

SPU # 24

Western Hemlock

Maritime

600 - 1100m

Breeding and orchard production

Seedling need (million): **0.4**

Program category: First-generation

filename: 24 Hw M high Sept 2017.xlsx

STRATEGY

First-generation open-pollinated and polycross testing. Selection of best parents for open-pollinated seed orchards. No second generation breeding planned.

TRAITS

Primary: Stem volume

Secondary: Stem form, wood quality

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
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Parents in progeny test:

Open pollin.																				
Polycross	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	301
Clonal																				
F1																				
F2																				
F3																				

Production forecast (million plantables)

Orchards (#, owner)	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
187 WFP (SFC)	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
130 Twest																				
143/196 FLNRO (Saanich)	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

Vegetative prod.:

Phase 1

Phase 2

Estimated gain in primary trait

Orchards (#, owner)	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
187 WFP (SFC)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
130 Twest																				
143/196 FLNRO (Saanich)	12%	12%	12%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%

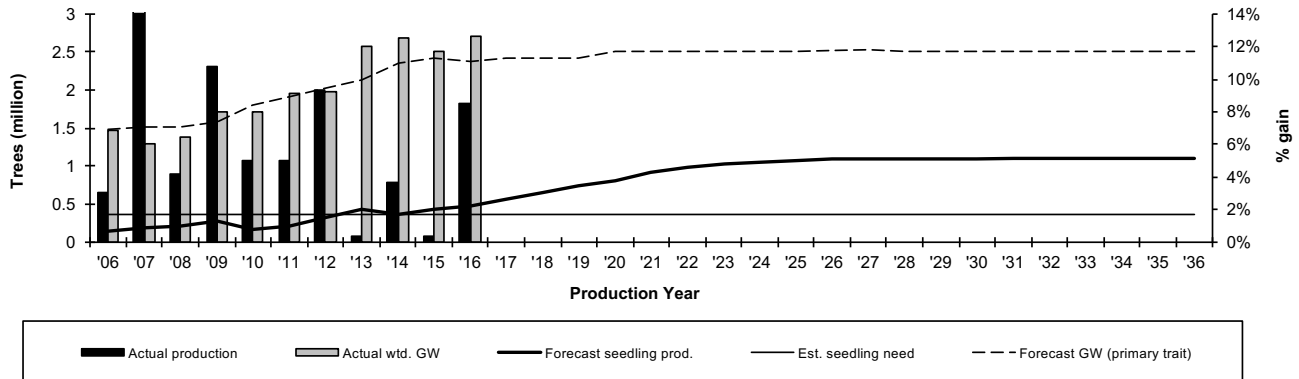
Vegetative prod.:

Phase 1

Phase 2

Total Production	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total gain	11%	11%	11%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%

Estimated orchard gain and production
SPU 24 Hw M 600-1100m



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 Hemlock Maritime 600 - 1100m
 Conservation -- Seed Orchards -- Seedling Use

SPU #24

GENE CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	3,086,225	ha
Area protected within SPU	381,263	ha
Percentage of SPU area protected	12%	
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: **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	Target seedling production (mm/yr) at full production		
WFP (SFC)	187	33	11%	196	221	4.0	0.77	orchard retired	
TWest (Mt Newton)	130					0.0	0.00		
FLNRO (Saanich)	143/196	19	13%	119	137	2.5	0.48		
				Total ramets	315	358	Total production	1.25	
Vegetative propagation						Stecklings/Emblings	0.0		
						Total production	1.3		

Seed and Nursery Factors

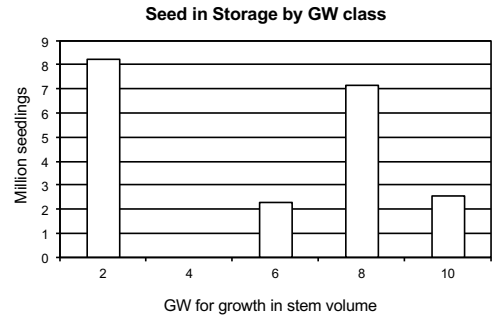
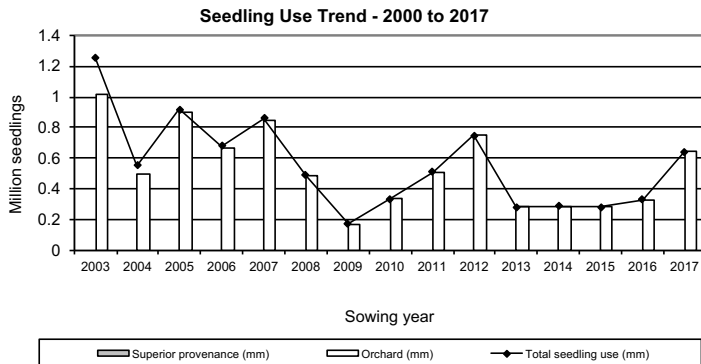
Expected annual average seedling production per ramet = 3,500
Seed weight (seeds/gram) = 428
Seedling recovery factor (seedlings/seed) = 0.45
Seedling recovery factor (seeds/seedling) = 2.22

Estimate of Required Orchard Capacity

Annual planting (million seedlings)	0.4
Planned over-production factor	1.3
Ramets required	104
Ramets required with over-capacity	136
Projected necessary expansion	0

SEEDLING USE AND SEED IN STORAGE

5-year average seedling requests to SPAR (2013 - 2017) 0.4 million
Estimated years of class-A seed in storage 60.8 years



Notes:
 - 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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