

# ALBERTA FOREST GENETIC RESOURCES COUNCIL

*Forest genetic resources:  
Conserving diversity, enhancing productivity*



## Gene Conservation - Native Trees of Alberta

Conservation of the genetic resources that sustain the native trees of this province is of great importance to the Alberta Forest Genetic Resources Council.

Genes represent the potential of any organism to adapt to its environment. For Alberta's native tree species, environmental challenges include fragmentation and isolation of populations due to economic development and land-use conversion, climate change and perhaps increased prevalence of pests and diseases. These conditions could erode the genetic variation required for evolution and continued forest productivity and health.

### **Conservation Tools**

Genetic resource conservation strategies can be accomplished within the original forest habitat or away from the original forest habitat. Current activities and programs that promote conservation include:

- wild seed collection for reforestation
- seed orchards and trials
- genetic field testing of trees
- the inclusion of biodiversity conservation in forest management planning
- coordination with Alberta's network of Protected Areas.



## Gene Conservation Plan

In order to more fully meet Council's conservation goal, and link with national Criteria and Indicators of Sustainable Forest Management, a working group has drafted the Gene Conservation Plan for Native Trees of Alberta. This work results from a formal agreement between Alberta Tourism, Parks, Recreation and Culture and Alberta Sustainable Resource Development. The agreement recognizes the importance of the Provincial Parks and Protected Areas network to any tree gene conservation effort.

The plan outlines a partnership between these two departments and the forest industry to set aside forest tree populations within existing or, where required, new gene reserves for genetic conservation of 28 native tree species.

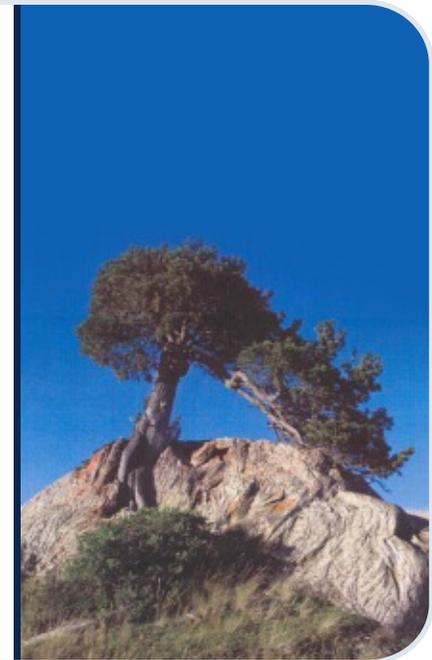
The gene conservation plan is a framework document that identifies and describes Alberta's native tree species, outlines a methodology for identifying the conservation needs for each species, and identifies roles and responsibilities for participation and implementation. Specific gene conservation protocols for species within tree improvement programs are provided by the Standards for Tree Improvement in Alberta.

The conservation plan will be implemented over several years. The initial conservation emphasis will be on two species for which large-scale planting of genetically improved trees is in progress (lodgepole pine and white spruce), and two species that are particularly vulnerable to insects, disease, wildfire and climate warming (limber pine and whitebark pine). Efforts to fill gaps in the network of protected populations will be concentrated on Alberta's public lands. Complementary efforts will be needed where candidate populations for protection are not on provincial public lands.



## Gene Reserves

The Provincial Government has primary responsibility under the plan for establishment of gene reserves for non-commercial species and commercial species where they are not part of a tree improvement program. Under the Standards for Tree Improvement in Alberta, companies involved in tree improvement have the primary responsibility for establishment and maintenance of reserves for species in their tree improvement programs. It is envisioned that many of the gene reserves can be established within the existing Parks and Protected Areas network. However, there will be a requirement for gene reserves to be established on other public lands for some species and local populations. Coordination between the working group on native tree gene conservation and local land managers will be required for implementation.



## Next Steps

Implementation of the plan commences in 2007 with establishment of gene reserves on a prioritized species basis. Ultimately the plan will also provide guidance for conservation activities relating to seed, pollen and plant materials maintained in archives, clone banks and field plantings.

## The Council

The Alberta Forest Genetic Resources Council advises the Alberta government, provides input on standards and policies, and helps set directions for research on conservation, biodiversity and productivity of forest genetic resources. Please visit our website, [www.abtreegene.com](http://www.abtreegene.com).

## For more information

If you have further questions, please contact  
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