Reforestation Standard of Alberta

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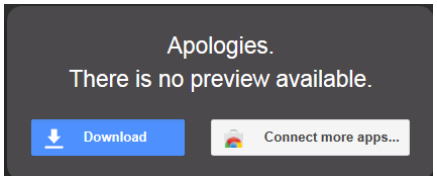

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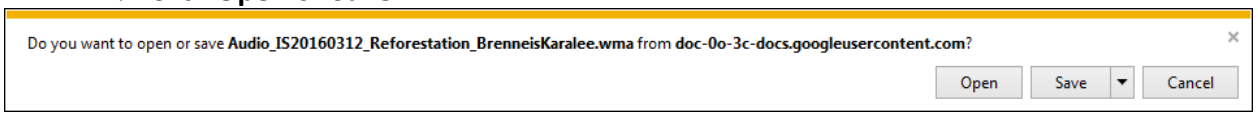


Reforestation Standard of Alberta

NEED TO KNOW

- The Purpose
- Timelines & Important Dates
- Basic understanding of Strata Balancing
- Establishment Surveys
  - Purpose
  - Objectives
  - Timing
  - Survey Methods
  - NSR options
- Performance Surveys
  - Purpose
  - Objectives
  - Timing
  - Survey Methods
  - Basic understanding of compilation

The Purpose

1.2 Purpose (page 14)

- Provides the standards and procedures to assess the level of reforestation success in managed stands following harvest;
- Enables the assessment of each opening to determine the adequacy of stocking, survival, growth, and tree species composition (Establishment survey and D standard CSR/NSR Performance survey); and,
- Assesses reforestation performance of each opening relative to the yields and strata assumed in the Forest Management Plan (FMP) (Establishment and Performance surveys)

Timelines & Important Dates

Table 1-1. Important milestones within a Timber Year.

Milestone	Description
1 May	Timber Year begins.
30 April	Timber Year ends. Last date for timber disposition holders to complete surveys for reporting by 15 May.
15 May	Final submissions of annual reforestation activities to ARIS. Last date to report Establishment and D Standard CSR/NSR Performance surveys to ESRD regional offices. Last date to report Aerial Stratification and Non-photo Systems Performance surveys to the Forest Management Branch.

Strata Balancing

3.2.4 Strata balancing (page 25)

Reforestation obligation holders are required to reforest harvested areas to regenerated yield class strata using transition assumptions as planned in the approved forest management plan. Therefore, the strata specific area harvested must balance with the strata specific area declared. A balance is required in order to properly adjudicate strata reconciliation after the completion of Performance Assessments.

Establishment – Purpose

4.1 Purpose (page 28)

Establishment surveys determine the level of success of early silviculture activities in harvested areas. Site occupancy is the predominant parameter used to determine the level of regeneration success. Site occupancy is the degree to which trees utilize a site's available growing space. Sufficient numbers of trees are necessary to fully utilize the site's water and nutrient resources to maintain timber productivity. Site occupancy or the presence of a vegetation community is also integral to maintaining healthy ecosystems.

Site occupancy is assessed using stocking. Stocking is the frequency or percentage of a sample within an opening that contains acceptable regeneration. In Alberta, 100% of the harvested area within an opening shall be regenerated. Openings are deemed sufficiently regenerated if stocking is 80% or greater after an Establishment survey.

Establishment - Objectives

4.2 Objectives (page 28)

- To determine and document the reforestation status of each opening
- To assess species composition and distribution of seedlings, suckers, and advanced growth with high potential for survival and future growth;
- To identify areas and conditions in openings where regeneration success has been inhibited or is unlikely to meet the species composition, density, and distribution targets for seedlings, suckers, and advanced growth at the required survey timing;
- To minimize survey time and effort where the level of regeneration success within an opening (either adequate or inadequate is evident; and,
- To focus field resources on intensively sampling openings where the level of regeneration success is uncertain.

Establishment - Timing

4.3 Timing (page 28)

Establishment surveys shall be completed no sooner than four (4) years and no later than (8) years after the end of the Timber Year of Cut for all openings.

Establishment – Survey Methods

4.7 Choice of Establishment survey method (page 33)

4.8 Reconnaissance Surveys

Reconnaissance surveys are visual evaluations of openings by qualified surveyors to determine stocking. A visual assessment of an opening can be performed by walking through or flying over the opening.

Where the total acceptable tree stocking for the opening is 70.0% or greater but not more than 83.9% and Intensive survey is required.

Establishment – Survey Methods cont.

4.9 Intensive Survey

Intensive surveys shall be conducted:

- In lieu of Reconnaissance surveys; or,
- When the total acceptable tree stocking assessed by Reconnaissance surveys for openings is determined to be 70.0% or greater but not more than 83.9%; or,
- To confirm LIG treatment prescriptions.

Intensive surveys use systematic survey methods to collect specific data for trees present in 10 m^2 (1.78m radius) plots.

Establishment Survey - NSR

4.11 Opening status and stratum assignment

Several options are available to timber disposition holders for reporting the status of openings deemed NSR to the declared stratum following Establishment surveys including:

1) Where the opening is SR to a stratum other than the declared stratum and the timber disposition holder deems the stratum change to be acceptable, the timber disposition holder may submit a declaration to the department indicating the stratum assignment is acceptable to the new stratum.
2) Where the opening is SR to a stratum other than the declared stratum and the timber disposition holder deems the stratum change to be undesirable, the timber disposition holder shall report the opening as NSR.
3) Where the opening is NSR to all strata stocking standards, the timber disposition holder shall report the opening as NSR

Openings reported as NSR require retreatment using methods and operations approved by the director (TMR 141.6(2)).

Timber disposition holders may choose "Let-It-Grow" (LIG) as a retreatment prescription in cases where information has been collected for under height (as defined in Section 4-6) trees present at the time of a Reconnaissance walk-through or Intensive Establishment survey. In order to use LIG, the addition of total acceptable tree stocking and under height tree stocking shall be 80% or greater.

Performance - Purpose

5.1 Purpose (page 50)

The *Timber Management Regulation (122.1(1) a.1)* defines Performance surveys as a survey to determine is established stands have continued to grow and to ensure these stands are healthy, vigorous, and capable of generating yields similar to the post-harvest yields assumed in the timber supply analysis

Performance - Objectives

5.2 Objectives (page 50)

The objectives of the Performance survey are:

- To assess every opening, as required under the Timber Management Regulation, at performance timing to document the status of the opening;
- To identify homogeneous units (polygons, Sampling Units) within openings to support model forecasts of Coniferous and Deciduous Mean Annual Increment (MAI) is a manner that is sensitive to the architecture and assumptions of the model used to generate MAI;
- To support efficient data gathering that will result in accurate regeneration assessment metrics (tree and stand parameters, stand type, MAI)
- To estimate stand and tree parameters to known and acceptable levels of accuracy; and,
- To provide data to demonstrate maintenance of minimum forest structures (i.e., identification of poorly regenerated areas)

Performance - Timing

5.3 Timing (page 51)

5.3.1 Aerial photography acquisition

Aerial photography shall be acquired no sooner than 11 years and no later than 14 years after the end of the Timber Year of Cut.

5.3.2 Field Survey

Performance field surveys shall be completed no sooner than 11 years and no later than 14 years after the end of the Timber Year of Cut.

Performance – Survey Methods

5.4 Aerial Stratification System (page 52)

The Aerial Stratification System is the standard method for completing Performance surveys. The system is designed to support a high level of confidence in polygon-level MAI projections. Timber disposition holders shall sample annual populations of stratified polygons (Sampling Units) to achieve this high level of prediction confidence.

The Aerial Stratification System has six (6) distinct and sequential phases:

1) Aerial photography acquisition;
2) Softcopy development;
3) Stratification;
4) Field sample selection
5) Field survey; and,
6) Compilation and calculation of MAI.

Performance – Survey Methods cont.

5.4 Non-photo system (page 78)

The Non-photo System is an acceptable methodology for timber disposition holders who:

- Have a total annual area due for a mandated Performance survey of 250 ha or less within a SYU; or,
- Have adopted the Aerial Stratification System, but circumstances beyond the control of the timber disposition holder have prevented the acquisition of aerial photography and the openings are due for aerial surveys.
- Have openings past due for Performance surveys

Performance - Compilation

5.6 Compilation procedures (Page 94)

The field survey data is compiled into four (4) respective .csv files and imported into the RSA Compiler.

The RSA Compiler completes a number of steps including:

- The compilation of input variables;
- The computation of Sampling Unit MAI forecasts;
- The compilation of MAI and composition labels to the opening level.