

Forecasting Seedling Need

ITAC

January 23, 2020



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Brian Barber
Kat Gunion

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Agenda

- Project Overview
- Methods
- Preliminary Results
- Observations
- Next Steps



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Overview - Purpose & Goals

- Estimate seedling needs to 2049 by...
 - Species
 - BEC variant
 - Management Unit
- Guide seed planning and investments
- Updatable - new information & sensitivity analysis



Project Plan and Website at: <https://arcg.is/DHOPX>

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Overview - Sponsors

- Vernon Seed Orchard Co. (VSOC) – Jeff Mycock
- Forest Improvement and Research Management Branch – Pat Martin
- BC Timber Sales – Mark Hay
- Select Seed Co. Ltd – Brian Barber

Project Team

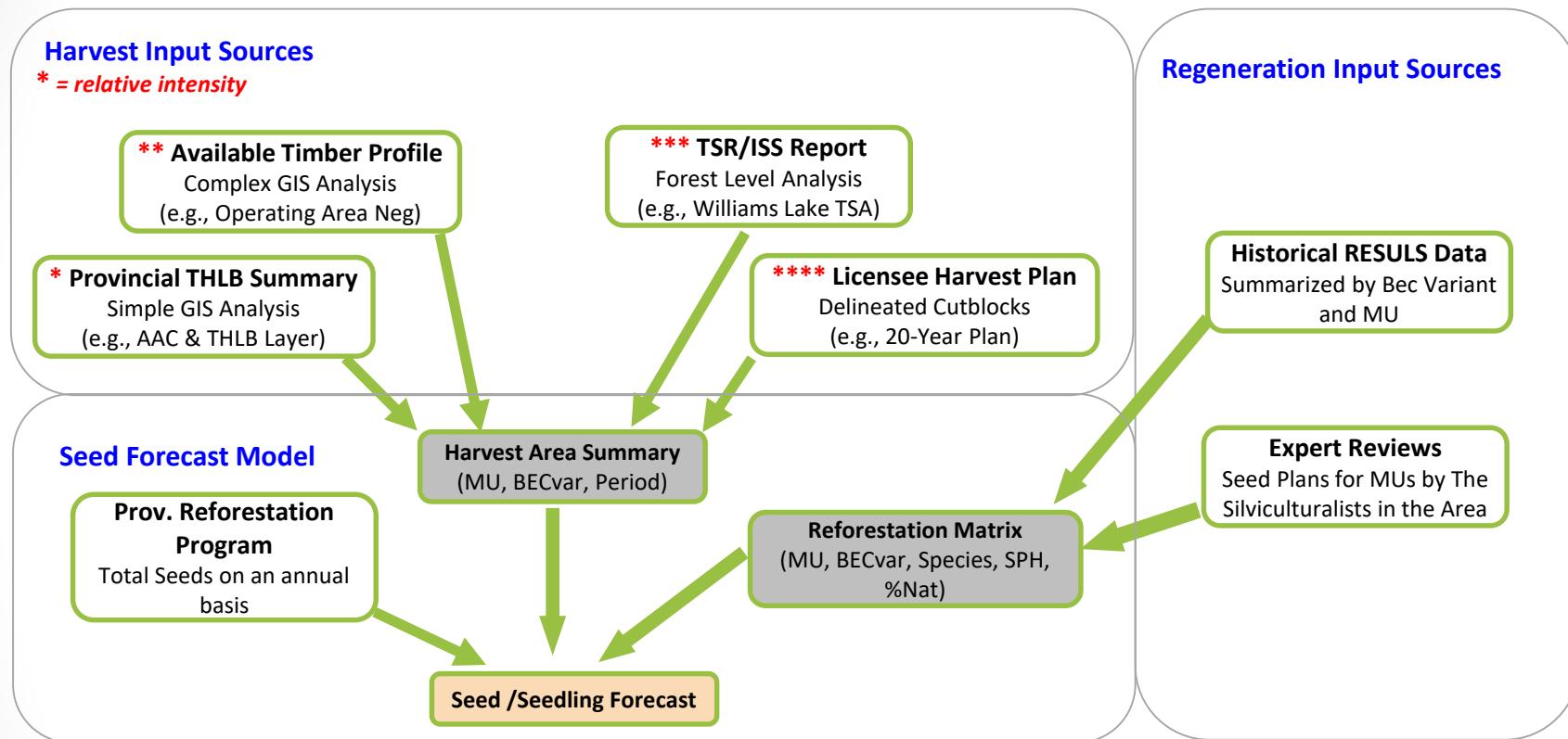
- Jeff Mycock, VSOC
- Kevin Astridge & Stephen Joyce, FIRM
- Kona Van Diest, BCTS
- Brian Barber, SelectSeed/FGC
- Pat Bryant & Kat Gunion, Forsite.



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Overview - Approach



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Methods

Reforestation Matrix

- Started with recent (3,5, & 10 year) performance by MU
- Requested Expert Feed Back

Management Unit	MAP_LABEL	NAT	SPH	SPP_01	SPP_PERC_01	SPP_02	SPP_PERC_02	SPP_03	SPP_PERC_03	SPP_04	SPP_PERC_04
Kamloops TSA	MSdm2		0%	1,400 PLI		20% SX		40% FDI		30% LW	
Kamloops TSA	MSdm3		0%	1,400 PLI		20% SX		40% FDI		30% LW	
TFL23	ICHxw		0%	1,200 FDI		45% PY		25% LW		20% PW	
TFL35	MSdm3		0%	1,800 SX		40% PLI		20% FDI		30% LW	
TFL8	ESSFmh		0%	1,200 SX		50% PLI		20% LW		20% FDI	
100 Mile House TSA	ICHmk3		0%	1,400 SX		40% PLI		10% FDI		35% CW	
Kamloops TSA	ICHdw3		0%	1,400 FDI		35% SX		40% PLI		10% CW	
Prince George TSA	SBSdw3		1%	1,501 PLI		40% SX		40% FDI		10% LW	
TFL8	ICHmk1		0%	1,200 FDI		30% LW		30% SX		25% PLI	
100 Mile House TSA	ICHdk		0%	1,400 PLI		10% SX		40% FDI		35% CW	
100 Mile House TSA	ICHmw3		0%	1,400 PLI		10% SX		40% FDI		35% CW	
TFL23	ESSFdc1		0%	1,400 SX		60% PLI		15% BL		10% FDI	
TFL8	IDFdm1	5%		1,200 FDI		50% LW		20% PY		15% PLI	

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Summary of Expert Input

- Expert Input Received from
 - Licensees (FLs and TFLs)
 - BCTS
 - District/TSA Working Groups
 - Government Programs (e.g. FFT)
 - Forest Analysis and Inventory Br.

Table of Status of Expert Input

Forecasting Seedling Need



Forecasting Seedling Need

Historical Regeneration Assumptions	Status of Expert's Regeneration Projection	Status of Expert's Harvest Projection
<u>100 Mile House TSA</u>	West Fraser(Dec 2019)	In Progress
<u>Arrow TSA</u>	Jan 2020	
<u>Arrowsmith TSA</u>		
<u>Boundary TSA</u>	Dec 2019	
<u>Bulkley TSA</u>	Nov 2019	In Progress
<u>Cascadia TSA</u>		
<u>Cassiar TSA</u>		

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Preliminary Results – Forecasting Seed Need

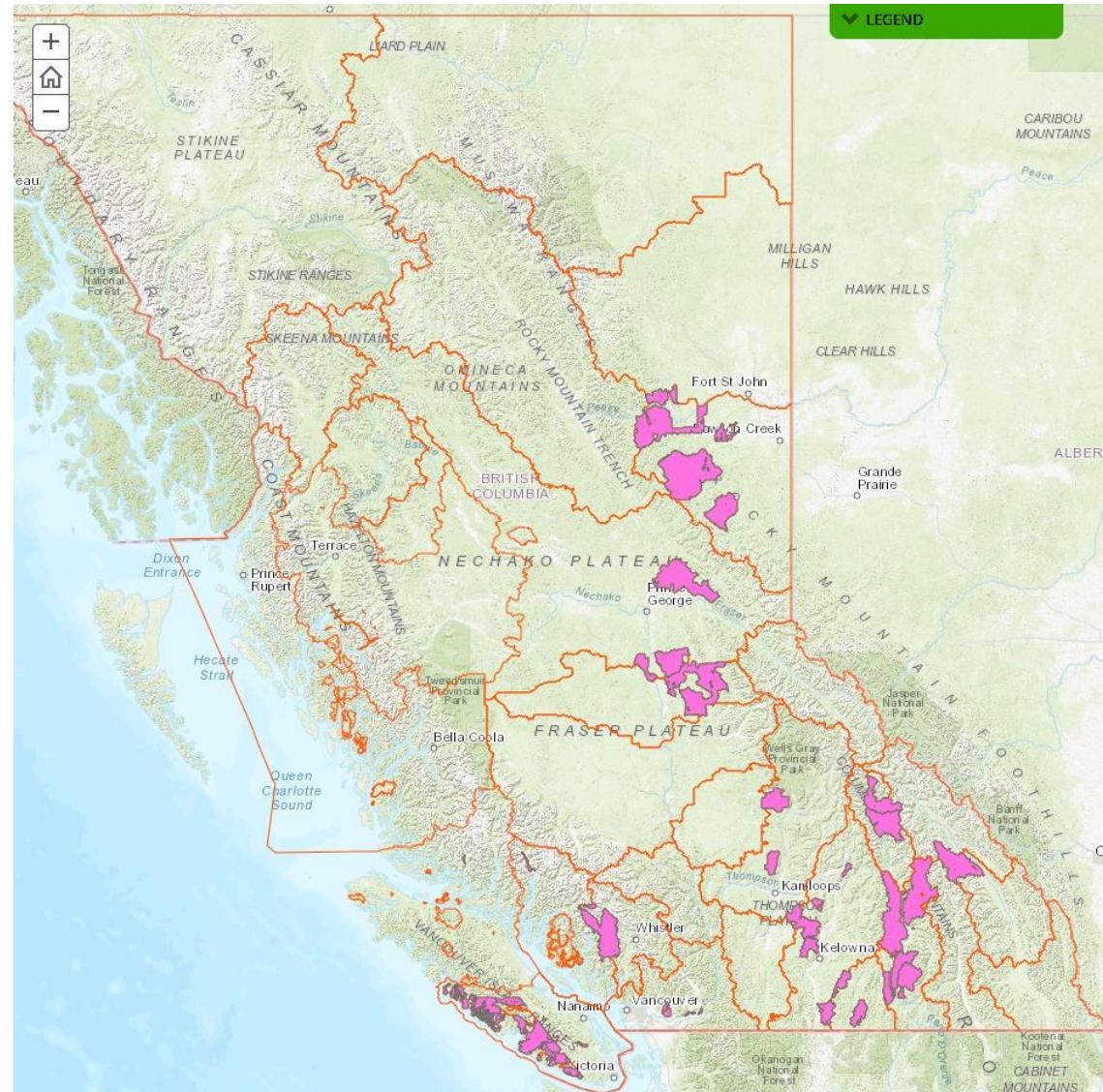
- Estimates by Species
- Estimates for new Pli breeding zones

Go to Spreadsheets

Annual Seedlings	2020-2024	2025-2029	2030-2024	2035-2039	2040-2044	2045-2049
AX	21,211	21,211	21,211	21,211	21,211	21,211
BA	1,983,725	1,980,840	1,869,837	1,861,610	1,869,985	1,867,849
BG	15,794	15,788	13,014	12,992	16,002	15,980
BL	2,135,791	1,965,928	1,943,524	1,928,025	1,923,504	1,919,972
BP	46,310	46,261	32,405	32,344	20,827	20,824
CW	14,627,276	14,324,935	14,042,642	13,914,056	13,635,611	13,501,166
DR	233,907	234,800	260,111	260,108	221,201	221,209
EP	2,544	2,544	2,544	2,544	2,544	2,544
FDC	9,049,257	9,042,731	9,175,030	9,168,686	9,183,463	9,236,846
FDI	28,037,187	25,341,617	25,064,475	24,727,948	24,427,241	24,206,804
HM	329,056	328,538	303,437	303,033	305,153	305,526
HW	3,261,083	3,258,703	3,191,847	3,187,689	3,148,747	3,146,254
LW	6,722,147	6,182,480	5,981,929	5,927,220	5,903,224	5,848,871
PA	14,778	14,771	14,767	14,767	14,767	14,767
PLC	52,238	52,889	53,874	53,874	53,348	53,348
PLI	69,977,015	59,033,830	56,318,130	56,431,110	56,479,368	56,121,506
PW	2,304,538	2,157,707	2,123,656	2,097,185	1,967,446	1,968,915
PY	2,327,782	2,249,185	2,234,401	2,187,071	2,172,141	2,126,463
SB	11,779	8,490	6,703	6,703	6,703	6,703
SS	1,511,299	1,501,389	1,525,488	1,522,806	1,574,832	1,573,610
SX	115,474,505	99,084,940	93,630,987	93,563,153	93,855,521	93,402,863
SXS	1,228,324	1,226,026	1,225,043	1,224,819	1,224,018	1,223,819
YC	1,884,204	1,856,297	1,524,144	1,515,433	1,428,053	1,443,296
Total	261,251,752	229,931,903	220,559,198	219,964,387	219,454,911	218,250,347

Observations

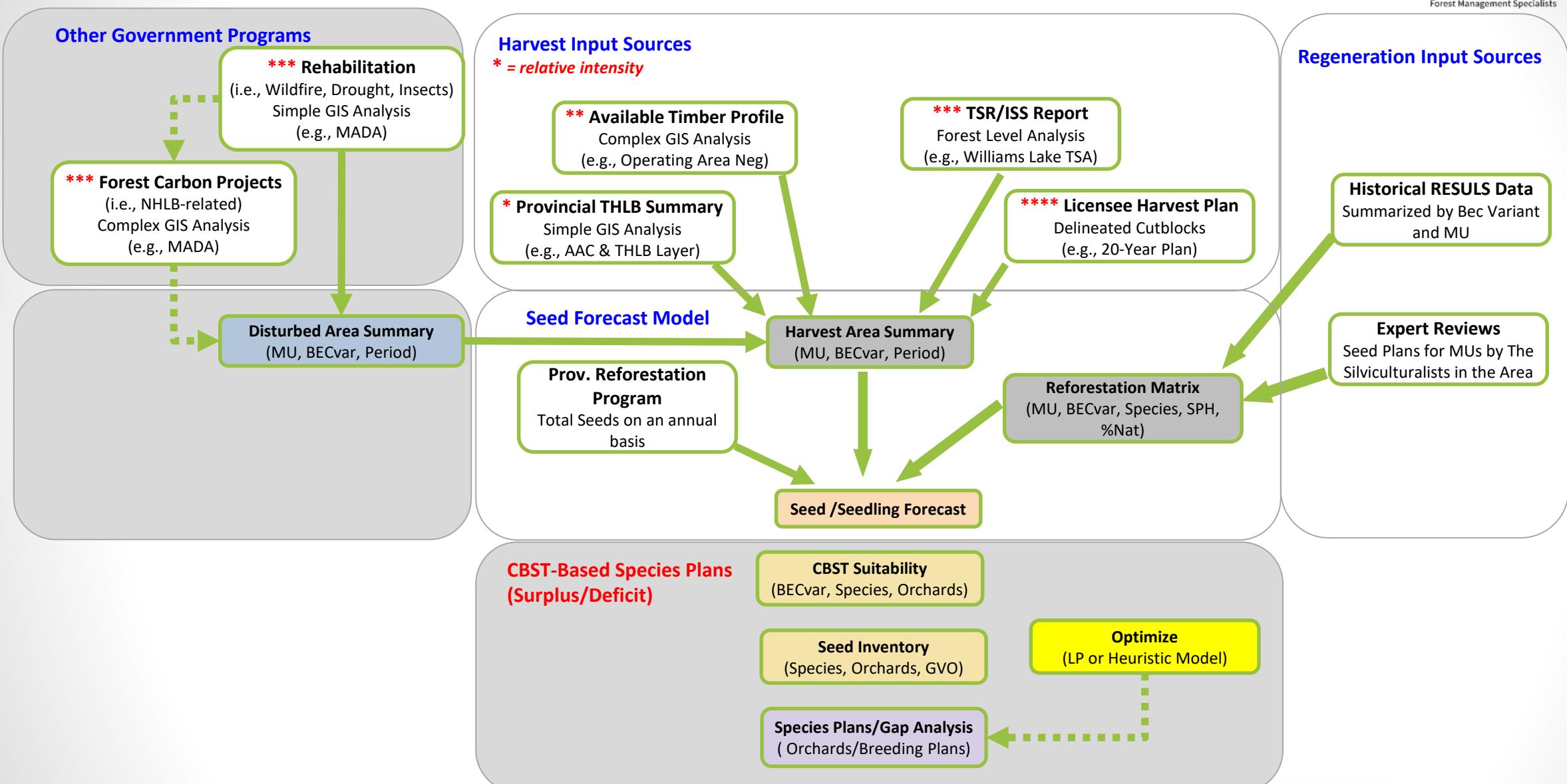
- Harvest flow is critical
- Overall numbers very sensitive to SPH and % Natural
- Does not include:
 - FES programs
 - Section 108
 - Small Tenure Holders (i.e., CFAs, FNWL...)



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Future Directions



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Next Steps

- Solicit assistance to fill in gaps
 - Regeneration assumptions
 - Timber supply & harvest forecasts
 - Non-harvest Drivers
 - Government Programs
- Project Team to finalize #s and report by Feb 28.
- Apply outputs to tree improvement plans:
 - # orchard ramets required for CBST zones
 - FGC Species Plans
 - Tree Improvement Investment Priorities



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Questions?

Website: <https://arcg.is/DH0PX>



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