

First Nation Volume Tenures Operating Area

Fraser TSA

181,551 M3/Yr

Tuesday, September 12, 2017

A General Comments

- 1 The economic zones are well balanced to the TSA a slightly lower representation in the poor zone where this is currently little FN uptake.
- 2 Age class is marginally overweight to second growth volume opportunity.
- 3 Slope as a indicator of harvest method is well correlated to the residual TSA.
- 4 Species distribution is also very well correlated to the residual TSA.

B FN Volume Based Operating Area Volume Summary

Total FN TSA Allocation	267,115
Total FN Allocation within proposed FNWL	124,580
Estimate of FN Volume outside of FN Operating Area	17,500

Total FN AAC required from FN Operating Areas 125,035

Total other allocations in TSA 56,516

Total potential Annual Volume From Area 181,551 M3

C Unresolved Issues

- 1 The expectation that these areas will be retained only for First Nation TSA allocation outside of FNWLs.
- 2 Further subdivision and assignment if desired by individual First Nations volume tenures.

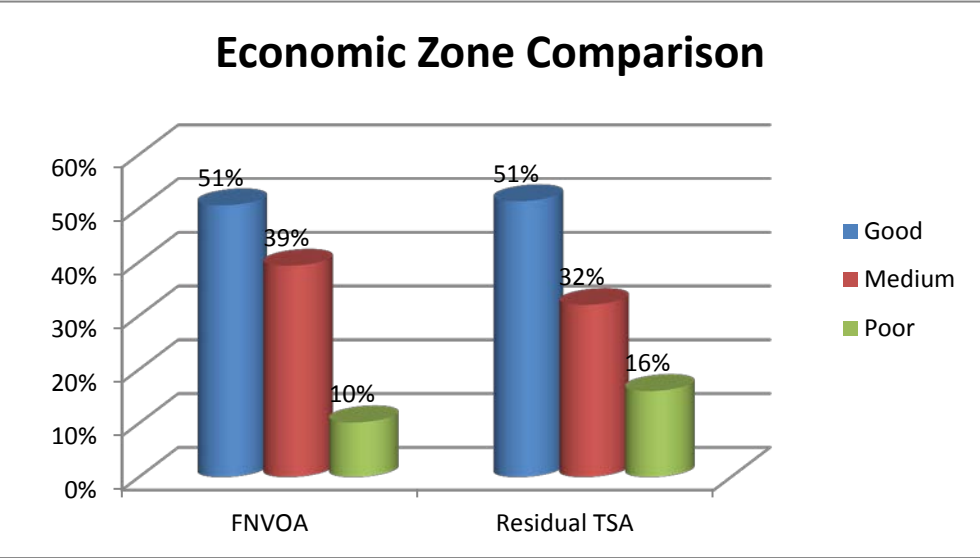
D Target Volume Position:

	<u>FNVOA</u>	<u>Residual TSA</u>
Total THLB Volume:	9,224,576	57,074,507
AAC Estimate	181,551	1,030,349
% of THLB Volume	16%	-
% of AAC	18%	100%
Years of AAC	51	55
Other Comparisons Requested by Tenure Holders:		
Ave Market Value	\$ 97.13	\$ 99.30
Volume per THLB Ha	452.4	461.8
% old HB>70%	8%	8%

E Summary:

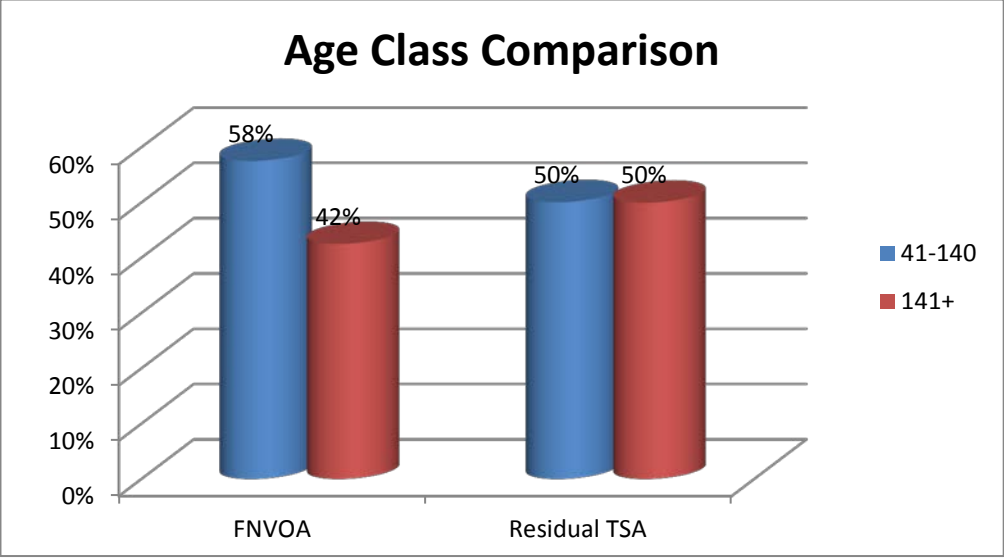
These areas are extremely well matched to the residual TSA criteria in all but age class distribution. Until First Nation clarify their intent to either pursue area based FNWL tenure, or carry on with volume based NRFL tenure, or even engage government at all on a tenure, the opportunity and flexibility afforded from these areas is believed to stabilize the existing major tenure holders operating area. It should be noted that for this exercise the allocations for Forest Service Reserve, Hardwood AAC and other miscellaneous allocation were assigned to this area, even though they may actually be generated from certain timber profiles throughout the residual TSA.

Comparison Graphs - First Nation Volume Tenures Operating Areas Compared to Residual Fraser TSA

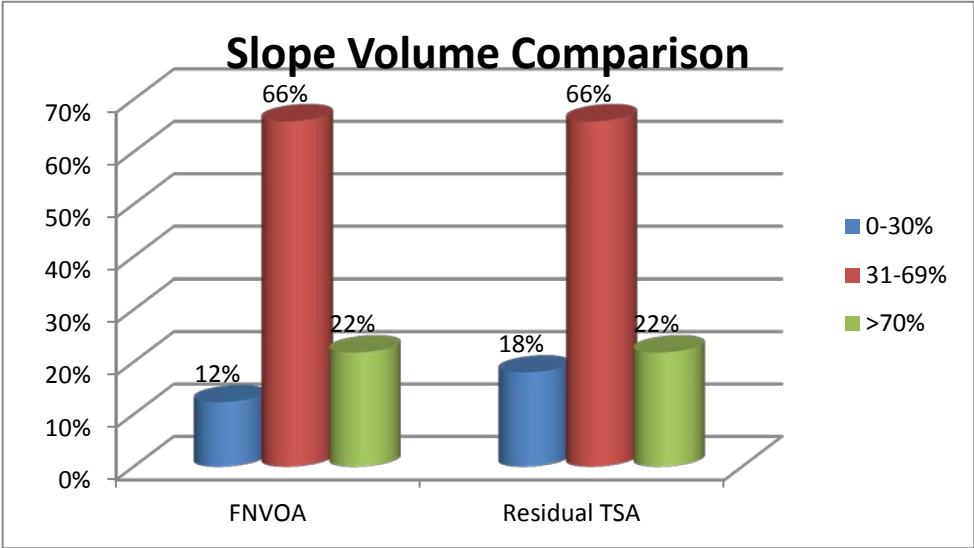


Economic Zone thlb Volume			
	Good	Medium	Poor
FNVOA	51%	39%	10%
Residual TSA	51%	32%	16%

100%

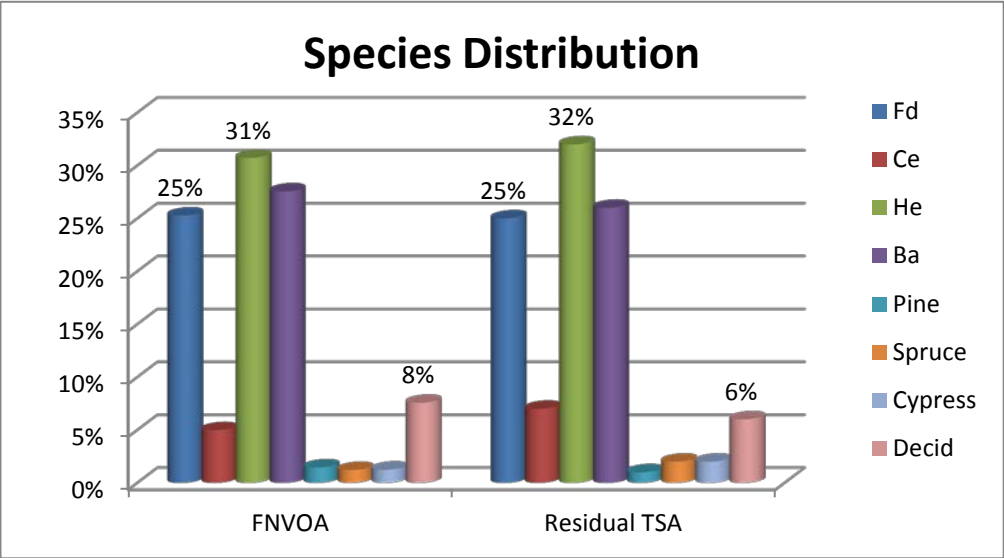


Age Class thlb Volume		
	41-140	141+
FNVOA	58%	42%
Residual TSA	50%	50%



Slope thlb Volume			
	0-30%	31-69%	>70%
FNVOA	12%	66%	22%
Residual TSA	18%	66%	22%

100%



Species thlb Volume Distribution								
	Fd	Ce	He	Ba	Pine	Spruce	Cypress	Decid
FNVOA	25%	5%	31%	28%	1%	1%	1%	8%
Residual TSA	25%	7%	32%	26%	1%	2%	2%	6%

Timber Harvesting Land Base (THLB): Based on Fraser TSA TSR 4 Timber Supply Analysis using a compilation of the best available information.

August 2017 Version 3 - Licensee Operating Area Analysis Forest Cover Data Sources:

Vegetation Resource Inventory: Attributes projected to 2016

Change Detection Mapping: Denudation current to April 2017 using RESULTS forest_cover_inv_svw dataset and Landsat imagery

Burn Severity Mapping: Wildfire V10247 (Cougar Creek) & V10370 (Wood Lake) forest cover updated for Low, Medium & High severity burn

August 1, 2017 Licensee - Economic Zones	Total THLB Area (ha)	Total THLB Vol (m3)	Total Annual Yield (m3/yr)	Slope 0-30 %										Slope 31-69 %										> 69%												
				Slope THLB Area (ha)	THLB Volume (m3)								Slope THLB Volume m3	Annual Yield m3/yr	Slope THLB Area (ha)	THLB Volume (m3)								Slope THLB Volume	Annual Yield m3/yr	Slope THLB Area (ha)	THLB Volume (m3)								Slope THLB Volume	Annual Yield m3/yr
					FIR	CEDAR	HEMLOCK	BALSAM	PINE	SPRUCE	CYPRESS	DECIDUOU				FIR	CEDAR	HEMLOCK	BALSAM	PINE	SPRUCE	CYPRESS	DECIDUOU				FIR	CEDAR	HEMLOCK	BALSAM	PINE	SPRUCE	CYPRESS	DECIDUOU		
First Nations Vol Tenures Operating Area																																				
Good																																				
41-140 Years	5,964	2,830,559	28,073	887	112,751	25,445	122,782	92,756	7,215	40	535	81,085	442,610	4,347	3,765	439,610	90,730	581,848	386,361	20,916	3	2,778	272,819	1,795,066	17,632	1,312	200,741	23,607	199,722	57,048	8,121	20	338	103,288	592,883	6,095
141+ Years	2,344	1,832,235	9,056	171	15,946	2,901	42,240	50,984	2,023	51	9,022	3,301	126,468	586	1,609	158,943	76,503	453,799	482,083	635	74	80,740	8,907	1,261,683	6,143	564	71,846	35,950	197,098	117,835	0	3	19,147	2,204	444,084	2,327
Good Total	8,307	4,662,794	37,129	1,058	128,697	28,347	165,022	143,740	9,238	91	9,557	84,387	569,078	4,933	5,374	598,553	167,233	1,035,647	868,444	21,551	77	83,519	281,726	3,056,749	23,775	1,876	272,587	59,558	396,820	174,883	8,121	23	19,485	105,491	1,036,967	8,421
Medium																																				
41-140 Years	5,965	2,075,474	24,501	985	74,753	17,118	96,017	118,011	293	2,628	0	41,436	350,255	3,917	4,045	379,438	61,955	399,566	455,366	10,278	4,113	223	127,015	1,437,953	16,719	936	93,091	19,455	80,168	51,146	3,932	918	0	38,556	287,265	3,865
141+ Years	2,575	1,549,395	10,224	219	13,564	3,521	31,147	67,977	0	7,703	102	156	124,171	770	1,328	146,700	42,690	316,480	313,627	1,537	16,730	1,019	991	839,773	5,364	1,029	142,443	41,266	253,854	141,702	433	3,976	0	1,777	585,452	4,090
Medium Total	8,541	3,624,869	34,725	1,204	88,317	20,639	127,164	185,988	293	10,331	102	41,592	474,426	4,687	5,372	526,137	104,645	716,046	768,993	11,814	20,843	1,242	128,006	2,277,726	22,083	1,965	235,534	60,721	334,022	192,848	4,365	4,894	0	40,333	872,717	7,955
Poor																																				
41-140 Years	2,002	398,774	6,267	228	16,014	2,094	900	10,249	4,798	770	41	2,318	37,184	704	1,506	198,923	3,312	4,857	39,606	61,236	2,986	594	11,196	322,711	4,758	268	26,811	291	1,708	3,266	4,825	287	322	1,367	38,879	805
141+ Years	1,540	538,139	4,787	161	8,584	275	5,442	30,420	456	11,755	89	92	57,112	474	1,164	188,343	11,162	41,905	112,572	6,516	53,774	98	1,369	415,740	3,680	215	42,467	881	4,038	10,745	628	6,182	0	345	65,287	634
Poor Total	3,542	936,913	11,054	390	24,598	2,368	6,342	40,669	5,254	12,525	130	2,410	94,296	1,178	2,670	387,266	14,474	46,763	152,179	67,752	56,760	692	12,565	738,451	8,437	482	69,278	1,172	5,746	14,011	5,453	6,470	322	1,713	104,165	1,439
First Nations Op Area Total	20,390	9,224,576	82,908	2,651	241,612	51,354	298,527	370,397	14,785	22,947	9,789	128,389	1,137,800	10,797	13,416	1,511,956	286,351	1,798,455	1,789,615	101,117	77,680	85,453	422,297	6,072,926	54,295	4,323	577,400	121,451	736,588	381,743	17,939	11,386	19,807	147,537	2,013,850	17,816

Hem Bal Old >70% in Poor

Residual TSA																																							
123,579	57,074,507	504,598		22,405	2,386,056	632,253	2,965,440	2,515,389	158,785	332,649	110,617	1,020,192	10,121,380	90,264	81,315	8,884,561	2,270,328	11,670,255	10,194,944	523,773	787,622	617,496	1,900.58	36,849,560	332,780	19,859	2,736,092	972,868	3,579,996	2,130,710	57,285	49,341	218,877	358,397	10,103,566	81,554			
18%	24%	6%	29%	25%	2%	3%	1%	10%					100%		66%	24%	6%	32%	28%	1%	2%	2%	0%	100%	66%	16%	27%	10%	35%	21%	1%	0%	2%	4%	100%	16%			

Check123,57957,074,506

RESIDUAL FRASER TSA PROFILE			
Economic Zone		Species Distribution	
Good		Species	Volume % Dist.
41-140 Years	16,600,506	Fd	14,006,709 25%
141+ Years	12,682,955	Ce	3,875,448 7%
Good Total	29,283,461	He	18,215,691 32%
Medium		Ba	14,841,044 26%
41-140 Years	9,207,428	Pine	739,842 1%
141+ Years	9,298,700	Spruce	1,169,611 2%
Medium Total	18,506,128	Cypress	946,990 2%
Poor		Decid	3,279,171 6%
41-140 Years	2,755,539	Check	57,074,507 100%
141+ Years	6,529,378		
Poor Total	9,284,918		

Check57,074,507

Total Age Class			Slope Criteria		
41-140 years	28,563,473	50%	0-30	10,121,380	18%
>140+ years	28,511,034	50%	31-69	36,849,560	65%
			>70+	10,103,566	18%
	Check	57,074,507	Check	57,074,507	

FNDA Species Distribution		%
Fd	2,330,968	25%
Ce	459,156	5%
He	2,833,571	31%
Ba	2,541,755	28%
Pine	133,841	1%
Sp	112,014	1%
Cyp	115,049	1%
Dec	698,222	8%
Check	9,224,576	100%

Hem-Bal Old >70% in Poor

TSA301,464

Weighted Average Market Value of THLB Volume Position

9,224,576

Source 3month Vancouver Log Price

First Nation Volume Tenure Operating Area

Residual TSA Volume Total

9,224,576

TSA Total

Species	%	Volume	\$/m3	Total Value
Fi	25%	2330968	\$ 164.86	\$ 384,283,376.31
Ce	5%	459156	\$ 232.55	\$ 106,776,736.59
He	31%	2833571	\$ 58.68	\$ 166,273,932.05
Ba	28%	2541755	\$ 58.68	\$ 149,150,194.72
Pine	1%	133841.1	\$ 49.15	\$ 6,578,291.57
Spruce	1%	112013.7	\$ 64.88	\$ 7,267,450.14
Cypress	1%	115048.9	\$ 122.81	\$ 14,129,153.28
Dec	8%	698222.3	\$ 88.11	\$ 61,520,366.77
<i>Check</i>		9224576		\$ 895,979,501.42
			AMV	\$ 97.13

Species	Value	% Dist.
Fd	\$ 164.86	25%
Ce	\$ 232.55	7%
He	\$ 58.68	32%
Ba	\$ 58.68	26%
Pine	\$ 49.15	1%
Spruce	\$ 64.88	2%
Cypress	\$ 122.81	2%
Decid	\$ 88.11	6%
<i>Check</i>		57,074,507
		AMV \$ 99.30