

Potential National Champion Mountain camellia, TN

by **Will Blozan** » Sat Nov 10, 2012 11:25 am

NTS, I have recently started a hemlock preservation job in NE Tennessee in the North Cumberland Wildlife Management Area. In this job I have and will continue to treat hemlocks in riparian areas over dozens of miles. This area seems to grow a diverse and impressive array of understory trees with large witch-hazel (8" dbh X 45'), Allegheny serviceberry (21" dbh X 65'), and one of my all-time favorites, mountain camellia (*Stewartia ovata*). I have encountered several small groves usually in the vicinity of beaverdams. One tree caught my eye for it's size and I measured it among others of slightly smaller dimensions. These trees are hard to miss if you are aware of the distinct bark of the species. It is like no other tree I regularly encounter.



Leaf and bark

My former National record for this species (also in TN) has disappeared from the NRBT list and I have not been back to see the tree since I nominated it ~17 years ago. I believe it has been removed by a road crew as a quick drive-by did not reveal the tree a few years ago. So this one should take its place and the list currently has no specimen listed.

Girth: 9.3"
Height: 22.8'
Spread: 10.5' avg

Will Blozan

The Golden Spruce – Book Recommendation

by **Mark Collins** » Sat Nov 10, 2012 2:26 pm

I just finished reading "The Golden Spruce," by John Vaillant. I would definitely recommend it. The book describes the early days of the development of the Pacific Northwest, the logging of the forests, clashes with the natives, particularly the Haida, and one man's transformation from logger to environmental activist, to outlaw after he cut down the sacred Golden Spruce Tree in an act of protest in 1997. The tree was growing on the Queen Charlotte Islands.

Mark Collins

Estonia

by **Lee Frelich** » Sat Nov 10, 2012 2:28 pm

NTS: Here are some observations and pictures from my recent visit to Estonia, where I gave a guest lecture at the Estonian University of Life Science in Tartu and two presentations at the Forest Ungulate Research Network (FURN) conference at the university's 25,000 acre Jarvselja Forest. Perfectly straight Scots pine and Norway spruce and weeping birch reached heights of 140+ feet, with soils and climate apparently much better than in Finland or Sweden. My visit was hosted by my friend and professor at the Estonian University of Life Science, Kalev Jogiste, who spent 9 months in Minnesota as a Fulbright Scholar during 2010-2011. Tartu is a remote place--it takes 24 hours on 3 different airlines to go there from Minnesota, but with only 1.3 million people in the country, there are large tracts of remote forests to visit as well as excellent universities.

Lee



Jeroen Engelhart and Lee Frelich and Medieval city wall in Tallinn, Estonia. Some buildings date back as far as 1154.



Old city in Tartu, Estonia



Presenting lecture at Estonian University of Life Science forest ecology class--note photos of Mohawk and Monroe Forests, Massachusetts, by Bob Leverett on the screen



Plant ecophysiology lab at Estonian University of Life Sciences, set to measure photosynthesis



Moose damage on spruce trees--moose eat the bark about 4-5 feet above ground



FURN conference participants from 10 countries, Jarvselja Forest



Kalev Jogiste at field site to examine effects of large-scale blowdown on forest regeneration



Bog with flarks (open water) and semi-dwarf Scots pine



Floating Scots pine forest at edge of a bog lake



Forest view from highest point in Estonia--a mosaic of birch, spruce and pine characteristic of Estonian forests

Lee Frelich

Re: Pine Plains Sycamore Report

by **principledchiro** » Sat Nov 10, 2012 2:32 pm

Hi Bob and all. I just joined The Native Tree Society after returning from this mornings hike on Thompsons Pond, Pine plains, NY. While on the trail, I couldn't keep my eyes off this huge tree bordering a farmers field and the sanctuary trail. It's definitely not a sycamore, but was compelled to take a few cell phone camera pics as a means to study it from the home PC. Googling "Old growth trees in NY" caused me to be aware of this awesome forum. Living in Millbrook, NY, makes us approx. 13 miles from the sycamore Bob measured. We often pass this tree whilst on family day trips. It's a truly an awesome sight to behold. Huge and bright due to its

unique bark color comprised of leopard-like swaths of grey and white. My wife and four kids roll their eyes at me due to enthusiasm toward large trees. I also estimate the Pine Plains Sycamore as 300+ years. I'm sure all here are aware the 500 year old tree in Bedford, NY? Not sure what species but can check this coming week when on office break. It's near the road and there is a historical tree marker near it. Looking forward to hearing from you all. Be well.

Seth Gross

[Re: Pine Plains Sycamore Report](#)

by dbhguru » Sun Nov 11, 2012 9:43 am

Adam, Unfortunately, access to the big tree is no longer allowed. You can drive by it and look at it from the road, but that is all. Here is a map that shows you the tree. Notice what the orange arrow is pointing to.



I hope to on day hook up with the owners and get access to this great tree.

Robert T. Leverett

[Re: The Golden Spruce](#)

by dbhguru » Sun Nov 11, 2012 12:45 pm

Joe Zorzin worte: I'd like to think that it's possible to be both a logger or forester AND and enviro activist. That's a rare breed of course but not impossible.

Joe, Indeed it is possible, and I have been privileged to know some good ones. As a matter of fact, I consider you to be one of those who can be both.

Russ Richardson, Don Bertollette, Michele Wilson, Rex Baker, and Ehrhard Frost are other examples. Of course, there are the iconic figures like Aldo Leopold, William Arthur Ashe, and Richard St Barbe Baker who reached the pinnacle of conservation consciousness. Still others could be mentioned, but alas, in total, I fear the percentage will always be small.

According to accounts I have read, the industrial model of forestry replaced in custodial model as the need for wood skyrocketed in WW II, and forestry has never since regained its bearings. I'm sure many would dispute this depiction of the history of the profession, or at the least, point to some well-managed forested properties, private and public. You certainly have success stories to tell there. And I recently saw an impressive example of excellent forestry in Woodstock, VT - the Marsh-Billings-Rockefeller NHP. But that property is about as far away from the industrial model as you can go and still call it forestry. I think the conventional message is that such a selective and light touch doesn't pay for itself in the short run - if at all.

I suppose the big question is whether or not forestry can provide good livings through long-term, sustainable forestry practices for its practitioners. I don't have the answer to that question. I know you have lots to say on the subject. I remember the discussions from NEFR when Carl Davies described paths to sustainable forestry and a decent living. Although those discussions were often heated, they did speak to the heart of the matter. I have been told by professionals (government and academic) that there is no path to the better life practicing ecologically balanced, sustainable forestry. According to those sources, you can never get ahead. If that is indeed true, then hope for real progress is illusory. We'll be subjected to the continuation of greenwash by timber companies and the organizational elements of the forestry establishment while witnessing our woodlands being perpetually over-cut except where subsidized. Depressing.

I suspect that the belief of no profitable alternative to heavy cutting is deeply ingrained within the forestry profession. Come to think of it, that maybe

the explanation for why there is so little apparent curiosity about places like MTSF among the professionals here in Massachusetts. Mohawk must bear little resemblance to anything they consider to be economically viable. So, they ignore even visiting the place. The extremely low number who do visit that exceptional forest probably do so because they are interested in big/tall trees as a separate focus. Nothing says that they can't be dedicated to forest management while simultaneously wanting to retain some unmanaged woodlands or simple entertaining a fascination for big trees.

Robert T. Leverett

[The Tallest Trees in Africa](#)

by **KoutaR** » Sun Nov 11, 2012 4:20 pm

The Tallest Tree in Africa is a 79-meter (259 ft) tape-measured *Eucalyptus regnans*. A still taller tree, 81.5-meter (267 ft) *Eucalyptus saligna* measured by a land surveyor, existed till 2006. The both trees are/were located in South Africa.

[http://git-forestry-blog.blogspot.com/2 ... imbed.html](http://git-forestry-blog.blogspot.com/2...imbed.html)

[http://git-forestry-blog.blogspot.com/2 ... essed.html](http://git-forestry-blog.blogspot.com/2...essed.html)

Kouta Räsänen

[Super Storm Sandy Destruction](#)

by **gnmcmartin** » Sun Nov 11, 2012 10:54 am

Folks: This storm was devastating to a degree I could never have imagined. The worst hit were Norway spruce and Japanese larch, with hemlocks close behind.

Many, many Norway spruce had their tops broken off. Most often the top 20 feet or so was broken off, but often much more. Many were broken in half, losing the top 50 feet or so. In one grove of about 200 trees in nearby Hampshire county, WV, all but about seven had their tops broken off. On my timberland, in places 30% were broken, including many of the larger ones. In some spots on my timberland, groups of 6 or 8 trees together were all broken.

The Japanese larch still had most of their needles on, and of those on my timberland, probably 70% were destroyed completely, or had the top 20 feet broken off. European larch had lost more of their needles, so while some were broken, not very many.

As for hemlocks: most of the larger healthy ones with dominant crown positions, with no structural weakness, were not damaged. But many, many with intermediate or subdominant crown positions were severely broken. Many were completely destroyed, meaning they have no live crown remaining. Most of the smaller understory hemlocks were bent over or broken.

As a result, the road leading into my timberland is impassable--it will take me a year or more to clear it, unless I get some help from two or three strong men.

White pines fared better. A few of the larger ones, with no apparent defect or weak points, were broken off about 20 feet up, but because their tops don't collect the snow as much as the Norway spruce, they did not have the weight on them when the gusts of wind hit.

The large hardwood trees that had lost their leaves were virtually undamaged, but a few were blown over by the winds. The understory beech trees, which had held their leaves, were all broken.

Parts of Garrett County were without power for as much as two weeks. Some areas still may not have power. At my timberland it was out for 8 days.

Turner: if you get a chance, take a look at the Rothkugel--I hope the damage there was nothing like what I see here. Those trees are over 100 years old, and should be stronger, and I hope able to resist the storm. Here, the combination of high winds and the immense snow loads, was just too much for my 45 year-old trees. There was 35 inches of the heaviest and stickiest snow imaginable.

--Gaines McMartin

[Re: Super Storm Sandy Destruction](#)

by **tsharp** » Tue Nov 13, 2012 12:23 am

Gaines: I just got back from a 3 day meeting in Caanan Valley, Tucker County, WV. If your timberland looks like some areas I passed I you have my sympathy. It looked like tank maneuvers had been held. The worst section I saw was along WV 28 coming from Phillipi toward St. George in Preston County. Some West facing slopes had 100 percent of trees with damage. I also drove North From Thomas, WV into Md and I believe that road is on the west side of Backbone Mountain with your property on the East side? Wow Still 5,00 customers without power Monday morning but schools will be open Tuesday. I will probably not make it to Rothkugel for several months but will make inquiries.

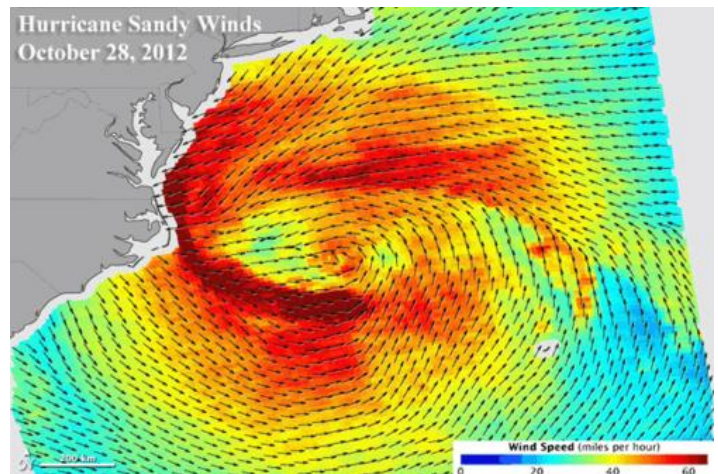
Turner Sharp

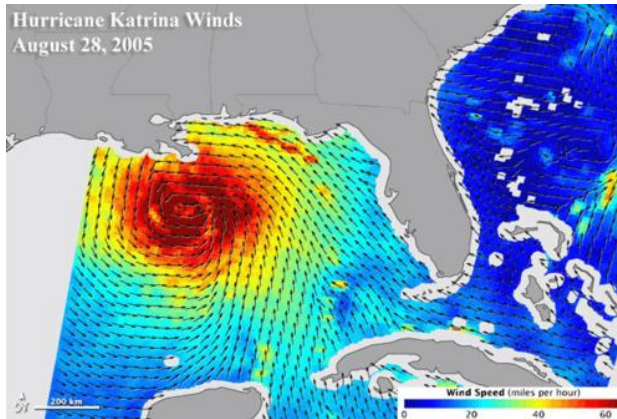
[Re: Super Storm Sandy Destruction](#)

by **Rand** » Wed Nov 14, 2012 1:43 pm

Found an interesting comparison between Hurricane Sandy and Katrina:

...ten hours before landfall (9:30 am EDT October 30), the total energy of Sandy's winds of tropical storm-force and higher peaked at 329 terajoules--the highest value for any Atlantic hurricane since at least 1969. This is 2.7 times higher than Katrina's peak energy, and is equivalent to five Hiroshima-sized atomic bombs. At landfall, Sandy's tropical storm-force winds spanned 943 miles of the the U.S. coast. No hurricane on record has been wider; the previous record holder was Hurricane Igor of 2010, which was 863 miles in diameter. Sandy's huge size prompted high wind warnings to be posted from Chicago to Eastern Maine, and from Michigan's Upper Peninsula to Florida's Lake Okeechobee--an area home to 120 million people. Sandy's winds simultaneously caused damage to buildings on the shores of Lake Michigan at Indiana Dunes National Lakeshore, and toppled power lines in Nova Scotia, Canada--locations 1200 miles apart!





<http://www.wunderground.com/blog/JeffMasters/comment.html?entrynum=2293>

Rand Brown

Re: Super Storm Sandy Destruction

by **gnmcmartin** » Wed Nov 14, 2012 9:18 pm

Thanks guys for your concern. The thought has occurred to me that I will just have to think of the timberland as it is now "post-storm" as a new starting point. But no, it's not that bad. But it has surprised me that the Norway spruce were so hard hit--previously they had shown considerable resistance to damage from ice and snow loads.

When I had heard that the storm was coming, I was most worried about the Japanese larch, and those were, indeed, the hardest hit. But some of those did survive unbroken.

And the hemlocks--yes, the strong dominant ones did just fine--maybe one or two exceptions--but those with subordinate crown positions, even if 60 feet tall, were hard hit. And also those in the lower understory. Again, as with the Norway spruce, in previous storms, these showed good resistance to snow and ice damage. At first look I thought most were destroyed, or seriously broken. But it is not so bad--maybe just 30%, if that. Yes, that's a lot, and it is painful to see, but it is not as bad as I thought after my first look. Of course the woolly adelgid may eliminate my hemlocks at some point. I hate to think

about that.

Mark:

The hemlocks on the rocks? I don't know--that is about a mile back from my trailer, and although the snow is now much reduced, right after the storm I would not have had the strength to walk back there. It may be a while before I can check. But, because most of the larger dominant hemlocks without any structural weaknesses came through fine, I expect these did also. These are interesting not just because they are growing on the rocks, but they are rather large and old, and some are the prettiest hemlocks I have ever seen. I have my fingers crossed, but my hopes ARE high for them.

There are lots of other favorite groves I need to check. It will be a while before I know the full extent of the damage.

Rand: wow, what nice pictures to illustrate the size of the storm. And, don't forget, this was not just a hurricane, but a kind of combination storm. The idea of a "hurricane snow" is mindboggling. I had thought of staying up at my timberland to see a few snow showers mixed in with the rain, which was the early forecast. Boy, am I glad I went back to Winchester, where our power stayed on, and our road was not blocked. We had water forced into our house by the winds, but no significant damage.

--Gaines

Re: Estonia

by **KoutaR** » Sun Nov 11, 2012 3:16 pm

Lee, In Järvelja forest there are two potential European height records. The height claims are Scots pine 46.6 m (153 ft) and grey alder (*Alnus incana*) 31 m (102 ft), but they have been measured with the tangent method (Vertex III and Blume-Leiss). You could have laser-measured them! The measurements have been published in e.g. here:

<http://www.ilmajaam.ee/946166/jarvelja...imad-puud/>

The news article gives following measured max. heights for the Järvelja forest:

Norway spruce (*Picea abies*) - 43.1 m (141 ft)
Silver birch (*Betula pendula*) - 36.0 m (118 ft)
Scots pine (*Pinus sylvestris*) - 46.6 m (153 ft)
Aspen (*Populus tremula*) - 40.8 m (134 ft)
Downy birch (*Betula pubescens*) - 27.6 m (90.6 ft)
Grey alder (*Alnus incana*) - 31 m (102 ft)
Black alder (*Alnus glutinosa*) - 33.3 m (109 ft)
Ash (*Fraxinus excelsior*) - 35.2 m (115 ft)
Small-leaved linden (*Tilia cordata*) - 34.5 m (113 ft)

Following trees are now dead:

Black alder (*Alnus glutinosa*) - 34 m (112 ft)
Common juniper (*Juniperus communis*) - 14 m (46 ft)

The trees have been measured with Vertex III and Blume-Leiss (tangent method). I know it because the news were discussed in a Finnish dendrologist forum and one member asked the Järvelja people about the method. I hope this helps.

Kouta Räsänen

Re: Estonia

by **Lee Frelich** » Mon Nov 12, 2012 11:07 am

Will and Kouta: Well, next time I go there, I will have to measure some trees. This trip I was too busy giving presentations and being treated like a king to measure trees. However, I did see some *Betula pendula* that I estimated visually at 42 m (138 feet), and I don't think the height claims made for Scots pine, aspen and Norway spruce that Kouta cited for Järvelja forest are much exaggerated. Trees are quite straight there, so errors from using the tangent method would be minimal.

Lee Frelich

Re: Estonia

by **KoutaR** » Mon Nov 12, 2012 12:52 pm

Lee, It would be great if you could verify some heights in Järvelja. According to the news article, there are signs to the record trees except *Fraxinus*, *Alnus glutinosa* and *Tilia* which are located in a nature protection area not allowed to enter. Of course, your hosts take you where you want.

The tallest laser-measured *Betula pendula* to our knowledge is 36.4 m tall and located in Białowieża NP, Poland, but I have a feeling it may become taller further north. In southern Finland there was a *B. pendula* Vertex-measured to be 38.5 m tall. After the measurement a few meters piece dried and broke off. I laser-measured it last summer and found it 35.4 m tall. The foresters say the dried piece was more than one meter long, so the birch would have been taller than the Białowieża birch. If the birch you observed in Järvelja was even close to the estimated 42 m, it would be the European record, too.

Kouta Räsänen

[The Forest Unseen: A Year's Watch in Nature](#)

by **Drala Hiker** » Sun Nov 11, 2012 9:07 pm

Any one that reads this site would find this book most interesting:

The Forest Unseen: A Year's Watch in Nature
by David George Haskell

David Haskell is a colleague of my Master Naturalist teacher. They work at University of the South.

Mr. Haskell walks on the trails along the side of Mont Eagle, where the university has placed the wild lands in a preservation trust.

His book is based on the observations coursing over a year of one square meter of land. He does a good job of showing the interdependency of all natural things. It's a fascinating read, filled with great information that we can use to further increase our own personal experiences in the old growth places that we love and cherish.

As a side note, the first time I hiked in Bankhead was with a friend who had been going there for years. An elderly man lived in a small wooden house just off the upper portion of Kinlock Road. I don't recall his name, but my friend Roy always stopped to say hello and offer a few cookies. I had remarked how incredible the forest was with the old growth trees and how amazing it must be to live there. He said it was nothing like it used to be when he was growing up there. He said that back then (1930s) 25% of the forest was filled with chestnut trees, but the blight hit and by the mid-50s they were all gone.

The forest we know now is the not the forest that will be there 100 years from now. Climate alone will account for much of the change. After all, the last major climate change was when the glaciers receded to the north and left the hemlocks to perservere in the canyons of Bankhead!

Bill Solomon

[Chinook Salmon? \(South Fork of the Eel River\)](#)

by **Mark Collins** » Sun Nov 11, 2012 11:14 pm



Today I spent the day walking around Richardson Grove State Park, a redwood park on highway 101, next to the Eel River. I had heard a few months ago about a salmon restoration project taking place on many of the local rivers. However, I assumed witnessing a salmon run on the Eel River was still a thing of the past, or at least something one had to be extremely lucky to see. Well, it sounds like the salmon are making a comeback, thanks to the restoration effort. Today, I saw several HUGE fish fighting the currents, thrashing about, heading upstream. I think the photo above is a Chinook salmon, although I can't tell for sure. Most of the fish were swimming where the currents were moving the fastest, at different spots on the river. Below is a link for an article about the comeback...

http://www.redwoodtimes.com/garbervilleneews/ci_21935838/volunteer-groups-count-thousands-salmon-coming-up-eel

Mark Collins

[Re: The Trsteno Planes - largest trees of Europe?](#)

by **KoutaR** » Mon Nov 12, 2012 5:15 am

Will Blozan wrote: WOW!!!!!!!!!!!!!!!!!!!!!! What a job that must have been to do the crown reduction pruning! They must have used a seriously big crane.

Will, Below some photos from the pruning Bodo Siegert sent to me.





Kouta Räsänen

TP360 Tilt Sensor Testing

by dbhguru » Mon Nov 12, 2012 5:34 pm

NTS,

The attached Excel workbook tells the story. The TP360 Tilt Sensor has an accuracy approaching 0.1 degrees. In this latest round of testing, I make

adjustments for tripod swivel. I've tested the Tilt Sensor before for both the TP360 and the TP200, but this test incorporates the most careful triangle construction.

 [TiltSensorCalibration.xlsx](#)

Robert T. Leverett

| TruPulse 360 Tilt Sensor Test: Nov 8-10, 2012, Robert T. Leverett | | | | | | | | |
|---|---------------------|-------------------|---------------------|---------------------------|-----------------------------------|------------------------------------|-------------------------|-------------------------------|
| # | Vert Leg: Bosch GLR | A: Top Ang: TP360 | C: Comput ed Bottom | A + C = Sum: Top + Bottom | L ₁ : Upper Side Bosch | L ₂ : Lower Side: Bosch | Comput ed Angle: law of | ABS Diff: measure d - compute |
| 1 | 6.042 | 6.4 | -7.574 | 13.97443 | 24.843 | 24.956 | 13.935 | 0.039 |
| 2 | 6.042 | 6.6 | -8.070 | 14.67041 | 23.686 | 23.771 | 14.627 | 0.043 |
| 3 | 6.042 | 7.9 | -9.748 | 17.64848 | 19.688 | 19.742 | 17.628 | 0.020 |
| 4 | 6.042 | 10.5 | -13.176 | 23.67586 | 14.604 | 14.718 | 23.778 | 0.102 |
| 5 | 6.042 | 6.5 | -7.474 | 13.97448 | 24.947 | 25.009 | 13.893 | 0.082 |
| 6 | 11.436 | 17.8 | -10.981 | 28.78124 | 23.300 | 22.531 | 28.836 | 0.055 |
| 7 | 11.436 | 22.6 | -14.644 | 37.24436 | 18.230 | 17.368 | 37.378 | 0.134 |
| 8 | 11.436 | 26.0 | -18.078 | 44.07827 | 15.603 | 14.609 | 44.332 | 0.254 |
| 9 | 11.436 | 26.0 | -18.079 | 44.07853 | 15.650 | 14.618 | 44.234 | 0.156 |
| 10 | 11.436 | 20.2 | -13.804 | 34.00436 | 19.882 | 18.991 | 34.120 | 0.116 |
| 11 | 6.042 | 7.2 | -9.258 | 16.45784 | 20.885 | 20.989 | 16.590 | 0.132 |
| 12 | 6.042 | 6.5 | -8.170 | 14.67042 | 23.646 | 23.779 | 14.635 | 0.035 |
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| Range | | | | | | | 0.234 | |
| STD Dev | | | | | | | #NAME? | |

[Ash twig ID](#)

by **wrecsvp** » Wed Nov 14, 2012 11:00 am

Hi all, Attached are a few photos of the same Ash twig.

I think it has "textbook" characteristics of Black Ash (*F. nigra*), although I find the textbooks that I see don't offer conclusive diagnostic characteristics. The tree had already dropped its leaves and it is too small to display characteristic bark yet (corky or otherwise) or bear seeds (even if it is "female") so all I had for ID purposes was the twig.

A very experienced colleague thinks it is Green Ash (*F. pennsylvanica*) based only on these photos. He raised the objection that the site was inappropriate for an acidophilic tree, such as Black Ash, to be. The site (Ottawa, Canada) is partly sunny/shaded along a creek with a mix of mostly hardwoods and some softwoods. Most of the canopy trees at the site are Green Ash, and I didn't see any mature Black Ash which supports his ID to an extent. I would appreciate any further opinions.

Owen



Ash twig 4



Ash twig 3



Ash twig 2



Ash twig 1

Chris Morris writes: I like Black Ash too. I noticed the gap between terminal and lateral buds [in Green and White, little to no gap].

Birds and leaves

by **Jenny** » Wed Nov 14, 2012 11:18 am

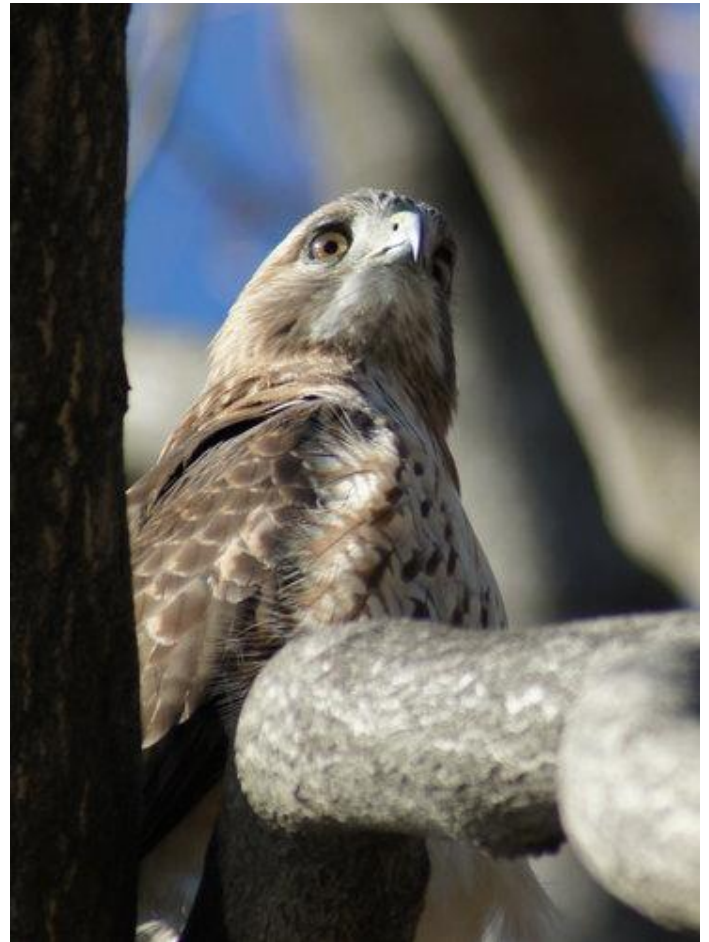
HI!!!!

Put together another Central Park video. Mostly birds, but some nice photos of sweet gum leaves and a beautiful ginkgo leaf (w/oak leaf).

Vimeo blurs images, but it's still worth checking out the variety of birds. You may have to copy and paste just the link.



<https://vimeo.com/53334306>



Jenny

[Agawam High School Students Project](#)

by dbhguru » Thu Nov 15, 2012 9:45 am

NTS, Later this morning, I'll be addressing a group of Agawam H.S. students at Robinson SP. The objective is to introduce students to simple tree measurements and work from the absolute most basic measurements upward as far as it makes sense to go. I have no idea what to expect, but I hope to challenge the students' imaginations and desire to know more about their forests. Robinson SP has the 4th highest Rucker Index of all the sites we've surveyed in Massachusetts and sports the champion tall tuliptree. There is definitely resources in Robinson to work with, and three math teachers will be present (two retired) to help students grasp the principles that will be applied.

I admit to feeling a little awkward. My entire teaching career of 24 years was at the college level. I've done some field trips for high schools and grade schools in the past with mixed results. My hope has been to find a school that has, let's say a math club, and appeal to students who have a very focused interest in that subject and challenge them to make math work in the field. If some young minds catch fire, it could be exciting. The question is whether or not I have what it takes to spark their interest. We'll see.

If this experiment works we will attempt to expand it, first in Agawam High and then elsewhere. Stranger experiments have worked.

Robert T. Leverett

[Re: Agawam High School Students Project](#)

by dbhguru » Thu Nov 15, 2012 9:16 pm

Eli Dickerson wrote: Very interested to see how it went. I've been doing informal education for middle and high schoolers for a few years now and have

often wondered how they would respond to our NTS activities and methods. Best of luck!

Eli, It went well. The kids were attentive and seemed to enjoy the demonstrations. Bart Bouricius, back from Peru, went with me and showed how to get a climbing line up into a tree. We measured a tuliptree. I took the individual measurements and one of the kids did the math, and got it right. That was pretty cool.

I'm not sure where we'll go from here, but it was a satisfying first event.

Robert T. Leverett

[A discussion on trunk and limb mass](#)

by **Don** » Fri Nov 16, 2012 1:00 am

Over time, I've wavered like many on how to properly deal with Multi's versus Single's when it comes to entering them in a champion tree list.

My most recent thinking is just a little bit derivative, and I think it provides parity in making a decision about "big trees".

How do we best define "big" in reference to trees? Crown size/spread? Girth? Height? A combination of these three? A weighted combination of these three as used by American Forests?

My current thinking ties into a forth arena of measurement that NTS works with, "mass"...

This is not likely to be popular with everyone, but big is big...a twin with two forks of 36" each girth is going to have more mass than say a 40" single stem, given same height and crown size.

Mass is not an easy measurement to begin with on a single stem, and twins/multi's are even more difficult. It's my thinking that one wouldn't want to undertake mass/volume measurements casually. It would seem appropriate for species maxima, particularly for the real giants.

What do you all think?

Don Bertoletto

[Re: A discussion on trunk and limb mass](#)

by **edfrank** » Fri Nov 16, 2012 11:19 am

Don, Are you using mass as synonymous with volume? They are not really the same thing. Here on Earth at 1G, mass is pretty much the same as weight for static objects like trees, and that would deal with wood density. I think you are saying volume. It is an

excellent parameter and I am sure that you will not get much argument from people here. The problem is that it is such a pain to measure, that it can only be practically done for occasional exceptional specimens. As such it has only a limited application for characterizing big trees in general. For those trees in which volume is measured, that is great!

I also wonder about how to deal with the volume of smaller branches. it is clear that some individual trees and some species in general have differing percentages of their volume ties up in branches. How do we determine what percentage of volume s included in the branches. if you ave a cut-off for minimum size of branch measurement, I wonder also if the ratio of the volume of smaller than cutoff size branches to larger branches is the same for all individual trees within a species or for trees of different species. This is not a criticism of the idea, just brain storming.... For big trees a size of branches below a minimum size might be a small percentage compared to the volume of the trunk and larger branches, would it be the same for smaller tree species? I think that smaller trees might be given short thrift in the process.

I like the Tree Dimension Index (TDI) concept, but we don't use it much. The advantage is that it consists of three parameters that are relatively easy to measure. Volume is a perfectly valid parameter as well. All of these ideas, even volume I think, include some compromises in characterizing what is big. Big can mean different things and reflect different parameters depending on what question is being asked.

Edward Frank

[Re: A discussion on trunk and limb mass](#)

by **dbhguru** » Fri Nov 16, 2012 11:17 am

NTS, Over the years Will Blozan, Jess Riddle, and I have made numerous posts on trunk and limb volumes and how to calculate them. It has been a

virtual career for Will, and close to that for yours truly. Determining mass is only a multiplication away from volume and volume must be determined first. So, I'll speak to volume.

WNTS VP Michael Taylor's high-end method for determining volumes is the final word. It is the unquestionably the best way to determine volumes for trees. We are indebted to Michael for solving the volume measurement challenge, but Michael's method is out of the reach of most Ents. It is an extremely high end method that isn't for the faint of heart. We need it for world-class trees (per Don's musings), but still need simpler techniques for lesser entries, and we do have them. NTS volume modeling techniques have been presented over the years. We even have handy Excel spreadsheets to do the calculations. It is all there in past posts.

Now to the big question. Does it make sense to add volume/mass to the mix in terms of what we do in NTS? On occasion, I'd say yes, but based on my assessment of overall interest, not as part of a measuring routine. Volumes involve too much work. Only a small number of us do it. However, if an Ent wants to tackle volumes, my suggestion is to start by purchasing a monocular with reticled focus such as an RF Interscience Co. Macroscope 25 or 45 or a Vortex Solo R/T 8 x 36. You'll have the added benefit of being able to measure diameter at a distance, and to an extremely high level of accuracy. And you can seek assistance from some pretty experienced monocular users: Will Blozan, Michael Taylor, Jess Riddle, Dale Luthringer, John Eichholz, Larry Tucei, and yours truly.

Speaking just for myself, I maintain a number of volume lists. One is of all single-stem white pines with a trunk volume of 500 cubic feet or more in Massachusetts. This list allows me to put a particular pine into perspective vis-a-vis others of its species in the immediate area, state wide, region wide, and range wide. But, again, maintaining the list involves a lot of measuring. One literally needs to be driven to do it. A casual interest hack it.

Now back to a point that Don makes, i.e. "big is big is big." There's a lot on meaning buried in that

simple phrase. How serious are we about distinguishing the giants for at least the largest species for a geographical region? I can answer that question for myself, but not for others. Individuals notwithstanding, it remains to be seen if we, functioning as a group, are ready to put the time and effort into dealing with mass/volume - even limited to the exceptional specimens. It is no minor undertaking.

Robert T. Leverett

[Re: A discussion on trunk and limb mass](#)

by **dbhguru** » Fri Nov 16, 2012 12:48 pm

Ed, Will has some good rules of the road to apply with respect to small branches as a percentage of total limb and/or trunk volume. Beyond conceptualizing about volume and mass as measurements we should consider, we could start with what we've done so far and see if those results point us in a direction. We have a lot of data on conifers. Certainly the limb to trunk volume ratios depend on species and growing environment. Those of us who have modeled trees of several species have crude ideas about overall percentages. We do have a pretty good feel for how the really small stuff, cluttered though it appears, impacts the totals.

I conclude by observing that volume modeling is labor intensive. Those of us who have reason for doing it will continue, but beyond the self-motivated few, I'm reluctant to pressure others to do more. Discussing the topic hurts nothing, though.

Robert T. Leverett

[Re: A discussion on trunk and limb mass](#)

by **dbhguru** » Fri Nov 16, 2012 4:11 pm

NTS, I welcome the re-emergence of mass and volume as a serious determination for NTS as opposed to the pursuit of a few. If my previous comments sound as if I don't give volume determinations much of a chance of taking off, well, I don't. Why? It is a labor intensive pursuit and fraught with pitfalls. Nonetheless, I hope the discussion will continue. For the record, I say again. Anyone genuinely interested in volume determinations should add a reticled monocular to their inventory. Earlier this afternoon, I went to Look Park to practice with my Solo R/T. Here is the image of the trunk of a large white pine.



At the marker, the girth is 12.45 feet. The equivalent diameter is 3.96 feet. Using the TruPulse 360 for distance and the Solo R/t to determine target width, at 67.5 feet I got a reticle reading of 59 millimeters. The computed target width is 3.98 feet. The difference of 0.02 feet equals 0.25 inches. I can live with that.

Next I went to a large double sycamore. Here are four views at 90 degree intervals.





The girth of this fusion is 17 feet. If we treated that number as the circumference of a circle (which it isn't), the cross-sectional area would be 23.0 feet. If we treat the form as an ellipse, we get 6.12 feet and 3.953 feet as the major and minor axes. The corresponding area of the form treated as an ellipse is 19.23 feet.

By simple observation, we can see that the form is not circular. Strictly speaking, it isn't elliptical either. It is more on the order of overlapping circles with the points of join filled in a little. The result is probably slightly less than the ellipse. I'd guess that the cross-sectional area is around 18.75 feet. Bear in mind, although the form isn't circular or elliptical, we can still compute a reasonable approximation of cross-sectional area with minimal effort expended using the closest match. If we have cross-sectional area, we are on the way to volume determinations.

Now, imagine a heavily buttressed tropical form (wait 'till you see what Bart Bouricius is going to show us). We no longer have a form that we can stretch a tape around or take a couple of reticle measures of. We have a computational nightmare situation staring at us. That is what I'm going to be facing in Hawaii when I tackle the old growth ohia forest. They want the biggest trees reduced to numbers - presumably numbers that mean something. I've increased the scheduled time planned for taking measurements in that forest from 2 to 4 days. Wish me luck.

Robert T. Leverett

[Re: A discussion on trunk and limb mass](#)

by **edfrank** » Fri Nov 16, 2012 5:36 pm

Bob, I am sure that Will has certain rules of the road for characterizing the percentage of volume in the smaller branches. I am sure Bob Van Pelt does also. You have a "pretty good feel" about how this smaller stuff impacts the tree volumes totals. But how do we objectively show that these approximate values are right, or even in the right ballpark? People once had a pretty good feel for the idea the Earth was flat. If our results are to be considered meaningful in a scientific forum, we need to be able to demonstrate that these approximations are correct, that they can be applied in varying situations, and that they can be applied by others trying to duplicate our work. Even on a larger scale there has been some concern expressed whether the volume of the large limbs of the Middleton Oak and its trunk were really bigger than the Sag Branch Tuliptree or if it was an inconsistency in the math used in the modeling process. So I am not trying to beat a dead horse, but to emphasize the need to some way to quantify or at least develop some qualitative evidence that these approximations are indeed correct.

Edward Frank

[Re: A discussion on trunk and limb mass](#)

by **dbhguru** » Fri Nov 16, 2012 6:13 pm

Ed, I wasn't clear on what I was getting at. Will has experience on the volume of the really small stuff as does BVP, and to a lesser extent, so do I. What I meant was that we should pool our collective experience and see where it takes us. I didn't mean to imply that others should assume that we three have the problem solved.

I went through a period of time where I ran computer simulations of limb and branch structures to see if I could get a better feel for the total volume

of the white pines and northern red oaks back of our house in terms of the main trunk, the big limbs, and the small limbs and branches all treated separately. Will has done detailed stuff from aloft. Bob Van Pelt and Steve Sillett used more sophisticated methods to map the huge trees they climb down to the twig level. I expect Michael Taylor has much to add. Collectively, I think that we could develop insights that might point a direction to go.

I expect there is software that simulates tree branching adaptable to different tree forms. One could even take a limb from a fallen tree and do some ground-based measuring and then replicate the results. I've actually got a number of large branches that I could measure from a couple of 100-foot tall northern red oaks that went down in Irene. A number of the limb structures are still intact. That may point the direction to a future modeling project for me. I'd rather incorporate data from actual trees and see where it leads me as opposed to using computer models based on assumptions that aren't clear.

Robert T. Leverett

[Re: A discussion on trunk and limb mass](#)

by **Joe** » Sat Nov 17, 2012 9:48 am

Guys, lots of logging jobs going on all the time in which, I'm sure, the loggers/foresters would be happy to drop a tree and let a researcher measure the small stuff.

Just a thought- but rather than trying to measure the volume of the small stuff by geometry, the small stuff could be weighed- then, because it's known how much each species weighs per cubic volume.....

Joe Zorzin

[Re: A discussion on trunk and limb mass](#)

by **Will Blozan** » Sat Nov 17, 2012 12:56 pm

Don, great topic and one in need of serious discussion. To sum things up Van Pelt and Sillett have branch volumes of CONIFERS down to about a 98%+ predictability, regardless of species. Van Pelt has come up with an algorithm he has called "The Universal Truth" that is integrated into their research. He thinks it will apply to hardwoods but has yet to be tested to my knowledge. His formula is based on many, many, tedious hours of dissection of hundreds of kilometers of small branches and branchlets (I have done this with him in CA). As accurate as the formula is the total tree volume represented by branches is typically tiny. For terminology sake, a limb is not the same as a branch; it supports a branch which has the leaves.

So, if we set a tolerance of say, 95% accuracy we would not need to bother with complicated formulas and extensive sampling of small parts. Interestingly and not surprisingly, open-grown and forest-grown trees of the same species will have vastly different ratios of branch volume (not mass- as Ed pointed out this is a whole different ballgame). In the research climbs with Sillett and Van Pelt all trees are measured to a certain diameter cutoff. In the sequoia work I believe we went down to a 7.0 cm resolution. These termination points were counted on every limb system and then the formula applied to the total number sampled. Furthermore, every branch was further sampled for path length (live and dead), bifurcations and foliar area for final tweaking of the outcome. Cones (green and brown) were counted and the number of these were used to calculate total weight (not volume) of the branches.

Tedious is the say the least about this process. For the current tuliptree study in GRSM we are using a 10.cm minimum resolution with grand goals to subsample branches for specific attributes. Time is the issue as always.

One more point for the moment; a multistemmed tree should not be compared to a single stem by way of

volume. This is no different than conventional big tree methodology. I do know American Forests will use tree volume to settle disputes about the super large trees. The current National record for sequoia (and redwood I think) is out pointed by several trees but remains the champ based on wood volume alone. I have tried to get the Sag Branch Tuliptree listed based on wood volume but to no avail. American Forests asked me to visit the Senator cypress and the Cat Island cypress to determine which was the largest in wood volume. I answered that one on the phone; the Senator was way bigger and actually a single tree. However, they chose to list the Cat Island twin instead...

Look for my posts on the Poplar Forest tuliptree measuring- it has a few tables of branch volumes. I'll try to pull some data together from other climbs as well, but since the resolution may be different they may not be of much use.

Will Blozan

[Re: A discussion on trunk and limb mass](#)

by **eliahd24** » Sat Nov 17, 2012 1:53 pm

Entering my 4th or 5th "season" as an active NTS tree measurer, I have a keen interest in moving beyond cbh, height, and crown spread measurements.

I have long been thinking of entering the realm of volume calculations and this thread certainly helps me think about the next steps. Here in Atlanta I have found a number of tuliptrees that I would love to do simple (VERY simple compared to Will, etc.) volume calculations. I'm curious to see how they stack up compared to the giants in the Smokies. I also have lofty aspirations of doing a valid volume measurement for the Angel Oak in Charleston, SC, as I visit the tree often. Thanks for the continued inspiration and information guys!~

Eli Dickerson

[Re: A discussion on trunk and limb mass](#)

by **Will Blozan** » Sat Nov 17, 2012 3:57 pm

Guys, The last sequoia I helped measure had a total volume of 27.77 m3 (981 ft3) in branches alone. This seemingly large amount of volume was only 1.82% of the total volume of the tree which was 1,526 m3 (53,894 ft3). Yes, it was a big tree.

Will Blozan

[Re: A discussion on trunk and limb mass](#)

by **Don** » Sun Nov 18, 2012 12:17 am

Bob/Ed/Joe/Will/Eli-

It was certainly fertile soil that my seed of thought fell upon! I appreciate your responses, and am reminded of having learned these terms oh, so long ago! But I'll not bore you by going back to high school/junior high school classes.

One of my favorite classes at Humboldt was Wood Science and Technology taught by an old school guy with a drill sargeant haircut...drawing a blank on his name, but when the local redwood mills were having from headrigs for 6' -10' logs, to 14" - 22" it was Bill (still can't remember his last name) they contracted out to write a computer program that would more efficiently cut up the smaller diameter logs (had to resort to second-growth...sure sign that they flipped off 'sustained yield!').

When we went from engineering issues with wood (tension, compression, sheer, etc.), we looked at how various woods and conditions affected BTU's...for those of us who were burning firewood to heat our student hovels, our ears were peeled. But before we got there, we learned about moisture content, specific gravity, mass and volume and how they all related to BTU out puts. (Not done there, Bill went on to stove efficiencies, and we were all rapt with attention).

I remember I got a little sticky in determining BTU's when we had to take into consideration how much the loss of moisture content changed the volume (any

given chunk of wood shrinks when it dries, expands when it soaks in water), and how that related to mass and it's specific gravity (aka density, which equals mass over volume, with an eye towards it's relationship with water at standard temperatures and pressures).

It got as sticky as you wanted it to get, an A's were tough to get in Bill's classes.

But I digressed...I was originally trying to find parity (a way to fairly compare) between the bigness of a single stem and the bigness of a twin (and to a lesser extent, multi-stem). Objectively.

To me, part of 'big' is the 'blots-out-the-background first impression', and anybody that saw the Arizona cottonwood champion before it died recently had to be impressed by it's size, even if it was a twin. Yes, but...I know.

Lots of trouble establishing volume parity across species AND across single/multiple stem subjects...do we take those determinations at the standard breast height and let variation in trunk diameters elsewhere go? Average the volume across a foot, half below bh, half above, so as to establish a standard?

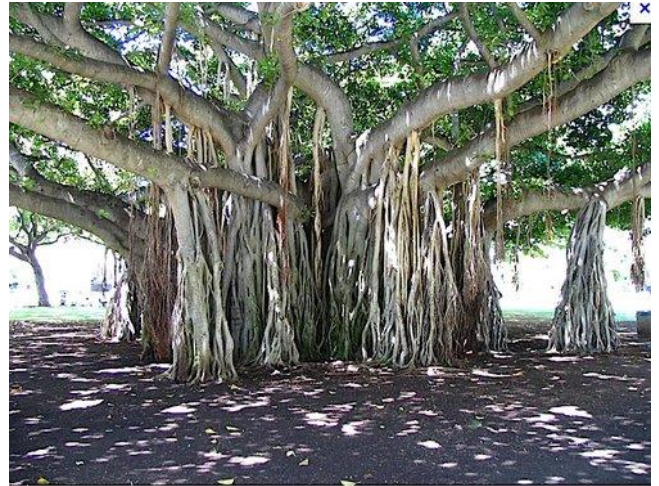
I've more thoughts, but fear that I'd really get rambling...I would be interested in your ideas on this!

Don Bertollette

[Re: A discussion on trunk and limb mass](#)

by **dbhguru** » Sun Nov 18, 2012 9:01 am

Don, Will, Ed, et al., Standards are fine for the well-behaved forms. Take a look at this.



When we leave our comfort zones (geographical and other), we encounter bizarre forms that are just as much a part of the tree world as trees with nice, straight trunks. I expect I'm going to be confronted with some pretty strange forms in a few days over in Hawaii. Hawaii falls in the region covered by WNTS. Maybe we'll break some new ground.

Bob Leverett

[Re: A discussion on trunk and limb mass](#)

by **dbhguru** » Sun Nov 18, 2012 3:03 pm

NTS, These discussions have ranged a bit from Don's original question of whether or not we should we add mass as a fourth dimension to measure in order to make more fine-tuned comparisons among the wide variety of tree forms. Don recognizes that undertaking volume and mass measurements is not for the faint of heart. The wide range of tree forms suggests non-comparability at the extremes - witness my post of the banyan tree image. But there are plenty of other examples. If we take the case of the truly giant trees growing on slopes, the vertical distance between uphill and downhill sides can be 20 feet. Where does the convention of measuring girth at 4.5 feet above mid-slope play out? The multi-trunked/rooted banyans suggest the questions: What is being measured at 4.5 feet? The old conventions

were intended for reasonably well-behaved tree forms. However, I humbly suggest that they are a wee bit outdated, but as we can all attest, replacing them is not a trivial pursuit.

Far from the rarified world of theorizing, I do my best work trying to make progress on the ground - yard at a time. There are steps that our current membership can toward resolving the challenges involved with tackling volume and mass. For instance, we can accumulate detailed data on volumes of twigs versus branches versus limbs to get an idea of what must be separated versus what can be lumped together or even ignored. One idea that Will and I discussed this morning was to develop a canopy measuring protocol that recreational tree climbers might participate in. It is a subject for the Oct 9-13 rendezvous in Atlanta. Manageable efforts on the part of the many could produce long term gains. I'm thinking of counting exercises that would be far too tedious to be taken on by the few.

At the risk of sounding like a broken record, Ents who wish to proceed with volume beyond chit chatting on the BBS should consider investing in a monocular. The little device has proven itself, and as some of us have discussed over the years, it opens the door to measurements taken at a distance of branches and limbs down to around 2 inches in diameter. In the end, it may find its greatest value in providing benchmark measurements to be used along with lots of overlapping photographs fed to Michael Taylor, BVP, Will Blozan, etc. But this is for high-end applications. That still leaves much that we can do at the low end, and it is only at the low end that including volume/mass as a fourth dimension in judging tree bigness makes sense for the vast majority of recreational big tree hunters.

Now here is a question for the group. If we had measuring protocols worked out for including volume/mass in comparing comparable tree forms (apples to apples), would any groups other than a subset of the NTS membership use the protocols? Lots more to discuss there.

Robert T. Leverett

[Re: A discussion on trunk and limb mass](#)

by Joe » Sun Nov 18, 2012 3:11 pm

Well, certainly we working stiff foresters would like to be able to know the full volume of trees which we mark for harvesting- especially when there is a market for such "leftovers" as branches- especially a chip market-- we do have our own rules of thumb to roughly estimate such volumes but God only knows how accurate or innacurate these numbers are because I'll never believe what any logger tells me about what they end up with

and of course, researchers who want to know exactly how much carbon is sequestered by trees should want good numbers

Joe Zorzin

[Re: A discussion on trunk and limb mass](#)

by dbhguru » Sun Nov 18, 2012 5:57 pm

Joe, I believe that we could help for the purposes you list. Using nothing more than a laser rangefinder, compass, and a reticled monocular, we could determine the volume of limbs and branches down to about 2 inches in diameter. If we modeled enough trees, we could provide information on species such as northern red oak, red maple, sugar maples, white pine, etc. in terms of the percentage you would need to add to the trunk volume to cover limbs and branches for a range of shapes.

I would have thought that destructive sampling had been done by biomass researchers to provide some rules of thumb. But I assume if data of that sort were readily available, you'd know about it and be using it. It would be rewarding to collect data that could have a variety of practical applications. When Monica and I return from Hawaii, I'd like to talk to you more about seeing if we could collect data of a sort that would be of practical value to you. Ideally, I would

work to perfect a ground-based protocol for measuring volume of trunk, limbs, and branches and array the numbers to separate parts of the total along the lines of greatest value. I see no reason why our data couldn't find homes in practical as well as more purely research applications.

I would be willing to refine the Excel spreadsheet that I previously built to model tree volumes using the LTI TruPulse 360 and a monocular. We could then model a sample of trees that you would identify as being useful to you. The data would be available to whomever could make use of it. I'm game if you are.

Robert T. Leverett

[Re: A discussion on trunk and limb mass](#)

by **edfrank** » Sun Nov 18, 2012 7:08 pm

Don wrote: Lots of trouble establishing volume parity across species AND across single/multiple stem subjects...

Don, I still think the best option is to keep separate lists for multitrunk and single trunk trees. Girth is not the same as volume, but it is a perfectly valid measurement in its own right. I like the 4.5 standard height, because we can't get anywhere or really make any useful comparisons at all if the girth is measured at different heights on each individual tree. I would better like a height of 4.5 feet measured on the high side of the tree, but alas...

The measuring a foot long section half above breast height and half below really gains us very little. No matter if the trunk is conical, paraboloid, or other shape, the volume of that cylinder will simply be 1 ft. x πr^2 . The differences in volumes between those shapes in that length are negligible.

Edward Frank

[Re: A discussion on trunk and limb mass](#)

by **Don** » Mon Nov 19, 2012 3:31 am

Bob- First, While I understand the sense of satisfaction/accomplishment/closure with a 100% accurate volume estimate (such as can only truly be obtained in an absolutely huge graduated beaker measuring volume of water displaced), I wish to draw the focus the other direction.

Acknowledging that my focus doesn't take in the 'big' picture, I was looking for a more 'truncated' volume measure, that would work with most of anticipated champion tree candidates. For deciduous form single bole it could be volume until first fork; for deciduous form twins/multis, to each of their boles forking. I've arbitrarily chosen the first fork as in so many of the trees I've seen, most of the 'big' happens there. But you've seen many more large eastern trees than I and I would easily/happily adjust up.

A quick aside, your mention of destructive sampling done by biomass researchers took me back to one of my Humboldt classes (we felled a 25' Doug fir, brought it into a lab where we sectioned it immediately above and below each whorl [there's no better way to get a sense of annual rings then following them up the tree], and binocular-scoping the pies for analysis of annual rings. I'm sure that the destructive sampling you're thinking of has been done, many times over. But at manageable sizes...most likely not champion candidates.

I do like what I'm understanding about BVP's "Universal Truth" 98% level of confidence across evergreen and somehow, deciduous? 95% sounds good to me, and if more practical, 90% gets closer than we are now measuring twins and calling them singles...

Don Bertolette

[Re: A discussion on trunk and limb mass](#)

by **dbhguru** » Mon Nov 19, 2012 2:14 pm

Don, I think an expectation of getting to within 10% of actual volume of what is being measured is quite reasonable. We usually can do a little better. Measuring volume from the ground, I'm guessing that we can usually come within 6 or 7% without spending an inordinate amount of time. Getting closer requires a lot more time. It becomes almost exponential.

In terms of how far up the trunk we would go, determining that is a more challenging problem. Some eastern hardwoods have limb structures that carry more wood for the same trunk diameter at the point of branching. I've long observed that. For example, white ash and sugar maple limbs lose volume fairly quickly. Oak, well, they are champions. For the same limb length, they maintain diameter. Consequently, if a volume comparison is to mean anything, limbs must be included and the species factored in.

We can discuss the measuring protocol(s) that might be adopted to include volume. I'm sure Will, Ed, and others have lots to say on the subject of how to factor in volume/mass to help distinguish between competing candidates for champion tree lists. At the least, it could be used as a tie breaker. Actually, the more I think about it, the more I like your initially expressed idea of considering volume/mass as a fourth dimension to include in the general champion tree formula - especially for the limited objective you set forth.

Here is a thought. What about measuring volume in the first half of the tree (50% of total height)? The 50% cutoff would be the standard, which of course would come at different heights on different trees, but so what? Trunk and limb above a cutoff point (e.g. 5 inch diameter) would be excluded. For the Jake Swamp white pine, this would mean a simple measurement of the trunk up to the height of 85.5 feet would suffice. A large spreading oak with big limbs would involve more work, but still not an

insurmountable amount.

BTW, I'm not wedded to any system, but I think the time has come for us to push the envelope. And who else could better do it than NTS? That said, the vast majority of us will never be able to go to the lengths that Sillet, Van Pelt, Michael Taylor, and Will Blozan do in measuring volume, but that shouldn't prevent us from moving forward in adopting a better system of judging "bigness" for at least the champion tree competitions.

As for my role, as you know I send a lot of time fiddling with my gadgets and determining what can be done with them. When I propose an extension to our techniques, I try to keep the majority of Ents in mind. So, at the risk of being tuned out, I'll close with one more call for the adoption of the monocular as a standard tool of our trade. Monoculars really aren't that expensive and like the rangefinder, they greatly enhance our ability to get accurate measurements at a distance. The Vortex Solo R/T 8x36 can be purchased for as little as \$120. Adding a \$180 laser rangefinder, a \$120 clinometer, a \$40 D-tape, and a \$20 calculator adds up to \$480.00. A serious tree measurer can justify that outlay.

Robert T. Leverett

[Re: A discussion on trunk and limb mass](#)

by **Don** » Mon Nov 19, 2012 5:58 pm

edfrank wrote: Don, I don't get what you are saying here: "90% gets closer than we are now measuring twins and calling them singles..."

Ed, If you go back to the beginning, read only me and exclude others, you'll see that the context that I was trying to create is to find a way to resolve the single/twin/multi-stem measuring conundrum, by going into a fourth "dimension" where volume becomes the 'measure' of bigness.

Of course there are problems making volume determinations. In our big tree measuring world

fraught with non-standard scenarios, a "Universal Truth" solution looks good. BVP feels that 98% of the tree's volume is captured at a certain point (I don't know, but I'm guessing at a stem diameter of say 2").

When I say that I'd be happy with the comparative size accuracy obtained at capturing 90% of a tree's volume (at an unknown stem diameter cut-off), I believe that would be of a magnitude greater than dbh's measured on twins and multi-stems using conventional tools.

Sorry to not provide a briefer more elegant answer, hope I managed to express myself, and informed you...-

Don Bertolette

[Re: A discussion on trunk and limb mass](#)

by **Don** » Mon Nov 19, 2012 6:07 pm

Bob- I suspect it would be too 'busy', but having looked into your Solo Vortex Monocular web page, I'm now thinking that a combination monocular/laser rangefinder would be the cat's meow!

It would need a horizontal and vertical scale, like the Vortex, and two sets of buttons, one for each scale. Vertical scale and button set would provide distance measures, slope angle; horizontal scale would use a horizontal distance and provide buttons for setting diameter points.

Tree height and cbh, one device. Wow !

Problem? Optimum Cbh distance would usually be less than that needed to accurately measure tree height. Hmm, guess I rambled...

Don Bertolette

[Re: A discussion on trunk and limb mass](#)

by **edfrank** » Tue Nov 20, 2012 2:09 am

Don, As I look over your original post and this latest reply, I am interpreting by mass you were really

talking about the impressiveness of a tree or its bigness. As far as measurements go to capture that concept, I don't think volume will do any better than girth. If it is a single trunk, what is its girth at breast height? If it is a multitrunk tree, what is its combined girth at breast height? Using a different height or multiple heights for girth doesn't change anything. I may be misinterpreting your concept, if so at least I am providing a jumping off point for a new series of tangential discussions to begin.

I really think the concept of bigness is a subjective one, more so than a physical characteristic that can be measured with lasers and tapes. There are four criteria about why a tree would seem massively big:

1) How easily you are impressed - some people will be impressed by the size of a particular tree that others may not be impressed.

2) The context of the trees placement. A big white oak in a field may be very impressive in that context, while a similar sized tree set amongst the giant sequoias would not be given a second thought.

3) The knowledge you have as an observer about trees in general and that particular species of tree will influence your opinion of bigness. If you know a particular tree is extremely large for that species, you will be impressed even if it is not the biggest tree in the area.

4) The knowledge you have of that individual tree. For example the Longfellow Pine at Cook Forest State Park, PA is not much different in girth when compared to many other trees in the area, it is smaller than many. It is difficult to judge height differences of 10 or twenty feet when looking through gaps in the canopy at the tops. But I know that particular tree is 184 feet tall. That makes it more impressive in my mind than many of the other trees in the area. The same can be said for some of the scraggly cedars, or bristlecone pines. If I know that tree is 1,000+ years old it takes on a much more impressive stature in my mind than other trees of similar size.

Given the subjective nature of many of these criteria, I am not sure how we can apply a measurement

system that will give the "Oh my, that thing is enormous!!" impression as a series of numbers.

Maybe we could develop a ten star rating system based on several criteria and have those be used to describe a tree, much like a movie rating or book rating in a review.

Now as for the multitrunk or single trunk question you are posing, I believe strongly that since multitrunk trees are distinctly different in growth form, they should be considered separately from single trunk trees no matter what physical measure you use to reflect overall size - girth, crown spread, or volume. The number of trunks doesn't really matter for height. Going a volume measurement of the entire tree, or some portion of the tree does not overcome, in my opinion, the fact that these are two different growth forms.

You can have a combined list for both, but you should indicate which are single trunk and which are multitrunk, and also how many trunks make up the girth, volume, and crown spread. I would include the standard AF points for each with a M notation for multitrunk, and also have a column for our Tree Dimension Index of Crown, girth, and Height, again with a m designation for multitrunk trees. In my mind they are two different things and that fact should not be ignored however you do your size rating. In each case I think it is better to use the best estimate of whether something is a single trunk or multitrunk based upon field observations and review of photographs if the measurer has clearly blown it.

Edward Frank

[Hawaii Trip Prospects](#)

by **edfrank** » Fri Nov 16, 2012 11:47 am

Bob and Monica Leverett are heading to Hawaii later this month to explore and measure some trees. He has mentioned the trip in several different posts, with pieces of information in each. This is a compilation of those comments:

On November 28th, Monica and I will head for Hawaii. We'll return on Dec 19th. I was in Hawaii back in the 1970s when still in the Air Force.

I've been in contact with the environmental group on the Big Island, which is trying to save an old growth Ohia forest. They are looking forward to getting hard numbers on their trees, which are going to present a real challenge to measure. I'm planning to devote at least two full days to the project and possible as many as four. I hope I won't run into any problems taking my measuring equipment on the flights.

I've been given trees to check out from both Bob Van Pelt and Steve Sillett. BVP's list of trees include ones he measured in 1992 and he wants to see how they have changed in the intervening 20 years. One is a Norfolk Island pine that was 143 feet tall in 1992. Tall assignments! Then we have the old-growth Ohia forest initiative to support.

Evidently the islands are awash in big non-native trees. Eucalyptus planted in the 19th century have reached heights above 200 feet. There may even be a chance to surpass 240 feet. If I can find some species of eucalyptus that exceeds 240 feet, I'm told that I'll have found the record tall angiosperm for the Western Hemisphere. I expect that there are taller ones somewhere in South America, but they have yet to be confirmed.

If you all here a sound like YIPPEE carried in on winds from the West, it may be a cheer coming from you know who.

Beyond the tree missions, Monica and I are going to explore Volcanos National Park and Lava Forest State Park on the Big Island, several of the Hawaiian Islands highest waterfalls, the rainforest on Kauai, snorkeling, swimming with dolphins, and taking all those images for the rest of you is going to be exhausting. Finally, there's going to be absorbing all those sun rays. I'm going to be a wreck, an absolute wreck. Pity Bob. Poor, poor Bob.

Robert T. Leverett

Harvard Forest and beyond

by dbhguru » Wed Nov 14, 2012 9:36 am

NTS, Yesterday was a good day at Harvard Forest. I had the opportunity to demonstrate measuring techniques and equipment to a group of 8 including two UMASS researchers from the Boston campus who specialize in LIDAR. The pair brought a TruPulse 360 to use for groundtruthing. All 8 are serious forest researchers looking to adopt more exacting methods for measuring tree height and interested in measuring growth at the top of the tree. I took 7 lasers with me and 3 monoculars.

I set up a TruPulse aimed at a white pine with a complex top and we took it from there. For comparison purposes, one of the researchers used a tape and clinometer. The difference between that method, as applied and actual height was a surprising 16 feet. I say surprising because I wasn't expecting a difference quite that large. But those 16 feet well illustrated the lesson. Everyone understood the variables of the problem. These are PhD researchers with a genuine interest in adopting whatever works better.

After the tree height measuring demonstrations, we measured the length of a new candle at the top of a conspicuous white pine. The candle proved to be at slightly over 13 inches. After the demonstration, I think all members of the group began thinking of applications for the laser-monocular combination. I owe them a list of equipment prices.

Next, using the laser and monocular, we measured the diameter of a small hemlock from a distance of about 35.5 feet, if I recall correctly. The D-Tape measurement was 1.31 feet and the monocular measurement turned out to also be 1.31 feet. Sweet! I was relieved, but not surprised. The Vortex Solo R/T 8 x 36 is one fine instrument. I originally learned about it from my friend Michael Taylor. He has never been wrong on any equipment recommendation, and I doubt he ever will be.

Lastly, I showed the UMASS pair how to calibrate their TruPulse 360, both the tilt sensor and the

compass, and gave them a number of pointers on use of the instrument, including using it to locate trees where GPS coordinates proved hard to get. They were grateful, and I appreciated their letting me know. I expect that we'll be communicating with one another and the topic of groundtruthing will be centerfold.

I'll be returning to help with whatever they want me to do. I think next, though, will be documenting the best growth we can find on the Harvard Forest property. I'll be working with my long time friend Dr. David Orwig. Dave and I go back to 1997. He is one of the principal scientists, then at Penn State U, doing research in Cook Forest State Park.

Tomorrow it is off to Robinson State Park to meet with up to 15 Agawam High School students and two math teachers. I have to shift gears and think of the basics, one step at a time. I don't want to blow the opportunity to contribute to the interests of young folks willing to explore the value of math in a forest setting. If this works, we'll expand the effort. I've been wanting to reach out to high schoolers for a long time, and this may be the groundbreaking opportunity.

Finally, BVP has given me a list of trees to measure for him in Hawaii. He measured them in 1992 and wants to see how they have changed in the intervening 20 years. One is a Norfolk Island pine that was 143 feet tall in 1992. Lots on the old plate.

Joe, In terms of your wondering about PhD-level research, I'm reminded of what Lee Frelich has told me. He can point to some pretty marginal stuff, but then explains that eventually through review and peer pressure, the truth emerges. It is the scientific process at work being executed by fallible humans. As for Harvard Forest, they hadn't needed to determine tree heights for the research they are presently doing. However, now that they may want to collect height data, they will do a thorough job of looking at equipment options and methods. They are going about it in the right way.

Robert T. Leverett

Balkans 2012 - Travelogue Part 4 - Biogradska Gora NP

by **Michael J Spraggon** » Sat Nov 17, 2012 8:43 am

It's Saturday, its time for part 4 - the Biogradska Gora National Park in Montenegro.

Enjoy!
Michael

 [Balkans 2012 Travelogue Part 4.docx](#)

Part 4

Day 6: Biogradska Gora

Breakfast is an international affair: a full English followed by a Continental, eaten in Montenegro by a Dutchman, a Finn and a German/English/Hungarian crossbreed. Mr No Problem, who runs the municipal waste department of Kolasin has big plans for the rest of the weekend. "Today I go to river with my friend, drink Pivo and cook a lamb. We eat whole lamb, no problem." We ask Lydia if there is a launderette in town. She offers to do all of our laundry free of charge and we of course accept.

The Biogradska Gora National Park is only a few miles from Kolasin, past a ski resort and up a wooded lane. The entrance and tourist centre is on the bank of Biogradsko Lake, the largest of the 6 glacial lakes in the park, situated in the virgin forest which makes up about a third of the parks area of 54km². Two wooden pods in a cute little Ewok village perched on the hillside will be our home for the next 2 nights.

Today we are exploring the area around the lake and the beginning of the valley beyond. It's not long before we are measuring some large beeches which are over 40 metres but not quite champions. There are large edible snails everywhere so we must look down as well as up to avoid the dreaded crunch.

We take a brief walk into the steep sided valley beyond the lake, which we will be exploring in more

detail tomorrow. The ground vegetation is an uninterrupted carpet of wild garlic (*Allium ursinum*). As we crush it beneath our feet the smell is very pungent but it doesn't stop me from munching on the leaves as I walk and stuffing them into my sandwiches – there haven't been enough fresh vegetables in our diet so far this trip. Soon we find two European champions: a dead standing sycamore maple of 40.6m (133.2ft) and a wych elm of 40.4m (133.5ft).

As we continue the valley becomes steeper and the river is fast flowing over rocks with large fallen tree trunks, each holding a thick garden of mosses, plants and small saplings. We measure several trees of over 50 metres and Kouta says that the tallest ones are further up the valley but we have run out of time today and will return tomorrow. There is one more surprise as we reach the lake again. Jeroen sees a very tall large-leaved lime and measures it: 39.2m (129ft). It is the tallest in Europe! Already Biogradska Gora has exceeded our expectations.

On our way into Kolasin for our evening meal we stop off to pick up our washing. Lydia has dried and neatly folded our clothes and put them into bags. Mr No Problem appears looking groggy. He claims to have had 15 Pivos to wash down the lamb this afternoon and has been asleep for 4 hours.

Day 7

After a sound sleep we emerge from our wooden capsules and decide to have breakfast at the restaurant in the forest, a large building on stilts further down the hillside with the dining area on a wide veranda looking out over the lake. Breakfast should have started at 08:00 but the staff don't arrive for work until ten past. Music starts playing over the speakers. It's not the lively Balkan folk music I was expecting. Instead, track after track of sombre men sing in unison over a dreary marching accompaniment, reminiscent of the strong, peoples anthems of Stalinist Russia, issued by the Bolshevik Party to inspire hard work and productivity.

I ask for a continental. A plate with sachets of butter and jam arrives but no bread. The waiter says I have to order that separately. Afterwards he brings a big

pile of paper. There is a separate receipt for every item the three of us have ordered!

After breakfast we quickly retrace our route around the lake and up the steep sided valley. We are already finding trees of around 55m when I spot a Norway spruce far higher than the surrounding trees but surprisingly a long way up on the hillside. It's difficult to tell which trunk on the slope is the correct base but Kouta measures two possible bases and says that the tree could be either 58 or 67 metres tall! Could this surpass the Sgerm Spruce and be the tallest native tree in Europe?



Tall spruce and fir near the confluence.

I cross the river on a huge fallen trunk and scramble up the steep slope to find the true base. It turns out to be the higher of the two so we haven't found the new

tallest native tree in Europe. J & K are having trouble hitting the base with the laser so, using my imagination, I pull my t-shirt up exposing my white belly as a substitute tree trunk. It actually works and we find that the tree is 59m (194ft) tall.

The going gets harder with the river becoming strewn with the trunks of trees that have slipped off the hillside and a continuous carpet of rhubarb-like plants with leaves up to a metre across. Eventually we reach a confluence. Kouta remembers seeing the widest spruce of them all here on the land between the waters in 2008. He finds the tree again. It is 671cm around the trunk and buttress and also taller than expected: 56.2m. Further up the right hand fork while standing by the river I can just see a tall silver fir though the trees in the distance. We find it and Jeroen gets a laser measurement of 53.6m (176ft) – the tallest fir measured in Montenegro.

There is still more to explore in Biogradska Gora and quite likely other champions yet to be found but they will have to wait for another year.



Jeroen (nearest) and Kouta negotiating some more fallen trunks.

Day 8

My second and final breakfast at the restaurant in the forest is less successful than the first. I try eating the dessert I have ordered but it is literally floating in syrup, filled with syrup and covered in sugar. I can

feel hyperglycemia and acid reflux coming on so I leave the rest and ask for something that has energy and fresh vegetables but no sugar. Ah, potatoes and mixed salad is just the thing. Our waiter returns with a large dinner plate completely filled with nothing but potatoes smothered in oil and another large plate completely filled with slightly yellow shredded lettuce covered with enough salt to de-ice Greenland. Through the loudspeakers the Russian workers choir sings on...

Michale J. Spraggon

[Photos of Forest on Rocky Face Mountain, NC](#)

by jamesrobertsmith » Fri Nov 16, 2012 6:18 pm

I went on a brief hike in the newly created Rocky Face Mountain Recreation Area in Alexander County. It's located in Hiddenite NC (not far from the emerald mines). It was once part of a granite quarry, the area bought by the Nature Conservancy to preserve the rare vegetation on the mountain. The peak itself is a classic pluton of impressive size. It stands about 700 feet above the surrounding area. I was completely unaware of the mountain until a friend went hiking there and told me about it.

The soils are thin above the granite bedrock, and pretty dry. Forests are a mix of pines, oaks, and cedars mainly. I did see some mountain laurel high on the slopes, which surprised me.





James Robert Smith

Biogradska Gora – two new broadleaf tree height records

by KoutaR » Sat Nov 17, 2012 12:41 pm

NTS,

The virgin forest reservation (16 km²) of Biogradska Gora National Park, Montenegro, consists of a mountain valley and surrounding mountains (up to 2117 metres). There is a small lake, Biogradsko Jezero, at the valley bottom (elev. 1100 m).



Biogradsko Lake. Biogradska Creek valley, where the other photos have been taken, is in the right center, towards the mountain top.

Soils are acid as they are underlain by silicate metamorphic rocks instead of limestone which dominates much of the western Balkans. Annual precipitation is quite high, approx. 2 200 mm. There is no drought period despite the Mediterranean rainfall distribution, with most rain falling outside the growing season. The forest in this park is one of the few true old-growth forests remaining in Europe outside Russia and Fennoscandia. The area has been protected since 1878, when the forest was already old.

The tree flora consists mainly of species common in Central Europe. The most common tree species are European beech (*Fagus sylvatica*), European silver fir (*Abies alba*) and Norway spruce (*Picea abies*), on the valley bottom and around the lake also sycamore maple (*Acer pseudoplatanus*). At the end of the lake around the delta of an inflowing creek (Biogradska Rijeka), there is lush moist forest composed mainly of European ash (*Fraxinus excelsior*) and grey alder (*Alnus incana*), with leaf butterbur (*Petasites hybridus*) dominating the understorey.



Moist grey alder dominated forest. Also sycamore maple, center, with scaly bark, and an ash sapling, left foreground. Leaf butterbur in the understorey.

Between this moist forest and the lake there is a still wetter area, seasonally flooded each year, with stands of white willow (*Salix alba*). Other tree species include Norway maple (*Acer platanoides*), wych elm (*Ulmus glabra*), large-leaved linden (*Tilia platyphyllos*) and goat willow (*Salix caprea*). According to the national park information, 86 tree species have been found in the park but this is a translation error: they mean woody species including shrubs.

Kouta explored this park in 2008 but without a rangefinder or even a tape. His recollections about tree heights were not very good. He thought the trees he saw were not extremely tall but we found in this park two new height records. They are: sycamore

maple 40.6 meters (133 ft., this tree was dead but still standing) and wych elm 40.4 m (133 ft.).



This is Jeroen's photo. 40.6-meter sycamore maple. The other mossy trunks are also sycamore maples. Also beech, right, silver firs, left background, and hazel (Corylus avellana), the shrub left from the big maple. Wild garlic (Allium ursinum) covers the ground.



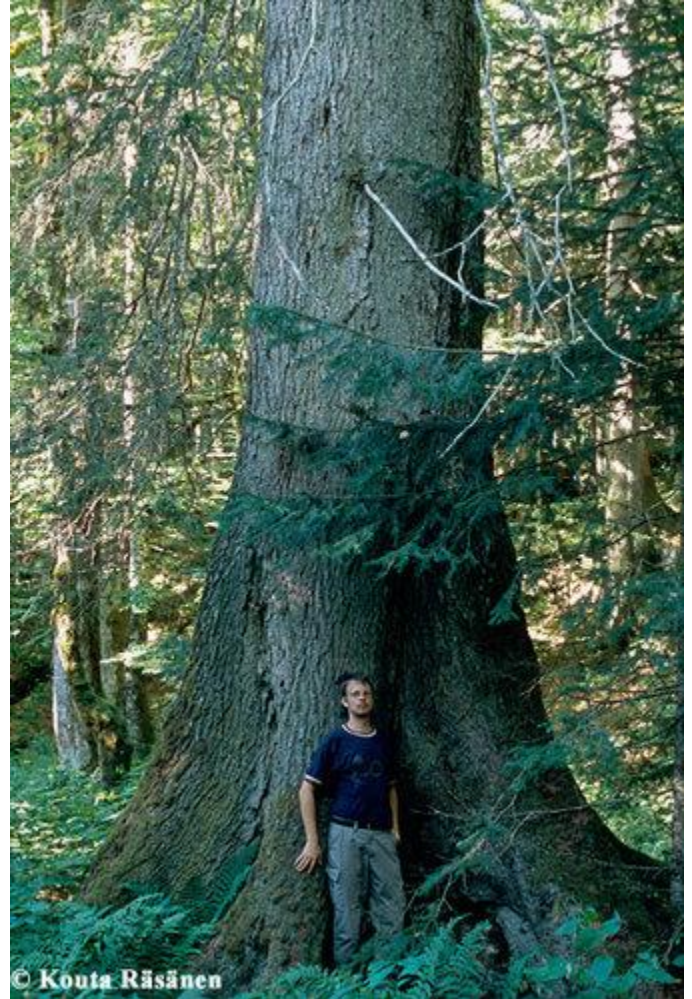
40.4-meter double-trunked wych elm. The second trunk to right backwards. Also silver fir, left, and ash, right. Biogradska Creek is behind the firs.

We also found a 39.2-meter (129 ft) large-leaved linden which was the height record at the time, but after our trip a 41.6-meter (136 ft) large-leaved linden has been found in France by a French measurer. The tallest tree we found was 59-meter (194 ft.) Norway spruce. It is not located on the valley bottom but on a lower NE facing slope. It was noticed as a tree top emerging above other trees.



This is Jeroen's photo. 59-meter Norway spruce, top left. To the left from it: silver fir. The conifers to the right from the tallest spruce are also Norway spruces. Also sycamore maple, right.

The thickest tree was the biggest spruce Kouta found in 2008. The photo below is from Kouta's 2008 trip.



The largest Norway spruce. Silver fir foliage, right.

Its CBH at different heights:

At 1.3 m: 671 cm

At 1.5 m: 631 cm

At 2.2 m: 503 cm

At 2.6 m: 480 cm (above the buttress)

We estimated its volume as approx. 40 cubic meters.

Kouta had originally thought it was not very tall, but it was actually the third tallest tree we measured in Biogradska Gora, 56.2 m. Below it from another perspective.



Jeroen admires the largest Norway spruce. The other big Norway spruce, left center, is 56.0 m tall and 540 cm around. Also beeches (pale trunks) and sycamore maples (mossy trunks). The conifer saplings are silver firs except the nearest one, which is Norway spruce. Biogradska Creek is behind the big spruces.

The second tallest was also a Norway spruce, 57.2 m. 54-55 m tall spruces were quite common. The tallest silver fir, we measured, was 53.6 m (176 ft.). We estimated its volume as approx. 35 cubic meters.

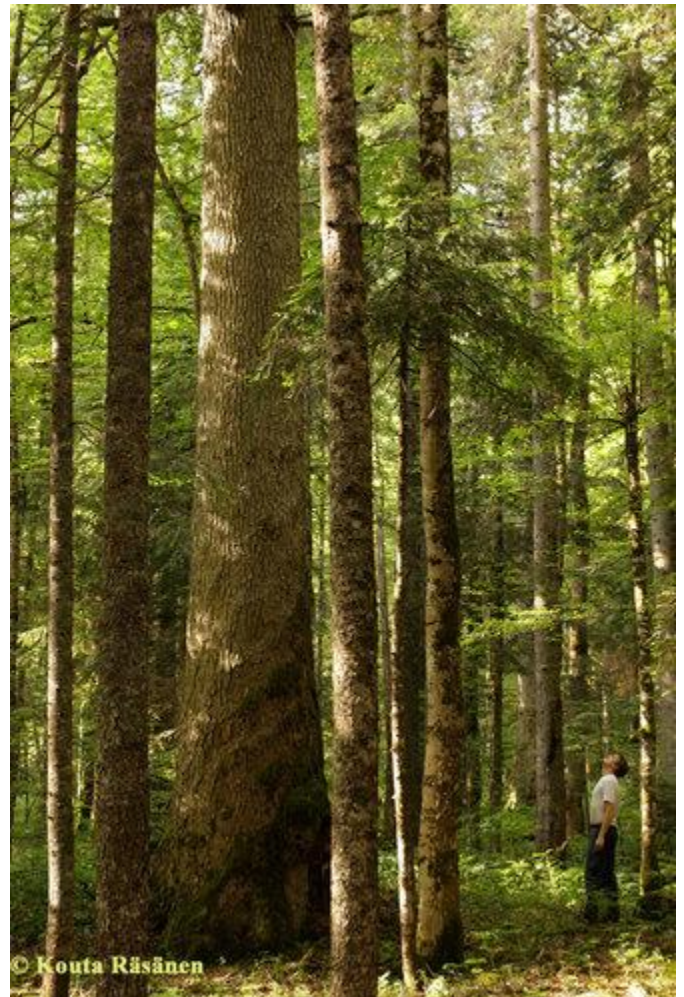
We explored a good proportion of the valley bottom but as the tallest tree was growing on a slope there are good chances a more thorough exploration would reveal still taller trees, at least conifers.

The Biogradska gora part of Michael's travelogue can be read here:

viewtopic.php?f=386&t=4710

Kouta, Jeroen & Michael

Photo on right: 53.6-meter silver fir. Other trees are silver firs and beeches.



[Re: Pictures of Fungi in the Redwood Forest](#)

by **Mark Collins** » Sat Nov 17, 2012 8:22 pm

November 17, 2012





Mark Collins

["The President" giant sequoia, SNP, CA](#)

by **edfrank** » Sun Nov 18, 2012 11:06 am

The December 2012 issue of National Geographic Magazine features as its cover story an article on "The President," a giant sequoia in Sequoia National Park California.



The text of the article can be viewed online, but by doing so you will miss some the beautiful images from the print version of the article and a large scale poster of the entire tree also available in the print edition. The article is by David Quammen, and the photographs are by Micheal Nichols who did the December 2009 portraits of giant redwoods in National Geographic

<http://ngm.nationalgeographic.com/2012/12/sequoias/quammen-text>

The web version of the poster is here:

<http://ngm.nationalgeographic.com/2012/12/sequoias/gatefold-image>

The article describes Steve Sillett's teams effort to map the detailed branch structure of one of the world's largest trees by volume. Will Blozan was one of the team hired to do the mapping.

[Bad year for acorns?](#)

by **Joe** » Sun Nov 18, 2012 10:54 am

A friend just brought it to my attention that this has been a bad year for acorn production (2nd year in a row)- at least in Massachusetts. I should know this as I'm in the woods most days but I never gave it a thought. Have y'all noticed this nationwide or is it just here in the Northeast? I would think it may have to do with the very dry and hot summer- just a guess- or maybe it's just a cyclical thing not related to weather. My friend thinks it may be due to GW.

Joe Zorzin

[Re: Biogradska GoraNP, Montenegro – two new broadleaf tree height records](#)

by **Jeroen Philippona** » Sun Nov 18, 2012 7:07 pm

Here is an attached list of the height- and girth records we found at our visit to Biogradska Gora. Of several species we saw in the reserve (like *Salix alba*, *Alnus incana*, *Acer platanoides* and *Quercus petraea*) we did not make good measurements, so they are not included.

Jeroen Philippona

 [Biogradska Gora-Tree-list2012.doc](#)

Biogradska Gora National Park, Montenegro

– list of largest and tallest trees, June 24 & 25, 2012

| Species | Height | CBH | DBH | Location | Remarks |
|-------------|--------|--------------|---------------|---|---|
| Picea abies | 59.0 m | 3.75 m | 120 cm | on northeast facing slope south of river, around 1.5 km southeast from the lake | Second tallest tree measured on our Balkan trip; measured from rather large distance and with help of Michael at the base |
| | 57.4 | ± 4.25 | ± 135 | near river, south side around 1.7 km southeast from the lake | |
| | 56.2 | 6.71 | 213.7 | near southern tributary of the river, around 2.2 km southeast from the lake | 6.3 m @ 1.5 m; big buttresses Volume ± 40 cubic m |
| | 56.0 | 5.4 | 172 | near southern tributary of the river, around 2.2 km southeast from the lake | |
| | 53.9 | 4.37 | 139.2 | near river, north side around 1.7 km southeast from the lake | |
| | 52.0 | 5.2 | 165.6 | near confluence of two tributaries 2 km southeast of the lake | |
| Abies alba | 53.6 | 5.04 @ 1.6 m | 160.5 @ 1.6 m | near southern tributary of the river, around 3 km southeast from the lake | largest silver fir in volume, ± 35 cubic m cbh measured above burl |
| | 52.0 | ± 3.5 | ± 111 | near river ± 1.3 km S.E. of the lake | |
| | 50.8 | 4.03 | 128 | near southern tributary of the river, around 2.5 km southeast from the lake | |
| | 50.2 | 4.5 | 143 | at southern slope of river ± 1 km southeast of the lake | |
| | 50.0 | 3.85 | 121 | near southern tributary of the river, around 2.2 km southeast from the lake | |
| | 48.4 | 5.14 | 163.7 | near southern tributary of the river, around 2.5 km southeast from the lake | |

| | | | | | |
|---------------------|-------|------|-------|--|--|
| Fagus sylvatica | 42.0+ | 3.40 | 108 | in beech forest southeast of Biogradsko Jezero | In forest; perhaps taller, while in leaf hard to measure |
| | 41.2 | 3.74 | 119 | in beech forest southeast of Biogradsko Jezero | |
| Acer pseudoplatanus | 40.6 | 5.42 | | at riverine flat ± 1 km S.E. of the lake | European heightrecord; Double trunked tree; tree was already dead |
| | ± 30 | 4.62 | 147 | near northeastern shore of Biogradsko Jezero | |
| Ulmus glabra | 40.4 | 3.96 | 126 | at riverine flat ± 1 km S.E. of the lake | European heightrecord |
| | 38.0 | 5.41 | | near southern tributary of the river, around 3 km southeast / upstream from the lake | Double trunked tree |
| | 38.0 | 4.5 | 143.3 | near southern tributary of the river, around 3 km southeast / upstream from the lake | |
| Fraxinus excelsior | 39.8 | 2.5 | 79.6 | at riverine flat ± 1 km S.E. of the lake | |
| | 38.0 | 4.7 | 149.7 | near northeastern shore of Biogradsko Jezero | |
| Tilia platyphyllos | 39.2 | ± 3 | ± 95 | near southwestern side of Biogradsko Jezero | No European height record: in France one taller specimen found in 2012 by Sisley |

Legenda: xx tallest / largest of this location
xx European record
xx Double trunked tree
xx Tree already dead at moment of measurement

Height measurements by Nikon 550 AS and Nikon Forestry 550 laser rangefinders.
Circumference at breast height (CBH): measured at 1.30 m above the average ground level around the trunk

Kouta Rasanen., Michael Spraggon, Jeroen Philippona 2012.

[Hurricane Sandy Damage to Trees, Central Park, NYC](#)

by **Jenny** » Mon Nov 19, 2012 11:08 am

Finally getting around to posting about the damage to trees in my beloved Central Park. Each article is accompanied by photos. I have visited since, and the park reopened quickly and the clean-up has been swift - although the North Woods (area between 103rd and 110th St.) was closed.

<http://www.businessinsider.com/look-at-all-the-storm-damage-in-central-park-2012-10>

<http://cityroom.blogs.nytimes.com/2012/11/07/mighty-oaks-%E2%80%94-and-very-old-ones-%E2%80%94-are-among-sandys-victims-in-central-park/>

I took the picture below in the Central Park Ramble after the Nor'easter of a sassafras (correct?) tree sagging from the weight of wet snow.



Jenny Dudley

[Sandy Damage Re: Small Sugar Maple rich NJ forest patch](#)

by **greenent22** » Tue Nov 20, 2012 4:25 am

Sadly the biggest oak was taken down by Sandy as well as another big oak and a reasonably sized sugar-maple and a smaller sugar maple and a couple other reasonably large trees. Sandy hit hard. :(My backyard had branches sliced off of a sugar maple by falling oak that had extended out in just such a way that not even an artist could have placed them any better, a true paradise in fall. :(

Larry Baum

[Bad Sandy](#)

by **greenent22** » Tue Nov 20, 2012 4:49 am

Sandy was a b :(: really had it in for big trees in the region :(even my backyard paradise was altered :(really hard to take but then again if you were not crushed or swept out to sea I guess you have to just be glad

Larry Baum

[Re: Bad Sandy](#)

by **Joe** » Tue Nov 20, 2012 8:47 am

not to disagree with the "badness" of a hurricane knocking down big/nice trees, but I suppose, taking a more Zen perspective, that if we really "love nature", we should love everything she does, not just love her when she's nice to us....

Joe Zorzin

Re: Archaeology of Autumn

by **Don** » Mon Nov 19, 2012 6:10 pm

In a word, phenology...: > }

Don Bertollette

Autumn

by **Steve Galehouse** » Tue Nov 20, 2012 12:11 am

Autumn-

The warm days pass into cool nights, the crickets slow, then stop.

Tupelo's red gives way to hickory's orange, then tulip's mountain of butter yellow.

Oaks discuss the season, without accord. The maples don't care, they know their role.

Steve Galehouse

Autumn's Last Days

by **Jenny** » Tue Nov 20, 2012 10:01 am

Here's an attempt:

Autumn's Last Days

The oak and maple branches sweep the sky
While towering White Pines stretch out their green needles boldly,

Careless of the season, watching the prancing chickadees.

They eye the low hemlocks, balsams, and even the spruces - bemused.

(Cape Elizabeth, Maine)

Jennifer Dudley

Pileated Woodpecker

by **Jenny** » Tue Nov 20, 2012 10:12 am

Was thrilled to see this awesome Pileated Woodpecker drilling for insects in a clearing with primarily dead birches in an otherwise coniferous/oak/maple/ash forest. I attracted it close enough to get a picture by using my Audubon Bird phone app which has call sounds loud enough for birds to react!

I'm not sure what species of tree its perching on.



This was taken in Maine (Cape Elizabeth) in a nice 80 acre mostly coniferous forest. I heard chickadees, tufted titmice, and white breasted nuthatches around too.

Jennifer Dudley

[Re: Tracey Ridge Chestnuts, PA](#)

by **Rand** » Tue Nov 20, 2012 10:49 pm

I returned to Tracy Ridge September 21-25 and went trawling through the forest looking for more fruiting chestnut trees (This was a few days early, I only got 8 nuts, but saw plenty of burs bouncing merrily in the breeze overhead). In the picture below, the areas with notable sized trees are numbered and marked in blue. Lighter dashed blue lines are areas where sapling to pole sized chestnut sprouts were common.

Red dashed areas I searched but didn't find any chestnuts trees at all.

As you can see they favor a southern aspect and areas midway between the valley bottoms and ridge tops.

The most common overstory species where White and Red oaks and a few hickories. Generally they

avoided the very driest ridge tops where chestnut oak tends to become more common.

The results were mixed. I found a lot of nice sized trees (and two new fruiting ones), however most of those were blighted. Just from the looks of things, it appears that the blight has only flared up in a major way in the last 3-5 years. Most of the trees I've marked as 'blighted' in the chart below are showing heavy sprouting all along the length of the trunk and will most likely be top killed in the next year or two.

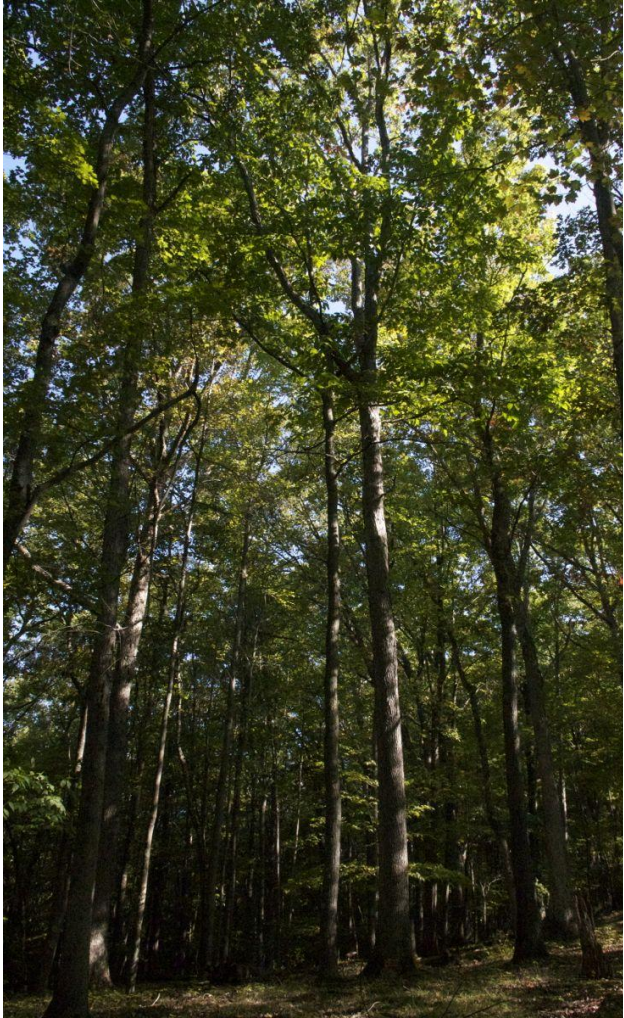
The blighted trees are all sprouting from the base, and the deer are browsing them into the ground. It's a real shame. I piled up brush in a 'tee-pee' around the bases of lots of trees for lack of knowing what else to do. Hopefully that will provide enough protection to allow them to survive.



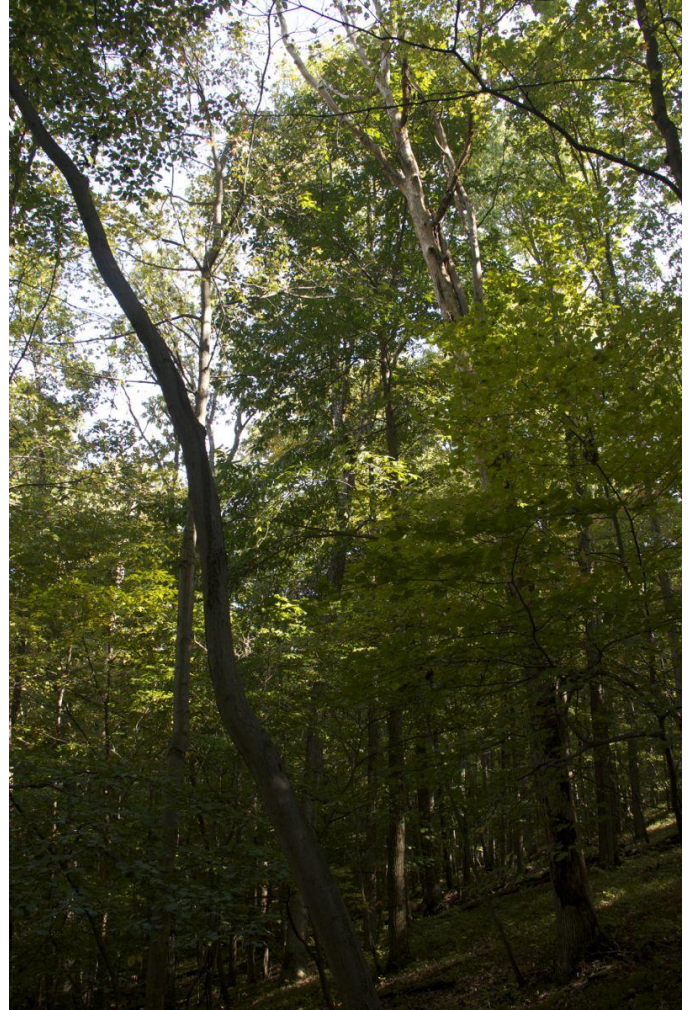
| Species Name: | | Circumference: | Height: | Blight | Fruiting | Full |
|-------------------------------------|-------------------------|----------------|---------|---------------|-----------|----------------|
| Common | Scientific | ft In | ft | Status | Status | Sun? |
| 1 – Main Valley | | | | | | |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 9.5" | 82.8' | Healthy | Yes | Yes |
| Chestnut, American | <i>Castanea Dentata</i> | 3.0' 3.0" | 90.5' | Healthy | Sparingly | No – White Oak |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 1.0" | 63.0' | Top kill 2012 | No | No – White Oak |
| 2 – Ridge Top | | | | | | |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 8.0" | 74.0' | Healthy | No | No – White Oak |
| Chestnut, American | <i>Castanea Dentata</i> | 3.0' 2.5" | 67.5' | Healthy | Yes | Yes |
| 3 – North Valley: Cove | | | | | | |
| Chestnut, American | <i>Castanea Dentata</i> | ~3' | ~ 55' | Dead | ? | Yes |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 6.0" | 73.0' | Dieing | Yes 2011? | Yes |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 2.0" | 63.0' | Dead Leader | No | No |
| 4 – North Valley: Confluence | | | | | | |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 2.0" | 59.0' | Dieing | No | ? |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 6.0" | 73.5' | Dieing | Yes | Yes |
| Chestnut, American | <i>Castanea Dentata</i> | 2.0' 2.0" | 63.0' | Dieing | No | No |
| Chestnut, American | <i>Castanea Dentata</i> | ~2' | ~ 65' | Top Kill | No | ? |
| Chestnut, American | <i>Castanea Dentata</i> | ~2' | ~ 65' | Top Kill | No | ? |



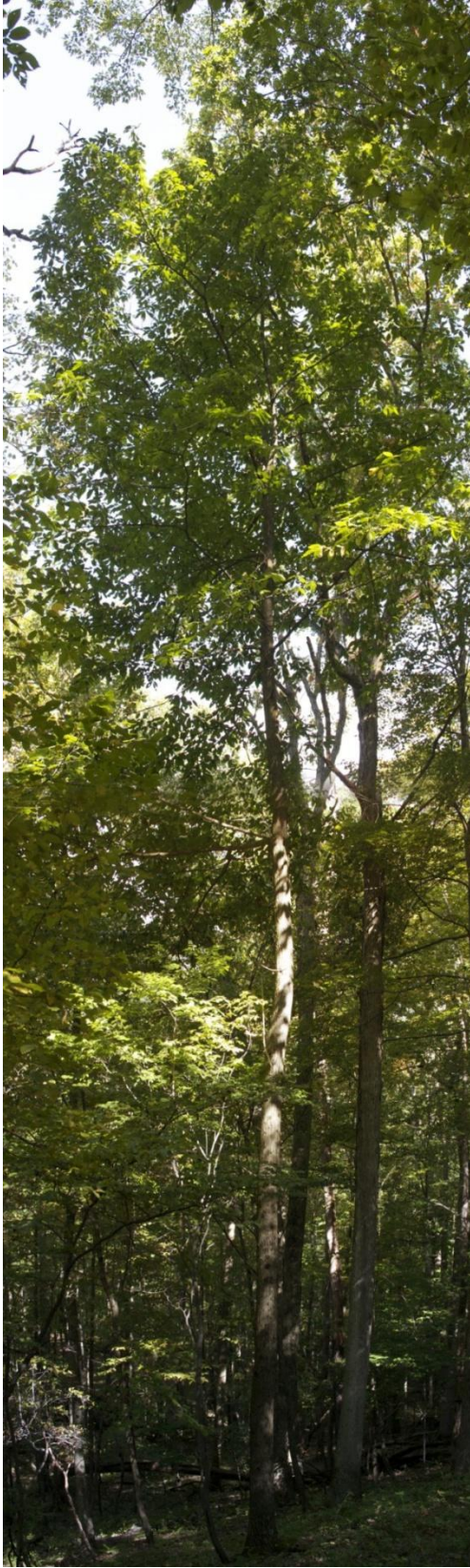
3' 2.5" x 67.5' - Closeup of nuts



2' 8" x 74'

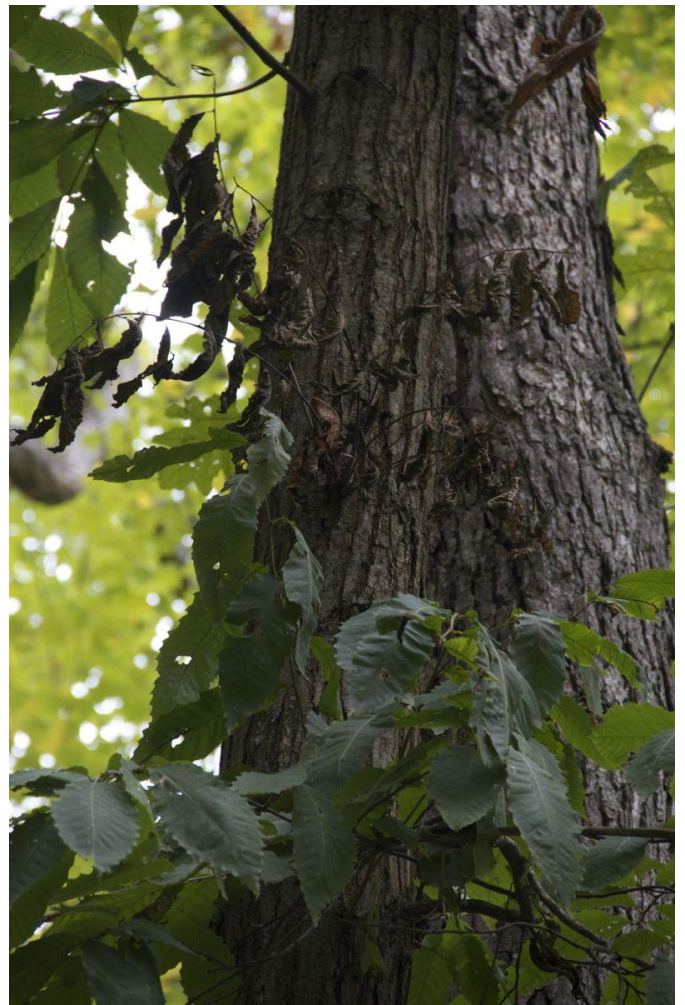


3' 2.5" x 67.5' - View 1

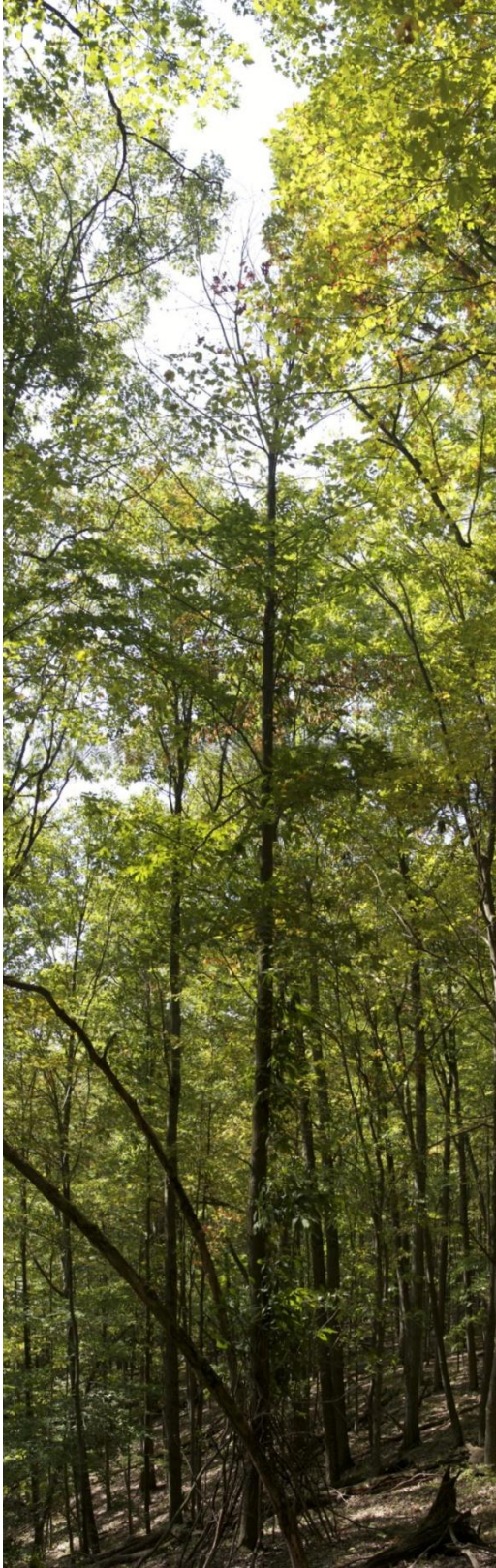


3' 2.5" x 67.5' - View 2

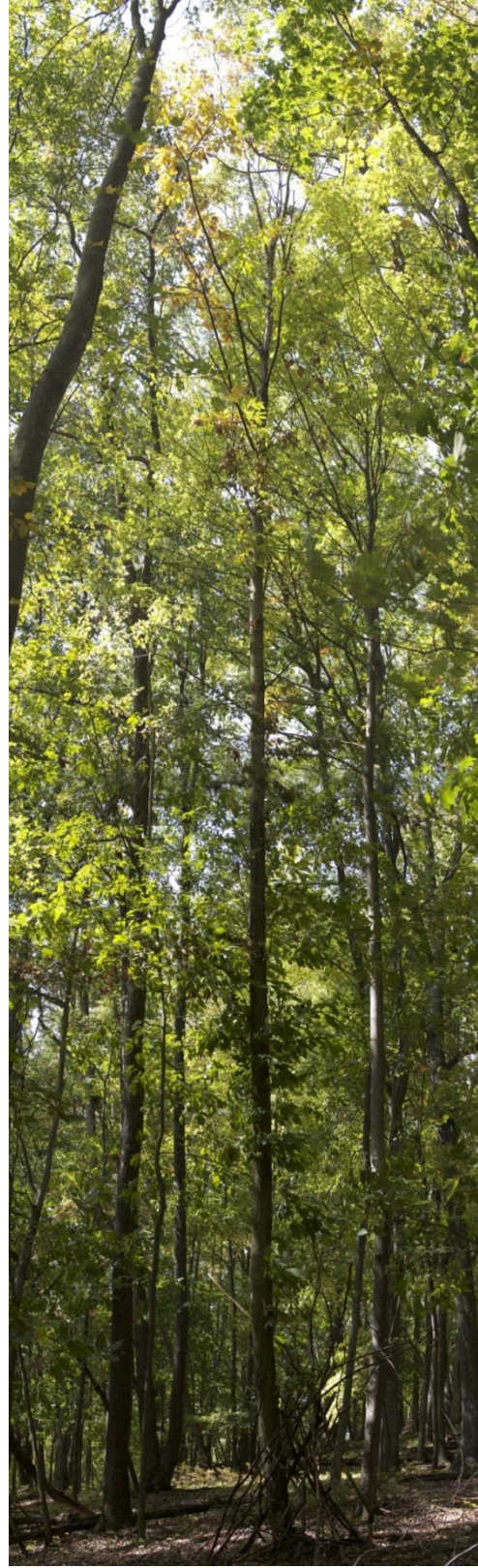
These next pictures show the final stages of the blight infection. At some point it appears that whatever small defense the trees has gets completely overwhelmed and the blight attacks simultaneously all along the length of the trunk. I suspect this is caused by an initiating canker high in the crown that sheds spores that are then washed all down the length of the trunk by trickling rainwater. In response the tree sends up lots of epicormic sprouts. Judging by the number of dead trees I saw with lots of dead sprouts hanging off them, this is a last ditch effort and the tree will be completely killed back to the roots a year or two later.



Closeup of blighted Area



2' 6.0" x 73' Dying, fruited previous years



2" 2.0" x 63' Dieing

Promising looking small patch, NJ

by **greenent22** » Tue Nov 20, 2012 4:44 am

This is not my photo. I probably shouldn't re-post it here and may remove it soon (it was publicly posted by the taker though elsewhere). I had had some thoughts there might be something good in this area from a few vague comments on some hiking reports over the years and from satellite pics. The area of larger trees is probably not so large, but it looks quite promising. These look like they may well be bigger than the 170 year trees in my other post and both are growing in the same region. I also saw another shot showing another section near here that appeared to show some trees that I bet have to be at least as old as the 170 year old area patch.

The beech doesn't look too bad and that one back to the right simply looks immense. Hopefully I am not getting tricked by the shot, I don't know the focal length or camera type it was taken with. I could swear that back right trees looks awfully big though. I know on the far side of this area, a mile away or so, is at least one verified old-growth oak and possible a small area of old-growth.

(This site is a bit of a walk and not quite yet up to it yet due to unfortunate reasons but perhaps in another year I will check it out. There actually is a way to get very close without much of a walk but you'd need to drive into a huge gated community and they have a 24hr guard house and you'd have to drive into the farthest depths of the community. Actually I just realized they built a hideous huge extension to another development that was a horror story to an unfragmented part of the highlands which actually gets somewhat close, bit of a wild rocky bushwack scramble down and up from there but a lot shorter than the 7 mile or so roundtrip starting from the hiking trailhead, more like 2 miles from there I think. Anyway I haven't seen it yet myself.)

I came across this photo and it got me pretty excited, it looks very promising.

Image

Looks like it was a popular area for people to hike out to and hang around back in the mid-70s to mid-80s judging by the carvings.

Atlanta Tree hugger/hunter

by **lewkhoney** » Sun Nov 25, 2012 9:28 pm

Hello folks --

My name is Scott, and I am new to NTS. If anyone would like to search for large trees between Atlanta and Macon, please let me know. I have found several ancient white oaks and beech trees in my homebase of McDonough.

Cheers,

Scott Honeycutt

post: The migrating sandhill cranes were flying over today --great sight and sound.

Balkans 2012 - Travelogue Part 5 - Canyons and Mountains

by **Michael J Spraggon** » Sat Nov 24, 2012 10:45 am

Good afternoon! A little later than usual, here is your Saturday installment of the Balkans story. We explore a forest on the side of the deepest canyon in Europe and have a snowball fight...

Happy reading,

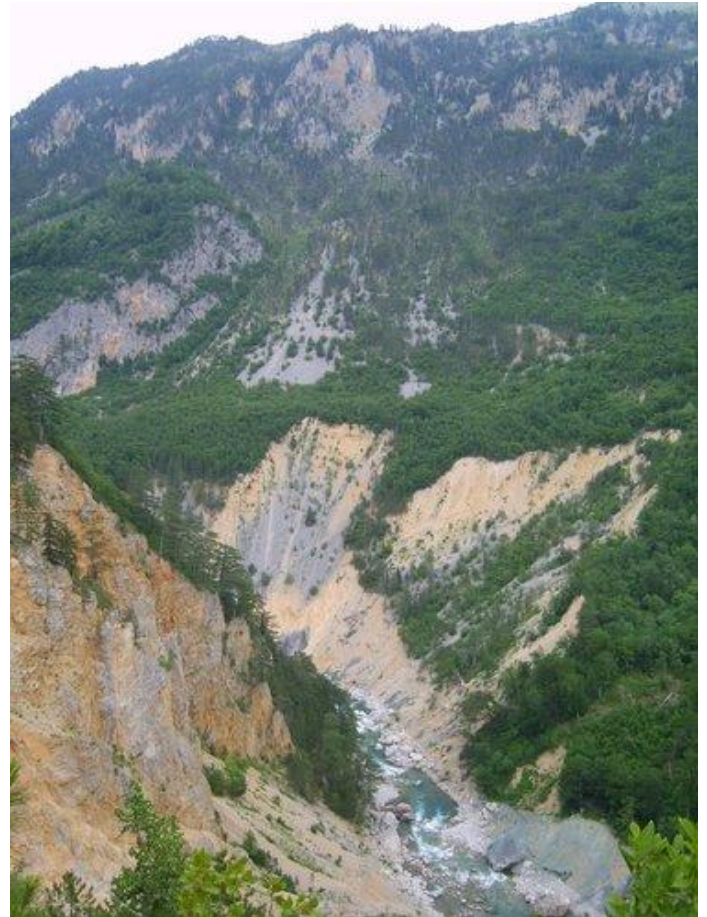
Michael

 [Balkans 2012 Travelogue Part 5.docx](#)

Balkans 2012 Expedition - Part 5

Day 8 continued: Crna Poda and Zabljak, Montenegro

By late morning we have reached Crna Poda, on the edge of Durmitor National Park. Almost without our noticing the river we have been following has dropped away and is now 2000ft below us at the bottom of a steep gorge. The pure turquoise channel of the Tara River stretches away into the distance between vast limestone cliffs dotted with fully grown black pines clinging like designer stubble to the near vertical faces. Each tree will be anchored to the soft limestone by a deep intricate root system that has literally eaten its way into the limestone over decades or centuries, probably in a symbiotic partnership with another organism which dissolves the limestone, making it palatable for the tree.



The start of the Tara Canyon

This is the beginning of the Tara Canyon, the deepest canyon in Europe and one of the deepest on Earth. It will get much deeper yet: over 4200 feet in places. We park in a layby and peer gingerly over the crash barrier at the drop. On the hillside here is the Crna Poda forest, a terrace on the steep side supporting stands of tall black pines (*Pinus nigra*) up to 400 years old reaching through an understorey of beech. The National Park literature claims that there are trees of up to 50 metres in height but the trees we can see from the road are not much over 40 metres.

As we begin surveying the stands below the road Jeroen and Kouta are already measuring trees of around 45 metres and I see a tall trunk in the distance near the bottom of the hairpin bend. J & K both measure it from different positions and it turns out to be 47.4m tall – a new record for laser measured black pines. After lunch we explore the top of the terrace

above the road and find other tall trees and also a huge double tree – clearly two trees fused together but each trunk as fat as the largest single trees in the forest. Having surveyed much of this small reserve we continue into the mighty Tara Canyon.

We stop at one of the deeper parts of the canyon where the road has dropped down close to the river. There are black pines dotted about near the top of the opposite wall about three quarters of a vertical mile above us. To put the scale into perspective I pick one of these specks and, holding my camera a still as possible, zoom in and in up to the full 78x magnification. The wobbling, grainy image becomes a large, impressively spreading tree which must weigh several tonnes, hanging on at an impossible angle to the crumbly limestone; one of many thousands of tenacious overweight rock climbers.

After driving the length of the canyon we come to the Tara Bridge, a tall thin concrete structure 170m (560 feet) above the river, and the only crossing point of the canyon. The original central arch was blown up in 1942 by the bridge's engineer to stop the invading Italian/Chetnik armies. He was later executed for his efforts.

Soon the road climbs onto a high grassy plateau with the Durmitor massif looming way off in the distance. The trees all but vanish and the empty landscape is dotted with tall thin brightly coloured alpine houses, which look like confectionery. The road eventually ends at Žabljak, nearly 5000ft up and the highest town in the Balkans. The rarefied atmosphere of Žabljak is as I would imagine a wilderness town in Alaska to be. There is a central square, overshadowed by 'Hotel Žabljak', a skewed, sloping monstrosity in the old communist style juxtaposed against a modern parade of shops opposite. There are lots of parked cars and off-road vehicles but few other buildings, the gaps in between being occupied by grassy banks and alpine houses as if the surrounding plateau is spilling into the town. There is a lot of sky in this place.

The road continues a little further, up a slight incline and ending up at a tiny campsite high up in an alpine meadow, facing a perfect panorama of the Durmitor

massif. The owner appears. He resembles a slightly taller version of Dudley Moore and is followed by an inquisitive young tabby cat whose job at the campsite is to make putting up tents as difficult as possible. There is a slight chill in the air. This is the first time we have actually been cold since the trip began.



Above: Žabljak by night. Below: Breakfast at the round table.



Day 9

The next morning I'm awakened by the cat attacking my feet through the wall of my tent. Unzipping my tent reveals a postcard view even more spectacular than yesterday evening with the morning sun hitting

the mountains. J & K drive into Žabljak for supplies while I sit at the campsites round table in the sun, finishing the yoghurt and Plazma biscuits under the attentive gaze of my feline supervisor. One of the young women in the tent opposite is getting changed outside the tent and has, without any self-consciousness, stripped down to just her underwear in full view of the campsite. Feeling very English all of a sudden, I try not to stare.

After breakfast and carrying our packed lunches we walk up the gravel track into the forest. There is a ranger standing by an old car who sells us tickets to enter the park. There is a reserve of primeval forest here, the Zminje Jezero Prašumski Rezervat, which is approximately 10 Hectares in size. Kouta was here in 2008 and remembers seeing some very tall and old Norway spruce. As we walk into the reserve there is evidence of some forest management, tree stumps, clearings and a landslide with a large plastic drainage pipe crossing it. Kouta finds the largest spruce on a slope at one end of the reserve. It is 49m tall and almost 5 metres in girth, and a thin silver fir 47.2 m tall. The trees here are not as large as we had expected them to be.

We have lunch in a lush grassy clearing with youngish firs about 40 years old forming a sort of avenue. Wild strawberry plants provide the dessert. Beyond this is the edge of the reserve and the land is immediately more rugged and bare. The huge white cliffs of Veliki Pass (Big Dog) below the peak of Crvena Greda tower more than 2000ft above us. On our way back we decide to follow the Mliniski Potok river to the Crno Jezero lake, whose still transparent water makes a perfect inverted image of the Durmitor massif, now immediately behind, which the Wikipedia article describes as ‘a sort of amphitheatre’.

We are at an Italian restaurant in Žabljak this evening and I get my first reminder of the country I’ve left behind: a large screen is showing a tennis match: Andy Murray is playing in the 4th round at Wimbledon. I leave the veranda for a while to watch some of it in the main bar. He’s looking more confident than ever this time. Could this be his year? A wide boy in a pimped up car cruises past with the

pumping bass on his mobile disco temporarily drowning out the tennis – some things are the same in every town no matter how remote. He seems to be doing laps of the town and on lap 3 he has a girl in the passenger seat so he must be doing something right.

Day 10

Another cold sunny breakfast at the round table: this time with a naughty Jack Russell trying to steal our food, and a young French couple on a walking holiday. The man is shy, bespectacled, and has his nose in a book entitled ‘Hemisphere Droit’; the woman, Natalie is more talkative. They both came from different parts of rural France to work in Paris where they now live. I go to settle up our bill with Dudley Moore and we reluctantly leave this friendly alpine campsite for our next destination: Tjentište and the Sutjeska National Park.

The featureless plateau becomes more undulating and our car is soon climbing on a narrow road with no barriers and steep drops off to the left. Jeroen, remembering Kouta’s Finnish predisposition to rally driving, urges him to take care. To the left is a mountain which looks like the Matterhorn and ahead is the Sedlo Pass, which at 1907m is the highest road pass in Montenegro. There is a small parking area just below the summit of the pass. Seven men are putting up a small wooden sign, disproving the theory that many hands make light work. In front of us the road meanders down into a vast rocky basin interspersed with clumpy grass and a few alpine style farm houses, surrounded by mountains on all sides.

To the left is Sedlana Greda, a double headed mountain, the nearest peak of which is Zupci (2148m). The mountain is sometimes called ‘the Saddle of God’. My GPS unit is reading an altitude of 1894m. I suddenly get the urge to see a reading of 2000m and begin running up the slope of ‘the Saddle’. In almost no time I am gasping for breath and remember that at 6500 feet the air is only 75% of the pressure at sea level. I carry on at a rather hypoxic stumble until I reach a cliff face. To my disappointment my GPS reads only 1992m. The cars are now just tiny coloured dots below me and I am

still short of my goal by 25 feet. Undeterred I start free-climbing the cliff and soon pull myself up onto a small terrace. I check the GPS again: 2005m (6578 feet) – I’ve done it! The others are probably wondering what I’ve been doing all this time so I had better get back down.



‘The Saddle of God.’

A bit further along the road and I see another experience to add to my list today: snow. Like a child I leave the car and run excitedly down the slope onto the patch of snow to make a snowball, which I throw at Jeroen. It falls short. Having the advantage of higher ground Jeroen throws some of it back with more success. We continue across the basin, past a herd of cows and a stone memorial to young man who died in 2005. There is a photograph and some sentimental items including a bottle of his favourite wine. We can’t translate the plaque but maybe he came off the road at this point and was killed. From a distance I can really see the shape of Sedlana Greda. I’ve never seen a mountain resemble a saddle so closely.



“Do you want some?” (A world apart from the 40° heat of Croatia.)

As we descend from the pass we come across a restaurant in the middle of nowhere. The owners run out to our passing car to beckon us in. It is a bit early for lunch but all that running about has made me hungry so we accept. The lamb is delicious and the waiter brings out a bottle of raki, announcing proudly: “Best slivovice we have!” Kouta is driving but the waiter pours Jeroen and I two large tumblers full of the distillate. “Smoother!” I gasp. It is actually very fine, with a bready, honeyed taste - it’s just that I can’t breathe for the next ten seconds. Another couple have also found this oasis. To Kouta’s delight they are from Finland and soon they are chatting in Suomi.

Not too much further down the hillside we pass a tiny solitary café with a hand painted sign nailed to the veranda advertising: ‘Cold beer, Juices, Coffee...Horseback Riding.’

Soon we are dropping down into the Piva Canyon, second only to the Tara in its scale. The road passes through many tunnels in the rock as it winds its way down to the Piva River. At one point we cross the canyon over the Mratinje Hydroelectric Dam, a colossal, convex concrete construction, 220m (720 feet) high and just 4.5m (15 feet) wide at the top. At the far end the road disappears into a gaping hole – another tunnel hewn into the rock. We lean over the flimsy iron railings at the grey bowl sweeping away

into the chasm and I can't help imagining what it must be like to dive off the top. The canyon becomes lower and wider as it approached the border. On the opposite bank is Bosnia and not far beyond is Tjentište.



Looking down from the 220m (720 ft) Mratinje Hydroelectric Dam.

Michael Spraggon

[Crna Poda – a new height record for European black pine](#)

by **KoutaR** » Sat Nov 24, 2012 4:20 pm

NTS, Durmitor National Park is the best-known nature destination in Montenegro. It is a mountainous area at 700–2500 metres above sea level.



The most popular area of Durmitor National Park. The mountains are Kulina (2313 m, left) and Devojka (2223 m, right). The forest is composed of Norway spruce and European silver fir; beech is missing due to forest management.

In the eastern extension of the park, the Tara River has carved into limestone a canyon which is said to be the second deepest in the world (max. depth 1300m) after the Grand Canyon, though the Colca Canyon in Peru also lays claim to the “deepest in the world” title and the Blue Nile Canyon in Ethiopia is probably deeper than the Tara. Tara is not the only deep canyon in Montenegro: Piva and Platije are equally impressive. European black pine (*Pinus nigra*) typically grows stunted on steep to vertical slopes.

Crna Poda (elev. 840–940 metres) is a terrace formed in the middle of a very steep slope of Tara Canyon.



Crna Poda, center.

Almost level terrain has allowed deep soil to accumulate and black pine has formed a tall forest. European beech (*Fagus sylvatica*) is invading the forest, preventing pine regeneration. Now the forest looks like a normal beech forest which has an additional emergent layer of black pine.



Mixed forest of black pine and beech. The pines in the photo are about 45 m tall.

The pines are about 400 years old. Some cut stumps can be seen. Other tree species include sycamore maple (*Acer pseudoplatanus*) and wild cherry (*Prunus avium*).

The www-site of the park states Crna Poda has black pines up to 50m in height. The tallest we measured was 47.4 m (156 ft.) which is a new record for laser-measured trees. The CBH of this tree is 296 cm. It is growing next to the road running through Crna Poda.



47.4-meter black pine, center. Also beech, and sycamore maple foliage (top left).

The thickest single-trunked pine had CBH as 418 cm. Although Crna Poda is relatively small, we had not time to explore the whole forest, so it is possible that there are still taller pines. We measured several trees 44–46 m in height. However, the tallest pine (any member of genus *Pinus*) of Europe does probably not grow in Crna Poda but in Tenerife where a Canary Island pine (*P. canariensis*) has reached 56-60 m (184-197 ft) depending on the source (the measurement method not known).

The beeches are still relatively young, but some have already reached almost 40m in height.

Two weeks after our visit wildfires burned large patches of the slopes of the Tara Canyon and threatened also Crna Poda but firefighters were able to save most of it. There is a video of the wildfires here:

[http://www.vijesti.me/vijesti/vatrogasc ... anak-82657](http://www.vijesti.me/vijesti/vatrogasc...anak-82657)

Fire must be an integral part of these forests, and the existence of Crna Poda's black pine forest may well be a consequence of an intense fire in the past. Without disturbances beech appears to replace shade-intolerant black pine.

Outside the Tara Canyon the forests of the park are selectively logged and grazed by cattle. We also explored in the Zminje Jezero Prašumski Rezervat (primeval forest reserve, 10 ha, elev. 1500–1600 metres) of Durmitor National Park. Kouta had thought in 2008 that the Norway spruces (*Picea abies*), he saw there, were very tall, but immediately after reaching the reserve we (including Kouta, now with two and half years of measuring experience) saw that the spruces are not very tall; the tallest was only 49 m, with a CBH of 479 cm.



49-meter Norway spruce. Also beeches. The photo is from Kouta's 2008 trip.

Despite the name the reserve is not primeval forest: it hardly differs from the forest outside the reserve (the most remarkable difference being perhaps the existence of beech) and there are a lot of stumps, openings and young forest. This forest is dominated by Norway spruce, European silver fir (*Abies alba*) and beech: a very common composition of central and southern European mountain forest.

The Durmitor part of Michael's travelogue can be read here:

viewtopic.php?f=386&t=4724

Kouta, Jeroen & Michael

Re: Crna Poda – a new height record for European black pine

by **KoutaR** » Sun Nov 25, 2012 7:37 am

Will,

Still one photo, of the beautiful canopy of old-growth European black pine at the edge of Crna Poda. Also beeches, bottom left.

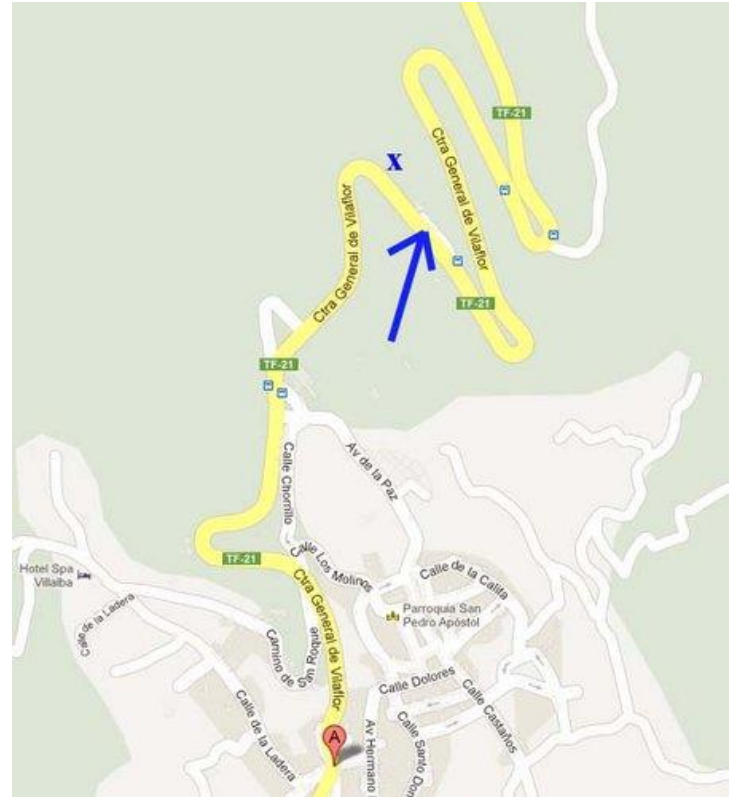


If the tallest eastern white pine is 188.8 ft = 57.5 m, I think it is taller than the tallest Canary Island pine. I guess 56 m is the actual measurement and 60 m is an approximation. But I am fairly sure there have been remarkably taller Canary Island pines in the past. I have understood there are only two old-growth trees left, growing almost side-by-side at an exposed location. The thicker and lower (~45 m) pine is pictured here:

<http://www.monumentaltrees.com/en/esp/c...flor/3481/>

You can find the both pines like this:

1. Search with Google Maps for Vilaflor, Spain.
2. Place the Street View cursor onto the point indicated with blue arrow below.



3. You see the top of the thicker pine over the parking place. You see the taller pine at the location marked with x above.

Yes, I hope I or somebody else can measure the pines sometimes with a laser rangefinder.

Kouta