



BC Seed Planning Tools Overview

Challenges to Our Future Seed Supply

June 23, 2022
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What is the Seed Planning and Registry (SPAR)?

SPAR is Web-based information management system that allows access to:

- The Provincial Registry of Forest Tree Seed
- A comprehensive seedling request system for meeting annual reforestation needs
- Seed planning tools (reports, data extracts and mapping tools)



The Provincial Registry of Forest Tree Seed

Display: ☒ Trees ☐ Quantity (grams/cuttings) ☒ Orchard No./Location ☐ Lat/Long

Seedlot Quantity is displayed in grams; Vegetative lot Quantity is displayed in No. of Cuttings (in thousands) 381 rows returned

Lot No.	Genetic Class & Worth	Germ. %	Agency	BEC	Orchard No. / Location	Coll. / Prod Year	Reserve Trees (000's)	Surplus Trees (000's)	
63865	A DSG+71 GVO+12	98	BCTS 00	SBSdw3	352 - SKIMIKIN	2019	473.2	0	DT CBST
63865	A DSG+71 GVO+12	98	MOF 20	SBSdw3	352 - SKIMIKIN	2019	0	97.3	DT CBST
63992	A DSG+71 GVO+12	98	BCTS 00	SBSdw3	352 - SKIMIKIN	2021	1905	0	DT CBST
63992	A DSG+71 GVO+12	98	MOF 20	SBSdw3	352 - SKIMIKIN	2021	0	1375.5	DT CBST
63794	A DSG+71 GVO+12	97	MOF 27	SBSdw3	352 - SKIMIKIN	2018	1144.6	0	DT CBST
63925	A DSG+71 GVO+12	97	BCTS 00	SBSdw3	352 - SKIMIKIN	2020	1614.7	0	DT CBST
63925	A DSG+71 GVO+12	97	MOF 27	SBSdw3	352 - SKIMIKIN	2020	660.1	0	DT CBST
63980	A DSG+63 GVO+11	96	BCTS 00	SBSdw3	352 - SKIMIKIN	2017	35	0	DT CBST
63786	A GVO+21	98	CARIER 00	SBSdw3	241 - SORRENTO	2018	16.3	0	DT CBST
63849	A GVO+21	98	MOF 27	SBSdh1	238 - KETTLE RIVER	2019	14.6	0	DT CBST

Output of a suitable seedlot search for Pli seed to be planted in the SBSmc2

Seedlot Number: 54114   [Lot Details](#)[CBST](#)[Owners](#)[Tests](#)[Commitments](#)[Transactions](#)[Heritage](#)[Back](#)

Seedlot Number:	54114	Registered:	Yes - 2021-05-17 - Active
Species:	PLI - lodgepole pine		
Genetic Class/Worth	B		
Collection Year:	2020		

Source Information

Location:	FIFTY SEVEN CREEK, MARBLE MTNS	Heritage:	No
Seed Planning Zone:	BB	Geographic Area:	-
Elevation: Mean/Min/Max (m)	1310 / 1290 / 1330		
Latitude:	51° 10' 48"	Longitude:	121° 40' 43"
BEC Zone/Subzone /Variant:	IDF dk 3	BEC Version:	10 SeedMap

Quantity and Test Information

Germination (%):	96	Peak Value:	85/ 7
Seeds per Gram:	286	Seedlings per Gram:	142
	Potential Trees (000's):	Grams:	
Reserved Available:	533.7	3,736	
Surplus Available:	0.0	0	
Total Available:	533.7	3,736	
Reserved Committed:	0.0	0	
Surplus Committed:	0.0	0	
Total Committed:	0.0	0	
Total Quantity:	533.7	3,736	
Agency:	CARCARSO 00 - CARIBOO CARBON SOLUTIONS		

Collection Information

Collector:	ZANZIB - 00 - ZANZIBAR HOLDINGS LTD.		
Collection Start Date:	2020-09-15	Collection End Date:	2020-09-18
Collection Method:	03 - Felled trees	Collection Method 2:	-
Collection Source:	-		
Collection Volume:	12.4	No Trees Collected From:	More than 50 trees
Effective Population Size:			

Extraction Information

Extraction Facility:	MOF - 00 - MINISTRY OF FORESTS		
Extraction Volume:	12.4		
Extraction Start Date:	2021-03-02	Extraction End Date:	2021-03-02
Stored Location:	MOF - 00 - MINISTRY OF FORESTS		
Original Seed Balance:	3738		

Seedlot Number:

43312



Go

Lot Details

CBST

Owners

Tests

Commitments

Transactions

Heritage

History

Ranked Current Tests

Seedlot Number: 43312

Germ Test Date: 2015-05-29

Type: G10

Seeds per Gram: 533

Purity %: 99.1

Species: SX - spruce hybrid

Germ %: 80

Moisture %: 7.7

PV: 75/ 11

Current Tests

Date	Type	Germ %	Rank	PV	Other Result	Description
2015-05-29	G10	80	A	75/ 11		24hr Soak, 21dy Strat, 21dy Count
1996-02-06	W1	82				24hr Soak, no Strat, Germ(30/20), 21day Count
1996-01-09	SA	92				Species average germination
2003-06-19	SIR				7.8	Sirococcus fungal assay test
1999-11-12	CAL				0.0	Caloscypha fungal assay test
1999-11-12	FUS				0.0	Fusarium fungal assay test
1996-01-09	FUR				99.1	Percentage pure seed by weight
1996-01-09	SPG				533.0	Number of seeds per gram weight
1996-01-04	MC				7.7	Moisture content expressed as a percentage

Noncurrent Tests

Date	Type	Germ %	Rank	PV	Other Result	Description
2011-10-21	G10	82	A	72/ 11		24hr Soak, 21dy Strat, 21dy Count
2008-01-11	G10	77	A	66/ 10		24hr Soak, 21dy Strat, 21dy Count
2007-11-07	G10	72		52/ 9		24hr Soak, 21dy Strat, 21dy Count
2004-01-23	G10	86	A	80/ 10		24hr Soak, 21dy Strat, 21dy Count
1999-12-01	G10	81	A	61/ 9		24hr Soak, 21dy Strat, 21dy Count
1996-02-21	G10	88	A	74/ 9		24hr Soak, 21dy Strat, 21dy Count

Planting Site +/-

Species: FDI-interior Douglas-fir *

Elevation Min: 1060 * Elevation Max: 1085 *

Latitude: 51° 51' 03" * Longitude: 123° 12' 33" * Default BEC

Biogeoclimatic Zone: IDF * Subzone: dk * Variant: 4 * SeedMap

Location Description: Hanceville

Sowing Details

No. of Seedlings (000's): 400 *

Nursery Requested: Assigned Nursery:

Stock Type: PSB * Planting Year: 2023 *

Container Type: 412B * Season: Spring *

Stock Age: 100000 * Month/Day: 0501

Latest Actioned Date: 2022-01-25

Additional Criteria (Note: If this criteria is entered, it will limit the lots returned)

Lot Number(s): 54012 DT DT

Owner Agency:

Client Reference:

Contact Info: Tree Seed Centre (604) 541-1683

View Lot Selection Go to Lot Selection Save Request Save Incomplete

Selected Lot

Display: ☒ Trees ☐ Quantity (grams/cuttings) Refresh

☒ Orchard ☐ Lat/Long

E / W:	Seedlings Selected:	Lot	Genetic Class/Worth	Germ %	Agency	Elev Min	Elev Max	Orchard No./ Location	Col. Year	Potential Trees	
C	392.2	54012	B	98	MOF 64	790	1490	RISKE CREEK (A93686-CP14)	2018 R	392.1	TG SR DT
	0								S	0	

Saved Quantity: R: 8301 S: 0

SPR20N Lot Selection

Request Key: 2022DCC0009

Seedlings Requested: 400.0 Potential Trees Selected:

Display: ☒ Trees ☐ Quantity (grams/cuttings) Refresh Back To Request

☒ Orchard ☐ Lat/Long

Potential Trees displayed in thousands; Seed Quantity displayed in Grams; Cutting Quantity displayed in thousands of cuttings. 63 rows returned

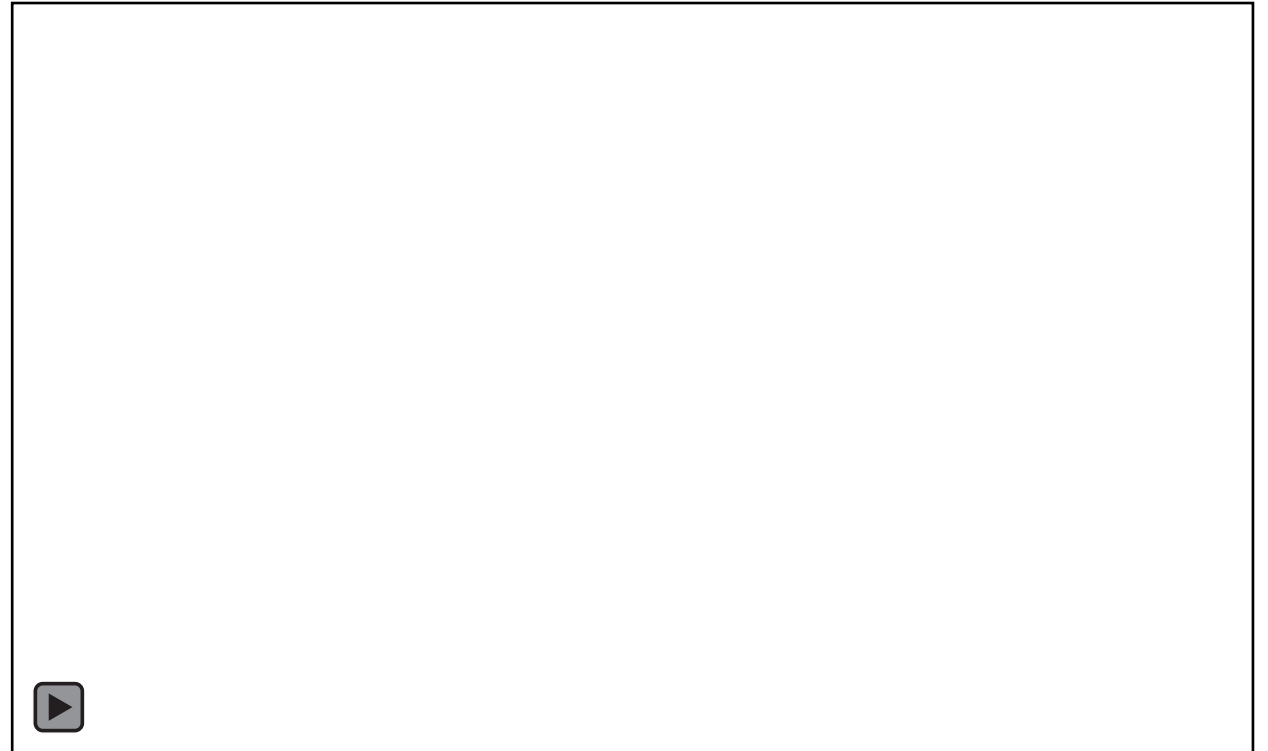
	Seedlings E / W:	Selected:	Lot	Genetic Class/Worth	Germ %	Agency	BEC	Elev Min	Elev Max	Orchard No./ Location	Col. Year	Potential Trees
<input type="radio"/>	C		54012	B	98	MOF	27 IDFxm	790	1490	RISKE CREEK (A93686-CP14)	2018 R	2609.2
<input checked="" type="radio"/>	C	392.2	54012	B	98	MOF	64 IDFxm	790	1490	RISKE CREEK (A93686-CP14)	2018 R	392.1
<input type="radio"/>	C		53856	B	98	BCTS	00 IDFdk1	1055	1755	SABISTON	2013 R	719.8
<input type="radio"/>	C		53960	B	98	ARML	00 IDFdk3	830	1530	ALKALI LAKE	2016 R	1909.3
<input type="radio"/>	C		53960	B	98	SECWRSS 00	IDFdk3	830	1530	ALKALI LAKE	2016 R	3.5
<input type="radio"/>	C		54028	B	98	TOLKO	01 IDFdk1	1123	1823	CHARTRAND CREEK	2018 R	582.3

Sowing guidelines = set of calculations that convert the number of seedlings requested by forest professionals to the quantity of seed that needs to be removed from long-term freezer storage for a seedling request

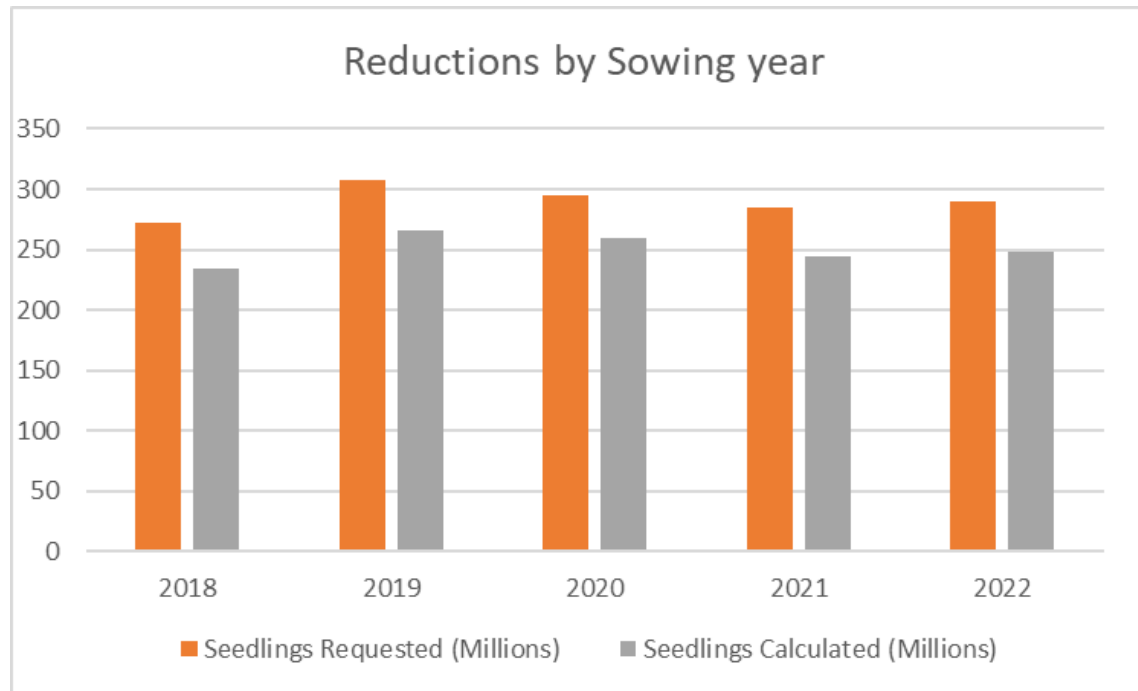
What's going on with the difference between seedlings requested and calculated?

The answer is: **Gram reductions!!!**

- Done by the nursery, the licensee or specified in Ministry sowing contracts
- In the nursery gram adjustment screen, nurseries can reduce grams using individual request keys, or pull up all requests being grown at their nursery



Quantifying Seed Savings

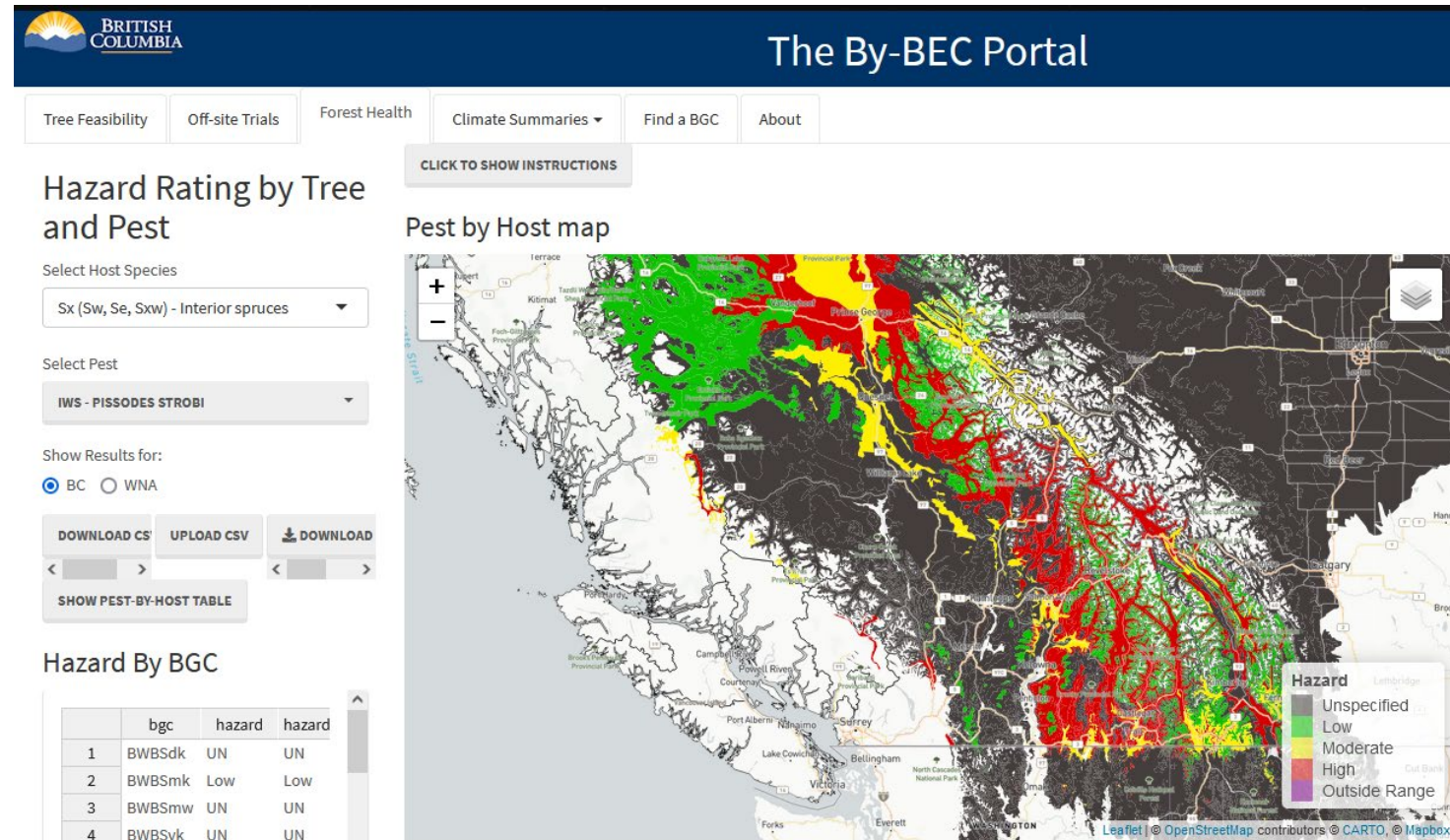


Over the last 5 years, nearly 200 million seedlings worth of seed has been saved

This equals an average of 40 million per sowing year!!

Saving seed continued

- Selecting the appropriate seedlot to meet management objectives saves valuable seed
- Resistant seedlots are in high demand
- Selecting resistant seedlots appropriately helps those that really need it, get it



<https://thebeczone.ca/shiny/bybecmap/>

Seedlot Selection Tool

[Instructions](#) | [I Have A Cutblock](#) | [I Have A Seedlot](#)

Species:

FDI

BEC Variant: (Select up to 3)

IDFdk3

GO

Clear

Procurement Areas

Plantation BEC	Seed BEC	Suitability	Limit
IDFdk3	ICHdw4	Suitable	
IDFdk3	IDFdk3	Suitable	
IDFdk3	IDFdk5	Suitable	
IDFdk3	IDFdm1	Suitable	
IDFdk3	IDFdm2	Suitable	
IDFdk3	IDFmw1	Suitable	
IDFdk3	IDFmw2	Suitable	

Seedlot	Orchard	GW	Class	Seed Bec
30459		0	B	ICHdw4
30460		0	B	ICHdw4
30515		0	B	ICHdw4
30516		0	B	ICHdw4
39261		0	B	ICHdw4
39262		0	B	ICHdw4
39267		0	B	ICHdw4



Seedlot Selection Tool

Instructions

I Have A Cutblock

I Have A Seedlot

Orchard Number:

Set Representative Seedlot

OR

Seedlot Number:

Set Species & BEC

OR

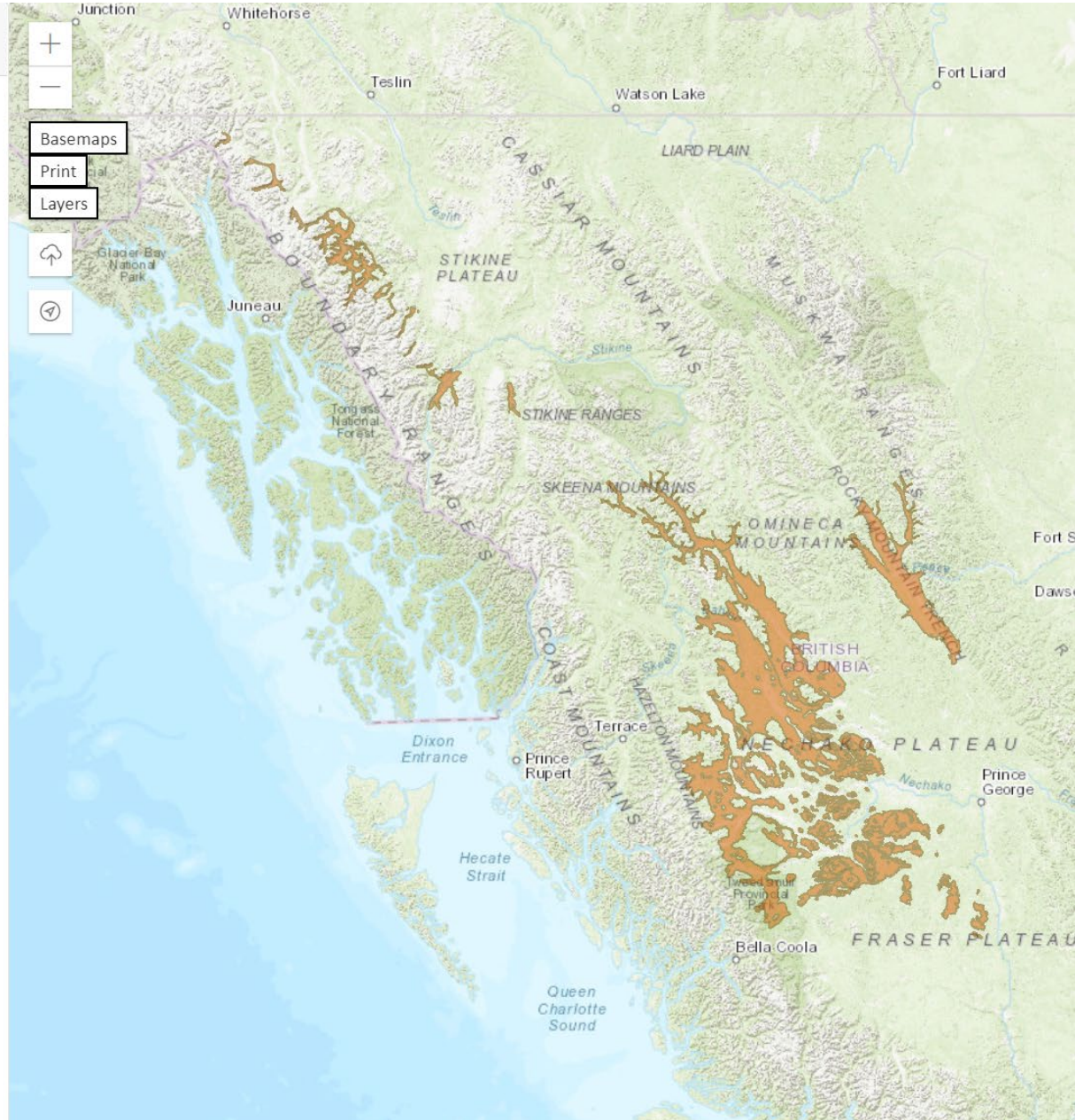
Species:

BEC Variant:

GO

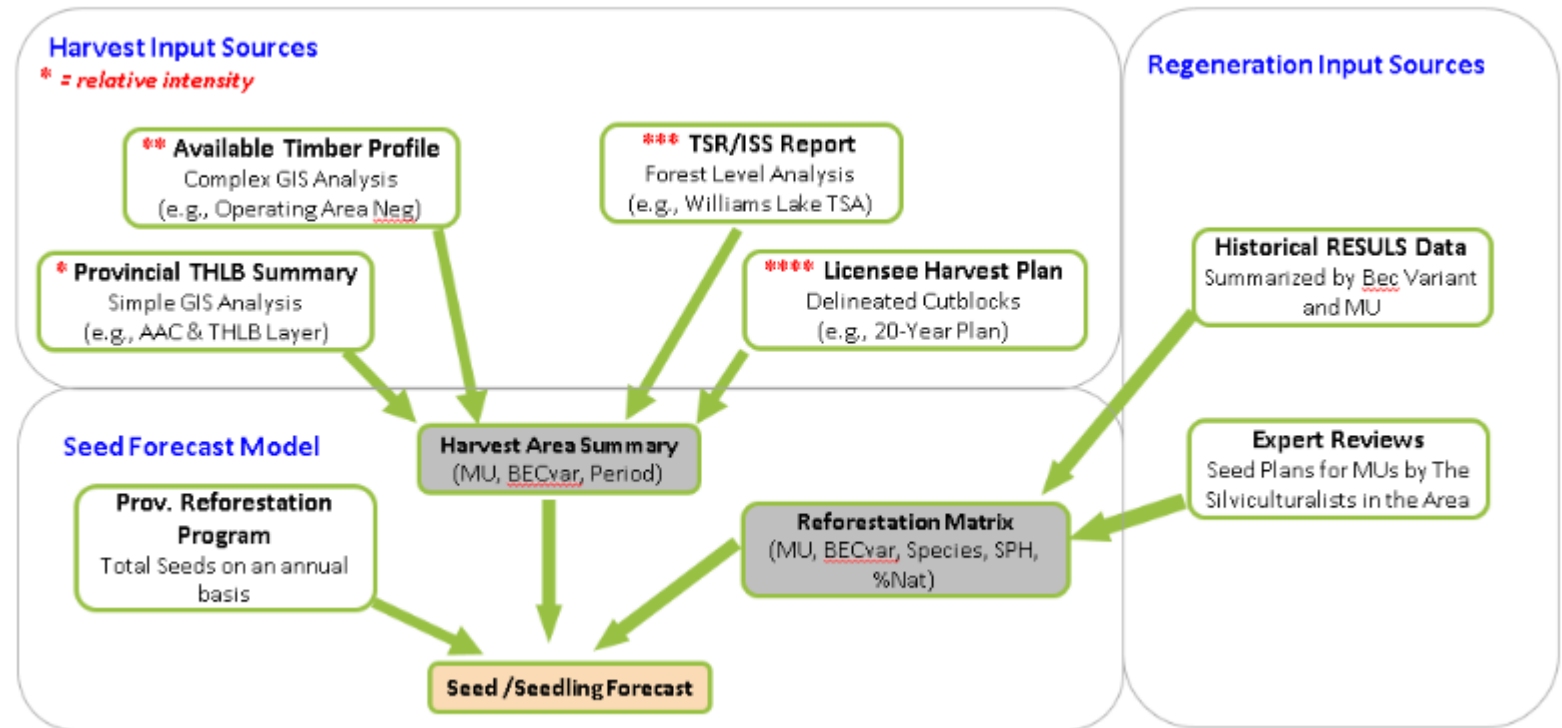
Deployment Areas

Plantation BEC	Seed BEC	Suitability	Limit
ESSFmv1	SBSdw3	Suitable	
SBSmc2	SBSdw3	Suitable	
SBSmc3	SBSdw3	Suitable	
SBSmk2	SBSdw3	Suitable	
SBSwk3	SBSdw3	Suitable	



Forecasting Seed Need

- goal was to estimate the number of seedlings by species required in the province over the next 30 years



Forecasting Seed Need Results

2019 Provincial Seedling Request		Annual Seedlings					
		2020-2024	2025-2029	2030-2024	2035-2039	2040-2044	2045-2049
117,700	AX	46,225	46,208	46,187	46,183	46,178	46,203
1,165,100	BA	2,161,146	2,152,131	2,040,778	2,032,405	2,040,602	2,038,429
39,700	BG	21,944	21,937	19,085	19,062	22,111	22,089
919,900	BL	1,956,890	1,879,199	1,879,035	1,868,740	1,864,906	1,860,331
112,400	BP	49,303	49,218	37,102	36,999	24,418	24,413
10,824,500	CW	15,454,377	15,161,429	14,919,857	14,790,724	14,492,026	14,356,643
78,600	DR	257,649	258,543	272,941	272,939	239,356	239,362
3,500	EP	2,850	2,850	2,850	2,850	2,850	2,850
13,463,400	FDC	9,841,599	9,835,021	9,928,330	9,921,185	9,953,557	10,006,727
41,023,800	FDI	31,888,866	28,970,657	28,462,406	28,095,024	27,767,986	27,149,767
69,300	HM	364,209	363,147	337,908	337,459	339,325	339,689
1,676,700	HW	3,294,808	3,293,082	3,218,768	3,215,402	3,182,300	3,179,803
9,430,600	LW	11,283,153	10,196,178	9,752,333	9,656,194	9,516,787	8,300,625
0	PA	16,156	16,156	16,156	16,156	16,156	16,156
29,300	PLC	53,071	53,722	54,706	54,706	54,180	54,180
119,681,200	Pli	76,550,453	65,239,235	62,308,970	62,369,470	62,574,578	60,771,876
2,082,500	PW	2,545,822	2,406,326	2,361,089	2,330,848	2,204,011	2,196,677
3,386,700	PY	2,563,866	2,462,708	2,419,360	2,385,625	2,372,498	2,264,667
12,000	SB	0	0	0	0	0	0
709,700	SS	1,544,126	1,534,217	1,556,633	1,553,950	1,606,801	1,605,579
101,744,900	SX	116,943,787	101,338,092	95,829,508	95,513,094	95,908,773	94,357,068
176,700	SXS	1,249,048	1,246,938	1,246,046	1,245,822	1,245,022	1,244,822

Orchard No
☒ 801
☒ 993
☒ 996

Species
FDI

B Vargroup
(All)

Grams/Seedlings
Seedlings

Seed Orchard Production

Year	2012	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040
Forecast	8M	10M	12M	14M	15M	16M	17M	18M	19M	20M	21M	20M	19M	18M	17M

Orchard No	B Vargroup	Old SPU	Orchard Location	Establishment Year	# Parents	# Ramets Current	# Ramets Planned	Recommended seeds/seedling	Wtd. Avg. seeds per gram	Estimated Seedlings Per Gra..	Volume (GW)	Resistance
225	FDI_SBSdh1	41 PG low 700-12..	VSOC (Vernon)	1996	30	1,602	540	1.89	96.91	51.28	GVO+27	
226	FDI_ICHmk3	37 QL low 700-14..	VSOC (Vernon)	1994	42	959	375	1.89	95.34	50.44	GVO+27	
231	FDI_SBSdw1	43 CT low 600-14..	VSOC (Vernon)	1995	31	1,894	1,000	1.89	99.2	52.49	GVO+28	
232	FDI_ICHmk3	37 QL low 700-14..	VSOC/SelectSeed	2001	36	618	975	1.89	85.39	45.18	GVO+28	
233	FDI_SBSdh1	41 PG low 700-12..	VSOC/SelectSeed	2002	41	700	786	1.89	86.87	45.96	GVO+28	
321	FDI_ICHdw1	21 NE low 400-12..	PRT/SelectSeed		40	2,082	2,199	1.89	85.92	45.46	GVO+25	
324	FDI_ICHmw2	22 NE high 1000-..	MFLNRO (Kalamal..	1999	38	2,253	2,457	1.89	86.49	45.76	GVO+34	
336	FDI_ICHmw1	39 EK all 700-1400	MFLNRO (Kalamal..	2004	31	1,066	1,144	1.89	97.43	51.55	GVO+24	
354	FDI_ICHmw3	53 TO high 1100-..	PRT/SelectSeed		45	1,979	2,100	1.89	86.0	45.5	GVO+20	
355	FDI_IDFmw1	52 TO low 600-10..	MFLNRO (Kalamal..	2013	24	355	1,892	1.89	86.0	45.5	GVO+17	

Legend
Forecast
Future
Historical

Orchard Supply vs. Planting Demand

Year	Historical Supply	Future Demand
2012	10M	0M
2014	12M	0M
2016	14M	0M
2018	16M	0M
2020	18M	0M
2022	0M	30M
2024	0M	28M
2026	0M	28M
2028	0M	25M
2030	0M	25M
2032	0M	25M
2034	0M	25M
2036	0M	25M
2038	0M	25M
2040	0M	25M

Storage Status
Reserve Avail
Surplus Avail

Seedlings/Grams in Storage

Year	Reserve Avail	Surplus Avail
19	0M	0M
23	0M	3.5M
24	5.0M	0M
25	5.0M	0.5M
26	5.5M	2.5M
27	1.5M	0.5M
28	1.5M	0.5M
29	1.5M	0M
34	1.0M	0M

tableau

Navigation icons: back, forward, search, etc.

Supply and Demand Graphs

Bank Status Graphs

Map

Species

FDC

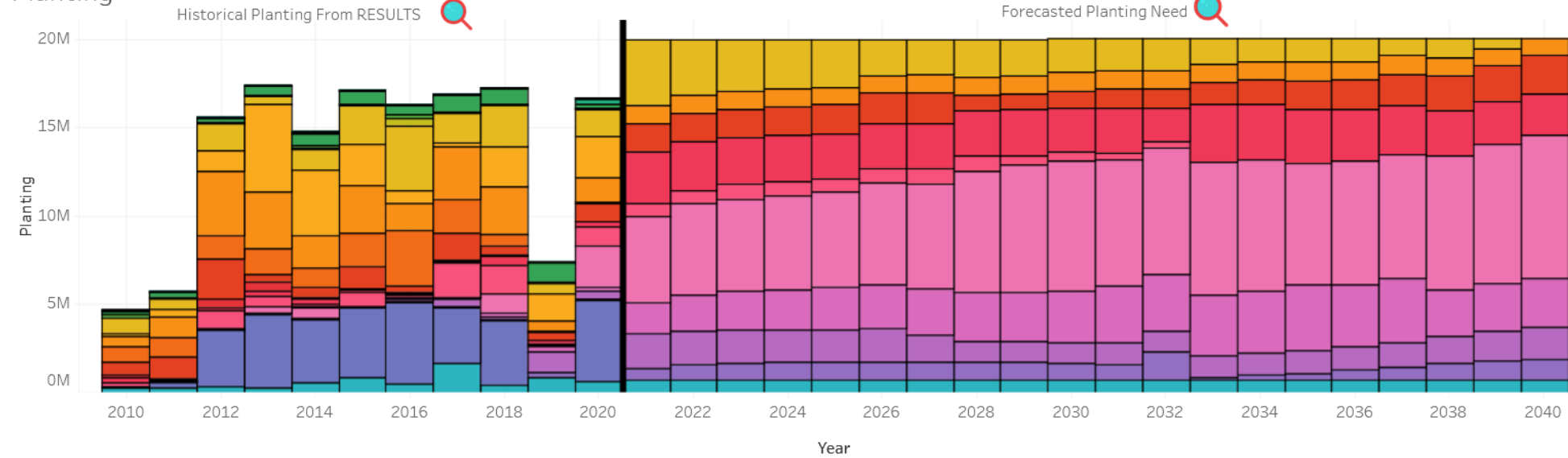
Orchard BEC Variant Gr...

- ☒ (All)
- ☒ Null
- ☒ FDC_CDFmm
- ☒ FDC_CWHdm
- ☒ FDC_CWHmm1
- ☒ FDC_CWHms2
- ☒ FDC_CWHvm1
- ☒ FDC_CWHvm2
- ☒ FDC_CWHxm1
- ☒ FDC_CWHxm2
- ☒ No Orchard

Management Unit

(All)

Planting



Grams/Seedlings

Seedlings

Display Options

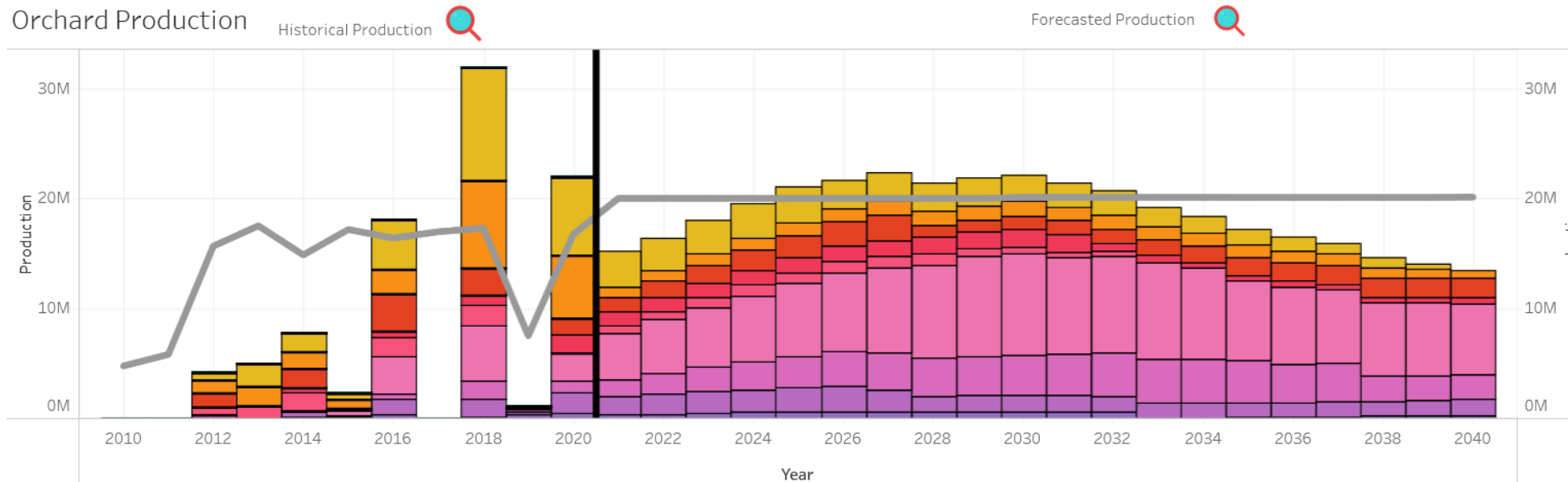
Orchard No

- 101
- 110
- 111
- 114
- 116
- 120
- 121
- 123
- 124
- 134
- 149
- 154

Orchard Status

- ☒ (All)
- ☒ Null
- ☒ No Orchard
- ☒ Producing
- ☒ Retired

Orchard Production



Summary of what we've reviewed:

- the uses and data available in SPAR
- Saving seed in SPAR
- the Seedlot Selection Tool
- Seed Orchard Dashboard
- Seed Supply and Demand Dashboard



Questions?

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