

SPU # 22	Interior Douglas Fir	Nelson	1000 - 1800m
Breeding and orchard production		Note overlap with SPU 21	
Adjusted for new Parent Tree Area of use. Previously 1000-1600m		Seedling need (million): 2.4	
Program category: First-generation			
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STRATEGY Parent-tree selections from wild stands tested in open-pollinated progeny tests. Best parents selected for seed orchard development. Focus on stem volume while maintaining wood density. Tests in this zone are merged from the old West Kootenay, Shuswap Adams, and Mica zones. 2nd generation breeding.

TRAITS	Primary:	Stem volume	Secondary:	Wood density, Armillaria resistance
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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.	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208
Polycross																				
Clonal																				
F1	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
F2																				
F3																				

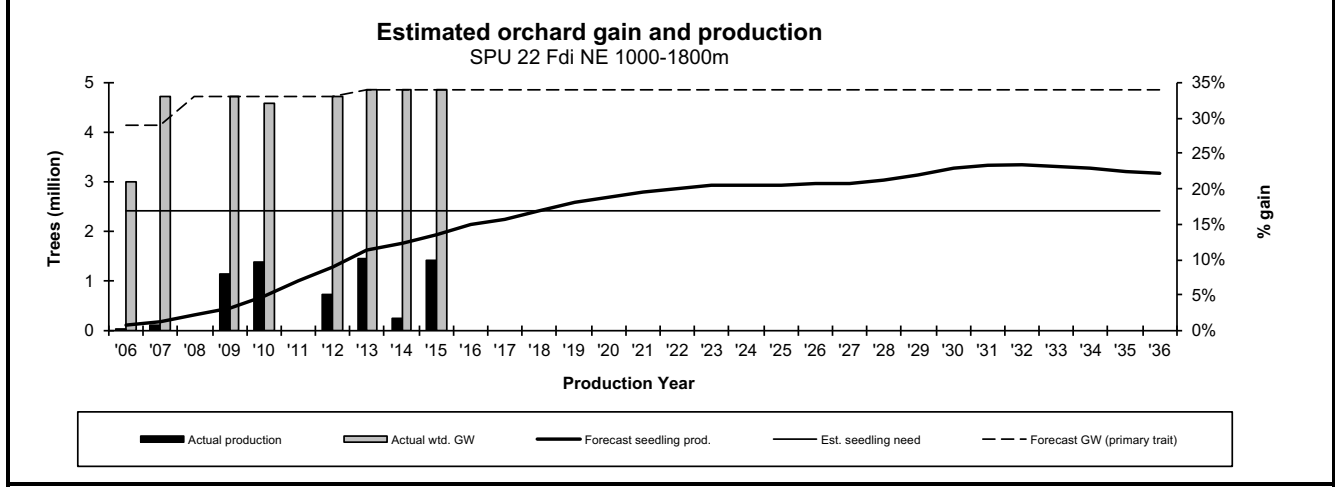
Production forecast (million plantables)																				
Orchards (#, owner)																				
324 FLNRO (Kalamalka)	2.2	2.4	2.6	2.7	2.8	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.1	3.3	3.3	3.3	3.3	3.3	3.2	3.2

Vegetative prod.:
Phase 1
Phase 2

Estimated gain in primary trait																				
Orchards (#, owner)																				
324 FLNRO (Kalamalka)	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%

Vegetative prod.:
Phase 1
Phase 2

Total Production	2.2	2.4	2.6	2.7	2.8	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.1	3.3	3.3	3.3	3.3	3.3	3.2	3.2
Total gain	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%



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 Douglas Fir Nelson 1000 - 1800m Conservation -- Seed Orchards -- Seedling Use

SPU #22

GENETIC CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	1,839,444	ha
Area protected within SPU	130,616	ha
Percentage of SPU area protected	7%	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	>4	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	30	

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/ly at maturity	Total Seedling Prod. million seedlings
FLNRO (Bailey)	324	38	34%	2,319	3,000	87.4	4.37
Total ramets				2,319	3,000	Total production	4.37
Vegetative propagation						Stecklings/Emblings	0.0
						Total production	4.4

Seed and Nursery Factors

Expected annual average seedling production per ramet = 1,457
Seed weight (seeds/gram) = 95
Seedling recovery factor (seedlings/seed) = 0.53
Seedling recovery factor (seeds/seedling) = 1.90

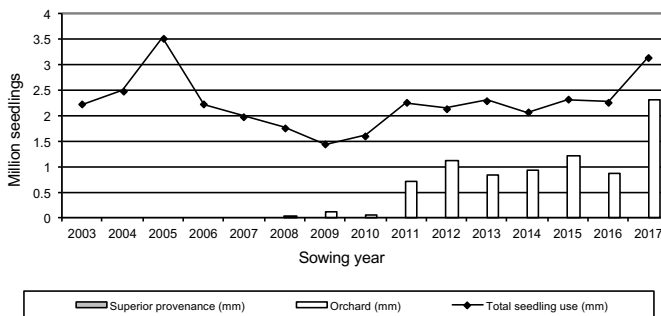
Estimate of Required Orchard Capacity

Annual planting (million seedlings)	2.4
Planned over-production factor	1.3
Ramets required	1,659
Ramets required with over-capacity	2,157
Projected necessary expansion	0

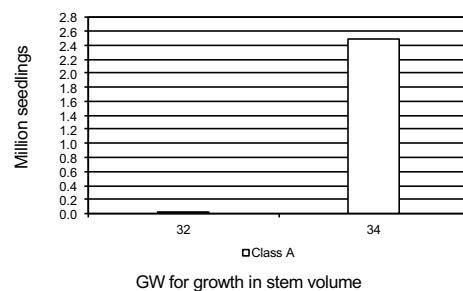
SEEDLING USE AND SEED IN STORAGE

5-year average seedling requests to SPAR (2013 - 2017) **2.4** **million**
Estimated years of class-A seed in storage **1.0** **years**

Seedling Use Trend - 2003 to 2017



Seed in Storage by GW class



GW for growth in stem volume

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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