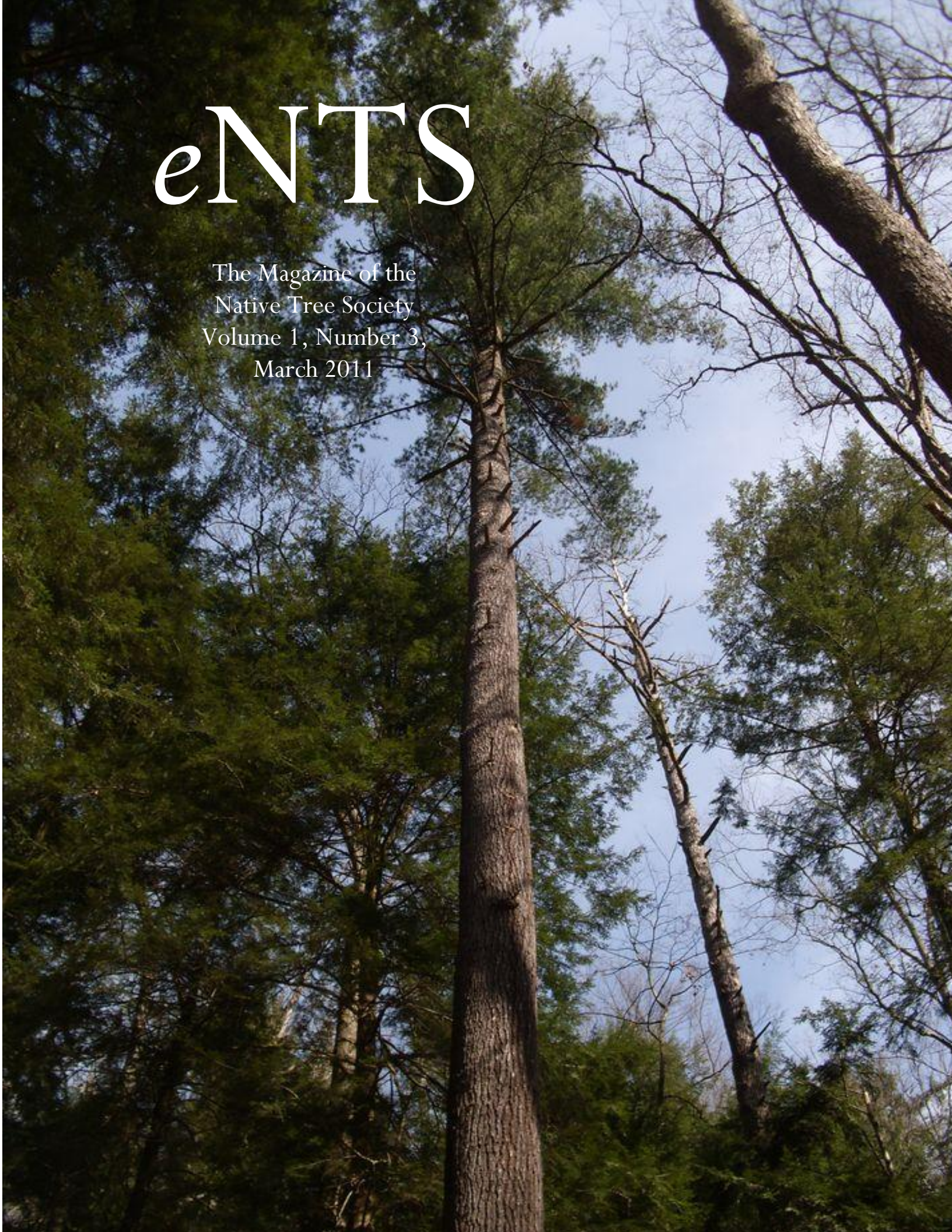
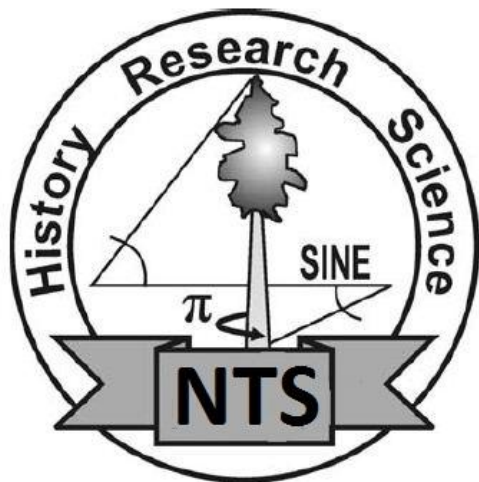


eNTS

The Magazine of the
Native Tree Society
Volume 1, Number 3,
March 2011





eNTS: The Magazine of the Native Tree Society

The Native Tree Society and the Eastern Native Tree Society

<http://www.nativetreesociety.org>

<http://www.ents-bbs.org>

Volume 1, Number 3, March 2011

Mission Statement:

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

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COVER: Clearfork Gorge, Mohican River, Ohio state record white pine. Photo by Steve Galehouse.

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Pink Beds Loop and Barnett Branch Hike, NC

by James Parton » Tue Mar 01, 2011 1:44 pm

On Saturday, Joy, Sarah and I met Clay and family for a nice hike up in the Pink Beds of Pisgah National Forest. After picking little Kloie up we headed into the forest. The Pink Beds loop is one of the prettier trails I know of and I have done a couple of past reports on the place.

<http://www.nativetreesociety.org/fieldt...trail.htm>

<http://groups.google.com/group/entstree...bd7e?hl=en>

Today was just intended to be a casual hike so I did not expect to measure many trees. I was just out to enjoy the forest with my family and friends. But I did find three noteworthy ones. Two of these were on the interconnecting Barnett Branch trail, which I had not hiked to measure any trees there on past trips. The first was a decent sized white pine. It measured 131.6ft tall and 9' 4 3/4" in girth. The second was a nice hemlock. It is 99.0ft tall and 9' 6" in girth. Sadly it is failing to hwa as is all untreated hemlocks in the area. The third tree is on the Pink Beds Loop itself. Actually very near where the loop begins in the woods near the first wildlife clearing. I don't know how I missed it! The tree is a nice Hemlock, probably a little over a hundred years old. It is 10' 8 1/2" around and measures 107.9 feet tall! At one time it would have been a really beautiful tree but now it is not doing well due to hwa infestation. This tree could still be saved if it was treated. The top crown is green still but the foliage is thinning. Though smaller trees near the nearby picnic area and parking lot have been treated I doubt this one has. I did not see any tags or markings indicating it had been treated, but I did not take the time to really look for them since everyone was waiting on me. I wonder if I could treat this tree myself without getting in trouble? It is in a busy area for hikers. How much imidacloprid would it take and how much would it cost? Or who would I call in the USFS to recommend treating it? It is such a nice specimen to just let die like so many others. Emily, Clay's daughter seemed impressed on how big the tree was!

We all had a wonderful time. Clay and Joy really needed getting out and I think no one had a better time than Ian. He brought his cute girlfriend Savannah (Savvy) with him. I doubt he even noticed the trees! Oh, what is it to be young....And mentioning young. Little 17 month old Kloie had a ball. She ran Joy ragged!

Here is a nice link I found on the Pink Beds Loop Trail.

<http://www.photographyboard.net/theres-...-310.html>





James E Parton

Hawk in Umbrella Magnolia

by eliahd24 » Wed Mar 02, 2011 10:47 pm

This red-tailed hawk was just beside me perched in the champion Magnolia tripetala behind Fernbank Museum. Truly awesome moment!



http://www.youtube.com/watch?v=gAgwO4FLcEs&feature=player_embedded

Eli Dickerson

Tree climbing snakes!

by eliahd24 » Wed Mar 02, 2011 10:50 pm

Last summer I had the great experience of seeing a black racer climb vertically up the furrowed bark of an old tuliptree in an old section of forest on the campus of Emory University here in Atlanta, GA. Quite amazing!



http://www.youtube.com/watch?v=U8MEwIEyS5E&feature=player_embedded

Eli Dickerson

Bulloch Hall, Roswell, GA

by eliahd24 » Wed Mar 02, 2011 10:37 pm

During this fantastic spurt of spring-like weather I had a chance to visit the grounds and forested areas at Bulloch Hall in Roswell, GA. Jess Riddle told me about this spot and the current state champion Bigleaf Magnolia is one he found on site about 10 years ago.

I was on a mission to find said tree along with a large tuliptree Jess mentioned as well. Turns out I found both (I think) and a good bit more as well.

Here's a rundown of the superlative trees, starting with the Bigleaf Magnolia's (*Magnolia macrophylla*). This is the finest stands of Bigleaf I've ever seen! Beech sized Bigleaf's everywhere!

Magnolia macrophylla on N/NW side of creek (Roswell Baptist Church property?):

CBH: 2' 7.5" (one of 3 tight trunks)

3' 1" (one of 2 trunks)

3' 2"

3' 4.5"

3' 5.5" (largest of 4 trunks!) x 78' tall

3' 7" (splits to 3 trunks)

3' 8" @ 3' above grade (splits to 2 leaders)

3' 11" x 82.6' tall

4' 7" x 91.2' tall x 39' avg. spread - (!) - State Champion from 2001?, if not, it's a new champion; also first documented over 90' (?)

Magnolia Macrophylla on Bulloch Hall (S/SE) side of creek

CBH: 3' 1.5" (rotten side trunk)

4' 2.5" (two other trunks: 3' 5.25" and 2' 9.25") x 83.9' tall (tree was 6' 6" below split, but clearly multi-trunked)

Bigleaf video:

http://www.youtube.com/watch?v=AH4AczHmNnw&feature=player_embedded

Other significant trees:

Carya tomentosa - 7' 4.5" x 111.4'
Cornus florida - 49.0' tall (!)
Pinus echinata - 6' 10" x 108.1'
Juglans nigra - 12' 5" x 95.7' x 91' spread
Quercus alba - 15' 7.5" CBH
Prunus serotina - 9' x 93.7' (two trunks)
Quercus falcata - 9' 3" x 105.7'
Quercus rubra - 9' 6.5" x 139.8' (!)
Juniperus virginiana - 81.7' tall (!)
Liriodendron tulipifera - 17' 5" x 114.1' (gnarly. old
looking tree with large cave and resurrection fern)

Video of giant Tuliptree:

http://www.youtube.com/watch?v=TtNJ5QDBeLo&feature=player_embedded

The bigleaf, n. red oak, and eastern redcedar are all the tallest I've measured in Georgia. The dogwood is second to a 56' specimen in Atlanta.
I will compare with other statewide data soon...

If any ENTS can confirm taller Bigleaf anywhere I'd love to know about it. I highly recommend a visit to this old plantation and forest if you're in the Atlanta area! It's one of the few spots where the open grown trees on the grounds (some dating back to the early 1800's homestead) are equally as impressive as the forest trees (or vice versa).

...pix forthcoming as well...

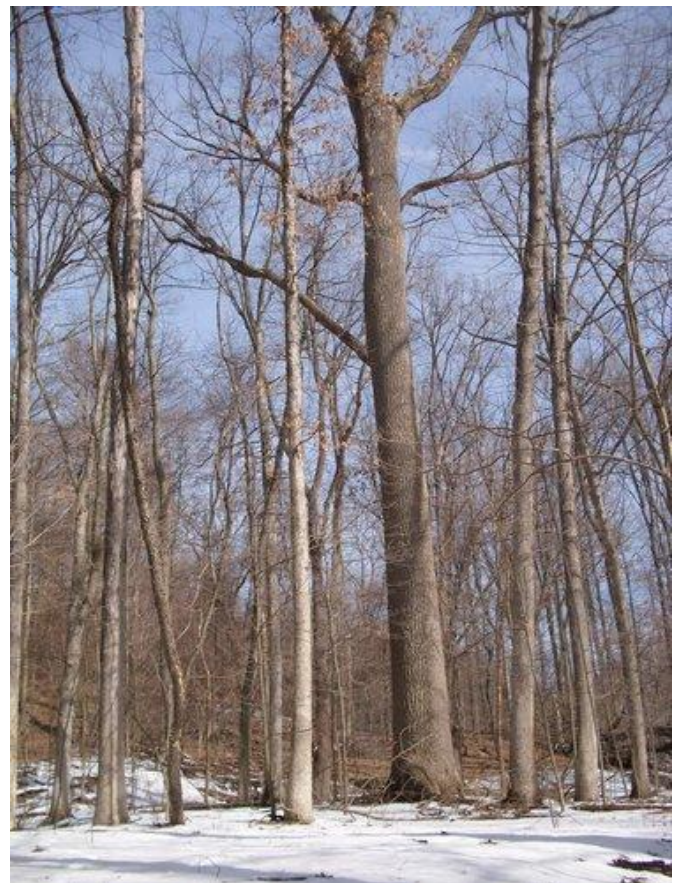
Eli Dickerson

[Everett Woods & O'Neill Woods, Summit Co., OH](#)

by Steve Galehouse » Fri Mar 04, 2011 9:48 am

Yesterday I scouted two areas I plan on measuring more thoroughly later this month. Both are hilly areas, several miles apart, on the western margin of the Cuyahoga River valley with elevation changes of about 250'. Both sites have LiDAR hits in the mid-upper 150's, so I was hoping to find some tall trees, but unfortunately there was still too much snow and ice in the upper ravines to explore safely. A brief summary of what I did measure, at O'Neill Woods: Tuliptrees at 146.9, 145, 138.5 x 7' 2", and 134 x 11' 10". The nicest tree was a white ash at 123 x 12' 1".

White ash, 123 x 12' 1":



At Everett Woods, a summary: Black oak 12' 3" x 101, tuliptrees 149.5, 144.67, 143, 135 x ~8', and 111.48 x 9' 4". Also found was a sycamore at 144',

the tallest I've found in the region.

Tuliptree 149.5, on left, next to sycamore at 144:



I'm confident I'll find trees in the 150's at both locations once the snows are all gone.

Steve

[Michael Taylor & 3 transit & 3 Baseline Height Measurements](#)

by [dbhguru](#) » Sun Mar 06, 2011 12:47 pm

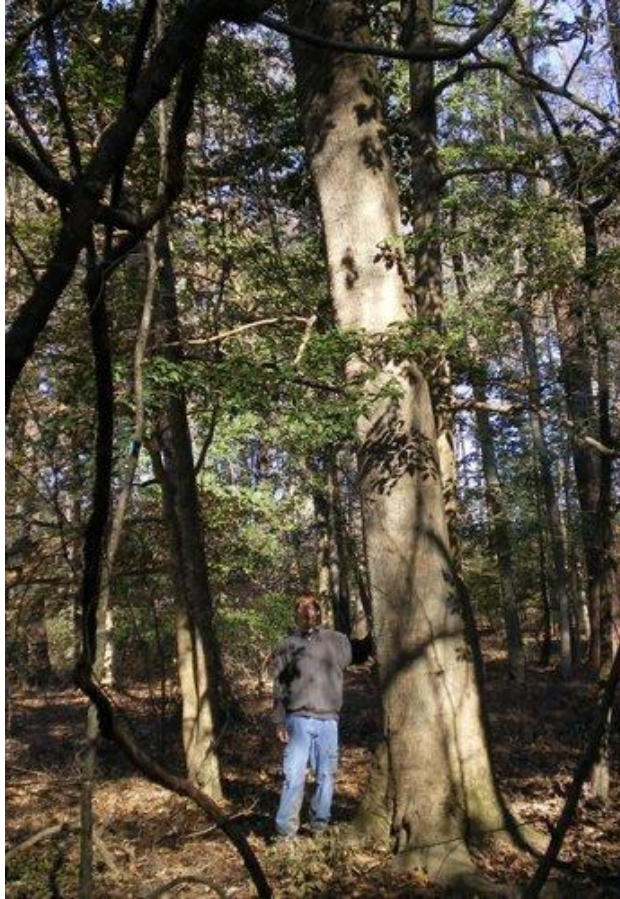
As spring approaches, I find the tree projects on my plate growing without bounds. As of late, I've been working with Michael Taylor, the redwood guru in California, on his ingenious modeling method for measuring the height of a tree using three transit stations and 3 remote baselines. It involves the iterative solution of 3 simultaneous equations, so it is not for the faint-hearted and it definitely requires a computer program. You cannot do the calculations in the field, but Mike's method promises accuracies of a centimeter or less. The method does not require any horizontal angles, believe it or not - only external baselines and vertical angles. I had to write a testing program using freeware called Chipmunk Basic to find a converging solution. Yep, Chipmunk Basic. I'm pleased to report that that darn little free rodent version of the Basic language works pretty well -- considering that it is free. But oh, how I miss Visual Basic. Alas, the price of converting to MAC. I can hear Ed saying, "I told you so". The MAC gives us Apple Script, a highly sophisticated, but difficult to learn scripting language that promises to automate everything and communicate with the dead. But my aging, nearly 70-year old brain just doesn't want to stretch to accommodate all the object-oriented concepts and many threads that this modern, all-purpose scripting language require you to learn. It attempts to be more English-like and in the process is verbose. I'd rather be out measuring trees.

Robert T. Leverett

State Champion Holly and Sugarberry

by Tyler » Sat Mar 05, 2011 3:56 pm

I stopped by Congaree last weekend to explore Pine Island as well as measure a couple of champion trees to update the state list. First was the american holly.



State Champion American Holly

6' 11" X 81', Spread 55.5' Max 48' Avg

If you check the South Carolina Champion Tree Site you can see that the holly was a multi trunked tree with two smaller hollies growing out of the larger trunk. One of the smaller trees inflated the circumference of the main tree. Sometime over the last 8 yrs this smaller tree has died and rotted away so the circumference can now be taken at 4.5'.



State Champion American Holly

Next was the state champion sugarberry. This tree is only a short walk from where the low boardwalk turns into the weston loop trail.



State Champion Sugarberry

13' 4" X 109.4', Spread 72' Max 69' Avg

I'll report on Pine Island tomorrow.

Tyler Phillips

[Pine Island, SC](#)

by Tyler » Sun Mar 06, 2011 12:58 pm

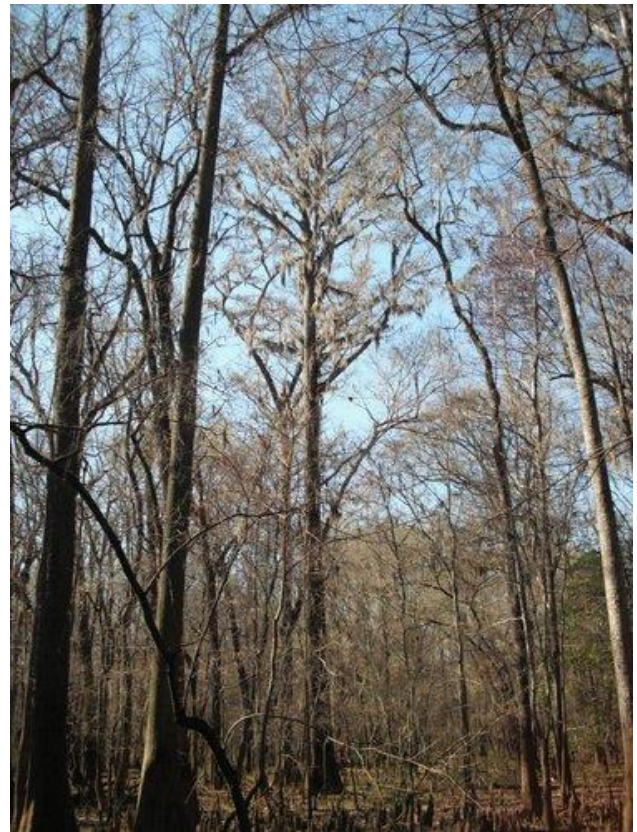
Pine Island, also known as Hurricane Island, is located a little over a mile west of the low boardwalk at Congaree National Park. For this trip my dad and I made our way west along Cedar Creek until we came to the island. On the way we encountered large

cypress trees lining the creek. The larger trees ranged from 13'-22' dbh and 110'-120' in height.



Cypress Knees

The tallest tree I measured in this area was a cypress at 130.1' on the opposite side of the creek. I also measured the spread of a large cypress to 84'.



130.1' Cypress

We then came to Pine Island. I spotted a tall loblolly at the edge of the island and quickly measured it to 151'.



151' Pine

Loblolly Pines range from scattered individuals to dense stands on Pine Island. We came to an area with three loblollies over 14'cbh growing near each other. Near these was a large loblolly blown over likely during a summer storm last year.

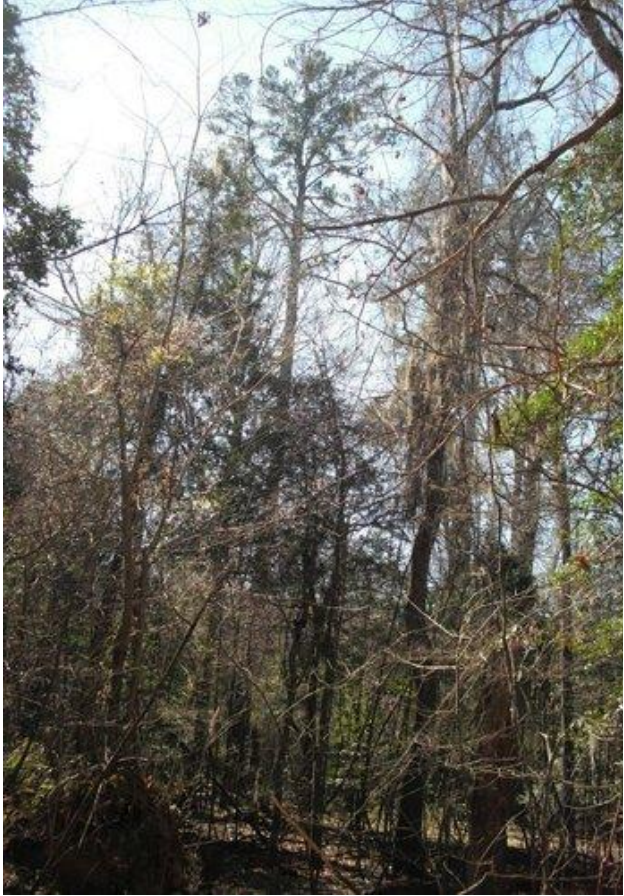


153' Fallen Pine

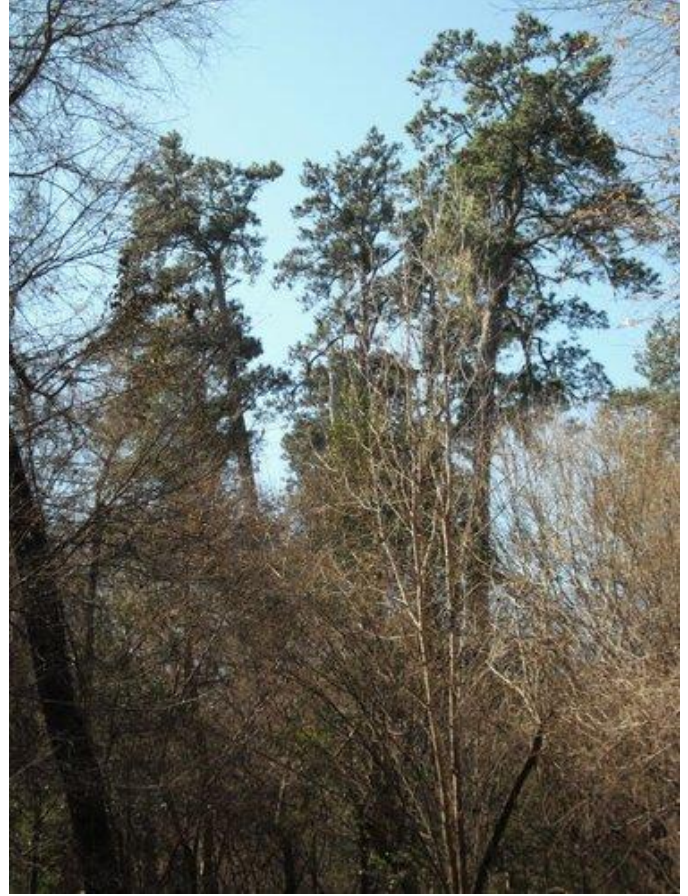


153' Fallen Pine

We visited a couple of pine groves that were a little farther away from the others. These turned out to contain the tallest trees measured all day.



10' 6.5" X 159' Pine



Center 163.8' Pine, trees left and right are 150'-155'

In summary Pine Island contains many large and tall loblolly pines. The 163.8' pine is the tallest tree I have ever measured. Many trees were roughed in the 140'-150' range and it is possible there may be taller trees present.

Tyler Phillips

Mezo Oak, MS

by Larry Tucei » Tue Mar 08, 2011 11:57 am

ENTS, I measured another Live Oak in Ocean Springs, on Monday. The tree is in the smaller range on the listing but still a large tree. The Oak measured CBH-20' 11", Height-63' and Spread-110' x 123'. The Mezo Oaks grows on the east side of the property close to the old house. There are several Live Oaks around the property this is the largest. The courtyard in the back is beautiful and has a Live Oak with limbs overhanging it, making for a serene setting. This property was an old homestead then a boutique for years now a small nightclub. Larry



Mezo Oak

Larry Tucei

Pillows and Cradles, MA

by jeffk » Mon Mar 07, 2011 10:36 pm

I've been doing some hiking in the Conway State Forest (CSF) in Conway Mass. and think I may have stumbled across an area which is unusual in that it may not have been altered by the hand of man for quite some time. I am hoping the ENTS can provide some direction in terms of how I would go about determining the pedigree of this patch of woods. I assume the first step would be an inventory of species and observations of the character of the woods (which I've started).

My first observation was that this area was different. Adjacent forested areas are largely single size (age?) and limited species trees whereas this woods is varied sizes. Also the species are varied - hemlock, black birch, oak, ash, in that order, and a few maple, white pine and white birch.

Also striking are the number of downed trees. Some are obviously blow-downs or ice-storm damage, but others appear to be dead-falls. Whatever the causes, there are fallen trees in all states of decay, from those downed last summer, to well-rotted, moss covered hulks on the forest floor. The forest floor is literally covered with "pillows and cradles" from old, long decayed uprooted trees. There's also a lot of litter on the forest floor.

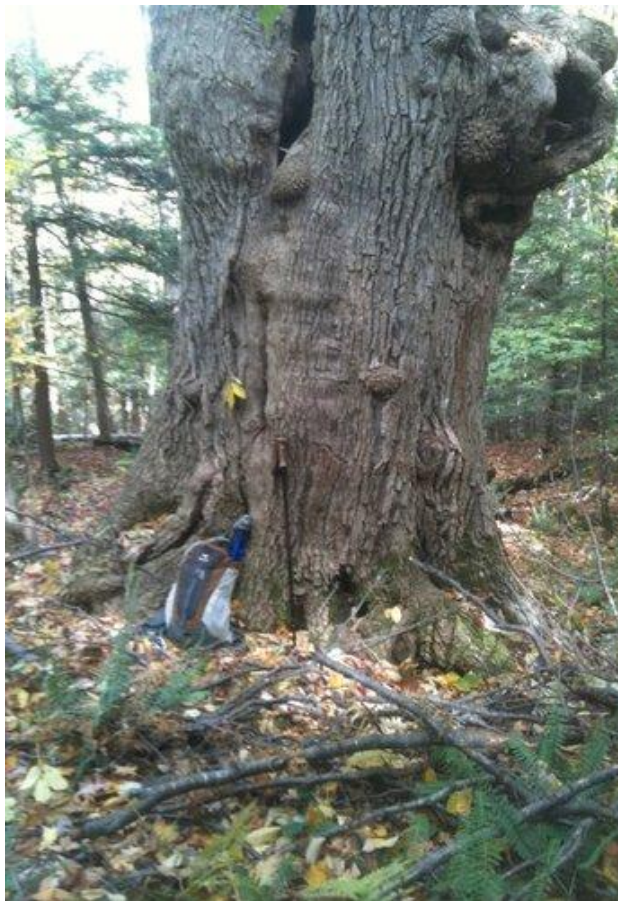
I also should mention much of this area is on the side of a ravine with 20-30 degree slope and in some places increasing to 45 degrees. Should also state the slope is north facing.

My ulterior motive is to give this patch of woods special notice in the State of Massachusetts' inventory of public lands. The state recently underwrote a "forest visioning" process which created some opportunity in this respect; in particular they designated a "patch reserve" category of woodland which apparently places use restrictions on fragmented and ecologically sensitive areas (so good ideas can come from the state bureaucracy!).

And of course, my hope is that parts of this woods may have been spared logging activity since

the mid 1800's when farming in Mass took a downturn and thus may constitute a "new old growth" - remote possibility in this neck of the woods I know, but possibility none-the-less. it. It may be this patch of woods is simply driven to its' current state by exposure and the slope; applying some forest science to determine which (with the help of the ENTS) is my goal.

Here's a large (wolf) ash, could be in a category with Treebeard himself, approx. 17' in circumference, and estimated 60-70 ft height (been topped more than once, I think) -



here's a typical view of the slope -



and a hemlock stand on the steeper slope (they don't look imposing, but the larger ones are 8-10' in circumference) -



finally, here's a view of some of one of the more densely littered areas -



So I guess the question is - what's the first step in determining whether this relatively small area of forest (10-20 acres) is unusual enough to merit special interest/protection?

Thanks, Jeff Knox

[Dawson Forest, GA](#)

by bbeduhn » Wed Mar 09, 2011 10:15 am

I did a race in Dawson Forest on Saturday. It's the site of an old nuclear facility where the government attempted to create a nuclear powered aircraft. The project never got off the ground (pun intended).

They had an open air nuclear reactor (did wonders for the trees there). Anyway, portions of the forest have been cut, even in the 80's, 90's and 00's, but along the streams, nice tall trees have staked their claim. I admired many tall trees. I don't have a rangefinder just yet, and I was a bit busy running all day, but the white pines and tuliptrees look to be in the 130' range with a very tall hickory and some tall oaks, a few sycamores, shortleaf pine and sweetgum.

If you get a chance to get out there, I can start you in the right direction. It's only 45 minutes north of Atlanta. I doubt I'll get back there any time soon.

Only one white oak appeared to have advanced age.

It's a young forest but a few spots yield good heights, especially for the age of the stands.

Brian

[Rich Hole Wilderness, VA](#)

by Ranger Dan » Sat Mar 12, 2011 12:44 am



monster northern red oak

Located west of Lexington, VA, Rich Hole Wilderness is in George Washington National Forest.

It's well-known for its exceptional northern red oak forest. There are more individuals of this species at roughly four feet DBH than I've seen in any comparable acreage, even in the Smokies and surrounding mountains. In my experience exploring, I would say this is the most extensive stand of big-tree old growth of any kind in Virginia's mountain territory, and that's counting the now-dead hemlock groves in places like Skidmore Fork and White Oak Canyon. There are larger stands of old growth, especially on high ridges, and in the Ramsay's Draft area, but there are few trunks over 30" DBH in those places.

Phil and I came here on a tip from a hunter who told of tuliptrees and white ash four feet in diameter on saddles to the west of Brushy Mountain. Ascending from the trailhead near I-64, we left the trail at the first gap, where there is a small old field. Just beyond it, there are a few chestnut stumps, but they were the only stumps we saw for miles. Fallen remains of mature chestnut trees are abundant. The head of the valley that trends northward is a rich area full of big, old oaks three and four feet in diameter, almost all northern red. Some sugar maples, cucumber magnolia, and basswood are in the very richest places. We contoured above this forest to the saddles and found more gently sloping terrain and big trees. Many northern reds measured over 12 ft., some over 13 ft., but by far the largest and most spectacular of them measured just over 17 ft. CBH.



the 17 ft. oak



Phil by 17 ft. CBH oak



the 17 ft. oak



Dan measuring a 13 ft. tuliptree



Phil in a grove of tuliptrees and oaks

In some of the tributary valleys there are some large tuliptrees, mostly hollow with traces of charcoal.

The largest we encountered measured over 13 ft., and a few are nearly as large. There are a few chestnut oaks up to 12 ft. on higher ground. At the final saddle of the day, we finally came to a couple big ash trees (the only ones of the day), the larger almost 12 ft.



12'2" basswood

More exciting was the discovery of one of the largest basswoods I've ever seen, a single-stemmed one we measured at 12'2" CBH.



crown of the big basswood

Returning by following the main stream back to the valley head, there is a steep-sided little gorge with cascades, but there are no rhododendron thickets like you'd encounter in similar places to the south. There are hemlocks. The living ones are a few tiny youngsters among the standing dead whose limbs clutter the ground. Thankfully, this is a short stretch, and the largest trunks are only 10 ft.CBH., but these are old trees. There are a few old tuliptrees about the same size in this rugged area. Big oak forest extends for over a mile from here to the gap where we started.

The only forest of this type I've seen that rivals Rich Hole is on the east-facing slopes of Little Santeetlah Creek's cove in Joyce Kilmer Memorial Forest, but I think there are more big northern reds here.

Brian Beduhn

[Tallest Hemlock Discovery 2011 / 80m+](#)

by mdvaden » Tue Mar 15, 2011 2:21 am

Just discovered a new tallest hemlock day before yesterday.

My estimate was 272 feet from a solo measure around noon on March 12. Sillett happened to be in the park that same day, and Taylor the next, so it got measured twice.

The name is Tsunami

Mario D. Vaden

[Atlanta, GA Rucker 10 index](#)

by eliahd24 » Wed Mar 17, 2010 11:54 am

As I compile more and more trip data for various sites across metro Atlanta, I thought it would be neat to look at a city-wide Rucker 10 index. It would be great to compare this to other metro-areas across the east as well. Here's what I have thus far:

Atlanta, GA citywide Rucker 10 index

Species	Height	Location:
CaGl	134.10	Fernbank Forest
LiSt	136.40	Parkwood Park
LiTu	157.20	Deepdene Park
PiEc	129.40	Fernbank Forest
PiTa	142.20	Fernbank Forest
QuAl	143.80	Frazer Center Forest
QuRu	137.20	Beecher Park
FaGr	123.00	Emory University
TiAm	129.70	Fernbank Museum
FrAm	125.90	Tanyard Creek PATH
Rucker 10 index:	135.89	
3.17.10		

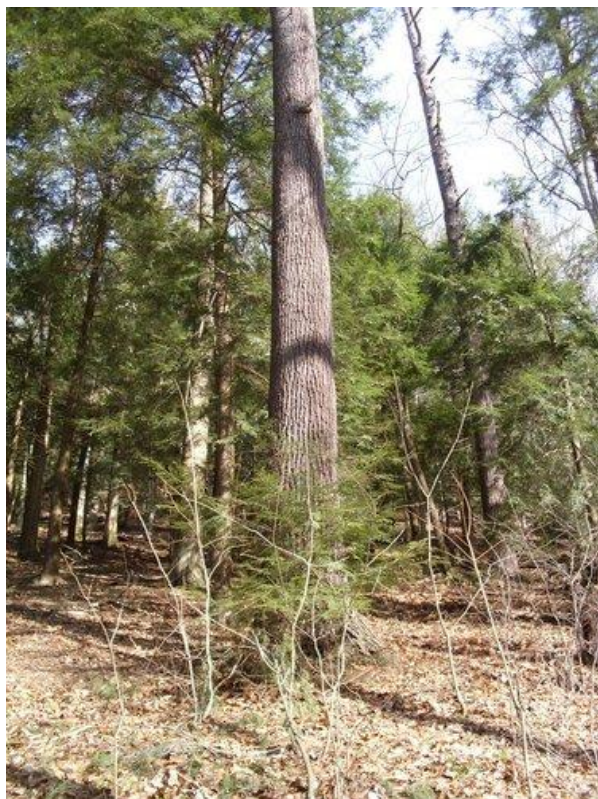
Eli Dickerson

Clearfork Gorge, Mohican River, Ohio record white pine

by Steve Galehouse » Thu Mar 17, 2011 11:35 pm

Today Rand Brown and I visited the Clearfork Gorge area of the Mohican River in Ashland County, Ohio, in the north-central part of the state. This area is very scenic, and has the highest concentration of native(not plantation)white pine in the state. We scouted this area prior to visiting utilizing LiDAR data, and figured the tallest white pine in Ohio was out there, and we knew just where to look. Sure enough, utilizing LiDAR data and Bing Maps aerial photos, we walked right up to it and measured it to 156.2' x 10' 2", all within 20 minutes of arrival at the site. Ohio isn't known as white pine country, but 156'+ isn't bad. From there we visited other areas of the park which had tall LiDAR hits, and found a hemlock at 140' plus several nice tuliptrees, the tallest at 163.2'---this is the third site in N Ohio Rand and I have found tulips in excess of 160'. Below is a summary of what we measured plus some photos:

Photos of state record white pine:



Species	Height	Girth			
White pine	156.2'	10' 2"	N 40 36.664	W 82 18.252	
White ash	123.6'				
Tuliptree	163.2'	9' 5"	N 40 36.909	W 82 19.228	
Tuliptree	151'	10' 3"			
Tuliptree	142'	8' 8"			
Tuliptree	141'	8' 8"			
Tuliptree	138.5'				across river
Tuliptree	138'				
Tuliptree	135'	7' 11"			
Tuliptree	134.55'	8' 9"			
Tuliptree	129'	8' 3.5"			
Sugar maple	113.4'				
Hemlock	140'	11' 10"			
Hemlock	139'	8' 9"			near tall white pine
Hemlock	132'	11' 9"			
Hemlock	126'				
Hemlock	126'				across river
Black cherry	108.75'				
Bitternut	132.5'				





The white pine at 156.2', the tulip at 163.2', and hemlock at 140' are each significant heights for the state. A taller hemlock is likely out there in Mohican but due to terrain is difficult to measure.

Steve Galehouse

Trees Database site now active

by Steve Galehouse » Fri Mar 18, 2011 9:45 pm

My son Mitch, a software engineer, has custom designed, developed and is hosting a site for coordinating data for tree measurement. The link is: <http://treesdb.org/>.

He gives co-credit to me for its development, but it's been his effort entirely. I hope you'll give it a look and try---it's pretty neat. Some of the data currently on it are for trial purposes, which should be obvious.

Steve

Progress report on Michael Taylor's Triangle Method

by dbhguru » Sat Mar 19, 2011 9:53 pm

Things are happening fast in the brave new world of engineering advanced methods of tree measuring. However, I'm having to stretch my gray matter as far as it will stretch in perfecting Michael Taylor's Triangle Method on homemade equipment. If the Triangle Method will work satisfactorily using the transit that my buddy Gary Beluzo and I made, then imagine what we can do using really accurate equipment. A new day will have dawned. The next transit Gary and I will make will use a self-leveling digital level, hopefully a laser level. The level will always know where horizontal is regardless of the tilt of the tripod. But first things first. We'll first perfect the Triangle Method using the digital level we started with, which reads to 1/10th of a degree, but must be set up level to begin with. The reason is cost. These cruder levels can be purchased for as little as \$40.00. A gun scope sufficient to do the job costs between \$15.00 and \$20.00. If you already have a tripod, your remaining expense is epoxy, a board, and a clamp to hold the apparatus onto the tripod. You put the scope on top of the level and the combination on the tripod. After that the scope has to be zeroed in so that the crosshairs will be on the center of a target that is level with the digital level. I'll soon send a picture of our contraption. Hit ain't purty, folks, but hit gits tha job done - Yeehaa.

The Basic program I wrote to work with the equipment computes the three converging heights. The program is written for Chipmunk Basic. Chipmunk Basic is a free Basic interpreter that works for PCs and MACs. If you have a better version of Basic, I can supply the code as a text file.

Using our homemade transit and Basic program, I set up two tests yesterday. I got a calculated height that differed from the tape measured height by 0.8 inches on one test and 0.4 inches on the other. I did both tests indoors on a level floor. I could get extremely accurate distances for the triangle and for the height of the target.

Mike's model assumes that vertical angles to the

target are measured from 3 locations, which represent the vertices of a triangle that lies in a horizontal plane. However, in the field we know that the ground will seldom be level. So we have to compensate for the 3 transit stations being at different elevations. Mike did this in this evolving model. However, I ran into another snag when I was preparing for the first real test. The telescope-digital level sits on top of the tripod. When you swivel the apparatus to point at the target through a positive or negative angle, you change the center of the level relative to the swivel point of the tripod. The centers on our assembly are 6 inches apart. So the center of the apparatus winds up above and either in front or behind the swivel point of the tripod. This shift of center has to be taken into account, otherwise the vertices of the three vertical angles will not lie in the same horizontal plane. Well, I did come up with a method to calculate the equivalent angles. I'll show all this in diagrams sometime within the next several days. The point is that the problem is solved, and I can continue testing.

I would never suggest that this method is easy to understand, but with my Basic program and the right equipment, a measurer can use the method without having to understand all the math behind the scenes. I'll eventually give a full explanation. I plan to write an article for a future edition of the Bulletin. Michael Taylor will probably coauthor the article.

Robert T. Leverett

Tulip trees, MA

by sam goodwin » Sat Mar 19, 2011 9:16 am

While hiking in Farmington River Park in Bloomfield, I found a few tulip trees. I measured the biggest at 7'3" cbh and 86' high. I measured a oak at 11'3" cbh at 85' high. This forest area is a mixture of oak, white pine, a few beech, very few white birch, a fair number of black birch and some norway spruce. Some parts of this park is old tobacco fields with young growth and some older stands of white pine. This park also abuts active tobacco fields.

Sam Goodwin

Ryerson Station State Park, PA

by sjhalow » Sun Mar 27, 2011 11:43 pm

Over the last few months I've taken several hikes along the trails of Ryerson State Park in southwest PA.

Information

http://en.wikipedia.org/wiki/Ryerson_Station_State_Park

<http://friendsofryerson.webs.com/>

Map of park

http://www.dcnr.state.pa.us/stateparks/parks/ryersonstation/ryersonstation_mini.pdf

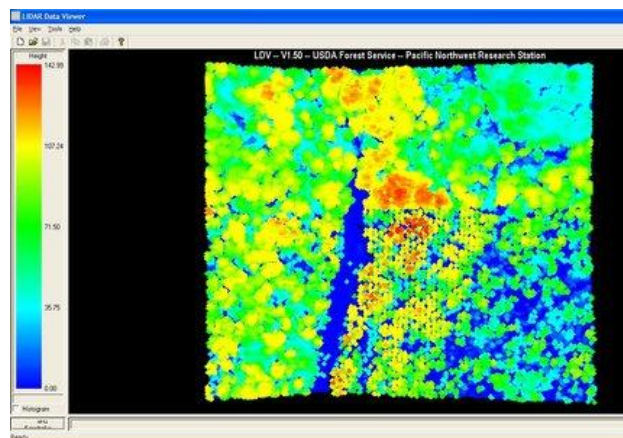
This park used to feature a small artificial lake, but it a few years ago the dam was damaged by nearby longwall mining and the lake had to be drained. I didn't find any trees that appeared to be exceptionally old. But there are many fairly tall tulip trees (130 to 140') throughout the park. Additionally, there are many tall sycamore trees along Kent Run in the north east section of the park. 144.0' was the best height I got after two visits to the Kent Run sycamores.



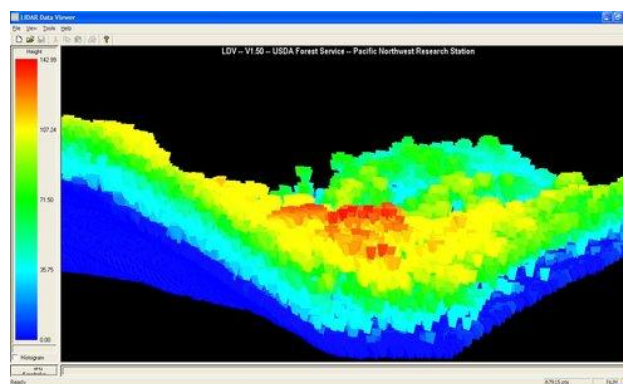
American Sycamore 144.0' x 11.5'

A few weeks ago I started experimenting with LIDAR data using the Fusion freeware application. I could not find groundpoint data (dtm files) on the USGS website (must be there somewhere though). After some trial and error, I figured out how to use the command line programs that come with the software to generate groundpoint and image files from the raw lidar data files (lda files) readily available on the USGS website. I will gladly assist anyone who wants to try this for themselves.

I was curious to see if I missed any taller trees at Ryerson, so about a month ago I downloaded and processed the lidar data for the park. Much to my chagrin, I found that I had missed some substantially taller sycamores along Kent Run. These sycamores are a couple hundred yards upstream from where I had previously searched.



Lidar data overview of Kent Run sycamores

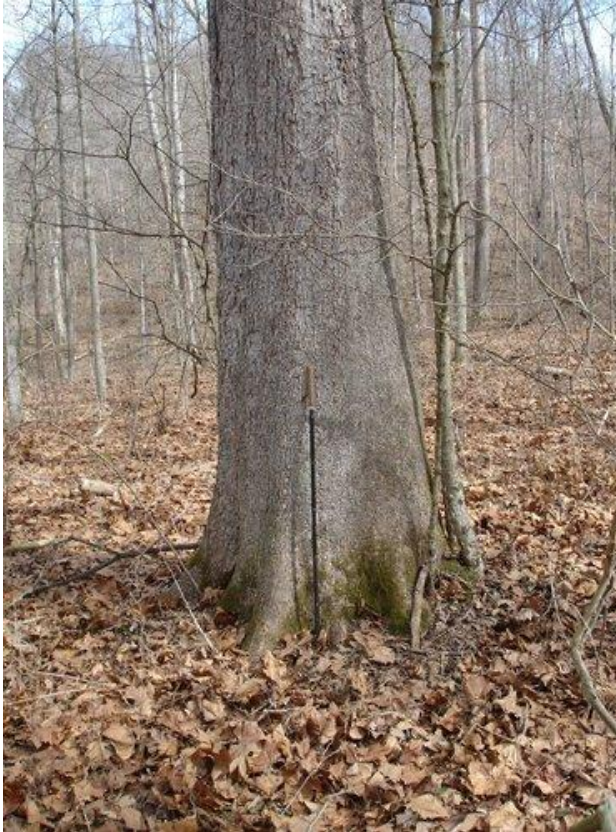


Lidar data side view of Kent Run sycamores

So I made a third trip to Kent Run and measured a double-trunked sycamore at 149.5' x 11.75' CBH and 147.0' x 10.92' CBH. A few yards away was a slightly taller sycamore at 150.5' x 10.25' CBH. I believe these are the tallest sycamores found in Pennsylvania to date.



Twin sycamore 149.5' and 147.0'



Sycamore 150.5'

Here is the RHI10 for Ryerson

Am. Sycamore	150.5' x 10.25'
Tulip Poplar	141.0' x 8.08'
White Oak	123.5' x 6.42'
East. Cottonwood	120.5' x ??
White Ash	119.0' x 9.25'
Am. Basswood	119.0' x ??
Pignut Hickory	117.0' x 7.25'
Black Cherry	117.0' (across ravine)
N. Red Oak	114.5' x 9.33'
Scarlet Oak	114.0' x 7.00'

RHI10 123.6'

Unfortunately I measured, but forgot to record the CBH's for the Eastern Cottonwood and American Basswood.

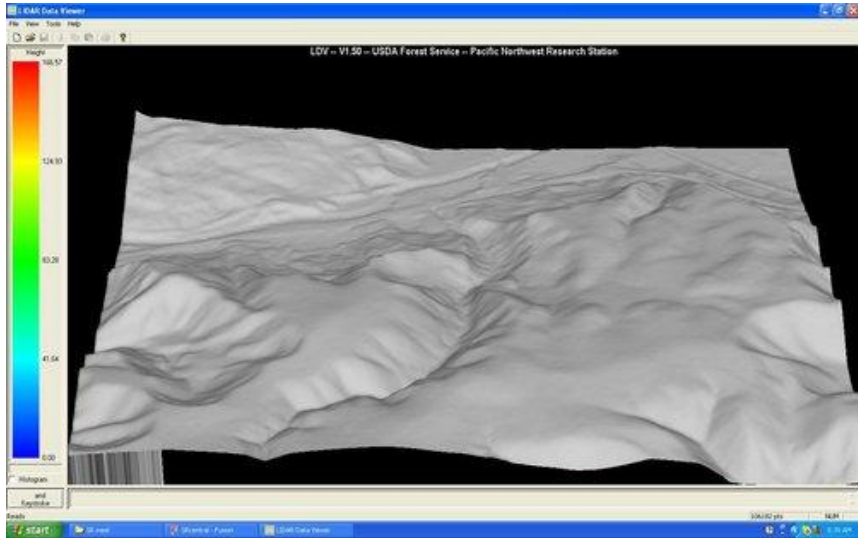
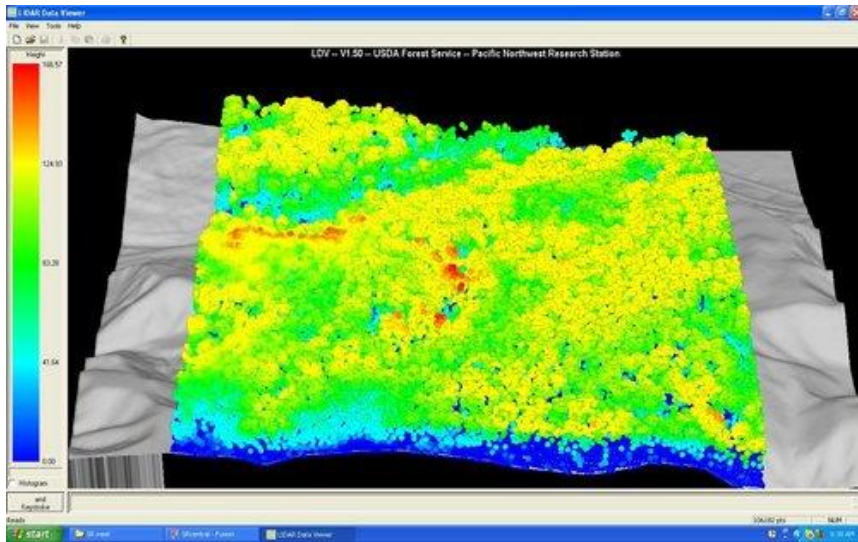
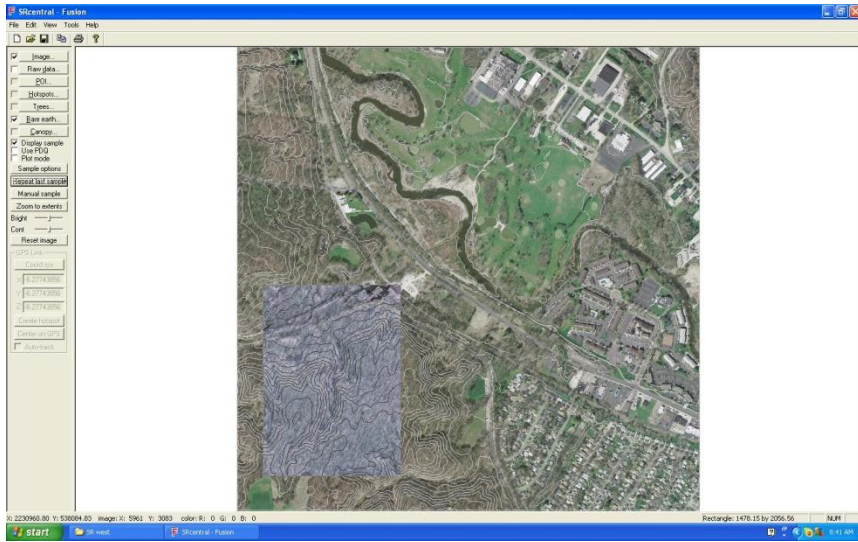
Other species identified but not measured,
Chinkapin Oak
Chestnut Oak
Black Gum
Black Walnut
Black Locust
American Beech
Bigtooth Aspen
Sassafras

Steve Halow

[Getting started with the Fusion program and LiDAR data](#)

by Steve Galehouse » Mon Mar 28, 2011 6:37 pm

Fusion is a program that uses LiDAR (Light Detection And Ranging) data to measure and visually represent canopy height compared with ground elevation. The canopy height range of a sample is color coded, with the actual height measurements given on the left side of the LiDAR Viewer screen. Samples can be manipulated by rotation and color settings, as well as other ways. I've never used stereo photography, but I don't think stereo photography can give actual height values, although one could probably get some idea of species composition, which Fusion and LiDAR cannot provide. The utility of Fusion for me is locating trees and then examining the terrain(minus the canopy data) where the trees are found---this makes the trees very easy to find on foot. I've attached three pics---the first a LiDAR tile in the Fusion program, with the sample area highlighted lower left, the second an image of the sample area in the LiDAR Viewer showing color coded tree heights, with the tallest at 166.57', and the third showing the sample area terrain view.



At Ed's suggestion I'm posting this simplified tutorial for using the Fusion program and LiDAR data. The tutorial provided Fusion is quite complex and perhaps more in depth than the way most ENTS would utilize the program, so this sort of a "quick and dirty" way to become familiar with Fusion. The data source I've used is from Ohio, but the information should be adequate to get one familiar with the program and what it can do, and then you can search for data in your home state:

1). Download and install Fusion from:

<http://www.fs.fed.us/eng/rsac/fusion/>

2). Go to this site to download Ohio

data:<http://gis4.oit.ohio.gov/osiptiledownloads/default.aspx> . Zoom in on an area until tile numbers and boundaries are visible---a tile will have a number like N2215545(tiles in the southern half of the state begin with S. Use the "select" option, icon at the upper right of the map, to grab the number. When you select a tile, five file options will show in the box to the right of the map. Download the TIFF file, the LiDAR file, and the ASCII file. Disregard the other two. Once downloaded, extract/open each file and move contents to a folder of your choice(I create a folder with the site name and leave on the desktop for convenience).

3). Open Fusion, then:

A). On the options bar to the left of the Fusion screen, click on "Image"; a box prompting you to open a file will appear, select the folder you've put the extracted file in, and an image(.tiff) file will be there--open that file to load into Fusion. An aerial photo should then appear in the Fusion screen.

B). Next, on the options bar to the left, click on "Raw data".An "open" prompting box will appear again, with LiDAR, .lda or .lds as the file type. Click on the file in the box, then "Open". Another box will pop up; just click "OK"(not "add file").

C). This is the only tricky part. At the top of the Fusion screen, in the toolbar, select "Tools", then "Terrain model", then, "Import ERSI ASCII raster files". An "Open" prompting box will appear again, but with no files visible. Change the "File types" from "ERSI ASCII raster files(*.asc) to "All files"(just click the down arrow to the right of the file type pane). Now all the files loaded into the folder

will appear. You are looking for a text file about 30.5 megabytes in size, usually in the second position down from the .tiff file. Click on this file to open; another box will appear: "Import ASCII raster terrain model"---Click "Import" at the bottom left of this box, wait a bit, and when a file directory appears in the pane above the import button, just close the box.

D). Click on the "Bare earth" button on the left bar of the Fusion screen---an "Open" box with a .dtm file will appear(this is what was just created by the process in "C"). Click on this file, a box titled "Surface model" will appear, click "OK", then elevation lines will appear on the aerial image. You are now ready to view the data.

4). Highlight an area with the cursor, wait a bit, and the "LDV" window will appear with tree heights color coded as per the height scale to the left of the viewer screen. Left click and hold to rotate the view, use the wheel to zoom in/out, right click for many other options(the "surface" option is very useful, as in the "marker" option to adjust point size. Once you get to this point, it's just a matter of playing around and getting familiar with the graphics functions of the program. Before you close the program, click the "save as" to store the data to a name.

The process sounds complex, but once you've done it a few times, it's a snap.

Steve Galehouse

From the Archives:

LIDAR

by pauljost » Mon Mar 15, 2010 12:05 am

Reposted from a sequence of posts by Paul Jost and others, Starting February 19, 2009.

Will, There was some mention of LIDAR applications in the past here. The USGS has a LIDAR web site:

<http://lidar.cr.usgs.gov/>

which includes a data viewer for finding publicly available LIDAR data:

http://lidar.cr.usgs.gov/LIDAR_View/

There is a lot of spotty coverage of the U.S., but it looks like all of North Carolina is covered with free data downloads based upon tiles georeferenced to 24K USGS topographic quadrangle map names and 4 data file tiles per quad. I'm not sure how useful it is depending upon the resolution that is supplied.

Someone has written software to allow LIDAR data to be converted to be used in Google Earth for viewing.

<http://www.cs.unc.edu/~isenburg/>

I'm not sure if he is converting it to bare earth topography or using canopy heights for the surface data. .

There is also a cool looking downloadable LIDAR viewer/visualization tool at:

<http://lidar.asu.edu/LViz.html>

However, it looks like it might not work with the native data format of the LIDAR data. Some work needs to be done to figure this all out.

For others elsewhere in the U.S., I have found that some state universities have remote sensing departments that provide additional data. For instance, the USGS has about 1/3 of Louisiana covered with freely available LIDAR data, but LSU's LIDAR page on the Links section of the first USGS page above has most of the state covered.

Paul Jost

Don Bertollette Wrote (Feb 19, 2009)

Paul- You and I may be the only ones interested...I posted several weeks back when I read Allen's post on the LIDAR that NPS and another agency had, of the Congaree. Of course when I heard that there was already imagery for the Congaree, I thought, what do we need to collect to be able to connect with it.

Accurate GPS locations.

That's all. So I'm hoping that the Congaree folks have "synched" their GPS's! At least have them all on the same Datum/Projection.

My interest has taken me to the Web, where I've found public domain software called FUSION, that works with the LIDAR data.

You can accurately measure tree heights to .5 to 2 feet, depending on data density. I'm going out next month with some Inventory folks, who will visit a site in advance of their upcoming Forest Inventory, which will involve LIDAR. High density LIDAR data can collect up to 4 "hits" per square meter...pretty data rich remote sensing!

One of the guys that I'll be meeting with co-wrote the FUSION software, and is pretty up on this stuff.

How was your interest piqued?

-Don

Ed Frank (Feb 19, 2009)

Don, Paul, I certainly can see the applications of the LIDAR data to the work ENTS people are doing. For example if you had the topographic surface elevation data for a site and the LIDAR showed the top of the trees, then it would be feasible with the right software to simply subtract the two and get a tope of canopy height. One of the things we are all aware of is that trees in valleys tend to be taller than their counterparts on the hilltops resulting in the surface of the tree tops reflecting a more subdued version of the general topography of the surface. Dale has observed that along these river corridors the trees near the base

of the slope at the side of the valley wall tend to be taller than those more in the flood plain and on the slopes above. These relationships that can be observed would stand out in a topo of canopy height generated by this process and the validity of these assumptions could be determined and documented.

Certainly it would give a broader overview things like canopy height topography relationships, and canopy height and relationships to many different environmental parameters. What relationships are there that might jump out at you once the data is manipulated, compiled, and displayed?

It is something worth pursuing, but for me at the moment I doubt I have the capacity to manage these data sets effectively on my laptop, and even if I could I don't have the programs needed to do so, and don't have the topographic and LIDAR datasets. If big chunks of the LIDAR is available online, that is great, but I still would need the topo data sets that would be compatible with the process, and the data manipulation programs. I don't have the bucks for a good GIS package or even a minimal one. (If you have sources of freebies let me know.)

I think many ENTS are interested in the LIDAR data, but just don't have the ability to make use of the data without being at a university.

Ed

Don Bertollette (Feb 19, 2009)

Ed- It might be that the NPS dataset could be accessed by an ENTS volunteer willing to spend time at the NPS office that has Congaree LIDAR imagery.

Often times they'll have competent computer facilities. Gary Beluzo has a potential solution, with GIS computer competency.

I guess my point is, maybe not all ducks are yet in a row, but enough of them are that it may be worth looking into. Your comment re topo surface elevation data being subtracted from the LIDAR data is correct...it's simple mathematics at one level, but with enormous repetitions such as computers are uniquely suited for.

The bottom line? If we can access ACCURATE tall tree location data in the Congaree, it can be later used as an axillary data layer, and co-registered to LIDAR.

It may be that ground truthed data as accurate as ENTS collects might be valuable to NPS folks....something could be worked out, perhaps?

GPSs like Will's new Garmin are capable of being averaged, downloaded and post-processed into a potentially valuable dataset.

-Don

Paul Jost (Feb 19, 2009)

Don, I've been following LIDAR for a long time and waiting for it's practical application by the general public. The time is close to arriving with fast home computers, downloadable datasets, and amazingly, some free, public domain processing and visualization software. Once all the pieces can be put together into a reasonable process, then we take advantage of this technology. I've been following LIDAR since I first learned that it was being used to measure topography, tree height, leaf area indices, etc. probably years ago. I found the information that I sent yesterday while researching old USGS aerial photos.

On the USGS EarthExplorer web site, you can search for all possible downloadable or orderable USGS data on a specific point on the earth based upon graphic map selection or coordinate entry. I was looking at their USGS and Army Map Service archive which goes back to 1939? for aerial photography. They have georeferenced photo mosaic indices that can be browsed to get medium resolution downloadable roll and frame numbers to browse and download for old frames that aren't searchable yet. I was browsing the more recent NAPP imagery and the older NAPP and Army mosaics, then browsed the preview thumbnails and low res imagery, then downloaded medium res frame scans. While "poking" around on the USGS web site imagery product page,

<http://www.usgs.gov/pubprod/aerial.html>, I noticed that they had a special link for LIDAR data that I have not seen before, so I investigated...

Anyway, I thought that some topographic data was inherent in raw LIDAR data. Forested areas can be post-processed to "remove" the trees from data to produce "bare earth" topographic data without using secondary sources that aren't as accurate or at least relative to the local tree height and density data. The raw data can also be used to produce LAI data, so it is obviously giving much more data than just the height to the first hard object. I believe that this was inferred by articles posted here earlier about LIDAR tracking of invasive tree species in Hawaii? and for locating potential ivory-billed woodpecker habitat.

You guys might want to talk to BVP about it at Congaree. I believe that his University is one with a remote sensing lab that is actively involved with LIDAR and natural resources/forestry applications.

Non-Lidar FYI: Additionally, recent high (2005 & 2008) and med. res. (2004&2006) leaf-on National Ag. imagery is available at

<http://datagateway.nrcs.usda.gov/>

or from local sites of members of the USGS AmericaView.org program, such as

<http://www.wisconsinview.org/>

Paul J.

Don Bertollette writes (Feb 19, 2009)

Paul- I'm sure I'm oversimplifying it, but LIDAR has two wave types, one P and one L. P penetrates the forest canopy and L is 'slowed' by the crowns. The difference is the tree heights. So just using the P wave, one could create a LIDAR equivalent of a DEM (Digital Elevation Model-a 3D base map).

With High Density L waves, there are 4 pie-plate sized "hits" per square meter, with Low Density L waves, you only get 1 "hit" per square meter, but is much cheaper.

You mentioned U. of Washington folks, one of the two people I'll be joining, perhaps next month for a trip out into the field, is one of them...Hans Andersen is often one of three folks that co-author many

LIDAR papers (for example,

Andersen, H.-E., S.E. Reutebuch, and R.J. McGaughey. 2006, Forest measurement and monitoring using high-resolution airborne LIDAR. Society of American Foresters (SAF) South Puget Sound Chapter meeting, March 16, 2006, Fife, WA)

Back when I using FARSITE to model fire area growth, one of the hardest inputs to get was crown bulk density...what better way then to use LIDAR to obtain that! I think it would be an exciting time for young folks with the 'knack' to be in this field.

From my initial understanding (and I'm just getting my feet wet in LIDAR), one can do pretty well with a moderately competent home computer, as long as the datasets are relatively small. LIDAR is very data-rich, so large area investigations would move you into the workstation arena pretty quick.

Ed-

One of the anecdotal accounts on LIDAR I wanted to mention earlier came from a conversation I had with a LIDAR savvy friend...he said for the FIRST time in more than a decade, he was actually SEEING an individual tree from remotely sensed (specifically, LIDAR) data, and the prospects were exciting.

-Don

Paul Jost writes:

Lidar data availability and possible application

Don, That's interesting. I believe that Hans Andersen may have been involved with the development of UWash's FUSION publicly available free software or at least works with it's creators.

Fusion, according to the USFS referenced tutorials, allows users to develop tree height data from LiDAR data and visualizations with georeferenced DOQQ's (digital ortho quarter-quads) by processing data with a combination of a Windows GUI and DOS command line tools.

<http://forsys.cfr.washington.edu/fusion.html>
<http://www.fs.fed.us/eng/rsac/fusion/>

There is no LiDAR data available for Wisconsin, but I've been playing with the data for North Carolina, which has both 1998 CIR DOQQ's and recent Lidar data with tiles based upon DOQQ's. I hope to try to find J.Kelly's upper Wright Creek big trees (from a recent post here) on the Santeelee Creek DOQQ and LiDAR data to try to prove it out for usefulness to ENTS.

Hopefully, I'll have local data to play with some time soon. Wisconsin's county governments are starting to acquire LiDAR data but aren't making it public domain - instead, selling it for thousands of dollars per user license! If I am successful with the process, I'll post the steps here later.

Paul

Josh Kelley wrote (March 3, 2009)

Paul, Let me know how using the LIDAR data around Santeeelah goes. If you find any great trees, I could ground truth them next time I return to the area. I'm quite sure there are 160' poplars in the area (second growth) and maybe some 170's.

Josh

Paul Jost wrote (March 07, 2009)

Gary, In the past I played with Landsat HDF files but had a difficult time classifying the data. The resolution also wasn't useful for my/our purposes, so I gave up on it. I looked at AVHRR, SIR-C and SAR and couldn't find practical applications of that data to ENTS functions.

On the other hand, the LiDAR is great. The Fusion demo data is higher resolution than the USGS online data, and gives a good picture of it's potential usefulness. From what I have seen so far, the USGS

data has good enough resolution to find and measure tall trees in a large landscape. We don't know how badly any of them are mismeasured badly yet, but it at least allows us to focus our searches a little better. Here's what I've done so far:

Downloaded Fusion software and sample data from the "Projects" "FUSION/LDV" frame:

<http://forsys.cfr.washington.edu/>

Downloaded Fusion tutorial pdf and data files from:

<http://www.fs.fed.us/eng/rsac/fusion/>

Get familiar with software.

Go to USGS LiDAR web site, use HTML/Java viewer to see where data is available.

http://lidar.cr.usgs.gov/LIDAR_View/

Download the .kml or .kmz file to better locate exact desired LiDAR tile data LAS file in GoogleEarth or ESRI ArcGis Explorer: At least for North Carolina, they are georeferenced to four tiles per DOQQ, which is 16 tiles per 7.5 minute topographic quadrangle. North Carolina has total coverage, Louisiana has partial coverage at USGS and more coverage at a LSU web site, other locations are spotty coverage with additional free data available from the state university GIS web sites, or free or for pay data from state, county, or local governments.

Once I had a LAS format LiDAR data tile from the USGS, I needed an image file for the same tile.

DOQQ or digital orthophoto quarter quadrangles based upon 1/4 of a 7.5 minute topographic quadrangle, are available for most of the U.S. from the USGS and state GIS departments. There are recent free medium and high resolution ortho imagery files available from:

<http://datagateway.nrcs.usda.gov/GatewayHome.html>

and also from member states sites of the AmericaView program. Wisconsin's is:

<http://www.americaview.org>

I got mine from North Carolina's GIS site hoping that it would be in the same projection as their LiDAR file. They were, but the only difference was one was in feet and the other was in meters:

<http://www.cgia.state.nc.us/DataResources/tabid/55/Default.aspx>

I tried their online viewer, but I can't get it to work properly on my computer at home or work:

<http://204.211.239.202/viewer/>

So, I manually found out which quarter quad (DOQQ) image I needed from their ftp download site:

<http://www.nconemap.net/Default.aspx?tabid=286>

Here, I got a 1998 DOQQ CIR MrSID file and the metadata info. First, I browsed the DOQQ names on the pdf index reference file:

ftp://204.211.239.203/outgoing/raster/doqq/cir_1998/

Then downloaded santck1 data from the directories down the folder tree.

Fusion can't read MrSID files, so I used free time-limited LizardTech GeoExpress View software to convert it to a properly georeferenced TIFF with a world file that I could edit.

http://www.lizardtech.com/download/dl_options.php?page=viewers

I couldn't find any other free software that would give me the conversion in the same resolution and without messing up the georeferencing. Their plug-in version reduces the image resolution to the screen resolution.

The .tfw file is not in the correct units for Fusion. I had to convert it from meters to feet:

Original santck1.sdw world file data, (x-scaling, y-scaling of x data, y-scaling, x-scaling of y-data, x offset, y offset):

```
1.0000000000000000
0.0000000000000000
0.0000000000000000
-1.0000000000000000
155061.204046555270907
191808.684446442872286
```

Conversion tables scale 1 meter = 3.2808 feet. By scaling the values from DOQQ metadata, the ratio of the LAS to image data can be properly scaled. A little error on a large data set will create a large error at the end of the x and y data.

From the metadata files, I determined the following

conversion factor:

LiDAR LAS Projection false easting =

2000000.002617 feet

DOQQ Projection false easting = 609601.22 meters

2000000.002617 / 609601.22

=3.2808333333338801388881734849546

I know, there are too many digits beyond the significant ones, but I just cut and pasted out of the Windows calculator. I multiplied all the entries in the world file by this amount to scale the data to units equivalent to the LiDAR LAS data file.

The resulting properly scaled santck1.tfw world file is:

3.2808333333338801388881734849546

0.0

0.0

-3.2808333333338801388881734849546

508729.96694282487296176202528535

629292.32555480953887910689675521

Both the LAS and TIF(TFW is automatically imported when the TIF is read) are input data files for Fusion. This allows viewing of 3D surface data with color coded heights or color by image data for the data set with little user experience.

What I'm doing now is using the groundfilter and gridsurfacecreate command line tools to generate bare earth data to allow individual tree measuring. I need to optimize the filter coefficients to get better results than the default values allow. So, far the default values provide a surface with significant outliers. They are above ground outliers, so they only make some trees appear shorter, not taller. Once that work is done for the USGS datasets, the commands can be entered in a batch file to allow anyone to use the data from USGS regardless of location. I'll post another message with screen shots showing individual tree measuring and 3D landscapes once I optimize the ground filtering for some more reliable data.

Paul J.

Application of USGS LiDAR data to ENTS, North Carolina example, part 2

Paul Jost March 09, 2009

http://groups.google.com/group/entstrees/browse_thread/thread/57077f5350573f02?hl=en

I found that Topcon Total Station uses a conversion factor of 1 meter = 3.28083333333333 survey feet. So, with more reasonable significant digits, I updated the TFW or TIFF world file described in Part 1 as follows:

```
3.28083333333333
0.0
0.0
-3.28083333333333
508729.966942740032947
629292.325554704592889
```

Then, with the LiDAR LAS file was converted to a ground points file with the following command.

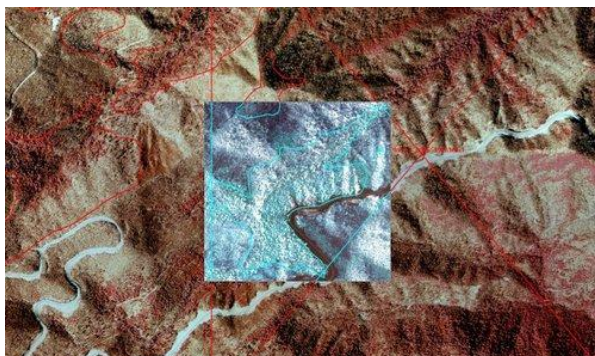
```
c:\fusion\groundfilter /gparam:-2 /wparam:3
/iterations:10 c:\lidar\wrightcreek\groundpoints.las
```

```
c:\lidar\wrightcreek\NC_Phase3_2005_35083c8c1.las
```

The surface file then was converted to a gridded surface for the software to use with the following command:

```
[url]c:\fusion\gridsurfacecreate
c:\lidar\wrightcreek\surface.dtm 3 F F 2 0 2 2
c:\lidar\wrightcreek\groundpoints.las[url]
```

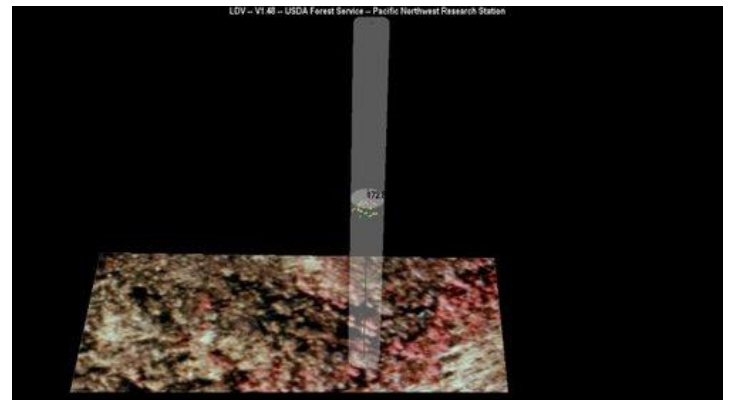
It leaves a very few traces of outliers but has the truest lay of the land without distorting it excessively to make a pretty, perfect visualization. State provided maps on the NC DOT web site are less than half the resolution (20 foot cells vs. 9 foot cells used here.)



First, I selected a portion of the data for what in the image file looks like an old growth section of Wright Creek:

Then, I subtracted the bare earth surface height from the tree canopy heights to flatten the image and show only tree heights. Since we are looking for big trees, I set the software to color by height and by class and set it to color trees up to 130 in blue, in the 130's green, 140' in yellow, 150's in orange, and above 160 in red. I set it to exclude trees under 150 feet tall.

These pictures are larger to show the content better:



Switched it to overhead mode, enabled the measurement marker and set it to snap measurement marker to highest points. Then, I enabled the image plate underneath the data and measured the tree heights. By hitting "h" and then enter, the height is updated and logged. After logging all the desired points to check out, I saved the "measurement line" to a .csv file which in the form of x,y,height.

Measuring can be done in overhead or 3D modes.

Colors can be smoothly graduated or colored by ranges. You can move the measurement marker tool over the color coded data view or over the image as shown here. This is a tall emergent tree with a large crown. It may be on a small rise or hump, or it may actually be a big tree. Ground truthing will bear it out...

Paul Jost

Seeking information-Discoloration Pattern inside of tree cookie

by Jim Wright » Wed Mar 30, 2011 4:56 pm

Recently I came across a very colorful and dramatic pattern inside a of a 12 inch tree that I helped a neighbor cut down. It was located in a stone row alongside a corn field in north western New Jersey; unfortunately, I do not know what type of tree it was as there were no leaves present at the time. If anyone is interested in seeing a photo of a cross section of this tree, I will gladly post it somewhere in order to solicit opinions on what causes this unusual design and what may have contributed to the red, orange and yellow colors that are present. I have little knowledge of trees and would appreciate advice. Thank you all.

The neighbor just moved in and wanted to clear several trees and shrubs at the back of the property; no identification was considered. Not sure if the stump has been removed yet; I'll followup on that. Two photos attached.



Jim Wright

Joe Zorzin wrote: Jim, I suspect that's what the famous tree researcher, Alex Shigo, called "discoloration and decay". He diced up many trees and followed such discoloration and decay. He showed that small injuries, such as branch stubs, will be overgrown by the tree but there is a succession of species of virus, bacteria, fungia that slowly rot the wood- though it may take decades.

I think in this case, we can see where branches broke off or were cut- then the tree grew over them. It appears that over several years- the tree produced new branches which also broke off or were cut.

Steve Springer wrote: It looks like a condition known as "calico poplar" in a yellow-poplar tree. It is caused by a beetle (*Corthylus columbianus*). It looks attractive but is considered a defect.

About: *e*NTS: The Magazine of the Native Tree Society

This magazine is published monthly and contain materials that are compiled from posts made to the NTS BBS <http://www.ents-bbs.org>. It features notable trip reports, site descriptions and essays posted to the BBS by NTS members. The purpose of the magazine is to have an easily readable and distributable magazine of posts available for download for those interested in the Native Tree Society and in the work that is being conducted by its members.

This magazine serves as a companion to the more formal science-oriented Bulletin of the *Eastern Native Tree Society* and will help the group reach potential new members. To submit materials for inclusion in the next issue, post to the BBS. Members are welcome to suggest specific articles that you might want to see included in future issues of the magazine, or point out materials that were left from a particular month's compilation that should have been included. Older articles can always be added as necessary to the magazine. The magazine will focus on the first post on a subject and provide a link to the discussion on the website. Where warranted later posts in a thread may also be selected for inclusion.

Edward Frank, Editor-in-Chief