SPU # 44	Interior Spruce	Nelson	1 - 1000m

Breeding and Orchard Production

Seedling need (million): 0.9

Program category: Second-generation

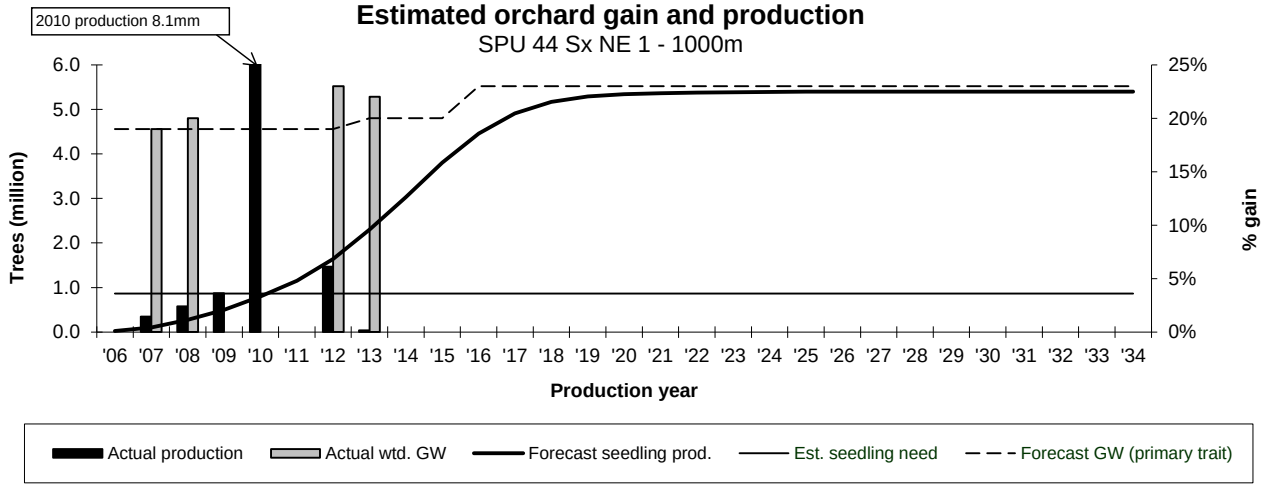
filename: 44 Sx NE low July 12, 2015

STRATEGY Parent tree selection in wild stands; polycross and open-pollinated progeny tests for old Shuswap Adams and West Kootenay zones. Focus on stam volume, wood density, and weevil resistance. Backward selection of best parents to open-pollinated 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.																				
Polycross	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374	374
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)																				
341 FLNR Kalamalka	3.8	4.5	4.9	5.2	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Vegetative prod.:																				
Phase 1																				
Phase 2																				
Estimated gain in primary trait																				
Orchards (#, owner)																				
341 FLNR Kalamalka	20%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
Vegetative prod.:																				
Phase 1																				
Phase 2																				
Total Production	3.8	4.5	4.9	5.2	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Total gain	20%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%

Seed from orchards 301, 304 and 305 may be used down to 800m elevation (see SPU #4 Sx NE mid)



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

44 Sx NE low July 12, 2015

Interior Spruce Nelson 1 - 1000m

SPU #44

Conservation -- Seed Orchards -- Seedling Use

GENETIC CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	**2,110,271**	**ha**
Area protected within SPU	**119,217**	**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	**32**	

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	341	39	20%	900	900	27.1	**5.40**
			Total ramets	**900**	**900**	**Total production**	**5.40**

Vegetative propagation	**Stecklings/Emblings**	**0.0**
	Total production	**5.4**

Seed and Nursery Factors

Expected annual average seedling production per ramet =	**6,000**
Seed weight (seeds/gram) =	**442**
Seedling recovery factor (seedlings/seed) =	**0.45**
Seedling recovery factor (seeds/seedling) =	**2.22**

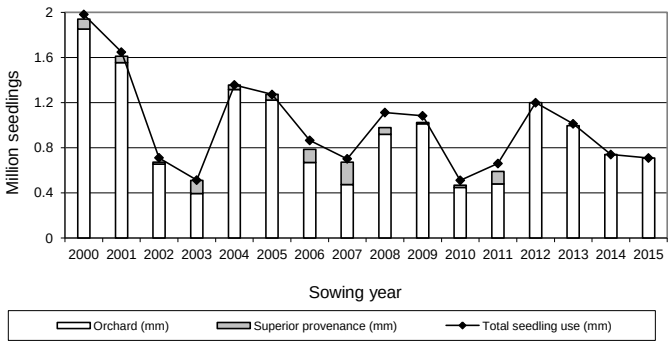
Estimate of Required Orchard Capacity

Annual planting (million seedlings)	**0.9**
Planned over-production factor	**1.2**
Ramets required	**144**
Ramets required with over-capacity	**173**
Projected necessary expansion	**0**

SEEDLING USE AND SEED IN STORAGE

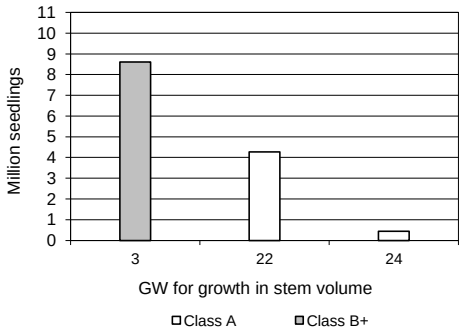
Average 5-year seedling use from SPAR (2011 - 2015)	**0.9**	**million**
Estimated years of class-A seed in storage	**5.5**	**years**

Seedling Use Trend - 2000 to 2015



- Seedling use data include 1/2 of adjacent overlap zones, where applicable
Sowing year: Aug 1 to July 31 (i.e. 2015 sowing year starts Aug 1, 2014)

Seed in Storage by GW class



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