

APPENDIX I

Statement of Management Objectives, Options and Procedures [SMOOP]

and

Objectives and Strategies for Employment and Economic Opportunities [EEO]

Statement of Management Objectives, Options, and Procedures (SMOOP)

for
Tree Farm Licence Number 39
Management Plan No. 8
(2001 to 2005)

*Embracing lands tributary to the communities of Powell River, Campbell River, Sayward,
Port McNeill, Port Hardy, Bella Coola, Sandspit, Queen Charlotte City, Skidegate,
Port Clements and Massett*

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Solid Wood

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1. INTRODUCTION

This Statement of Management Objectives, Options and Procedures (SMOOP) provides the framework for developing Management Plan No. 8 (MP #8) for the period from 2001 to 2005. It is submitted to demonstrate MB's continuing commitment to manage the forests of Tree Farm Licence (TFL) 39 in accordance with current expectations of the people of British Columbia. It provides a vision of the challenges and issues of the day and our response in the form of proposed objectives and strategies.

TFL 39 is a large and varied forest unit consisting of seven geographically distinct Blocks, dispersed along the BC coast from Powell River in the south to northern Vancouver Island, the Central Coast and the Queen Charlotte Islands (QCI) (refer to the map and description in Section 1.1).

These forests have been providing resources for people for many years. First Nations people have harvested various resources for everyday living. In particular, western redcedar has been used extensively. The history of commercial timber harvesting varies by Block, from one hundred years in Block 1 (Powell River) to twelve years in Block 7 (Namu). Licensed management commenced in the Salmon River with the granting of TFL 7 in 1952 and for the remainder with the granting of TFL 39 in 1961. In 1988, TFL 7 was merged with Block 2 of TFL 39, simplifying management, and administration.

Early initiatives in forest management included an emphasis on reforestation, forest inventory, and research. This commitment to management and innovation has been maintained over the years. In the 1970s, MacMillan Bloedel (MB) added fish, wildlife, and soils specialists to its Forest Management Team. More recently MB has been actively involved in research of alternative silvicultural systems and in developing forest-planning tools.

In June of 1998, MB announced a New Forest Management Strategy, designed to meet changing public expectations of managing for the many and varied forest uses and to meet MB's goals for safety in the work place, business success and public respect as a forest products company. Key components of the new strategy are to phase out clearcutting over a five-year period, to replace it with variable retention and the protection of more old-growth forest.

MB is committed to meet the laws that govern forest management and the conservation of all resources of the forestlands within the TFL.

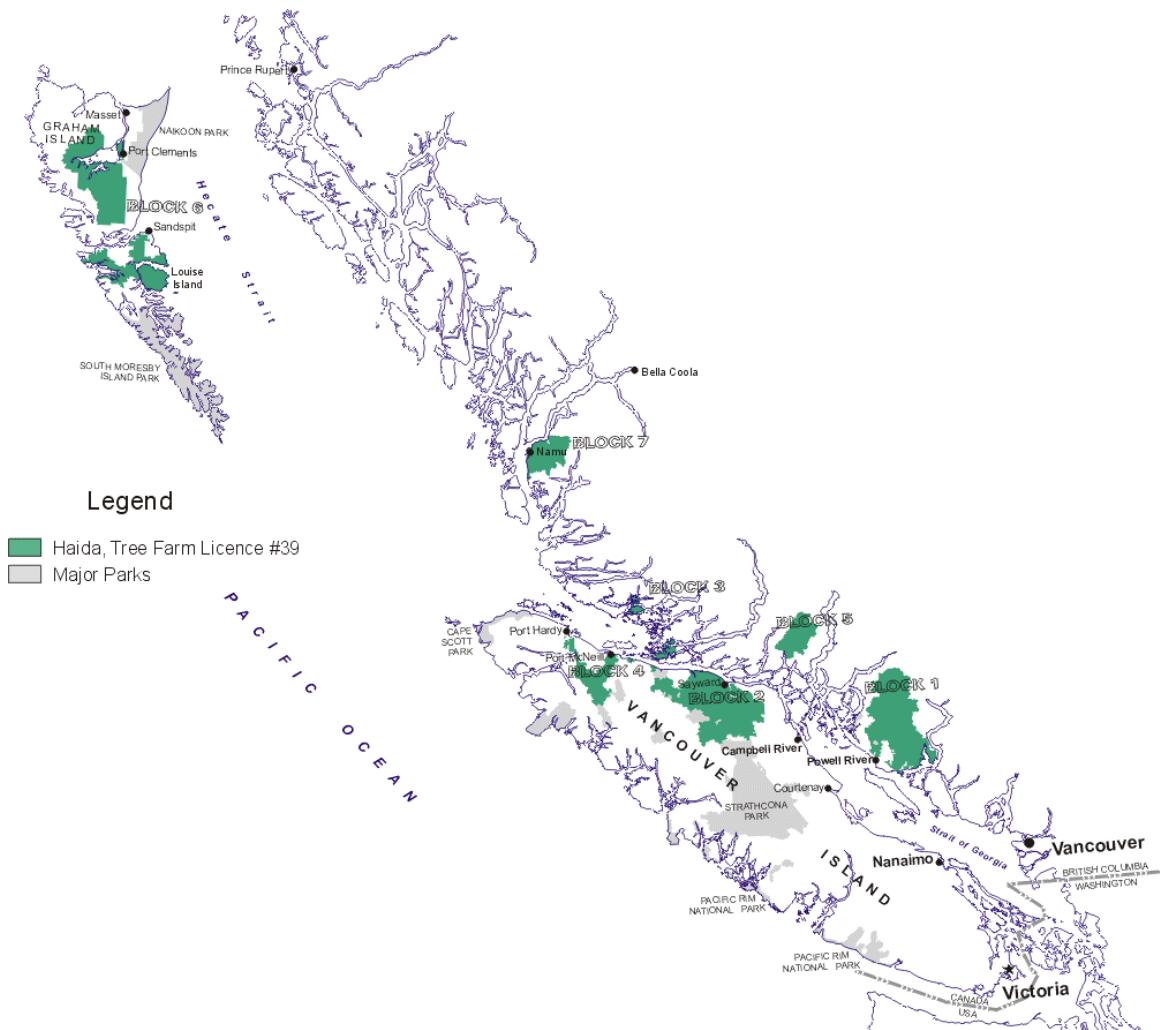
MB recognizes the importance of the TFL to local people. They play a significant role as contributors and critics in the Management Plan and other planning procedures, while also sharing in the benefits the harvest of timber and other resources offer. Public involvement is an important part of the Management Plan process.

1.1 Brief Description of TFL 39

TFL 39 includes seven geographically separate blocks that are dispersed along the BC Coast and are administered by four of MB's operating divisions. Refer to the following table and to the location map.

Division	TFL 39 Block	Geographic Location of Block
Stillwater Division	Block 1 (Powell River)	Powell River Area
Stillwater Division	Block 5 (Phillips River)	NW of Bute Inlet
North Island Woodlands	Block 2 (Adam River)	North of Campbell River
Port McNeill Division	Block 3 (Coast Islands)	Islands off Port McNeill
Port McNeill Division	Block 4 (Port Hardy)	North Vancouver Island
Port McNeill Division	Block 7 (Namu)	Central Coast
Queen Charlotte Division	Block 6 (QCI)	Queen Charlotte Islands

TFL 39 covers over 800 000 ha, approximately two-thirds of which is defined as productive forestland. The current Management Plan (#7) is for the period to the end of the year 2000 and has an AAC of 3 740 000 m³/year, including 162 218 m³/year allocated to the Small Business Forest Enterprise Program.



2.0 GOALS AND MANAGEMENT OBJECTIVES

2.1 Corporate Goals and Objectives

Corporate goals are to be:

- The safest forest products company in North America.
- The most respected forest products company in North America.
- A globally competitive and financially successful company.

Within this context the corporate objectives are to:

- Provide a safe work place for employees.
- Manage all the resources of the TFL for the benefit of both present and future generations.
- Manage the forests to provide a continuous, economic supply of timber and other values.
- Utilize the timber from the forest to maximum economic advantage.

2.2 Forest Management Objectives

The following management objectives for the TFL are grouped under various headings for ease of review. It is important to recognize that these objectives do not stand-alone, rather they are integral to all planned actions. The relative importance of each objective will vary according to the particular circumstances.

2.21 Forest Resource Stewardship

Within the overall context of and compliance with the Forest Practices Code Act and Regulations, the objectives are to:

- Judiciously manage resources in the TFL guided by the knowledge available on sustainable forestry, ecosystem management, and economic reality.
- Balance the legitimate, often conflicting demands and expectations of the various segments of society.
- Collect and maintain appropriate forest inventories of the various resources and use these data when considering options and preparing plans.
- Monitor silvicultural, engineering and other forest practices.
- Identify and take essential restorative actions.
- Adjust practices to improve stewardship based on knowledge gained from research and experience.

2.22 Visual Landscape and Recreational Resource Objectives

The visual landscape and recreation objectives are to:

- Identify and integrate recreational resources into operational plans.
- Develop and/or manage these recreational opportunities in partnership with government and local citizens according to demand (shown by recreation analysis) and availability of funds.
- Manage the various visual landscapes in accordance with their assigned value and the associated guidelines.
- Periodically revise value ratings or conduct new inventories to incorporate changes in value perceptions or management guidelines.

2.23 Harvesting the Allowable Annual Cut (AAC)

The harvesting objective is to harvest the approved AAC, balancing the annual and periodic cut as required by the Forest Act.

2.24 Silvicultural Systems and Management

The silvicultural objectives are to:

- Implement the silvicultural system best suited to achieve objectives for each harvest area according to regulations, land use designation, forest values, silvicultural needs, and economic feasibility.
- Regenerate all harvested land promptly with appropriate species considering both silviculture characteristics and economic values. Set stocking targets to provide a high, sustainable yield of timber.
- Treat the newly regenerated forest as needed to control or encourage understory vegetation or to reduce tree density to meet special habitat goals.
- Prune, fertilize, or thin the new forests when these treatments are economically advantageous or when warranted to achieve non-timber values.
- Harvest hardwood stands in response to market demand.
- Vary the scale and intensity of silviculture treatments considering:
 - likelihood and magnitude of growth or value response,
 - magnitude of impact on and importance of other values present,
 - availability of funding.

2.25 Forest Protection and Health

The forest protection and health objectives are to:

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

- Minimize losses to insect and disease through monitoring and appropriate control measures.
- Minimize losses from wind damage through assessments of susceptibility, cutblock design and appropriate management practices.

2.3 Public Information and Involvement Objectives

2.31 General

In keeping with the expressed interest of the public in all aspects of resource inventory, management, and use, our objectives are to:

- Identify and advise local and other involved public interest groups, local governments, First Nations and interested individuals of opportunities for input to the various planning processes and solicit their feedback.
- Advertise and hold public information meetings to enable any interested member of the public to view and respond to MB's Management Plan proposals and current performance.

2.32 First Nations

First Nations groups, living in communities adjacent to MB operations or having asserted traditional territorial claims on areas of MB operations, will be provided opportunity for forest management involvement and economic benefits through:

- Consultation in planning and in communication of forestry practices and planned activities. Consultation will be carried out within the framework of the Ministry of Forests, Protection of Aboriginal Rights Policy and the Heritage Conservation Act.
- Employment opportunities in forest management activities subject to constraints of existing labour agreements.

3.0 MANAGEMENT ISSUES AND PROPOSALS

In this section we highlight the legal, social, biological and technical challenges faced in the process of managing the Licence and present the proposals for meeting them.

Since the initial award of the Licence, the complexity of management has increased significantly, especially in the past five years. The company must comply with the Forest Act, the Forest Practices Code Act and other Federal and Provincial Acts, liaise with First Nations, and also consult with the citizens of BC.

3.1 Planning and Conservation for All Resources

3.11 MacMillan Bloedel's New Forest Management Strategy

Issue

Meet the overall societal goals of maintaining a sustainable environment while achieving competitive forest operations.

Proposals

- Phase out clearcutting over a five-year period.
- Replace with variable retention silvicultural systems.
- Increase the amount of old-growth forests and wildlife habitat conserved on lands managed by MB in BC.

Discussion

In June of 1998, MB announced a New Forest Management Strategy. 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. This will be integrated with an international advisory panel and forest certification process (Section 3.12). The transition to the New Forest Management Strategy will occur during the last half of MP #7 and the first part of MP #8.

The research carried out by MB indicates that this New Forest Management direction can be consistent with retaining social licence to harvest in original forests, work safety, improved competitiveness and economic results. This strategy applies current ecological thinking to address mainstream public concerns on clearcutting coastal old-growth forests.

With variable retention, some of the original forest is left behind (retained) in-groups or as individual trees instead of the whole stand being removed during harvesting. A defining property of variable retention is that a degree of influence from the original forest is retained on all portions of the area harvested. The size and distribution of groups of trees that are left behind varies depending on the site characteristics. Section 3.371 on Choice of Silvicultural System provides a general description of the wide range of options available.

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 (from old growth to timber) and a range of silvicultural systems from group selection to aggregated retention. The zones allow for a focussed management approach that will deliver overall improved environmental benefits, often with improved economic efficiencies. It is expected that the zones will be assigned in consultation with MoF and MoELP staff during 1999. The following percentage targets apply to all MB tenures. They may differ for TFL 39 alone.

- Old-Growth Zone: Approximately 10% of MB's landbase will be in the "old-growth" zone. This will include areas of high biodiversity and/or environmental sensitivity. High cultural and recreation values are also

priority criteria. The primary management objective is the conservation of old growth values. About two-thirds of the original forest will be retained. Where it occurs, harvesting will include application of group selection and irregular shelterwood silviculture systems and uneven aged management. Retention minimums are 20%.

- **Habitat Zone:** This zone will comprise approximately 25% of MB's landbase. It will include areas that have high biodiversity values and a moderate amount of old growth. The primary objective is wildlife conservation. Silviculture systems utilized in this zone will include various types of shelterwood, group selection and group retention and a mix of even and uneven aged management. Retention minimums are 15%.
- **Timber Zone:** Approximately 65% of MB's landbase will be included in this zone. It will include both private and public land designated low in biodiversity. The primary management objective is commercial timber production. Silvicultural systems used here will include group retention and various types of shelterwood with even aged management. Retention minimums are 10% for group retention and 5% for dispersed retention.

The above includes a description of the general strategy for applying silvicultural systems in each stewardship zone. Within this general structure, there is flexibility to assign the most appropriate silvicultural system according to site specific factors such as species, topography, and forest health.

The MB zoning approach will be used as a strategy to meet existing land-use zoning objectives, such as the Vancouver Island Land Use Plan.

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 also ensure that the strategy is consistent with the Crown's objectives.

The New Forest Management Strategy contributes to proposals for many of the issues discussed in the following sections. These include biodiversity, fish and wildlife habitat, visual landscapes and silvicultural systems. Implications of the new strategy for timber supply and forest (timber) growth, forest health and windthrow are also discussed.

3.12 Forest Certification

Issue

Provide customers and the public with assurance that MB's standard of forest management meets or exceeds expectations.

Proposals

- Apply for forest certification at MB's North Island Woodlands (includes Block 2 of TFL 39).
- Provide a structure and standards to enable all operators (MB, the MoF, small business and other operators) in the North Islands Woodlands

forests to achieve consistency in environmental programs and management systems.

- Review this initial exercise in forest certification before applying the results to other forest areas that MB manages in Coastal BC.

Discussion

There are three main forest certification standards:

- ISO 14001 - ISO stands for the International Organization for Standardization.
- Canadian Standards Association (CSA) Sustainable Forest Management System (Z809).
- Forest Stewardship Council (FSC).

MB is implementing a Sustainable Forest Management (SFM) System at North Island Woodlands (includes Block 2 of TFL 39) with the intention of applying for forest certification for the three standards described above. Application for the ISO and CSA standards is scheduled for the first half of 1999. A preliminary review for FSC standards will commence in 1999. This process has been delayed, pending the development of Regional Standards.

Results of the North Island Woodlands forest certification exercise will then be reviewed before being applied to the other forest areas that MB manages in Coastal BC.

The shift to variable retention and the additional conservation of old growth and other values will contribute towards meeting certification requirements for sustainable forest management.

The forest certification project in Block 2 will assist in refining objectives, management systems and some practices. The results of interaction between this process and Management Plan #8 will contribute towards the draft Management Plan document (scheduled for submission in June of 2000).

Forest certification applies to a defined forest area. MB will work with the MoF, small business and other operators in the North Islands Woodlands forests (includes TFL 39, Block 2) to ensure consistency in environmental programs and management systems.

3.2 Legal and Social Issues and Proposals

3.21 Cooperation with First Nations People

Issues

First Nations groups have expressed concerns about protection of traditional values. They have also expressed interest in increasing their economic involvement in the management of local resources.

An issue for the Haida in the Haida Gwaii/Queen Charlotte Islands is the sustainable supply of redcedar.

Proposals

MB will build on the MP #7 practice of actively consulting with First Nations groups, on planning issues that relate to their asserted traditional territories.

Training and forestry work opportunities will be made available to First Nations groups, utilizing outside funding such as Forest Renewal BC (FRBC) funding where practical.

The supply of old-growth cedar in Block 6 (QCI) will be examined as part of the analysis for MP #8.

Discussion

Initiatives during MP # 7 include training members of some bands for silvicultural work and involving them in basic and enhanced silvicultural programs. Further work opportunities have been provided in road deactivation and other watershed restoration activities.

FRBC has funded the enhanced silviculture and watershed restoration projects.

MB has encouraged review of operational plans. In some operations, band members are employed and trained to assist with this process. The intent is to improve communications and understanding by all involved and hence identify and solve concerns well in advance of planned operations.

3.22 Archaeological and Cultural Heritage Sites

Issues

It is necessary to identify archaeological and cultural heritage sites in advance of development, to resolve their status and obtain approval for appropriate management.

Cultural heritage sites need to be accounted for in estimates of timber supply.

Proposals

Areas of potential interest, where cultural resources may be affected by forest development, will be identified through consultation with local people. MB will conduct assessments and implement management to protect cultural resources in accordance with the Forest Practices Code and the Heritage Conservation Act. This includes working with First Nations, the MoF and the Archaeology Branch (Ministry of Small Business, Tourism and Culture) to identify the appropriate assessment procedures.

Cultural heritage sites will be accounted for in the Timber Supply Analysis for MP #8 by utilizing available inventories, broad assessment information and operational experience as appropriate.

Discussion

Operational personnel are trained in the field identification of heritage features.

Various inventories including traditional use studies have occurred and others are ongoing. In some areas, Archaeological Overview Analyses, combined with operational experience may provide estimates of the impacts of cultural heritage sites on future timber supply.

3.23 Community Issues

Refer to Appendix I on Objectives and Strategies for Employment and Economic Opportunities (EEO).

3.231 Community Water Supply

Issue

The objective is to maintain both the quality and quantity of water supply.

Proposal

Work closely with regional and community water boards to confirm appropriateness or reach consensus on new measures. Continue with planning initiatives and ensure that operations meet defined standards.

Discussion

There are currently six community watersheds that are partly or wholly within the Licence. They are:

- The Haslam/Lang, Whittal, Jeffered and Silver watersheds in Block1.
- Newcastle Creek in Block 2.
- Honna Watershed in Block 6.

As part of our commitment, terrain stability inventories have been completed for all of these community watersheds. Surface erosion potential inventories and Coastal Watershed Assessment Procedures (CWAPs) have been initiated for most of these community watersheds.

3.232 Recreation and Tourism

Issues

The Ministry of Forests (MoF) and MB have established a number of recreation sites. Facilities need to be maintained and there are opportunities to enhance recreation values.

Residents and visitors make use of Licence roads and lands for recreation.

Proposals

- Continue the present practice of providing maps showing recreation areas, roads and rules of access.
- Cooperate with commercial tour operators where access is required.
- Develop and maintain recreation sites in concert with the MoF and subject to funding.
- Develop, with the MoF, objectives for recreation sites and trails.
- Define strategies for managing trails and sites.
- Continue to cooperate with the MoF and local caving groups in managing and protecting sensitive caves and Karst resources. This includes undertaking surface inventories in Karst areas prior to development.

3.233 Forest Access

Issue

Residents and visitors make use of Licence roads and lands for recreation and other forest uses. Continued road access depends on plans for road deactivation, road maintenance and safety issues. In some areas, controlled access is sought for protection of specific forest resources.

Proposals

MB will work with the Ministry of Forests and local residents to develop appropriate strategies for access to specific areas.

3.234 Social and Economic Impacts

Issue

BC's commercial forests including TFL 39 are managed to meet a wide range of goals including those that are economic, community based and environmental. The challenge facing forest managers is to meet such goals that are often conflicting and continue to evolve.

Specific harvest rules and landbase deletions can have significant impacts on levels of timber harvest and hence on local economies and communities. By identifying such constraints that have large economic consequences, efforts can be focused on ways to minimize costs while achieving the various intended objectives.

Proposals

Examine the social and economic impacts of various options analyzed in the Timber Supply Analysis for MP #8. While the emphasis will be on local and regional impacts, provincial effects will also be reported.

Work with government and communities to develop efficient planning procedures in order to achieve a competitive forest industry operation and a sustainable environment.

3.24 Specific Integrated Resource Management Issues

3.241 Regional Planning Initiatives

Issue

Various regional and landscape planning initiatives are occurring in different areas of TFL 39. Some are being developed and others are awaiting formal recognition before being implemented.

Proposal

MB will continue to participate in these planning processes and will continue to develop planning tools to assist with implementing the results in an efficient manner (refer to Section 3.242).

Discussion

The Vancouver Island Land Use Plan (VILUP) has resulted in the establishment of a protected area in the Tsitika Watershed (Block 2) and the definition of Special Management Zones (SMZs formerly referred to as Low Intensity Areas) in parts of the Tsitika and White Watersheds and adjacent to Johnstone Strait (all in Block 2).

SMZs are areas for which conservation of one or more resource values, such as habitat, recreation, scenery or community watersheds is a priority. The management emphasis (objectives) has been defined for each SMZ. The special requirements of SMZs are being built into Forest Development Plans as information becomes available and decisions are reached by the agencies involved.

The VILUP process has also provided recommendations on locations, management objectives and strategies for Enhanced Development Zones and General Management Zones (previously referred to as High Intensity Areas and General Forestry Areas). These recommendations have yet to be approved by government.

The MoF and MoELP have developed a Regional Landscape Unit Planning Strategy. This initiative has defined draft landscape unit boundaries and assigned biodiversity emphases to these units. These plans have yet to be approved.

MB has been an active participant in the Tsitika Integrated Watershed Management Plan (TWIRP). Although the plan no longer has status in legislation, many of the results of the plan are still in effect. These include deer winter ranges, recreation areas and sensitive sites that will again be recognized in the MP #8 analysis.

The Central Coast Land and Coastal Resource Management Plan (CCLCRMP) process is proceeding. This planning area includes Block 3 (Coast Islands), Block 5 (Phillips River) and Block 7 (Namu) of TFL 39. Roading and harvesting in the Koeye Watershed of Block 7 has been deferred since 1991 due to study area status, first as an old-growth deferral area and latter as a Protected Area Strategy study area.

MB is involved in the Tlell Local Resource Use planning process (Block 6 - QCI) and will participate in the Queen Charlotte Islands Land Resource Management Plan.

MB is also working with the Island Community Stability Initiative (ICSI) in the Queen Charlotte Islands. The company acknowledges the commitments made as an addendum to the Memorandum of Understanding between ICSI and the Ministry of Forests (dated August 28, 1996). One strategy that has been discussed is to transfer the TFL, Block 6 allocation of SBFEP to the QCI Community Forest (refer to Section 3.25).

3.242 Landscape Unit Reporting and Planning

Issue

Long-term spatial planning is required to achieve effective harvesting and biodiversity strategies across the forest. Development of planning tools and procedures is needed to do this planning in an efficient manner.

Proposals

Further FRBC funding for the Enhanced Forest Management Pilot Project (EFMPP) in Block 2 of TFL 39 has been approved. Goals for the next two years include development of tools for landscape level allocation of variable retention systems to harvest blocks and a strategic analysis of the timber supply and ecosystem impacts of variable retention. They also include the development and implementation of old-growth recruitment and riparian restoration strategies and the development and application of an adaptive management and monitoring program.

MB will continue to develop capabilities for landscape reporting to assist with the landscape planning process.

Discussion

MB together with the MoF and the MoELP has been involved in an EFMPP in Block 2 of TFL 39 since September of 1995. The project has been funded by FRBC and has focused on developing a working group process and an analytical tool kit for identifying silvicultural investment opportunities spatially in one landscape unit, the Adam-Eve.

With the new FRBC funding, the EFMPP project will be extended to all of Block 2 and the emphasis will be on the development and application of spatial planning tools to MB's New Forest Management Strategy, to variable retention systems.

MB is currently undertaking landscape reporting by Biogeoclimatic variant to assess levels of existing old growth and harvest history. These reports will be used to establish wildlife tree patch target levels and to determine whether old-growth reserves or recruitment strategies are required to meet the biodiversity guidebook recommendations.

3.25 Small Business Forest Enterprise Program

The AAC for TFL 39 includes 162 218 m³ that is allocated to the Small Business Forest Enterprise Program (SBFEP).

Issues

It is intended that the SBFEP harvest volume reflect the timber and harvest profile in the TFL.

Management situations vary across the TFL. There is flexibility to vary management of the SBFEP to suit different requirements.

Proposals

Selection of areas for the SBFEP will be reviewed with the Small Business Foresters of the MoF.

Options for management of the SBFEP in TFL 39 will be reviewed. These include:

- Examining options for trading all or part of MB's harvest allocation in the Strathcona Timber Supply Area for all or part of the SBFEP allocation in Block 2.
- Working with the Island Community Stability Initiative in the Queen Charlotte Islands to transfer the TFL, Block 6 allocation of SBFEP to the QCI Community Forest. This requires defining an appropriate forest area and then separating it from the TFL.

Any changes to the management of the SBFEP in TFL 39 will be done in consultation with the MoF and will be subject to approval by the MoF.

3.3 Management Issues and Proposals

3.31 Fish and Wildlife Habitat Conservation

Issue

Closely linked to social concerns for biodiversity is concern that habitat is maintained for fish and wildlife.

Proposals

Development Plans and Silviculture Prescriptions will be reviewed in early stages with officials and agreement reached on any special actions beyond those prescribed by Regulation. This process includes ongoing habitat assessments and detailed assessments of streams.

Variable retention silvicultural systems and zoning will add significantly to fish and wildlife habitat conservation.

Management strategies for dealing with Marbled Murrelets, Goshawks and Falcon and Eagle nests will be included in MP #8. These will include identifying sites or nests as part of the operational assessment process. Protection is then provided by placing wildlife tree patches or other retention areas around the sites.

Discussion

Substantial areas, distributed throughout the forest landscape, are managed for habitat. These include reserves (i.e., inoperable and sensitive soil areas as well as wildlife (deer, goat and grizzly)) and riparian areas and wildlife tree patches.

Variable retention will ensure that important habitat structures such as snags, large wood debris and deciduous and coniferous leave trees will be dispersed frequently across the forest landscape. Variable retention patches offer refugia for re-colonization of the harvested area as well as thermal and hiding cover for game animals. Old growth and habitat stewardship zones will provide additional emphasis on biodiversity and habitat conservation with a variety of silvicultural systems and higher levels of retention than required by the Forest Practices Code. These zones will apply to approximately 35% of the coastal BC area managed by MB. (Refer also to Sections 3.11 and 3.35.)

3.32 Forest Protection

The document titled, "Insect and Disease Pest Management Strategies for Tree Farm Licence 39, Management Plan #7," approved in August of 1998 will be the basis for developing insect and disease strategies for MP #8.

3.321 Forest Insects

Issue

Endemic insect populations periodically become epidemic and destroy or severely damage areas of forest.

Proposals

MB will continue to utilize the many forest assessments that occur, both on the ground and from the air to identify potential problems. Any suspect areas will be examined and monitored by helicopter or ground surveys and federal or provincial experts will be consulted on appropriate actions.

Trees and stands that are already dead or of high risk to mortality will be salvaged subject to environmental and economic considerations.

Guidelines issued for the management of *Abies* species and Sitka spruce will be applied to reduce the risk of future losses from the Balsam Woolly Adelgid and the Sitka spruce weevil respectively. These guidelines will be described in MP #8.

Discussion

Recent examples of insect infestations include the Douglas-fir bark beetle (*Dendroctonus pseudotsugae* Hopk) in Block 1, the conifer sawfly (*Neodiprion* spp.) in Blocks 2 and 5, and the blackheaded budworm (*Acleris gloverana*) in the Queen Charlotte Islands (including Block 6 of TFL 39). These infestations have been monitored regularly. Salvage plans were implemented in patches of severely damaged forest in Block 5. Since then the sawfly populations have diminished. In Block 2, recent survey results show a significant decrease in sawfly populations and little mortality. Monitoring will continue. In Block 1, salvage operations have recovered mortality caused by the Douglas-fir bark beetle infestation. Populations have decreased to lower levels.

Although currently not present in TFL 39, the Balsam Wooly Adelgid (*Adelges piceae*) has been observed nearby, in the vicinity of Blocks 1 and 2. MB has issued revised and more stringent guidelines to reduce the risk of future losses from the adelgid in stands that include *Abies* species.

MB has guidelines for restricting planting of Sitka spruce, particularly in medium and high hazard zones (includes Blocks 1 to 5 of TFL 39) for the Sitka spruce weevil (*Pissodes strobi*).

3.322 Forest Diseases

Issues

Forest diseases are endemic in over mature forests and are primary or secondary causes in the death of large numbers of over mature trees annually.

In new forests a number of parasitic fungi and plants can kill trees or degrade log quality and value. Most significant of these are hemlock dwarf mistletoe, laminated root rot, Annosus root rot and Armillaria root disease.

Concern has been expressed over variable retention and the management of dwarf mistletoe and root rot, particularly where its occurrence of these diseases is widespread.

Proposals

Variable retention will be prescribed to remove groups of trees that are most severely infected with dwarf mistletoe. For example, where risk is high, lighter levels of aggregated retention will be practiced; if low then group shelterwoods, group selection or dispersed retention could be used. Heavily infected trees along the boundaries of retention can be removed or girdled (creating snags). Diseased trees will not be left as dispersed retention. In some areas, felling residual hemlock saplings after harvest will reduce mistletoe in the new crop.

Laminated root rot (*Phellinus weiri*) occurs in pockets in Douglas-fir stands in Blocks 1 and 2. Strategies for addressing these infections include surveys to map the infected areas, planting of resistant species (e.g., western redcedar) where appropriate and monitoring the results of earlier initiatives and other research to determine appropriate treatments.

Root rot can be managed effectively under variable retention by removing vulnerable species or high infection centres. Alternatively, in some situations, leaving some infection centres and planting resistant species around them may add to the diversity in the stand while not posing a major threat to the remainder of the stand.

3.323 Protection from Fire

Issue

Natural and human caused fires are an ever-present threat during the dry summer months.

Proposal

Fire prevention and attack policies will be continued. This includes hazard induced logging closures, aerial and ground patrols, and quick initial action using fixed wing tanker aircraft, helicopters and ground crews.

Discussion

Damage to established stands has averaged less than 39 ha per year (less than 21 ha per year in mature stands) during the last 25 years. This is due to aggressive policies in fire prevention and initial attack.

3.324 Wind Damage

Issue

Small cutblock sizes and reserves within cutblocks (e.g., wildlife tree patches and riparian management areas) expose more timber edge to potential damage from strong wind events.

Although variable retention may create more exposed edges, the retention pattern could modify wind forces against edges and reduce windthrow relative to clearcuts.

Proposals

The strategy to minimize losses from windthrow will involve further development of practices already in place. These include assessment of susceptibility to windthrow, cutblock and retention patch design based on knowledge of historic wind patterns and assessments, and management practices such as feathering of edges (applied according to the assessment results).

The strategy also includes monitoring of windthrow and recovery of downed trees where practical. The increased use of helicopter grapple yarding should allow retrieval of small patches of windthrow and individual trees that were uneconomic to salvage in the past. Large, rotting logs play an important role in forest ecosystems, hence a variety of size classes of woody debris and damaged or rotten logs will be left behind to maintain natural cycles and habitat.

3.325 Browse Damage to Seedlings

Issues

Deer and/or elk browse of seedlings has a significant impact on reforestation costs in some areas. The impact is greatest on redcedar and yellow cypress, as these species are most palatable to deer.

As an example, elk transplanted to Block 1 (Powell River) in 1994 have caused significant damage to plantations through browsings of redcedar seedlings and antler rubbing on older trees.

Reforestation costs have been particularly high in Block 6 (Queen Charlotte Islands) in recent years because of a District policy for regenerating redcedar and a serious deer browse problem in much of Block 6.

Proposals

Less palatable species will be planted where appropriate in areas that are highly susceptible to browse. Protective measures will be used where necessary.

In Block 6, a strategy for reforesting cedar has been developed and approved by the District Manager. The goal is to achieve landscape objectives for species (cedar) representation in an efficient (low cost) manner. If additional opportunities are identified then the strategy will be amended, subject to district approval.

3.33 Hydrology

Issue

Forest management activities can affect the flow of sediment into streams and peak flow levels in streams. Of concern are the resulting impacts on watershed values, particularly downstream fish habitat and community water supply.

Proposals

Current practices for minimizing impacts on streams will continue to be refined. This includes:

- Work with agencies to improve and apply the Coastal Watershed Assessment Procedures.
- Identify potential erosion concerns during operational planning. This is largely dependent on terrain stability mapping. For problem areas, management will be prescribed according to the advice from soil specialists.
- Ensure that road construction and road maintenance are to a high standard. Aerial yarding systems are being increasingly used in sensitive areas to minimize road density.
- Develop and implement road deactivation plans, and further reduce erosion through dry seeding, or hydroseeding and planting. Utilize FRBC funding for watershed restoration work.

MB will continue to support the MoELP's program for monitoring streams with FRBC funding.

The new MB standards criteria will be used for selecting suitable sites for future wood waste landfills. The surface and ground water in existing sites will be monitored.

The Information Package for MP #8 will include recommendations for incorporating the results of CWAPs in the analyses. The recommendations will be based on a review of completed CWAPs and discussions with MoF analysts.

Discussion

The Forest Practices Code includes procedures for watershed assessment, defining riparian buffers, gully management, road standards and management activities on sensitive soils.

Coastal Watershed Assessment procedures have so far been applied to a total of 43 watersheds and basins in TFL 39.

MB, has entered into a partnership agreement with MoELP to use FRBC funds to install water flow monitoring devices and collect measurements on Newcastle Creek (a community watershed in Block 2), the Benson River (Block 4) and the Theodosia River (Block 1).

MB has new waste management standards that include the management of wood waste landfills (e.g., dryland sort waste areas). The focus is on protection of surface and ground water quality and also includes slope stability and fire issues.

3.34 Maintaining Site Productivity

Issue

Inappropriate road building and maintenance, engineering layout, logging methods, equipment use and fires may damage the soil and lower site productivity.

Proposal

High standards will be maintained in planning, engineering, implementation and monitoring of all activities to ensure impacts are within current standards. Mitigation of impacts will be implemented where necessary.

Discussion

Variable retention is not expected to increase road requirements. There will be situations with increased road requirements and others with reduced requirements. It is expected that in sum they will tend to offset one another. For example, it is anticipated that variable retention will involve more helicopter harvesting (and hence less roads) in steeper terrain. Significant increases in roads are not expected on flatter terrain because of gains in reduced adjacency constraints.

3.35 Biodiversity

Issue

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

Proposals

The variable retention forest management system is intended to directly address the underlying public concerns as expressed in international agreements ¹(often referred to as new values) by retaining future options, sustaining healthy ecosystems (productivity), maintaining economic opportunities and sustaining biological diversity.

MB will continue to cooperate with MoF and MoELP specialists to devise landscape level and stand level strategies to protect ecosystem and species diversity in an efficient manner. This includes, at the landscape level, reporting on important objectives such as old seral representation and developing strategies for meeting targets when existing commitments (e.g., for old seral forest) are short.

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 retained forest structures are effective.

¹ Outcomes of the "Earth Summit" (or United Nations Conference on Environment and Development; UNCED), June 1992 at Rio de Janeiro. Four agreements emerged from this conference that have greatly expanded internationally recognized forest values: Convention on Biological Diversity, Framework Convention on Climate Change, Agenda 21 and Guiding Principles on Forests.

The development and use of performance-based procedures will be encouraged. Refer to the Section 3.242 discussion of the Enhanced Forest Management Pilot Project in Block 2.

Discussion

Substantial areas, largely old growth, have been reserved throughout TFL 39, on inoperable or sensitive soil sites, and as riparian, wildlife and recreation reserves. Stand level biodiversity guidelines are in place and biodiversity landscape units and objectives will be defined and implemented during the next few years.

MB is committed to meeting government landscape objectives including biodiversity requirements for old seral representation and Wildlife Tree Patches. Variable retention and stewardship zones will provide additional means and flexibility for achieving and often exceeding these targets.

Biodiversity and ecosystem values will be enhanced by replacing clearcutting with variable retention, conserving more old growth and maintaining forest structural legacies important for habitat and ecological functioning of coastal forest ecosystems. 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, riparian, and early and late seral stages.

3.36 *Landscape Aesthetics*

Issue

Concerns for forest landscape aesthetics have resulted in management constraints with a major impact on timber harvesting operations. The challenge is to minimize the harvest impacts (volume and cost) of maintaining scenic values.

Initiatives to date include the MoF's visual mitigation strategy, new visual landscape inventories for TFL 39 and MB's transition from clearcutting to variable retention. The following proposals build on these initiatives.

Proposals

MB will work with Ministry of Forests' specialists to manage visual landscapes more efficiently. Opportunities include:

- Reclassifying areas currently known as scenic areas and modification of visual quality objectives and classes. This includes recognizing demand (i.e., number of visitors to an area) as well as supply (the view) when assessing appropriate standards for managing visual landscapes.
- Reducing the time to achieve visually effective green-up. Strategies vary according to site, but may include site preparation, prompt reforestation, and selection of large, fast growing planting stock, increased stocking density and fertilization.
- Applying variable retention in harvest areas to provide as much visual protection as is practical.

- Other improvements in planning including placing of blocks and visual landscape design.
- Visual rehabilitation in some areas.

3.37 Silviculture

3.371 Choice of Silvicultural System

Issue

The public has continued to express concern about clearcutting and impacts of forest management on biodiversity and landscape aesthetics.

Proposal

A key component of MB's New Forest Management Strategy is the phasing out of clearcutting over a five-year period (from 1998) to be replaced by variable retention.

Discussion

The retention of individual trees and groups of trees, including snags and coarse woody debris, can create habitats for a wide range of species and retain diversity across the forest landscape. It can also assist in protecting visual values.

Variable retention covers a wide range of harvesting and silvicultural systems. It includes leaving behind individual trees, groups or patches of trees dispersed throughout a cutblock as long-term reserves (i.e., for at least one rotation). Dispersion is to be no more than four tree lengths between patches and no more than two tree lengths between individual trees. Patch size will be variable, (generally ranging from 0.2 to 4.0 ha) and built around key structural elements or site features. More formally, variable retention includes:

Retention: Standing trees are retained as dispersed individuals or groups to meet objectives such as retaining old-growth structure, habitat protection and visual quality. This method retains structural features (snags, large woody debris, and live trees of varying sizes and canopy levels) as habitat for a host of forest organisms.

Shelterwood: Mature trees are removed in a series of cuts designed to establish a new, generally even-aged stand under the shelter of the remaining trees. The mature trees provide protection and shelter to developing trees. Variations include uniform, group, and strip, natural and irregular (multi-aged) shelterwoods. Long-term reserves may be dispersed through the cutblock or clumped in patches or strips.

Group Selection: Involves harvesting groups of trees in patches of less than 1 ha. It maintains a continuous uneven-aged forest cover with three or more distinct age classes. Group selection creates a patchwork of small openings that provide favourable microclimates for tree species that can regenerate in shade or shelter. Long-term reserves are included with the variable retention approach.

The form of variable retention that is selected for a site will depend upon the stewardship zone (old growth, habitat or timber) minimum retention levels, the specific management objectives for the area and site factors including species, topography and forest health.

3.372 Forest Renewal and Maintenance

Issues

It is required that new forests are established on all harvested, productive land.

The promptness of reforestation and rate of tree growth in young stands can affect the timing of harvests in adjacent areas and in special management areas such as visual landscapes.

MB's corporate stocking standards and survey procedures differ from those of the MoF. This has caused some confusion in defining stocking objectives and in recording and interpreting results.

Newly established seedlings require protection from competition with other plants and unacceptable levels of animal damage.

Recent analyses of MB's permanent sample plot data shows that juvenile spacing of Douglas fir and western hemlock, as practiced operationally, generally decreases stand volumes without improvement in stand values. Some simulation work (e.g., the work of the Stand Density Management Committee) shows small volume gains in some situations, generally at ages beyond culmination of mean annual increment.

A review is required of opportunities for investment in incremental silviculture (beyond basic reforestation) in TFL 39.

Proposals

Reforestation will be completed within the prescribed timeframes at or above acceptable levels of stocking considering the tree species, site quality, and ground conditions. Improved seed will be used as available and fill planting will be done to ensure maintenance of tree species, diversity and genetic quality.

Practices will be applied in specific areas to partially offset the impacts of spatial constraints on reducing medium-term (5 to 30 years) harvest levels. These practices include prompt reforestation, using large, fast-growing planting stock and fertilization at planting in appropriate areas. FRBC funding will be sought for those practices that are incremental to basic reforestation and favourably affect medium-term harvest levels.

MB stocking standards and assessment procedures will be reviewed prior to MP #8. External reporting and auditing will be done to the MoF standards listed in the SP. MB will use the Establishment to Free Growing Guidebook for the Vancouver Forest Region as a guide for assigning stocking standards in SPs.

On difficult sites, (e.g., colluvium), the target and minimum stocking may be reduced and the regeneration delay increased. However, the minimum stocking will not be less than the number of merchantable stems per hectare existing prior to harvest. Another strategy is to use cluster planting.

Where weeds threaten the successful establishment of the new crop, the options of manual, chemical, or no treatment will be evaluated to achieve a free-growing stand. The optimal weed control prescription will be selected with due consideration to environment and yield factors.

MB will review its strategy for maximum density management in TFL 39. Ministry of Forests' Guidelines are expected to be released during the first half of 1999. The review will also include the results of recent analyses of juvenile spacing.

Opportunities for investment in incremental silviculture (beyond basic reforestation and including juvenile spacing) in TFL 39 will be reviewed. MB will use the results of the review to develop an incremental silvicultural strategy for the TFL. The strategy will include encouragement of a more flexible approach to FRBC funding to better achieve forest and social objectives.

3.38 Harvest Strategy

3.381 Working Circles

Issue

Harvest levels for individual blocks of TFL 39 contribute significantly to various communities on the BC Coast.

Proposal

MB will continue to allocate and report harvest by working circle.

Discussion

The current AAC for TFL 39 is allocated between six working circles (Block 1, Block 2, Blocks 3+4, Block 5, Block 6 and Block 7) ensuring that the harvest is dispersed throughout the TFL.

3.382 Harvesting the Profile

Issue

There is concern that the timber harvest should reflect the economic timber types within the forest.

Proposals

Both the available mature timber and harvest projections will be reported by operability and broad harvest method classes for the 20-Year Plan, and the Base Option of the Timber Supply Analysis.

The TFL 39 Annual report will report on harvest volumes classified according to the approved operability classification.

Discussion

The concern for harvesting the operability or economic profile of the forest has focussed on current conditions. The dynamics of economic timber supply over time has often been ignored.

Historically the economically accessible portion of the forest has continued to expand as technical developments have occurred and old-growth prices have increased over the long term. Portions of the forest that contributed to the determination of harvest rates in earlier years did not become accessible until later.

To a considerable extent harvesting of the forest profile is occurring as spatial harvesting constraints and netdowns to the timber harvesting landbase are dispersing operations throughout the forest and across the profile. In TFL 39, harvesting with "non-conventional" systems, particularly long line and helicopter systems, has increased considerably in recent years, and will increase more in the coming years.

The profile of timber available for harvest is dynamic, changing with regulations, technical developments, market conditions, maturing of second growth and the local impacts of development sequence and spatial harvesting constraints.

3.383 Harvesting Deciduous Stands

Issue

TFL 39 includes almost 9 000 ha of stands with a deciduous (primarily red alder) leading species. These deciduous stands can contribute to both landscape biodiversity and timber production objectives.

Proposals

MB will manage deciduous areas, recognizing the contributions of some areas to biodiversity values and opportunities for utilization of other sites for timber production.

Variable retention will provide more flexibility for leaving deciduous trees (individual and patches) across the landscape.

3.384 Second-Growth Harvest Strategy

Issue

The current second-growth harvest strategy in TFL 39 does not recognize changes in harvest opportunities and spatial patterns resulting from the Forest Practices Code and other recent regulations.

Proposals

Variable retention will reduce the timber supply impacts of spatial constraints, particularly during the next 10 to 20 years.

In addition, planning for first pass harvest opportunities in second growth will occur at earlier ages than previously considered, in the timber zone.

Discussion

The Protected Area Strategy and the Forest Practices Code have significantly reduced planning flexibility and harvest opportunities in mature timber. The timber harvesting landbase has been reduced substantially and spatial

harvesting constraints, quite different from historical harvesting patterns, have been imposed.

Spatial constraints (including maximum block size, adjacency and rate-of-cut restrictions) mean that areas of similar aged second growth will not be harvested over a short period as they were in the previous harvest. Instead they will be harvested over a number of passes, often four or more over a period of 30 or more years.

The strategy then, in the timber zone, is to plan for first pass harvest opportunities in second growth at earlier ages than previously considered. It is proposed that initially, "minimum harvest ages" based on calculations of financial rotations in recent stand level analyses be used. The first pass "minimum harvest ages" will vary between 40 and 70 years depending on site productivity and species. Later harvest passes in similar aged timber will by definition occur at older ages.

This approach takes advantage of the considerable variability in stand conditions in many places and assists in the transition to the desired forest spatial pattern while helping to reduce impacts (of this transition) on timber supply in the medium-term.

The "minimum harvest ages" will assist in providing an initial focus for harvest planning. Collection of more detailed information from inventories and site visits will then indicate priority areas for harvest (e.g., forest health) and areas that must be deferred because of non-timber resource issues or because of harvest economics.

On average, rotation ages will be longer in habitat and old-growth zones.

The variation in species, site productivity, terrain, stewardship zones, silvicultural systems and management concerns such as visual landscapes will result in a wide range of stand types and rotation ages across the forest.

3.385 Variable Retention and Harvest Economics

Issues

There are concerns, about the effect of variable retention on harvest economics and the potential to high-grade stands.

Proposals

MB's strategy at the landscape level is to harvest stands with a positive profit margin.

At the stand level, MB will use several strategies including variable retention and multi-pass harvesting to optimize margin – increasing the average value of produced logs, while maintaining high values in retained structures. It is clearly recognized that long-term forest health, genetic diversity and productivity must be maintained and variable retention is key to achieving these objectives as well.

Discussion

MB will apply variable retention to achieve both economic and ecological values. Stands will not be high graded (i.e., leaving only low value trees with no plans for

regeneration). A variety of trees and groups of trees will be retained in a landscape. Stands will be regenerated (Section 3.371) and forest health issues (Section 3.32) will be attended to. Within this framework there are opportunities to retain trees with high habitat and ecological values but poor timber values.

Through variable retention, MB will leave important habitat structures such as snags, large woody debris and live trees of various sizes. Often trees with decay or timber "defects" have high value as habitat for cavity-nesting birds. These subsequently become habitat for small mammals and amphibians. Finally as coarse woody debris they help maintain forest productivity. Traditional clearcut silviculture has removed these trees, whether or not they had commercial value. Trees felled during clearcutting that have little or no product value are of greater social benefit if left on-site for wildlife habitat and ecosystem function.

Special habitats like ravines, wetlands, and rock outcrops typically have higher plant diversity, yet lower timber values. Leaving these sites as part of permanent reserves will also help to maintain biodiversity.

Removing groups of trees in several stages over a rotation with shelterwood and selection systems provides an opportunity to take advantage of market fluctuations for different species. Where feasible, logging patches with a higher proportion of a species will be timed to match market value. For example, over the past 10 years, cedar and hemlock have fluctuated in their relative demand and price. In some stands, healthy understory trees that are too small for commercial use may be left, allowing them to grow as part of the next rotation.

3.386 Impacts of the New Forest Management Strategy on Harvest Levels

Issue

Of interest is the impact of zoning and variable retention on both short-term and long-term harvest levels.

Proposals

Estimates of impacts have been developed and will be refined through discussion with Ministry of Forests and other specialists.

The Timber Supply Analysis for MP #8 will include assumptions for estimating the impacts of zoning and variable retention on both short-term and long-term harvest levels.

Discussion

It is estimated that zoning and variable retention will increase the area of reserved (protected) productive forest by approximately 20% (from roughly 30% to 36% of the total productive forest, company-wide).

There are opportunities to offset much of the negative effect of increased reserves on timber supply, particularly in the short term (next 5 to 10 years):

- The full adoption of variable retention will not occur immediately, but will occur during a transition period of five years.
- The impacts of spatial constraints on harvest schedules can be reduced. Adjacency and block size requirements established for clearcutting need

to be reviewed for their applicability to variable retention. Variable retention will also assist in managing visually sensitive areas, enabling more area to be harvested without disrupting the visual appearance.

- Variable retention prescriptions may be designed to recover timber from areas not accessible with clearcutting methods. In such areas, including sensitive soils, riparian, recreation and wildlife areas, variable retention can allow the harvest of some timber while protecting other important forest values.

Management Plan #8 will outline strategies for demonstrating that these opportunities are available and that harvesting is possible in constrained areas.

Long-term harvest volumes will likely be reduced somewhat. All evidence suggests that adoption of silvicultural systems other than clearcutting will reduce yield future yields of subsequent yields.

4.0 RESOURCE INVENTORIES: PRESENT STATUS AND PROPOSALS

Before a Management Plan can be prepared, resource inventories are required to be completed and used in the various phases of planning, particularly in the Timber Supply Analysis and 20-Year Plan. Further, these resource inventories must be updated on a regular basis. A schedule will be developed in consultation with the MoF and will be reported in the Management Plan.

The following sections highlight the present status of the various inventories and proposals for improvements.

4.1 Timber Inventory

Present Status

TFL 39 was inventoried between 1962 and 1964.

Improvements have since been made to the inventory:

- The inventory has been updated each year to reflect areas and volumes logged.
- In 1989, operational cruising was combined with the 1987 inventory to improve the less intensive original inventory on those areas. In the remaining area (not included in the operational cruise), the inventory was recompiled to exclude samples in areas logged in 1987 or earlier.
- Since 1977, 78 800 ha of second growth have also been cruised, largely as part of the 31+ re-inventory program for stands which reach pole size, normally between 30 and 40 years of age. Cruise data for these stands have been entered into the inventory database.

Inventory audits have been conducted on old-growth areas cruised in 1964. The tests are almost complete. Block 5 will be completed in 1999 and there are no plans to check the small area of old growth remaining in Block 3.

The audits have occurred in accessible timber and inaccessible timber as typed in the 1964 inventory. Inventory volumes in the accessible timber types are compiled from samples, while in the inaccessible type, volumes were estimated from photo-coding. More recent operability mapping has replaced the accessibility classification.

The audit results for accessible areas show that only in Block 6 (QCI) is the test significantly different from the 1964 inventory. Block 6 volumes will be reduced accordingly in the MP #8 analyses. A similar adjustment was applied to Block 6 volumes in MP #7.

For the inaccessible area, the test volumes are higher than the photo-coded estimates for all Blocks tested—significantly higher in Blocks 1, 2, 4 and 7. Volumes will be increased according to these test results in the MP #8 analyses.

Proposals

The inventory will continue to be updated on a regular basis.

Inventory update procedures will be developed and implemented for variable retention systems. Information on reserves, residual timber available for future harvests and prescriptions are required for planning and monitoring.

The audit of Block 5 old-growth volumes will be completed.

The inventory will be recompiled for the MP #8 analysis. Unlogged areas of operational cruising completed since 1987 will be combined with the inventory. As in the 1989 recompilation, the original (1964) inventory will be recompiled to exclude logged samples and samples covered by operational cruise areas. The recompilation will use the latest Kozak 4.1 taper equations.

For the MP #8 analyses, inventory old-growth volumes will be adjusted based on the audit test results, as described in the “Present Status” section above.

4.2 Timber Operability

Present Status

Operability mapping was completed for Blocks 1 to 5 and 7 in 1993 and was approved for use in the Timber Supply and 20-Year Plan analyses for MP #7.

Proposals

Revisions to the operability mapping for Blocks 1 to 5 and 7 and new mapping for Block 6 will be completed by early 1999. Results will be reviewed with the MoF Districts before use in the analyses for MP #8.

Minor checks and revisions will be made as needed during MP #8.

4.3 Recreation and Landscape (Visual) Inventories

Present Status

Recreation and visual landscape inventories of differing standards were available for the MP #7 analyses.

Proposals

New recreation, Recreation Opportunity Spectrum (ROS) and visual landscape inventories have or are being completed for all seven Blocks. This information will be applied in the MP #8 analyses.

Recreation analyses will also be completed for each Block prior to MP #8

During MP #8 these new inventories will be refined as appropriate. They will be reviewed with MoF District staff by December 31, 2003, prior to MP #9.

4.4 Environmentally Sensitive Areas

Present Status

All of TFL 39 has been mapped by either five-class terrain stability mapping or ES mapping. This information is sufficient for identifying sensitive areas for operational planning. Procedures for using this information in the MP #8 analyses were approved in February of 1998.

MB's GIS database includes streams, lakes and wetlands mapped to a 1:20 000 scale. It also includes information on hydrologic stream order, fish streams and community watersheds. This information will be used to determine riparian netdowns for MP #8 analyses.

More detailed stream information is collected at the 1:5 000 map scale for operational planning.

Proposals

Mapping of surface erosion potential in community watersheds will be completed.

Terrain stability mapping in Block 1 will be done in conjunction with the scheduled work on Terrestrial Ecosystem Mapping. Mapping, funded by FRBC, commenced in the Lois Lake area during 1998.

Possibilities for improving the 1:20 000 scale inventory of fish, stream, lake and wetlands information from 1:5 000 operational plans will be examined. This includes using operational data to check riparian assumptions used in the Timber Supply Analysis and 20-Year Plans, and transferring some of the operational data into the Geographic Information System (GIS) as it is collected.

4.5 Wildlife

Present Status

Deer winter ranges, and elk, goat and grizzly habitat areas were mapped and included in MP #7. Bald eagle nesting sites have also been identified and mapped in some areas.

Proposals

- Wildlife inventories are being reviewed and updated for including in MP #8.
- Ungulate winter ranges in Blocks 2, 4 and 5 that have been formally designated will be included in MP #8.
- These reserve areas will be evaluated and refined as appropriate over time.

4.6 Ecosystem Mapping

Present Status

Ecosystem mapping exists for only part of TFL 39.

Ecosystem mapping provides:

- Essential information on the location and extent of forest ecosystems for landscape-level planning, including the representation of biological diversity and protection of critical wildlife habitat.
- The ability to use GIS-based computer models to assess the impacts of forest practices on wildlife habitat and populations.
- A tool for site productivity estimation for old-growth stands.
- An aid for Silvicultural Prescription (SP) mapping (e.g., initial stratification) and extrapolation from similar ecosystems.
- A framework for predicting silvicultural treatment benefits on a forest-wide basis for economic models and cut-level determination.

Proposal

MB's goal is to map ecosystems to the site series level at the 1:20 000 scale for all of its management tenures. The fieldwork is scheduled for completion by the year 2000 following the Resources Inventory Committee (RIC) standards. Work in TFL 39 is being funded by FRBC.

By the end of the 1998/99 year, 560 000 ha of ecosystem mapping fieldwork will have been completed in TFL 39.

5.0 INTEGRATED RESOURCE MANAGEMENT PLANNING PROCEDURES

Subsections 5.1 to 5.4 describe the Timber Supply Analysis, 20-Year Plans and Economic Impact Analysis. The purpose of these Analyses is to provide estimates of current and future harvest levels and their contributions to the regional and provincial economies. The allowable annual cut recommended for MP #8 to the Chief Forester of the Province will be developed from the results of these analyses.

5.1 Timber Supply Analysis

A Timber Supply Analysis (TSA) will be completed to provide estimates of future harvest levels and to show how issues described earlier in this report may impact harvest levels.

It is proposed that a linear programming based harvest-scheduling model (Woodstock) will be used in this analysis. Woodstock is used for strategic and operational planning in other provinces and countries.

An Information Package, a detailed report on assumptions and procedures to be used in the TSA, will be submitted to the MoF by August 31, 1999. Approval of this "Information Package" is required before doing the TSA. The Information Package includes detail on:

- Options.
- Process of compiling inventory data.
- Description of the landbase including adjustments to determine the net landbase available for timber management.
- Integrated resource management assumptions.
- Silvicultural and yield projection assumptions.

The following subsections provide a brief description of the proposed options.

5.11 Base Option

It is proposed that the base option includes the new Forest Management Strategy that was announced in June of 1998. The five-year transition from clearcutting to variable retention will be halfway at the beginning of MP #8 (2001 to 2005) and will be complete in 2003.

The base option will include a current understanding of impacts of the Forest Practices Code, and recently approved protected areas will be withdrawn from the timber harvesting landbase.

Portrayal of the new Forest Management Strategy will include assumptions on levels of timber retention that have been added by the new strategy and estimates of the implications of increased forest edge (shading) on forest growth. The assumptions will be developed through discussion with specialists from the Ministry of Forests.

The extent to which the stewardship zones and associated retention levels will be included in the base option is not clear at this time. It will depend upon the results of discussions between MB and the Ministry of Forests and will be defined in the Information Package.

The base option will not consider some of the expected timber supply benefits of variable retention. These include anticipated gains from reduced adjacency constraints, increased flexibility in visual landscape areas and the potential for access to some timber in areas that are currently reserved (e.g., sensitive soils, wildlife and recreation areas). These benefits have not yet been demonstrated and so will be examined in an option (refer to Section 5.12).

The July 27, 1998 document titled, "Timber Supply Review Base Case Modelling Assumptions for Biodiversity and Landscape Units," by Timber Supply Branch, MoF, provides direction for modelling landscape biodiversity in the base option. MB will discuss with agency specialists, the appropriate application of these analysis guidelines to variable retention.

The base option provides a benchmark for comparison with other management scenarios. Timber supply impacts may be estimated by comparing results of options for the various issues, with results for the base option.

5.12 *Timber Supply Impacts of the New Forest Management Strategy*

Purpose

Of interest is an estimate of the New Forest Management Strategy on short-term and long-term harvest levels.

Procedure

An option that excludes the new Forest Management Strategy assumptions will be compared with the base option.

A second option will examine the possible timber supply gains (due to variable retention) from reduced adjacency constraints and some harvest in areas that are currently reserved.

Depending on what is included in the base option, there may be additional analysis that examines some aspects (e.g. retention levels) of the stewardship zones.

5.13 *Management of Non-Timber Resources*

Purpose

Substantial netdowns have been made to the timber harvesting landbase for wildlife, biodiversity and recreation. Constraints on timber harvesting have also been applied for managing visual landscapes and biodiversity.

The sensitivity of timber harvests and related socio-economic impacts to variation of these netdowns and constraints is part of an evaluation of such choices.

Procedure

Options to include:

- Biodiversity. An option will examine the timber supply impact of early and mature + old seral constraints as well as the old seral requirements.
Old seral requirements will be compared between the average assumptions in the base option and the draft landscape units and biodiversity emphases. An additional option will be run (with the draft assumptions) for Blocks where there is a substantial difference in the timber harvesting landbase between the two scenarios.

- Variation of visual landscape constraints. Two options will examine the effect of a decrease and an increase in years to achieve Visually Effective Greenup (VEG).

5.14 *The Operable Landbase*

Purpose

The base option excludes mature timber that is classified as “currently uneconomic” to log. What would be the timber supply impacts if this timber was accessed during the high portions of price cycles?

Procedure

Examine an option that harvests timber classified in the inventory as “currently uneconomic,” over 100 years. The extended harvest period of 100 years corresponds to a strategy of taking advantage of periodic good market conditions to gradually harvest this timber.

5.15 *The Timber Harvesting Landbase*

Purpose

It is likely that after compiling the information package, there will remain uncertainties on the impact of various issues on the timber harvesting landbase.

Procedure

Examine options that vary size of the timber harvesting landbase, for example, a reduction by 5%.

5.16 *Protected Areas and Moratorium Areas*

Purpose

The base option excludes protected areas and other removal areas that have been approved by an Order in Council. Those that have not been legally approved (including moratorium areas) are retained in the timber harvesting landbase for the base option. The timber supply impacts of these potential reserve areas are examined by comparing the results of options that exclude the areas of interest with results of the base option.

Procedure

Determine the status of protected areas.

Examine options that exclude moratorium areas and protected areas that have not yet been approved by legislature. These will include:

- The Koeye Watershed in Block 7. A moratorium on timber harvest has been in effect since 1991.
- Declared protected areas (Haida Gwaii/QCI) in Block 6. These are defined in the Islands Community Stability Initiative (ICSI) Consensus Document January 1996).

- Confederation Lake Park in Block 1.

5.17 Silviculture

Purpose

What is the timber supply impact of some intensive silvicultural opportunities?

Procedure

Opportunities for silvicultural investment in TFL 39 will be reviewed. The results will be discussed and if substantial they will be included in an "additional silviculture" option.

5.18 Timber Yields

Purpose

What impact would different timber volume estimates have on timber supply predictions?

Procedure

Increase and decrease yield estimates through a series of four options:

Mature Volumes	Second-Growth Volumes
1. Increase by 10%	As in Base Option
2. Decrease by 10%	As in Base Option
3. As in Base Option	Increase by 10%
4. As in Base Option	Decrease by 10%

Mature refers to forest areas established prior to 1864. These volumes are calculated from timber cruises.

Second growth refers to areas established after 1863. These volumes are estimated by projections from assigned yield tables.

5.19 Site Productivity

Purpose

It is proposed that revised site index estimates based on MB's biophysical decision tree will be used in the analysis.

Procedure

The sensitivity of timber supply to estimates of site index will be examined.

5.20 Minimum Harvest Ages

Purpose

Assumptions are made in the Timber Supply Analysis on the initial availability of second-growth stands for harvest. Markets, technological trends and regulations

will affect future harvest economics and hence merchantability of stands of different situations and ages. Of interest is the sensitivity of short-term and long-term harvest levels to a variation in minimum harvest ages.

Procedure

Examine an option with second-growth minimum harvest ages that are 10 years greater than in the base option.

5.3 Twenty-Year Plan

Twenty-Year Plans will be completed for each of the seven blocks in TFL 39. The purpose of the 20-Year Plan is two fold:

- To test the feasibility of a harvest schedule.
- To enable the public and agencies to identify concerns that they may have regarding development well in advance of planned operations.

The 20-Year Plan is a mid-level planning document, fitting between the Timber Supply Analysis and the Development Plan.

The Timber Supply Analysis uses approximations of spatial attributes to reflect forestry constraints and guidelines. Specific forest types are scheduled for harvest, but precise locations are not identified. As the locations are not explicitly identified, the impacts of harvest block size and adjacency guidelines are only approximately reflected. Such simplifications allow the exploration of the impacts of silvicultural activities and harvest levels over the next 200 years.

The 20-Year Plan identifies potential harvest blocks over the first 20 years of the Timber Supply Analysis. These blocks are tested against constraints and guidelines, demonstrating the feasibility of the Timber Supply Analysis harvest levels.

The 20-Year Plan, however, does not represent a development plan. Information gathered in future site visits would alter cutblock boundaries and perhaps the timing of harvest. The next level of planning, the Development Plan, will involve the detailed site visits. The 20-Year Plan is also useful in identifying areas of contention that can be subsequently dealt with in preparation of a Development Plan.

The 20-Year Plan process will need to be adapted to account for variable retention. This includes allowing for volumes that are retained (not harvested) and recognizing the impacts of variable retention on spatial constraints such as adjacency and management of visual landscapes.

MB is examining options for developing Twenty-Year Plans through computerized blocking and harvest scheduling tools. The benefits of such a computerized approach include significantly reduced work for operational staff and opportunities for examining more than one option. MB is refining computer procedures for spatially (on maps) defining the location of harvest blocks (sufficient for this exercise) and for scheduling the harvest of such blocks within the bounds of constraints such as adjacency and local rate of harvest restrictions (e.g., visual landscapes). A decision will be made by mid 1999 whether to proceed with this approach. If the decision is to the affirmative then approval will be sought from the MoF.

Landbase assumptions and timber volume estimates will be consistent with those used in the Timber Supply Analysis. A Terms-of-Reference for the 20-Year Plan will be submitted to the Ministry of Forests.

5.4 Economic Analysis of Some Timber Supply Issues in TFL 39

The objective of this section is to assess the economic costs and impacts of some key issues governing the timber supply in TFL 39. Economic impact and benefit-cost techniques are used to accomplish this objective. While other decision-making tools are available, these two combined are believed to produce sufficient information to help identify areas for cooperative efforts to develop more beneficial outcomes.

The importance of TFL 39 to the regional and provincial economies will be described. This will provide a benchmark against which the various economic impact scenarios can be compared.

Of interest are the economic impacts of foregone timber harvest resulting from various landbase reduction and harvest constraint scenarios. Such impacts will be determined by multiplying changes in harvest levels between appropriate options (from the Timber Supply Analysis) by current estimates of average economic activity generated per cubic meter of harvest. Measures will include total sales value, government revenues and employment and salaries and wages generated at both the regional and provincial levels.

6.0 PUBLIC INVOLVEMENT PROCEDURES

MB recognizes that public involvement is an important part of developing a Management Plan. A strategy has been developed to provide the public with opportunities to review current plans and to have input into the Management Plan process.

This public review strategy was submitted to the Regional Manager in late August of 1998. Approval for the strategy was received in October of 1998.

This public review involvement plan for MP #8 involves three stages:

- **Stage 1** Initial comment on MP #7.
- **Stage 2** Review of the SMOOP and SEEO.
- **Stage 3** Review of the draft Management Plan.

6.1 Stage 1—Initial Comment on Management Plan No. 7

This stage has been completed.

Prominent advertisements were placed in regional and local newspapers in order to:

- notify the general public that the next Management Plan for the TFL is being prepared,

- request written submissions from the public on the current Management Plan and on the Licensee's performance, and
- advise the general public of locations where the current Management Plan could be reviewed.

The advertisements were placed in the following papers on or near June 18 and June 25, 1998:

Campbell River Courier Islander (18/25)	Queen Charlotte Observer (18/25)
North Island Gazette (17/24)	Williams Lake Tribune (18/25)
BC. Gazette (19/26)	Prince Rupert Daily News (18/25)
Powell River News (17/24)	Campbell River Mirror (17/24)

Note: The numbers within the brackets reflect the advertising dates in June of 1998.

Copies of Management Plan No. 7 and a short newsletter were made available for viewing by the general public between July 1, 1998 and September 1, 1998 during normal working hours at the following locations:

- MB Woodlands Divisions at:
 - Queen Charlotte Division
 - Port McNeill Division
 - North Island Division
 - Stillwater Division
 - Nanaimo Woodlands
- Ministry of Forests Offices at:
 - Campbell River Forest District Office
 - Port McNeill Forest District
 - Queen Charlotte Islands Forest District
 - Sunshine Coast Forest District
 - Mid Coast Forest District
 - Victoria, Resource Tenures & Engineering Branch
 - Nanaimo, Vancouver Region Office

A copy of the advertisement, the short newsletter and the questionnaire were sent to those on the mailing list for TFL 39.

Copies of the public input and a summary of the feedback were submitted to the Regional Manager on October 5, 1998. Sixty-one responses were received. The following, extracted from the report to the Regional Manager, provides a summary of the concerns raised and how they will be (are being) addressed either operationally or in the Management Plan process.

In June of 1998, MB announced a new-forest management program. A major component is the phasing out of clear-cutting over a five-year period. In its place, variable retention will maintain biodiversity by retaining significant portions of the original forest. This approach to forest management will help to meet many of the environmental and visual concerns expressed in the feedback. The new strategy and its implications will be described in Management Plan #8.

Fifty-five of the responses were from guests at the Fiddlehead Farm Resort, located adjacent to some of MB's private land in Block I (Powell River) of TFL 39.

The concerns raised reflect those expressed in discussions between the proprietor of the resort and Stillwater Division staff. MB is making substantial changes to operations in response to the concerns. They include:

- Restrictions on timing of operations to outside the main tourist season.
- Planned construction of a log dump on Powell Lake to ensure operations can proceed in the winter months. This will occur at considerable cost to MB and the associated dumping, towing and reloading will also add to harvesting costs.
- Leaving areas in cut blocks to act as visual buffers.

The move to variable retention harvesting will assist in reducing the visual impacts of harvesting in the area surrounding Fiddlehead farm.

Response #6 discussed various issues including preservation of old-growth forest areas, sustainable management and collaboration with First Nations people. These issues will be addressed in Management Plan #8. Variable retention will add to the Protected Area Strategy and reserves for sensitive sites and non-timber resources by leaving older-forest attributes well distributed across the landscape. During review of the draft SMOOP, offers will be made to First Nations groups to meet with them for discussion of issues of special concern to them.

A response from Bella Coola (response #27) expressed concern regarding employment opportunities. MB's strategy will be presented in the forthcoming Objectives and Strategies for Employment and Economic Opportunities.

Response #47 discussed forest values in the Claud Elliot Lake /Sickle Lake area of TFL 39, Block 2 (Adam River). The issue of access has been discussed and MB is willing to cooperate if approval is obtained. The implementation of variable retention will provide additional opportunities for reducing the impact of harvesting on this area.

Response #59 expresses concerns on the rate of harvest in the upper Tlell Watershed of Block 6 (Queen Charlotte Islands) and resulting impacts on downstream fisheries and residential values. MB is involved in the Tlell Watershed Local Resource Use Plan. Current plans include very little activity in this area.

Response #60 from the Sunshine Coast Forest District refers to wildlife, fisheries and biodiversity issues. These were discussed during a meeting in Powell River on September 24, 1998. Minutes of this meeting will be distributed to participants shortly. A further meeting has been organized for early November to refine wildlife areas in Blocks 1 and 5 of TFL 39.

Response #61 discusses the Sunshine Coast Trail in the Powell River Area. Portions of the trail benefit from being located in recreation areas and in a park area created as part of the Protected Area Strategy. The recreation strategy for TFL 39 will be described in the Management Plan.

6.2 Stage 2—Review of the SMOOP

Prominent advertisements were placed in regional and local newspapers in order to:

- Notify the general public that the Draft SMOOP and Draft EEO were being prepared for MP #8,
- Request written submissions from the public on issues and concerns they would like addressed, and
- Advise the general public of locations where a copy of the Draft SMOOP and Draft EEO could be obtained.

The advertisements were placed in the following papers during the last two weeks of November 1998.

BC Gazette
Bella Coola Coast Mountain News
Campbell River - Courier Islander
Campbell River Mirror
Port Hardy North Island Gazette

Powell River News
Prince Rupert Daily News
Queen Charlotte Observer
Williams Lake Tribune

Copies of the draft documents, a short newsletter and a survey form were made available to the general public between December 11, 1998 and February 22, 1999. Copies were available during normal working hours at the following locations:

- MB Woodlands Divisions at:
 - Queen Charlotte Division
 - Port McNeill Division
 - North Island Woodlands
 - Stillwater Division
 - Nanaimo Woodlands.
- Ministry of Forests offices at:
 - Queen Charlotte Islands Forest District
 - Port McNeill Forest District
 - Mid Coast Forest District
 - Campbell River Forest District
 - Sunshine Coast Forest District
 - Vancouver Region Office, Nanaimo
 - Resource Tenures and Engineering Branch, Victoria

Copies of the draft SMOOP and EEO reports, the newsletter and questionnaire were also sent to those on the current mailing list for TFL 39.

Offers were made to First Nations groups to meet with them for discussion of issues of special concern.

A report on Stage 2 was submitted to the Regional Manager in April 1999. The report describes the process and documents the input received. The following is from the Results Section of the Stage 2 Report.

Eighteen written responses were received. A reply has been sent to each. A copy of each of the responses and the replies are included in Appendix VI of the Public Review Stage 2 Report. The concerns and issues raised are varied. They include local employment and economic opportunities, other local issues, wildlife habitat, riparian and water management, biodiversity, MB's New Forest Management Strategy, management of second growth and harvest levels.

Some of the issues will be addressed operationally. Others were requests for information. The following is a list of changes to the SMOOP and EEO resulting from the input.

Section 2.32, First Nations: The third bullet has proved to be misleading and has been removed.

Section 3.11, MacMillan Bloedel's New Forest Management Strategy: The words "High cultural and recreation values are also priority criteria", have been added after the second sentence in the paragraph on the Old-Growth Zone.

Section 3.21, Cooperation with First Nations People: A word change has been made to the second issue, regarding a sustainable supply of redcedar in the Queen Charlotte Islands.

Section 3.241, Regional Planning Initiatives: An acknowledgement of MB's commitments in the addendum to the Memorandum of Understanding between the Queen Charlotte Islands Community Stability Initiative (ICSI) and the MoF has been added.

Section 3.33, Hydrology: A reference to road maintenance standards has been added.

Section 3.35, Biodiversity: The reference to "International Agreements" has been defined. MB's commitment to meeting government biodiversity objectives including old seral representation and wildlife tree patches has been more clearly stated.

Section 3.384, Second-Growth Harvest Strategy: Changes have been made to clarify the strategy. In particular, rotations on average will be longer in habitat and old growth zones than the timber zone. Further the younger rotation ages in the timber zones apply to opportunities for a first harvest pass – later harvest passes in similar aged timber will by definition occur at older ages.

Section 4.5, Wildlife: Red and blue listed species in TFL 39 will be listed in MP #8.

Section 5.16, Protected Areas and Moratorium Areas: The Haida Interest Areas in Block 6 have been more accurately referred to as the Declared Protected

Areas (Haida Gwaii/QCI) in Block 6 as defined in the Islands Community Stability Initiative (ICSI) Consensus Document of January 1996.

As suggested by one of the respondents, a glossary of technical terms will be included in the Management Plan.

A meeting was held with the Sliammon First Nation. A copy of the minutes of this meeting is included in Appendix V of the Public Review Stage 2 report.

6.3 Stage 3—Review of the Draft Management Plan

On submission of the draft Management Plan No. 8, scheduled for June 30, 2000, input will be sought from the following:

- Federal and Provincial ministries as specified in the mailing list.
- Identified stakeholder groups, communities and First Nations.
- Members of the general public who requested follow-up material from earlier stages.

Specific activities to accomplish the above will be:

- Mail the following material to the groups and individuals noted above.
 - Questionnaire
 - Draft MP 8 brochure, a newsletter format description of the draft MP.
 - Summary of public input received to date.
 - Invitation to attend open houses.
- A series of nine Open Houses will be completed by August 15, 2000. The locations will be:
 - Powell River
 - Sandspit
 - Skidegate
 - Masset
 - Port Clements
 - Bella Coola
 - Port McNeill
 - Kelsey Bay
 - Campbell River

Special invitations to attend the Open Houses will be sent to First Nations groups. Open Houses will be one-day events from 3:00 p.m. to 9:00 p.m.

- Copies of the Draft Management Plan will be made available during July and August of 2000 at the MoF and MB offices referred to in Stage 1.
- A written report on the results of this public review will be submitted to the Regional Manager by September 30, 2000.

Advertising to provide information on open houses and locations for reviewing the Draft Management Plan will occur at least twice (one week and two weeks in

advance) prior to the review period. The advertisements will occur in the regional and local newspapers referred to in Stage 2.

Notices will also be placed on public bulletin boards and in public areas of Ministry of Forests Offices in Victoria, Nanaimo, Campbell River, Powell River, Port McNeill, Hagensborg and Queen Charlotte Islands and in MB Woodlands offices.

A draft of the advertisement will be provided to MoF, Vancouver Region, for advance review and comment.

7.0 MANAGEMENT PLAN SCHEDULE

The following schedule is proposed to complete the balance of the Management Plan.

■ Submit Draft SMOOP and EEO	December 08, 1998
■ Public Review of SMOOP and EEO	December 1998, January 1999
■ Submit SMOOP and EEO	April 14, 1999
■ Submit Information Package	August 31, 1999
■ Submit Timber Supply Analysis	February 29, 2000
■ Submit Twenty-Year Plan	February 29, 2000
■ Submit "Draft" Management Plan	June 30, 2000
■ Public Open-Houses	July, August 2000
■ Approval of Management Plan by MoF Chief Forester	December 31, 2000

Appendix I

OBJECTIVES AND STRATEGIES FOR EMPLOYMENT AND ECONOMIC OPPORTUNITIES (EEO)

1.0 Objectives

MacMillan Bloedel (MB) is committed to supporting local communities by ensuring that all of its operations:

- Provide employment with safe working conditions.
- Gain market access through exemplary environmental practices.
- Provide community stability by being competitive in the market place.

2.0 Strategies

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.

Although little change in total employment is expected because of the New Forest Management Strategy, the distribution of jobs may change somewhat.

For example, planning requirements will increase while in some areas there will be a shift to more heli logging (company wide the percentage of harvest by heli logging is expected to increase from 10% to 20%).

MB will continue the practice of managing TFL 39 on a Block basis in response to local economic concerns including employment opportunities. The current AAC for TFL 39 is allocated by Block and analysis for MP #8 will similarly be on a Block basis (Blocks 3 and 4 will be combined).

Operations in Block 6 (QCI) have a policy of hiring Island people wherever possible, with a focus for hiring from the Haida communities. In addition, support is provided for training of local people in forestry skills. This includes working with the "Haida Gwaii QCI Community Skill Centre" to offer courses through the Northwest Community College leading to a diploma in forestry. It also includes offering scholarships to local high schools for students to pursue forestry studies at university or college.

The strategy of Mid Coast operations (Block 7 – Namu) is to promote local employment. This includes encouraging prime logging and road building contractors to hire suitable mid coast residents as openings occur. Other current initiatives include First Nations employment in silvicultural activities, stream cleaning and CMT surveys. In addition, MB is actively involved in creating a joint venture company with the Heiltsuk First Nation to bid on an upcoming timber sale. A local company conducts fish stream assessments and MB is encouraging a local minor products contractor to operate in Mid Coast tenures.

MB has embarked on a strategic plan to add value and profit by further manufacture, quality enhancement and innovative uses for waste or low value fibres. Already this has been successful and will continue to grow in response to research and development of both products and markets.

Research and development in the use of scanning technologies has been implemented at Alberni Pacific Division and has lead to improved extraction and sawing patterns.

More than 30% of MB's sawn wood is remanufactured in either MB owned or leased mills by independents. Final products include a wide range of panelling, specialty siding, window stock, spindles, banisters as well as many other special products for the North American, Japanese and European markets.

MB has a long history of successful research and development of new value-added products. Examples include Parallam™ and Timberstrand™. Further structural products made from low value fibre are in the development stage.

MB has signed a multi-year agreement for FRBC funding. Within this agreement there are requirements for local employment and MB has negotiated or is negotiating Partnership Agreements within several First Nations groups. Funding is primarily directed at enhanced silviculture and watershed restoration projects.

MB will continue to encourage participation by First Nations groups. Recently, opportunities have occurred in projects funded by FRBC.

3.0 Use of TFL 39 Timber Harvest

Since the early 1980s, MB mills have been and continue to be upgraded as part of a business strategy to be competitive and to increase the proportion of higher profit, value added products. In addition, MB has leased other mills (custom cut) or entered into contracts for remanufacture for the same purpose.

MB sold its Harmac pulp mill in 1994 and exited the paper business by selling the Powell River and Port Alberni mills in early 1998. MB has agreements with the resultant companies, Harmac Pacific and Pacifica to supply fibre to these mills.

The following table lists the primary destinations for logs from TFL 39 in 1998. Mill consumption's are listed for the MB sawmills (including the custom cut operation) and the percentage distribution of logs from TFL 39 is described. These mill consumption and distribution figures are indicative as they vary from year to year according to markets.

In 1998, 45% of the TFL 39 log volume went directly to MB sawmills and 29% (pulp logs) went to Pacifica (mainly the Powell River mill). The remaining 26% categorized as resale, includes logs that are supplied to other sawmills on the coast including those that MB has log arrangements with. These external sales are offset to some extent by mill purchases as logs are traded to better suit mill requirements.

Destination	Current Operating Schedule – Log Input (000 m ³)	Percentage of 1998 Log Sales From TFL 39
Alberni Pacific, Port Alberni	725	4
Somass, Port Alberni	300	2
Chemainus	420	4
Island Phoenix, Nanaimo	400	6
New Westminster	566	10
Canadian White Pine, Vancouver	530	12
Custom Cut	380	7
Pacifica		29
Resale		26
Total		100

4.0 Current Employment Associated with TFL 39

4.1 Direct Employment

It is estimated that the 1998 harvest from TFL 39 has resulted in more than 4 000 direct jobs on the BC Coast. The following two tables list jobs (person-years of employment) by work location and by place of residence.

Harvest levels in 1998 are reduced because of poor market conditions. A preliminary estimate of the TFL 39 harvest for 1998 is approximately 2 500 000 m³ compared to an AAC for MB (excluding SBFEP) of 3 577 780 m³.

The job estimates include both company employees and contractors. They also include both fulltime and part time positions. They do not include jobs in the government sector, some of the value-added employment or jobs generated by the SBFEP harvest in the TFL.

The jobs listed by logging division, mill and corporate include only those that are attributed to harvesting and other management activities in TFL 39 (i.e., they are not total employment numbers for the operations).

Of the TFL 39 related employment, most of the woodlands jobs are located in communities on Northern Vancouver Island, Queen Charlotte Islands and the Sunshine Coast. The processing jobs occur mainly in Powell River, Nanaimo, Chemainus, Port Alberni and the Lower Mainland.

TFL39 EMPLOYMENT BY DIVISION OR MILL – 1998				
Division or Mill	Employment (Person-Years)			
	Mill	Woodlands	Corporate	Total
Queen Charlotte Islands Division	-	265	-	265
Port McNeill Division	-	280	-	280
North Island Division	-	435	-	435
Stillwater Division	-	294	-	294
Corporate Forestry (Nanaimo and Vancouver)	-	-	137	137
Alberni Pacific Division	100	-	-	100
Canadian White Pine Division	319	-	-	319
Custom Cut Division	160	-	-	160
Chemanus Division	257	-	-	257
Island Phoenix Division	85	-	-	85
New Westminster Division	256	-	-	256
Somass Division	57	-	-	57
Alberni Specialties Division	61	-	-	61
Pacifica Paper	654	-	-	654
Harmac Pacific	150	-	-	150
Other Non-MB Mills	550	-	-	550
Total	2,649	1,274	137	4,060

TFL39 EMPLOYMENT BY PLACE OF RESIDENCE - 1998				
Place of Residence	Employment (Person-Years)			
	Mill	Woodlands	Corporate	Total
Queen Charlotte Islands		255	-	255
Powell River, Sunshine Coast and Mid Coast	586	242	-	828
Port McNeill and Port Hardy	-	192	-	192
Port Alberni	286	-	-	286
Campbell River	-	416	-	416
Nanaimo and Vancouver Island South	594	155	67	816
Vancouver and Lower Mainland	1,135	62	70	1,267
Total	2,649	1274	137	4,060

4.2 *Indirect Employment*

The forest sector also generates indirect and induced jobs in other economic sectors. Companies that supply goods and services to the logging operations and mills create the indirect jobs. Examples include heavy equipment suppliers, accounting and insurance firms and fuel and gas companies. The induced jobs are realized from the expenditures of households that derive their income directly from the forest sector. Examples include restaurants, grocery stores, car dealerships, retail stores and movie theatres. In the following discussion indirect and induced jobs are combined and simply referred to as “indirect” jobs.

It is estimated that one direct job in the forest industry supports one indirect job locally and a further indirect job elsewhere in the province. This corresponds with a local employment multiplier of 2.0 and a provincial multiplier of 3.0. Several studies suggest that these multipliers are realistic².

Given that direct employment in 1998 is 4,060 jobs then the indirect provincial employment is estimated as 8,120 jobs for a total provincial employment impact of 12,180 jobs.

4.3 *First Nations*

Participation of First Nations in the workforce has increased substantially in recent years. There continues to be some involvement in harvesting. Most of the gains have occurred in silviculture, particularly in enhanced forestry work funded by FRBC. Several First Nations groups now have crews working in this field. In addition they do some work in watershed restoration and in basic forestry activities such as planting and brushing and weeding.

MB has negotiated or is negotiating Partnership Agreements with several First Nations groups. These are for silvicultural and watershed restoration work as part of the multi year funding agreement that MB has with FRBC.

Some logging operations employ band members to assist with the operational planning process, in particular to act as a liaison on concerns regarding cultural heritage values.

² For example refer to:

Horne, G., D. Riley, L. Ransom and S. Kosempel. 1996. A Provincial Impact Estimation Procedure for the British Columbia Forest Sector. Staff Discussion Paper, Analysis and Education Branch, Ministry of Finance and Corporate Relations, Victoria.

H.A. Simons Ltd. 1990. Contribution of the Forest Industry to the Alberni—Clayoquot Regional Economy. Report prepared for the Regional District of Alberni—Clayoquot Economic Development Commission.

White, W.A., K.M. Duke and K. Fong. 1990. The Influence of the Forest Sector Dependence on the Socioeconomic Characteristics of Rural British Columbia, Forestry Canada, Information Report BC-X-314, Victoria.