

SPU # 2

Western Redcedar Maritime 1 - 700m

Breeding and orchard production

Adjusted for new Parent Tree Area of use. Previously 1-600m

Seedling need (million): 7.0

* Includes Georgia Lowlands (GL)

filename: 02 Cw M low Sept 2017.xlsx

Program category: Advanced-generation

STRATEGY

First generation: polycross progeny testing for early growth and blight resistance; clonal testing for deer resistance; F1 for growth, blight resistance and heartwood durability. Backward selections for seed orchard production and advanced generation breeding population. Significant attention to inbreeding impacts and their effect on seed production.

TRAITS

Primary: Stem volume

Secondary: Kethia leaf blight, wood durability, deer resistance, stem form

TESTING AND PRODUCTION

Production Year (July 1 to June 30) -- (Cone harvest year shown)

Parents in progeny test:

Open pollin.																				
Polycross	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950
Clonal	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
F1	450	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
F2																				
F3																				

Production forecast (million plantables)

Orchards (#, owner)

140 TW (Mt Newton)	1.7	1.8	1.9	2.0	2.0	2.1	2.1	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
152 TW (Mt Newton)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
190 WFP (SFC) (HG)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	Excluded from gain and production graph												
184 FLNRO	3.5	3.5	3.6	3.8	3.8	3.9	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
198 WFP (SFC)	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
408 Yellowpoint Prop.	1.1	1.3	1.4	1.5	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8

Vegetative prod.:

Phase 1	0.1	0.1	0.1	0.1																
Phase 2																				

Estimated gain in primary trait

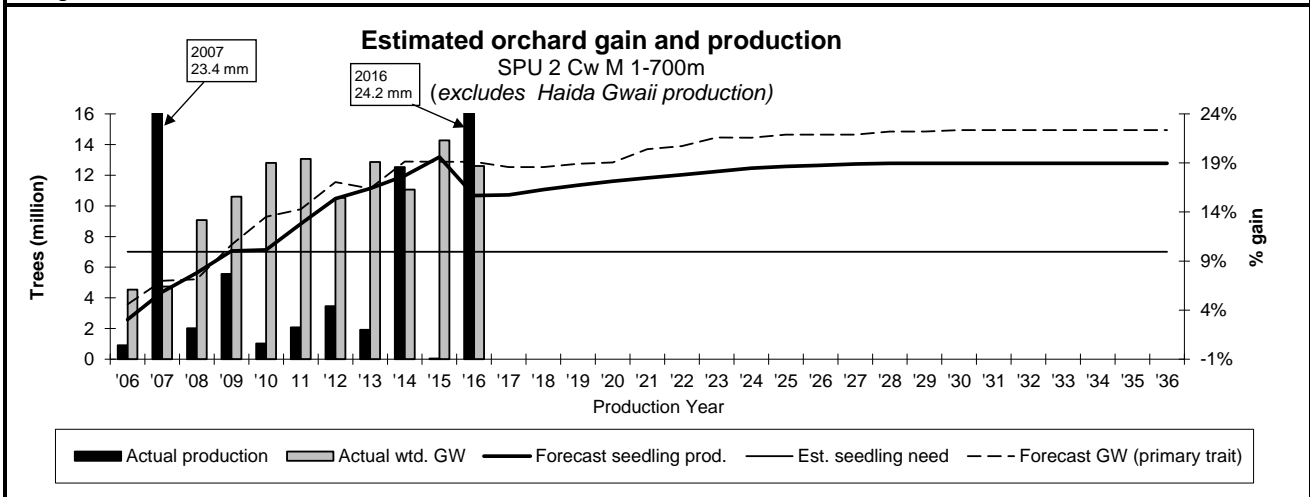
Orchards (#, owner)

140 TW (Mt Newton)	20%	20%	20%	20%	21%	21%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%
152 TW (Mt Newton)	20%	20%	20%	20%	21%	21%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%
190 WFP (SFC) (HG)	4%	5%	5%	5%	5%	5%	5%	Excluded from gain and production graph												
184 FLNRO	19%	19%	19%	19%	21%	21%	22%	22%	23%	23%	23%	24%	24%	24%	24%	24%	24%	24%	24%	24%
198 WFP (SFC)	18%	18%	19%	19%	20%	21%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%
408 Yellowpoint Prop.	18%	18%	18%	19%	19%	19%	19%	19%	19%	19%	19%	19%	19%	19%	20%	20%	20%	20%	20%	20%

Vegetative prod.:

Phase 1																				
Phase 2																				

Total Production	10.8	11.2	11.4	11.7	11.8	12.0	12.2	12.5	12.6	12.7	12.7	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Total gain	19%	19%	19%	19%	20%	21%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%



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 Redcedar Maritime 1 - 700m Conservation -- Seed Orchards -- Seedling Use

SPU #2

GENETIC CONSERVATION STATUS

Conservation statistics

Seed planning unit (SPU) area	896,402	ha
Area protected within SPU	60,026	ha
Percentage of SPU area protected	7%	
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	98	

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	Target seedling production (mm/yr) at full production	
TW (Mt Newton)	140	36	20%	188	225	9.7	2.48	to be expanded to include 152
TW (Mt Newton)	152	10	20%	45	0	0.0	0.00	to be phased out
WFP (SFC)	190 (HG)	37	5%	111	40	1.7	0.44	Haida Gwaii and north coast only
FLNRO (Saanich)	184	26	19%	583	590	16.0	4.10	adj. for container
WFP (SFC)	198	35	19%	355	450	19.4	4.95	
Yellowpoint Prop.	408	42	18%	167	167	7.2	1.84	
Total ramets				1,449	1,472	Total production	13.80	

Vegetative propagation	Stecklings/Emblings	1.0
	Total production	14.8

Seed and Nursery Factors

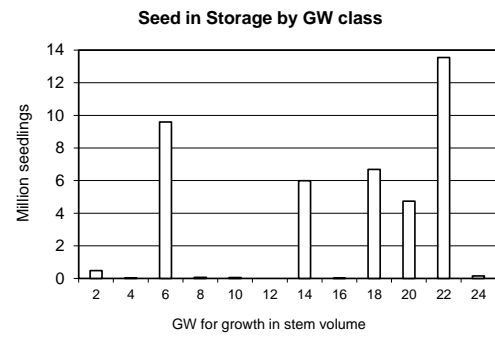
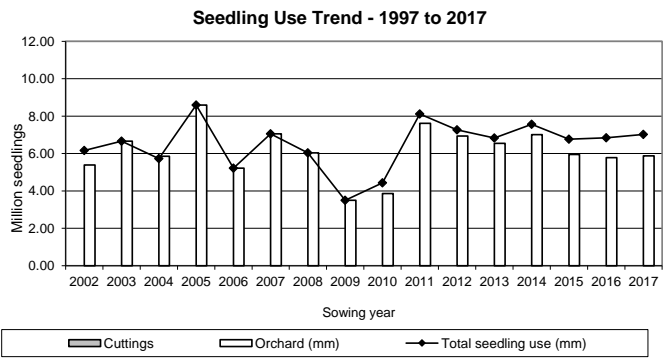
Expected annual average seedling production per ramet = 9.375
Seed weight (seeds/gram) = 766.00
Seedling recovery factor (seedlings/seed) = 0.33
Seedling recovery factor (seeds/seedling) = 3.00

Estimate of Required Orchard Capacity

Annual planting (million seedlings)	7.0
Planned over-production factor	1.3
Ramets required	747
Ramets required with over-capacity	972
Projected necessary expansion	0

SEEDLING USE AND SEED IN STORAGE

Average 5-year seedling use from SPAR (2013 - 2017) **7.0** **million**
Estimated years of class-A seed in storage **5.9** **years**



- 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.

- 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)

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