

**SPU # 8**

**Western White Pine Maritime 1 - 1000m**

Breeding and orchard production

**Seedling need (million)\*: 0.6**

**Program category: Advanced-generation**

\* estimated need with resistant stock; includes GL zone

filename: 8 Pw M-SM July 12, 2015

**STRATEGY**

Development of an F1 population from slow canker growth (SCG) and difficult to infect (DI) open pollinated progeny from all existing test programs (CFS, Texada Island, with and better material from Idaho and Dorena, Oregon programs for comparison). Best selections will be put in open-pollinated seed orchards.

**TRAITS**

**Primary: Rust resistance Secondary: Stem form, wood properties**

**TESTING AND PRODUCTION**

Production Year (July 1 to June 30) -- (Cone harvest year shown)

**Parents in progeny test:**

	'15	'16	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34
Open pollin.	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Polycross																				
Clonal																				
F1	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
F2	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
F3																				

**Production forecast (million plantables)**

**Orchards (#, owner)**

174 Canfor (Sechelt)	Orchard retired																			
175 FLNRO (Puckle Rd)	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	0.5	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
403 TW (Mt Newton)	Orchard retired																			

**Vegetative prod.:**

Phase 1  
Phase 2

**Estimated gain in primary trait**

**Orchards (#, owner)**

174 Canfor (Sechelt)																				
175 FLNRO (Puckle Rd)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
403 TW (Mt Newton)																				

Gains in blister rust resistance are quantified Genetic Worth values for resistance to white pine blister rust (GWr). GWr values are estimated for individual seedlots.

**Vegetative prod.:**

Phase 1  
Phase 2

**Total Production**

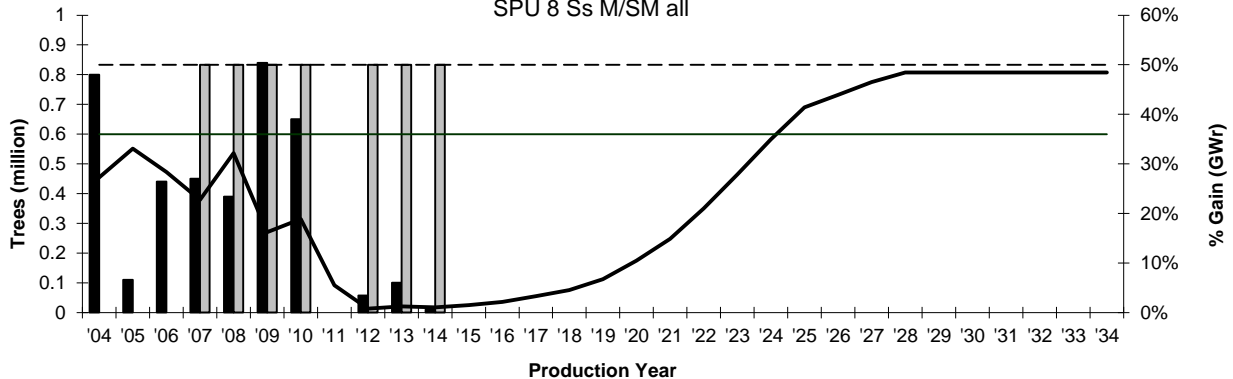
	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	0.5	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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**Total gain**

	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
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**Estimated orchard gain and production**

SPU 8 Ss M/SM all



Legend:   
 Actual production   
 Actual wtd. GW   
 Forecast seedling prod.   
 Est. seedling need   
 Forecast GW (primary trait)

Seed production estimates are subject to change. When using this information for silviculture planning or timber supply analysis, contact the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations to confirm data. See SeedMap on [www.for.gov.bc.ca/htl/seedmap](http://www.for.gov.bc.ca/htl/seedmap) for current inventory by Seed Planning Unit

## Western White Pine Maritime 1 - 1000m Conservation -- Seed Orchards -- Seedling Use

**SPU #8**

### GENETIC CONSERVATION STATUS

#### Conservation statistics

Seed planning unit (SPU) area	<b>6,542,815</b>	<b>ha</b>
Area protected within SPU	<b>609,531</b>	<b>ha</b>
Percentage of SPU area protected	<b>9%</b>	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	<b>&gt;2</b>	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	<b>2</b>	

#### Conservation status

Current in-situ protection status: **Adequate**  
 Probability of maintaining > 3 protected areas with adequate  
 population size given natural disturbance regimes: **High \***

\* Ground truthing required as inventory data are less reliable for this species

For further information visit <http://www.genetics.forestry.ubc.ca/cfgc/>

### ORCHARD STATUS

Orchard location	Orchard number	Number of parents	Mean BV	# of ramets currently established	# of ramets planned for final orchard size	Target Seed production kg/y at maturity	Total Seedling Prod. million seedlings			
Canfor (Sechelt)	174	50	R	700	0	0.0	<b>0.00</b>	Retired in 2012		
FLNRO (Puckle Rd)	175	113	R	355	655	87.1	<b>1.64</b>			
TW (Mt Newton)	403	0		0	0	0.0	<b>0.00</b>	Orchard retired		
<b>Total ramets</b>							<b>1,055</b>	<b>655</b>	<b>Total production</b>	<b>1.64</b>
Vegetative propagation							<b>Stecklings/Emblings</b>	<b>0.0</b>		
							<b>Total production</b>	<b>1.6</b>		

### Seed and Nursery Factors

### Estimate of Required Orchard Capacity

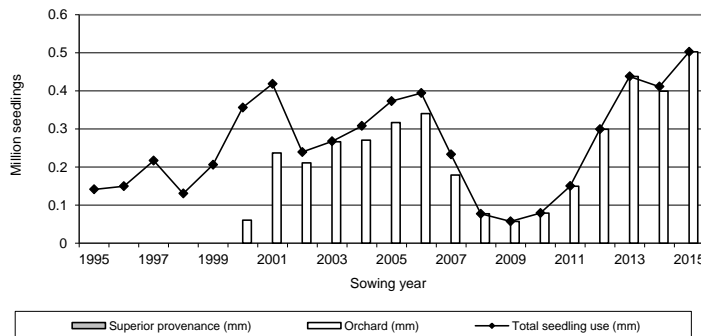
Expected annual average seedling production per ramet = 2,500	Annual planting (million seedlings) **	<b>0.6</b>
Seed weight (seeds/gram) = 47	Planned over-production factor	<b>1.3</b>
Seedling recovery factor (seedlings/seed) = 0.40	Ramets required	<b>240</b>
Seedling recovery factor (seeds/seedling) = 2.50	Ramets required with over-capacity	<b>312</b>
	Projected necessary expansion	<b>0</b>

\*\* Assumed demand with seed of high blister rust resistance

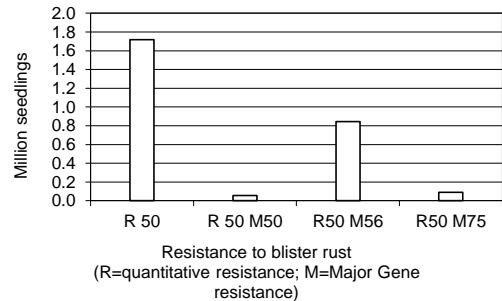
### SEEDLING USE AND SEED IN STORAGE

Average 5-year seedling use from SPAR (2011 - 2015) **0.36** million  
 Estimated years of class-A seed in storage **7.5** years

**Seedling Use Trend - 1995 to 2015**



**Class A Seed in Storage**



Notes:  
 - Seed held in both "reserve" and "available" status in the Seed Planning and Registration (SPAR) system is included  
 - Seed inventories change with new orders. Data presented here are based on a June sample.  
 - For up-to-date information use SPAR, or contact the Tree Improvement Branch of the Ministry of Forests and Range

Seed production estimates are subject to change. When using this information for silviculture planning or timber supply analysis, contact the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations to confirm data.

See SeedMap on [www.for.gov.bc.ca/ht/seedmap](http://www.for.gov.bc.ca/ht/seedmap) for current inventory by Seed Planning Unit