Corner Brook Pulp and Paper Limited – Best management practices – Harvesting¹

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Introduction

Corner Brook Pulp and Paper Limited operates a newsprint mill at Corner Brook, Newfoundland, which uses approximately 950 000 cubic meters of wood fibre each year. While a primary objective of our forest management is to provide a sustainable supply of high quality raw material to the mill at a competitive cost, we must also ensure a sustainable flow of other forest values such as clean water, wildlife habitat and recreational opportunities.

Corner Brook Pulp and Paper Limited manages over 2 million hectares of forest land on the Island of Newfoundland and has long-term tenure on these lands. These timber limits span from the Codroy Valley on the southwest corner of the Island to Plum Point on the Northern Peninsula and east to Gander in central Newfoundland. Of the 2 million hectares of total land area, only 930 000 hectares are forested. The remainder of the land is bog, barren, water and scrub land. Of the 930 000 hectares of forest, approximately 750 000 hectares produce timber for the mill – the rest is in environmental reserves or isolated, steep inaccessible areas. We actually harvest only 37% of the area we manage.

Forest Management Activities

Corner Brook Pulp and Paper constructs more than 200 kilometres of main forest access road each year and a similar amount of secondary road. This road construction costs in excess of \$5 million annually. While the main purpose of these roads is to provide access for forest management operations, they also provide the public with access for hunting, fishing, firewood cutting, berry picking, hiking and other forms of outdoor recreation. Road construction techniques have changed drastically over the past 10 years. All major roads and most secondary roads are now built using excavators rather than bulldozers. This provides for a much narrower right of way with much less land taken out of forest production. We harvest approximately 7000 hectares of forest each year. Harvested areas are assessed for natural regeneration two to three years after harvest, and 85–90% of these areas regenerate naturally. Areas with insufficient natural regeneration are planted.

The main silviculture treatment in naturally regenerating stands is pre-commercial thinning. This is a treatment carried out when stands are 10 to 15 years old to reduce density from the natural 20 000 – 50 000 stems per hectare, to approximately 2000 stems per hectare. This provides the remaining trees with sufficient space for optimal growth. Since 1976, we have carried out a comprehensive silviculture program aimed at providing a sustainable supply of raw material for the mill

and maintaining other forest values. In that time period, more than \$50 million has been invested in stand improvement and reforestation on Company limits.

GIS

The company maintains a comprehensive, state of the art Geographic Information System (GIS) to aid in planning and controlling its forest management activities. The GIS is a computer-based mapping system containing the geographic information for the entire Company limits. Maps and tabular data can be generated from this system for any area of the Company's timber limits. Operational timber cruises are conducted on forest areas to gather information on the number, species, size and health of trees in the area, as well as soil texture and terrain conditions. This information is used in the development of 10-Year Forest Ecosystem Management Plans, 5-Year Operating Plans, and Annual Operating Plans.

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Environmental Protection Guidelines

The Environmental Protection Guidelines for Timber Management in Newfoundland were developed by the Newfoundland Forest Service in 1995 to conserve and manage the ecosystems of the Province, and to provide for the utilization of these resources under the principles of sustainable development, ecologically based management, and sound environmental practices. The ecologically based approach to forest resource management requires resource managers to shift their focus from managing components of the ecosystem to managing the three dimensional landscape ecosystems that produce them. It means that everyone attends to the conservation and sustainability of ecosystems instead of focusing on the productivity of individual or competing resources, which has been our traditional mode of operation.

FMPOPs

In 1998, we developed our Forest Management Planning and Operating Practices (FMPOP) Manual, which documents the processes, and practices for planning, implementing, and monitoring our forest management activities. It is used as a reference tool and guide for our staff and contractors, and covers topics such as: Commitment, Employee Health and Safety, Public Participation and Communication, Forest Management Planning, Access Development, Harvesting Operations, Forest Renewal, Forest Protection, Monitoring, Review and Improve. Critical to the successful implementation of the FMPOPs will be the training of Company Employees and Contractors.

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Forest and Environmental Policy

During 2000, Corner Brook Pulp and Paper Woodlands Division issued its Forest and Environmental Policy with the main objective to carry out our forest management activities to provide long-term sustainability and maintain natural biodiversity while supplying the fibre requirements for the Corner Brook mill.

Harvesting Systems

Several harvesting systems are employed on Company operations, ranging from manual felling with chainsaws, to complete mechanical processing of the trees. The system used in any given area is determined by forest and terrain conditions. Mechanical equipment has a soft footprint and is less intrusive to the environment. Approximately 75% of our harvest is mechanized. This mechanization has allowed better utilization from our winter harvesting operations and fresh wood to the mill on a year-round basis. Fresh wood is critical in meeting the quality demands of today's newsprint markets. Mechanization has also reduced the frequency and severity of accidents in our logging operations.

Corner Brook Pulp and Paper is currently using a TLD Gauthier 3000C Cable-Logging system to harvest timber on steep and sensitive sites where conventional logging systems would cause excessive environmental impacts. Production from this system is approximately 12 000 m³ per year with a second system planned for early next year.

Chip Receiving Facility

In 1998, we installed a chip receiving facility at our mill in Corner Brook that has an annual capacity of approximately 150 000 m³. Through exchange agreements with the Department of Forestry we currently have four integrated sawmills harvesting sawlogs on our timber license areas and the residue pulp chips are now delivered to our mill as a result of the new chip receiving facility.

Buffers

In Newfoundland we have an operating guideline that requires us to leave a 20-meter treed buffer on all streams that show up on a 1:50 000 scale topographic map. We have agreed to leave larger buffers around identified sensitive sites such as salmon rivers, outfitters' lodges, wildlife areas (nesting areas, denning sites, caribou calving areas and moose yards), and recreational cabin areas.

Retention Cutting

A new harvesting technique that we have been experimenting with over the last year or so is retention cutting. We are attempting to leave all sub-merchantable trees and under-utilized species on the cutovers to provide for a faster green-up and reduce the visual impact of a new cutover. This type of cutting also provides cover and habitat for some types of wildlife.

Harvesting on Sensitive Sites

We are now putting more effort into pre-planning of our harvesting activities in sensitive sites. These efforts are being directed towards areas such as protected watersheds, wet areas, wildlife areas, or recreational areas. Initiatives such as wider buffers, travel corridors for wildlife, leave patches, better

planned roads, forwarder trails and landings, and fuel storage are just a few examples of what we consider in this type of intensive planning.

Corner Brook Protected Watershed

In 1991, we developed the Corner Brook Watershed Harvesting Guidelines in response to our request to harvest within the protected water supply area for the City of Corner Brook. These guidelines incorporated initiatives such as wider buffer zones, steep slope logging techniques, fuel/oil storage and handling plan, and a monthly water sampling program. Harvesting operations have been ongoing in the watershed since that time and water sampling has confirmed that there has been no significant impact on water quality. These guidelines have been used successfully in other protected watersheds across our limits.

Brooms Brook Harvest Area

In 1997 a local citizens group expressed their concern over the potential for flooding downstream of our proposed harvesting area due to the steep slopes and deep soils found in the area, and possible impact on a local hunting outfitter located in the area. A Memorandum of Understanding was signed with the group to provide for the following:

- Wider buffers on streams to reduce potential erosion.
- Pre-planning of roads to ensure best location.
- Decommissioning of roads where required.
- Wildlife leave areas to protect moose population and habitat.
- Shorter operating season with no cutting during big game hunting season.

Harvesting and Outfitters

Across our limits, we encounter many outfitting operations established for big game hunting and salmon fishing. We have worked with many of these operations to address the common concerns that they have with our planned harvesting operations in the vicinity of their outfitting operations. We have provided for wider buffers around their lodges, we have relocated access roads to reduce access to their hunting or fishing areas, we have reduced our operating season so as not to conflict with their operating seasons, and with one large outfitting operation we are implementing a long-term landscape design harvest plan in an attempt to mitigate the impact of our operations.

Harvesting and Wildlife

We work closely with the Newfoundland Wildlife Division to plan and carry out our harvesting operations in an effort to consider wildlife requirements such as caribou calving areas, moose winter yards, travel corridors, nesting areas, and salmon spawning pools. We have done a great deal of work trying to mitigate the impacts of our harvesting activities on the Newfoundland Pine Marten. In 1999, the Little Grand Lake Reserve System was established to protect what is considered to be the core population of Pine Marten remaining on the Island. The reserve system is comprised of a provisional ecological reserve, a wildlife reserve, and a public reserve totalling some 1496 square kilometres in size. A large portion of this reserve system is on CBPP timber limits containing in excess of 3 million cubic meters of merchantable timber. We are also involved in a seven-

year study to test the impacts of a modified harvesting regime on a resident population of Pine Marten. The study is based on a series of wider buffers and leave areas that are connected across the landscape to determine how the Pine Marten in the area will be impacted by our harvesting. We have also carried out an extensive analysis of our limits looking at the impacts of our harvesting activities on Pine Marten across the broader landscape, and from this we have identified and set aside for a ten-year period sufficient marten habitat to meet the minimum viable population goal of the Newfoundland Wildlife Division.

Forest Access Roads

As mentioned earlier, we construct in excess of 200 kilometres of forest access road each year. These roads provide access to our forest management activities, and all our roads are open to the public and used year around for many activities such as hunting, fishing, hiking, mountain biking, and berry picking. Since the early 1990s, we have been using excavators exclusively to build our access roads. They require a narrower right of way and create much less ground disturbance than the traditional bulldozer. We use corrugated, galvanized steel culverts on all of our smaller stream crossings. Well-installed culverts help to maintain fish habitat, with little or no erosion, and we install plunge pools where required to facilitate fish migration. On our larger stream and river crossings we use Arch culverts or concrete and steel bridges. These types of structures maintain the natural stream beds and flows, and provide for long-term installations thus reducing the potential for any serious impacts. To reinforce our FMPOPs as they relate to forest access road construction, we meet with our Access Road Contractors on an annual basis to review the access road construction environmental and operating procedures. We recognize the importance of our water resource and the many values associated with our rivers and streams. In addition, the Water Resources Division of the Department of Environment and Labour approves all stream crossings before construction begins, and the Department of Fisheries and Oceans is also notified of the location and type of all crossings.

Harvesting and Landscape Design

During the planning process for the 5-Year Operating Plan in Forest Management District 16, a conflict was identified with our proposed harvesting plans and a large commercial fishing and hunting outfitting operation. In an attempt to resolve the conflict, we decided to undertake a landscape design in the river valley where the lodge is located. We had five major objectives for the design:

- Timber
- Visual/Aesthetic quality
- Recreation
- Water quality/Fish habitat
- Wildlife

The goal of the project was to harvest the majority of the timber while conserving the quality and character of other values in the landscape, and to allow the lodge to continue as a wilderness destination, and to test the landscape design process and its application in Newfoundland.

We eventually completed a design that was acceptable to the lodge operator that will be implemented over the next 12 to 13 years.

Fuel Storage and Spill Prevention

All of our operations are now equipped with ULC-approved fuel storage tanks, and each site is also equipped with an emergency spill kit in the event of a fuel or oil spill on the job.

Environmental Monitoring

To ensure compliance with our FMPOPs we carry out bimonthly audits/inspections of all of our harvesting operations. The audits cover things such as garbage disposal, oil spill kits, fuel storage, buffer zones, watercourse crossings, and road and trail construction. We have an incentive program to reward contractors who are meeting our environmental standards, which require 100% conformance in order to pass.

Western Newfoundland Model Forest

Corner Brook Pulp and Paper is a partner in the Western Newfoundland Model Forest and is represented on the Board of Directors and Management Committee. We have participated in many studies and projects carried out by the Model Forest such as the buffer zone study at Copper Lakes and Pine Marten Working Group

Compliance Agreement

We have held discussions with the Newfoundland Forest Service, and have prepared a draft agreement with the Forest Service, Corner Brook Pulp and Paper and Abitibi-Consolidated to manage forest activities to ensure compliance with Environmental Protection Guidelines. The Compliance Agreement provides for a system of penalties and or remedial action to be assessed for violations of accepted operating practices. An incident of silt entering a water body as a direct result of harvesting would result in a \$75 fine.

ISO 14001 Registration

We are well on our way to becoming registered under the International Standards Organization 14001. This registration will show that Corner Brook Pulp and Paper Woodlands is following internationally recognized environmental management systems and sustainable forest management practices. Registration to ISO 14001 will allow us to demonstrate to our customers, employees, and the communities where we operate, that we are protecting the environment, and will help us to maintain a more secure market for our products and this will mean sustained employment for our employees. We expect to complete the registration process early in 2001. As part of this registration process, all 800 of our woodlands employees will attend an environmental awareness training course by December 2000, which will be conducted by Company and Contractor staff.

Public Participation and Communication

We recognize the importance and need for public and user group consultation as an important component of forest operations and management planning. We have tried both formal and informal approaches over the years to reflect community goals and values, as well as address specific sites and concerns of individuals and groups. We currently use a framework for public involvement to assist us in preparing 5-Year Operating Plans and 10-Year Forest Ecosystem Management Plans. This framework involves the establishment of a planning team for each Forest Management District comprised of Gov-

ernment Resource Agencies, local public citizens, and non-government organizations. This planning team working with a consensus-based decision process, develops and identifies goals, objectives, ecosystem values and issues that are used to prepare the required 5- and 10-year plans. The process has proven to be successful thus far, and normally involves about 20 planning team meetings and a one-day workshop in order to prepare the plans. When the Planning Team approves the final plans they are submitted to the Department of Environment and registered as an undertaking under the Environmental Assessment Act. This requires a further 45-day public review before final approval. A major component of this process is the establishment of Monitoring Committees to monitor the implementation of the plans and provide feedback. Another major initiative of our communication program is site visits and tours of our operations by local community councils, school kids, and monitoring committees located throughout our limits. Our operations impact on approximately 40 to 50 local communities throughout Newfoundland. We also have a Woodlands Video, which is a 19-minute video covering all of our forest management activities, which we use for logger training and public awareness.

Woodlands Tour

Each summer we offer our Woodlands Tour to general public. It is carried out over a seven-day period in August and is an all-day tour of our forest management activities. We can accommodate approximately 75 people each day, and we give them an exposure to all aspects of our forest management activities such as silviculture, harvesting, road construction, stream crossings, and issues around biodiversity. It has proven to be very successful and well received by the 1537 participants who have taken in the Tour over the last few years.

Woodlands Web Site

In 1999, we established our Woodlands Web Site as an additional tool to reach out to the public, and provide the public with easier access to information about our forest management activities. We have had many good comments about our site, and in excess of 7000 hits to date. For more information about any of the topics discussed here, please visit us at www.cbpl.com.