

2016 Free Growing Monitoring Project: ***Coast Area Free Growing Precision Standards Summary***

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1. Executive Summary of Findings

Free Growing Compliance Report Details

- Out of 27 randomly selected Standards Units monitored in 2016 in the Coast Area TSAs, all but 7 were deemed to be Free Growing (FG). This suggests the licensees' declarations proving **free growing obligations had been met were questionable 26% of the time**, based on this small sample;
- Of the sample population, **0% are fully compliant** with the Chief Forester's precision standards for reporting forest cover into RESULTS, when compared to survey data from a third party consultant;
- The discrepancies when comparing the consultant survey data and the licensee RESULTS submission data are summarized as follows:
 - 7 SUs (26%) were deemed not FG having not met minimum heights (1-4 growing seasons predicted to achieve the prescribed minimum standard) or being impacted by some level of brush competition;
 - 23 SUs (85%) did not meet the 20% allowable error for total density (stems/ha) reported;
 - 15 SUs (56%) did not meet the 10% allowable error for FG density (stems/ha) reported;
 - 6 SUs (22%) did not meet the 20% allowable error for species composition reported as the inventory component;
 - 2 SUs (7%) did not meet the 20% allowable error for species composition reported as the silviculture component;
 - 11 SUs (41%) had estimates of Site Index (height at 50 years) greater than 3 years;
 - 10 SUs (37%) did not have the ecosystem classification correct.
- This 2016 audit is a small but unbiased sample of 27 Standard Units (SUs) of the total population **of 1,482 SUs declared free growing in 2015. This represents a 1.8% check of Coast Area standards units:**
 - The 2016 sample population was constrained to a minor extent by access restrictions paired with safety considerations, however, some 'helicopter access only' SUs were sampled. The Coast Area SU population was selected using the following parameters:
 - 2015 FG declarations made at the SU level by TSA (not TFLs);
 - SUs greater than 1 ha and less than 60 ha
 - Multi-storey surveys acceptable in population

2. Implications and Recommendations

- Free Growing Declarations have not adequately been monitored over the past 4 years;
- It is the Resource Practices Branch mandate to monitor and determine if correct data is reported into corporate databases to the Chief Forester's precision standards and to take corrective action to ensure consistency in reporting accuracy (i.e. promote training, etc.);
- Accurate reporting of forest cover at the free growing milestone helps ensure:
 - Growth and yield modelling projections remain as accurate as possible to inform the timber supply review and subsequent AAC determinations by management unit;
 - Legal reforestation obligations of tenure holders have been met within the free growing assessment period;
 - Forest health factors have been correctly identified.

- With a **recommendation** to continue monitoring efforts, the ministry may continue to provide funding for free growing inspections on an annual basis. This will allow RPB to continually assess forest cover submission data, and generate a full unbiased picture of the level of compliance with the Chief Forester's precision standards for reporting to RESULTS, and tailor training needs to address significant deficiencies in data collection.

3. Free Growing Compliance Report Summary Matrix

Data Source: monitoring contract performed by Silver Fir Consultants in 2016.

Non-compliance reporting breakdown of the 27 Standards Units sampled in the Coast Area TSAs:				
Reporting Data Element	Number of Standards Units	Average % difference	Range % difference	Comments / Implications
FG Status not met	7	-	-	Professional Reliance for the submitting forester; providing milestone submissions that may not be reflective of legal reforestation obligations being satisfied.
Total INV Sph > 20%	23	50%	15%-86%	No change in leading spp, but this has implications for future value and volume forecasts in TSR. CF Precision Standard is 20%
FG Sph > 10%	15	36%	20% – 83%	This will impede future comparisons with SDM to assess how well stands are growing after free growing. CF Precision Standard is 10%
INV Leading Species Composition > 20%	6	33%	25% - 40%	Represents a change in leading spp, or greater than 20% spp composition error. This has implications for future value and volume forecasts in TSR. CF Precision Standard is 20%
SILV Leading Species Composition > 20%	2	32%	31%-33%	Represents a change in leading spp, or greater than 20% spp composition error. This has implications for future value and volume forecasts in TSR. CF Precision Standard is 20%
Site Index > 3m	11	4.8 m	4 m – 6 m	Wrong SIBEC. This can be equivalent to significant volume over estimate or under estimate. CF Precision Standard is 3 m
BEC Site Series Incorrect	10	-	-	This has implications for site productivity estimates and prioritizing future silviculture treatments.
Forest Health > 10%	0	0	0	Slightly more forest health factors found, but not significantly different. CF Precision Standard is 10%

It is important to note that when surveying variable populations, data collected from two independent surveys would be expected to differ to some degree. The more uniform the stand, the closer the two data sets should be to an accurate representation of the stand attributes. Of course sampling intensity is a variable to consider as well. In general, the fewer the sample plots the higher the statistical error. The above table simply reflects the spread of the two data sets when compared to the allowable error defined in the precision standards.