



FFT USE OF WESTERN WHITE PINE GUIDANCE

Scope

This guidance covers the use of Western White Pine for areas reforested by Forests For Tomorrow.

1. Introduction

The primary objective of Forests For Tomorrow (FFT) Program is to improve the long-term timber supply through the establishment of new forests on areas impacted by the mountain pine beetle (MPB) and catastrophic fires outside licensee and BC Timber Sales basic reforestation obligations¹.

Climate change will result in significant alterations to natural systems challenging the ability of natural resource managers and resource-based communities to adapt². However, there are opportunities to minimize the impacts of climate change including managing for a range of species to enhance resiliency to biotic and abiotic influences.

Western white pine is a fast growing species with large ecological amplitude and adapted to large gradients in elevation and latitude making it a suitable species for managing for climate change. It also is a fairly productive species with mean annual increments comparable to that of Douglas fir.

Land Based Investment Strategy (LBIS) FFT-funded silviculture operations will contribute to achieving diverse mixes of desirable tree species within FFT treatment units, subject to applicable site management objectives, site limitations, and considerations of economic return. The use of genetically improved suitable seedlings is one of the program's nine guiding principles³ (**FFT Principle 5. Species diversification and utilizing genetically desirable seedlings are reforestation and restoration objectives**).

Western white pine persists as a minor component of both coastal and interior forested landscapes. However due to white pine blister rust (*Cronartium ribicola*) there has been a decrease in both the numbers and distribution of the species. Fortunately, significant genetic resistance to white pine blister rust occurs naturally. This genetic resistance to blister rust has been exploited to develop resistant planting stock. This newly developed genetically resistant stock demonstrates a high degree of survival.

2. Purpose and Objectives

Under FFT Policy 1, MANAGEMENT OF TREE SPECIES COMPOSITION, direction is given to promote the use of a diversity of species when feasible and ecologically appropriate to do so in order to increase resilience.

¹ Forest for Tomorrow Program Management Plan, June 15, 2005, p. 5

² Preparing for Climate Change: Adapting to impacts on British Columbia's forest and range resources, May 18, 2006

³ Forest for Tomorrow Program Management Plan, June 15, 2005, p. 14



The purpose of this Ministry of Forests, Lands, and Natural Resource Operations (FLNRO) FFT USE OF WESTERN WHITE PINE guidance is to provide direction on utilizing western white pine for FFT reforestation.

The objective is that **where feasible and ecologically appropriate to do so white pine blister rust resistant western white pine seedlings will be incorporated into the planting mixture for FFT funded reforestation activities.**

3. General Guidance

- Breeding programs have developed 3 types of resistance; 1) slowly growing small cankers, 2) trees that are completely clean of the disease, and 3) developmental resistance as a tree ages.
 - Seed orchards currently produce seed using the first two types of resistance
- Select a western white pine seedlot of highest resistance for your area
- Seed requires a stratification period of greater than three months (112 days). Ideally, seedling orders should be placed in early fall for a 1+0 stock type; and late fall if selecting a 2+0 stock type.
- Early results with PBR313 container grown nursery seedlings followed by a year in bare root, grown at an interior nursery have less disease than coastal grown one year old container only seedlings.
- Seedlings perform well and are suited to production in a PSB 410 or 412B container size. However, larger container cavities do not necessarily provide a larger seedling.
- Where ecologically suitable, western white pine should be considered as a species of choice for fill-planting or in those situations with high levels of natural regeneration.
- Plant up to 50% western white pine seedlings on ecologically suitable sites; a species mix provides insurance against long-term losses to white pine blister rust.
- Infection of a resistant tree does not mean that the tree will die. However, infected trees will not be counted as free growing. There is no requirement to prune.
- Western white pine performs well in areas with Phellinus root disease. Also, western white pine is less at risk to browsing pressure relative to other planted tree species.

4. Additional Information

WESTERN WHITE PINE – What's not to like?

http://www.for.gov.bc.ca/hti/publications/misc/Western_White_Pine_Bulletin.pdf