

SPU # 2 **Western Redcedar** **Maritime** **1 - 700m**

Breeding and orchard production
 Adjusted for new Parent Tree Area of use. Previously 1-600m

Program category: Advanced-generation **Seedling need (million): 7.3**
 * Includes Georgia Lowlands (GL)
 filename: 2 Cw M low July 12, 2015

STRATEGY First generation: polycross progeny testing for early growth; testing grafted progeny for wood 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)**

	'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	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950
Clonal																				
F1	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
F2																				
F3																				

Production forecast (million plantables)

Orchards (#, owner)

140 TW (Mt Newton)	1.7	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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) (QCI)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	Excluded from gain and production graph										
184 FLNRO (container)	5.4	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
198 WFP (SFC)	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
408 Yellowpoint Prop.	0.7	1.0	1.3	1.6	1.8	1.8	1.8	1.8	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	0.1	0.1														
Phase 2																				

Estimated gain in primary trait

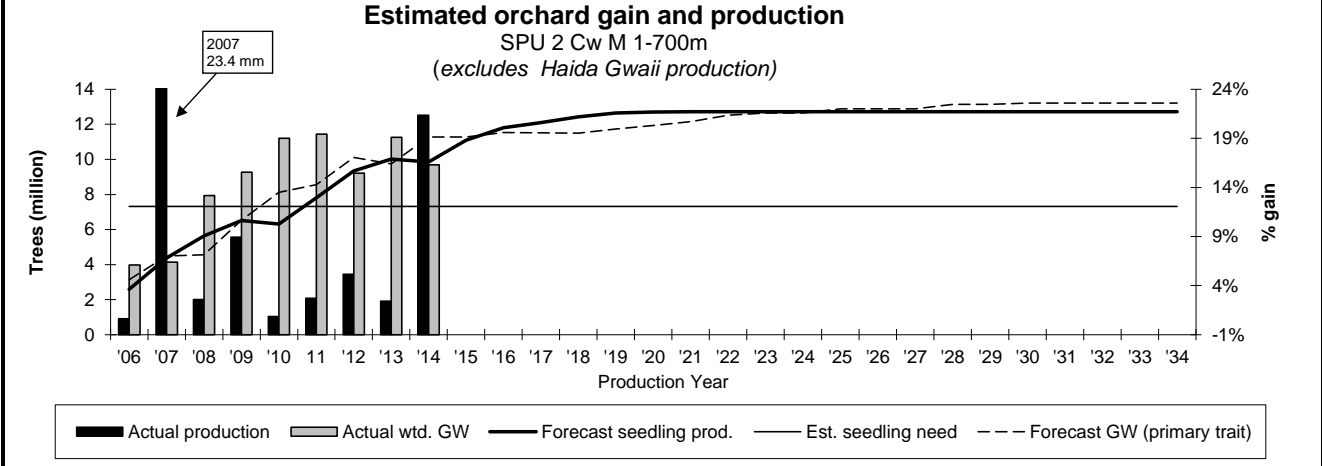
Orchards (#, owner)

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

Vegetative prod.:

Phase 1																				
Phase 2																				

Total Production	11.2	11.9	12.2	12.5	12.7	12.8	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
Total gain	19%	20%	20%	20%	20%	20%	21%	21%	22%	22%	22%	22%	22%	22%	22%	23%	23%	23%	23%	23%



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/htl/seedmap for current inventory by Seed Planning Unit

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	34	20%	208	225	8.9	2.25	to be expnded to include 152 to be phased out Combined with orch 198 in 2010 QCI and north coast only Container - 60% seed prod. est.	
TW (Mt Newton)	152	10	20%	45	0	0.0	0.00		
WFP (SFC)	189					0.0	0.00		
WFP (SFC)	190 (QCI)	37	4%	111	40	1.6	0.40		
FLNRO (Saanich)	184	29	19%	393	450	10.7	2.70		
WFP (SFC)	198	35	18%	365	450	17.8	4.50		
Yellowpoint Prop.	408	42	18%	160	200	7.9	2.00		
				Total ramets	1,282	1,365	Total production		11.85
Vegetative propagation						Stecklings/Emblings	1.0		
						Total production	12.9		

Seed and Nursery Factors

Expected annual average seedling production per ramet = 10,000
Seed weight (seeds/gram) = 766
Seedling recovery factor (seedlings/seed) = 0.33
Seedling recovery factor (seeds/seedling) = 3.03

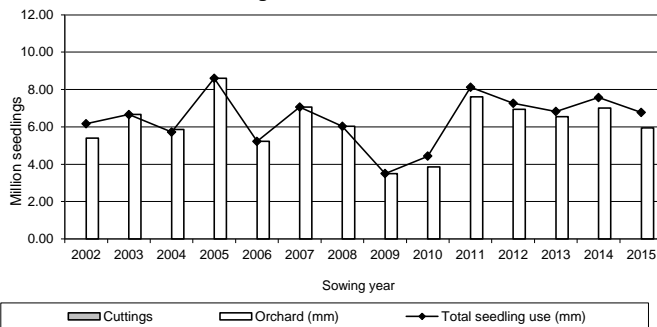
Estimate of Required Orchard Capacity

Annual planting (million seedlings)	7.3
Planned over-production factor	1.3
Ramets required	731
Ramets required with over-capacity	950
Projected necessary expansion	0

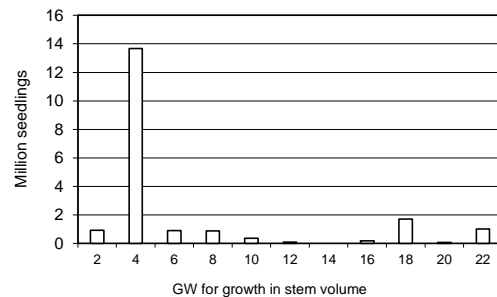
SEEDLING USE AND SEED IN STORAGE

Average 5-year seedling use from SPAR (2011 - 2015) 7.3 million
Estimated years of class-A seed in storage 2.7 years

Seedling Use Trend - 1997 to 2015



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

- Notes:
- 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 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/htl/seedmap for current inventory by Seed Planning Unit