

SPU # 7	Interior Lodgepole Pine	Nelson	450 - 1600m
Breeding and orchard production			
Adjusted for new Parent Tree Area of use. Previously 700-1400m			Seedling need (million): 2.6
Program category: Advanced-generation			filename: 07 Pli NE low Sept 2017.xlsx

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

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

	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
Parents in progeny test:																				
Open pollin.	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286	286
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	80	80	80
F3																				

Production forecast (million plantables)

Orchards (#, owner)	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
307 FLNRO (Kalamalka)																				
313 PRT (Grandview)	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
337 PRT/SelectSeed	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
347 FLNRO (Kalamalka)	1.1	1.3	1.5	1.8	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

Vegetative prod.:

Phase 1

Phase 2

Estimated gain in primary trait

Orchards (#, owner)	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
307 FLNRO (Kalamalka)																				
313 PRT (Grandview)	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
337 PRT/SelectSeed	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	17%	17%	17%	17%	17%	17%	17%	17%
347 FLNRO (Kalamalka)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

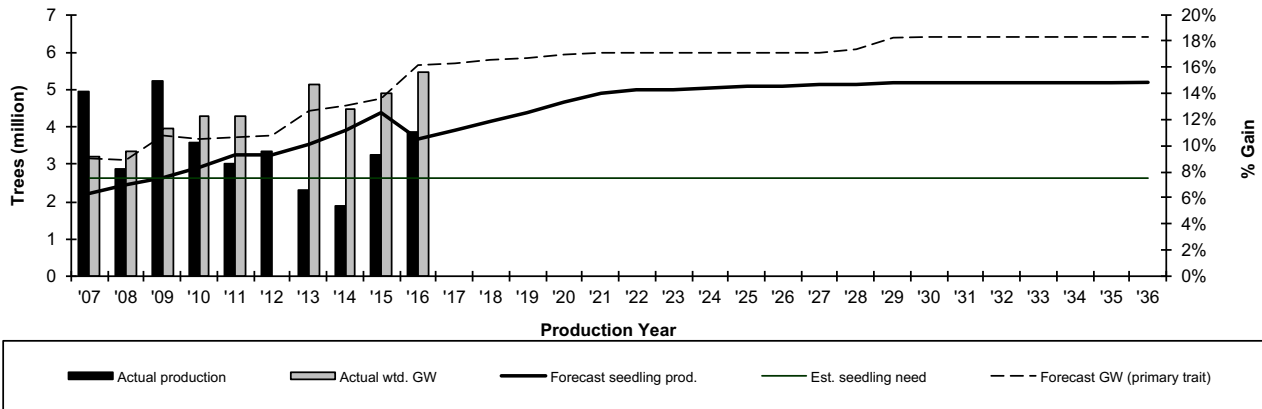
Vegetative prod.:

Phase 1

Phase 2

Total Production	3.9	4.1	4.4	4.7	4.9	5.0	5.0	5.0	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	
Total gain	16%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	18%	18%	18%	18%	18%	18%	18%	18%

Estimated orchard gain and production
SPU 7 Pli NE 700-1600m



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 Nelson 450 - 1600m
 Conservation -- Seed Orchards -- Seedling Use

SPU #7

GENE CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	2,049,372	ha
Area protected within SPU	131,798	ha
Percentage of SPU area protected	6%	
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	27	

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	
FLNRO (Kalamalka)	307	0		0	0	0.0	0.00	Orchard retired
PRT (Grandview)	313	46	16%	1,090	1,090	9.3	1.58	
PRT/SelectSeed	337	40	14%	988	989	8.4	1.43	
FLNRO (Bailey)	347	40	20%	1,804	2,022	14.3	2.45	
Total ramets				3,882	4,101	Total production	5.46	
Vegetative propagation						Stecklings/Emblings	0.0	
						Total production	5.5	

Seed and Nursery Factors

Expected annual average seedling production per ramet = 1,332
Seed weight (seeds/gram) = 256
Seedling recovery factor (seedlings/seed) = 0.67
Seedling recovery factor (seeds/seedling) = 1.50

Estimate of Required Orchard Capacity

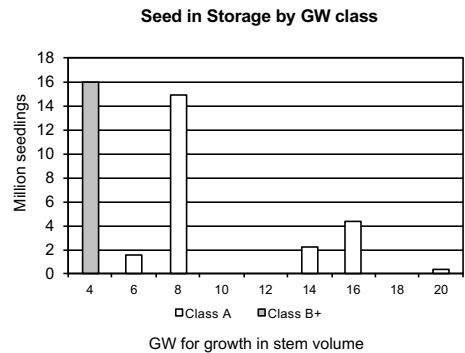
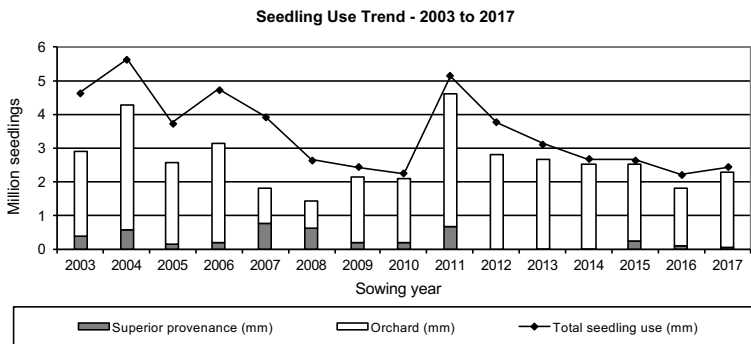
Annual planting (million seedlings)	2.6
Planned over-production factor	1.3
Ramets required	1,974
Ramets required with over-capacity	2,567
Projected necessary expansion	0

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

SEEDLING USE AND SEED IN STORAGE

Average 5-year seedling use from SPAR (2013 - 2017) **2.6 million**
Estimated years of class-A seed in storage **8.9 years**



- Notes:
- Seedling use data prior to the 2000 sowing year are estimated from old seed planning zones and are approximate.
 - Seedling use data include 1/2 of adjacent overlap zones, where applicable
 - Sowing year: Aug 1 to July 31 (i.e. 2017 sowing year starts Aug 1, 2017)

- 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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