

Development Plan for Alternative Regeneration Standards (ARS) for the Alberta-Pacific Forest Industries Inc. FMA Area

Introduction

Al-Pac has submitted a Letter of Intent to develop (ARS) for all FMU's in the FMA area. The ARS being developed under the Letter of Intent will generally follow the process as outlined in the Alberta SRD Interpretive Bulletin dated November 28, 2005. Specific requirements outlined in the Interpretive Bulletin are addressed in the following sections.

1. Management Objectives

The recently approved Forest Management Plan (FMP) contains forest management assumptions that will be addressed by ARS. These include:

- Regenerated yield assumptions – the ARS will develop regeneration standards that ensure that regenerated yields are achieved within the times prescribed in the DFMP.
- Yield class transitions – ARS will monitor and reconcile regenerated yield class proportions with those projected for the FMP.
- Annual Allowable Cut (AAC) - ARS will achieve or surpass the currently approved AAC.
- Understory Protection – During the span of the FMP, high-effort understory protection (strip cuts) will be undertaken in deciduous stands with white spruce understories of certain height, densities and/or stocking according to FMP specifications.. Understory protection yield curves will be developed for the 2nd ARS approximation. In the absence of those yield curves, protected understories will transition to CD or DC stands depending on pre-harvest composition.
- White spruce underplanting - During the span of the FMP, white spruce may be planted in specified existing deciduous stands. Underplanting yield curves may be developed for the 2nd ARS approximation. In the absence of those yield curves and associated regeneration standards, underplanted stands will transition to deciduous stands with conifer understory. (This treatment is not part of the 2007 TSA, and, to-date, is only an operational research program.)

2. Growth Phases

ARS will recognize the growth phases identified in the November 28, 2005 Interpretive Bulletin. Block-level minimum and stratum-level average regeneration standards will be developed for Establishment and Performance assessment.

Minimum block-level standards will be developed and will apply to all harvest blocks in the FMP. Assessing the block-level minimum standard at establishment will allow re-treatment or re-assignment of blocks to a stratum, enhancing probability of passing performance standards while maintaining strata balance. Passing a minimum block-level standard at performance will allow the block to enter a stratum population.

The stratum-level performance standards will be linked to FMP yield curves and will include assessment of density and height. The block-level performance standards will include competition assessments where appropriate.

Understory protection and underplanting blocks will transition to certain strata as per 2007 (revised) FMP assumptions. Specific understory protection and underplanting yield curves will be developed for the 2nd approximation. A survey system appropriate for assessing understory protection and underplanting success will be developed for the 1st approximation.

3. Yield Class Stratification

The stratification will follow the set of currently approved yield curves, which are amalgamated according to Appendix 1.

The 10 proposed Alberta SRD minimum strata will be used with the following exceptions:

- Strata II and V will be combined into a pine-mix stratum since the area in these strata comprise only 2 % and not enough data are available to justify individual strata.
- There will be no stratum VI since the area in black spruce/hardwood is negligible (0.1 ha).
- There will be no stratum X since there is no Douglas fir on Al-Pac's FMA are.
- An additional stratum XI for white spruce understory is proposed.

Only pure white spruce and pine have sufficient data to justify stratification by productivity substrata.

A low productivity sub-stratum yield curve and its corresponding performance targets will be developed for the 2nd approximation for all other strata. The low productivity sub-strata will contain blocks that have passed the block-level performance standard but have to be removed from the stratum population in order for the stratum to achieve its stratum-level target.

4. Assessment Systems

Regeneration surveys currently prescribed in the Alberta SRD Regeneration Survey Manual will be modified as required to demonstrate achievement of the ARS within a statistically acceptable level of probability.

All blocks other than understory protection will be surveyed twice (Establishment and Performance). Understory protection blocks will be surveyed only once, several years after harvest to assess post-harvest stocking (excluding losses to blowdown), density and height of the residual stand.

Aerial surveys augmented with ground samples will be considered for pure deciduous and pine strata as well as partial retention, i.e. understory avoidance.

5. Regeneration Standard – Performance Assessment

Data used to develop stratum-level performance standards will include company TSP's, PSP's and regeneration surveys, as well as Alberta SRD SDS and Monitoring Plot data. Analysis tools will include knowledge- and data-based based tools in the scientific literature, the Mixedwood Growth Model (MGM), as well as professional opinion when other options prove unreliable. Stratum-level performance standards will be linked to FMP regenerated yield assumptions.

Appropriate statistical methods will be used to establish a reasonable variance around the stratum-level standards and will result in block-level standards. Block-level standards will likely include stocking, density by species, height by species and competition assessment parameters (performance only).

The average of all blocks passing the minimum block-level performance standard must meet or exceed the stratum-level target which is linked to the final yield at rotation age. The block-level minimum sets the lower limit of the variation around the stratum average. There should be no upper limit unless there are specified density interactions/constraints for multiple species in mixedwood strata.

If the stratum standard cannot be met by the average of all blocks within a stratum population at performance, then blocks close to the lower limit can be removed from the population to increase the average. A low, under-performing yield curve will be developed for these blocks and the AAC adjusted accordingly in the next TSA.

6. Regeneration Standard – Establishment Assessment

Establishment standards will be developed that assess early stand trajectory and provide a link to performance standards. Where regeneration models seem inappropriate, data sources such as past regeneration surveys, SRD SDS and Monitor Plot data and research results will be used to develop reasonable assumptions. The standards will contain stocking, density and height parameters.

7. FMA-specific Regeneration Manual

An FMA Area-specific Regeneration Manual will be developed upon approval of ARS. That manual will summarize the ARS and will detail the survey procedures for assessment of stands at establishment and at performance.

8. Remedial Actions

Remedial actions shall be developed according to the Alberta SRD Directive 05-01 with adjustments as required and defensible.

9. Regeneration Assessment Results Reporting

Reporting of regeneration results to ARIS shall be conducted according to the requirements of the ARIS Industry Operations Manual.

10. Monitoring and Refinement

Monitoring shall be conducted through Regeneration Surveys, research plots, and juvenile PSPs (see Alberta-Pacific Growth and Yield Plan, 2007). Details shall be provided with the Second Approximation submission.

Embedded Quota Holders

Letters of support from timber quota holders embedded within the Al-Pac FMA were collected. It is Al-Pac's intent to collaborate with embedded quota holders in all phases of ARS development.

Proposed Schedule

Al-Pac proposes to complete the First Approximation by April 30, 2007, and requests regularly scheduled meetings with Alberta SRD personnel on at least a quarterly basis during the development period. More detailed timelines are as follows:

April/May 2006: Meeting with SRD and quota holders to establish terms of collaboration and ARS specific goals

Bimonthly: Technical meetings of Al-Pac and quota holders facilitated by Willi Fast of The Forestry Corp to develop targets and other elements required in ARS.

Quarterly: Meetings of Al-Pac and quota holders with SRD to update SRD on current progress and for SRD to provide input regarding ARS process development.

April 30, 2007: Submission of 1st approximation ARS.