

MINUTES

Genetic Conservation Technical Advisory Committee

Meeting May 25 & 26, 2015

Meeting held at the University of BC

Attending:

May 25th, Whitebark Pine information meeting:

GCTAC members: Pia Smets (Chair), Sally Aitken, Charlie Cartwright, Dave Kolotelo, Jun-Jun Liu, Tongli Wang,

Members attending by video: Michael Murray, Alan Vyse

Regrets: Andreas Hamann, Tory Stevens, Alvin Yanchuk

Others attending: Bianca Eskelson, Barb Gass, Vincent Hanlon, Don Pigott, John Russell, Nicholas Ukrainetz, Jack Woods

By video: Angelia Keyley, Bryan Chruszcz, Sybille Haeussler, Chris Ritchie, Joanne Vinnedge, Randy Moody

May 26th, GCTAC meeting:

GCTAC members: Pia Smets (Chair), Sally Aitken, Charlie Cartwright, Dave Kolotelo, Tongli Wang

Members attending by video: Michael Murray, Alan Vyse

Regrets: Andreas Hamann, Tory Stevens, Alvin Yanchuk

Others attending:

Jon Degner, Don Pigott, Annette VanNiejehuis, Jack Woods

May 25, 2015 Whitebark Pine Conservation in BC

1. Chris Ritchie (MOE) - Provincial policy

A presentation was made on provincial policy related to whitebark pine (WBP).

2. Joanne Vinnedge - MFLNRO - WBP work in the Omineca Region.

Joanne outlined WBP conservation work that is happening in the Omineca region, including a large seed collection in 2007. She pointed out that rust screening and resistant seed is important to future conservation efforts.

3. Randy Moody - Mapping and monitoring WBP

Presented existing mapping and monitoring efforts on rust, the awareness of where rust data are lacking, and some ideas for using General Resource Mgt. surveys and timber cruising to improve the inventory of WBP (the VRI database is considered inaccurate for this species). Citizen science can be useful to help close information gaps (eg. the tree "Tagger" app, WBP field guide by D.P. in progress) but transects by pathologists or other experts will still be needed.

4. Don Pigott - WBP facilities and seed production

Don outlined current WBP seed availability and seed production options, including the Whitetail Lake seed production stand. He feels that the lack of an ongoing price on seed is a barrier and that registered seed is in short supply.

5. Michael Murray - WBP facilities and seed production

Michael noted increased WBP mortality in the South East, up to 50%, and increasing demand for WBP seed. Seed with no screening for blister rust resistance is being used and this carries a high risk of loss (90-95%). His GCTAC funded project screens 40 families annually, in the field as well as under controlled inoculations. The cone collections for this were funded by Parks Canada and the Bulkley Valley Research Centre.

6. Randy Moody – Funding options for WBP conservation work

A presentation was made about the activities and efforts of the whitebark pine ecosystem foundation.

6. Charlie Cartwright - Provincial policy, working towards a decision document

Charlie described company concerns about reductions to the timber harvest land base if land is removed to protect WBP. They are however keen on demonstrating their existing efforts at protection. Garry Oak protection is facilitated by the fact that it is protected as an ecosystem rather than a species.

7. Sybille Haeussler - Bulkley Valley Research Center - Restoration and assisted migration planting of WBP

Sybille described restoration plantings in the Bulkley Valley on burnt areas with 3-5 year old stock (hot-planted) and also WBP assisted migration studies. In low elevation plantings, additional problems arise, including weed competition, hares, heat waves, aphids, and Dothistroma.

8. Dave Kolotelo - Ex-situ seed collections

Dave outlined the current status of WBP seed inventory and emphasized the need to permanently tag known parent trees. Warm stratification or green seed sowing were discussed as alternatives to presently used procedures.

9. Tongli Wang - Future climate envelope maps

Tongli showed current and future expected range maps for WBP. Although the range is shrinking, there will be suitable climate niches well into the future.

May 26, GCTAC meeting

Summary of action Items

Responsibility	Action
Sally, Dave, Pia and Jack	Lead review of the existing genetic conservation plan and propose edits and updates for review at a fall, 2015 GCTAC meeting.
Dave, Don	Monitor requests from the Millennium Seed Bank Partnership initiative with respect to requests for collections and whether there are opportunities to participate and align with BC needs.

1. Jack Woods - Genetic Conservation Strategic Plan update

Jack reviewed FGC strategic objectives for genetic conservation and pointed out that the GCTAC plan needs to align with this.

Action item: Sally, Dave, Pia and Jack will lead review of the existing genetic conservation plan and propose edits and updates for review at a fall, 2015 GCTAC meeting.

2. Charlie Cartwright - Update on genetic conservation work done by the MFLNRO

Charlie provided an update on work in progress, including WBP field trials. His surplus of WBP germinants (mostly American seeds) can be made available to the Whitebark Pine Ecosystem Foundation. The Grand fir analysis was completed by Marie Vance and will be presented in fall. The catalog write-up (inter-situ, non-comm. spp.) is going through internal and external reviews at the MFLNRO.

3. Jon Degner - Update on Garry oak

Jon presented an update on Garry Oak work funded through the FGC and NSERC. This work completes the work of C. Huebert (2009), whose range-wide collection did not adequately cover BC due to a poor acorn crop in BC. Using GBS (genotype-by-sequencing) on green leaves from USA and BC sources collected from the Totem Field common garden and new BC collections, populations were characterized. BC populations are distinct from US populations.

Based on this work, it is proposed that three viable in-situ populations should be maintained to represent BC variation. Candidates are Victoria, Saturna, and Salt Spring. Census numbers could be obtained through collaboration with the Garry Oak ecosystem foundation or from air photos. Two disjunct mainland BC populations, Yale and Sumas, are genetically unique and warrant attention on their own and perhaps ex-situ conservation. The Yale population is in its own ecological reserve that has received a small amount of conservation effort. The Sumas population is on private property and unprotected. Both are quite threatened by competition with Douglas-fir.

4. Tongli Wang - Updating species distribution data for the cataloguing project

Tongli presented progress on his updates of the catalog for in situ protection. Using botanical plot data, a new parks layer and version 10 of BEC, he did a lot of data cleaning and derived new species coverage maps for 39 species. He will incorporate VRI data. While species presence can be inferred from as yet unused sources, such as e-flora, seedlot origin data (DK), and local experts (DP will provide TW with a list of names), absence and frequency cannot. We have yet to figure out a way in which categorical and anecdotal information provided by citizens (phone-apps with pictures?) can be incorporated in our methods in a systematic manner. Sally pointed out that in the absence of information, risk evaluation will determine whether action from GCTAC is needed and what priority each species will receive. Fringe populations will be evaluated by species and location.

5. Don Pigott - Update on *ex-situ* seed collections

Seventeen populations were collected in 2014: *Acer circinatum* (3), *Acer glabrum* (6), *Acer macrophyllum* (3), *Betula occidentalis* (4) and *Juniperis maritima* (1). Don believes that *Alnus tenuifolia* should be listed as tree species in the GCTAC plan, as it can grow to tree size.

Sally pointed out that for low frequency species, we can increase the # parent trees from what's available to the desired minimum of 20 by combining two or more sites if they are in the same BEC zone.

6. Dave Kolotelo - Seed bank management

DK described the three different types of collections that make up the BC Genetic Conservation Tree Seed Bank: the operational seedlots, the research collections, and the GCTAC collections. Drying the latter properly before freezing is his priority. GAP analysis yields priorities for new collections: maples in 2014 and poplars in 2015. A provincial seed bank management plan is in progress. Dave pointed out that we need seed withdrawal guidelines against which to evaluate requests for seed. The few requests so far have been decided on an ad hoc basis. It was generally agreed that Dave should make these decisions if the impacts on the conservation collection are small. If there are larger impacts he should consult with the GCTAC.

7. Dave Kolotelo / Pia Smets - Millennium Seed Bank initiative

The Millennium Seed Bank Partnership (MSBP) is expanding tree seed conservation collections worldwide. CONFORGEN endorsed a collaboration in principle. It is expected that provinces will

Genetic Conservation Technical Advisory Committee

Meeting minutes – May 25-26, 2015

cooperate with the MSBP. MSBP is offering up to \$900 per collection. This money could be used to leverage collection efforts where there is overlap in interest, however, for BC overlap is limited.

It was agreed that no FGC/GCTAC funding would be directed to this unless it supported GCTAC priorities. Dave Kolotelo and Don Pigott will monitor this initiative.

Action item: Monitor requests from the Millennium Seed Bank Partnership initiative with respect to requests for collections and whether there are opportunities to participate and align with BC needs.