fog of religion, racism, nationalism, and propaganda of all sorts- along with our own false theories of reality. Of course some people can't bear facing "the ground of their being" as some philosophers say.

Regarding trees, seeing them for what they are, living creatures, can be an epiphany, or so those who've experimented often say.

Joe Zorzin

[Re: Why do we find trees so rapturous?](#)

by **RyanLeClair** » Sat Sep 01, 2012 7:38 pm

I agree with both of you gentleman--our primitive ancestors probably admired the wilderness more than Huxley would care to admit. I don't know if you've heard this little tidbit, but the legend goes that if you peeled the bark off of an oak tree in pagan Germany, you were killed in a very bad way (which I won't go into on here. If you're curious, you can look it up :)). This definitely suggests that ancient man viewed Nature as sacred in a very, very, very profound way.

Some people have said that enhanced consciousness is a curse. This is probably the case for people who are miserable, but I find increased consciousness to be a blessing.

Ryan LeClair

[Why do some redwoods twist?](#)

by **Mark Collins** » Sun Sep 02, 2012 8:26 pm



"Twisting" Candy Cane Trees (Humboldt Redwoods State Park)

A friend and I were hiking in Montgomery Woods today when she asked me if I knew why some of the redwoods in the grove appeared to be twisting, while others did not. I had no idea. Can anyone explain this phenomenon?



"Straight" redwoods (Humboldt Redwoods State Park)

Marc Collins

Re: Why do some redwoods twist?

by **edfrank** » Sun Sep 02, 2012 9:03 pm

Mark, We have had discussions on this subject before, but without any definitive resolution. This thread: [https://groups.google.com/forum/?hl=en& ... y_BO1E3nQQ](https://groups.google.com/forum/?hl=en&...y_BO1E3nQQ) on our old Google Group list includes most of the discussions. With earlier remarks posted here: [http://www.nativetreesociety.org/forest ... _grain.htm](http://www.nativetreesociety.org/forest..._grain.htm)

Essentially it seems that most trees have spiral grain to some extent. It has to do with cell formation:

Wood Sci Technol (2007) 41:133–156,
The mechanism of spiral grain formation in trees
K. Schulgasser & A. Witztum

The abstract reads in part:

Thus it is concluded that neither the slant of pseudotransverse divisions nor other “isolated events” (imperfect periclinal division, biased intrusive growth) are causative, but that they rather result from the fact that there is a radial gradient of the inclination angle (in the tangential plane) of fusiform cells, i.e. from the general tendency of a maturing cell to take on a preferred inclination with respect to the cell which immediately preceded it in its file. Growth stress patterns in trees have also been extensively investigated in the past half century. It is shown that the development of these stresses and the formation of spiral grain are just two aspects of the same process.

It seems that in some species the spiral is more pronounced than in others. Also in a given population there seems to be a strong preference for either right hand or left hand spirals suggesting that there is a genetic factor involved. There seems to be a strong preference for spiral grain under certain conditions or at certain locations, suggesting it is a factor that is selected for over those with vertical or straight grain.

Why would there be a selection for spiral grain?

What advantages might it have in some conditions?

One suggestion is that it has some value in water transport through the tree. Another suggestion is that the spiral grain may allow these trees to better distribute wind shear by twisting some rather than bending. There has been research on its effect on the characteristics of the lumber produced by these trees, but not so much on what advantage it may or may not provide the trees.

Ed Frank

How high is Mount Harvard and attendant implications?

by dbhguru » Mon Sep 03, 2012 10:27 am

NTS, Mount Harvard in the Collegiate Peaks area of the Sawatch Range of the Colorado Rockies is the 3rd highest peak in the chain. Its height on modern lists is usually given as 14,420 feet. When Massive and Harvard were vying for the number two spot, with Massive given as 14,421, a single foot of elevation was critically important. Below you can see what the current NGS datasheet shows. Note the 14,421 figure at the top. However, if you read far enough you see that the benchmark is 6 feet below the actual summit. Adding the 6 feet gives a height of 14,427. That, I presume, is the mountains best determined height on NAVD88.

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JL0879 U.S. NATIONAL GRID SPATIAL ADDRESS: 13SCD8551109217(NAD 83)
JL0879
JL0879 MARKER: DD = SURVEY DISK
JL0879 SETTING: 17 = SET INTO TOP OF METAL PIPE DRIVEN INTO GROUND
JL0879 SP SET: METAL PIPE DRIVEN INTO GROUND
JL0879 STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
JL0879
JL0879 HISTORY - Date Condition Report By
JL0879 HISTORY - 1954 MONUMENTED USGS
JL0879 HISTORY - 1955 GOOD USGS
JL0879
JL0879 STATION DESCRIPTION
JL0879
JL0879 DESCRIBED BY US GEOLOGICAL SURVEY 1955
JL0879 STATION IS NOT THE SAME AS NGS STATION --MOUNT HARVARD, CAIRN, 1894--.
JL0879
JL0879 STATION LOCATED ABOUT 10 MI. NW. OF BUENA VISTA, 17 FT. E. OF
JL0879 HIGHEST POINT OF MT. HARVARD.
JL0879
JL0879 TO REACH FROM BUENA VISTA POST OFFICE, GO NW. 0.4 MI. ALONG U.S.
JL0879 HIGHWAY 24 TO JUNCTION WITH DIRT RD. W., PROCEED 2.1 MI. W. TO T-RD.
JL0879 E., TURN RIGHT AND GO W. AND W. ALONG DIRT RD. 0.9 MI. TO Y-RDS.,
JL0879 TURN LEFT THRU GATE AND PROCEED S. AND THEN W. 6.5 MI. ALONG MAIN
JL0879 DIRT RD. UP NORTH COTTONWOOD CREEK TO END TRUCK TRAVEL, FOLLOW
JL0879 FOREST SERVICE TRAIL 2.0 MI. TO JUNCTION WITH TRAIL TO HORN FORK
JL0879 BASIN, TAKE RIGHT FORK OF TRAIL, PROCEEDING NW. TO HEAD OF HORN FORK
JL0879 BASIN, THENCE CLIMB TO SADDLE ON SW. SIDE OF PEAK AND FOLLOW ALONG SE.
JL0879 SIDE OF RIDGE TO HIGH POINT OF PEAK AND STATION.
JL0879
JL0879 STATION RECOVERED AS PREVIOUSLY DESCRIBED AND ALL MARKS FOUND
JL0879 IN GOOD CONDITION.
JL0879
JL0879 STATION MARK--STANDARD TABLET IN 3/4 IN. PIPE DRIVEN IN GROUND AND
JL0879 PROJECTING 0.2 FT., STAMPED--HARVARD 1954---. TABLET IS 6 FT.
JL0879 LOWER THAN HIGH POINT OF PEAK.
JL0879
JL0879 REFERENCE MARK NO. 1--CHISELED SQUARE ON TOP GRANITE BOULDER, 20.78
JL0879 FT. DISTANT, N 48 DEG 05 MIN W.
JL0879
JL0879 REFERENCE MARK NO. 2--COPPER NAIL AND WASHER SET IN SEAM OF GRANITE
JL0879 BOULDER, 13.36 FT. DISTANT, N 51 DEG 42 MIN E.
JL0879
JL0879 National Geodetic Survey, Retrieval Date = SEPTEMBER 2, 2012

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1 NATIONAL GEODETIC SURVEY, RETRIEVAL DATE = SEPTEMBER 2, 2012
JL0879 *****
JL0879 DESIGNATION - HARVARD
JL0879 PID - JL0879
JL0879 STATE/COUNTY- CO/CHAFFEE
JL0879 COUNTRY - US
JL0879 USGS QUAD - MOUNT HARVARD (1982)
JL0879
JL0879 *CURRENT SURVEY CONTROL
JL0879
JL0879 NAD 83(1992) POSITION- 38 55 27.87025(N) 106 19 14.64655(W) ADJUSTED
JL0879 NAVD 88 ORTHO HEIGHT - 4395.6 (meters) 14421. (feet) VERTCON
JL0879
JL0879 LAPLACE CORR - 1.63 (seconds) DEFLEC09
JL0879 GEOID HEIGHT - -13.48 (meters) GEOID12
JL0879 HORN ORDER - THIRD
JL0879
JL0879 The horizontal coordinates were established by classical geodetic methods
JL0879 and adjusted by the National Geodetic Survey in January 1993.
JL0879
JL0879 The NAVD 88 height was computed by applying the VERTCON shift value to
JL0879 the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
JL0879
JL0879 The Laplace correction was computed from DEFLEC09 derived deflections.
JL0879
JL0879 The following values were computed from the NAD 83(1992) position.
JL0879
JL0879 North East Units Scale Factor Converg.
JL0879 SPC CO C - 426,239.011 843,234.099 MT 0.99994064 -0 31 03.5
JL0879 SPC CO C - 1,398,419.16 2,766,510.54 sFT 0.99994064 -0 31 03.5
JL0879 UTM 13 - 4,309,217.303 385,511.481 MT 0.99976140 -0 49 47.6
JL0879
JL0879 Elev Factor x Scale Factor = Combined Factor
JL0879 SPC CO C - 0.99931293 x 0.99994064 = 0.99925361
JL0879 UTM 13 - 0.99931293 x 0.99976140 = 0.99907450
JL0879
JL0879 SUPERSEDED SURVEY CONTROL
JL0879
JL0879 NAD 83(1986)- 38 55 27.86562(N) 106 19 14.65176(W) AD( ) 3
JL0879 NGVD 29 (12/18/91) 4393.5 (m) 14414. (ft) VERT ANG
JL0879
JL0879 Superseded values are not recommended for survey control.
JL0879
JL0879 NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
JL0879 See file dndata.txt to determine how the superseded data were derived.
JL0879
JL0879 U.S. NATIONAL GRID SPATIAL ADDRESS: 13SCD8551109217(NAD 83)
JL0879

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I expect that future listings for Mount Harvard from many interested parties will present a helter-skelter combination of heights: 14,420, 14,421, and 14,427, and sometimes two of these figures on the same page as I've seen on Peakbaggers.com. So, what is my point in presenting mountains as opposed to tree heights on the BBS? We in NTS need to constantly be reminding readers how we make our tree measurements and not be timid in pointing out the flaws in how most others do it. We can't let ourselves tire of the message or the numbers deluge on the Internet will dilute our contributions, often negating their value. You have to dig deep to uncover the facts around a NGS elevation. You can sort it out if you persist, but misinterpretations are common, and the proliferation of old and misinterpreted data on the Internet has gone beyond proliferation to explosion. How can we learn from the NGS experience? NGS is the source of the most accurate geographical positioning information available to the public?

I will now return to tree measuring.

Robert T. Leverett

Tree's leaves genetically different from its roots

Cottonwood trees show genetic differences across individuals as well as within populations.

Ed Yong, 10 August 2012

<http://www.nature.com/news/tree-s-leaves-genetically-different-from-its-roots-1.11156>

Re: Tree's leaves genetically different from its roots

by **gnmcmartin** » Mon Sep 03, 2012 2:54 pm

Wow, this is interesting.

Here is a question, followed by a thought. First, the question: is this degree of genetic variation within one tree greater, or more common with black cottonwood than with other trees? And if so, how much more common? I doubt anyone would have an answer to that question yet.

Anyway, here is the thought: there are a great many trees sold as grafted clones. Cuttings are taken from a "parent" tree, then grafted onto a rootstock, and then sold as a clonal variety, or "cultivar." Genetic identity is assumed. I have a collection of these, including a bunch of Norway spruce cultivars. But, if there are commonly mutations throughout a tree, the cuttings may not all have the same genetic makeup.

I once found a very unusual and beautiful Norway spruce tree, and twice had someone do custom grafting for me. Unfortunately, I lost most of the grafts due to one accident or another, but four remain.

I am not sure that any of those really represent the tree from which I got the cuttings. I always thought this was strange, and had some explanations in mind.

Well, now I have another potential explanation. Some of the cuttings I took were from epicormic sprouts from low down on the trunk, which if there is genetic diversity within the tree, would increase the chance that I may have got a sample genetically different from what the upper parts of the tree were expressing.

I have been a member of the Gardenweb tree forums for years, and there has been a fair amount of discussion of the identity/confusion about some of the clonal varieties. I have always thought it was because of some pervasive carelessness in the trade. For one example, at two different times I bought a cultivar called Norway spruce 'Pendula Major.' But the trees are growing in very different forms, and can't be "clones." Is this because of some confusion or carelessness? Or could it be somewhere along the line someone took cuttings properly and kept them properly identified, all with good provenance, but there was an unsuspected mutation involved, resulting in a tree quite different from the parent?

Most dwarf conifer clones originate as branch mutations, usually expressing themselves as witches brooms--obvious cases of an intra-tree mutation. But other mutations may not be so obvious, but may still result in noticeable, and sometimes significant differences in growth of the grafted tree.

--Gaines McMartin

Re: Tree's leaves genetically different from its roots

by **edfrank** » Mon Sep 03, 2012 3:36 pm

Gaines, I ask myself the same questions when reading the post about the degree of variation between the roots and branches and whether it was more prevalent in black cottonwood than other species. I would think if it had been a dramatic difference it would have been noted previously. I also consider the case of some of the clonal colonies, such as the box huckleberry plants estimated to be 11,000 years old. These have been shown in literature to be the same plant across its many acre spread based upon genetic testing.

<http://naldc.nal.usda.gov/catalog/17706> So... where does this lead us...

Edward Frank

Re: Tree's leaves genetically different from its roots

by **gnmcmartin** » Mon Sep 03, 2012 7:07 pm

Here is another thing that may apply here, but again, I have to plead that I know little or nothing about the cause:

Sometimes a grafted clonal variety, or "cultivar" will have a chance reversion back to the normal type. Two specific times I have seen this happen with a cultivar of white spruce, sometimes called Dwarf Alberta Spruce, or *Picea glauca* 'conica.' I saw one of these at the National Arboretum, and one on one of my own trees. On my tree, I cut it out, and it has not grown back.

Now here is what makes me think this is strange--why a reversion to the original type? Now I obviously didn't do any genetic testing, but these shoots looked like regular white spruce. Of course they could be a mutation to some third genetic "type," that includes undoing the dwarfism. Possible, but to me this seems like a stretch.

So here is another speculation--yeah, maybe a bit "far-out"--but recently there has been a lot of interest in epigenetics, or ways in which the phenotype (the physical structure of a grown plant) can be significantly different because of factors that influence gene expression, and these can be inherited even though they are not a part of the plant's DNA.

So, I am wondering why there is such a common "reversion" in *Picea glauca* "conica." Yes, apparently it is common--I have seen it twice, and others have seen the same thing.

So, could this "Dwarf Alberta Spruce" be simply a form that is expressing epigenetic factors, not true genetic ones in the DNA? The frequency of the reversions makes me wonder. There is some question about how long inherited epigenetic factors can be passed on to offspring. But this difficulty does not apply here, because the *Picea glauca* 'conica' is propagated by grafted cuttings.

My first question in trying to solve this question

would be to find out what the origin of this cultivar was. Was it a witches broom, which would indicate, I would think, a genetic mutation? Or a chance seedling growing in some special environment that may have brought into play some epigenetic factors?

Well, lots of ideas for someone who is looking for a plant genetics dissertation topic.

Anyway, just as an aside here--you all know I am fascinated by Norway spruce. A professor at Michigan State University once told me that Norway spruce has a very, very large genome, and it is/was(?) thought that much of this is "junk" DNA. Well, having observed the apparent genetic diversity of the species--or at least the phenotype diversity--and the tree's great adaptability, I have wondered if the "junk" DNA is really junk, or if it is in some sense "dormant" until some epigenetic factors come into play.

OK, I know, too much speculation, too many questions, about something I know too little about to really discuss sensibly. Anyway, maybe someone knows something, or would like to do some "unbuttoned" speculation along with me.

Gaines McMartin

Re: Tree's leaves genetically different from its roots

by **edfrank** » Mon Sep 03, 2012 7:14 pm

Gaines, in some animals, and I assume some plant species there are certain genes that can be turned on or off by various environmental factors. The genetic code is there for two different forms, but only one is turned on at a time.

Edward Frank

[Re: Tree's leaves genetically different from its roots](#)

by **Don** » Mon Sep 03, 2012 10:25 pm

While attending Northern Arizona University specializing in Ecological Forest Restoration, we had only to look up at the San Francisco Peaks at the north edge of Flagstaff, Arizona to find another reason to ponder this issue.

At mid-slope around most of The Peaks, quaking aspens had established a transitional position in the classic C. Hart Merriam Life Zone model that informed ecologists for more than a century. The colors of the aspen's seasonal change was a palette of colors ranging from yellow to gold to almost scarlet, not so much in an elevational or temporal gradient, as defining clonal groups, or so the speculation ran among the forest academics.

Don Bertollette - President/Moderator, WNTS BBS

[Re: Tree's leaves genetically different from its roots](#)

by **TN_Tree_Man** » Tue Sep 04, 2012 9:33 am

Gaines,

This is an interesting topic. Attached are a couple of pics of a Dwarf Alberta spruce that has reverted back.

Both of these trees were the same size and age at planting. One has reverted while the other has not.

My understanding is that this cultivar was indeed discovered and propagated from a "witches broom" growing on White spruce. Witches brooms are unpredictable and usually considered as genetic anomalies caused by different variables including unstable dominant alleles, environmental factors and/or other reactionary responses (chance?).

Steve Springer



Reverted Dwarf Alberta spruce; the tree is about 10 feet tall now; notice it's cohort to the side



Closer view of the reverted Dwarf Alberta spruce



Dwarf Alberta spruce

Asheville Trees

by **bbeduhn** » Tue Sep 04, 2012 11:58 am

I wanted to post some numbers on trees I've measured recently in the Asheville, NC area.

Montford Park

Nordmann fir	68.4'	78.4'	81.1'	93.2'
Suware false cypress	85.6'	91.2'		
Northern white cedar	73.3'			

Hanger Hall near downtown-unusual trees for Asheville

Longleaf pine	75.0'
Loblolly pine	78.0'

The Mountains-to-Sea Trail

Shortleaf pine 124.6' very nice grove.
Will measure the remainder soon.
Pitch pine 121.7' I've listed this previously at 121'. The actual top is a bit higher but nearly impossible to spot.

Church St., downtown

Ulmus procera? English/Atinian elm? both triple trunked but may pass the single pith test
17'2" cbh 90.4' 17'9" cbh 79.6'

Fuddruckers near downtown

Ulmus glabra? Scots/Wych elm?
13'6" cbh 90.0' 15'5" cbh 93.0'

TGIF/hotel parking lot

Shortleaf pine 115.7' The same site has a 144' sycamore and a very tall dawn redwood.

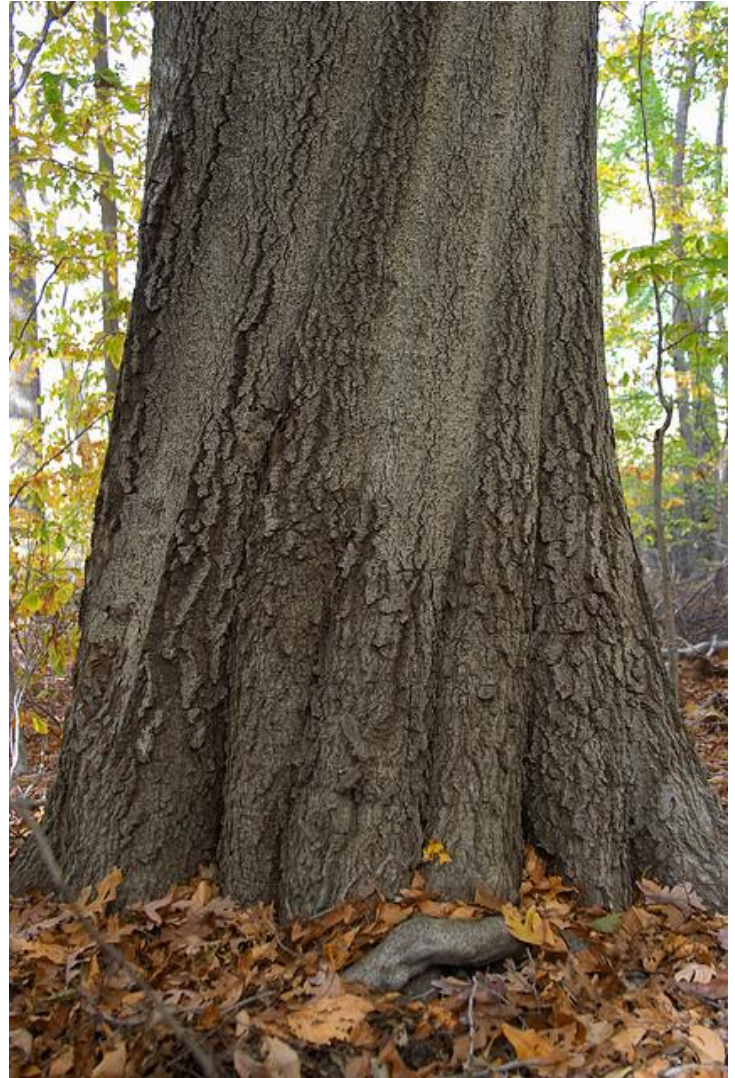
I'm cataloguing all of the tall Dawn redwoods (60'+) in the area. Will just informed me of a few more, so I'll post the numbers very soon.

Brian Beduhn

Re: Why do some redwoods twist?

by **AndrewJoslin** » Tue Sep 04, 2012 10:26 am

Here's a *Fagus grandifolia* with a nice counter-clockwise twist:



Andrew Joslin

Re: Why do some redwoods twist?

by **Larry Tucei** » Tue Sep 04, 2012 5:24 pm

Hi Mark, Ed has pointed out about our previous discussion on this topic. No one is really certain what causes these strange twisting patterns. For some reason when the tree is very young it starts to twist as it grows ever larger. I believe one reason could be the trees are twisting to follow sunlight. Many Live Oaks have this growing pattern. The funny thing is that only certain trees have this characteristic. A Live Oak with the strange twisting pattern,



Larry Tucei

Re: Tree's leaves genetically different from its roots

by **Bart Bouricius** » Wed Sep 05, 2012 9:55 am

Gaines,

Here is some more "unbuttoned" speculation
This is a very interesting subject and may help explain why some early research showed more similarity between the DNA of some white and red oaks in I believe Wisconsin? than between Red Oaks in North Carolina and Wisconsin. There may have been flaws with this research which was done at the very beginning of gene sequencing technology, but much of this may be explained by HGT (horizontal gene transfer) which is now said to account for significantly more genetic change in organisms as a whole than does mutation. Epigenetic explanations certainly play a role here, but there are probably more factors at play.

When one of my favorite evolutionists Richard Dawkins, asked Lynn Margulis in a debate (paraphrasing here), why we needed more than mutation and adaptation through natural selection, straight forward and parsimonious, to explain evolution, Lynn replied "because it exists". Lynn was talking about the myriad of ways that genetic material moves or is moved from one organism to another and how organisms often combine together to form new organisms. She also championed the notion that organisms often evolve as guilds or interlocking systems rather than as simply individuals and I remember her telling me that she believed that very little of "junk DNA" was actually junk.

Now I have probably gotten way beyond the scope of this thread, but don't kill the messenger when new information, in this case about genes in trees, shows up. Should you not believe "your lying eyes" just because you do not know the mechanism, or should you search more broadly for a different mechanism. Sorry for the rambling thoughts.

Bart Bouricius

Re: Tree's leaves genetically different from its roots

by **gnmcmartin** » Wed Sep 05, 2012 7:58 pm

Bart:

Yes, yes, yes. And I have read that viruses can be the transfer mediums for genes. And, I actually remember seeing something about genes being transferred from dogs--or was it cats--to their owners, or the reverse. I have no idea if any of this was true, but I could do a quick web search to see what I can find.

And, as coincidence would have it--about the "junk" DNA: there was a report on the NBC evening news, of all places, about the "junk" DNA and it said that the DNA that the DNA directly responsible for the structure of proteins was previously thought to be the only acting DNA, but the report tonight said that the "junk" DNA actually is the switches that control the activity of the other genes and/or their effects. One point the report made is that the new way of understanding our DNA may lead to medical breakthroughs.

I am not sure I caught the report completely or accurately. But I assume that it is not really "breaking news," but it does seem to overlap somewhat what I have read about the epigenetic factors. It is exciting that we are beginning to sort these things out.

--Gaines

Worksheet for Oct 12th Tree-measuring workshop

by **dbhguru** » Thu Sep 06, 2012 10:51 am

NTS, Attached is the worksheet that I developed for the advanced tree-measuring workshop scheduled for Oct 12th at Mohawk Trail State Forest, MA. I developed it around use of the LTI TruPulse 360 although a conventional laser rangefinder-clinometer-compass can be used instead. I set the worksheet up to take advantage of the TP360's features since Steve Colburn from LTI will bring a bunch of them to the Oct gathering for others to use. I would greatly appreciate it if NTS members who plan to come can tell me now so that we can try to have sufficient TPs available.

As I have often reported, the TP200 and TP360 are extremely accurate. I conducted a calibration test yesterday on my TP200 and on 4 trials had an average height error of a mere 1.9 inches. That's really good. However, I must point out that when I do calibration tests, I use a very clear target and I have to be able to measure its height with extreme accuracy, so the conditions are almost of laboratory quality. Otherwise, how do I know how large/small the measurement errors actually are? Measuring to fuzzy targets isn't likely to be as accurate, but there is good reason to believe that under the vast majority of field conditions, the accuracy of the TruPulse is within +/- 0.5 feet. Occasionally, you can be off by a foot. I'm assuming that the target is sufficiently distinct and visible to make measuring possible.

For those of you willing to wade through the worksheet, you'll notice that the sine and tangent methods are being compared. But also calculations are being called for that illuminate the reason for differences in results. The NTS faithful come to understand that measuring tree height is a problem of determining the vertical distance between two points in three-dimensional space. No assumptions are made about what might connect the two points, if anything. Dependency on a configuration that postulates a woody connection between the two points and the vertical alignment of the points is forever lifted. Thinking more abstractly and after a time, the

thought of dependency on a trunk to connect the two points seems rather unimaginative, if not down right silly. However, if one is combating decades of habit, going from tangent to sine does not turn out to be easy to do.

My solution is a step by step process that focuses attention on the two components of height (eye level to upper point and eye level to lower point). Hopefully, the worksheet, an explanation, and live exercises using convenient equipment will do the trick. Feel free to use or modify the worksheet to fit your needs. I view it as an NTS product.

 [SinTanWorksheet.xlsx](#)

Robert T. Leverett

Re: Asheville Trees

by **bbeduhn** » Thu Sep 06, 2012 1:02 pm

The 115.7' p echinata has a cbh of 8' 5.5" I'll get a cbh on the 124.6' soon. I think it may be a bit smaller than the 115.7'. I've been trying to top 140' on pitch pine but they just aren't cooperating with me.

Here are a few more I overlooked:

Black Mountain, NC

Sequoia Giganteum 64.1' Will get a cbh. I didn't write it down, but it's growing.

Picea abies 125.1'

Asheville

Picea abies 114.0'

Brian Beduhn

Zane Moore

by **yofoghorn** » Tue Sep 04, 2012 1:24 pm

Hi all, this is me, Zane. Thank you all for your encouragement. I have now registered to be part of the NTS and this will be my profile! Thank you specifically, Bob, for your invitation to be a part of this.

Zane J. Moore

Undergraduate Student

Colorado State University



Photo of Zane Moore by M. D. Vaden

“The Moosewood Tree”

When fall had but shut the door and headed out,
And changing skies roiled like a mind in doubt,
I trekked an autumn grove, alone, apart—
And sought a golden leaf to woo my heart.
But not one yellow leaf lay on the ground
(Those crinkling under my feet were brown)—
The autumn leaves were out of reach, alas,
Held tauntingly by ash and sassafras
And maples tall. I had near left my plight,
When there, between the trunks as dark as night,
Shone through a rare moosewood tree.
It looked as lost in that far place as me—
It surely paled amidst that noble crowd,
Not half as tall or old, not near as proud
As all the beech and oak (the autumn wilds
Leaned over it, as though it were a child),
But how its leaves were bright! A lovely gold,
The loveliest that day I did behold.
And low they hung, like the fruits of Eden's tree,
But not weighed down with a heaven lost to me,
But flitting freely in an earthly breeze—
But in my reach, the same, at a poor man's ease.
I picked the leaf as day sunk behind the wood—
But I had my own light to do me good.
I'll not forget, that on that autumn day,
My mind roiling like skies at season's change,
Only the moosewood bent on knee for me
And shared its only gifts so readily.

By Ryan LeClair

Posted Fri Sep 07, 2012 5:38 pm

[Forest History Society](#)

by **edfrank** » Fri Sep 07, 2012 10:54 pm

General Information About the Forest History Society

<http://www.foresthistory.org/About/index.html>

The Forest History Society (FHS) is a 501(c)3 nonprofit educational institution located in Durham, North Carolina, that links the past to the future by identifying, collecting, preserving, interpreting, and disseminating information on the history of interactions between people, forests, and their related resources -- timber, water, soil, forage, fish and wildlife, recreation, and scenic or spiritual values. Through programs in research, publication, and education, the Society promotes and rewards scholarship in the fields of forest, conservation, and environmental history while reminding all of us about our important forest heritage.



<http://www.youtube.com/watch?v=kwDNjFCV60k>

Join Larry Tombaugh, longtime member and past Chairman of the Board, as he leads you on a tour through the facilities, programs, and collections of the Forest History Society.

Since its establishment in 1946, the Forest History Society has developed numerous programs to facilitate the dissemination of information about the history of human interaction with the environment and natural resources. Each program area supports a vital part of our mission. FHS continually seeks innovative ways of enhancing its programs and new methods for promoting the study of environmental

history. FHS programs center around the following broad categories:

*Research
Publishing
Education
Fellowships and Awards*

Edward Frank

[Jack-O-Lantern Fungi](#)

by **edfrank** » Sat Sep 08, 2012 12:03 am

Orange fungi growing at the base of a oak stump
They have reappeared every year for the last five or six years.

The first photos are from September 5, 2012





Photo of underside of fungi showing lack of rings and orange gills.



Orange fungi growing at the base of a oak stump
They have reappeared every year for the last five or six years.

Photo taken September 7, 2012 showing their growth



I checked but this patch of fungi did not glow, but that is not a definitive characteristic of the species.

This appears to be Jack O'lantern (*Omphalotus illudens*) - Information on Jack O'lantern - Encyclopedia of Life

eol.org <http://eol.org/pages/190094/overview>

http://www.mushroomexpert.com/omphalotus_illudens.html

Edward Frank

Re: Jack-O-Lantern Fungi

by **edfrank** » Sat Sep 08, 2012 4:42 pm

Three more shots taken today - September 8, 2012.
The fungi continue to grow and change into a more vase-shaped cap form.





These are on the edge of my lower yard. The cut-off stump was a white oak that died several years ago. Its twin was blown over in a windstorm this summer. The exposed area at the base is in the pit formed by the upturned root ball of the fallen oak.

Edward Frank

[#31\) Re: European beech forests](#)

by **hamadryad** » Sun Sep 09, 2012 7:51 am

Here's a few new images of our European beech, mainly Epping forest, some from Windsor Great Park and one or two from Knole Park all taken within the last three weeks, I tend to get around a bit! I am very fortunate to live within a short drive of some of Europe's most amazing and ancient woodlands, where man has been the driving force in the creation of unique habitats, the likes of which are rarely seen

elsewhere. There are those that say that our European beech, *Fagus sylvatica* is a fragile beast that can't be pruned, this is of course utter nonsense and the beech is as capable a survivor as any, as you'll no doubt see here! True beeches are sensitive and need a little care in management, but as long as they are understood anything is achievable.

Pruning trees is not a blanket situation, it is a species specific situation, an Oak or an ash that are high demanding of light require different approaches to the shade tolerant woodland species such as beech, which with their thin bark can be highly sensitive to over exposure to light.

A fine Pollard in Epping forest



Epping forest is home to 10's of thousands of Beech pollards



defying the laws of gravity is an art!



Very ancient beech probably in excess of 500years
with *Ganoderma* Sp and *Perenniporia fraxinea*

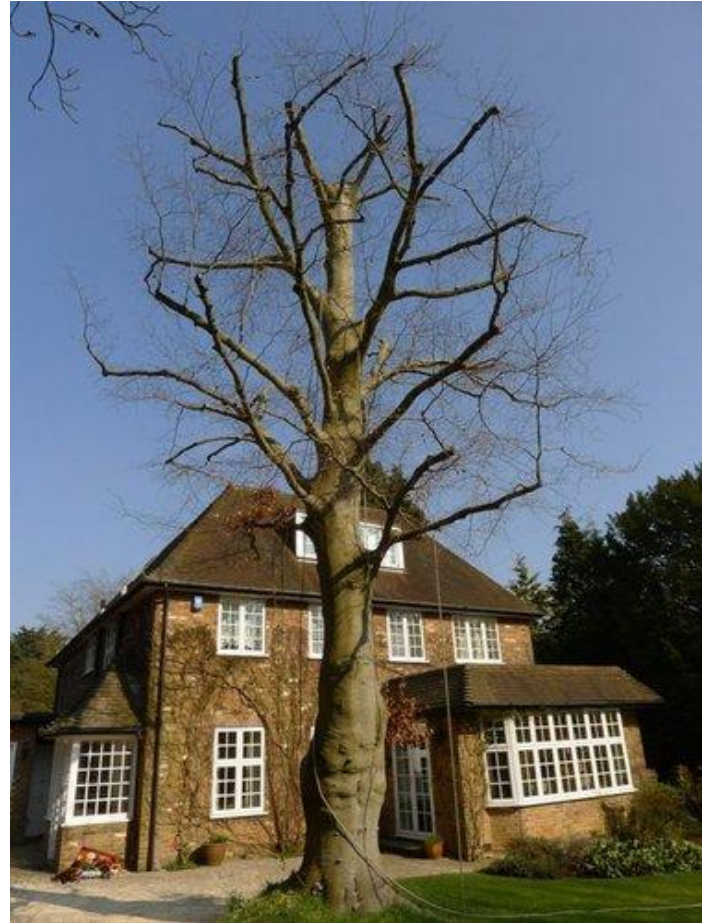




Inonotus cuticularis, beech is its favourite host species though this can also be found occasionally on *Acer* Sp including *Acer campestre*



A beech tree that I have been stage pollarding as a compromise to felling, the client was feeling the tree was too large for the location and this is just before the second stage as you can see it is responding well



European beech is a fragile genus? yeah right, a natural pollard!



A beech freed from forest now filling out to become and open grown specimen.



An included bark union long since failed, now occlusion tissues (embryonic) form into re iterative roots due to contact with moist rotting wood rather than exposure to light which may have caused the tissues to differentiate into shoots (retrenchment)

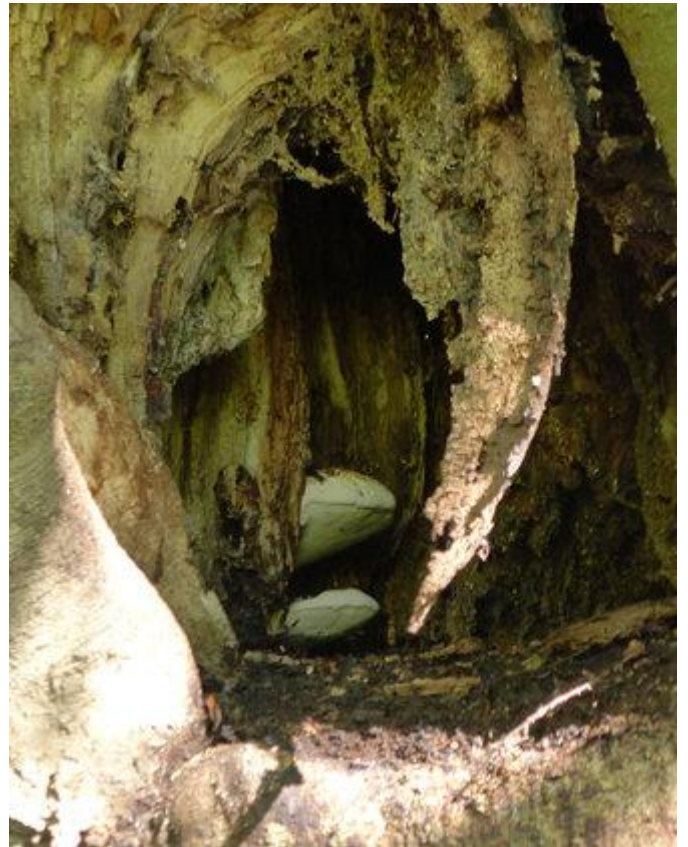


Ganadorma sp, probably *G. australe* aka the southern bracket on ancient beech



The Ganoderma colonised Beech with clear die back and retrenchment, if the tree can shed enough weight before the ganoderma causes a failure in the main union she may go on for a lot lot longer.







[Fistulina hepatica and the Oak, a study into the morphologic](#)

by **hamadryad** » Sun Sep 09, 2012 1:23 pm

Hi all, I am embarking on a rather ambitious project and you guys all seem very science minded and hence i am asking for a little advice!

Now, first off I guess I should start by saying that I have no education via recognised routes (I consider that an advantage in Out of the box thinking) and therefore have no real idea how to get started other than the obvious route of finding a mentor and getting their approval for application for a PHD.

I obviously dont want to badger my mentor constantly for info and advise but am currently trying to piece together the survey record sheets and methodology to gather a data set for this study, which will take "heart rots in general into the work, as opposed to just the one of greatest interest. Now I shall tell you all a little bit about my theory and make it as easy as possible to give me advice on how I might go about proving or rather disproving my hypothesis.

I dont mind if you think this total rubbish, you wouldnt be the first! but can assure you i have studied this phenomena "the body language of decays" for many many years, and I am going to prove it one way or another, as youll see in time!



This image shows an Oak with *fistulina hepatica*, the trunk is a lumpy warty old beast, I believe that *fistulina hepatica* is one of the longest co evolved of the oaks decay fungi and that *fistulina* has evolved to coerce growth in the cambium of living trees in order to maintain both its hosts life span AND thus its own source of habitat and longevity.



The body language associated with other principal basidiomycetes is VERY different altogether, with this example showing *Inonotus dryadeus* and the fluted discontinuous trunk also a common theme.



Some of the growths of oaks colonised by *fistulina* are so extreme it is almost obscene!



So any ideas regarding not just survey methodology but also any ideas on the other aspects of proving the microbiology aspect?

your help is not expected this is a rather different investigation/study and cross disciplines but appreciate any comments or advice .

Tony Croft

[Re: *Fistulina hepatica* and the Oak, a study into the morphologic](#)

by **edfrank** » Sun Sep 09, 2012 2:37 pm

Anthony, do you see expression of this type of malformation associated with the fungus in younger trees? What you need to include as part of the study is a series of cross-sections through the affected

areas. This is not practical for the old growth trees, but if the same features were beginning to develop in trees being harvested for timber, then you could conceivably get cookies from them. Also there is potential for cookies from dead old growth trees, those blown down from wind, or even from fallen infected branches.

You can look at the surface with a reflective microscope or peel off thin slices with a plane that would be viewable under a regular microscope. One technique used at times to get very thin layers, at least of the basic structure of a large slab is as follows: Sand to a smooth surface - the smoother the more continuous the resulting sample. Soak the surface with acetone, and lay a sheet of acetate (drafting material) on top of it. The acetone will melt the acetate onto the surface of the wood. When it dries after a few minutes the acetate sheet can be pulled up and will pull a thin layer of the wood surface up with it that is usable in a light transmission microscope.

Another thing you could do is take a series of stereo pairs of the features around the entire trunk. There is software that will allow you to translate the stereo pairs into 3d-maps of the surface. I will try to find copies of the software or at least its name for you.

The specifications for the stereo pair requirements will be dependent on the software. In any case stereo pairs should be made for documentation and for show-and-tell for the work.

Your premise is that the fungus has evolved as a parasite that feeds from the oak, but does not kill it, and the oak has evolved a specific response to the infection. I am not sure how to demonstrate that.

For the tree itself you should do all the standard data collection - species, general location, GPS location, girth, multi-trunk or single trunk, description of the outgrowth including size and location on the tree, general health of the tree. And note any other fungi that are present and anything that seems even peripherally relevant to the tree and fungi relationship. Take more detailed photos of anything interesting or noteworthy of the particular growth, tree, or location.

Re: *Fistulina hepatica* and the Oak, a study into the morphologic

by **edfrank** » Sun Sep 09, 2012 3:04 pm

Here is someplace to start with the 3d-image stuff

Agisoft StereoScan - Agisoft StereoScan is an easy to use 3D modeling tool for automatic generation of textured 3D models from individual stereo pairs. The stereo pairs are not required to be calibrated or aligned, and can be captured by hand from any generic positions

<http://www.agisoft.ru/products/stereoscan/> There is both a free version and a demo version of the full program Also available here:

http://download.cnet.com/Agisoft-StereoScan-32-bit/3000-6677_4-75573958.html?tag=mncol:8 and here: http://download.cnet.com/Agisoft-StereoScan-64-bit/3000-6677_4-75573961.html?tag=mncol:9

Article link: Surface Modeling of Plants from Stereo Images <http://dl.acm.org/citation.cfm?id=1299176>

You could email one of the authors and get a copy of the article. You could reference it in your report if nothing else.

A fully functional 30 day version of Topcon's Imagemaster Pro and the Camera Calibration Software (Imagemaster Calib) is available.

<http://www.terrageomatics.com/products/>

You of course, would want to figure out some way to describe and categorize these growths. A uniform terminology as much as possible for various expressions, and see if you can divide the growths into different form groups that may or may not eventually be found to be meaningful.

Edward Frank

Re: *Fistulina hepatica* and the Oak, a study into the morphologic

by **anthony.j.mills** » Sat Sep 15, 2012 10:05 pm

Mr. Frank, thanks very much for your replies to Tony Croft. When he first mentioned this thesis to me some time ago, it struck me as one of those ideas which, as soon as the relationship is pointed out, one thinks is so intuitively obvious that it's a wonder no-one saw it before. Though it takes the eye of someone with a deep understanding and clear reading of tree body language, and their relationships with fungi, unconstrained by conventional interpretations, to achieve such an insight. The problem is proving it... I would think myself that investigation of the biochemical basis of the modification of cell growth patterns by the fungus, in the same way that gall wasps modify the growth of acorns, buds and twigs, might be a useful way forward. We know that fungi are masters of the use of enzymes in the exploitation of their hosts, and this could be a variation on that theme, albeit a mutually beneficial symbiotic one.

Tony deserves every credit and support for pursuing this thesis. I regret that I have no idea where or how such a biochemical mechanism or relationship could be researched and demonstrated.

Anthony J. Mills

Exploring the Redwood Forest (Humboldt Redwoods State Park)

by **Mark Collins** » Sun Sep 09, 2012 5:15 pm



I was fortunate to be able to explore another section of Humboldt Redwoods State Park over the weekend. I was focusing on finding some of the largest trees in the forest and taking their pictures.



I camped the night before and the forest was dark, dark, dark. There was hardly any noise all night either, other than a few creatures running through the duff from time to time. The frogs are quiet now, and the creeks are running low.

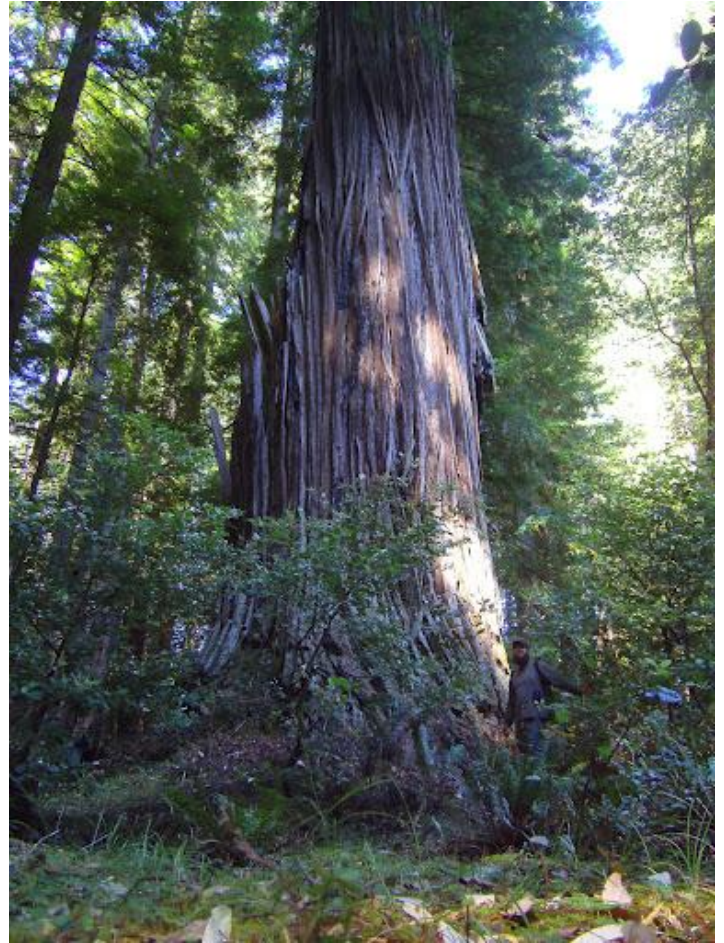


I awoke to one of my favorite sounds-the whistle of the Varied Thrush. They didn't seem to sing very long though, by the time I packed up my stuff and began exploring, the forest was silent again.



I like to spend my time away from the Avenue of the Giants. The silence of the redwood forest is one of its

endearing qualities in my opinion. There is way too much car noise along the Avenue.



Of course, there were plenty of fantastic trees to see.