00:43:54 Chris Nichols - Woodland Trust: As I mentioned in the intro, here is the link to find out more about Woodland Trust-funded research: Research We Are Funding - Woodland Trust
00:44:10 Chris Nichols - Woodland Trust: https://www.woodlandtrust.org.uk/about-us/what-we-do/research-and-evidence/conservation-research-grants/research-we-are-funding/
00:44:52 Chris Nichols - Woodland Trust: And here is the link to the Woodland Trust Living Legends campaign - please sign the petition to help improve legal protection for these natural wonders!
00:44:54 Chris Nichols - Woodland Trust: https://www.woodlandtrust.org.uk/protecting-trees-and-woods/campaign-with-us/tree-protection-campaign/
00:51:36 Simon Russell: Which iPhone app are you using?
00:54:47 Peter Lowe Woodland Trust Scotland: So I presume you could walk on a grid through a wood with a handheld Lidar and get a good measurement of biomass?
00:54:52 Simon Russell: I'd be interested in what software you're using for processing the point clouds and creating the mass estimation process
00:56:55 Jerry Ross: can you differentiate between live ad dead wood?
00:58:20 ESL: have you published the terrestrial lidar findings from Camden/urban trees anywhere?
00:58:24 Peter Lowe Woodland Trust Scotland: and to go off at a slight tangent, could handheld lidar be used on the structure of dwarf shrub heathland communities
00:59:46 Cecilia’s iPhone: Replying to "Which iPhone app are…"
Polycam
01:00:11 Simon Russell: Replying to "Which iPhone app are..."
And using the inbult LIDAR rather than the photogrammetry option?
01:02:36 Tim Kellett: Can you estimate the underground carbon storage of the root system basing it on the scale and architecture of the above ground scan.
01:04:16 Jocelyn Cohen: and one of the slides showed an arrow with Time pointing underground does the lidar capture the mychrorize and other underground architecture and connections?
01:07:21 Mat Disney (UCL): Replying to "Can you estimate the..."
I can field that one - you can, but that’s pretty approximate (root to shoot ratio) but that’s how it is v often done. The lidar can’t do anything about the roots unless you can dig them up and scan them (which people have done)
01:08:06 Vikki Bengtsson: Replying to "Can you estimate the..."
Has there been any cooperation with archaeologists with regard to scanning tree roots Mat?
01:08:10 Tim Kellett: Replying to "Can you estimate the..."
I wonder if you could estimate based on existing sample data
01:08:48 Mat Disney (UCL): Replying to "and one of the slide..."
No sorry - it’s near infrared light (just beyond our eye sensitivity) so doesn’t penetrate the ground. Some people have used ground penetrating radar to look at roots but that’s also not easy / reliable
01:09:13 Mat Disney (UCL): Replying to "Can you estimate the..."
@Vikki Bengtsson not that I know of
01:09:35 Cecilia’s iPhone: Replying to "Can you estimate the…"
No, a rough estimate would be that rooting biomass would be similar to branching but this is a very rough estimation
01:10:14 Tim Kellett: Replying to "Can you estimate the..."
root formation and scale is different to crown branching.
01:10:47 Kirsten O'Sullivan (Woodland Trust): How far back do you think you will be able to go when looking at management histories? Do you know how old the trees you are working on are?
01:11:21 Cecilia’s iPhone: Replying to "and one of the slide…"
Second Mat’s response
01:11:26 Mat Disney (UCL): Replying to "Can you estimate the..."
@Tim Kellett it is - people have done empirical correlations based on harvest data but it is v approx
01:17:06 Mat Disney (UCL): Replying to "How far back do you ..."
Ah ha, good Q - many of these I’d say the ages are really approximate (mix of local historical records, anecdotal etc). Everyone has their own estimate &

approx method once you go beyond about 200 years! 😃
01:18:42 Hannah Patterson: *Birnam
01:19:37 Kirsten O'Sullivan (Woodland Trust): How do you make sure scans don't pick up any props which are being used to hold tree limbs up?
01:20:18 Chris Nichols - Woodland Trust: Martin Hugi! ♡
01:20:33 Mat Disney (UCL): Replying to "How do you make sure..."
It picks them up but we can filter out later easily enough
01:21:16 Martin Hugi: Thanks. Yes, missed them by a week. On Twitter @treepilgrim Insta @tree.pilgrim
01:29:27 Carl Cornish: Can the total area of leaves be measured and leaves per branch be counted? Be interested if this can be used to look at health of tree.
01:31:43 Mat Disney (UCL): Replying to "Can the total area o..."
Yes - it’s still active area of research (ie it’s hard!) but yes we do this kind of thing for sure. Obv the issue is it’s almost possible to validate
01:35:30 Rory Finlay: Replying to "Can the total area o..."
01:37:54 Daniel Richards (ATF): Next webinar is on 27th July 2023, looking at pollards in the Basque region. Booking link: https://www.ancienttreeforum.org.uk/events/basque-pollards-an-atf-spring-summer-forum-2023-online-event-thursday-27th-july-2-00-3-45pm/
01:38:24 Vikki Bengtsson: Replying to "Next webinar is on 2..."
More tree envy promised :)
01:38:47 Laura Alcock-Ferguson, CEO (she/her): For the November event - as well as keeping an eye on our website event pages, the best way to find out about this is to sign up to our newsletter and you will be among the first to hear of the event when it opens for bookings
01:41:57 Carl Cornish: Replying to "Can the total area..."
Thanks. Assume even without validation an individual tree can be compared between years to see if there's leaf thinning?
01:47:14 Tim Kellett: Can you overlay photographic imagery to include colour and more detail. ie to record mosses lichens fungi and other epiphytes?
01:47:36 Carl Cornish: For me, seems to be an exciting new tool to help in monitoring the condition (health and structural integrity) of ancient trees.
01:47:54 Jocelyn Cohen: When I go walking on my "ancient tree journeys" I regularly come across veteran or ancient trees that don;t appear to be inventoried on the website. what all information is important for all of us to look for and collect that adds to the database and understanding of the trees that we might not be thinking to look for.
01:48:30 Mat Disney (UCL): Replying to "Can the total area o..."
@Carl Cornish yes although the finer the level of detail you want the more the issue of things like wind v data quality comes into play. But generally yes, change over time. But arguably you can do that just as well and perhaps better w eg fixed high res cameras. Lidar does the 3D but you can do a lot from v good image data too!
01:48:30 Vikki Bengtsson: @Carl Cornish agree that is something I am hoping we might get out of it. Also to identify the architecture that might help us understand how the trees might respond to pruning.
01:48:52 Peter Lowe Woodland Trust Scotland: @carl cornish not just ancient trees
01:49:53 Jane Sayers - Woodland Trust (she/her): Replying to "When I go walking on..."
https://ati.woodlandtrust.org.uk/how-to-record/
01:50:29 Tim Kellett: How accurately can you measure growth of the volume of the trunk over a long period of time. THis may give a better understanding of tree growth and ageing.
01:50:44 Jane Sayers - Woodland Trust (she/her): Replying to "When I go walking on..."
You can set up an account and get going. 10 fig grid ref, girth and photos are most important but the more info the better :)
01:56:50 Jerry Ross: Dead wood within a live tree is one of the determinants of a 'veteran', its' that sort of dead wood I was asking about rather than dead trees
02:00:10 Stephan Green: Interesting review of 3D scanning apps at https://all3dp.com/2/best-3d-scanner-app-iphone-android-photogrammetry

02:00:24 Vikki Bengtsson: Reacted to "I’ve been down this ..." with 😂
02:02:12 Phil Wilkes: p.wilkes@ucl.ac.uk @TLS_TREES
02:02:13 Mat Disney (UCL): Replying to "Dead wood within a l..."
That’s also hard to do - we’ve tried to combine lidar with sonic tomography data, but again that is a very active area as it’s so important in tropical forests
02:02:26 Tansy Lee Moir: Thanks, such exciting research and really amazing images!
02:02:30 Mat Disney (UCL): Replying to "Dead wood within a l..."
Lidar only shows the outside, so you need something else
02:02:48 Lisa: Thank you for this, really interesting
02:03:06 Tom Burns: Thank you all, really interesting stuff!
02:03:20 Kevin Stanley: Thank for for a great presentation and for doing such useful research for veteran and ancient trees.
02:03:23 chris reid: thanks all - fascinating project
02:03:35 Cheryl Duerden (Ancient Tree Forum): Thank you so much. Excellent progress and very interesting for the future of AoVTs.
02:03:40 Vikki Bengtsson: We can take some of these questions to the workshop in November