

SPU # 5 **Interior Spruce** **Nelson** **1700 - 2100m**
Breeding and orchard production
Adjusted for new Parent Tree Area of use. Previously 1500-1900m **Seedling need (million): 1.2**
Program category: Advanced-generation filename: 5 Sx NE high July 12, 2015

STRATEGY Selection in wild stands; polycross progeny tests for old Shuswap Adam and West Kootenay zones. Focus on volume, wood density, and weevil resistance. Backward selection of best parents for seed orchards.

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

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

	'15	'16	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34
Parents in progeny test:																				
Open pollin.	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
Polycross	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256
Clonal																				
F1	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
F2																				
F3																				

Production forecast (million plantables)

Orchards (#, owner)

302 MFLNRO (Skimikin)	3.5	3.9	4.3	4.7	5.0	5.3	5.4	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
306 MFLNRO (Kalamalka)	3.6	3.9	4.2	4.3	4.4	4.5	4.5	4.6	4.6	4.6	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
304 MFLNRO (Kalamalka)*																				

Orchard retired

Vegetative prod.:
Phase 1
Phase 2

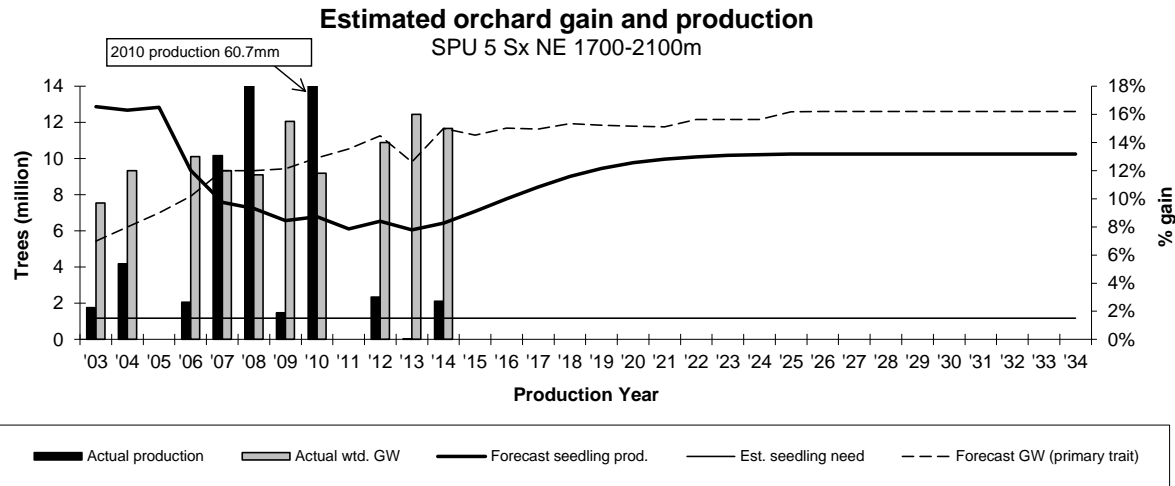
Estimated gain in primary trait

Orchards (#, owner)

302 MFLNRO (Skimikin)	11%	11%	11%	11%	11%	11%	11%	12%	12%	12%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
306 MFLNRO (Kalamalka)	18%	19%	19%	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	7.1	7.8	8.4	9.0	9.5	9.8	10.0	10.1	10.2	10.2	10.2	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Total gain	15%	15%	15%	15%	15%	15%	15%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%



Seed production estimates are subject to change. When using this information for silviculture planning or timber supply analysis, contact the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations to confirm data. See SeedMap on www.for.gov.bc.ca/hti/seedmap for current inventory by Seed Planning Unit

Interior Spruce Nelson 1700 - 2100m Conservation -- Seed Orchards -- Seedling Use

SPU #5

GENETIC CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	1,399,689	ha	
Area protected within SPU	134,948	ha	
Percentage of SPU area protected	10%		
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	21		

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 (Skimikin)	302	70	10%	922	900	30.2	5.40	Retired in 2010
FLNRO (Kalamalka)	306	31	20%	779	779	26.1	4.67	
FLNRO (Kalamalka)	304*			0	0	0.0	0.00	
Total ramets				1,701	1,679	Total production	10.07	

Vegetative propagation	Stecklings/Emblings	0.0
	Total production	10.1

Seed and Nursery Factors

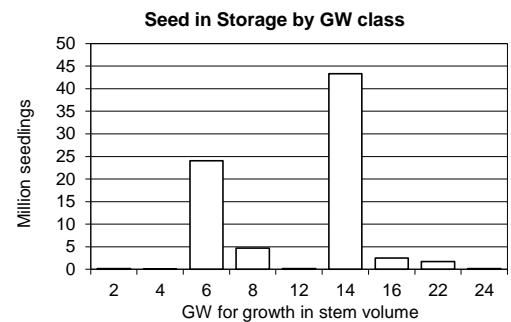
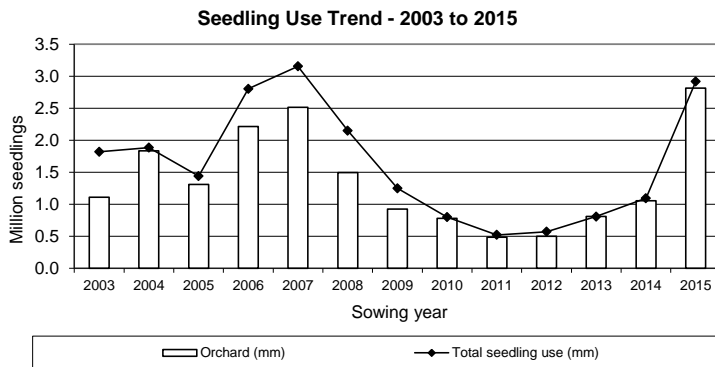
Estimate of Required Orchard Capacity

Expected annual average seedling production per ramet = 6,000	Annual planting (million seedlings)	1.2
Seed weight (seeds/gram) = 398	Planned over-production factor	1.2
Seedling recovery factor (seedlings/seed) = 0.45	Ramets required	197
Seedling recovery factor (seeds/seedling) = 2.22	Ramets required with over-capacity	237
	Projected necessary expansion	0

* Orchard 304 seed is also suitable for the NEK overlap zone.

SEEDLING USE AND SEED IN STORAGE

Average 5-year seedling use from SPAR (2011 - 2015) **1.2 million**
Estimated years of class-A seed in storage **64.9 years**



- Notes:
- Seed held in both "reserve" and "available" status in the Seed Planning and Registration (SPAR) system is included
 - Seed inventories change with new orders. Data presented here are based on a June sample.
 - For up-to-date information use SPAR, or contact the Tree Improvement Branch of the Ministry of Forests and Range

Seed production estimates are subject to change. When using this information for silviculture planning or timber supply analysis, contact the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations to confirm data.

See SeedMap on www.for.gov.bc.ca/hti/seedmap for current inventory by Seed Planning Unit