

SPU # 10 **Interior Lodgepole Pine** **Thompson Okanagan** **700 - 1400m**

Breeding and orchard production

Seedling need (million): **5.3**

Program category: **Advanced-generation**

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STRATEGY

Parent-tree selection in wild stands; OP testing to rank parents for second-gen breeding and seed orchards; breeding for growth and wood density; forward selections from second-gen testing based on growth for third-gen breeding and advanced-gen seed orchards.

TRAITS

Primary: **Stem volume**

Secondary: **Wood density, stem form**

TESTING AND PRODUCTION

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

Parents in progeny test:

	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
Open pollin.	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443
Polycross																				
Clonal																				
F1	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
F2				80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
F3																				

Production forecast (million plantables)

Orchards (#, owner)																				
308 PRT																				
311 PRT	1.5	1.4	1.4																	
338 PRT/SelectSeed	6.3	6.4	6.5	6.6	6.7	6.7	6.7	6.7	6.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
350 FLNRO (Skimikin)	0.9	1.3	1.7	2.1	2.5	3.0	3.5	3.7	3.8	3.9	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1

Vegetative prod.:

Phase 1

Phase 2

Estimated gain in primary trait

Orchards (#, owner)																				
311 PRT	16%																			
338 PRT/SelectSeed	16%	16%	16%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
350 FLNRO (Skimikin)	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%

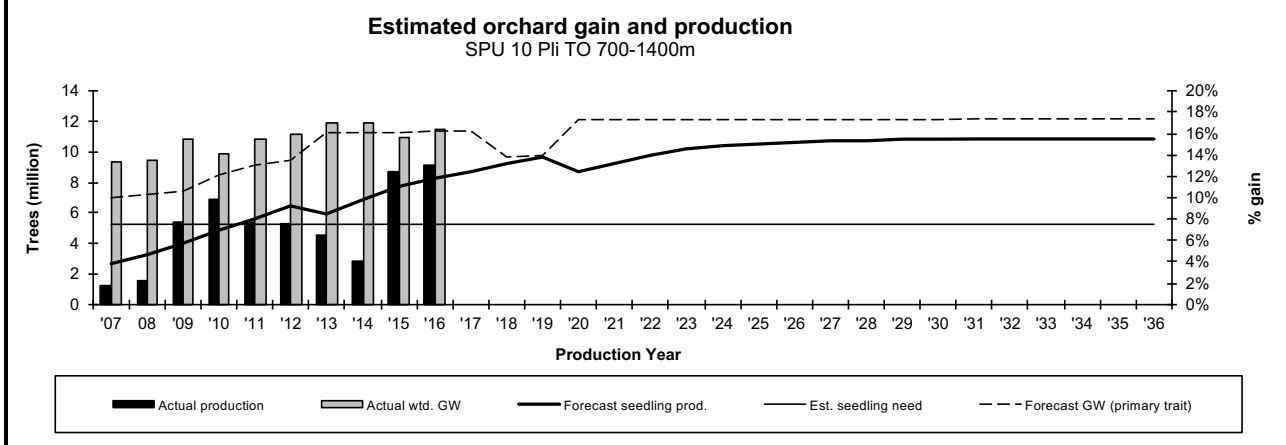
Vegetative prod.:

Phase 1

Phase 2

Total Production	8.7	9.2	9.7	8.7	9.2	9.7	10.2	10.4	10.6	10.7	10.7	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
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Total gain	16%	14%	14%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
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The above forecasts are based on orchard status, seed inventories and seed use as of June, the year of publication, and are subject to change. Refer to the seed Planning and Registry System (SPAR) or contact the orchard manager for current seed inventories. Contact the Forest Improvement and Research Mgt. Branch, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, to confirm data if used for silviculture or timber-supply planning.

Interior Lodgepole Pine Thompson Okanagan 700 - 1400m
 Conservation -- Seed Orchards -- Seedling Use

SPU #10

GENE CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	1,307,041	ha
Area protected within SPU	123,078	ha
Percentage of SPU area protected	9%	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	>9	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	26	

Conservation status

Current in-situ protection status: **Very well protected**
 Probability of maintaining > 3 protected areas with adequate population size given natural disturbance regimes: **Very high**

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	
PRT	308			0	0	0.0	0.00	Orchard retired
PRT	311	71	17%	964	0	0.0	0.00	
PRT/Selectseed	338	72	16%	4,671	4,796	41.2	6.95	
FLNRO (SKIM)	350	64	18%	3,365	3,614	25.9	4.37	
				Total ramets	9,000	Total production	11.33	
Vegetative propagation						Stecklings/Emblings	0.0	
						Total production	11.3	

Seed and Nursery Factors

Estimate of Required Orchard Capacity

Expected annual average seedling production per ramet = 1,347	Annual planting (million seedlings)	5.3
Seed weight (seeds/gram) = 253	Planned over-production factor	1.3
Seedling recovery factor (seedlings/seed) = 0.67	Ramets required	3,904
Seedling recovery factor (seeds/seedling) = 1.50	Ramets required with over-capacity	5,076
	Projected necessary expansion	0

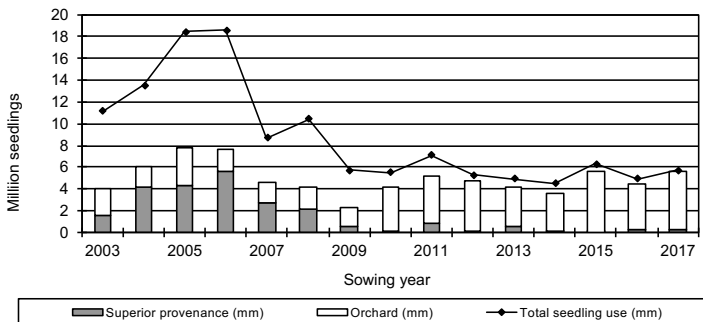
Superior provenances (B+) suitable for this Seed Planning Unit

Canoe Creek, Cartwright Lake, Champion Lakes, China Valley, Inonoaklin Creek, Larch Hills, Lossie Creek, Marl Creek, Rocky Mtn. Trench, Wentworth Creek

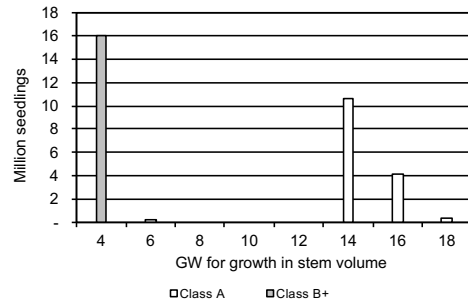
SEEDLING USE AND SEED IN STORAGE

Average 5-year seedling use from SPAR (2013 - 2017) **5.3 million**
Estimated years of class-A seed in storage **2.9 years**

Seedling Use Trend - 1995 to 2017



Seed in Storage by GW class



- Notes:
- "Reserve" and "Available" seed in the Seed Planning and Registry System (SPAR) are included.
 - Class A = seed orchard; Class B+ = superior provenance; Class B = wild stand seed.
 - Genetic Wroth (GW) for growth means the projected additional wood volume available at rotation compared to using Class B seed.

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