



P14 2009-2018 Forest Management Plan

Chapter 5: Implementation and Monitoring

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1. Implementation of the PFMS

1.1 Background

Sustainable forest management for FMU P14 is defined in the Values, Objectives, Indicators and Targets (VOITs) as documented in Chapter 3: Performance Standards (VOITs). The Preferred Forest Management Scenario (PFMS) contains a sequence of forest management activities that if implemented on the ground will meet the targets described in the VOITs. This chapter describes the processes and procedures that will be used to guide the implementation the PFMS activities on the ground. Successful on the ground implementation of the PFMS is the next step towards achieving sustainable forest management for FMU P14.

Sustainable forest management requires tradeoffs to achieve a desirable balance between forest values. Depending upon the condition of the forest and the flexibility of the solution, deviation from the activities prescribed in the PFMS may impact the desirable balance and put long term sustainability at risk. Therefore, PFMS activities must be implemented on the ground as prescribed in the PFMS, within the identified levels of tolerance. To ensure forest sustainability as described in the PFMS is achieved requires strong relationships between the activities as modeled in the PFMS and the activities as implemented on the ground. The Spatial Harvest Sequence (SHS) is one of the products produced as part of the 2009-2018 FMP that enables strong linkages between the PFMS and the operational information required for implementation on the ground. The SHS linkages are the description of the timing, spatial location, pattern and the extent of harvest and regeneration activities.

Not all values are addressed through the implementation of the SHS. To address these other values requires details on how to plan, approve, layout and implement the strategies designed to achieve these other values. Operating Ground Rules (OGR) contain the procedures describing how and by whom, the operational planning and approval process for forest management activities including access, harvesting, renewal and maintenance are to be implemented to achieve the PFMS and the VOITs. To ensure OGR alignment with the approved 2009-2018 FMP, VOITs will guide the development of the OGR which will commence after approval of the 2009-2018 FMP.

1.2 Timelines

The 2009-2018 FMP becomes effective only when approved by the Executive Director, Forest Management Branch. The effective date of the 2009-2018 FMP will be documented in the FMP Approval Decision document. While the 2009-2018 FMP provides detailed guidance for the next 20 years, SRD policies require that new FMPs be developed every 10 years. The planned end date of the 2009-2018 FMP is the end of the 2018/19 timber year, or until replaced by a new FMP.

1.3 Access

Road access is essential for managing the forest as well as providing access to other forest users. The P14 Long-term Road Plan (refer to Appendix V) describes the corridors providing road access to all the compartments in the FMU. Access between and within harvest blocks will be identified in Final Harvest Plans (FHP) by following the procedures as described in the OGRs.

To reduce environmental access impacts, forestry all-weather road densities will be managed to achieve the density as specified in VOIT 1.1.1.3 and the total length of open seasonal and or temporary forestry road will be less than or equal to 32 km at any one time (VOIT 1.1.1.3).

Roads have a potential environmental impact on water and aquatic biodiversity if not constructed and maintained properly. Road construction standards are specified in the OGR and water crossings must be in compliance with the Code of Practice for Water Course Crossings (VOIT 1.1.2.3).

Roads can impact long term forest productivity through soil compaction. To address this, strategies were developed to minimize the amount of roads and bared areas and the incidences of soil erosion and slumping (VOITs 3.1.1.1 and 3.1.1.2).

1.4 Harvesting

As described earlier, the SHS is the principle means of directing the timing and spatial location of harvesting activities as proposed in the PFMS. Adherence to the SHS on the ground will ensure that the desired future forest structure, pattern and composition will be attained, thus achieving the ecological and biodiversity targets as described in the Performance Standards (VOITs 1.1.1.1 and 1.1.1.2).

The 2009-2018 FMP recognises that to address operational considerations, there will be differences between the planned activities in the SHS and those actually implementation on the ground. The maximum acceptable variance is 20% from the SHS as described in the Planning Standard.

The maintenance of biodiversity is too complex to be fully addressed at the strategic FMP level and therefore, additional strategies to address biodiversity were developed for applicaiton during operational planning and implementation. These include strategies for the maintenance of

uncommon plant communities (VOIT 1.1.1.4), the maintenance of unique habitats provided by wildfire and blown down events (VOIT 1.1.1.5) and the maintenance of the integrity of sensitive sites (VOIT 1.1.2.2). Operational strategies developed for application at the stand-level include structure retention targets of a minimum two percent of merchantable timber volume and a downed woody debris retention targets (VOITs 1.1.2.1a and 1.1.2.1b).

Strategies have been developed to ensure that harvesting does not negatively impact water quantity and quality by retaining the effectiveness of riparian habitats. These include minimizing impacts in riparian areas as described in the OGR and compliance with the Water Act (VOITs 1.1.1.6, 3.2.1.1 and 3.2.1.2).

2009-2018 FMP targets are applicable to the entire Forest Management Unit (FMU). However, it is the individual operators who will be implementing the 2009-2018 FMP in the field and they are only responsible to meet the targets applicable to their areas. To track individual operator adherence to the FMP, stands in the SHS have been allocated for harvest to individual operators who will report their activities on the assigned areas to Alberta Sustainable Resource Development (SRD). SRD will determine success in achieving the FMU wide targets based on the information submitted.

Determining and enforcing sustainable harvest levels is one of the principles of sustainable forest management. Timber drain and chargeability rules for the 2009-2018 FMP are described in VOIT 5.1.1.1. All industrial salvage timber volumes will be reported and charged to the FMU AAC and distributed among the quota holders as per Directive 98-03.

1.5 Renewal and Maintenance

The forest renewal strategy employs a mixture of natural regeneration and planting techniques designed to achieve the desired future forest structure and the managed timber yields. Forest structure and timber volume targets for regenerated stands at establishment and performance benchmarks will be detailed in Alternative Regeneration Standards (ARS) that will be developed from the FMP yield stratification and timber volume curves after approval of the 2009-2018 FMP (refer to 3.3). In the absence of approved ARS, the current provincial regeneration standards will apply.

Strata balancing must be completed using the FMP strata and other strata as required by SRD directives and VOITs 2.1.1.1 and 2.1.2.1.

Renewal and maintenance implementation strategies are described in the Performance Standards, OGR and the policies and directives as issued from time to time by SRD. To achieve forest sustainability, the 2009-2018 FMP contains renewal targets designed to ensure that the regeneration assumptions incorporated into the PFMS are implemented in the field as prescribed. These include timely reforestation success for every cut block (VOIT 2.1.1.1) and minimizing the conversion of productive forested landbase (VOIT 2.1.2.2).

The Standards for Tree Improvement in Alberta recognize that genetic diversity is important not only for tree improvement programs but for the maintenance of biodiversity and for healthy forests that are resistance to stresses such as insects and disease infestations and the pressures of climate change. Currently, there is no tree improvement program in FMU P14,

however SRD's genetic diversity implementation targets are applicable to all artificial regeneration activities and are described in VOITs 1.3.1.1 and 1.3.1.2.

2. Communications

Transparent and open two-way communications are necessary for effective forest management on public lands. A communications strategy has been developed for FMU P14 as described in Appendix VI: P14 Communication Plan. This plan will be implemented by SRD and all forest operators on the FMU. The P14 Communication Plan is based on provincial policy and describes the ongoing communication that will be undertaken to meet forest management objectives. The P14 Communication Plan is a living document and will be updated from time to time to reflect changes in provincial policies, or directives or to address emerging issues.

The goal of this the P14 Communication Plan is to satisfy the Alberta government's requirements for meaningful and effective public participation in forest management planning on the P14 FMU. The plan defines:

- How stakeholders will be solicited for participation;
- What opportunities will be provided for public participation;
- How stakeholders feedback will be captured and followed-up; and
- How information about forest management activities will be communicated to the public.

3. Monitoring

3.1 Responsibility

The 2009-2018 FMP monitoring program is a critical component of successful continuous improvement and adaptive forest management in FMU P14. The monitoring program is based on the monitoring and reporting protocols as described in the Performance Standards in Chapter 3, the OGR and the policies and directives produced by SRD. Monitoring and reporting is required from forestry operations undertaken anywhere in the FMU and all monitoring and reporting must meet the requirements of the 2009-2018 FMP. Operators must collect, assemble and report information as directed to SRD within the timelines specified by the FMP and SRD. SRD is responsible for assembling the information received into FMU wide summaries and to prepare comparisons between the FMU wide targets in the 2009-2018 FMP and FMU wide achievements.

3.2 Timelines

Each VOIT in the Performance Standards describes the applicable requirements for monitoring and measurement, reporting procedures and the acceptable variance. Monitoring and reporting periods vary between annual reporting and the 5-year Stewardship Report. Additional reporting details will be clarified in OGR and SRD policies and directives as updated from time to time. Annual reporting requirements must be included in approved AOP submissions.

3.3 Alternative Regeneration Standards

3.3.1 Background

To support the development of Alternative Regeneration Standards (ARS) for the 2009-2018 FMP, Mean Annual Increment (MAI) targets were produced for the FMP yield curves which

were used for forecasting timber supply. ARS MAI targets were constructed for each yield stratum and broad cover group.

Due to the small size of FMU P14 and the limited plot data, separate managed yield curves were not created for the 2009-2018 FMP. The base yield curves developed using natural stand data were used to forecast both natural and managed stands. Since both yield curve sets were the same, the base natural yield curves adjusted for forecasting were used to calculate MAI targets.

Table 1 presents the transition between the FMP yield strata and the managed yield strata. The managed yield strata distributions were used to produce the yield strata MAI targets. The DU stratum was transitioned post harvest to the CD yield stratum.

Table 1. Yield curve strata used to create the MAI targets.

BCG	FMP Yield Stratum	Mgd. Yield Stratum	Yield Curve Code	Curve Type
D	D	D	D-N	Base natural, coniferous curve capped at 50 m ³
DC	DC	DC	DC-N	Base natural
	DU	CD	CD-N	Base natural
CD	CD	CD	CD-N	Base natural
C	C-SB	C-SB	C-SB-N	Base natural
	C-SW	C-SW	C-SW-N	Base natural

3.3.2 MAI Targets by Yield Strata

MAI targets by yield strata are presented in Table 2. For the coniferous landbase, which is comprised of all strata except the 'D' stratum, coniferous culmination age was used to determine the MAI targets. While on the deciduous landbase, which is comprised of only the D stratum, the deciduous culmination age was used. Note that DU natural stand curve was not used in the development of either the MAI targets by managed yield stratum or the MAI targets by broad cover group since the stands from DU stratum will be transitioned after harvest to CD stratum.

Table 2. MAI targets by managed yield stratum.

BCG	Yield Stratum	Mgd. Stands Area (ha)	Culmination Age ¹	Maximum MAI (m ³ /yr/ha)		
				Coniferous	Deciduous	Total
D	D	3,479	61	0.20	2.02	2.22
DC	DC	1,231	140	1.50	1.21	2.71
CD	CD	1,469	52	1.65	0.35	2.00
C	C-SB	-	121	1.72	0.27	1.99
	C-SW	1,141	102	1.68	0.40	2.08

¹ For D stratum deciduous culmination age was used, while for the DC, CD, C-SB, and C-SW the coniferous culmination age was used

3.3.3 MAI Targets by Broad Cover Group

MAI targets by broad cover group were created from the same information. The targets were built by area weighting the base natural yield curves adjusted for forecasting within one BCG

using the current (2009) managed stand area present for each stratum (areas from Table 2). The current managed stand area was used so that targets reflect the actual harvested areas. Where there was no managed stand area for a certain yield stratum, the stratum was not included in creating the target (e.g. C-SB).

Table 3 presents the MAI targets by BCG. The coniferous culmination age was used for the coniferous landbase (all BCG except D) while the deciduous culmination age was used for the D broad cover group.

Table 3. MAI targets by broad cover group.

BCG	Mgd. Stands Area (ha)	Culmination Age ¹	Maximum MAI (m ³ /yr/ha)		
			Coniferous	Deciduous	Total
D	3,479	61	0.20	2.02	2.22
DC	1,231	140	1.50	1.21	2.71
CD	1,469	52	1.65	0.35	2.00
C	1,141	102	1.68	0.40	2.08

¹ For D broad cover group deciduous culmination age was used, while for the DC, CD, and C broad cover groups the coniferous culmination age was used

3.4 Growth and Yield Program

No formal growth and yield program has been prepared for FMU P14 nor are there plans to complete one in the immediate future. No Permanent Sample Plot program has been developed for FMU P14.

