Sustainable Forest Management (SFM) Plan

North Island Woodlands

Version 2.4

October 8, 1999

MacMillan Bloedel Limited

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Appendices

Appendix 1   CCFM Criteria and Indicators

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               (Phase 1)

1.0   Introduction

The Sustainable Forest Management (SFM) Plan is a "roadmap" to current and long-term SFM performance objectives and management strategies on the Defined Forest Area (DFA).

It is an adaptation of planning processes that have been in place for more than thirty-five years on the DFA. These planning processes include strategic and operational plans, analyses, standards, and monitoring and public review. Management of forest lands in the Campbell River/Sayward area has continued to evolve over time in response to changes in society's values. Revised Management Plans, submitted at approximately five-year intervals include objectives, management strategies and analyses of management impacts. Standards and operating plans have been updated as changes occur. Monitoring has included divisional reporting as well as Tree Farm License (TFL) 39 and corporate annual reports and compliance audits.

The results of the DFA related public participation processes over the past twenty-five years have contributed to the development of the goals, indicators and objectives. (Refer to the summary report on History of Public Involvement.) The recently formed SFM Advisory Group has helped to further develop the SFM performance framework for the DFA. Ongoing public review and input is provided by the Advisory Group, TFL management and operational plan reviews and specific land use issues such as landscape unit planning and community water supply.

The values, goals and management practices described in this document are currently understood and followed by the Division for achieving SFM on the DFA. This is an evolving document that is reviewed and revised on an annual basis with the public advisory group to reflect changes in the forest and local community. In particular, this SFM Plan will evolve over the next two years to incorporate MB's Forest Management Strategy directed at phasing out the clear cutting of old-growth forests[1].

The SFM Plan includes five sections:

Section 1.0   Introduction and Overview.

Section 2.0   Description of values, goals, indicators, objectives and acceptable variances and management strategies for the DFA in terms of the six Canadian Council of Forest Ministers (CCFM) criteria.

Section 3.0   Current status of each indicator, monitoring procedures and reported results.

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[1] The new-forest management strategy announced in June of 1998 is on schedule to meet its target of a five-year transition from clearcutting to variable retention silviculture systems. The definition of stewardship zones is planned to occur in 1999, but will depend on the outcome of discussions with the MoF and MoELP.

2.0   SFM Values, Goals, Indicators and Management Strategies

2.1   The Process for Developing the Set of Criteria and Indicators

The DFA's regulatory and management systems — and the values that they promote — have been developed over several decades and are responsive to Canadian Standards Association (CSA) SFM system criteria, including the requirements for public involvement and the elements of a continual improvement process. However, in some instances differences in terminology and/or organizational format serve to obscure similarities among the systems.

To address this circumstance, MacMillan Bloedel (MB) staff, in conjunction with the recently formed North Island Advisory Group, is involved in an on-going review and analysis process. One significant product of this process is an evolving SFM Plan that ties together numerous initiatives and programs (current and historic) on the DFA.

This document has been developed using two main strategies.

1) External: The Advisory Group proceeded largely from a "fresh perspectives" approach, developing statements of values, goals and indicators with only minimal prior reference to existing strategies.

2) Internal: In contrast, MB staff focussed mainly on identifying those existing management elements that meet CSA system requirements.

The results of these two approaches[2] were then merged into one consensual document (see Appendix 1).

The review process to date has clearly determined that SFM system components addressing each critical element of the six CCFM criteria are now in place and are based on a solid historic foundation of input from a broad base of stakeholders.

Continual improvement of the SFM Plan: The review process continues to expand the SFM Plan. Consistent with the two strategic approaches, this is occurring both through identification and assignment of existing components to their proper place in the CSA organizational scheme and through new public input. The latter will find legal expression in the TFL 39 Management Plan, which is now in the early stages of its five-year review and revision. Because of

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[2] Despite the differences in the two strategies noted above, neither involves a pure approach. Most Advisory Group members are well informed in the relevant concepts and issues as a result of their previous participation in land use and forest management decision-making processes. And, several of the MB staff in this exercise also were key participants in a recent review of corporate forest management practices that produced a major reconceptualization of the company's approach. Those circumstances are reflective of the extensive history of public involvement and continual improvement within the DFA.

the dynamic nature of this process, the description that follows should be viewed as an illustrative snapshot, rather than as a final or static description.

The indicators described in Sections 2.2 to 2.7 are numbered from (1) to (21). The numbering system corresponds to that used in Section 3 to describe the current reporting and monitoring procedures and to the summary table in Appendix 2.

Some values and goals could not be measured by quantifiable indicators. Instead they have been addressed by management programs.

2.2 Conservation of Biological Diversity

2.21 Goals, Indicators and Objectives by Forest Value

2.211 A Healthy Forest that is Ecologically and Economically Productive

Goals:

Maintain ecosystem diversity at quantitative and qualitative levels to support viable populations of existing species.

Maintain the diversity of tree species and age classes distributed across scales from landscape-level to stand-level.

Indicators:

(3) Percentage of forest area that is greater than 60 years of age.

> Objective: A minimum of 36%.

> Acceptable Variance: 36% and greater.

This indicator will be refined as the forest project (refer to Sections 2.22 and 5.1) proceeds. The intent is to measure forest areas that will contribute structural diversity (including snags, coarse woody debris and variation in size) to the forest landscape.

(1) Percentage of primary, secondary and tertiary species as weighted by ha (for second growth).

> Objective: Maintain the percentage of second growth species.

> Acceptable Variance: ± 20% by species.

(11) The age class distribution (%s) within the forest inventory.

> Objective: The forest age class distribution has historically been implicit in the AAC determination. It is now being redefined through the forestry project.

> The objective and acceptable variance will be defined by December 31, 2000.

2.212 Protection of Ecological and Economic Productivity

Goals:

No known species shall become extinct as a result of MB management activities.

Maintain a "mix" of tree species similar to the current species mix.

Indicators:

(4) The number of identified species at risk in the DFA.

>   Objective: Zero annual increase in number of species at risk as a result of management activities in the DFA.

>   Acceptable Variance: Zero.

(1) Percentage of primary, secondary and tertiary species as weighted by ha (for second growth).

(2) Gross volume by species of old growth over time.

>   Objective: Maintain the percentage of second growth and old growth species.

>   Acceptable Variance: ± 20% by species.

Programs:

MB is involved in conservation programs for several red-listed species on its forest management areas. This has included efforts with the Ministry of Environment, Lands and Parks in locating nesting sites for the Northern Goshawk and in searching for habitat areas for the Marbled Murrelet.

2.213 Adaptability to Change

Goals:

Improve commercial values in the timber zone through the use of genetically improved planting stock.

Maintain natural levels of genetic diversity.

Indicators:

(5) Percentage of seed used that is registered or certified.

>   Objective: 100% of seed used is registered or certified.

>   Acceptable Variance: zero.

(6) Percentage of harvested area that is reforested.

>   Objective: Reforest 100% of the harvested area within 3 years on average from harvest.

>   Acceptable Variance: zero.

2.22   Management Strategy:

Concern for sustainability of ecosystems has led to increasing demand for landscape level planning to ensure ecosystems; plant and animal habitats that are conserved or protected.

Substantial areas, largely old growth, have been reserved, on inoperable or sensitive soil sites, and as riparian, wildlife and recreation reserves. These areas are described in Timber Supply Analysis reports (e.g., in the Tree Farm Licence (TFL) 39 Management Plans).

The Forest Practices Code (FPC) requirements for landscape and stand level biodiversity have been applied within TFL 39. The Biodiversity Guidebook was issued in 1995. Recent direction from the Ministry of Forests (MoF) and the Ministry of Environment, Lands and Parks (MoELP) has placed emphasis on old seral stage representation at the landscape level and on variation in stand structure, primarily through Wildlife Tree Patches (WTPs).

The MoF and MoELP have developed a Regional Landscape Unit Planning Strategy. Draft landscape units have been defined and biodiversity emphases have been assigned to these units. These plans have yet to be approved.

MB is continuing to develop a capability for landscape reporting. This includes reporting by biogeoclimatic variant on reserved areas, seral (age) classes, and Interior old growth and patch sizes. These reports will be useful for describing the current situation and as a basis for developing strategies to achieve landscape objectives (when they are available).

At a more general level, age class distributions are reported for major forest units (e.g., Divisions or Blocks) in Management Plans.

In June of 1998, MB announced a New Forest Management Strategy (commonly called the MB Forest Project). Key components include phasing out clearcutting over a five-year period to be replaced by variable retention and an increase in conservation of old-growth forests and wildlife habitat on BC lands managed by the company. Section 5 includes a fuller description of the Forest Project with particular reference to the development of future (phase II) indicators.

2.3   Maintenance and Enhancement of Forest Ecosystem Condition and Productivity

2.31   Goals, Indicators and Objectives by Forest Value

2.311 Ecological and Economic Productivity of Ecosystems

Goal:

Maintain and enhance forest ecosystem health and productivity.

Indicator:

(7) The percentage of the area of an opening that is occupied by permanent access structures (roads and landings, etc.).

Objective: Less than 7% of the area in openings to be in permanent access structures (annual average).

Acceptable Variance: + 1% (i.e. less than 8%).

(6) Percentage of harvested area that is reforested.

Objective: Reforest 100% of the harvested area within 3 years on average from harvest.

Acceptable Variance: zero.

2.312 Healthy Forest Condition

Goals:

Minimize stress associated with harvesting activities.

Minimize losses to fire.

Track and minimize losses to fire, insects and disease.

Recognize that natural levels of disturbance and stress may be beneficial.

Indicators:

(6) Percentage of harvested area that is reforested.

Objective: Reforest 100% of the harvested area within 3 years on average from harvest.

Acceptable Variance: zero.

(8) Area that does not meet Free to Grow (FTG) commitments.

Objective: Zero ha FTG non-compliance.

Acceptable Variance: Zero

(9) Number of forest fires caused accidentally by industrial activity.

Objective: Zero.

Acceptable Variance: one per year.

Programs:

Annual fire pre-organization plan for responding to emergency fire situations.

Divisional Forester does an annual overview of insect and disease issues in the DFA.

MB Forest Project; forest management strategy for the 21st century. This initiative recognizes opportunities for utilizing local natural levels of disturbance as part of the diversity in forest landscapes.

2.313 Adequate Regenerative Capacity

Goal:

Maintain and enhance forest ecosystem condition and productivity.

Indicators:

(10) Area of regeneration failure.

> Objective: Regeneration failure on less than 5% of the current unstocked area.

> Acceptable Variance: Up to 10% of the area established (by planting and natural regeneration).

(8) Area that does not meet Free to Grow (FTG) commitments.

> Objective: Zero ha FTG non-compliance.

> Acceptable Variance: Zero

2.314 *Balanced Distribution of Forest types and Age Classes*

Goal:

Maintain the distribution of different age classes and species.

Indicators:

(11) The age class distribution (%s) within the forest inventory.

> Objective: The forest age class distribution has historically been implicit in the AAC determination. It is now being redefined through the forestry project. Refer to section 5.24.

The objective and acceptable variance will be defined by December 31, 2000.

2.315 *Forest Health*

Goal:

Maintain the ecological suitability of reforested species to sites.

Indicator:

(5) Percentage of seed used that is registered or certified.

> Objective: 100% of seed used is registered or certified.

> Acceptable Variance: zero.

2.316 *Biologically Productive Forests*

Goal:

To maintain the habitat for identified species.

Indicator:

(4) The number of identified species at risk in the DFA.

Objective: Zero annual increase, in number of species at risk, as a result of management activities in the DFA.

Acceptable Variance: Zero.

2.32 Management Strategy:

Forest Protection and Health

MB's goals are to protect the forest and to maintain a healthy forest condition. The Draft SMOOP for TFL 39, MP #8, page 4 describes forest protection and health goals as to:

- Limit the losses from fire through a rigorous program of fire prevention and suppression.

- Minimize losses to insects and disease through monitoring and appropriate control measures.

The fire protection strategy is addressed in the Management Plans for both TFL 39 and Managed Forest (MF) 19.

Prevention and control are governed by operating policies and procedures and a series of plans. Plans are prepared for MoF approval and North Island Woodlands maintains and deploys its own fire suppression equipment.

Fire protection activities include hazard induced logging closures, aerial and ground patrols during periods of high risk and quick initial action using fixed wing aircraft, helicopters and ground crews.

The statistics on area burned and the cause of fires is reported in TFL annual reports.

An insects and disease pest management strategy is attached to TFL 39, MP #7 and will be updated for inclusion in MP #8. Reference to parts of this strategy is also included in MF 19, MP #2. Insect infestations, disease outbreaks and associated management activities are reported in the TFL 39 Annual Report.

Activities are in place to minimize losses from wind damage. These include assessment of susceptibility to windthrow, cutblock design and management practices (feathering of edges where appropriate), monitoring of damage and recovery of downed trees where practical. Refer to the Draft SMOOP for TFL 39, MP #8.

Soil Degradation

Roads, landings and other compacted areas remove area from the productive forest landbase. These areas are estimated in post harvest assessments. This data will be compiled and reported annually for both TFL and MF harvest areas.

Management practices are in place to ensure that impacts are within current standards, including site restoration where appropriate.

Also refer to TFL 39, MP #7 and MF 19, MP #2.

Reforestation

Restocking standards (included in TFL, MP #7 and MF 19, MP #2) specify that depending on site, Areas Awaiting Reforestation (AAR) will be reforested within

two to six years after completion of logging. A measure of success has been to compare the AAR area with the average harvest area of recent years; the objective has been to manage the AAR to be below three years of logging. These results have been reported in the TFL 39 Annual Report.

2.4   Conservation of Soil and Water Resources

2.41   Goals, Indicators and Objectives by Forest Value

2.411 Water Quality Supports Aquatic Life and/or Community Use

Goal:

Conserve (maintain and restore) the productive capacity of water and soil.

Indicators:

(19) Number of Code contraventions related to road, soil, and water management.

> Objective: Zero.

> Acceptable Variance: Zero.

(7) The percentage of the area of an opening that is occupied by permanent access structures (roads and landings etc.).

> Objective: Less than 7% of the area in openings to be in permanent access structures (annual average).

> Acceptable Variance: + 1% (i.e. less than 8%).

(12) The area of water bodies.

> Objective: No change in area.

> Acceptable Variance: Zero.

Program:

Compliance Monitoring Database.

2.412 Soil Qualities Support Forest Productivity.

Goal:

Conserve (maintain and restore) the productive capacity of water and soil.

Indicators:

(7) The percentage of the area of an opening that is occupied by permanent access structures (roads and landings etc.)

> Objective: Less than 7% of the area in openings to be in permanent access structures (annual average).

Acceptable Variance: + 1% (i.e. less than 8%).

2.413 Protection of Ecosystem health and Productivity

Goal:

Minimize soil and water degradation resulting from management activities.

Indicators:

(7) The percentage of the area of an opening that is occupied by permanent access structures (roads and landings etc.)

> Objective: Less than 7% of the area in openings to be in permanent access structures (annual average).

> Acceptable Variance: + 1% (i.e. less than 8%).

(12) The area of water bodies

> Objective: No change in area.

> Acceptable Variance: Zero.

Programs:

MB compliance monitoring program (# slides / occurrences).

Fisheries programs: gene bank, stream identification.

Water quality measurements in the Oyster River and the Tsitika River.

2.42 Management Strategy

Forest management activities can increase rates of soil erosion and affect the flow of sediment into streams and peak flow levels in streams.

Management practices are designed to minimize these impacts. These are based on regulatory guidelines including the Coast Fish/Forestry Guidelines and the FPC. Operational staff receive training for these standards and procedures and environmental audits of operations are conducted annually.

Strategies for protection of soil and water resources are described in the Management Plans.

Since aerial yarding systems significantly reduce impacts on soils and water resources, they (particularly helicopter) are increasingly being used to access timber in sensitive areas.

Forest areas have being mapped by either five-class terrain stability mapping or sensitive site (ES) mapping. This information is used to identify sensitive areas for operational planning. It is also used to estimate appropriate allowances in strategic analyses (e.g., refer to TFL 39, MP #7).

Particular attention is focussed on managing riparian areas. In the TFL, riparian reserve and management areas are implemented according to the FPC. Similar practices are applied in the MF, based on site-specific assessments.

The Coastal Watershed Assessment Procedure (CWAP) has been applied to a number of watersheds according to a priority list developed by the MoELP.

The Oyster River Watershed (in MF 19) and Newcastle Creek (in TFL 39) are water supply areas for local communities. MB has participated in the Oyster River Watershed Management Committee for the last decade.

2.5 Forest Ecosystem Contributions to Global Ecological Cycles

2.51 Goals, Indicators and Objectives by Forest Value

2.511 Forest Land Supports Ecological Cycles.

Goal:

Maintain forests as highest and best use of forest land.

Manage activities so as not to significantly change the total water surface in the DFA.

Indicators:

(7) The percentage of the area of an opening that is occupied by permanent access structures (roads and landings etc.).

> Objective: Less than 7% of the area in openings to be in permanent access structures (annual average).

> Acceptable Variance: + 1% (i.e. less than 8%).

(6) Percentage of harvested area that is reforested.

> Objective: Reforest 100% of the harvested area within 3 years on average from harvest.

> Acceptable Variance: zero.

(8) Area that does not meet Free to Grow (FTG) commitments.

> Objective: Zero ha of FTG non-compliance.

> Acceptable Variance: Zero

(13) Area sold out of the DFA (MF 19).

> Objective: Zero.

> Acceptable Variance: Zero.

(12) The area of water bodies

> Objective: No change in area.

> Acceptable Variance: Zero.

2.52 Management Strategy

The uptake and storage of carbon by forests reduce global carbon dioxide levels.

North Island Woodland's forest management activities are focussed on prompt reforestation of harvested areas with well stocked stands and on restricting the area that is removed from production by roads and landings (refer to Section 2.32).

Surface water area is a significant contributor to hydrological cycles. The current management strategy has had minimal adverse impact on the surface water area in the DFA.

2.6   Multiple Benefits to Society

2.61   Goals, Indicators and Objectives by Forest Value

2.611 A Continual Satisfactory Flow of Benefits from the Forest

Goals:

Sustain or enhance the potential for derived benefits from the forest for current and future generations.

Maximize the work year for employees harvesting the cut.

Indicator:

(14) Harvest levels.

Objectives:	TFL:	Harvest the AAC allocation over the 5 year cut control period.
MF:	Achieve the annual plan.	
Acceptable Variance:	TFL:	+/- 50% of the AAC on an annual basis within the 5 year cut control period.
MF:	+/- 20%.	

Program:

Existence and maintenance of a SFM system.

2.612 Economic Benefits to the Community

Goals:

Maintaining sustainable forests as the highest and best use of the NIW DFA.

Contribute to a stable and growing local economy and to all sectors of society.

Maximize local employment.

Indicator:

(14) Harvest levels.

Objectives: TFL: Harvest the AAC allocation over the 5 year cut control period.

MF: Achieve the annual plan.

Acceptable Variance: TFL: +/- 50% of the AAC on an annual basis within the 5 year cut control period.

MF: ± 20%.

2.613 *Contribute to the National and Provincial Economies (timber/non-timber sectors)*

Goals:

To become a flagship for the Canadian forest industry:

- A globally competitive company.
- Most respected forest company in the world.
- Safest forest company in North America.

Indicators:

(15) North Island Woodlands margin ($/m^3)

Objective: $7.14/m^3 for 1999.

Acceptable Variance: At least 100% of the previous year.

(16) Medical Incident Rate (MIR).

Objective: 7.2 for MB crews in1999.

Acceptable Variance: Less than or equal to the target.

Program:

MB Forest Project.

2.614 *Forests Enhance the Quality of Life*

Goals:

Construct and improve recreational access (e.g. hike and bike trails, maps and signage).

Support the appropriate use of non-timber values.

Maintain or enhance non-timber values while maintaining productive capacity.

Indicators:

(18) Length (km) of active road (maintained and non-maintained)

Objective: Retain the active road network.

Acceptable Variance: +/- 20%.

(17) Number of recreational sites maintained.

> Objective:　　　　Continue the maintenance of existing sites.
>
> Acceptable Variance: Zero.

2.62　Management Strategy:

Employment in the DFA is important to the economic health of the local communities, particularly Sayward and Campbell River. Current employment (1998) is approximately 430 person-years.

A comprehensive review of management strategies and operations occurred in late 1997 and early 1998.

The company reaffirmed its commitment to the solid wood products industry in British Columbia. MB's goal is to be the most highly respected forest-products company in North America. This includes attaining high standards in safety, environmental responsibility and business success.

Strategies are being developed to achieve these goals. The strategies include:

- A dedicated effort to improve safety in the work place.

- Initiating with the IWA a program of co-designing operations, involving all employees in improving safety and productivity and reducing costs. Competitive operations are critical for both corporate success and for the health of the local economy including provision of employment opportunities.

- Restructuring of operations to reduce overhead costs.

- A New Forest Management Strategy was announced in June of 1998. The strategy is in response to market and general public concerns. Key components include phasing out of clearcutting over a five-year period to be replaced by variable retention and conservation of more old-growth forest.

It is expected that a positive market response to the New Forest Management Strategy will help to stabilize short-term harvest and employment levels in local communities.

MB will continue the practice of managing TFL 39 on a Block basis in response to local economic concerns including employment opportunities. The current Annual Allowable Cut (AAC) for TFL 39 is allocated by Block (including Block 2) and analysis for MP #8 will similarly be on a Block basis.

Economic benefits include employment, wages and payments to government revenues, including stumpage fees and other taxes. Records for these are compiled monthly by the Division.

The financial health of the North Island Woodlands operation relates directly to the economic health of the local community. A measure of financial health is the margin (revenue minus costs) that the operation achieves. The Division reports this measure monthly.

The capacity for timber production is indicated by the AAC allocation to TFL 39, Block 2 and annual plans for MF 19 areas. Actual harvest can be compared to these numbers. Substantial variation can occur on an annual basis largely because of changes in market conditions. For example, poor market conditions

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in Japan and increased costs of regulation and additional stumpage charges have resulted in reduced harvest levels in the TFL during1997 and 1998.

An inventory of approvals (in the TFL) for road development and harvesting provides flexibility to take advantage of changing market opportunities. MB in conjunction with the Ministry of Forests has developed such Standing Timber Inventory (STI) targets.

The DFA provides varied recreational opportunities for both locals and residents. Recreation strategies are included in both TFL and MF management plans. Several recreation sites have been developed and maintained by MB and harvesting activities are restricted in some areas because of recreation and visual landscape value.

Public access is available throughout the DFA. Some restrictions are applied, especially in active logging areas, for personal safety reasons and protection of equipment. During periods of high fire hazard, access is limited.

Recognition and management of cultural heritage sites is discussed in Section 2.7.

2.7   Accepting Society's Responsibility for Sustainable Development

2.71   Goals, Indicators and Objectives by Forest Value

2.711 Social Equity

Goals:

Ensure mechanisms are available to allow for fair and effective decision-making.

Respect treaty rights and meet legal requirements regarding aboriginal communities.

Effectively facilitate participation of aboriginal communities in the SFM.

Ensure that mechanisms are available for fair and effective decision-making.

Indicators:

(20) Advisory group active membership.

      Objective: all sectors represented

Programs:

The North Island Woodlands advisory group.

Partnership agreements with First Nations. Acceptance of practices and management by First Nations.

2.712 Certainty of Tenure

Goal:

Accept decisions of the treaty process.

Program:

Corporate policy.

2.713 *Peace and Harmony*

Goals:

Understand and respect aboriginal values as to management of the TFL.

Ensure access to old-growth cedar for traditional, cultural and ceremonial use in perpetuity.

Indicator:

(21) Planting by species (compared to harvest).

> Objective: Plant cedar in proportion to cedar harvest (average over a ten-year period).
>
> Acceptable Variance: To be defined by December 31, 2000.

Program:

The North Island Woodlands advisory group. First Nation's participation in the advisory group.

2.714 *Better Quality Decisions*

Goals:

Ensure that mechanisms are available for fair and effective decision-making.

Forest education activities.

Research activities.

Collect and communicate information that leads to quality decisions.

Indicators:

(20) Advisory group active membership.

> Objective: all sectors represented

Programs:

The North Island Woodlands advisory group.

An education program.

Research programs include:

- The Montane Alternative Silvicultural Systems (MASS) project located in the MF 19 portion of the FDA.

- The Enhanced Forest Management Pilot Project (EFMPP) project located in the TFL portion of the FDA.

- The MB Growth and Yield program includes installations in the FDA.

2.72 Management Strategies

Public participation processes are central to achievement of these goals. An SFM advisory group provides input on an ongoing basis. There is a twenty-five year history of public involvement in the DFA. The process for developing MP #8 for TFL 39 is underway. This includes public review at different stages in preparation of the plan. Operational plans in TFL 39 are available for public review and dialogue occurs with special interest groups such as cavers, other recreational users and the Oyster River Watershed Management Committee

Representatives of local First Nation people are participating in the advisory group. The TFL 39 MP #8 process includes sending invitations to First Nation groups to discuss management issues and Forest Development Plans are referred to local groups for input.

The Division has a partnership agreement with First Nations for carrying out silvicultural work. This agreement is currently being amended to achieve fuller representation of First Nations with traditional territories in the DFA.

Operational planning to identify cultural heritage sites and to develop appropriate management prescriptions occurs according to the FPC and the Heritage Conservation Act. The strategy is summarized in the SMOOP for TFL 39, MP #8.

These major research projects are located in the DFA:

- The Montane Alternative Silvicultural System (MASS) Project located in the MF19 portion of the DFA is a multi-agency cooperative testing new approaches to harvesting and regeneration. Overall objectives are to test alternative silvicultural systems for coastal montane forests, document the operational costs and feasibility and study the biological and silvicultural impacts. There are 21 integrated research studies investigating many aspects of this long-term experiment.

- MB has been actively involved in the Enhanced Forest Management Pilot Project (EFMPP) in Block 2 of TFL 39. This project is funded by FRBC and is focussed on the development and application of spatial planning tools. The results of this initiative will assist in projecting the impacts of management and in developing management strategies.

Other issues regarding sustainability and quality of life for the local communities are covered in Section 2.6

3.0   Monitoring and Reporting

This section describes the reporting and monitoring for each of the quantitative indicators using the numbering system applied in Section 2. A summary is provided in Appendix 2.

Refer to the DFA data set for recent measures for each of the indicators. A current copy of the data set is maintained at North Island Woodlands.

(1) Percentage of primary, secondary and tertiary species as weighted by ha (for second growth).

Forest inventories have been maintained for 30 to 40 years for the DFA; for TFL 39, Block 2 and for Blocks 8 and 9 of MF 19. The inventory is maintained and updated (annually) by the Solid Wood Inventory Section.

The inventories include a description of primary, secondary and tertiary species (by crop trees) for each second growth stand. Beginning in the early 1980s the percentage for primary, secondary and tertiary species has also being included in the inventory. The FDA data set includes only the second growth areas that have been established since 1981 and have a percentage assigned to each species in the stand record.

(2) Gross volume by species of old growth over time.

Old growth is defined as forest areas established before 1864. The timber inventory is maintained and updated by the Solid Wood Inventory Section. Old growth volumes are based on timber cruises, the oldest of which date back to the 1960s. Generally, inventories including old growth volumes by species are updated and reported annually by Inventory Section and hence incorporated into the annual DFA data set.

(3) Percentage of forest area that is greater than 60 years of age.

The Solid Wood Inventory Section is responsible for maintaining the inventory. Generally inventory update reports, including age class distributions are provided annually. Age class distributions are also reported in the TFL 39 and MF 19 Management Plan.

The timber supply analyses provide forecasts of the age class distributions for the TFL and MF portions of the DFA.

(4) The number of identified species at risk in the DFA.

The Provincial Conservation Data Centre is responsible for identifying red- and blue-listed species within ecosections of each Forest District.

Upon request from the MoELP, the Division Engineer contacts the Solid Wood Wildlife Biologist to conduct an inventory and analysis.

(5) Percentage of seed used that is registered or certified.

MB's seed inventory (including that for the DFA) is maintained by the Solid Wood Group and is reported to the MoF.

The MoF requires that all seed used on Crown land is registered and is stored at the seed bank in Surrey. MB also follows this practice for seed destined for reforestation of private land.

The MoF maintain the provincial seed registry and produces an annual report. The registration process ensures that seed zone guidelines are met and that each seed lot includes a minimum requirement for population diversity.

Certification applies to seed produced from a seed orchard. It documents the management of the seed orchard including the design and layout of the clones and the parents that have contributed to the seed lot.

(6) Percentage of harvested area that is reforested.

This indicator is calculated as the Area Awaiting Restocking (AAR) divided by the average harvest area for the last five years. The resulting number of years harvest (for the AAR) is compared to the objective maximum of three years.

The Division provides AAR and harvest area information to Inventory Section on an annual basis. The AAR information is reported in the AAR annual report. Inventory Section calculates and reports the indicator.

Recent timber supply analyses have included an assumption of a three-year regeneration delay. The reduction in average regeneration delay (refer to the DFA Data Set) during recent years is largely because of more prompt planting after harvest.

(7) The percentage of the area of an opening that is occupied by permanent access structures (roads and landings, etc.).

The Division forestry record keeping system includes statistics on the percentage of each opening that is occupied by roads and landings. The percentage is compiled from all the openings in a given year for the DFA Data Report. The Divisional Forester is responsible for tracking and reporting this indicator.

Forecasts for the current year are based on estimates made in operational plans.

(8) Area that does not meet Free to Grow (FTG) commitments.

The Division Forester tracks and reports compliance with FTG obligations. Forecasts are made for the following year of areas expected to meet FTG.

(9) Number of forest fires caused accidentally by industrial activity.

The Division Forester reports annually on the incidence and cause of fire escapes and on the area burned. This indicator includes fires resulting from escaped prescribed burning (slash fires) and from operational causes. The Inventory Section (Solid Wood Group) incorporates this information into the TFL 39 Annual Report. A historical record of fire incidence and damage is included in the history appendix of the TFL 39 MP #7.

A historical record of this indicator is not available for MF 19 areas. Tracking and reporting will commence in 1999.

A small allowance for non-recovered timber from fire has been included in recent timber supply analyses.

(10) Area of regeneration failure.

The Division Forester tracks the area of regeneration failure and reports the results to the Solid Wood Inventory Section which in turn includes the statistics on failures in the annual report on Area Awaiting Restocking (AAR). Regeneration failures may also result in changes in the inventory

update (managed by Inventory Section); a change in a polygon description from stocked to AAR.

Management plan forecasts assume the failure rate to be zero as it is covered in the assumption on average regeneration period.

(11) The age class distribution (%s) within the forest inventory.

The Solid Wood Inventory Section updates the inventory generally on an annual basis. This includes age class distributions for the DFA; for TFL 39, Block 2 and for MF 19, Blocks 8 and 9.

Age class distributions can be forecast as part of the Timber Supply Analyses.

(12) The area of water bodies

Inventory Section reports (at the 1:20,000 scale) on the area of lakes, wetlands and large streams at each inventory update. This includes the inventory summaries in TFL and MF Management Plans.

Care needs to be taken in interpreting historical records of the area of water because of changes in map standards and boundaries. Reporting standards for areas of lakes and swamps and length of streams will be determined in 1999 and then used for reporting future inventory updates.

(13) Area sold out of the DFA (MF19)

Timberlands and properties tracks all land transfers. The Solid Wood Group Inventory Section is responsible for updating the forest inventory, usually on an annual basis. The inventory revisions report includes a description of areas added to or subtracted from each management unit.

The Timber Supply Analyses assume no change. The Timberlands and Properties Group is responsible for forecasting any future changes.

(14) Harvest levels

Scaled harvest volumes are accumulated in the MoF harvest database. The Solid Wood Inventory Section reports these harvest volumes (by operation and tenure) in an annual report titled, "Official MoF Scale Report and MacMillan Bloedel Woodlands Divisions Production." The TFL 39, Block 2 harvest is also reported in the TFL 39 Annual Report.

The Chief Forester of the province determines the Allowable Annual Cut (AAC) every five years for TFLs as part of the Management Plan process. The TFL 39 AAC has been allocated by Block (i.e., an allocation for Block 2 in the DFA) in MP #6 and in the current MP #7. It is expected that the Block 2 contribution to the AAC will also be recognized in the upcoming (December 2000) AAC decision on MP #8.

The Division Manager is responsible for determining the annual harvest plan for the MF portion of the DFA.

The Solid Wood Group is responsible for the Timber Supply Analyses that contribute to the TFL 39 Management Plan process and assist in developing management strategies for MF 19.

(15) North Island Woodlands margin ($/m^3)

The margin ($/m^3 of log) is the difference between the average selling price and the average costs for the operation.

The vice-president in charge of woodlands sets the annual target for each operation.

The Division Financial Manager tracks and reports this indicator.

(16) Medical Incident Rate (MIR)

The MIR is the number of incidents per 100 workers that require a doctor's medical attention or result in lost work time.

The Human Resources Department at the division collects information on all medical incidents. The Financial Manager reports the indicator as part of the monthly divisional financial statement.

(17) Number of recreational sites maintained.

The Division Forester is responsible for maintaining recreational sites in the DFA. This includes tracking and reporting on the sites.

The North Island Woodlands recreation map is currently being updated. The new map will show locations for the current recreation sites.

(18) Length (km) of active road (maintained and non-maintained).

The active road network (maintained and non-maintained roads) is maintained at a 1:20,000 scale by the Solid Wood Inventory Section. It is tracked and reported through the inventory revision process.

The Division also prepares an annual report on road development that is summarized by Inventory section in the TFL 39 Annual Report.

(19) Number of Code contraventions related to road, soil and water management.

The Forest legislation Compliance Database is maintained by the MB Legal department and is monitored on a daily basis.

Contraventions are reported internally in a quarterly report and externally in the annual MB Environmental Compliance Report. The Ministry of Forests also prepares Compliance Reports.

(20) Advisory group active membership.

The Division Forester is responsible for supporting and monitoring participation in the advisory group. There is a membership list and a Terms of Reference for the advisory group. Minutes are recorded for each meeting and provide feedback to the SFM system and plan.

(21) Planting by species (compared to harvest).

The Division Forester is responsible for silviculture plans and for tracking all silvicultural treatments including planting by species. This information is collected and reported annually by Inventory Section. The TFL 39 and MF 19 results are reported by management unit in the annual "Summary of Silvicultural Activities". The TFL 39 results are reported by Block in the TFL 39 Annual Report.

Scaled harvest volumes are obtained from the MoF harvest database and reported by Solid Wood Inventory Section in MB's official MoF Scale Report and in the TFL 39 Annual Report. Often this information has been aggregated by management unit in MB's official MoF Scale Report. Hence there are some gaps in the harvest data by species available for the MF portion of the DFA.

4.0   Links to Management Plans and Operational Plans

Figure 1 shows the links between operational planning and TFL Management Plans with the FPC. Similar processes and links occur in a less formal manner in the MF 19 portions of the DFA.

The SFM Plan is an umbrella plan that links higher level plans such as the Management Plan with operational plans. The SFM Plan reflects the objectives, management strategies and reporting structure of Management Plans. Likewise it is influenced by other higher level plans such as the Vancouver Island Land Use Plan and by legislation including the FPC Act. Figure 1 shows the flow of input and direction to operational plans, including Forest Development Plans and Silvicultural Prescriptions. It also shows the feedback loops of research, monitoring and adaptive management that occur from operations to the SFM plan, management plans and operational plans.
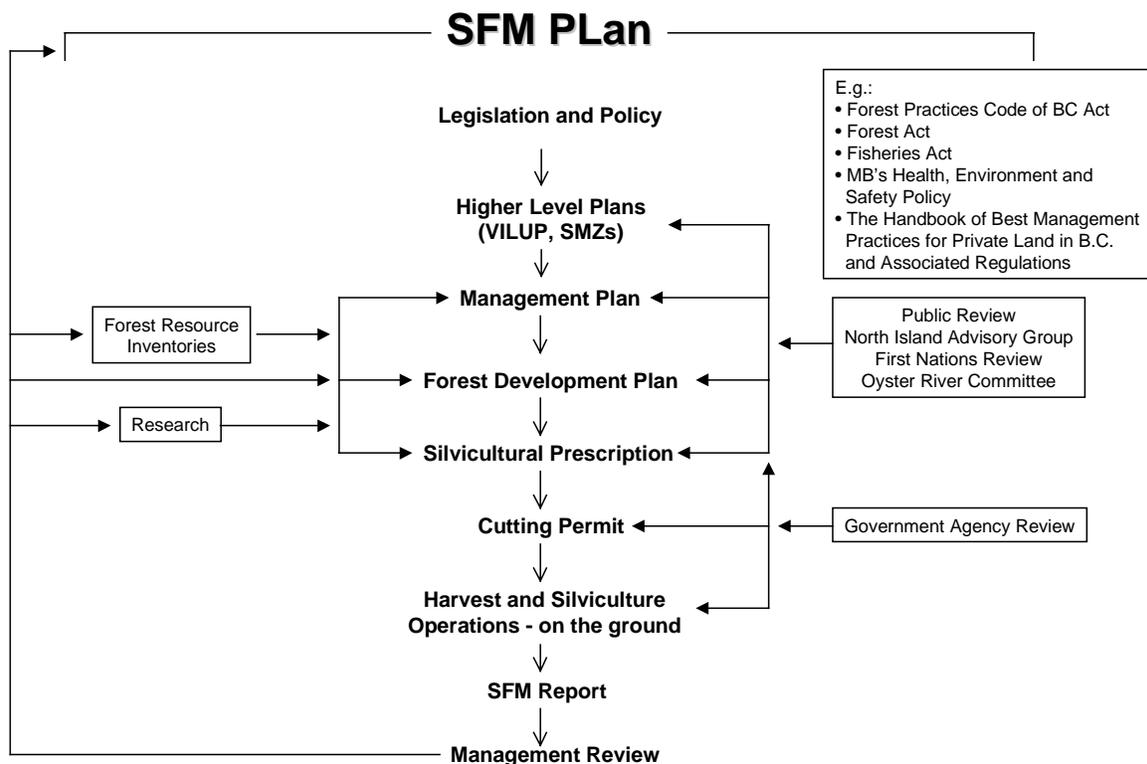

Figure 1:   Links between Plans (TFL - with Forest Practices Code)

5.0   Future Indicators in Progress

Work is proceeding on developing a number of additional indicators. This is an outcome of meetings with the North Island Advisory Group and of the New Forest Management Strategy announced in June of 1998.

Section 5.1 provides a brief overview of the New Forest Management Strategy (forest project). Proposed (future) indicators are discussed in section 5.2.

5.1   Summary of the New Forest Management Strategy (The Forest Project)

Key components of the New Forest Management Strategy include phasing out clearcutting over a five-year period to be replaced by variable retention and an increase in conservation of old-growth forests and wildlife habitat on BC lands managed by the company.

The variable retention forest management system is intended to directly address the underlying public concerns as expressed in international agreements (often referred to as new values) by retaining future options, sustaining healthy ecosystems (productivity), maintaining economic opportunities and sustaining biological diversity. Conserving more old growth and maintaining forest structural legacies important for habitat and ecological functioning of coastal forest ecosystems will enhance biodiversity and ecosystem values. Application of a range of variable retention silvicultural systems (depending on site characteristics and resource objectives), not only adds key biological legacies within harvested areas, but also provides flexibility for maintaining and dispersing forest structure across the landscape. These habitat elements include cavity sites, downed wood, shrubs, deciduous trees, and riparian and early and late seral stages.

In order to meet landscape objectives, MB proposes to divide the forestlands into three distinct stewardship zones (old growth, habitat and timber) with decreasing levels of minimum retention and a range of silvicultural systems from group selection to aggregated retention. These allow for a focussed management approach that will deliver overall improved economic and environmental benefits. Retention minimums in harvest areas are 5% in timber zone areas managed for dispersed retention, 10% in timber zone areas managed for group retention, 15% in the habitat zone and 20% in the old-growth zone.

The MB zoning approach builds on the zoning objectives developed in the Vancouver Island Land Use Plan. It is expected that the stewardship zones will be assigned in consultation with MoF and MoELP staff and other stakeholders during 1999.

A working group of specialists from MB, the MoF and the MoELP has been formed to deal with the many issues that the New Forest Management Strategy raises. It will ensure that the strategy is consistent with the Crown's objectives. MB will also work with both agencies in assigning and implementing an adaptive management and monitoring program to ensure that variable retention objectives are met and that structures retained are effective.

Reporting procedures are being developed to show progress in the transition from clearcutting to variable retention and the amount of retention in harvest blocks.

5.2 Future Indicators

Descriptions of the future indicators include reference to the appropriate CCFM criteria and SFM goals. These indicators are at different stages of development. For some the objectives are clear and it is a matter of beginning to collect the necessary data. Others need to be refined further before defining objectives. These indicators are referred to as Phase II indicators in the summary table in Appendix 1.

5.21 The scheduled phase out of clearcutting.

The New Forest Management Strategy announced in June of 1998 is on schedule to meet its target of a five-year transition from clearcutting to variable retention silviculture systems.

Objective:	By 2003.
Acceptable Variance:	Zero
Criterion:	Conservation of Biological Diversity
Goal:	Maintain ecosystem diversity at quantitative and qualitative levels sufficient to support viable populations of existing species.
Criterion:	Maintenance and Enhancement of Forest Ecosystem Condition and Productivity.
Goal:	Maintain habitat for identified species.

5.22 Stewardship Zone Distribution

The definition of stewardship zones is planned to occur in 1999, but will depend on the outcome of discussions with the MoF and MoELP.

Objective:	Timber 65%, habitat 25% and old growth 10%.
	This is the zoning objective for all of MB management areas in Coastal BC. Although the DFA is a substantial portion of the total it is possible that the zoning in the DFA will be somewhat different from the overall average.
Criterion:	Conservation of Biological Diversity
Goal:	Maintain diversity of tree species and age classes distributed across scales from landscape-level to stand-level.

5.23 Number of Genetically Distinct Salmon Runs

Information on salmon runs will be collected to provide baseline data.

Criterion: Conservation of Biological Diversity

Goal: Maintain natural levels of genetic diversity.

5.24 Age Class Distributions within the Forest Inventory

This indicator4 is included as (11) in Section 2.34. The objective and acceptable variance will be defined following definition of stewardship zones and analysis of the DFA in the context of the forest project.

5.25 Percentage Soil Disturbance within the Net Area Reforested

This is a compliance issue under the Forest Practices Code. MB has put in place a SOP for post-harvest assessments to record whether or not the 5% is exceeded. This indicator will apply once information becomes available.

Acceptable Variance: Zero.

Criterion: Conservation of Soil and Water Resources.

Goal: Conserve (maintain and restore) the productive capacity of water and soil.

5.26 Water Quality Measurements and Stream Flows

Baseline information and installations for measuring water quality and quantity are required to develop these indicators. The first step involves looking for existing data for the Oyster and Tsitika Rivers.

Criterion: Conservation of Soil and Water Resources.

Goal: Minimize soil and water degradation resulting from management activities.

5.27 Recreational Site Usage

MB will start collecting user statistics based on observations by weekly recreation site maintenance crews and as recorded by the watchman on private land.

Criterion: Multiple Benefits to Society.

Goal: Support appropriate use of non-timber values.

Maintain or enhance non-timber values while maintaining productive capacity.

Appendix 1

CCFM Criteria and Indicators

Appendix 2

MB North Island EMS: Woodlands Criteria, Indicators, and objectives (Phase 1)