



Mountain Pine Beetle Seed Planning

BULLETIN 02

TREE IMPROVEMENT BRANCH

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Interior Lodgepole Pine Superior Provenance Seed Sources

A key component of the Mountain Pine Beetle (MPB) seed strategy for interior lodgepole pine (Pli) is the identification of potential seed sources and collection areas. Seed from superior provenances is considered a preferred seed source.

What is a Pli superior provenance?

Superior provenances are natural stand seed sources that have been field tested by the Ministry of Forests and Range, Research Branch. Extensive Pli provenance trials have been established since the late 1960s (Experimental Project series 657), as well as progeny tests of field-selected parent trees (EP 770.20 series) since 1984. Test results have shown consistently high stemwood-volume production rates across several test sites spanning central and southern British Columbia. Superior provenance Pli seed sources have the following traits.

- Genetic gains of 3% in growth (height and volume) over that of local populations
- Broad transferability both geographically (multiple seed planning zones), and clinically (through the application of elevation transfer limits).

Interior Lodgepole Pine Superior Provenance Seed Sources

For a current listing of Pli superior provenances, collection areas and areas of use (transfer limits), see the *Chief Forester's Standards for Seed Use*, April, 2005 – Appendix 5, Table 5.1 at <http://www.for.gov.bc.ca/code/cfstandards/>. Parent tree, seed use and genetic gain history reports of Pli superior provenances are also available on the Seed Planning and Registry system (SPAR) at <http://www.for.gov.bc.ca/hti/spar/index.htm>.



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Superior Provenance Review

A preliminary review of superior provenance seed sources as identified in the *Chief Forester's Standards for Seed Use*, April, 2005 was conducted between 2004 and 2005 in collaboration with the Research Branch. At that time, superior provenance Pli seed collection areas were reviewed for potential collection purposes through analysis of map overlays indicating past silviculture activity in the collection area. *More recent disturbances due to harvest activities and MPB infestations were not considered in this analysis – collection areas may have since been depleted further. Please ensure more current information is considered when making cone collection plans.*

- Superior Provenance Pli Review is available at:
HTML: <http://www.for.gov.bc.ca/hti/mpbseedcollections/lodgepolepinesummary.htm>
PDF: [http://www.for.gov.bc.ca/hti/mpbseedcollections/Superior Provenance Review - Summary 1a.pdf](http://www.for.gov.bc.ca/hti/mpbseedcollections/Superior%20Provenance%20Review%20-%20Summary%201a.pdf)

Superior Provenance Maps

In late 2004, Pli superior provenances were mapped as a series of ready-to-use 'pdf' maps overlaid on a base map, forest genetics map (seed planning zones), ecological map (BEC), and forest and resource management information map (silviculture, forest inventory, landscape units, watersheds). Each map comprises gene resource management information such as seed source (point of origin), collection area (radius, elevation band) and seed selection (registered seedlots).

- Superior Provenance Source maps are available at:
MPB Seed Collections – Superior Provenance Seed Sources – Pli
http://www.for.gov.bc.ca/ftp/HTI/external!/publish/MPB_Seed_Collections/
- Area of Use maps are available at:
MPB Seed Collections – Superior Provenance Area of Use – Pli
http://www.for.gov.bc.ca/ftp/HTI/external!/publish/MPB_Seed_Collections/Superior_Provenance_Areas_of_Use

Superior Provenance Digital Data

Digital data is available in shape file format for use in GIS-based analyses. Shape files may also be downloaded into the web-based Ministry of Forest and Range MapView tool for use in aerial reconnaissance and cone collections.

- Superior Provenance digital data (shape files) are available at:
http://www.for.gov.bc.ca/ftp/HTI/external!/publish/MPB_Seed_Collections/.

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