

SPU # 13	Western Larch	Nelson	450 - 1600m
Breeding and orchard production			Seedling need (million): 3.0
Adjusted for new Parent Tree Area of use. Previously 700-1400m			
Program category: Advanced-generation			filename: 13 Lw NE low Sept 2017.xlsx

STRATEGY Parent tree selection in wild stands; open-pollinated progeny tests. Selection of best parents for seed orchards. Open-pollinated seed production in orchards. Focus on volume while maintaining wood relative density (RD).

TRAITS	Primary: Stem volume	Secondary: Wood density
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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.	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	
Polycross																					
Clonal																					
F1 (144 FS families)	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	
F2				(selections for orchard)																	
F3																					

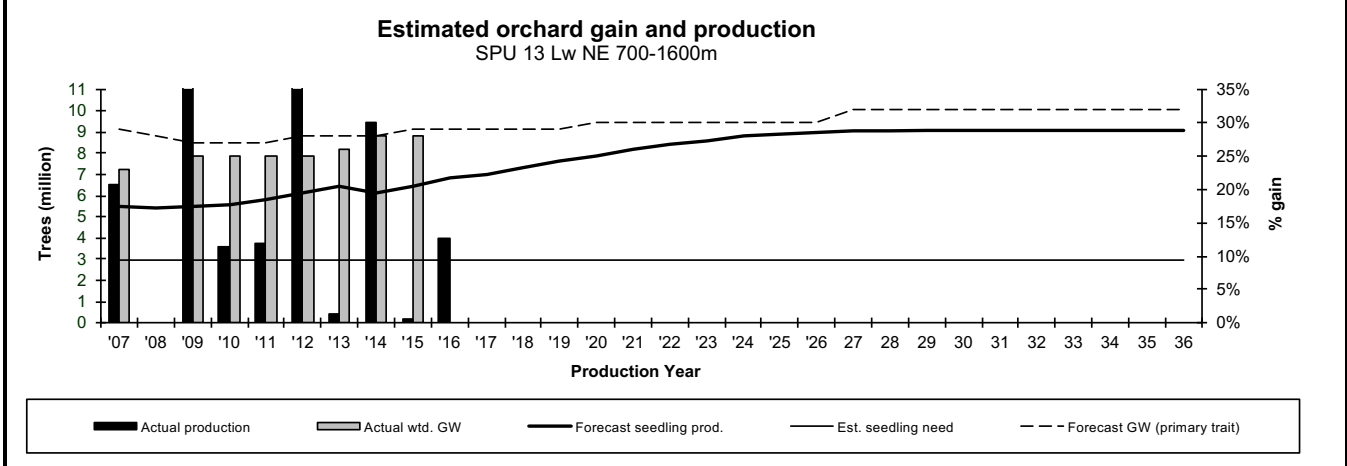
Production forecast (million plantables)																				
Orchards (#, owner)																				
332 FLNRO (Kalamalka)	7.0	7.3	7.6	7.9	8.2	8.4	8.6	8.8	8.9	9.0	9.0	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1

Vegetative prod.:
Phase 1
Phase 2

Estimated gain in primary trait																				
Orchards (#, owner)																				
332 FLNRO (Kalamalka)	29%	29%	29%	30%	30%	30%	30%	30%	30%	30%	30%	32%	32%	32%	32%	32%	32%	32%	32%	32%

Vegetative prod.:
Phase 1
Phase 2

Total Production	7.0	7.3	7.6	7.9	8.2	8.4	8.6	8.8	8.9	9.0	9.0	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
Total gain	29%	29%	29%	30%	30%	30%	30%	30%	30%	30%	30%	32%	32%	32%	32%	32%	32%	32%	32%	32%



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.

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

SPU #13**GENE CONSERVATION STATUS****Conservation statistics**

Seed planning unit (SPU) area	1,785,807	ha
Area protected within SPU	89,171	ha
Percentage of SPU area protected	5%	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	>2	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	13	

Conservation status

Current in-situ protection status: **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)	332	50	29%	1,680	1,680	82.8	9.07	
				Total ramets	1,680	1,680	Total production	9.07

Vegetative propagation		Stecklings/Emblings	0.0
		Total production	9.1

Seed and Nursery Factors

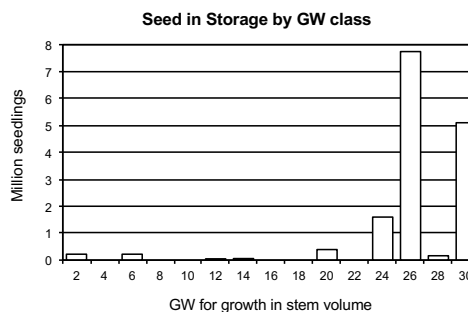
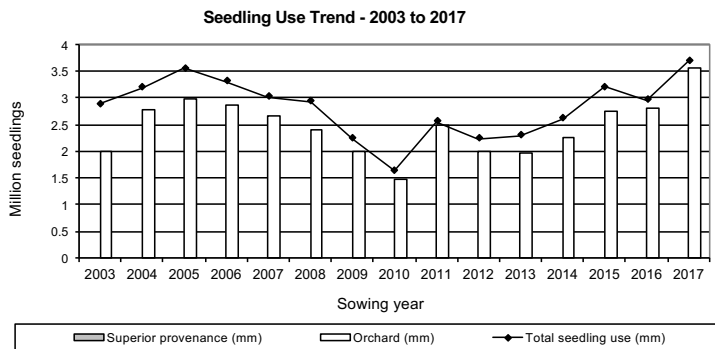
Expected annual average seedling production per ramet = 5,400
Seed weight (seeds/gram) = 241
Seedling recovery factor (seedlings/seed) = 0.45
Seedling recovery factor (seeds/seedling) = 2.20

Estimate of Required Orchard Capacity

Annual planting (million seedlings)	3.0
Planned over-production factor	1.3
Ramets required	547
Ramets required with over-capacity	711
Projected necessary expansion	0

SEEDLING USE AND SEED IN STORAGE

Average 5-year seedling use from SPAR (2013 - 2017) **3.0 million**
 Estimated years of class-A seed in storage **5.3 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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