

7.0 GOALS, OBJECTIVES AND STRATEGIES

In order to ensure the broad set of values identified by the Canadian Council of Forest Ministers were addressed in this Detailed Forest Management Plan the following Goals, Objectives and Strategies have been developed. This section of the document was created with input from the Planning Team. It is felt that through the implementation of these strategies that the values identified by the Canadian Council of Forest Ministers will be preserved in this FMA.

A matrix document that shows the relation of each goal, objective and strategy to the CCFM criteria and elements has been included in Appendix 1 of this document.

Goal #1: Maintain Relative Proportions of existing broad cover groups.

One method for the classification of forest ecosystems is based on broad cover group. This goal assumes that if the same relative area represented on the landbase is maintained over time, the forest ecosystem should provide similar benefits as it does today.

Objective 1.1: Maintain the same proportions of broad cover groups (as defined in the Net Landbase and Yield Curve Development Documents) on the productive landbase as stated in Forest Management Branch Directive 2004-01.

In order to provide flexibility for silviculturalists to ensure each hectare is reforested to the most appropriate species groups, Forest Management Branch Directive 2004-01 is to be adhered to.

Stands that have conifer understories are not included in this balancing exercise. This will help meet the objectives associated with increasing habitat effectiveness for the Woodland Caribou while maintaining the natural successional pathways of these broad cover groups. Typically, as the overstory species mature and begin to die off, the understory species begin to fill the gaps left in the canopy and eventually the broad cover group changes to one that is conifer dominated.

Strategy 1.1.1: Balance the proportion of harvested broad cover group to within 5% (or 10 hectares, whichever is greater) of the pre-harvest broad cover groups on a five-year period. This balance will be complete as per provincial forest policy.

Acceptable Variance: As per Forest Management Branch Directive 2004-01.

Implementation Schedule: Ongoing.

Monitoring Procedure: Reported in Annual submission of regeneration declarations with summary given in Stewardship Report.

Operating Plan Linkages: Final Harvest Plan to contain breakdown of broad cover groups by block. Annual regeneration declaration summary to contain an as-cut summary of broad cover group breakdown by block, as well as block regeneration declarations demonstrating compliance.

Strategy 1.1.2: Stands with a sufficient conifer understory will transition as per the Understory Stand Transition Strategy (Appendix 2).

Acceptable Variance: As per Forest Management Directive 2004-01.

Implementation Schedule: Ongoing.

Monitoring Procedure: Reported in Annual submission of regeneration declarations and a summary given in Stewardship Report.

Operating Plan Linkages: Annual regeneration declaration submission to contain as-cut summary of broad cover group breakdown by block, as well as block regeneration declarations demonstrating compliance.

Goal #2: Reduce the level of fragmentation in the FMA.

Ecosystems develop as a result of many factors. Factors such as size, moisture regime, temperature and light are impacted through the fragmentation of ecosystems. This impact can have detrimental impacts on the overall health of, and the ability of the ecosystem to function as required. Minimizing fragmentation will help to maintain healthy and productive ecosystems.

When ecosystem components become separated in time and space, the integrity of the ecosystem is challenged. This fragmentation can affect critical connections within an ecosystem (CCFM, 1997). The objectives and strategies defined below strive to ensure that future activities do not increase the level of fragmentation on the FMA through the use of a concentrated harvest pattern rather than a dispersed two-pass harvest system and also developing a long-term access development plan that will be made available to other industries while also striving to integrate with current access and industrial initiatives. The objectives and strategies also strive to reduce the current amount of fragmentation on the FMA by reducing the amount of anthropogenically created disturbances on the net productive area.

Objective 2.1: Develop a long-term operational harvest plan for the FMA.

A 20-year spatial harvest sequence will be developed that strives to concentrate harvest activities in lower value stands to woodland caribou, while taking into account other management goals.

Canadian Council of Forest Ministers, Criteria and Indicators of Sustainable Forest Management in Canada.
Technical Report 1997

Strategy 2.1.1: Develop a 10-year operational harvest sequence, with an associated 10-year contingency sequence within the FMA to be submitted with the DFMP.

Acceptable Variance: No more than 20% of area (ha) of the scheduled stands shall be deleted. An equivalent area may be replaced from unsequenced stands within the net landbase while harvesting no more than 100% of the total area sequenced in Spatial Harvest Sequence. These above conditions are to be met across the FMA within a 10-Year period.

Implementation Schedule: Commencing May 1, 2004. First 10- year period runs from May 1, 2004 until April 30, 2013.

Monitoring Procedure: Deviations from spatial harvest sequence are summarized in the Annual Operating Plan and the Stewardship Report.

Operating Plan Linkages: Final Harvest Plan to contain section summarizing reasons for deviations from spatial harvest sequence.

Strategy 2.1.2: Utilize a single pass harvest system that allows the harvest of complete stands in as short a time frame as possible.

Acceptable Variance: As constrained by the annual allowable cut and spatial harvest sequence. The spatial harvest sequence submitted in the Preferred Forest Management Strategy achieves this goal, except where constrained to meet other goals.

Implementation Schedule: The Preferred Forest Management Strategy will contain a spatial harvest sequence that achieves this strategy. The General Development Plan, Final Harvest Plan and Annual Operating Plan will strive to implement this strategy at an operational level.

Monitoring Procedure: Deviations from spatial harvest sequence are summarized in the Final Harvest Plan and the Stewardship Report.

Operating Plan Linkages: Final Harvest Plan is to contain a section summarizing reasons for deviations from spatial harvest sequence.

Strategy 2.1.3: Both conifer and deciduous will be harvested in each stand at the same time, while maintaining retention and understory protection requirements.

Acceptable Variance: All merchantable trees within a cutblock will be harvested prior to a cutblock receiving skid clearance, while maintaining retention

requirements. Blocks with understory protection implemented on them will adhere to the understory protection harvest strategy described in appendix 10.

Implementation Schedule: Ongoing.

Monitoring Procedure: The Field Operations Reporting Protocol will assess the level of compliance during operations through the use of Weekly Operations Inspections Reports, the results of these reports is to be summarized in the Stewardship Report.

Operating Plan Linkages: Section included in Final Harvest Plan stating commitment to implement DFMP strategies.

Objective 2.2: Minimize the amount of new clearing required for access within the FMA.

In order to implement the operational harvest sequence, roads have to be built. In order to strive to reduce the amount of future clearing required, a long-term access planning is required.

Strategy 2.2.1: Develop and submit a Road Corridor Development Plan (Appendix 3) as part of the Preferred Forest Management Strategy. This plan is to be used to determine access locations until the Access Management Plan is approved.

Acceptable Variance: None. The approved Access Management Plan will provide more detail than, and once approved will replace the Road Corridor Development Plan.

Implementation Schedule: To be submitted with Preferred Forest Management Strategy.

Monitoring Procedure: The General Development Plan and Final Harvest Plan and Stewardship Report will summarize variances from approved Road Corridor Development Plan.

Operating Plan Linkages: General Development Plan and Final Harvest Plan to contain a section describing variances from the Road Corridor Development Plan.

Strategy 2.2.2: Develop a 10-year Access Management Plan for the FMA by July 1, 2005. Provisions for amendments to this plan will be made in order to continually integrate the access management plan with access developed by other users.

Acceptable Variance: As approved by SRD. Access Management Plan to Integrate with approved Road Corridor Development Plan and new access created on the FMA over time.

Implementation Schedule: Access Management Plan to be submitted for approval prior to July 1, 2005.

Monitoring Procedure: Variations to be described in General Development Plan, Final Harvest Plan, Annual Operating Plan and the Stewardship Report.

Operating Plan Linkages: General Development Plan, Final Harvest Plan and the Annual Operating Plan to describe the level of integration with the Access Management Plan.

Strategy 2.2.3: Integrate planning and operations with utility disposition holders to reduce hazard trees along powerlines while minimizing the loss to the forest landbase. This is to be accomplished through the following process:

- Identify hazard stands within the Vanderwell FMA.
- Identify specific location of existing power lines within the FMA.
- Using above information identify stands requiring tree freeing.
- Integrate planning and operations of tree freeing with planned harvest operations.
- Utilize hazard stand information in determining future power line route selection process.

Acceptable Variance: Hazard areas are not to be used to constrain the harvest sequence. Definition of hazard areas to be provided by Atco.

Implementation Schedule: Map showing location of hazard stands is to be included in the Landscape Assessment. Operational implementation is ongoing.

Monitoring Procedure: Final Harvest Plan to detail areas where integration of harvest and hazard reduction is proposed. Stewardship Report to summarize level of integrated activity between Atco and Vanderwell to reduce the amount of hazard areas within the FMA.

Operating Plan Linkages: Final Harvest Plan to detail areas where integration of harvest and hazard reduction is proposed.

Strategy 2.2.4: Provide a copy of the operational harvest sequence, the Road Corridor Development Plan and the 10-year Access Management Plan for the FMA

to the local SRD office and other known commercial users on the FMA. Enclose a letter with these documents encouraging them to practice integrated landscape management. Other known commercial users to be determined through LSAS search.

Acceptable Variance: Copies of documents sent to all companies identified as having land-use dispositions within the Vanderwell FMA.

Implementation Schedule: Above-mentioned documents to be provided within one month of SRD approval date.

Monitoring Procedure: Stewardship Report to detail approval dates and mailing dates of above documents. A copy of the above-mentioned letter will also be included in the Stewardship Report.

Operating Plan Linkages: None.

Objective 2.3: Reduce the area of anthropogenically created disturbances on the net productive area.

In order to attempt to reduce the fragmentation of the ecosystems present in the FMA, it is essential to try to bridge the gaps in space and time within the ecosystems. It is much easier to bridge the gap in space, through such activities as reforestation of reclaimed sites. In harvest areas, non-treed sites, such as seismic lines and reclaimed industrial sites, will be reforested and treated as part of the harvest area, excluding sites being used to meet other forest management objectives. This will help bridge the gap in both space and time. On sites that are reclaimed, but are not contained within harvest areas, reforestation will fill the gap in space; however there may be a gap in age between the reforested area and the rest of the ecosystem.

Strategy 2.3.1: Reforest seismic lines that are within harvested areas, excluding seismic lines being used to meet other management objectives (ie. Recreation, access), at the time the rest of the block is reforested.

Acceptable Variance: Unless used to meet other objectives, all seismic lines within cut blocks to be reforested at the same time as the rest of the block.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship Report to detail length of seismic lines inside cutblocks, the ones that were reforested and reasons why seismic lines were not reforested.

Operating Plan Linkages: None.

Strategy 2.3.2: Vanderwell will create an Integrated Reforestation Strategy (Appendix 4) that strives to reforest to silviculturally and commercially acceptable tree species, all dispositions as they are added back into the productive landbase.

Acceptable Variance: Creation of Integrated Reforestation Strategy to be complete and submitted with Preferred Forest Management Strategy.

Implementation Schedule: Ongoing.

Monitoring Procedure: Silviculture Schedule will detail plans to implement the Integrated Reforestation Strategy, while the Stewardship Report will summarize the level of implementation.

Operating Plan Linkages: Silviculture Schedule will summarize the amount of area planned to be treated as per the Integrated Reforestation Strategy.

Goal #3: Maintain habitat features that may otherwise become limited through the implementation of forest management strategies detailed in this plan.

There are many species that require habitat features that may become limited through the implementation of forest management strategies such as the implementation of a rotation period that is less than the age at which these features are produced within a stand.

The maintenance of these habitat features is necessary to meet the value of maintaining biodiversity in the FMA. These features will contribute to the maintenance of biodiversity at the ecosystem, species and genetic levels.

Objective 3.1: Maintain habitat features that may otherwise become limited through the implementation of forest management strategies detailed in this plan.

Strategy 3.1.1: Ensure the amount of over mature stands is maintained over the next 20 years.

Over mature stands have been defined as the age at which each stratum begins losing volume. It is felt that the loss of volume is a good indicator that the stand contains characteristics such as dead woody debris and standing dead trees that are important characteristics of over mature stands.

The table below identifies the age at which each stratum becomes defined as over mature.

Stratum	Age where volume decline begins
C-Sw	110
C-Pj	110
MX	80
D	120

Acceptable Variation: Stands with identified conifer understories contribute to the mixedwood strata rather than their present overstory strata.

Implementation Schedule: Preferred Forest Management Strategy to include summary showing the amount of area classified as over mature by strata at 20, 80 and 160 years into the future.

Monitoring Procedure: Landscape Assessment contains a summary of the amount of old forest currently present within the FMA. Preferred Forest Management Strategy to include summary showing the amount of area classified as over mature by strata at 20, 80 and 160 years into the future.

Operating Plan Linkages: None.

Strategy 3.1.2: Define the amount of structure left across the landscape in stands that meet the following criteria.

1. Were included in 1998 net landbase, have since burned, but have not been harvested.
2. Areas that have been deleted from the net landbase for reasons other than merchantability deletions, and were not part of the 1998 net landbase.
3. Merchantability deletions with a TPR of either Fair, Medium or Good.

A data summary and map showing the location of these stands is included in the Landscape Assessment document included in the DFMP. At this point in time no strategies are being developed to maintain this amount of structure as none of the areas defined above are available for harvest.

Acceptable Variance: None.

Implementation Schedule: Complete.

Monitoring Procedure: N/A.

Operating Plan Linkages: None.

Strategy 3.1.3: Maintain 3% of net productive area as stand structure that will eventually contribute to coarse woody debris within a harvest block.

Acceptable Variance: Acceptable range is from 2% to 5% within a five-year period over the FMA. The location of stand structure areas will be consistent with Appendix 6.

Implementation Schedule: Ongoing. Annual Allowable Cut presented in the PFMS has been reduced by 3% to account for structure retention.

Monitoring Procedure: As defined in Stand Structure Monitoring Procedure (Appendix 6). Final Harvest Plan to contain a section describing the percent of net productive area planned to be retained as stand structure.

Operating Plan Linkages: Final Harvest Plan to contain a section describing the percent of net productive area planned to be retained as stand structure.

Strategy 3.1.4: In blocks where ‘pile and burn’ is the slash disposal prescription, up to 10% of the piles, or one pile per block, whichever is greater, can be retained on site.

Acceptable Variance: Subject to provincial debris disposal guidelines.

Implementation Strategy: Blocks that have pile and burn slash disposal method prescribed will be detailed in the Annual Operating Plan.

Monitoring Procedure: The Stewardship Report will detail what blocks have had the pile and burn slash disposal method prescribed, the number of piles burned and the number of piles retained in these blocks.

Operating Plan Linkages: The Annual Operating Plan will define what blocks have the pile and burn slash disposal method prescribed.

Goal #4: Ensure special management considerations are in place for known threatened, endangered, rare or vulnerable species.

Species that are known to be threatened, endangered, rare or vulnerable within the FMA should have special management strategies designed and implemented with the goal of maintaining the population. Upon completion of an analysis of the FMA to identify species that meet these criteria, it was determined that the Woodland Caribou is the only species in the FMA (as determined by a BSOD and Alberta Natural Heritage Information Centre search). Special management considerations have been defined for the Woodland Caribou.

Objective 4.1: Develop management strategies that strive to protect the Woodland Caribou and its habitat.

Through the DFMP process it has been stressed by the Fish and Wildlife Division that both coarse and fine filter strategies that can be implemented at both the strategic and operational levels are developed and implemented in the FMA that strive to mitigate the impacts of forest management operations on caribou and caribou habitat. There has been much work done within the province of Alberta by the Boreal Caribou Committee regarding operational strategies. Vanderwell has committed to implementing the applicable best operations practices.

At the strategic level strategies have been developed that strive to have low impact operations occur in lower value habitat types, and non-critical times in non-critical areas of the FMA. Strategies have also been developed that strive to improve the habitat types for the Woodland Caribou over time, these include such strategies as minimizing the deciduous and shrub phase of succession within conifer dominated sites.

Strategy 4.1.1: At the operational level, adopt the applicable best operations practices as defined by the Boreal Caribou Committee for operations within the caribou zone (Appendix 5). This is to be completed through the development and implementation of an Annual Caribou Protection Plan.

Acceptable Variance: Upon approval from SRD.

Implementation Schedule: Ongoing.

Monitoring Procedure: The Field Operations Reporting Protocol will assess the level of compliance during operations through the use of Weekly Operations Inspections Reports, the results of these reports is to be summarized in the Stewardship Report.

Operating Plan Linkages: Annual Caribou Protection Plan to adopt Boreal Caribou Committee Best Management Practices. Section included in Annual Operating Plan stating commitment to implement DFMP strategies.

Strategy 4.1.2: Utilize reclamation techniques on access routes that strive to prevent highway vehicle use and limit off-highway vehicle use (as per the Alberta Timber Harvest Planning and Operating Ground Rules and the Resource Road Planning Guidelines).

Acceptable Variance: Off highway vehicle access required to implement silvicultural activities.

Implementation Schedule: Ongoing.

Monitoring Procedure: N/A.

Operating Plan Linkages: Compliance with the Access Management Plan will be detailed in the General Development Plan, Final Harvest Plan and the Annual Operating Plan.

Strategy 4.1.3: Implement silviculture systems that will limit the non-coniferous shrub and tree regeneration phase of succession in conifer dominated stands.

Acceptable Variance: Allowance of 20% non-conifer shrub and tree stocking in establishment and performance surveys in conifer broad cover groups.

Implementation Schedule: Ongoing.

Establishment and Performance survey results are submitted as required and will be summarized in the Stewardship Report.

Operating Plan Linkages: None.

Strategy 4.1.4: Carry out harvest activities in winter months except where existing access and ground conditions permit harvest activities to occur otherwise.

Acceptable Variance: Existing access means existing at time of planned operation, not at time of DFMP submission. Existing access may include private roads held by Vanderwell and/or other private companies.

Implementation Schedule: Ongoing.

Monitoring Procedure: The Final Harvest Plan and the Annual Operating Plan will contain a section describing proposed access routes and season of harvest operations. The Stewardship Report will contain a section describing as-built access routes and season of operations.

Operating Plan Linkages: Final Harvest Plan to contain section describing proposed access routes and season of harvest operations.

Strategy 4.1.5: Vanderwell will create an Integrated Reforestation Strategy (Appendix 4) that strives to reforest to silviculturally and commercially acceptable tree species, all dispositions as they are added back into the productive landbase.

Acceptable Variance: Creation of Integrated Reforestation Strategy to be complete and submitted with Preferred Forest Management Strategy.

Implementation Schedule: Ongoing.

Monitoring Procedure: Silviculture Schedule will detail plans to implement the Integrated Reforestation Strategy, while the Stewardship Report will summarize the level of implementation.

Operating Plan Linkages: Silviculture Schedule will summarize the amount of area planned to be treated as per the Integrated Reforestation Strategy.

Strategy 4.1.6: Evaluate the FMA to determine the amount of effective habitat available for caribou.

Acceptable Variance: None.

Implementation Schedule: A habitat effectiveness analysis has been complete as part of the DFMP process. A data and map summary has been included in the Landscape Assessment Document.

Monitoring Procedure: N/A

Operating Plan Linkages: None.

Strategy 4.1.7: Target harvest activities in stands that are North of the 2001 Chisholm Fire.

Acceptable Variance: As approved to SRD to meet other goals of management within the FMA.

Implementation Schedule: PFMS to demonstrate this has been accomplished.

Monitoring Procedure: N/A

Operating Plan Linkages: AOP's to integrate with PFMS.

Strategy 4.1.8: Utilize a single pass harvest system that allows the harvest of complete stands in as short a time frame as possible.

Acceptable Variance: As constrained by the annual allowable cut and spatial harvest sequence. The spatial harvest sequence submitted in the Preferred Forest Management Strategy achieves this goal, except where constrained to meet other goals.

Implementation Schedule: The Preferred Forest Management Strategy will contain a spatial harvest sequence that achieves this strategy. The General Development Plan, Final Harvest Plan and Annual Operating Plan will strive to implement this strategy at an operational level.

Monitoring Procedure: Deviations from spatial harvest sequence are summarized in the Final Harvest Plan and the Stewardship Report.

Operating Plan Linkages: Final Harvest Plan is to contain a section summarizing reasons for deviations from spatial harvest sequence.

Strategy 4.1.9: Concentrate harvest activities in stands of lower habitat quality to the Woodlands Caribou. Pine stands have been identified as being the highest quality habitat types for Woodland Caribou, deciduous stands are the lowest.

Acceptable Variance: As approved to SRD to meet other goals of management within the FMA.

Implementation Schedule: PFMS to demonstrate this has been accomplished.

Monitoring Procedure: N/A

Operating Plan Linkages: AOP's to integrate with PFMS.

Strategy 4.1.10: Target harvest into stands that can have lower impact harvest strategies (understory protection) implemented on them.

Acceptable Variance: As per Forest Management Branch Directive 2004-01. A minimum of 70% of the pre-harvest coniferous understory density is to be present post-harvest.

Implementation Schedule: Ongoing.

Monitoring Procedure: Reported in Annual submission of regeneration declarations and a summary given in Stewardship Report. Pre and post-harvest densities to be summarized in the Stewardship Report.

Operating Plan Linkages: Annual regeneration declaration submission to contain as-cut summary of broad cover group breakdown by block, as well as block regeneration declarations demonstrating compliance. Final Harvest Plan to contain information on pre-harvest density. Appendix 10 details the proposed plot protocol and the harvest strategy to be used to ensure 70% of coniferous understory is protected.

Strategy 4.1.11: Strive to have new access follow existing linear disturbances in development of the Road Corridor Development Plan and the Access Management Plan.

Acceptable Variance: Where following existing access causes a net increase in area cleared, or significant cost or environmental impacts, new access can be used.

Implementation Schedule: The Road Corridor Development Plan is included in Appendix 3 of this document. The Access Management Plan is to be submitted prior to July 1, 2005.

Monitoring Procedure: Compliance with the Road Corridor Development Plan and the Access Management Plan will be detailed in the General Development Plan, Final Harvest Plan, Annual Operating Plan, and the Stewardship Report.

Operating Plan Linkages: Compliance with the Access Management Plan will be detailed in the General Development Plan, Final Harvest Plan and the Annual Operating Plan.

Goal #5: Reduce the impacts of noxious and restricted weeds on naturally occurring species populations.

The Public Lands Act of Alberta stipulates that noxious and restricted weeds must be controlled on all dispositions issued under the Act. Noxious and Restricted weeds have the ability to out compete many naturally occurring species for the same resources. This may cause a negative impact on natural ecosystem functioning. The following strategies were developed in order to ensure compliance with the Weed Control Act, and to be proactive in the identification and control on noxious and restricted weeds.

Objective 5.1: Monitor and control the spread of noxious and restricted weeds on Vanderwell Dispositions.

Strategy 5.1.1: Adhere to the Weed Control Act.

Acceptable Variance: Upon approval by SRD.

Implementation Schedule: Ongoing.

Monitoring Procedure: Any instances of non-compliance will be detailed within the Stewardship Report.

Operating Plan Linkages: None.

Strategy 5.1.2: Train appropriate woodlands staff to identify noxious and restricted weeds.

Acceptable Variance: All forest technologists and foresters employed at Vanderwell will be provided information on how to identify noxious and restricted weeds within three months of commencing employment.

Implementation Schedule: Within three months of commencing employment.

Monitoring Procedure: Stewardship report to detail date of hire and date that information on identification of noxious and restricted weeds was provided for each new employee.

Operating Plan Linkages: None.

Goal #6: Maintain vegetative structure within the FMA in varying spatial patterns.

Structure can be managed on two levels, the landscape level, and the stand level. Landscape level structure spans large areas whereas stand structure is at a smaller or local scale. Structure at the stand level includes clumps of trees left within and adjacent to cutblocks, and is essential to the maintenance of important biodiversity attributes within the FMA. Strategies have been developed to ensure that structure is retained at both the landscape and stand level within the FMA.

Objective 6.1: Evaluate the amount of and maintain structure across the landscape of the FMA.

Strategy 6.1.1: Define the amount of structure left across the landscape in stands that meet the following criteria.

1. Were included in 1998 net landbase, have since burned, but have not been harvested.
2. Areas that have been deleted from the net landbase for reasons other than merchantability deletions, and were not part of the 1998 net landbase.
3. Merchantability deletions with a TPR of either Fair, Medium or Good.

A data summary and map showing the location of these stands is included in the Landscape Assessment document included in the DFMP. At this

point in time no strategies are being developed to maintain this amount of structure as none of the areas defined above are available for harvest.

Acceptable Variance: None.

Implementation Schedule: Complete.

Monitoring Procedure: N/A.

Operating Plan Linkages: None.

Strategy 6.1.2: Natural areas (Hondo and Saulteaux) within the FMA are to be retained as landscape structure.

Acceptable Variance: No harvest or road building activities allowed within Natural Areas.

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan to contain map demonstrating compliance.

Operating Plan Linkages: Final Harvest Plan to contain map demonstrating compliance.

Strategy 6.1.3: Buffers as defined in the Alberta Timber Harvest Planning and Operating Ground Rules are to be retained as landscape structure.

Acceptable Variance: Buffers to be maintained within ground rule specifications. As approved by SRD.

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan to contain a statement detailing the level of compliance. Stewardship Report to contain a section detailing the level of compliance.

Operating Plan Linkages: Final Harvest Plan to contain statement detailing level of compliance.

Objective 6.2: Maintain structure at the stand level within the FMA.

Strategy 6.2.1: Maintain 3% of the net productive area available for harvest as structure within cutblocks.

Acceptable Variance: Acceptable range is from 2% to 5% within a five-year period over the FMA.

Implementation Schedule: Ongoing. Annual Allowable Cut presented in the PFMS has been reduced by 3% to account for structure retention.

Monitoring Procedure: As described in the stand structure monitoring procedure (Appendix 6). Stewardship report to contain section describing amount of net productive area retained as stand structure.

Operating Plan Linkages: Final Harvest Plan to contain a section describing the percent of net productive area planned to be retained as stand structure.

Goal #7: Maintain the functionality of protected areas.

Protected areas surrounded by the FMA have an important role to play in maintaining ecosystem, species and genetic diversity in the FMA. It is important that the boundaries of these protected areas are respected in order to allow the ecosystems to function properly.

Objective 7.1: Ensure forest management operations do not occur within the boundaries of the Hondo and Saulteaux Natural Areas.

Strategy 7.1.1: The Hondo and Saulteaux Natural Areas have been removed from the net landbase and therefore are not available for harvest. The access management plan shall ensure future access is not planned within these areas.

Acceptable Variance: No harvest or road building activities allowed within Natural Areas.

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan to contain map demonstrating compliance.

Operating Plan Linkages: Final Harvest Plan to contain map demonstrating compliance.

Goal #8: Protect areas of special biological significance.

Areas of special biological significance are not necessarily biologically significant in a spatially or temporally static state. Certain areas may be significant during particular times of the year, such as the breeding season, while others may only be in the current location temporarily, such as nesting sites. The strategies below strive to ensure that biologically significant sites are identified in the right place and protected at the right time.

Objective 8.1: Ensure forest management operations protect areas of special biological significance.

Strategy 8.1.1: Implement Vanderwells Areas of Special Biological Significance Protection Strategy (Appendix 7).

Acceptable Variance: As approved by SRD.

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan to detail the location of sites and protection strategy implemented. A summary showing the number of each feature protected will be presented in the Stewardship Report.

In order to demonstrate that temporal protection measures have been implemented, commence and completion dates of annual operations will be summarized in the Stewardship Report.

Operating Plan Linkages: Final Harvest Plan to contain a section describing protection measures implemented on each area of special biological significance.

Goal #9: Maintain the regenerative capacity and a balanced distribution of forest types within the FMA.

Evolution has provided forest ecosystems with elaborate mechanisms for recovery from disturbances. This capacity for recovery is a measure of the ability of ecosystems to maintain their integrity despite perturbations (CCFM, 1997).

Regeneration of forestlands following human activity, such as harvesting, is a good indication of the sustained productivity of forest ecosystems. Successful regeneration is evidence that forests are resilient and therefore persistent, which implies the integrity of the forest is being maintained (CCFM, 1997).

The silvicultural harvest strategy employed should be appropriate given the pre-harvest conditions that exist in the stand and should strive to emulate natural successional pathways.

Objective 9.1: Meet, or exceed, government regulated regeneration standards.

Strategy 9.1.1: Create strata specific regeneration standards for the FMA prior to December 30, 2006.

Acceptable Variance: As approved by SRD.

Implementation Schedule: To be submitted for review and approval prior to December 30, 2006

Monitoring Procedure: Stewardship Report to detail date the strata specific regeneration standards have been submitted. Growth and yield program to integrate with regeneration standards.

Operating Plan Linkages: None.

Strategy 9.1.2: Follow current government regeneration standards until such time as FMA specific standards are developed.

Acceptable Variance: Stands with understories can be harvested with understory protection harvesting strategies prior to FMA specific regeneration standards being approved on the condition that once regeneration standards are approved, they will apply to the harvested stands.

Implementation Schedule: Ongoing.

Monitoring Procedure: Alberta Regeneration Information System and Stewardship Report to describe level of compliance.

Operating Plan Linkages: Alberta Regeneration Information System to describe level of compliance.

Strategy 9.1.3: Develop and implement a Silviculture Strategy Summary (Appendix 8) to be included in the Detailed Forest Management Plan.

Acceptable Variance: As approved by SRD.

Implementation Schedule: Included in the Detailed Forest Management Plan (Appendix 8). The defined strategies will be implemented post harvest.

Canadian Council of Forest Ministers, Criteria and Indicators of Sustainable Forest Management in Canada.
Technical Report 1997

Monitoring Procedure: A summary will be included in the Stewardship Report that demonstrates the silviculture strategies implemented on the ground were consistent with the Silviculture Strategy Summary.

Operating Plan Linkages: Silviculture Schedule to detail strategies to be implemented.

Strategy 9.1.4: Conduct pre-harvest assessments to determine most effective harvesting and reforestation strategy on blocks as per Vanderwell's Pre-Harvest Assessment Procedures (Appendix 9).

Acceptable Variance: As described in Pre-Harvest Assessment Procedures.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship report to contain section describing level of compliance.

Operating Plan Linkages: None.

Strategy 9.1.5: Implement initial reforestation treatment within 2-years of harvest except where required to achieve another strategy.

Acceptable Variance: As approved by SRD.

Implementation Schedule: Ongoing.

Monitoring Procedure: Silviculture Schedule and Stewardship Report to summarize level of compliance.

Operating Plan Linkages: Silviculture Schedule to summarize level of compliance.

Strategy 9.1.6: Conduct plantation monitoring surveys within 3 years of initial reforestation treatment date to assess level of establishment and identify limiting factors.

Acceptable Variance: Plantation monitoring survey's to be complete on 90% of blocks within 3 years.

Implementation Schedule: Ongoing.

Monitoring Procedure: Silviculture Schedule and Stewardship Report to summarize number of surveys, and actions taken due to results of survey.

Operating Plan Linkages: Silviculture Schedule identifies surveys to be completed annually.

Strategy 9.1.7: Conduct regeneration surveys as required by provincial legislation.

Acceptable Variance: As approved by SRD.

Implementation Schedule: Silviculture Schedule identifies surveys to be completed annually.

Monitoring Procedure: Alberta Regeneration Information System and Stewardship Report to demonstrate compliance.

Operating Plan Linkages: Alberta Regeneration Information System identifies surveys to be completed annually.

Objective 9.2: In reforestation activities, utilize trees that most closely resemble the natural gene pool.

Strategy 9.2.1: Utilize natural regeneration methods where appropriate.

Acceptable Variance: Up to discretion of Vanderwell Contractors (1971) Ltd. Must meet approved regeneration standards and maintain compliance with Silviculture Strategy Summary.

Implementation Schedule: Ongoing.

Monitoring Procedure: Silviculture Schedule and Stewardship Report to detail amount of natural and artificial regeneration used.

Operating Plan Linkages: Silviculture Schedule to detail amount of natural and artificial regeneration used.

Strategy 9.2.2: Reforest areas using seedlings grown from seed collected in the same seed zone, and according to the provincial seed zone guidelines.

Acceptable Variance: As approved by SRD.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship Report to detail compliance with provincial seed zone guidelines.

Operating Plan Linkages: Seed withdrawal and variance applications detail compliance with provincial seed zone guidelines.

Strategy 9.2.3: Stands with a sufficient conifer understory will have understory protection measures implemented so as to ensure 70% of the pre-harvest density of coniferous understory is maintained post harvest. A description of the Understory Protection harvest strategy to be implemented in these stands is included in Appendix 10.

Acceptable Variance: As per Forest Management Directive 2004-01. A minimum of 70% of the pre-harvest coniferous understory density is to be present post-harvest.

Implementation Schedule: Ongoing.

Monitoring Procedure: Reported in Annual submission of regeneration declarations and a summary given in Stewardship Report. Pre and post-harvest densities to be summarized in the Stewardship Report.

Operating Plan Linkages: Annual regeneration declaration submission to contain as-cut summary of broad cover group breakdown by block, as well as block regeneration declarations demonstrating compliance. Final Harvest Plan to contain information on pre-harvest density and harvest design planned to be used to ensure 70% of coniferous understory is protected.

Objective 9.3 Maintain the same proportions of broad cover groups (as defined in the Net Landbase and Yield Curve Development Documents) on the productive landbase within 5% of current status over a 5-year period.

Strategy 9.3.1: Balance the proportion of harvested broad cover group to within 5% of the pre-harvest broad cover groups on a five-year period. This balance will be complete as per provincial forest policy.

Acceptable Variance: As per Forest Management Directive 2004-01.

Implementation Schedule: Ongoing.

Monitoring Procedure: Reported in Annual submission of regeneration declarations with summary given in Stewardship Report.

Operating Plan Linkages: Final Harvest Plan to contain breakdown of broad cover groups by block. Annual regeneration declaration summary to contain an as-cut summary of broad cover group breakdown by block, as well as block regeneration declarations demonstrating compliance.

Strategy 9.3.2: Stands with a sufficient conifer understory will transition as per approved Understory Stand Transition Strategy (Appendix 2).

Acceptable Variance: As per Forest Management Directive 2004-01. A minimum of 70% of the pre-harvest coniferous understory density is to be present post-harvest.

Implementation Schedule: Ongoing.

Monitoring Procedure: Reported in Annual submission of regeneration declarations and a summary given in Stewardship Report. Pre and post-harvest densities to be summarized in the Stewardship Report.

Operating Plan Linkages: Annual regeneration declaration submission to contain as-cut summary of broad cover group breakdown by block, as well as block regeneration declarations demonstrating compliance. Final Harvest Plan to contain information on pre-harvest density and harvest design planned to be used to ensure 70% of coniferous understory is protected.

Goal #10: Maintain a Healthy Forest

Insect and disease infestations have the potential not only to reduce the growth rate of the trees within the FMA, but to impact the long term sustainability of the fibre source. Through identification, and management of areas impacted by insect and disease, the impact on the sustainability of the fibre source can be minimized.

Objective 10.1: Detect and monitor the location of insect and disease infestations within the FMA.

Strategy 10.1.1: Review the annual report produced by SRD detailing the status and location of insect and disease infestations within the province of Alberta.

Acceptable Variance: Review to be complete by Insect and Disease Coordinator within three months of receipt of document.

Implementation Schedule: Annually.

Monitoring Procedure: Document to be signed and stored in Vanderwell Woodlands Library System. Summary to be included in Stewardship Report detailing level of compliance.

Operating Plan Linkages: None.

Strategy 10.1.2: Implement Vanderwell's Insect and Disease Policy and Procedure (Appendix 11) within the FMA.

Acceptable Variance: None.

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to contain sections summarizing any information collected as per the Policy.

Operating Plan Linkages: Final Harvest Plan to contain section summarizing any information collected as per the Policy.

Strategy 10.1.3: Maintain active participation in the Northeast Boreal Integrated Pest Management Working Group.

Acceptable Variance: Can change from Northeast to Northwest or Provincial group.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship Report to detail level of compliance.

Operating Plan Linkages: None.

Objective 10.2: Ensure that merchantable volume loss resulting from insect and disease infestations is minimized.

Strategy 10.2.1: Implement the Dwarf Mistletoe Management Plan (Appendix 12).

Acceptable Variance: As approved by SRD.

Implementation Schedule: Ongoing.

Monitoring Procedure: The Final Harvest Plan, Annual Operating Plan, Silviculture Schedule and Stewardship Report will detail management strategies implemented from the Dwarf Mistletoe Management Plan.

Operating Plan Linkages: The Final Harvest Plan, Annual Operating Plan and Silviculture Schedule to detail management strategies implemented from the Dwarf Mistletoe Management Plan.

Strategy 10.2.2: Harvest stands threatened/infected by insect/disease infestations prior to the harvest of stands that have little to no forest health issues.

Acceptable Variance: Where another forest management value will become jeopardized through the implementation of this strategy.

Implementation Strategy: Ongoing.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to detail level of deviations from spatial harvest sequence for forest health reasons.

Operating Plan Linkages: Final Harvest Plan to detail level of deviations from spatial harvest sequence for forest health reasons.

Goal #11: Mitigate the impacts of forest management activities on the quality and quantity of soil and water.

Forest management operations have the potential to cause a harmful alteration to the quality and quantity of both soil and water resources. In order to mitigate the impacts of forest management activities on soil and water it is imperative that processes are in place that ensure proper operational procedures, including reclamation of disturbed sites, a monitoring program is in place for disturbed areas, and that information is available for those in charge of planning and supervising operations.

Objective 11.1: Implement operational procedures that strive to mitigate the impact on the quality and quantity of soil and water resources.

Strategy 11.1.1: Conduct Pre-Harvest Assessments to identify sites with access and harvest limitations due to soil conditions.

Acceptable Variance: As defined in Pre-Harvest Assessment Policy and Procedure (Appendix 9).

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to identify blocks with access and harvest limitations due to soil conditions.

Operating Plan Linkages: Final Harvest Plan to identify blocks with access and harvest limitations due to soil conditions.

Strategy 11.1.2: Minimize the impact of roads, landings, rutting, displaced soil and debris piles on the productive landbase.

Acceptable Variance: Non-productive landbase created by timber harvesting operations shall not exceed five percent of each harvest areas without prior written approval of Alberta. None productive forest landbase is created by temporary roads, rutting, bared landing areas, displaced soil, and debris piles.

Implementation Schedule: Ongoing.

Monitoring Procedure: As determined in Operating Ground Rules development process.

Operating Plan Linkages: Final Harvest Plan to contain a commitment to implement strategies defined in the approved Detailed Forest Management Plan.

Strategy 11.1.4: All road construction and watercourse crossing structures will be installed and reclaimed in accordance with provincial and federal legislation.

Acceptable Variance: As approved by SRD and the Department of Fisheries and Oceans.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship Report to detail non-compliance with provincial and federal legislation.

Operating Plan Linkages: Appropriate provincial and federal approvals to be in place prior to operations commencing.

Strategy 11.1.5: Reclaim and reforest areas within cutblocks that have been used for roads as per the Alberta Timber Harvest Planning and Operating Ground Rules.

Acceptable Variance: Where road is being retained as long-term access, or to meet other values.

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to detail amount of roads being retained as long-term access and/or to meet other values.

Operating Plan Linkages: Final Harvest Plan to detail location and amount of roads being retained as long-term access and/or to meet other values.

Strategy 11.1.6: Vanderwell will adhere to the Standards & Guidelines for Operating Beside Watercourses of the Alberta Timber Harvest Planning and Operating Ground Rules.

Acceptable Variance: No variance is permitted

Implementation Schedule: Ongoing.

Monitoring Procedure: Final Harvest Plan to contain a statement detailing level of compliance. The Stewardship Report will contain a section that summarizes the level of compliance.

Operating Plan Linkages: Final Harvest Plan to contain a statement detailing level of compliance.

Objective 11.2: Ensure crossing structures are installed, maintained and reclaimed in a manner that allows them to function properly over time. This includes the passage of fish and water while minimizing erosion and road surface degradation.

Strategy 11.2.1: Crossings will be assessed as per the Vanderwell Stream Crossing Assessment Policy and Procedure (Appendix 13). Database to be created

to track the location, LOC/Disposition #, crossing number, crossing class (temp or perm), crossing type (bridge, culvert, etc.), creek class, installation date, inspection date, crossing category (red, green, blue, yellow).

Acceptable Variance: As approved by SRD.

Implementation Schedule: As detailed in Stream Crossing Assessment Policy and Procedure.

Monitoring Procedure: General Development Plan to include a section detailing upgrades required to crossings and schedule of upgrades. Stewardship Report to include a section detailing crossings that have been identified as requiring upgrades, the schedule for these upgrades, dates of upgrade completion and results of post upgrade monitoring.

Operating Plan Linkages: General Development Plan to include section detailing upgrades required to crossings and schedule of upgrades.

Strategy 11.2.2: Assess crossing structures as they are installed, and monitor on a weekly basis (during active operations) according to Field Operations Reporting Protocol.

Acceptable Variance: Deals only with temporary crossings installed with approval of Annual Operating Plan, and contained within cut blocks.

Implementation Schedule: Ongoing.

Monitoring Procedure: As per Field Operations Reporting Protocol. Stewardship Report to summarize outages identified during Field Operations Reporting Protocol.

Operating Plan Linkages: None.

Strategy 11.2.3: Monitor roads as per the Vanderwell Road Monitoring Policy and Procedure (Appendix 14).

Acceptable Variance: None.

Implementation Schedule: As detailed in the Road Monitoring Policy and Procedure.

Monitoring Procedure: General Development Plan to include a section detailing maintenance and upgrades required to roads as well as a schedule detailing when

the work will be complete. Stewardship Report to include a section detailing maintenance and upgrades required to roads as well as dates of upgrade completion and results of post upgrade monitoring.

Operating Plan Linkages: General Development Plan to include a section detailing upgrades required to roads and schedule of upgrades.

Objective 11.3: Training and information is provided to those individuals in charge of planning and supervising the construction, maintenance and reclamation of roads and watercourse crossings.

Strategy 11.3.1: Provide training through the Woodland Operations Learning Foundation (Watercourse Crossing) to appropriate employees on how to properly construct and install creek crossings.

Acceptable Variance: Appropriate employees are anyone in charge of the supervision of watercourse crossing installation and/or repair. If WOLF does not provide training course in time, employee will be responsible to review WOLF training material.

Implementation Schedule: Prior to the supervision of watercourse crossing installation and/or repair.

Monitoring Procedure: Stewardship Report to detail date of training for each employee, as well as date of supervision of first watercourse crossing installation and/or repair.

Operating Plan Linkages: None.

Strategy 11.3.2: Ensure appropriate employees have access to the Forest Soils Conservation Guidelines, the Resource Road Planning Guidelines, the Stream Crossing Guidelines, and the Operating Ground Rules.

Acceptable Variance: If documents become outdated or change significantly, the new documents will substitute the above-mentioned documents.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship Report to contain section confirming above-mentioned documents are contained in the Vanderwell Woodlands Library.

Operating Plan Linkages: None.

Strategy 11.3.3: Provide training to logging and site preparation contractors describing how to minimize soil and water disturbance.

Acceptable Variance: None.

Implementation Schedule: Annually.

Monitoring Procedure: Section to be included in Stewardship Report detailing what contractors have been represented at the annual training session.

Operating Plan Linkages: None.

Goal #12: Enhance the area classified as 'treed' within the FMA.

In order to enhance the long-term sustainability of the FMA it is essential that non-treed areas have the potential to become 'treed.' Two methods to achieve this goal have been developed, firstly to minimize the amount of area being converted from the treed productivity class to the anthropogenic non-forested classification. The second method is to treat areas that are currently anthropogenic clearings and bring them back to the treed productivity classification.

Objective 12.1: Minimize the area within the FMA being converted from the 'treed' productivity class to 'anthropogenic non-forested'.

Strategy 12.1.1: Develop a 10-year Access Management Plan for the FMA by July 1, 2005. Provisions for amendments to this plan will be made in order to continually integrate the access management plan with access developed by other users.

Acceptable Variance: As approved by SRD. Access Management Plan to Integrate with approved Road Corridor Development Plan.

Implementation Schedule: Access Management Plan to be submitted for approval prior to July 1, 2005.

Monitoring Procedure: Variations to be described in General Development Plan, Final Harvest Plan, Annual Operating Plan and the Stewardship Report.

Operating Plan Linkages: General Development Plan, Final Harvest Plan and the Annual Operating Plan to describe the level of integration with the Access Management Plan.

Strategy 12.1.2: Provide a copy of the operational harvest sequence, the Road Corridor Development Plan and the 10-year Access Management Plan for the FMA to the local SRD office and other known commercial users on the FMA. Enclose a letter with these documents encouraging them to practice integrated landscape management. Other known commercial users to be determined through LSAS search.

Acceptable Variance: Copies of documents sent to all companies identified as having land-use dispositions within the Vanderwell FMA.

Implementation Schedule: Above-mentioned documents to be provided within one month of SRD approval date.

Monitoring Procedure: Stewardship Report to detail approval dates and mailing dates of above documents. A copy of the above-mentioned letter will also be included in the Stewardship Report.

Operating Plan Linkages: None.

Objective 12.2: Reforest anthropogenic non-forested sites.

Strategy 12.2.1: Reforest seismic lines that are within harvested areas, excluding seismic lines being used to meet other management objectives (ie. Recreation, access), at the time the rest of the block is reforested.

Acceptable Variance: Unless used to meet other objectives, all seismic lines within cut blocks to be reforested at the same time as the rest of the block.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship Report to detail length of seismic lines inside cutblocks, the ones that were reforested and reasons why seismic lines were not reforested.

Operating Plan Linkages: None.

Strategy 12.2.2: Vanderwell will create an Integrated Reforestation Strategy (Appendix 4) that strives to reforest to silviculturally and commercially acceptable tree species, all dispositions as they are added back into the productive landbase.

Acceptable Variance: Creation of Integrated Reforestation Strategy to be complete and submitted with Preferred Forest Management Strategy.

Implementation Schedule: Ongoing.

Monitoring Procedure: Silviculture Schedule will detail plans to implement the Integrated Reforestation Strategy, while the Stewardship Report will summarize the level of implementation.

Operating Plan Linkages: Silviculture Schedule to summarize areas that have been treated as per the Integrated Reforestation Strategy.

Goal #13: Ensure the ability of the forest landbase to provide a flow of benefits to society.

The primary goal of management within this FMA is the establishment, growing, harvesting and removal of timber. This is to be done while also striving to provide the values as defined by the Planning Team and other stakeholders during the DFMP process. Through the implementation of sound management principles, including economics, it is possible for the forest landbase to provide a range of benefits to society over time. The objectives and strategies detailed in this section strive to ensure the FMA is capable of providing a flow of benefits to society over time.

Objective 13.1: Maintain or enhance the sustainable harvest levels.

Strategy 13.1.1: Calculate a sustainable harvest level for the FMA.

Acceptable Variance: None.

Implementation Strategy: During development of Preferred Forest Management Strategy.

Monitoring Procedure: N/A

Operating Plan Linkages: None.

Strategy 13.1.2: Ensure timber is utilized to the 15/11 utilization standard.

Acceptable Variance: Actual utilization level can be increased. A decrease in the utilization standard must be approved by SRD.

Implementation Strategy: Ongoing.

Monitoring Procedure: Field Operations Reporting Protocol requires assessment of utilization on a weekly basis during operations.

Operating Plan Linkages: Annual Operating Plan to contain section outlining the utilization standard being used during operations.

Strategy 13.1.3: Update the current inventory prior to developing the next Detailed Forest Management Plan. The re-inventory program will be used to assess changes in land-use and forest classifications, an understory inventory will also be created, and areas currently classified as potentially productive will be re-evaluated.

Acceptable Variance: Inventory to be submitted for approval prior to the completion of the next landscape assessment document.

Implementation Strategy: To be submitted for approval prior to the completion of the next landscape assessment document.

Monitoring Procedure: Stewardship Report to detail progress made towards attaining a new inventory.

Operating Plan Linkages: None.

Objective 13.2: Ensure forests are not harvested at a rate greater than what is sustainable.

Strategy 13.2.1: Develop a spatially explicit annual allowable cut that ensures the sustainability of the fibre source for a minimum of 200 years.

Acceptable Variance: As approved by SRD.

Implementation Strategy: Submitted with Preferred Forest Management Strategy.

Monitoring Procedure: N/A.

Operating Plan Linkages: General Development Plan, Final Harvest Plan and Annual Operating Plan to integrate with spatial harvest sequence.

Strategy 13.2.2: Monitor the harvest level on a five-year basis to ensure the harvest level does not exceed the sustainable annual allowable cut level.

Acceptable Variance: As per Timber Management Regulations.

Implementation Strategy: Ongoing.

Monitoring Procedure: Stewardship Report to include section detailing allowable and actual harvest levels on a five-year basis.

Operating Plan Linkages: General Development Plan and Annual Operating Plan to include section outlining allowable quadrant production, quadrant production to date, remaining quadrant production and expected production for timber year.

Strategy 13.2.3: If a natural disaster (insect, disease, wind, fire) results in a harvest level greater than what is deemed sustainable, and impacts greater than 2% of net productive area within one timber year, the annual allowable cut will be re-calculated.

Acceptable Variance: As approved by SRD.

Implementation Strategy: As required.

Monitoring Procedure: Stewardship Report to detail percent of net productive area impacted by natural disaster on an annual basis.

Operating Plan Linkages: None.

Strategy 13.2.4: Develop a long-term growth and yield monitoring program for the FMA by March 1, 2006.

Acceptable Variance: Long-term Growth and Yield Monitoring Program to be submitted to SRD for review and approval prior to March 1, 2006.

Implementation Schedule: Submission to SRD prior to March 1, 2006.

Monitoring Procedure: Stewardship report will detail the exact date of submission and progress made towards implementation.

Operating Plan Linkages: None.

Objective 13.3: In conjunction with the Department of Sustainable Resource Development, strive to minimize the impact of wind and fire events within the FMA.

Forest fires have had an impact on many values within the FMA. These have included things such as the sustainable harvest level and the populations of furbearers. Vanderwell will work with the Forest Protection Division of Sustainable Resource Development to ensure all fires within the FMA are reported, and that where economically feasible, salvage of areas burned or blown over is complete prior to degradation of the fibre resource beyond utilization capabilities.

Strategy 13.3.1: Maintain communication with the Department of Sustainable Resource Development throughout the fire season to ensure all fires within the FMA are reported to Vanderwell Contractors.

Acceptable Variance: As per Annual Fire Control Plan.

Implementation Schedule: Ongoing during fire season.

Monitoring Procedure: Summary of level of communication to be summarized in Stewardship Report.

Operating Plan Linkages: None.

Strategy 13.3.2: When working in the FMA, Vanderwell woodlands staff will monitor for fires and areas impacted by blowdown.

Acceptable Variance: None.

Implementation Schedule: Ongoing.

Monitoring Procedure: Summary of 'finds' to be detailed in the Final Harvest Plan and Stewardship Report.

Operating Plan Linkages: Summary of 'finds' to be detailed in the Final Harvest Plan.

Strategy 13.3.3: Develop a Fire Control Plan on an annual basis.

Acceptable Variance: Fire Control Plan to be submitted to the Forest Protection Division office in Slave Lake annually prior to April 1.

Implementation Schedule: Annually prior to April 1.

Monitoring Procedure: Summary of annual submission dates to be detailed in Stewardship Report.

Operating Plan Linkages: Fire Control Plan to be submitted on annual basis.

Strategy 13.3.4: As part of the Preferred Forest Management Strategy, develop a map that identifies Vanderwell Contractors values at risk within the FMA. This map is to be provided to the Forest Protection Division in Slave Lake.

Acceptable Variance: Values at risk are determined by Vanderwell Contractors (1971) Ltd.

Implementation Schedule: Included in the Landscape Assessment.

Monitoring Procedure: N/A.

Operating Plan Linkages: None.

Strategy 13.3.5: In conjunction with the Forest Protection Division, identify areas with water source requirements in the FMA. Where required, integrate the creation of water sources with other operations.

Acceptable Variance: Creation of water source areas subject to economic conditions.

Implementation Schedule: Identification of water source requirements prior to April 1, 2006. Creation of water source areas is ongoing.

Monitoring Procedure: Stewardship Report to detail date of identification of water source areas. Location of water source areas created to also be detailed in the Stewardship Report.

Operating Plan Linkages: Final Harvest Plan and Annual Operating Plan to detail proposed construction standards and timelines for water source area creation.

Objective 13.4: Ensure that merchantable volume loss resulting from wind and fire events is minimized.

Strategy 13.4.1: Deviate from the approved spatial sequence in order to harvest stands impacted by wind and fire events.

Acceptable Variance: Where another forest management value will become jeopardized through the implementation of this strategy. Stands with greater than 20% of the merchantable volume impacted by wind/fire events are to be targeted for harvest.

Implementation Strategy: Ongoing.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to detail level of deviations from spatial harvest sequence in order to harvest stands impacted by fire/wind events.

Operating Plan Linkages: Final Harvest Plan to detail level of deviations from spatial harvest sequence in order to harvest stands impacted by fire/wind events.

Objective 13.5: Mitigate the impact of forest management activities on recreational opportunities.

Strategy 13.5.1: Create a map showing the location of current recreational sites and trails by September 30, 2005.

Acceptable Variance: Upon approval by SRD.

Implementation Schedule: Complete prior to September 30, 2005.

Monitoring Procedure: Stewardship Report to include copy of map as well as details on date submitted to SRD.

Operating Plan Linkages: Information used in development of Final Harvest Plan and/or Silviculture Schedule.

Strategy 13.5.2: Work with stakeholders to mitigate the impacts of forestry operations on recreational sites and trails.

Acceptable Variance: Where stakeholders can be identified and contacted. Subject to integration with other strategies developed for the management of this FMA.

Implementation Schedule: During Final Harvest Plan development.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to detail how this strategy has been implemented.

Operating Plan Linkages: Final Harvest Plan to detail how this strategy has been implemented.

Objective 13.6: Mitigate the impact of forest management activities on scenic values.

Strategy 13.6.1: Create a map showing the location of areas where scenic values should be considered in the development of Final Harvest Plans, this map is included in the Landscape Assessment portion of this document.

Acceptable Variance: None.

Implementation Schedule: Included in the Landscape Assessment.

Monitoring Procedure: N/A.

Operating Plan Linkages: None.

Strategy 13.6.2: Implement strategies as defined in the Management of Visually Sensitive Areas document (Appendix 15).

Acceptable Variance: As approved by SRD. As defined in the Management of Visually Sensitive Areas document.

Implementation Schedule: Strategies to be implemented as described in the Management of Visually Sensitive Areas document.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to detail strategies implemented in visually sensitive areas.

Operating Plan Linkages: Final Harvest Plan to detail strategies planned to be implemented in visually sensitive areas.

Objective 13.7: Protect historical/unique values during forest management operations.

Strategy 13.7.1: Implement Vanderwell's Historical and Unique Resource Reporting and Protection Policy and Procedure (Appendix 16).

Acceptable Variance: As approved by SRD.

Implementation Strategy: Ongoing.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to detail location of 'finds' and measures taken to protect them.

Operating Plan Linkages: Final Harvest Plan to detail location of 'finds' and measures taken to protect them.

Strategy 13.7.2: Prior to September 30, 2005, conduct an evaluation of the FMA to identify sites of potential historical value.

Acceptable Variance: As approved by SRD.

Implementation Strategy: Create a map showing the location of sites of potential historical value for submission prior to September 30, 2005.

Monitoring Procedure: Stewardship Report to detail date of submission.

Operating Plan Linkages: None.

Strategy 13.7.3: Prior to September 30, 2005, develop operational strategies on how to protect areas with historical and/or unique resources.

Acceptable Variance: As approved by SRD.

Implementation Strategy: Submission to SRD prior to September 30, 2005.

Monitoring Procedure: Stewardship Report to detail date of submission.

Operating Plan Linkages: Final Harvest Plan to commit to implementing approved strategies.

Objective 13.8: Mitigate the impact of forest management activities on Registered Trappers.

Strategy 13.8.1: Calculate the current amount of area within each trapline that is over the age of 40 and the predicted amount 20 years in the future. A summary of these calculations is provided in the Preferred Forest Management Strategy (Section 8.0).

Acceptable Variance: None.

Implementation Strategy: Included in PFMS.

Monitoring Procedure: N/A

Operating Plan Linkages: None.

Strategy 13.8.2: Provide opportunities for Registered Trappers to have input into the development of Operating Plans by implementing Vanderwell's Registered Trappers Notification Policy and Procedure (Appendix 17).

Acceptable Variance: As approved by SRD. As described in Vanderwell's Registered Trappers Notification Policy and Procedure.

Implementation Strategy: Ongoing.

Monitoring Procedure: Final Harvest Plan and Stewardship Report to detail compliance with Policy and Procedure.

Operating Plan Linkages: Final Harvest Plan to detail compliance with Policy and Procedure.

Goal #14: Maintain an environment that allows the forest industry to remain competitive in provincial, national and international markets.

As the primary goal of management of the FMA is establishing, growing, harvesting and removal of timber, it is essential that the management plan considers the long-term competitive nature of the forest industry. Where possible, it is essential that barriers to efficiency are avoided and/or removed. The objectives and strategies detailed below are felt to provide sufficient structure to ensure the goals of management within this FMA are achieved while allowing the flexibility for the industry to remain competitive and continually improve forest management practices.

Objective 14.1: Produce a spatially explicit plan that allows the forest industry to prepare for future expenses.

Strategy 14.1.1: Develop a 10-year operational harvest sequence, with an associated 10-year contingency sequence within the FMA to be submitted with the DFMP.

Acceptable Variance: No more than 20% of area (ha) of the scheduled stands shall be deleted. An equivalent area may be replaced from unsequenced stands within the net landbase while harvesting no more than 100% of the total area sequenced in Spatial Harvest Sequence. These above conditions are to be met across the FMA within a 10-Year period.

Implementation Schedule: Commencing May 1, 2004. First 10- year period runs from May 1, 2004 until April 30, 2013.

Monitoring Procedure: Deviations from spatial harvest sequence are summarized in the Final Harvest Plan and the Stewardship Report.

Operating Plan Linkages: Final Harvest Plan to contain section summarizing reasons for deviations from spatial harvest sequence.

Strategy 14.1.2: Develop a 10-year Access Management Plan for the FMA by July 1, 2005. Provisions for amendments to this plan will be made in order to continually integrate the Access Management Plan with access developed by other users.

Acceptable Variance: As approved by SRD. Access Management Plan to Integrate with approved Road Corridor Development Plan.

Implementation Schedule: Access Management Plan to be submitted for approval prior to July 1, 2005.

Monitoring Procedure: Variations to be described in General Development Plan, Final Harvest Plan, Annual Operating Plan and the Stewardship Report.

Operating Plan Linkages: General Development Plan, Final Harvest Plan and the Annual Operating Plan to describe the level of integration with the Access Management Plan.

Objective 14.2: Allow flexibility in the timing of harvest within the FMA.

Strategy 14.2.1: Allow the forest industry flexibility to post pone harvest in one cut-control period, until the next cut-control period. This would allow the harvest in the next cut-control period to be equal to the allowable cut for that period, plus any un-used harvest from the previous cut-control period.

Acceptable Variance: As approved by SRD. As per the Timber Management Regulations.

Implementation Schedule: As required.

Monitoring Procedure: Annual Operating Plan to detail production records for current cut control period plus expected production for the current year. General Development Plan to detail actual production records for the current cut-control period, and expected production records for five years into the future and proposed carry-forward volume into the next cut-control period. Stewardship Report to detail actual production records in current cut-control period, and proposed carry-forward volume into the next cut-control period.

Operating Plan Linkages: Annual Operating Plan to detail production records for current cut control period plus expected production for the current year. General Development Plan to detail actual production records for the current cut-control

period, and expected production records for five years into the future and proposed under production volume for the current cut-control period.

Objective 14.3: Adopt the planning process as defined in the Alberta Timber Harvest Planning and Operating Ground Rules and Framework for Renewal.

Strategy 14.3.1: Include an implementation strategy in the Detailed Forest Management Plan that is consistent with the Alberta Timber Harvest Planning and Operating Ground Rules and Framework for Renewal.

This process includes the following components:

1. Approved Forest Management Plan
2. Compartment Assessment
3. General Development Plan
4. Final Harvest Plan
5. Annual Operating Plan

Acceptable Variance: As approved by SRD.

Implementation Schedule: Upon approval of DFMP.

Monitoring Procedure: N/A.

Operating Plan Linkages: Planning process to develop as per the above-mentioned document.

Objective 14.4: Support research and innovation into sustainable forest management.

Strategy 14.4.1: Identify areas where increased knowledge is required in order to reduce the uncertainty that results from assumptions made in the strategies being implemented as per this Detailed Forest Management Plan.

Acceptable Variance: As approved by SRD.

Implementation Schedule: Document summarizing research requirements is included in Appendix 19.

Monitoring Procedure: Date of document circulation to be included in Stewardship Report. A copy of this document is to be included in the Stewardship Report.

Operating Plan Linkages: None.

Strategy 14.4.2: Develop a schedule detailing how and when knowledge gaps identified in Strategy 14.4.1 are to be filled.

Acceptable Variance: As approved by SRD.

Implementation Schedule: Document summarizing research schedule is included in Appendix 19.

Monitoring Procedure: Date of submission to be documented in Stewardship Report.

Operating Plan Linkages: None.

Strategy 14.4.3: Implement research to fill knowledge gaps as defined in the schedule produced in Strategy 14.4.2.

Acceptable Variance: Research need not occur within the Vanderwell FMA or be funded by Vanderwell. Research may consist of monitoring programs, operational data collection and summary, the review of existing literature or scientific research programs.

Implementation Schedule: As defined in schedule produced in Strategy 14.4.2.

Monitoring Procedure: Section to be included in Stewardship Report that details the schedule produced in Strategy 14.4.2 and the status of the research.

Operating Plan Linkages: None.

Objective 14.5: Practice adaptive management and continually improvement forest management activities.

Strategy 14.5.1: Develop and implement a Performance Monitoring, Analysis and Reporting Plan (Section 9.0) as part of the Preferred Forest Management Strategy to track whether the forest management goals are being met, and identify areas for improvement. This plan is to also describe how continual improvement is going to be achieved.

Acceptable Variance: None.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship Report to include section detailing how the Monitoring Plan has been implemented.

Operating Plan Linkages: General Development Plan, Final Harvest Plan, Annual Operating Plan and Silviculture Schedule to integrate with Monitoring Plan.

Goal #15: Create an environment where those interested in contributing to forest management decision making have the ability to contribute.

In order to determine the values that Albertans hold for the forests they own, it is essential that there is a forum available for the public to voice their opinions. It is equally important that mechanisms are in place to ensure public have a chance to review and comment on the management plan. This allows them a chance to see that their values are being considered in the management of the forest. To achieve this, it is paramount that a Public Involvement Plan is developed that spells out how public involvement is sought, and how public opinions are utilized in the development of the Detailed Forest Management Plan. This Public Involvement Plan should be designed and made known to all participants prior to the development of the Detailed Forest Management Plan.

Objective 15.1: Develop and Implement a comprehensive Public Involvement Plan that allows public members a voice at the decision making table.

Strategy 15.1.1: As part of the Detailed Forest Management Planning process, develop and implement, with public participation, a government approved Public Involvement Plan (Section 10.0) for the FMA.

Acceptable Variance: The Public Involvement Plan was approved March 10, 2004 and is included in section 10.0 of this document.

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship report to detail level of compliance with Public Involvement Plan.

Operating Plan Linkages: General Development Plan, Final Harvest Plan, Annual Operating Plan and the Silviculture Schedule to integrate with Public Involvement Plan.

Strategy 15.1.2: In order to ensure applicability, review the Public Involvement plan on an annual basis. This review will include members of the public.

Acceptable Variance: Review to be complete prior to November 30 of each year.

Implementation Schedule: Review to be complete prior to November 30 of each year. The revised Public Involvement Plan is to be submitted to SRD for review and approval prior to November 30.

Monitoring Procedure: Stewardship Report to detail annual changes made to Public Involvement Plan. Copy of revised Public Involvement Plan to be submitted to SRD on annual basis.

Operating Plan Linkages: None.

Goal #16: To have an informed public that can provide input in the forest management decision-making process.

Forest management and planning are complex tasks that require knowledge of diverse disciplines as engineering, sociology, hydrology, ecology and economics. To make the right choices, and to maximize societal benefits from the forests without compromising their ability to continue to provide these benefits, all members of the planning team must work in partnership and employ the best and most current information available. The company has a responsibility for ensuring this information is available to others who wish to participate.

Objective 16.1: Develop and implement a comprehensive Public Involvement Plan that promotes public education regarding sustainable forest management.

Strategy 16.1.1: As part of the Detailed Forest Management Planning process, develop and implement, with public participation, a government approved Public Involvement Plan (Section 10.0) for the FMA.

Acceptable Variance: The Public Involvement Plan was approved March 10, 2004 and is included in section 10.0 of this document..

Implementation Schedule: Ongoing.

Monitoring Procedure: Stewardship report to detail level of compliance with Public Involvement Plan.

Operating Plan Linkages: General Development Plan, Final Harvest Plan and the Annual Operating Plan and the Silviculture Schedule to integrate with Public Involvement Plan.

Strategy 16.1.2: In order to ensure applicability, review the Public Involvement plan on an annual basis. This review will include members of the public.

Acceptable Variance: Review to be complete prior to November 30 of each year.

Implementation Schedule: Review to be complete prior to November 30 of each year. The revised Public Involvement Plan is to be submitted to SRD for review and approval prior to November 30.

Monitoring Procedure: Stewardship Report to detail annual changes made to Public Involvement Plan. Copy of revised Public Involvement Plan to be submitted to SRD on annual basis.

Operating Plan Linkages: None.