

NTIS Steering Group Meeting Minutes

Wednesday 13th October 2021, 2-4pm, via Zoom

Attendees

Chair: Steve Lee

Secretary: Tim Rowland (Future Trees Trust)

Clare Trivedi (Royal Botanic Gardens Kew)
Charles Beaumont (Trees Please)
John MacKay (Oxford University)
Andy Leitch (Confor)
Dave Richardson (Forestart)
Charles Beaumont (Trees Please Nursery)
Roger Coppock
Gustavo Lopez (Forest Research)
Chris Hardy (Forestry England)

Jo Clark (Future Trees Trust (FTT))
Harry Frew (Cheviot Trees)
Fiona McFarlane (Welsh Government)
Stephen Cavers (ITE)
Jason Hubert (Scottish Forestry)
Richard Buggs (RBG Kew)
Jon Stokes (Tree Council)

Guests: Joe Beesley (FTT), Richard Whittet (FR),
Imam Sayeed (Trees Please), Ben Goh (Maelor),
Jessica Allan (Tree Council)

1. Apologies

Stuart Wilkie (Conifer Breeding Co-op; CBC)

2. **Minutes of previous meeting** - were approved and seconded without amendments.

3. **Matters arising** – Website traffic is low (53 visits in the last month). **TR** explained that regular news updates from NTIS member organisations, issued under the NTIS ‘brand’ on social media will help drive traffic to the website (as it has done for FTT; see Item 7 ‘Social Media’).

4. DEFRA update – Clare Trivedi

- The England Tree Action Plan (ETAP) aims to triple woodland creation rates by 2025 to 30,000 hectares of new planting per year. There will be a requirement for around 70 million extra trees per year. Much of Clare’s work is now in support of ETAP. NTIS is keen to ensure that as much as possible of this new planting is of appropriately adapted material and of improved stock which will absorb more carbon and give a better financial return. Most of the planting in England will be of native woodlands.
- DEFRA/FR support UK membership of EUFORGEN which is the European focus for understanding and using forest genetic resources.
- Defra are working with Forest Research and Kew to create the Centre for Forest Protection. One area of focus for the Centre will be understanding the genetic diversity and structure of populations of UK trees in order to use this to plant for resilience to stresses. It is supporting work at Kew this year to further understand the genetic basis of specific tree traits with respect to resilience (Ash dieback, emerald ash borer, acute oak decline). Also work by FR (**RW**) to develop a draft UK report on Forest Genetic Resources building on the previously published strategy is in preparation.
- Also work at Kew to publish the database of the UK National Tree Seed Project collections. This will aim to develop capability, capacity and understanding around FGR.
- DEFRA is supporting the NERC Treescapes Programme This is a £14.5M programme; of which £10M is already awarded included a CEH project on tree genetics and the BiFor project on epigenetics in trees.

(**Chair comment:** we should invite Prof Rob MacKenzie to the next NTIS meeting). DEFRA are also funding a big public engagement programme – social acceptance to new forest planting etc.

- Away from research and on the applied side, DEFRA is using the Nature for Climate Fund to improve the sector's capacity, with a workstream around supporting nurseries and seed supply. The Tree Planting Innovation Fund (TPIF) is a part of this. This project is also supporting work to support Forestry England to enhance seed sources. In addition, the project is allowing DEFRA to support progression of the Sustainable Seed Source Project which several NTIS members have previously been involved with. There will be a technical workshop on 10th November looking at species-specific strategies for enhancing seed sources.

JM asked if there would be another Treescapes research call – **CT** replied yes, but she wasn't yet able to tell us when it would be announced.

BG made the point that tree-buying customers weren't represented on the NTIS Steering Group and that demand is relatively modest for most improved planting stock. **CT** confirmed that the stakeholder analysis undertaken during creation of the FGR strategy document did not yield a high demand for improved stock. **SL** made the point that it is down to FTT and the Conifer Breeding Co-Op to drive this demand (see also Item 10 below)

Chair Comment : Conifer growers are represented by David Edwards (ICF/Tilhill), also public sector planting in England, Scotland & Wales are represented by Mike Render, Jason Hubert & Fiona MacDonald respectively; Woodland Trust and Tree Council are also represented. Is there a gap here representing the private B'leaf –planting community?)

5. Research sub-group update – John McKay

5.1 University of Oxford

- The Sitka spruced project (Oxford, FR, Roslin Institute) is now in its final year, following an extension. A high-density genetic map has been developed for Sitka and linked it to maps in other conifers; work to link it to genome assemblies is ongoing. Work on genomic selection has been somewhat delayed (by several factors including the pandemic) but is now back on track. Research publications are in preparation: mapping work, quantitative genetics and performance in improved Sitka. Final project workshop is now in its planning stages (likely to be Spring 2022)
- A new project funded by the Leverhulme Trust for 3.5 years (from January 2022) will investigate the molecular evolution of a major phenolic defence mechanism in Norway spruce and white spruce. The work will look at copy number variation.
- A new project funded by the TPIF as a 6-month pilot (October 2021 to March 2022) to develop DNA finger-printing methods for traceability in Scots pine, Douglas-fir, and Sitka spruce. It is a partnership with CEH (S Cavers) and also involves Forest Research (J Cottrell, G Lopez).
- An industrial PhD studentship is under recruitment to work on diseases affecting alternative commercial species involving analyses in species trials, in collaboration with Forest Research (Sarah Green) and two forest tree nurseries.
- The proposal to develop a Doctoral Training Partnership has been put on hold until it is known if and when there may be a new call for proposals from the BBSRC. Future plans should include securing funding to hire a person to develop the bid.

5.2 Conifer Breeding Cooperative

- Tanya Gato started on 1 July 2021 as the Co-op's first programme administrator
- New Norway spruce provenance trials were established on 5 sites in 2021 with the participation of several Co-op members organizations to source seed, grow plants, plant up and begin tending sites. This series of trials are the first in a resilience evaluation platform that the Co-op intends to develop.
- A new project funded by the TPIF as a 6-month pilot (October 2021 to March 2022) to develop Plus Tree populations in alternative conifers (Norway spruce, Douglas-fir) for the creation of clonal archives and seed orchards and develop plans for Douglas-fir progeny trials.
- A strategic development plan is presently in preparation. A consultation of the general orientations and goals will occur during the Annual Members Day.
- Annual Members Day will be held 3-4 of November 2021 as online virtual events. Contact Tanya to register (a flyer accompanies these minutes).

SL asked why Sitka spruce was not included in Oxford's work on defence mechanisms with Norway Spruce and White Spruce. **JM** replied that there had not been an opportunity to do this using an evolutionary analysis, combined with local distribution and that there are already 7 or 8 papers on this subject, on which their work was drawn.

5.3 Treescapes (Stephen Cavers)

SC presented a series of slides about his work (attached) with the future UK Treescapes programme.

CT added that alongside the science element of this initiative, there will be a huge programme of public engagement / dialogue.

JMcK suggested that NTIS members should collaborate and submit a proposal for the next round of project funding (circa £4.5M)

5.4 B4Est project (Stephen Cavers)

- This is an EU-funded project run by the Centre for Ecology and Hydrology (CEH) and Forest Research, until spring 2022. The outputs will be thermal genotyping arrays, available commercially to all tree-breeders. Genetic markers are already available for Scots pine, Douglas fir, ash, eucalyptus and Norway spruce.
- The B4Est project is also attempting to re-invigorate the Scots Pine breeding programme in UK. Work is on-going and needs to collaborate with FR (who hold the IP) and the CBC.
- **JC** asked if the project included screening for tolerance in ash; **SC** replied that it did. **RB** and Kew need to be aware of this work.

5.5 Science and Innovation Strategy (Gustavo Lopez)

- Recent FR work has involved selection of European and Japanese larch phenotypes that appeared to show tolerance to *P.ramorum*.
- Somatic embryogenesis of open-pollinated seed collected from selected larch trees is progressing. FR is encouraged to work with the new SE team at Maelor.
- Limited further work on MoE in Sitka spruce trees continues. (Pending receipt of Gustavo's notes).

5.6 Update from Richard Buggs at Kew Gardens

- Work continues investigating genes associated with Chalara Ash die-back. Following the work of Stocks et al 2019, investigations are now being carried out into how much influence genetics has in ash dieback damage in natural woodland settings where trees are different ages and in different micro-

environments, as opposed to a uniform field trial. So far our results suggest that genetics is not having a major impact in these settings, but work is still in progress. It would appear so far that heritability of ash dieback resistance seems to be much lower in natural woodland situations than in planted trials.

- Work is being carried out on the population genetics of birch species in GB. It is hoped this will lead to a better understanding of local adaptation in birch, and seed sourcing recommendations based on that
- Recent paper on genetic diversity of oak (<https://doi.org/10.1002/ppp3.10229>)
- Investigating heritable variation for Acute Oak Decline
- Interested in working on with Elm trees and resistance to Dutch Elm disease,
- Defra is setting up a “Centre for Forest Protection” which currently involves Kew and FR.

Prof John MacKay stood down as Chair of the NTIS Research sub-group. The Chair thanked John for carrying out this role over the last 4 years since the inception of NTIS.

Dr Stephen Cavers has agreed to take up the position of Chair of this sub-group along with Dr Jo Clark as Secretary. Many thanks to Stephen and Jo for agreeing to take on this task.

6. “Frankenstein Trees” (Jon Stokes, Tree Council)

JS (Director of Tree Science with the Tree Council) made this comment at an FTT annual supporters’ day in 2018. John admitted it is his job to challenge. JS’s presentation outlines his concerns about tree breeding – that it appears to be driven solely by productivity, paying little or no heed to non-commercial aspects such as longevity, supporting biodiversity or the social aspects of growing trees. He posited the question “How might these factors be incorporated into tree improvement?”. A lively (but friendly!) discussion ensued and all welcomed JS’s input to NTIS.

Chair Comment: Clones are not being deployed at the moment, with no plans to do so. NTIS is aware of the need to retain genetic diversity and there are studies underway (PhD Edin Uni sponsored by CBC) to measure the genetic diversity of Sitka spruce VP and seed orchard products relative to wild seed. The same could be done with b’leaf trees from seed orchard in time. Also there is a stated NTIS aim that breeding plans for all species include measures to retain genetic diversity. NTIS are active members of FGR.org . The meeting agreed it’s good to have somebody rattle the cage now and then and ask difficult questions. We hope John Stokes remains an active member of NTIS.

7. Social media and NTIS (Georgina Thomas)

GT gave a presentation (attached) about the benefits of using social media to NTIS. **TR** explained the impact social media has had at FTT – vastly increased reach to many new stakeholders, resulting in many research collaboration enquiries, comms enquiries (e.g. an imminent feature about the Living Ash Project on BBC Radio 4) and increased appeal to potential funders (e.g. Vastern Timber).

Action: **SL** suggested forming a comms / social media sub-group to discuss best use of social media at NTIS.

8. Future Trees Trust update (Jo Clark)

Recent achievements / activities at FTT have been:

- Receipt of a £20k grant under the TPIF initiative to support further oak plus tree climbing, scion collection and grafting for FTT’s oak clonal seed orchard project
- Seed collection for the birch and sycamore groups and establishing progeny trials. 100 clones have been gathered for each species so these are large trials. The seed is currently being stratified at Forestart ready for planting next winter.
- The production of a short film on growing oak, funded by William Hamer and filmed at the Herriad Estate in Hampshire, with the specific purpose of engaging foresters in the benefits of using improved planting stock (**Chair Comment:** Could be of value in addressing Item 10)

- The production of a short film about ash dieback (funded by DEFRA) for the Living Ash Project website, prompting landowners to use the site to report healthy ash trees
- The publication of a paper on Short Rotation Forestry (<https://doi.org/10.1093/forestry/cpab033>)
- Ongoing work with the Living Ash Project – the recent LCMS was not successful, but will be repeated in due course
- Ongoing work to produce deployment literature for seed form every FTT orchard, advising foresters as to how best to deploy the improved material.

9. Forest Genetic Resources update (Stephen Cavers)

The UKFGR website is up and running and all agreed is a great resource. The metadata does still not include details of Forest Research’s progeny trials for broadleaf trees, despite access to these data being agreed some time ago.

Action please: GL or RW of FR

SC is working with site owners across the UK to find more Genetic Conservation Units (GCUs)

10. Availability of, and access to improved planting stock (all)

Harry Frew voiced concerns he has heard from across the sector about lack of access to and availability of improved stock. **Dave Richardson** from Forestart disagreed, citing that improved material is widely promoted in Forestart’s product catalogue and that all the nurseries he supplies know of its availability.

Clare Trivedi confirmed that during the stakeholder engagement she conducted while preparing the UKFGR Strategy document, demand for improved stock was low.

TR referred the group to the feature on FTT’s website, listing what improved material is available from whom, but there is still a piece of work to do to understand the barriers in some areas of the nursery sector to promoting improved material. Many emails followed in the 24-hours after the meeting. **TR** and **HF** had a discussion the next day about how **HF**, through the Confor Nursery Producers’ Group (NPG), could help promote the availability and benefits of improved material to the nursery sector, which will help drive demand for the stock. **HF** agreed to raise this issue at the imminent NPG meeting and to invite **FTT** and the Conifer Breeding Co-Op to present at their next meeting

13. Next Meeting: Spring 2022, most likely via ‘Zoom’. Further details will be circulated soon.

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