

SPU # 40 Low **Interior Spruce** **Peace River** **250 - 650m**
Breeding and Orchard Production

Program category: First-generation **Seedling need (million): 0.7**
Program rank: 22
 filename: 40 L Sx PR low Sept 2017.xlsx

STRATEGY Parent tree selection from wild stands in the PR zone. Progeny tests using open-pollinated seed from selected parents. Focus on stem volume. Best parents, based on offspring performance on progeny tests, are selected for seed production in an open-pollinated seed orchard.

TRAITS **Primary: Stem volume** **Secondary: Wood density, weevil**

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.	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351
Polycross																				
Clonal																				
F1	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
F2																				
F3																				

Production forecast (million plantables)

Orchards (#, owner)

213 FLNRO (Skimikin)	3.9	4.5	4.9	5.1	5.2	5.4	5.5	5.7	5.8	5.9	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
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Vegetative prod.:
 Phase 1
 Phase 2

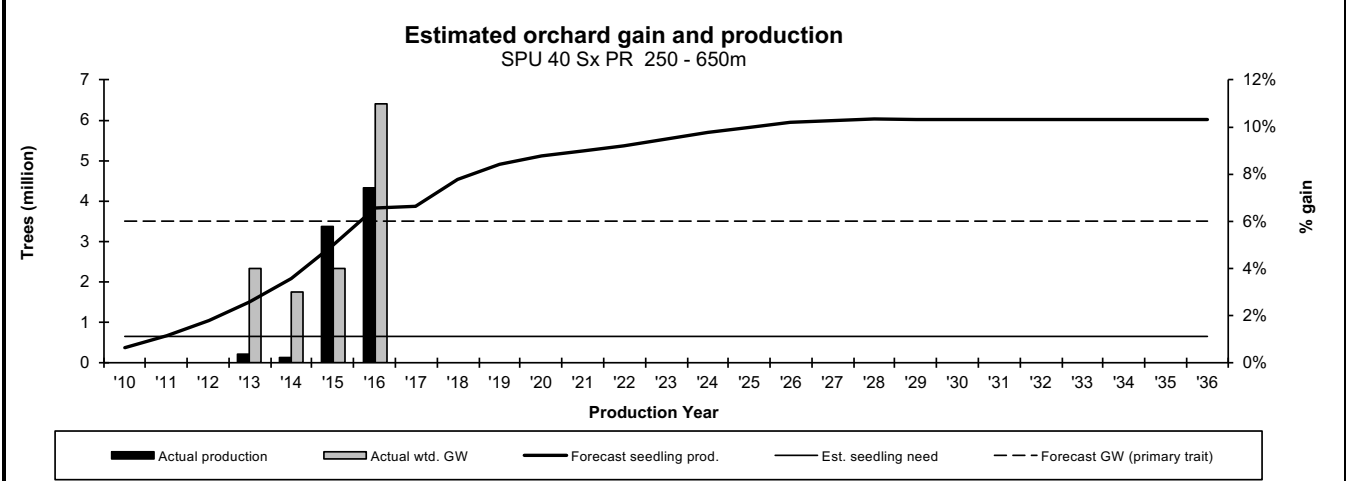
Estimated gain in primary trait

Orchards (#, owner)

213 FLNRO (Skimikin)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
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Vegetative prod.:
 Phase 1
 Phase 2

Total Production	3.9	4.5	4.9	5.1	5.2	5.4	5.5	5.7	5.8	5.9	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Total gain	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%



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 Spruce Peace River 250 - 650m
Conservation -- Seed Orchards -- Seedling Use

SPU #40 Low

GENETIC CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	11,644,978	ha
Area protected within SPU	255,930	ha
Percentage of SPU area protected	2%	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	0	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	3	

Conservation status

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

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 (Skimikin)	213	39	6%	1,002	1,189	39.8	7.13	Low elevation (<650m)
Total ramets				1,002	1,189	Total production	7.1	
Vegetative propagation						Stecklings/Emblings	0.0	
						Total production	7.1	

Seed and Nursery Factors

Estimate of Required Orchard Capacity

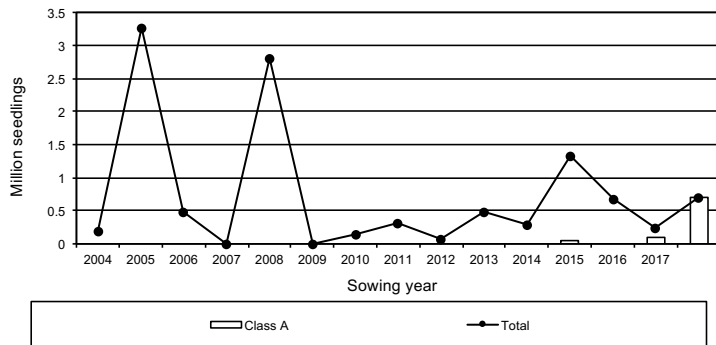
Expected annual average seedling production per ramet = 6,000	Annual planting (million seedlings)	0.7
Seed weight (seeds/gram) = 394	Planned over-production factor	1.2
Seedling recovery factor (seedlings/seed) = 0.45	Ramets required	108
Seedling recovery factor (seeds/seedling) = 2.20	Ramets required with over-capacity	130
	Projected necessary expansion	0

Progeny test data will determine whether the low-elevation need should be developed in conjunction with mid-elevation, or as a separate orchard.

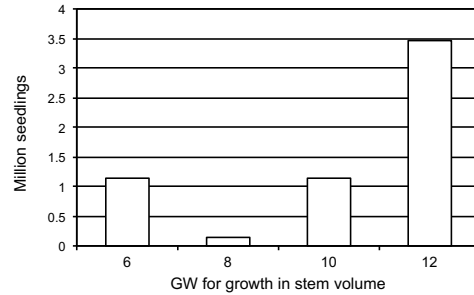
SEEDLING USE AND SEED IN STORAGE

5-year average seedling requests to SPAR (2013 - 2017) 0.7 million
Estimated years of class-A seed in storage 9.0 years

Seedling Use Trend - 2003 to 2017 for <650m elev.



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.

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)

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