

**Environment Preview Report
Five-Year Operating Plan (2002 – 2006)
Main River Watershed**

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APPROACH

Corner Brook Pulp and Paper Limited (CBPP) has taken considerable care and has committed to major mitigation measures in planning for the harvest of timber resources in the Main River watershed.

The environmental concerns which have been identified include: the Heritage River designation for the River; the presence of the Newfoundland Pine Marten; the old-growth gap replacement forest of the region; potential conflicts with Outfitter operations; and the need to ensure ecological connectivity with the adjacent Gros Morne National Park. These issues require careful planning and attention to the principles of sustainable development.

The adaptive management approach as advocated by the Department of Forest Resources and Agrifoods (DFRA) has been used to ensure that the environmental effects of harvesting activities are reduced to an extremely low level. Development of an Ecosystem Based Forest Management Strategy for FMD16 by DFRA (Nicoll 2001) provides a framework for CBPP and all other stakeholders to participate in a process of Sustainable Forest Management.

The keystones of the CBPP approach to sustainable forest management in the Main River watershed include:

- Eliminating clear cutting in the watershed;
- Limiting harvest volumes from the watershed to an annual average of 25,000 m³;
- Contributing a large area of Company timber limits where no harvesting will occur along the main stem of the river. This led to the acceptance of the Heritage River Management Plan by the Canadian Heritage River Board and the designation of the Main River as a Canadian Heritage River;
- Using selection harvesting techniques to retain the age structure and habitat quality of the forest ecosystem for use by Newfoundland Pine Marten and other species;
- Conducting all CBPP wood harvesting operations in compliance with the Company's ISO14001 Environmental Management System; and
- Working with outfitters operating in the Main River area to develop plans whereby both Outfitting and Forest Management operations can coexist successfully.

In addition, CBPP continues to apply its adaptive management approach in the Main River watershed, and thereby gain new knowledge and continually improve forest management practices over time. CBPP plans to conduct trials of several harvest patterns over the next few years and implement monitoring to assess the effectiveness of this strategy. Initially, monitoring will primarily focus on habitat values and connectivity. These monitoring programs are being developed with the Gros Morne Connectivity Working Group comprising scientists and also managers from the Park; the Parks and Natural Areas Division and the Inland Fish and Wildlife Division of the Dept. of Tourism, Culture and Recreation; the DFRA; the Canadian Forest Service, and CBPP.

Through the formation of the Gros Morne National Park Connectivity Working Group, the Company is working with Parks Canada to ensure that forest management activities adjacent to the park do not negatively affect the ecological integrity of the park. CBPP continues to cooperate with the Wildlife Division of the Department of Tourism, Culture and Recreation to

ensure the provision of sufficient suitable habitat for the recovery of the Newfoundland Pine Marten in western Newfoundland.

CBPP has contributed more than 17,000 hectares of its timber limits to provide for the designation of the Main River as a Canadian Heritage River. This designation was granted in August 2001. The management plan for the Heritage River will protect the natural and wilderness values along the full length of the river and provide for expanded eco-tourism opportunities in the White Bay South area.

Tourism and recreation are important values derived from Newfoundland's forests. CBPP has signed a Memorandum of Understanding with the Newfoundland and Labrador Outfitters Association and works with individual outfitters to address their concerns with forest management activities on CBPP timber limits. Conflicts between outfitting operations and forest management operations are essentially a resource allocation issue. As such they can only be fully addressed in the context of a comprehensive land use policy in the Province. However, as stated in the Department of Forest Resources and Agrifoods' FMD 16 Strategy Document, "The Province of Newfoundland and Labrador presently has no comprehensive land use planning framework and has not attempted to integrate existing sectorial land use plans, such as those created under the auspices and authority of the *Forestry Act*, under a formalized policy." Nevertheless, CBPP is committed to working with outfitting operations that have been established on CBPP timber limits to reach compromises whereby both parties can co-exist successfully.

Forest management activities in FMD 16 support a significant portion of CBPP's contribution to the economic and social benefits derived from Newfoundland's forests. The proposed Five-Year Operating Plan that is the subject of this EPR represents a high level of achievement by the Company and reflects its corporate commitment to Sustainable Forest Management.

EPR GUIDELINES

The Guidelines identify seven categories where specific information is requested. Each category is listed below and the response summarized.

Adaptive Management Process

The Guidelines identified the need to describe the Adaptive Management process in order to demonstrate how participation in the process will reduce negative effects.

The EPR provides an overview of the Adaptive Management approach as implemented by the Department of Forest Resources and Agrifoods. The proposed operations by CBPP in the Main River watershed will apply an adaptive management approach which serves to increase knowledge about the forest in the watershed and results in improved management practices. A comprehensive listing is presented of current and proposed research efforts, studies and initiatives by CBPP that are linked with and contribute information regarding the proposed harvesting within the Main River watershed and their relationship to the Goals and Objectives of the FMD 16 Strategy Document.

General

The EPR is to state the percentage of the mill's annual timber requirements which will be provided by harvesting in the Main River watershed. It should provide an overview map of the Main River watershed. It should provide information on the Science Advisory Group and it should confirm that mitigative measures described in the Environmental Evaluation are corporate commitments.

During the period 2002-2006, an annual average of 25,000 m³ of wood will be harvested from the watershed. This amounts to approximately 3% of the annual requirements of the mill. An overview map has been included in the EPR. The Science Advisory Board is described and CBPP confirms its commitments to mitigative measures, rehabilitation plans and monitoring.

Forestry

The EPR is to address how the proposed forest harvesting activities are linked and integrated with the guiding principles, goals and objectives of the Forest Management District 16 Strategy Document. It is also to describe current and proposed research efforts and studies that are linked with and contribute information regarding the proposed harvesting. The EPR should identify harvest strategies and volumes for 2002-2006 and discuss results of ongoing studies on the environmental effects of these strategies. A map is to be provided with a 20-year forest age-class structure to aid in impact predictions upon migratory birds and species at risk. The EPR is to provide details of proposed road construction for the Main River watershed.

A table has been developed to illustrate how the activities of CBPP (including forest harvesting activities) are linked and integrated with the forty-one Objectives contained in the FMD 16 Strategy Document. The CBPP harvest strategy is to minimize the annual harvest from the watershed and implement a variable retention harvest system that will more closely emulate the natural disturbance regime in the area. A key ingredient of this strategy is the commitment by CBPP to eliminate clear-cutting in the Main River watershed. Selection harvest techniques and reduced annual harvest volumes will ensure that large tracts of mature forest remain on the landscape through time. CBPP proposes to conduct harvest trials in two blocks in the watershed in 2002. The selection harvesting trial carried out in 2001 in the watershed is described. The same strategy of selection harvest in accordance with the Newfoundland Pine Marten Guidelines will be employed in 2003-2006. A 20-year forest age class structure of the Main River watershed is included in the EPR. The proposed road construction program for the 2002-2006 period is identified. In total 97 km of primary access road is proposed for construction.

Wildlife

The EPR is to provide details with respect to Newfoundland Pine Marten and migratory birds.

More recent and in-depth research results were asked to be included to provide a baseline for assessing the potential impacts of forestry operations on marten populations. A comprehensive review of the literature was undertaken and relevant recent publications incorporated. A description is presented of Pine Marten habitat evaluation modeling work that has been undertaken by CBPP in cooperation with the Wildlife Division. The model has recently been revised and was run to assist in predicting the effect of the proposed harvesting on Pine Marten

habitat. Because a selection harvest approach does not exceed the habitat suitability criteria for the Newfoundland Pine Marten, the area remains as suitable after harvesting as it did before. On that basis, the proposed Five-Year Operating Plan is predicted to have a minor (not significant) residual environmental effect on the Newfoundland Pine Marten.

The EPR is to review forest structure requirements and Guilds for birds and review impact predictions taking into account forest structure requirements and the revised species list. Based on input from the Canadian Wildlife Service, a table was developed presenting groupings of birds species by habitat selection guild applicable to the Main River watershed.

The EPR addresses the population status of forest birds and identified species in decline that are associated with old/mature and interior forests in Newfoundland. Seven bird species were identified which may be in decline (globally or locally) and which may be present in the Main River watershed area. By leaving at least 30% of merchantable timber standing in harvest areas, habitats will not be altered. This practice along with mitigative measures (which were reviewed and discussed) resulted in the prediction that the effect of wood harvesting operations in Main River on migratory birds is minor (not significant).

Outfitting Lodges

The EPR is to review the impact prediction on such issues as outfitter conflicts. As well, the EPR is to examine the impact of increased accessibility on non-resident hunter expenditure and outfitter revenues using information available from the Strategic Tourism Product Development Division of the Department of Tourism, Culture and Recreation. The EPR is to predict the impact of forest access roads on increasing accessibility and hunter crowding taking into account information available from the Department of Tourism, Culture and Recreation. It is to address the status of the "Roads Access Management Strategy".

Corner Brook Pulp and Paper Limited has entered into a Memorandum of Understanding (MOU) with the Newfoundland and Labrador Outfitters Association. This MOU outlines a procedure for addressing land use conflict issues, while acknowledging and respecting the rights of both parties.

The sources of information identified in the Guidelines were not available to CBPP for analysis. It was however, possible to develop an indirect comparison. The results of the analysis fail to illustrate any negative effect from forest access roads on increased accessibility and hunter crowding. In FMD 16 there does not appear to be any clear relationship between new forest road construction and the number of big game applications, licenses issued, or hunter success.

With respect to the "Roads Access Management Strategy", the Company has advised the District Ecosystem Manager that they are supportive of this initiative and available to participate when requested.

Main River As a Heritage River

The EPR is to describe the status of the Stewardship Agreement to protect the natural and recreational values of the Main River Valley. The EPR was also asked to evaluate the VECs for the Canadian Heritage River designation for Main River.

The Stewardship Agreement is described. The agreement has been drafted by the Parks and Natural Areas Division, however, it has not yet been executed. CBPP is committed to its role as a party to the agreement.

The VECs (natural and recreational values of the Main River) have already been evaluated in the Main River Management Plan prepared by the Dept. of Tourism, Culture and Recreation with the conclusion that the effect of timber harvesting will not result in negative impacts on these values. CBPP has adopted a policy of no clear-cutting in the entire Main River watershed. This policy will further reduce the potential effects of timber harvesting in the watershed beyond what was contemplated in the Management Plan that was approved by the Canadian Heritage River Board. Therefore, it is concluded that the Project will have a negligible (not significant) residual environmental effect on Main River natural heritage and recreational values.

Gros Morne Park

The EPR is to include an environmental evaluation of the four focus species (pine marten, lynx, caribou and passerine birds) and should predict the effects of the undertaking upon connectivity.

The EPR provides a summary of the efforts of the Gros Morne National Park Connectivity Working Group (of which CBPP is a member), including the evaluation of the four identified focus species/groups. The use of carefully designed monitoring programs and the application of Adaptive Management principles will serve to identify and react to unanticipated changes. Therefore CBPP is confident that it can place a relatively high level of confidence in the impact prediction of negligible effect of the Undertaking upon connectivity.

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1.0 INTRODUCTION

Corner Brook Pulp and Paper Limited (CBPP) proposes to continue wood harvesting operations in Forest Management District (FMD) 16 over the period 2002-2006 inclusive. As required under the *Newfoundland Environmental Assessment Act* (NEAA), the 2002-2006 Five-Year Operating Plan for FMD 16 was registered with the Minister of Environment in September 2001. The Registration comprised two documents; a Five-Year Operating Plan (Volume One) and an Environmental Evaluation document (Volume Two).

The FMD 16 Five-Year Operating Plan provided a detailed description of the proposed Undertaking. It included quantities to be harvested, harvest locations, infrastructure requirements, minutes from stakeholder consultation meetings and applicable environmental protection measures. The Environmental Evaluation provided a comprehensive environmental assessment of the Undertaking, including a description of the existing environment, a determination of interaction between the project and the environment, an assessment of the level of potential effect, application of mitigative measures and subsequently, an assessment of the residual effects from the project.

In response to the Registration, on December 19, 2001 the Minister of Environment required CBPP to submit an Environmental Preview Report (EPR) for that portion of FMD 16 within the Main River watershed. Guidelines for the EPR were released on February 26, 2002. This document is submitted as the required EPR.

In order to facilitate its review and evaluation, the EPR has been organized and presented in accordance with the Guidelines' headings and format. As well, for ease of reference, the Guidelines' text is presented (*in italics*) at the beginning of each applicable section of the EPR.

2.0 FORMAT

"The EPR should focus on information gaps identified during the review of the registration as described in these Guidelines. Gaps which cannot be filled within the context of the EPR should be identified.

The summary of the EPR should use non-technical language and be readily understood by the general public. The language in the entire EPR should take into account that the EPR will be reviewed by the non-technical public in addition to technical reviewers.

The EPR, when submitted, will be available for a 35 day public review in accordance with the Environmental Assessment Regulations, 2000. The Regulations provide that the Minister's decision is due not more than 45 days after the EPR has been submitted. The proponent shall initially submit 80 paper copies of the EPR and 20 electronic copies on compact disks. Additional copies may be required depending on demand. In addition, an electronic copy suitable for posting on the Department Website is required.

Paper copies shall be printed double-sided on recycled paper. Maps should be scaled for ease of readability, fit letter-size paper where practical, include co-ordinates, a north arrow, and labeling of major geographic features. Project-related documents shall be included in a bibliography which identifies any documents of a proprietary nature. System International (SI) units of measure and terminology shall be followed in the EPR."

Response:

As required, the EPR focus is on information gaps identified during the review of the Registration documents. The EPR does not repeat the contents of these documents, but is presented as a supplement to them. The Registration documents have been widely circulated and can be readily accessed for reference. Note that, where there are differences between the contents of the EPR and the Environmental Evaluation, the former takes precedence. However, because it forms the official submission under the *Forestry Act*, the Five-Year Operating Plan remains as the definitive description of the Undertaking.

The EPR has been prepared and submitted as 80 paper copies and 20 electronic copies on compact discs. Additional copies may be provided, depending on demand. As well, the EPR has been placed on the web sites of the company and the Department of Environment. The paper copies have been produced double-sided on recycled paper. The maps have been reduced as much as possible to fit within the document, however it has not always been possible to meet the EPR Guideline requirement which restricts their size to letter-size paper. In order to be legible some maps have been provided as fold-outs. A comprehensive bibliography has been developed and included. SI units of measure and terminology have been followed in presenting information.

3.0 ADAPTIVE MANAGEMENT PROCESS

3.1 GUIDELINE

"The Environmental Evaluation (Executive Summary, pg. ii) states that there are no significant impacts predicted from forest harvesting operations "given the commitments made by CBPP throughout the Adaptive Management Process". The Evaluation (Section 4.3, p. 104) further states that certain valued ecosystem components "do not require further evaluation as they are dealt with through.....Adaptive Management". While the Evaluation (p. i, ii, 2, 132, and 147) gives a summary of the adaptive management approach it does not adequately explain how the approach would be used to mitigate impacts to the minor (insignificant) levels which are predicted in the Evaluation. The EPR should describe adaptive management and demonstrate how the proponent's participation in that process will result in no significant negative impacts.

The explanation of the adaptive management approach should be consistent with the objectives of adaptive management presented in the Forest Management District 16 Strategy Document, and should address processes for designing experiments and developing hypothesis to achieve the objectives. In addition, the EPR should address the role of monitoring and how monitoring may determine the need for further management action. Agencies, academics and other research efforts which would contribute to the adaptive management process on an ongoing basis should also be addressed."

Response:

The Adaptive Management process as applied to forest harvesting was the subject of an Environmental Preview Report prepared by the Newfoundland Forest Service and submitted to the Minister of Environment in accordance with the *Environmental Assessment Act* (Newfoundland Forest Service, 1994). The EPR provided a description of adaptive management and outlined the process to be followed. CBPP has followed the requirements of the process with respect to its woods operations.

It should be noted that certain issues do not lend themselves to resolution through an environmental impact assessment approach. The most obvious examples relate to land or resource use conflicts. As is noted in the FMD 16 Ecosystem Based Forest Management Strategy (generally referred to as the "Strategy Document"; Nicholl, 2001), such issues are probably better addressed through a comprehensive land use management planning system. Unfortunately, no such framework is in place for Newfoundland and Labrador, and as pointed out by Nicholl (2001), the Strategy Document does not attempt to replace or emulate a comprehensive land use planning strategy.

Forests are complex and dynamic ecosystems. This fact, coupled with constantly changing social values, leads to uncertainty over how to best manage forest resources. Adaptive management is a systematic approach to improving management and accommodating change by learning from the outcomes of management interventions. It recognizes that we do not have all the answers and that we must, instead, learn and adapt. Adaptive management is valuable whenever there is significant uncertainty about the outcome of management policies (Taylor et. al. 1997). In an adaptive management approach, management activities are designed to

increase understanding about their effect on the system being managed. Increased understanding about how the system responds can lead to more effective management. Information is gained by analysis of existing data and selecting the "best" management alternative and carefully monitoring the outcomes of implementing it. Outcomes that are unexpected or that differ from predictions become opportunities to learn and improve, rather than management failures.

The proposed operations by CBPP in the Main River watershed will apply an adaptive management approach in order to increase knowledge about the forest in the watershed and improve management practices. The Pine Marten recovery team has developed new habitat guidelines for the province. These guidelines are based on the latest research from other jurisdictions, but their effectiveness in Newfoundland is uncertain. Corner Brook Pulp and Paper proposes to harvest in accordance with the marten guidelines and monitor the response of marten in the Main River area to this harvest. Monitoring will measure marten habitat use in modified harvest areas, previously clear-cut areas and uncut areas. Habitat values will be assessed by measuring environmental conditions, stand attributes and prey base as proximate measures of habitat effects from harvesting. Information gained from this approach will be used to modify habitat guidelines and harvest prescriptions in order to maintain marten populations and habitat in the province.

Table 3.1. describes current and proposed research efforts, studies and initiatives by CBPP that are linked with and contribute information regarding the proposed harvesting within the Main River watershed. The Table also lists the relationship of these initiatives to the Goals and Objectives of the FMD 16 Strategy Document (see EPR Guideline Item 5.1).

Table 3.1 Current and Proposed Research Efforts and Studies Linked to Proposed Harvesting Within the Main River Watershed

Research Effort/Study Title	Description	Relevant FMD 16 Goals and (Objectives)*
1. Pine Marten Recovery Team	CBPP participates in the recovery team.	1.2.1 1.3.1 (2,3) 3.3.1 (2)
2. Test and Improve Marten Model	Work with the Wildlife Division and others to better describe and assess marten habitat in Newfoundland.	1.3.1 (3)
3. Landscape thresholds for Marten in Newfoundland	A University of Maine project funded by CBPP and others to quantify key habitat factors in Newfoundland for Marten.	1.3.1 (3)
4. 2001 Harvesting Trials	CBPP have conducted selection harvest trials to determine their effect on stand structure and harvest production.	1.1.1 (1, 2, 3) 1.1.2 (1, 2, 3) 1.3.1 (1) 2.1.1 (1) 2.2.1 (2) 2.3.1 (2) 4.1.2 (1)
5. Commercial Thinning	Intermediate felling to salvage natural mortality and enhance stand productivity.	2.3.1 (1)
6. Multi Stakeholder Planning Team	Consisted of environmental interest groups, local businesses, and members of the public, regulatory and resource agencies to discuss all matters of forestry activities within FMD 16.	3.3.1 (3) 5.7.1 (1) 6.2.1 (1, 2) 6.3.1 (1)
7. Gros Morne National Park Connectivity Working Group	CBPP has been working with Parks Canada and DFRA to develop a framework document for maintaining the connectivity of Gros Morne National Park with adjoining ecosystems.	1.1.1 (1) 1.2.1 1.3.1 (2, 3)
8. Stewardship Agreement Concerning Management of the Main River	An agreement to support the DTCR in implementing the Main River protected area corridor as a Waterway Provincial Park and Main Rivers designation as a Canadian Heritage River. In doing this a balanced set of objectives have to be met, including sustainable ecosystem management, forest harvesting, protected spaces, tourism development and outdoor recreation.	1.2.1 3.3.1 (3) 5.3.1 (1) 5.4.1 (2) 6.2.1 (1, 2)

Research Effort/Study Title	Description	Relevant FMD 16 Goals and (Objectives)*
9. Collaboration with Wildlife Division	Working together on a five-year modified harvesting study within the Main River area. The wildlife division is monitoring various harvesting techniques to determine their effects on the marten. Results will provide a better understanding of potential effects and of the effectiveness of different management techniques.	1.2.1 1.3.1 (2, 3) 2.3.1 (2) 5.4.1 (1) 5.6.1 (1)
10. Stewardship agreement with Ducks Unlimited.	CBPP have designated 24,000 hectares of company lands for the enhancement and protection of waterfowl and other wildlife.	1.2.1 (2) 1.3.1 3.3.1 (3) 4.1.2 (1) 5.7.1 (1) 6.2.1 (1, 2)
11. Western Newfoundland Model Forest	<p>Corner Brook Pulp and Paper was a principal proponent for the establishment of a model forest in western Newfoundland. Approximately 70% of the model forest is on the company's timberlands, and encompasses in total some 700,000 hectares of forest land.</p> <p>The primary goal of the model Forest is the development of an integrated resource management planning process for Newfoundland's forests through public participation. This process, which involved several partners including CBPP and more than 20 stake holders groups, addresses all aspects of resource management and takes into consideration a wide array of forest values that can be applied throughout the Province.</p>	1.1.1 (1) 1.2.1 1.3.1 (2, 3) 3.3.1 (3) 5.3.1 (1) 6.2.1 (1, 2) 6.3.1 (1)
12. Natural Disturbance Regimes in Western Newfoundland	WNMF project to describe natural disturbance regimes in western Newfoundland.	2.1.1
13. Biodiversity Assessment Project	WNMF project to assess biodiversity impacts of alternate management scenarios.	1.1.1 1.1.2
14. Summer Institute	A project with District 3 School Board and WNMF to provide forest ecology, management and wildlife information to teachers across Newfoundland.	6.3.1

Research Effort/Study Title	Description	Relevant FMD 16 Goals and (Objectives)*
15. Newfoundland Outfitters Association	A memorandum of understanding has been outlined between CBPP and NLOA and its members whereby they mutually acknowledge the importance of both the wood harvesting and outfitting to the economy of Newfoundland and Labrador and the significant employment both industries create.	5.2.1 (1) 5.3.1 (1) 5.4.1 (2) 5.6.1 (2) 6.2.1 (1, 2)
16. Scientific Advisory Group	A combined effort of CBPP and the Sierra Club to gather unbiased and expert advice on ecosystem management within the Main River watershed.	3.3.1 (3)
17. View Shed Analysis	A visual sensitivity analysis was performed from a series of viewpoints along the Main River Corridor in an effort to minimize the impact of harvesting on the view shed. This would allow the Main River Lodge and other outfitters to continue viable operations as a wilderness tourist destination.	1.1.1 (1) 1.2.1 3.3.1 (3) 5.3.1 (1) 5.4.1 (2) 5.6.1 (2) 5.7.1 (1)
18. Integrated Pest Management – Balsam Fir Sawfly	CBPP with other participants has mounted an IPM research effort to develop natural alternatives to chemical pesticides for controlling sawfly outbreaks.	2.2.1
19. Integrated Pest Management – Yellow Headed Spruce Sawfly	Studies to describe YHSS biology and pest/host interaction.	2.2.1
20. Classification of Scrub Forest	Classify scrub forest in Main River watershed for its habitat values.	1.3.1 (2, 3)
21. Cable Logging Trials	Assess and implement new technology for logging on steep slopes and in sensitive areas.	5.1.2
22. Research – Disturbance Dynamics on the Main River	CBPP provided funding support for Father John McCarthy to carry out PHD research on the old growth gap dynamic forests of western Newfoundland.	5.7.1 (1) 6.2.1 (1, 2) 6.3.1 (1)
23. Improved Utilization of Timber Resources	CBPP has a proactive program to improve utilization on its harvest operations.	5.1.3 (3)

Research Effort/Study Title	Description	Relevant FMD 16 Goals and (Objectives)*
24. Environmental Inspections	CBPP conducts bi-monthly inspections on all operations to ensure compliance with environmental laws and Company FMPOP's.	1.2.1 1.3.1 2.1.1 2.2.1 2.3.1 3.1.1 3.2.1 3.2.2 3.3.1
25. Environmental Awareness training	A one day program for all CBPP woodlands employees.	6.3.1
26. Reducing Soil Disturbance	Program to reduce soil disturbance on harvesting operations – part of CBPP Environmental Management System (EMS).	3.2.1 3.2.2
27. Water Quality	Program to monitor water quality on harvesting operations – CBPP EMS	3.1.1
28. Regeneration Assessment	Assessment of regeneration on all harvested areas.	2.1.1 2.2.1 2.3.1
29. Wood Freshness Taskforce	Program to improve freshness of wood delivered to mill. Aimed at reducing energy and chemical consumption in the papermaking process and improving quality.	5.1.3 5.2.1
30. Annual Woodlands Tour	Provide public tours of forest management operations.	6.2.1 6.3.1

* See Table 5.2 as per Nicholl, 2001.

4.0 GENERAL

4.1 GUIDELINE

“Section 2.1 (p. 9-10) of the Environmental Evaluation states the percentage for the CBPP mill’s total annual timber requirements which is provided by FMD 16. The EPR should state the percentage of the mill’s annual timber requirements which would be provided by proposed harvesting in the Main River watershed.”

Response:

Corner Brook Pulp and Paper requires in excess of 900,000 m³ of wood annually. This requirement is supplied by harvesting from company timber limits on the island of Newfoundland, purchases of wood from Crown lands, purchases of chips from sawmills and, if necessary, purchases of wood from off-island sources. A significant other source is from recycled material, which can provide the equivalent of 165,000 m³ of wood towards the annual mill consumption.

The Main River watershed contains some 2.5 million m³ of merchantable, accessible timber after allowing for the Heritage River Special Management Area, buffers and other leave areas. Corner Brook Pulp and Paper harvest strategy for the watershed is to minimize the annual harvest from the watershed and implement a variable retention harvest system in order to emulate the natural disturbance regime in the watershed (see Table 5.2). During the period 2002 – 2006 up to 125,000 m³ (average 25,000 m³ per year) will be harvested from the watershed. This amounts to approximately 3% of the annual requirements of the mill.

4.2 GUIDELINE

“The EPR should provide an overview map of the Main River watershed which includes a UTM or co-ordinate grid, legible names for operating areas, labels for waterbodies and communities, and the boundary of the watershed.”

Response:

An overview map (Figure 4.1) provides the requested information. Note that the map includes applicable boundaries for the CBPP limits, the Main River Waterway Provincial Park and Special Management Area.

4.3 GUIDELINE

“Corner Brook Pulp and Paper Ltd. has recently announced an independent Science Advisory Group to advise on forest harvesting within the Main River watershed. The EPR should indicate the membership, objectives, mandate and terms of reference for the Science Advisory Group, and indicate the timeframe associated with the Group’s operation.”

Response:

In October, 2001 CBPP, jointly with the Sierra Club of Canada, appointed a scientific advisory board to provide advice on forest management in the Main River watershed. The role of the board is to provide an independent, scientific viewpoint on management of the forest resource in the Main River watershed. The mandate and terms of reference for the advisory board are detailed in Appendix B. The original Terms of Reference for the board contemplated the completion of a report by March 31, 2002. However because of the workload of board members, the timeline has been extended, and the board now expects to complete its report by early summer 2002.

The advisory board members are:

Dr. Louis Belanger of Laval University; and
Dr. Peter Duinker of Dalhousie University;
Dr. Thom Erdle of the University of New Brunswick.
Dr. Faye Murrin of Memorial University of Newfoundland;

4.4 GUIDELINE

"The Environmental Evaluation (Section 4.0) addresses mitigative measures for potential effects, rehabilitation plans, and monitoring associated with the Five-Year Plan. But the Evaluation does not state whether CBPP regards these procedures as corporate commitments. This should be clarified in the EPR."

Response:

The Company is committed to the applicable mitigation measures, rehabilitation plans and monitoring as discussed in Section 4.0 of the Environmental Evaluation. Of course, the Minister has the authority to impose terms and conditions upon the proponent at all stages of the Environmental Assessment process.

Figure 4.1 Main River Watershed Overview Map

5.0 FORESTRY

5.1 GUIDELINE

“The EPR should address, in detail, how the proposed forest harvesting activities are linked and integrated with the guiding principles, goals and objectives of the Forest Management District 16 Strategy Document. The EPR should also describe current and proposed research efforts and studies that are linked with and contribute information regarding the proposed harvesting.”

Response:

The FMD 16 Strategy Document (Nicholl, 2001) was not completed when the FMD 16 Five-Year Operating Plan was registered. The document has since been finalized and was released by the Forest Service on February 2002. It includes comprehensive background input from many stakeholders.

In order to address how CBPP proposed forest harvesting estimates are linked to the guiding principles, goals, and objectives of the Strategy Document, it may be helpful to provide discussion as to how the Strategy Document is structured. In Section 3 of the Document, five **Guiding Principles** are presented as the basis for achieving overall sustainability:

1. Environmental Sustainability;
2. Economic Sustainability;
3. Political Sustainability;
4. Social Sustainability; and
5. Cultural Sustainability.

Section 7 of the Document presents six **Criteria** which have been developed by the Canadian Council of Forest Ministers (CCFM). These criteria comprise the essential values of Sustainable Forest Management (SFM):

1. Biodiversity;
2. Healthy Forests;
3. Soil and Water;
4. Global Impacts;
5. Benefits to Society; and
6. Public Involvement and Commitment.

For each of the six Criteria, applicable **Values** have been identified. For each Value, **Goals** are defined, and achievable **Objectives** laid out, along with measurable **Indicators** that can facilitate measurement of progress, and provide a basis for evaluating success or failure. The reader is referred to the Strategy Document for a more detailed explanation of these terms and their inter-relationships.

The Strategy Document does not provide an explicit link between the five Guiding Principles and the six Criteria (and, in turn with the associated Goals and Objectives). However, based on our review of the document, a matrix was developed (Table 5.1) to illustrate this relationship.

For example, Environmental Sustainability is achieved by satisfying four CCFM Criteria: Biodiversity; Healthy Forests; Soil and Water; and Global Impacts. Economic Sustainability is achieved by satisfying Criterion 5 - Benefits to Society.

Table 5.1 FMD 16 Guiding Principles and Associated CCFM Criteria

Guiding Principles	CCFM Criteria					
	Biodiversity	Healthy Forest	Soil and Water	Global Impacts	Benefits to Society	Public Involvement and Commitment
Environmental Sustainability						
Economic Sustainability						
Political Sustainability						
Social Sustainability						
Cultural Sustainability (DFRA 2001)						

Note: Criteria which relate to Principles are shown as shaded cells.

The FMD 16 Strategy Document provides a detailed listing of the Values, Goals, and Objectives that address the stated Criteria. While overall, stewardship of the Strategy Document is the responsibility of DFRA, all stakeholders can play a role with respect to the long list of identified Objectives. The Document does not include an explicit assignment of lead responsibility or roles to the various interested agencies/stakeholders. Nevertheless, as requested by the EPR Guidelines, Table 5.2 has been developed to illustrate how the activities of CBPP (including forest harvesting activities) are linked and integrated with the forty-one Objectives contained in the FMD 16 Strategy Document. Figures 5.1, 5.2, and 5.3 provide recent examples to demonstrate the active role played by CBPP in addressing these objectives specifically with respect to Environmental Management Systems, Public Involvement, and Community Sustainability.

The comprehensive listing provided in Table 3.1 includes a description of current and proposed research efforts, studies and initiatives by CBPP that are linked with and contribute information regarding the proposed harvesting. The table includes a column to relate these initiatives to the proposed harvesting in Main River watershed by listing the applicable FMD 16 Goals and/or Objectives to which each applies.

Table 5.2 Integration and Linking of Corner Brook Pulp and Paper Forestry Harvesting Activities with FMD 16 Strategy Document

FMD 16 Strategy Document				Related CBPP Forestry Activities
Criterion	Values	Goals	Objectives	
1. Biodiversity	1.1. Representative Landscapes	1.1.1. Recommend area for protection that provide adequate representation of each ecoregion 1.1.2. To have adequate representation of the various forest successional stages.	1. To contribute a representative portion of the eco sub region that exists in the management district to help reach the overall provincial goal of protection by 2006. 2. Maintain at least 20% of forest in older successional stages (>80yrs). 3. Allow at least 50% of the forest available for timber harvest in the district to reach 70 years of age before it is scheduled for harvest.	1. CBPP has contributed more than 17,000 ha of its timber limits in the Main River watershed to the Main River Special Management Area. 2. This objective will be exceeded by CBPP within the Main River watershed. 3. CBPP harvest strategy for the Main River watershed will maintain the uneven age structure of the forest.
	1.2. Special Places	1.2.1. Establish special management provisions to preserve biologically distinctive or unique features	1. No loss of any rare plant sites. 2. To monitor the existing caribou calving grounds and waterfowl nesting areas while considering natural changes.	1. CBPP Forest Management Plan and Operating Procedures (FMPOP) states that areas identified as containing rare and/or unique flora must be avoided. 2. CBPP's FMPOP provides guidelines regarding caribou and waterfowl habitat.
	1.3. Wildlife Habitat	1.3.1. Maintain, conserve and protect habitat for wildlife and ensure landscape connectivity	1. To maintain a minimum of 15% of each age class across the landscape. 2. To identify and protect caribou calving ground, pine martin habitat and songbirds. 3. To forecast Pine Marten and selected songbird habitat and implement a strategy to maintain connectivity based on the ideal forecasted scenario, through computer modeling.	1. Within the Main River watershed selection harvesting will maintain the existing age class distribution. 2. CBPP has been working with such organizations as Parks Canada, the WNMF, and the Wildlife Division to ensure wildlife habitat is maintained. In addition CBPP's FMPOP provides guidelines regarding wildlife habitat. 3. CBPP is working with the Wildlife Division and others on the development of tools for forecasting habitat values. CBPP is a partner in the Gros Morne National Park Connectivity Working Group.

Table 5.2 Integration and Linking of Corner Brook Pulp and Paper Forestry Harvesting Activities with FMD 16 Strategy Document

FMD 16 Strategy Document				Related CBPP Forestry Activities
Criterion	Values	Goals	Objectives	
2. Healthy Forests	2.1. Natural Processes	2.1.1. Support the ecosystem's ability to maintain natural process over time.	1. To have all forest sites return to sufficiently stocked with no loss of productivity.	1. Silviculture, regeneration surveys, growth and survival assessments of plantations, and operational planning for the following years program are important aspects of CBPP 5-year management plans, and serve to ensure that forested sites are sufficiently stocked.
	2.2. Long-term ecosystem health (natural resiliency, organization, vigor)	2.2.1. Maintain the resiliency, organization and vigor of the forest (including soils) taking into consideration current climate change predictions and scenarios.	1. To evaluate and maintain current levels of site indices for balsam fir and black spruce through evaluation and monitoring. 2. Maintain current stand composition at rotation age.	1. CBPP is a participant in the Provincial Forest Inventory Program which monitors forest productivity over time. 2. Selection harvesting will maintain current stand composition at rotation age within the Main River watershed.
	2.3. Natural productive capacity.	2.3.1. In areas that are managed for timber production maintain and/or enhance the structure, function, and productivity of ecosystem components.	1. The mean annual increment (mai) of 2.0 m ³ /ha/yr for balsam fir and 1.5-m ³ /ha/yr black spruce will be maintained. 2. To maintain Coarse Woody Debris (CWD) at current levels for mature stands as determined by the Forest Inventory Branch.	1. The Provincial Forest Inventory Program PSPs and TSPs monitor growth rates. 2. The proposed harvest strategy for the Main River watershed will allow for the maintenance of CWD at current levels.
3. Soil and Water	3.1. Water	3.1.1. Maintain naturally occurring flow rates and chemical composition of water	1. To have water quality stay within the acceptable range as defined in the Canadian Water Quality Standards 2. Water flow rates (m ³ /sec) will remain within natural flow cycles.	1. Compliance with the FMPOP will protect water quality. 2. Compliance with the FMPOP will prevent negative effects on natural water flows. CBPP has an environmental program in its EMS which specifically addresses water quality and quantity.

Table 5.2 Integration and Linking of Corner Brook Pulp and Paper Forestry Harvesting Activities with FMD 16 Strategy Document

FMD 16 Strategy Document				Related CBPP Forestry Activities
Criterion	Values	Goals	Objectives	
	3.2. Soil	<ul style="list-style-type: none"> 3.2.1. Minimize soil erosion and compaction during forestry operations. 3.2.2. Ensure there is no long-term net loss of soil nutrients. 	<ul style="list-style-type: none"> 1. Less than 10% of mineral soil will be exposed during forestry operations. 2. Level of soil nutrients after rotation should be within adequate levels as determined by Morism, CFS 1974. 	<ul style="list-style-type: none"> 1. Compliance with the FMPOP will prevent erosion and compaction effects during forestry operations. 2. Compliance with the FMPOP will help preserve soil nutrient levels. <p>CBPP has an environmental program in its EMS which specifically addresses soil disturbance.</p>
	3.3. Policy and protection of forest. To ensure the maintenance of ecosystems, it is important that policies are in place, which provide for management practices and for the protection of the environment.	<ul style="list-style-type: none"> 3.3.1. To have current policies and plans that provide direction for protecting the environment. 	<ul style="list-style-type: none"> 1. Complete the Five-Year Operating Plans and submit to the Minister of Environment for review and approval under the <i>Environmental Assessment Act</i>. 2. Implement and monitor for compliance. 3. Provide an opportunity for planning teams or its sub-committees to participate in the monitoring of Five-Year Operating Plans. 	<ul style="list-style-type: none"> 1. In process. 2. CBPP Environmental Management System requires bi monthly compliance inspections of all operations. 3. CBPP produces monitoring reports and will cooperate with the Forestry Service in stakeholder participation with respect to monitoring.
4. Global Impacts	4.1. Forests as carbon sinks.	<ul style="list-style-type: none"> 4.1.1. The forests to be a carbon sink. 	<ul style="list-style-type: none"> 1. To maintain the average tons of carbon within the range as determined by Tarnocai, C. and B. Lacelle 1996. This range is outlined on the "Soil Organic Carbon of Canada Map". 	<ul style="list-style-type: none"> 1. CBPP monitors forest cover on the landscape comprising its timber limits. <p>CBPP is working with the Western Newfoundland Model Forest (WNMF) to develop a carbon budget model for the model forest that can be implemented throughout the Province at the forest management level.</p>

Table 5.2 Integration and Linking of Corner Brook Pulp and Paper Forestry Harvesting Activities with FMD 16 Strategy Document

FMD 16 Strategy Document				Related CBPP Forestry Activities
Criterion	Values	Goals	Objectives	
		4.1.2. To limit the permanent net loss of forest area due to forest management activity with exception of capital road development.	1. No net loss of forest area.	1. CBPP's Five-Year Operating Plan maintains forest cover across the landscape.
5. Benefits to Society	5.1. Commercial Timber.	5.1.1. Enhance tree growth and quality of trees on lands managed intensively for commercial timber. 5.1.2. Optimize the use of the land base to support commercial timber production 5.1.3. Increase the utilization of wood fiber. 5.1.4. Harvest timber volumes at sustainable levels.	1. To maintain the mai of 2.0 m ³ /ha/yr of bF and 1.5 m ³ /ha/yr for bS. 2. Work toward no net loss of the Class I land base (Class I areas are those lands identified for timber production). 3. Volume of merchantable timber left after timber harvesting will not exceed 6 m ³ /ha. 4. Softwood timber harvesting not to exceed the calculated annual allowable cut. 5. To determine a hardwood annual allowable cut.	1. see Value 2.3, Objective 1. 2. Because of the allocation of land areas for Waterway Park and adjacent Management Areas, Class 1 land base will be lost for timber production in the Main River watershed. 3. Within the Main River watershed this objective is not relevant as a selection harvest strategy is being implemented. 4. CBPP will not exceed AAC as determined by DFRA. 5. No hardwood dominated stands exist within the Main River watershed.
	5.2. Employment	5.2.1. To maximize employment benefits derived from timber-based, non-timber and value-added utilization of resources.	1. To optimize the number of people employed in timber-based, non-timber and value-added industry.	1. CBPP directly employs 1500 people in their operations. Indirectly, CBPP supports employment by making sawlogs available to support local sawmills. As well, the CBPP road network supports a wide range of forest-based activities.
	5.3. Revenue from non-timber forest products and services.	5.3.1. Encourage a greater diversity of forest-based, resource-generating activities within a sustainable capacity.	1. Manage to a sustainable level the tourism lodges and business in conjunction with the Department of Culture, Tourism and Recreation.	1 CBPP contributes to this objective through a Memorandum of Understanding, which is in place with the Newfoundland and Labrador Outfitters Association.

Table 5.2 Integration and Linking of Corner Brook Pulp and Paper Forestry Harvesting Activities with FMD 16 Strategy Document

FMD 16 Strategy Document				Related CBPP Forestry Activities
Criterion	Values	Goals	Objectives	
	5.4. Recreation.	5.4.1. Where appropriate, increase the amount and diversity of suitable recreational forest-based activities.	<ol style="list-style-type: none"> Evaluate the quality of big game, based on carrying capacity and adjust the intensity overtime to meet sustainable levels. Provide adequate protection to areas for recreational occupation. 	<ol style="list-style-type: none"> This is the responsibility of the Wildlife Division. CBPP's road network provides access for recreational activities.
	5.5. Forest products for personal use.	5.5.1. Provide for a sustainable domestic harvest of wood.	<ol style="list-style-type: none"> To maintain the domestic consumption at current levels by allocating sources from non AAC timber and waste from all ownerships and source AAC for any shortfalls. 	<ol style="list-style-type: none"> DFRA manages domestic wood harvesting.
	5.6. Heritage.	5.6.1. Encourage the continuation of traditional activities and rights of common access where they are consistent with the principles of sustainable development.	<ol style="list-style-type: none"> Local citizens to have licenses to hunt and permits to cut timber in areas of preference if within the sustainable level of harvest for that designated area. To have the majority of residents satisfied with the use, and access to, their traditional areas of forest. 	<ol style="list-style-type: none"> CBPP issues permits for harvest of non-commercial species in their limits. The CBPP road network provides access for traditional uses of the forest.
	5.7. Spiritual values.	5.7.1. Ensure that intrinsic and intangible values are adequately considered in forest management.	<ol style="list-style-type: none"> To have the majority of the public surveyed feel satisfied with their forest interaction. 	<ol style="list-style-type: none"> CBPP promotes public awareness about the importance of forests through an active program of classroom presentations, woods tours, talks to service groups and various publications.

Table 5.2 Integration and Linking of Corner Brook Pulp and Paper Forestry Harvesting Activities with FMD 16 Strategy Document

FMD 16 Strategy Document				Related CBPP Forestry Activities
Criterion	Values	Goals	Objectives	
6. Public Involvement and Commitment.	6.1. Forest contribution to community sustainability.	6.1.1. Ensure that sustainable forest management contributes to the health of communities.	<ol style="list-style-type: none"> 1. To establish a baseline that represents an optimum number of households per community that could be sustained by forest-based employment. 2. To have employment opportunities for workers previously employed by the forest industry. 3. To have salary ranges meet provincial standards. 	<ol style="list-style-type: none"> 1. CBPP contributes to the social and economic development of Newfoundland. Over \$200 million are spent annually on wages, and goods and services in the Province. 2. CBPP have taken affirmative actions to retain its woods operation labour force. 3. Wages for CBPP woods personnel are above provincial minimum standards.
	6.2. Fair decision-making.	6.2.1. Incorporate, on an ongoing basis, active public involvement in the forest management planning and decision-making process.	<ol style="list-style-type: none"> 1. To diversify the number of stakeholders on the planning teams, that represent recreation, community, and non-timber based forest economy value. 2. To obtain a level of consensus on the forest planning process. 	<ol style="list-style-type: none"> 1. CBPP is an active participant in DFRA public planning process. 2. CBPP is an active participant in DFRA public planning process.
	6.3. Informed and responsible decision-making.	6.3.1. Increase awareness, understanding, and practice of sustainable forest management.	<ol style="list-style-type: none"> 1. To make SFM presentations to a representative number of schools and service clubs in each District. 	<ol style="list-style-type: none"> 1. CBPP has an active public awareness program including an annual woods tour for the public, the WNMF Summer Institute for teachers, classroom presentations, talks to service groups, and publications.

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COMMITTED TO CONTINUAL IMPROVEMENT

CBPP Woodlands' Environmental Management System registered to ISO14001

Corner Brook Pulp and Paper Woodlands' Environmental Management System (EMS) is officially certified to the ISO 14001 Standard. The Quality Management Institute presented the Certificate of Registration to Patrick Tompkins, Woodlands Manager of Corner Brook Pulp and Paper on July 17, 2001.

The scope of registration, which was achieved with a combined effort of all employees of CBPP Woodlands, includes the EMS as it applies to all Woodlands operations controlled by the Company in Forest Management Districts 9, 14, 15, 16 and 17. This includes management planning, road construction and maintenance, harvesting operations, transportation of fibre, silviculture and support services.

A great deal of work went into building this system. A team made up of Woodlands Superintendents, Safety and Environmental Coordinators as well as a contractor representative has ensured our EMS is appropriate to the overall envi-



By Anne Hollahan,
Environmental
Management Coordinator

CBPP

ronmental aspects of our operations. Our EMS allows us to monitor our progress based on an international standard and analyze employee training needs. CBPP Woodlands' has identified key elements such as operating procedures for emergency response, environmental incident reporting, reviewing environmental performance and employee training and awareness. The system will help us to measure our performance against set targets and make improvements to our overall operations.

"We are extremely pleased today to have reached this significant point in Environmental Management. It is very important to not only say that you are doing the right things but to be recognized by the industry to be doing the right things. We are proud of this Registration and pleased with the third party endorsement of our environmental practices," said Kevin Sheahan, Vice-President and General Manager of Corner Brook Pulp and Paper.



CERTIFICATE PRESENTED: On hand for the presentation of CBPP Woodlands certificate of registration were: Patrick Castonguay of QMI, Woodlands Manager Patrick Tompkins, Environmental Management Coordinator Anne Hollahan and Kevin Sheahan, Vice-President and General Manager.

Figure 5.1 A Milestone for the Company was the Achievement of Full Certification of its Woodlands Operations to the ISO14001 Standard.



CORNER BROOK PULP AND PAPER **Woodlands Tour 2002**

Corner Brook Pulp and Paper Limited invites the public to attend **Woodlands Tour 2002**.

Complimentary tours will be conducted daily between **July 28-August 3**.

Groups will be transported by bus for on-site demonstrations of conventional and mechanical harvesting, road construction, pre-commercial thinning and more.

We'll also provide complimentary

lunch on-site. Come and bring your family – we promise you'll have a great day.

We can accommodate up to 72 persons per day. A reservation is required and we recommend you call as soon as possible. Simply contact Marilyn at CBPP Woodlands, 637-3104.

We'll be happy to take your reservation and answer any questions you may have!

Figure 5.2 CBPP Conducts an Annual Program of Woodland Tours.

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LEFT: Stan Pinksen instructs Adam Baker on proper chainsaw use;
CENTRE: The Professor and his students; and,
RIGHT: A field trip to CBPP Woodlands.

THE PROFESSOR: ‘Retirement was a tough decision but I wanted to seek new challenges, adventures’

In his own words, former Corner Brook Pulp and Paper Woodlands Manager Stu Weldon “sort of retired at the end of January 1998 at the young age of 58 and eight months.” He adds, “It was a tough decision but I wanted to seek new challenges and adventures.”

Since retiring Stu and Carol Ann have travelled extensively, including to England in 1998 to trace his family roots. He has collected over 3,000 relatives’ names and has them stored in a genealogy program on his computer. He ventured to Ireland in 1999 to attend a show entitled “Wood, The Beauty of Objects,” in which Stu had five pieces of work on display.



By Faron Knott,
Planning Technician

Stu enjoys continued ties to Corner Brook Pulp and Paper Limited. His research material on the history of the Mill, the Power Company, and Woodlands operations from the company’s inception in 1923 to 2000 was used by a writing committee responsible for preparing the 75th Anniversary book called “The Hum on the Humber.” His ties to Corner Brook Pulp and Paper Woodlands prove to be a valuable asset for his latest new challenge as well.

Stu was amazed when Dr. George Gunther head of the science department at Sir Wilfred Grenfell College asked him to become a forestry lecturer at Sir Wilfred Grenfell College. After encouragement from his family Stu accepted the job. He is responsible for teaching a first-year forestry course that is a pre-requisite of Newfoundland students entering the second or third year at the University of New Brunswick’s five-year forestry degree program.

The course started in late August with a one-week forestry camp prior to the beginning of regular classes in

September. Stu’s introduction to his new class was on familiar ground. He had made arrangements with Woodlands Manager Patrick Tompkins to have his class visit our operations. Members of the Woodlands staff were guides and the class was introduced to the various aspects of a woodlands operation. In addition to the operations’ tour the students have visited the Cooks Marsh silviculture site, toured the wood yard scaling facility and toured the mill. In the new year the students will be exposed to a lecture by George VanDusen on sustainable forest management, biodiversity, and other environmental concerns, like the Main River watershed issues.

As many of us are well aware, there are no half measures with Stu. When he makes a commitment, it is carried out with vigour and professionalism that produces a product that is second to none. I am sure that I speak for everyone when I wish Stu all the best in this new challenge and adventure.

Good luck, Stu!

Figure 5.3 CBPP is an Active Supporter of Education and Training Programs.

5.2 GUIDELINE

"For 2002, the EPR should identify harvest strategies which will be employed, rationale for the preferred strategy(s), and harvest volumes for specific operation areas within the Main River watershed. The EPR should also include results of ongoing studies on the environmental effects of the proposed harvest strategies."

Response:

The CBPP harvest strategy is to minimize the annual harvest from the watershed and implement a variable retention harvest system that will more closely emulate the natural disturbance regime in the area. A key ingredient of this strategy is the commitment by CBPP to eliminate clear – cutting in the Main River watershed. Selection harvest techniques and reduced annual harvest volumes will ensure that large tracts of mature forest remain on the landscape through time.

Corner Brook Pulp and Paper proposes to conduct harvest trials in two blocks in the watershed in 2002 (Figure 5.4). The harvest will be a selection harvest in accordance with the Newfoundland Pine Marten Guidelines (see Table 6.1) and will act to maintain the older age structure of the forest within the harvest blocks. The harvested areas, as a result will maintain habitat for a wide range of wildlife.

Two different harvest patterns will be used in 2002 to evaluate the operational feasibility of the harvest strategy and to evaluate the effectiveness of the marten guidelines in maintaining marten habitat values. One block will be harvested employing a strip pattern of cutting a 20m corridor every 60m throughout the block. The other block will be a group selection cut of small openings up to 3 hectares in size randomly through the block. Both techniques are described in Section 2.2.4.3 of the Environmental Evaluation Report and Figure 2.3 provides an illustration of the group tree selection harvesting techniques. The total volume harvested in these trials will depend upon the initial basal area of the blocks, but is estimated at 14,000 m³.

A trial of selection harvesting techniques was carried out in 2001 in the watershed (Figure 5.5). The objective was to leave an average of at least 18m² of basal area per hectare over the entire harvest block in order to meet the Newfoundland Pine Marten Guidelines. A mechanical harvester moved through the block in travel corridors spaced 20m apart. Corridors were kept to the minimum width necessary for the harvester to gain access. Along the travel corridors trees were selected randomly with the objective of leaving a random distribution of all tree sizes represented in the stand and not enlarging any natural opening in the stand, while meeting the minimum basal area requirement. Details of this trial are described in Appendix C. Figure 5.5 is an aerial photograph of the trial area following harvesting. Note the minimal visual effect.

Figure 5.4 Main River Watershed 2002 Annual Operating Plan



Figure 5.5 Aerial Photograph of the Trial Area Following Harvesting.

5.3 GUIDELINE

"To the extent possible, CBPP should also provide a projection of the anticipated harvest strategies, rationale and harvest volume for specific operation areas within the Main River watershed annually for the remainder of the Five-Year Plan (2003-2006). If this information cannot be provided in whole or in part, reasons should be provided in the EPR."

Response:

The same strategy of selection harvest in accordance with the Newfoundland Pine Marten Guidelines will be employed in 2003-2006. Selection harvest blocks within the operating areas shown on Figure 5.4 will be chosen with input from members of the Gros Morne Connectivity Working Group (see Guideline 9.1). Harvest blocks will be selected to facilitate research and monitoring being conducted by the working group. The actual cut patterns will be selected based on recommendations from the working group. An area of approximately 500-750 hectares will be harvested each year.

The precise location or timing for harvesting over the period 2003-2006 will be developed in advance of each year's operations as an annual operating plan submitted to DFRA for approval. A projection has been made as listed in Table 5.3, including the road construction and likely harvest volumes by Operating Area, as shown on Figure 4.1. Note that, in addition to primary roads each operating area will require a secondary road network. In total, 125,000 m³ will be harvested over the 2002-2006 period. This represents 12% of the gross forest inventory volume in the identified operating areas.

Table 5.3 Harvesting and Primary Road Estimates for 2002 to 2006

YEAR	Operating Area	Primary Roads (kms)	Harvest Method	Volume (m ³)
2002	Lower Four Ponds	2.0	Selection Harvest	8,400
	Eagle Mountain	1.0	Selection Harvest	5,600
	St. Pauls Big Pond	1.0		
	Main River Link	9.0		
Sub 2002		13.0		14,000
2003	<i>Lower Four Ponds</i>	3.0	<i>Selection Harvest</i>	3,000
	<i>Eagle Mountain</i>	3.0		
	<i>St. Pauls Big Pond</i>	4.0	<i>Selection Harvest</i>	4,000
	<i>Main River Link</i>	10.0	<i>Selection Harvest</i>	15,750
	<i>Main River North</i>	6.0	<i>Selection Harvest</i>	5,000
Sub 2003		26.0		27,750
2004	<i>Lower Four Ponds</i>	3.5	<i>Selection Harvest</i>	2,000
	<i>Eagle Mountain</i>		<i>Selection Harvest</i>	3,000
	<i>St. Pauls Big Pond</i>	5.0	<i>Selection Harvest</i>	8,000
	<i>Main River Link</i>	5.0	<i>Selection Harvest</i>	5,000
	<i>Main River North</i>	9.0	<i>Selection Harvest</i>	9,750
Sub 2004		22.5		27,750
2005	<i>St. Pauls Big Pond</i>	2.5	<i>Selection Harvest</i>	5,000
	<i>Main River Link</i>	4.0	<i>Selection Harvest</i>	10,000
	<i>Main River North</i>	12.0	<i>Selection Harvest</i>	12,750
Sub 2005		18.5		27,750
2006	<i>St. Pauls Big Pond</i>	4.0	<i>Selection Harvest</i>	5,000
	<i>Main River Link</i>		<i>Selection Harvest</i>	5,000
	<i>Main River North</i>	10.0	<i>Selection Harvest</i>	17,750
	<i>Taylors Brook North</i>	3.0		
Sub 2006		17.0		27,750
TOTAL		97.0		125,000*

* Note: These annual projections will be reviewed and revised prior to each operating year. Changes can be anticipated, however the total projected volumes over the 2002-2006 period will not be exceeded.

5.4 GUIDELINE

"The maps included with the Registration do not include forest age classes. To facilitate impact predictions upon migratory birds and species at risk, CBPP should provide mapping with 20-year forest age-class structure."

Response:

Figure 5.6 shows the 20-year forest age class structure of the Main River watershed. Note that the age class structure will not change measurably over the five-year time frame of the

Operating Plan, since selective harvesting will not alter age class structure of the harvest blocks.

5.5 GUIDELINE

“The harvest volume on the operating area data sheets for District 16 in the Five-Year Plan is shown as 1,603,797 m³ while the text indicates a harvest of 1,000,000 m³. The EPR should clarify this apparent discrepancy with reference to harvest volumes proposed for the Main River watershed.”

Response:

There is no actual discrepancy. The data sheets indicate the gross merchantable volume shown in the Forest Inventory. The text which referred to 1,000,000 m³ was with reference to an anticipated AAC for FMD 16. In any case, a total of 125,000 m³ will be harvested from the Main River watershed over the period 2002 to 2006.

5.6 GUIDELINE

“The EPR should provide details of proposed road construction for the Main River watershed and explain road construction requirements in relation to proposed harvesting.”

Response:

The proposed road construction program for the 2002 – 2006 period is listed in Table 5.3 and illustrated on Figure 4.1. In total, 97 km of primary access road (“Proposed Road” on Figure 4.1) are proposed for construction within the Five-Year Operating Plan. A selection harvest strategy, distributing harvest blocks throughout an area, requires an accelerated road construction program in the initial stages of developing access to harvest areas.

5.7 GUIDELINE

“The overview map in the Five-Year Plan shows Alienation Class 3 for much of the Main River Valley but the detailed mapping indicates modified harvest in some areas. CBPP should clarify this apparent discrepancy.”

Response:

The Overview Map (Figure 4.1) shows in white the alienated areas along the stem of Main River. The areas shown in green within the Special Management Area are eligible for harvest in the Heritage River Management Plan, however no harvest is proposed for the Special Management Area within the proposed Five-Year Operating Plan.

Figure 5.6 Main River Watershed Forest Age Structure 2002 – 2006

5.8 GUIDELINE

“Section 3.2.5.5 (P. 42) of the Environmental Evaluation estimates that an area of 5,400 km² of old growth forest exists on the eastern Northern Peninsula. It is further estimated that “the area identified for potential harvest within the proposed Five-Year Plan in the Main River watershed is approximately 1% of the potential old growth.” The EPR should clarify the basis for this comparison and whether this estimate takes into account that the two areas may include non-forest areas such as waterbodies, barrens, and peatlands.”

Response:

The outlined area comprising the old-growth forest dynamic, including the Main River watershed, also contains non-forested areas of waterbodies, barrens and peatlands (bogs and fens). It was assumed that the proportion of non-forested area is the same within the Main River watershed as for the entire potential old growth region. On the basis of this assumption, it was estimated that the Main River watershed harvest area comprises approximately 1% of the potential old growth area on the eastern Northern Peninsula.

6.0 WILDLIFE

Pine Marten

6.1 GUIDELINE

“The references used to support much of the information presented in the Environmental Evaluation (p. 47-48, 118, and 120) are limited in number. There is a significant body of current literature available from the Northeastern US and Canada on the Marten biology and ecology that is not referenced. The majority of information presented in the sections on life history and mitigation/protection is out-of-date. The EPR should include more recent and in-depth research results to provide a baseline for assessing the potential impacts of forestry operations on marten populations.”

Response:

The Environmental Evaluation cited a comprehensive listing of relevant literature, however due to an editing error, not all of the citations were included in the List of References. In any case, a revision has been completed and presented as Appendix D. This material provides a comprehensive review of the literature upon which the Newfoundland Pine Marten Guidelines are based. As well, we have incorporated some recent publications that may be relevant.

6.2 GUIDELINE

“The EPR should describe the marten habitat evaluation modeling which CBPP is currently undertaking with the Wildlife Division, together with an explanation of how results of the modeling will be used to modify future harvesting. The EPR should review impact predictions of forestry operations on marten populations in light of updated research results (Guideline 6.1) and results of habitat evaluation modeling, if available.”

Response:

In 2001, the Inland Fish and Wildlife Division of the Department of Tourism, Culture and Recreation finalized the initial development of a new Pine Marten habitat model for Newfoundland. The model incorporates both stand structural attributes and spatial arrangement to define marten habitat. A general description of the development of the model and how the model operates is contained in Appendix E.

In the fall of 2001, with the departure of the lead programmer developing the model, CBPP assumed a lead role, along with the Wildlife Division, in the continued development of the model. The initial model ran on a vector based GIS database. The model took some 24 hours to complete one run of ten iterations for the Main River watershed. The model has recently been converted to run on a raster GIS database and this has increased the speed of the model some tenfold.

Many of the model's parameters are based on research conducted in other jurisdictions throughout North America where marten home range sizes and habitat conditions are considerably different from Newfoundland. Next steps in the development of the model are to

test the sensitivity of several of the model's parameters in order to focus future research to better define these parameters for the Island of Newfoundland. This sensitivity analysis is currently being done by Gros Morne National Park. At the same time, CBPP plans to run the model for the entire western region of the island in order to get an estimate of current habitat availability in the region for marten. Ultimately, the model will be used in conjunction with forest vegetation projection models used by CBPP and the DFRA to evaluate alternative forest management scenarios regionally for the entire island in order to ensure that there will be sufficient habitat available to meet the Province's marten population goals in the long term.

Toward this objective, CBPP, along with several other agencies in the Province is supporting a research project at the University of Maine to define landscape thresholds for marten based on Newfoundland data collected over the past several years. This proposed research is described in Appendix F.

The new model was initially run for the Main River watershed in late summer 2001. For the Main River watershed, the model predicted that there is sufficient habitat capacity available to support approximately 20 female and 10 male Newfoundland Pine Marten. A second run was carried out assuming clear-cut harvesting of 100% of the merchantable timber in all of the operating blocks proposed for harvest by CBPP during the 2002-2006 period. This run indicated a reduction in habitat capacity in the Main River watershed to 9 female and 3 male Newfoundland Pine Marten. The model was then run based on the selection harvesting approach now proposed by CBPP in the 2002-2006 Five-Year Operating Plan. The model predicts that harvesting in accordance with the Guidelines (as listed in Table 6.1) should have nil effect on the quantity of available habitat, i.e. the effects of the Five-Year Operating Plan proposed harvesting will be negligible, and the indicated capacity of 20 female and 10 male marten will be maintained.

Because a selection harvest approach does not exceed the habitat suitability criteria for the Newfoundland Pine Marten, the area remains as suitable after harvesting as it did before. On that basis the proposed Five-Year Operating Plan is predicted to have a minor (not significant) residual environmental effect on the Newfoundland Pine Marten.

Table 6.1 Newfoundland Pine Marten Habitat Management Guidelines

<ul style="list-style-type: none">○ The basic unit for evaluation will be the home range size for male (30 km^2) and female (15 km^2) marten.○ All forest types can be considered if they meet the following requirements.○ 70% or greater of that unit must be suitable habitat.○ 40% or greater of the unit should have trees $> 9.6 \text{ m}$ in height.○ The remaining portion of the 70% (30% or less), unit should have trees between 6.5 and 9.6 m.○ 50% of the unit should be contiguous. Stands will have to be within 50 m of an adjacent habitat to be considered contiguous.○ A qualifying stand will have to be within 160 m of another stand or habitat patch to be considered as habitat.○ Minimum patch size = 20 ha.○ Basal area requirement = ($\sim 18 \text{ m}^2/\text{ha}$).○ Hardwood stands, (insect kill and blowdown) will be considered suitable habitat where crown closure is $> 30\%$.

Softwood scrub, which meets the minimum height requirements (6.5 m) will be considered habitat. Where height is not known, Softwood scrub within 50 m and adjacent to a qualifying stand will be considered habitat.

Migratory Birds

6.3 GUIDELINE

“The EPR should distinguish between the forest structure requirements for “forest interior” and “old/mature forest” birds (p. 14 and 129 of the Environmental Evaluation). Species listed in the “Interior Habitat Selection Guild” (p. 57 of the Environmental Evaluation) include species that require forest habitat but are not necessarily interior, and impact predictions (p. 34) should be reviewed, taking into account forest structure requirements (interior vs. old) and the revised species list.”

Response:

The Environmental Evaluation described guild categories based upon research carried out for Newfoundland (Whitaker and Montevecchi, 1997). The forest structure definition of “Forest Interior” habitat relates to the distance from buffer/open areas, i.e. Forest Interior refers to forested areas which are distant from such features as bogs/fens, water bodies, roads and the like and which lack “edge” habitat. The forest structure definition for “Old/Mature Forest” relates to the dominant age/size class of trees and generally refers to stands dominated by trees 80+ years of age. Thus, the distinction between “Forest Interior” and “Old/Mature Forest” habitats, and the associated species comprising each guild has an element of overlap, i.e. it is possible that birds could be described as being members of both Interior (non-edge) and Old/Mature (>80+ boreal forest) habitat guilds.

Based on communications with H. Hogan of the CWS, the Main River Forest Landscape Design Report (CBPP 1998), and Whitaker (1997), Table 6.2 has been developed to present groupings of bird species by habitat selection guild applicable to the Main River watershed. On H. Hogans’ advice, there are now 26 species in the old/mature guild.

Table 6.2. Candidate Bird Species by Guild for Main River Watershed.

Species	Forest Habitat Type Guild					
	Old/Mature	Interior	Riparian	Open / Edge	Regen/ Young Second Growth	Cavity
Evening Grosbeak (<i>Coccothraustes vespertinus</i>)		⌚				
Ovenbird (<i>Seiurus aurocapillus</i>)		⌚				
Yellow-bellied Flycatcher (<i>Empidonax flaviventris</i>)		⌚				
Black-throated Green Warbler (<i>Dendroica virens</i>)	⌚	⌚				
Black-backed Woodpecker (<i>Picoides arcticus</i>)	⌚	⌚				⌚
Hairy Woodpecker (<i>P. villosus</i>)	⌚	⌚				⌚
Winter Wren (<i>Troglodytes troglodytes</i>)	⌚	⌚				⌚
Brown Creeper (<i>Certhia Americana</i>)		⌚				
Common Snipe (<i>Gallinago gallinago</i>)			⌚			
Northern Waterthrush (<i>Seiurus noveboracensis</i>)			⌚			
Greater Yellowlegs (<i>Tringa melanoleuca</i>)			⌚			
Tree Swallow (<i>Tachycineta bicolor</i>)	⌚		⌚			⌚
Spotted Sandpiper (<i>Actitis macularia</i>)			⌚			
Belted Kingfisher (<i>Ceryle alcyon</i>)			⌚			
Yellow Warbler (<i>Dendroica petechia</i>)			⌚	⌚		
Rusty Blackbird (<i>Euphagus carolinus</i>)			⌚			
Black-capped Chickadee (<i>Parus atricapillus</i>)	⌚		⌚	⌚	⌚	⌚
Hermit Thrush (<i>Catharus guttatus</i>)	⌚		⌚	⌚		
Redstart (<i>Setophaga ruticilla</i>)			⌚	⌚		
Redpoll (<i>Carduelis flammea</i>)			⌚	⌚		
Goldfinch (<i>Carduelis tristis</i>)			⌚	⌚		
Mourning Warbler (<i>Oporornis philadelphicus</i>)				⌚		
Dark-eyed Junco (<i>Junco hyemalis</i>)	⌚			⌚	⌚	
White-throated Sparrow (<i>Melospiza lincolni</i>)				⌚	⌚	
Lincoln Sparrow (<i>Melospiza lincolni</i>)				⌚	⌚	
American Robin (<i>Turdus migratorius</i>)				⌚	⌚	
Downy Woodpecker (<i>Picoides pubescens</i>)	⌚			⌚	⌚	⌚
Ruffed Grouse (<i>Bonasa umbellus</i>)	⌚					
Boreal Chickadee (<i>Parus hudsonicus</i>)	⌚					⌚
Golden-crowned Kinglet (<i>Regulus satrapa</i>)	⌚					
Ruby-crowned Kinglet (<i>R. calendula</i>)	⌚					⌚
Pine Grosbeak (<i>Pinicola enucleator</i>)	⌚					
Pine Siskin (<i>Carduelis pinus</i>)	⌚	⌚		⌚	⌚	
Purple Finch (<i>Carpodacus purpureus</i>)	⌚					
Fox Sparrow (<i>Passerella iliaca</i>)						⌚
Black-and-white Warbler (<i>Mniotilla varia</i>)	⌚	⌚				
Blackpoll Warbler (<i>Dendroica striata</i>)						⌚
Magnolia Warbler (<i>Dendroica magnolia</i>)	⌚					
Yellow-rumped Warbler (<i>Dendroica coronata</i>)	⌚					
Red-breasted Nuthatch (<i>Sitta canadensis</i>)	⌚					⌚
Gray Jay (<i>Perisoreus canadensis</i>)	⌚					
Lincoln Sparrow (<i>Melospiza lincolni</i>)						⌚
Swainson's Thrush (<i>Catharus ustulatus</i>)	⌚					⌚
Common Merganser (<i>Mergus merganser</i>)	⌚					⌚
Common Goldeneye (<i>Bucephala clangula</i>)	⌚					⌚
Northern Flicker (<i>Colaptes auratus</i>)				⌚		⌚
Grey-cheeked Thrush (<i>Catharus minimus</i>)	⌚					
White-winged Crossbill (<i>Loxia curvirostra</i>)	⌚			⌚		

The listed species may not be comprehensive for forest birds within each guild, however they do generally represent the more abundant species. Conversely some “typical” guild members may not be present in the Main River watershed. For example, the Ovenbird has been included in the Interior Habitat Selection Guild, however this species nests in deciduous/coniferous forests where deciduous trees are the chief component (Lewis and Monteverchi 2001). Such habitat is not found within the Main River watershed.

Appendix G contains a revision of the Impact prediction section of the Environmental Evaluation taking into account the forest structure requirements and a revised species list.

6.4 GUIDELINE

“Many forest bird species are in decline. The EPR should address the population status of forest birds and identify species in decline that are associated with old-growth and interior forests in Newfoundland. Mitigative measures should be reviewed taking this information into account.”

Response:

A literature review has been conducted to determine whether any species of migratory bird on insular Newfoundland are in decline and whether these species are associated with “Old/Mature” and/or “Interior” forests. The review is presented in Appendix G and considers which of these species could be affected by the Project (i.e. associated with those habitats within the Main River watershed which would be affected by the proposed Five-Year Harvesting Plan). As well, mitigation measures are discussed and reviewed. The conclusion of the revised effects prediction is the same as in the previous Environmental Evaluation, i.e. a minor (not significant) residual environmental effect is predicted for migratory birds, including species in decline.

7.0 OUTFITTING LODGES

7.1 GUIDELINE

"The Environmental Evaluation (Section 4.4.4, p. 144) states that a Guiding Principle in the Forest Strategy Document for Forest management District 16 is to "protect the viability of the current outfitting/adventure tourism businesses and outdoor activities". The Environmental Evaluation (Section 4.4.4.7, p. 145) predicts that impacts on select socio-economic issues including outfitters will be minor (insignificant). According to the Evaluation (Section 4.4.4.5, p. 145), this prediction is based upon the proponent's proposal to work with the Department of Tourism, Culture and Recreation, and the outfitters "to ensure that forest harvesting and outfitting can work together without significant constraints or conflicts." In the Evaluation, the proposed meetings are considered a mitigative measure and are factored into the residual impact prediction. However, negotiations in past similar situations have not mitigated impacts to an insignificant level and have resulted in operators relocating. Therefore, it is not clear how the proposed meetings can "ensure" insignificant constraints or conflicts and result in a prediction of minor impacts upon outfitting lodges. The EPR should review the impact prediction and provide support for the level of confidence attached to it.

In addition, the EPR should examine the impact of increased accessibility on non-resident hunter expenditure and outfitter revenues using information available from the Strategic Tourism Product Development Division of the Department of Tourism, Culture and Recreation."

Response:

The consideration of the interaction between forest harvesting and activities such as outfitting must be placed in the context of the need to reduce conflict and avoid negative effects on both sides of the issue. At the same time, an important distinction exists between Crown Lands and areas where timber rights are held privately. This situation is acknowledged by the Province, hence the approach taken by Lands Division with respect to such areas, "to promote planned development which does not compromise present or future harvesting plans" (Nicholl, 2001).

The company has recognized the need to seek compromise on this issue and to seek sustainability assurance, not only with respect to the timber resource, but with respect to non-timber uses. For this reason, in the past, CBPP has held regular discussions with Outfitters and consulted with them on issues such as road routing and development of buffer areas.

The Ontario document *Management Guidelines for Forestry and Resource-Based Tourism* (Tourism Guidelines Working Group, 2001) was reviewed in light of this issue. The guidelines were written as a co-operative effort among the resource-based tourism and forest industries and the Ministries of Natural Resources and Tourism. They summarize management options and practices to be considered when developing operational prescriptions in forest management plans intended to address resource-based tourism interests or values. This document states that "Managing the resource-based tourism/forestry interface is a critical part of forest management planning. Generally, the best planned, least costly and, most successful results occur when the resource-based tourism operator and forest management planner meet early in the planning process, and then discuss and consult throughout the process." The following

chronology illustrates the efforts made by CBPP and the process achieved as a result of the Company's efforts to engage Outfitters in the planning process.

- In April 1995, CBPP in conjunction with the Department of Forest Resources and Agrifoods (DFRA) took part in public meetings to initiate the new Adaptive Management Process for Newfoundland in an effort to prepare 20 Year Forest Management Plans and Five-Year Operating Plans. This process led to the development of planning teams in each FMD. These planning teams are made up of government resource agencies, industry, NGO groups, and interested public citizens. Outfitters have been represented on the FMD 16 planning team.
- During the planning process to develop the 1997-2001 Five-Year Plan for FMD 16, CBPP agreed to work with Outfitters in seeking to minimize the effect which proposed harvesting could have on Outfitting. A working group (Committee) consisting of staff from CBPP, Dept. of Forestry, Main River Lodge, the Western Newfoundland Model Forest and the Centre for Forest and Environmental Studies was established. A consultant was hired to prepare a landscape design for the area and the final report was received in July 1998. The Committee worked directly with the consultant on this project. The landscape design proposed a harvesting plan spread over a 12-15 year period with a cut pattern of small interlocking cut blocks. This harvesting pattern was designed to reduce the effect of harvesting activities on the view shed. As well, potential surface access to Outfitter areas was reduced by relocating forest access roads and committing to the decommissioning of roads, where required. The first harvesting under this plan began in 2000.

CBPP have agreed to meet at least annually and review the status of the landscape design project, review harvesting plans for the area and address any concerns that Committee members may have.

- As part of the planning process to prepare a new Five-Year Plan for FMD 16 to cover the period 2002 – 2006, a meeting was held in Deer Lake on January 17, 2001 between the Department of Tourism, Culture and Recreation, the DFRA, the Newfoundland and Labrador Outfitters Association and eight Outfitters operating in the FMD 16 area. The purpose of the meeting was to discuss CBPP plans for the Upper Humber Main River area and any potential impacts on the Outfitters operating in the area. A commitment was made at this meeting to meet with individual Outfitters to discuss their issues. Individual meetings have been held with interested Outfitters and commitments have been made by CBPP after each meeting to develop mitigation measures specific to each Outfitters' concern. Some of the proposed measures included:
 - Meet with Outfitters on an annual basis each fall following the submission of the CBPP Annual Operating Plans to government in order to review the proposed harvesting plans for the coming year;
 - Modify harvesting and road building plans to alleviate Outfitter concerns in specified view sheds;
 - Exchange a harvesting area near an Outfitter with Crown Land so that a proposed access road can be relocated away from a hunting area and so as to leave a wide buffer between the road and hunting area (requires approval from government agency);

- Temporary and permanent removal of panel bridges to restrict local access;
- Investigate the possibility of a government agency trying to implement some form of control over access by ATVs to an Outfitters area;
- Investigate the possibility of constructing temporary bridges where feasible. This would limit access to Outfitter hunting areas;
- Spread wood harvesting over a longer portion of the year;
- Leave larger buffers and areas which would potentially enhance large game populations;
- As part of the Landscape Design for the Main River valley, construct forest access roads as far away from water bodies as is physically and operationally possible (this would restrict hunter access); and
- Committee members to monitor harvesting during pilot scale trial of selection harvest techniques.

- CBPP has met with seven Outfitters since the January 17, 2001 meeting. Based on discussions at the individual Outfitter meetings, CBPP have assessed their harvesting needs and made adjustments accordingly. CBPP is aware of one Outfitter that chose to relocate within the Main River watershed prior to the adaptive management process. A number of initiatives were taken by CBPP to assist this Outfitter. Discussions were held with Crown Lands. A buffer zone of 1 km² was left around the Outfitters camp and the routing of an access road was changed to avoid the Outfitter's camp.
- An important further step was taken in January 2002 when a Memorandum of Understanding was signed between the Newfoundland & Labrador Outfitters Association (NLOA) and CBPP. The intent of the agreement is to seek accommodation whereby both parties can co-exist successfully. This will be the standard to be used as the basis for discussion. The document (Appendix H) sets out the objectives of both parties, a protocol for exchanging information, and a process for resolving issues of concern. The Company intends to operate within the context of that agreement, and abide by its provisions. On that basis, therefore the prediction of a minor (not significant) residual effect is made. Given the commitment by both parties to the MOU, the level of confidence which can be attached to this prediction is now relatively higher than was the case when the Environmental Evaluation was completed.

The EPR Guidelines refer to information which was to be available from the Strategic Tourism Product Development Division of the Department of Tourism, Culture and Recreation, and which relates to the examination of the impact of increased accessibility on non-resident hunter expenditure and outfitter revenues. The raw data used to complete this examination is confidential and not available to CBPP for analysis. The study will provide general information, but may not be specific to Main River watershed (J. Quigley, pers. comm, Dept. of Tourism, Culture and Recreation). In any case, the work has only recently started and as of May 17, 2002 was not available for inclusion in this EPR.

7.2 GUIDELINE

"The mapping submitted with the Registration does not designate the Northwest Tributary area (the location of four lodges) for modified harvest. This appears to be inconsistent with the proponent's statement in the Environmental Evaluation that no clear cutting will take place in the Main River watershed and should be addressed in the EPR."

Response:

As previously stated in the Environmental Evaluation, there will be no clear cutting in the Main River watershed. CBPP has committed to a modified harvest in the Main River watershed, including the Northwest Tributary area.

7.3 GUIDELINE

"The EPR should predict the impact of forest access roads on increasing accessibility and hunter crowding taking into account the number of resident big game applications, licence issues, and returns for areas that have become accessible by forest access roads. This information is available from the Wildlife Division of the Department of Tourism, Culture and Recreation.

The EPR should address the status of the "Roads Access Management Strategy" which is a Guiding Principle for Tourism in the Forest Management District 16 Strategy Document. The implications of this strategy for the maintenance of ecological integrity and wilderness values for Gros Morne Park, and the implications for outfitting lodges including identification of opportunities for road decommissioning, should be addressed in the EPR."

Response:

Maps provided by the Wildlife Division show the harvest density of moose and caribou per 100 km² per year. This information is based on resident hunter moose and caribou harvests from 1988 to 1995 and is displayed at a scale of 1:1,000,000. Overall it appears that there is a correlation between harvest sites and major road systems. The harvest density for both moose (MMAs 3 and 4) and caribou (CMA 69) in the Main River watershed is shown as <1 to 4 animals harvested per 100 km² per year.

There is no data break down available that presents returns solely for areas which have become accessible by forest access roads. In the absence of such data, it is possible only to develop an indirect comparison.

A discussion and analysis has been prepared and is presented in Appendix I. It is based on the available data from Wildlife Division and forest access road construction records from CBPP.

The results of the analysis presented in Appendix I do not illustrate any negative effect from forest access roads on increased accessibility and hunter crowding. In FMD 16 there does not appear to be any clear relationship between new forest road construction and the number of big game applications, licenses issued, or hunter success.

The “Roads Access Management Strategy” is identified in the Tourism and Recreation Section of the Strategy Document (Nicholl, 2001), however it has not been adopted as one of the FMD 16 Goals or Objectives. The text states: “*A Roads Access Management Strategy (RAMS) will be developed to work within the guidelines negotiated for road development and decommissioning between CBPP, GMNP and the province.*”

To date, CBPP has not been approached to participate in the development of the Strategy. The Company has, however advised the District Ecosystem Manager that they are supportive of this initiative and available to participate when requested. In a letter dated April 29, 2002, DFRA has indicated that they intend to initiate discussions on the Strategy in the near future.

8.0 MAIN RIVER AS A HERITAGE RIVER

8.1 GUIDELINE

"The EPR should describe the status of the Stewardship Agreement to protect the natural and recreational values of the Main River Valley."

Response:

The Management Plan for Main River as a Canadian Heritage River has been developed by the Parks and Natural Areas Division, Newfoundland Department of Tourism, Culture and Recreation. The document includes a proposed Stewardship Agreement (Appendix J) to address the management of activities within the watershed, but beyond the Heritage River corridor. The objective of the Stewardship Agreement is to establish processes and commitments which will ensure the integrity of the natural, recreational, and cultural values for which the Main River was nominated to receive Canadian Heritage River Status. The Agreement addresses the management plan, viewscape, forest management, wildlife management, fisheries management, road decommissioning, science, economic development, and ongoing consultation, and will foster cooperative stewardship for the River (Main River CHRS Management Plan, p 38). The agreement has been drafted by the Parks and Natural Areas Division and has been agreed to in principle by all parties to the agreement, however the Division has not yet executed the agreement. Corner Brook Pulp and Paper Ltd. is committed to its role as a party to the agreement.

8.2 GUIDELINE

"The Environmental Evaluation (Evaluation Section 4.4, p. 111) of selected valued ecosystem components (VECs) does not include an environmental evaluation of the VECs which are essential to the Canadian Heritage River designation for Main River. These VECs should be evaluated in the EPR."

Response:

These VECs (natural and recreational values of the Main River) have already been evaluated in the Main River Management Plan (Newfoundland Department of Tourism, Culture, and Recreation, 2001), with the conclusion that the effect of timber harvesting will not result in negative impacts on these values.

The Main River was nominated as a Canadian Heritage River for its natural heritage and recreational opportunities (Main River CHRS Management Plan, p 4). The Management Plan for Main River as a Canadian Heritage River developed by the Parks and Natural Areas Division was submitted to the Canadian Heritage River Board in February 2001 and the Main River was officially designated as a Canadian Heritage River in August 2001.

The Management Plan that was accepted by the Canadian Heritage River Board states that timber harvesting “can occur within the watershed without having negative impacts on the natural and recreational values for which the Main River was nominated” (Main River CHRS Management Plan, p 24). The Plan also describes the agreed measures to managing timber harvesting in the watershed. These include:

- no harvesting within the heritage river corridor;
- no cut areas to be designated outside the designated corridor, but along the viewshed area;
- beyond the viewshed boundary, the harvesting of productive forests on timber limits will continue.

The Plan identifies mitigation measures to be taken with respect to harvesting, and which “will mitigate impacts on the natural and recreational values of the Main River”(p28).

At the time this plan was developed, the CBPP harvest strategy for areas outside the Heritage River special management area was consistent with the mitigation measures identified in the Management Plan, and included provision for clear-cut harvesting. Subsequent to the development of the CHRS Management Plan, and as documented in the FMD 16 Five-Year Harvesting Plan Registration, CBPP has adopted a policy of no clear-cutting in the entire Main River watershed. The policy will further reduce the potential effects of timber harvesting in the watershed beyond what was contemplated in the Management Plan that was approved by the Canadian Heritage River Board.

It is concluded therefore, that the Project will have a negligible (not significant) residual environmental effect on Main River natural heritage and recreational values.

9.0 GROS MORNE PARK

9.1 GUIDELINE

"The Environmental Evaluation (Section 4.3, p. 104) states that impacts upon Gros Morne Park integrity and other valued ecosystem components may be addressed through other mechanisms and do not require further impact assessment. The Evaluation (Section 4.3.5, p. 109) refers to the mandate of the Gros Morne Park Working Group as contributing to maintenance of the ecological integrity of the Park and, therefore, leads to a prediction of negligible (not significant) impacts to connectivity/integrity. The existence of the Working Group is used to justify a preliminary level of assessment in the Evaluation.

However, acknowledging that members of the Working Group have signed a Memorandum of Understanding, it is still not clear whether a high level of confidence can be attached to the impact prediction of negligible impacts. Therefore, the EPR should include an environmental evaluation of the four focus species identified in Section 4.3.5 as requiring further study relative to the connectivity/integrity issue (pine marten, lynx, caribou and passerine birds), and should predict the effects of the undertaking upon connectivity."

Response:

The level of confidence which can be attached to impact predictions is heightened by the application of the Adaptive Management Approach used by CBPP in carrying out its harvesting activities (See Response 3.1). The use of four focus species/groups as indicators to predict the effect of the undertaking upon connectivity has been considered as part of the background work conducted by the Working Group. A literature review commissioned by the Working Group included an evaluation of the habitat and connectivity requirements of the focus species groups. The following discussion provides a description of this work, and in so doing provides a basis for our prediction of effects.

Corner Brook Pulp and Paper and Gros Morne National Park have formed a "Connectivity Working Group" made up of members from Parks Canada, the Department of Tourism, Culture & Recreation (Wildlife and Parks & Natural Areas Divisions), Corner Brook Pulp & Paper, the Department of Forest Resources & Agrifoods, and Natural Resources Canada (Canadian Forest Service). The overall intent of the group is to work cooperatively to develop science-based solutions to ensure that Gros Morne National Park remains connected with its broader landscape. The group has identified a number of principles that will guide it in its efforts to work cooperatively to achieve its intent. These include:

- Maintaining connected populations is a fundamental requirement for the long-term preservation of species;
- Forest harvesting is an important and appropriate use of land within the broader ecosystem;
- All parties recognize and respect each other's constitutionally and legally defined jurisdictions;
- Scientific information and consensus decisions arising from this agreement will be incorporated into existing decision-making processes of each party (e.g. park

- management plans, Five-Year Operating Plans);
- Results of primary research will be subject to peer review; and
- Adaptive management will form an important foundation.

The group initially selected four indicator species/groups (Marten, Caribou, resident birds and Lynx) as requiring further study relative to connectivity/integrity. This approach was based on the reasoning that if harvesting could take place in such a way that these four species could continue to cross the landscape, then the group would consider it a successfully connected landscape. A literature review of habitat and connectivity requirements for the indicator species was then conducted for the purpose of assessing current knowledge, thereby better defining what connectivity should mean for Gros Morne National Park.

A workshop was held for managers to review the results of the literature review and to discuss future plans. Following this step, field studies were conducted to better determine marten distribution in the region (complementary to the Main River study conducted by the Wildlife Division, Dept. Tourism, Culture & Recreation). Another effort focused on the development of tools to forecast future forest conditions at five year intervals.

Currently the group is working together to test the sensitivity of the provincial marten habitat model in order to make improvements to the model, conducting further marten field studies, and collaborating on the design of Adaptive Management approaches for the Main River watershed.

The literature review commissioned by the group and prepared by Meg A. Krawchuk and A. Michelle McPherson (Krawchuk and McPherson 2002) of Acadia University suggested an approach for moving forward in the Main River watershed. The following extracts are relevant.

“Managing boreal forest resources for all species

Managing habitat for multiple species is a very complex task. However, the species in this review have habitat requirements with corresponding mitigating harvest techniques that can be integrated into a single management strategy. Here, we suggest general concepts and ideas for the GGME. Looking first at the largest spatial scale is advisable for management so that the requirements of the furthest-ranging species are fulfilled. At the landscape (>3000 km²) scale in the GGME, marten, caribou, lynx and several birds require large (>20 km² for marten) tracts of adjoining mature and old growth forest for immediate conservation in the ecosystem. Of these species, marten and caribou are likely the most demanding in terms of how much forest habitat they require for movement, foraging and predator avoidance; therefore creating no-harvest zones to meet their requirements would also protect habitat for lynx and resident birds as well.

When allocating these contiguous blocks, an additional factor to remember is that the entire area of a patch of trees does not comprise forest-interior habitat. Edge effects such as the development of ecotone communities, altered microclimates, and increased predation extend from the structural edge towards the centres of forest patches, reducing the actual shelter or space provided to mature-forest species. Edges created by harvesting might be mediated by various levels of partial cutting. Further, the geometric shapes of retained mature forest patches should be more circular or square, than long or narrow.

After designating protected zones, consideration should be given to the placement of

riparian corridors, wider land corridors, small patches of forest and partial (e.g., selection or retention) cuts in an attempt to enhance movement between the larger forest patches. This step is crucial in order to avoid isolated breeding units in birds and marten, and to allow all species to access more favourable areas if environmental conditions deteriorate due to natural or anthropogenic disturbance. Figure 1 suggests a hypothetical landscape that includes both large and small patches of preserved forest, various methods of alternative harvest (selection and retention), as well as naturally occurring scrub resources. For a forest animal, the larger patches may be considered suitable habitat, and movement among these forest patches may be enhanced by selective harvest in comparison to clear-cutting. In fact, a landscape with a similar amount and configuration of forest habitat but with a matrix of selective harvest (as illustrated in Figure 1) rather than clear-cut occurring among these patches may be functionally very different. For example, some large patches of remaining forest may be inaccessible if separated by clear-cut. Again, the specific needs of animals should be the priority. Lynx and marten may require higher tree densities and more canopy cover in order to move through the harvested matrix. At finer spatial scales, it is clear that large snags and dying trees or trees with high lichen loads should be left for marten, lynx, resident birds and caribou. In addition, the retention of deciduous trees surrounded by groups of merchantable trees will also benefit all species and provide niches for foraging, shelter and escape.

It is very difficult to manage a commercially harvested region effectively for all species due to varying habitat requirements and sensitivity to disturbance. However, the status of some species makes it obvious that they should be a primary concern in the conservation of habitat and ecosystem management. In western Newfoundland, the endangered status of the Newfoundland pine marten should make it a priority species in discussing the long-term management of the GGME."

Adaptive Management

"The use of an adaptive management framework for the implementation of this management strategy would foster economic gain (through harvest), ecological gain (through conservation of key areas) and increased understanding of the ecosystem. Walters and Holling (1990) observe that, "...every major change in harvesting rates and management policies is in fact a perturbation experiment with highly uncertain outcome, no matter how skillful the management agency is in marshaling evidence and arguments in support of the change." We suggest combining our existing knowledge of this ecosystem, predicting the outcome of various management strategies, and implementing these harvest patterns experimentally in the GGME. It would also be far-sighted to set aside some areas as a safeguard against failure (e.g., no-harvest zones), because inevitably, some of these perturbation experiments will produce unforeseen and unintended results (Spence 2001).

There is no single most appropriate adaptive management plan to implement in the GGME. However, decision-making for the physical layout of experimental cut-blocks, replication, temporal rotation of harvest, and extent of no-harvest zones must be agreed upon by all stake-holders within the region for its successful long-term management. Here, we have presented a thorough theoretical background in landscape ecology and adaptive management as critical tools for decision-making by the Connectivity Working Group. This report ensures that we are aware of current concepts in landscape ecology and understand the terms and ideas they provide. In association with the comprehensive

review of current information on a suite of focal species, this provides the background needed for all members of the Connectivity Working Group to contribute to further decisions regarding the GGME. This will aid in the continued discussion of management ideas, designs and their implications for learning about and conserving the integrity of the Greater Gros Morne Ecosystem.”

The proposed harvest strategy in the Five-Year Plan incorporates these suggestions. Corner Brook Pulp and Paper and Gros Morne National Park are currently developing monitoring programs to assess the effectiveness of selection harvest techniques on maintaining marten populations and habitat in the Main River watershed i.e. to test the new marten habitat guidelines. As well, they are developing procedures to monitor bird populations in the watershed. These monitoring programs will be implemented in 2002 in conjunction with the proposed harvest. The group will address additional monitoring for other species groups as its work progresses.

The use of carefully designed monitoring programs and the application of Adaptive management principles will serve to identify and react to unanticipated changes. Therefore CBPP is confident that it can place a relatively high level of confidence in the impact prediction of negligible effect of the Undertaking upon connectivity.

10.0 REFERENCES

Corner Brook Pulp and Paper Limited. 1998. Upper Main River Forest Landscape Design, Corner Brook Pulp and Paper Ltd., Corner Brook, NF. 37 pp.

Krawchuk, M.A. and A.M. McPherson. 2002. A Review of Landscape Connectivity and Adaptive Management For the Greater Gros Morne Ecosystem. Under Contract to the Connectivity Working Group of the Greater Gros Morne Ecosystem.

Lewis, K.P. and W.A. Montevercchi. 2001. Forest Bird Monitoring Program and Forest Bird Guide and Supplement. Prepared for the Newfoundland and Labrador Department of Forestry and Agrifoods, St. John's, NF.

Newfoundland Department of Tourism, Culture, and Recreation. 2001. Management Plan for Main River as a Canadian Heritage River. Prepared by Parks and Natural Areas Division, January. 52 pp, Appendices.

Newfoundland Forest Service. 1994. Environmental Preview Report Proposed Adaptive Management Process. 89 pp.

Nicholl, B. 2001. Ecosystem Based Forest Management Strategy Forest Management District 16: Community Partners Working Toward Sustainable Forest Management. Government of Newfoundland and Labrador. 192 pp.

Taylor, B., L.L. Kremsater and R. Ellis. 1997. Adaptive Management of Forests in British Columbia.

Tourism Guidelines Working Group. 2001. Management Guidelines For Forestry and Resource-Based Tourism. Version 1.0. 24 pp + appendices.

Whitaker, D.M. 1997. Composition and conservation of riparian bird assemblages in a balsam fir ecosystem. M.Sc. Thesis, Memorial University of Newfoundland, St. John's, NF.

Whitaker, D.M., W.A. Montevercchi. 1997. Breeding bird assemblages associated with riparian, interior forest, and nonriparian edge habitats in a balsam fir ecosystem. Can. J. For. Res. 27:1159-1167.

APPENDIX A

Guidelines for Environmental Preview Report

APPENDIX B

**Memorandum of Understanding Between Corner Brook Pulp and Paper Limited and
Sierra Club of Canada on the Formation of a Main River Advisory Group**

And

Main River Advisory Group Terms of Reference

APPENDIX C
Extract From the Main River Harvest Trial Report

APPENDIX D
Pine Marten Literature Review

APPENDIX E

Pine Marten Habitat Model for Newfoundland (General Description)

APPENDIX F

**University of Maine Research Proposal –
Landscape Thresholds and Response to Fragmentation by Endangered Newfoundland
Marten**

APPENDIX G
Migratory Birds Impact Prediction Review

APPENDIX H

**Memorandum of Understanding Between Corner Brook and Pulp and Paper and
Newfoundland and Labrador Outfitters Association**

APPENDIX I
Access Roads and Hunter Effects

APPENDIX J

Stewardship Agreement Concerning Management of the Main River Waterway Provincial Park And Special Management Area