

# 2002 Local Level Indictors of Sustainable Forest Management for FML 01



**Tembec Industries Inc.**  
**Forest Resource Management**  
**Pine Falls Operations**





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# 2002 Local Level Indicators of Sustainable Forest Management

## Introduction

The *2002 Local Level Indicators of Sustainable Forest Management* is the second report produced for the Tembec Industries Inc. (Tembec) Forest Management Licence 01 (FML).

The 2002 report contains highlights and additional analysis of some of the indicators and targets reported on in the more detailed Criteria Tables that follow. The report also provides background on the development of sustainable forest management indicators, and the process undertaken by the Manitoba Model Forest (MBMF) to develop local level indicators for the FML.

The six 2002 Criteria Tables are found in Appendix I. Each of the six tables includes the 2002 monitoring results for the goals, indicators and targets developed for Tembec with the assistance of the MBMF.

A list of acronyms is found in Appendix II.

## Development of Sustainable Forest Management Indicators in Canada

The importance of sustainable forest management was recognized at the 1992 United Nations Conference on Environment and Development (UNCED) with the adoption of a *Statement of Forest Principles*. The Canadian commitment to sustainable forest management is well enshrined in *The National Forest Strategy (1998 – 2003) Sustainable Forests: A Canadian Commitment*, endorsed in May 1998 by governments and others concerned with Canada's forests. This commitment has been further strengthened through a number of initiatives at the provincial, territorial and local levels.

The development of criteria and indicators for monitoring sustainable forest management is an important step in implementing Canada's commitments made at UNCED. Consequently, in 1994 the Canadian Council of Forest Ministers (CCFM) launched a process to define criteria and indicators for monitoring the sustainable management of Canadian forests. *Defining Sustainable Forest Management, A Canadian Approach to Criteria and Indicators* (CCFM, 1995) established the framework.

The Canadian framework reflects an approach to forest management that is based on:

- The need to manage forests as ecosystems in order to maintain their natural processes;
- The recognition that forests simultaneously provide a wide range

of environmental, economic and social benefits to Canadians;

- The view that an informed, aware and participatory public is important in promoting sustainable forest management; and
- The need for forest management to evolve to reflect the best available knowledge and information. (CCFM, 1995)

The criteria and indicators represent a comprehensive framework. It is recognized that no single criterion or indicator alone is an indication of sustainability; rather, the individual criteria and indicators must be considered in the context of other criteria and indicators. Further, indicators should be viewed as providing information on trends or changes in the status of forests and related values over time.

# The Canadian Council of Forest Ministers Framework

The CCFM framework was developed around six broad criteria that reflect the ecological, economic and social components of sustainable development. Each criterion is then subdivided into elements (values), which reflect the key components to be considered within the criterion. Nested within each element are indicators, which can be used to assess the long-term sustainability of the element. Graphically, the CCFM framework is:

The criteria and elements for the national

**Criteria**  
**Elements**  
**Indicators**  
**Targets**

framework are:

## **1 Conservation of Biological Diversity**

- 1.1 Ecosystem Diversity*
- 1.2 Species Diversity*
- 1.3 Genetic Diversity*

## **2 Maintenance and Enhancement of Forest Ecosystem Condition and Productivity**

- 2.1 Incidence and Disturbance and Stress*
- 2.2 Ecosystem Resilience*
- 2.3 Extant Biomass*

## **3 Conservation of Soil and Water Resources**

- 3.1 Physical Environmental Factors*
- 3.2 Policy and Protection Forest Factors*

## **4 Forest Ecosystem Contributions to Global Ecological Cycles**

- 4.1 Contribution to Global Carbon Budget*

## *4.2 Forest Land Conversion*

## *4.3 Forest Sector CO<sub>2</sub> Conservation*

## *4.4 Forest Sector Policy Factors*

## *4.5 Contributions to Hydrological Cycles*

## **5 Multiple Benefits to Society**

### *5.1 Productive Capacity*

### *5.2 Competitiveness of Resource Industries*

### *5.3 Contribution to the National Economy*

### *5.4 Non-Timber Values*

## **6 Accepting Society's Responsibility for Sustainable Development**

### *6.1 Aboriginal and Treaty Rights*

### *6.2 Participation by Aboriginal Communities in Sustainable Forest Management*

### *6.3 Sustainability of Forest Communities*

### *6.4 Fair and Effective Decision-Making*

### *6.5 Informed Decision-Making*

Measurable targets for each indicator were not developed at the national scale by the CCFM. However, they were developed for the FML through an exhaustive public consultation process facilitated by the MBMF (see page 16).

The combination of all criteria, elements, indicators and targets provides for the assessment and long-term maintenance of a sustainable forest. The CCFM developed the criteria into a national framework, which has been modified to better reflect indicators of sustainability at a regional or local setting.

## Definition of Local Level Indicator Components

The 2002 Criteria Tables, Appendix I, were developed using the CCFM framework outlined on the previous page, with some refinements. The local level framework is:



The following defines components of the local level framework.

### ***Criteria***

The criteria, identified in the Montreal Process, are essential components of sustainable management of forests. Criteria 1 to 4 deal with the elements necessary to maintain the sustainability of the forest while Criteria 5 and 6 deal with society's role in forest management.

### ***Values***

Each criterion is subdivided into values to better define the component of the criterion to be monitored. The values closely follow the elements determined by the CCFM but have been revised to suite a local application.

### ***Goals***

The goals follow the guidance of the CCFM document, but have been adapted to reflect the values people place on the forest and the local factors influencing the forest of the FML. Goals have a three-digit number representing criterion, value and goal.

### ***Indicators***

The indicators are assessment tools for monitoring the goals. Indicators provide a description of the current state of the forest and its use. Over time, the monitoring will provide patterns of change within that indicator. Indicators have a four-digit number, building on the goal number by adding one more digit for each indicator.

### ***Targets***

Targets are measurable assessments of the indicators. Most targets have been developed so they can be stated in measurable terms, but some indicators lead to targets that are more descriptive. Where applicable, monitored results will be tracked over time to measure the direction of change for that indicator. Targets have a five-digit number, building on the indicator number by adding one more digit for each target.

# 2002 Local Level Indicator Highlights

The following highlights provide some detail and analysis of the 2002 monitoring results. The results are for the period October 1, 2001, to September 30, 2002. This period coincides with Tembec's fiscal year and facilitates the availability of data pertinent to the local level indicator report. For a more detailed account of the monitoring results see Appendix I.

## Criterion 1: Conservation of Biological Diversity

### ***Value 1.1 Ecosystem Diversity***

Ecosystem diversity and landscape patterns are important components of biodiversity. Maintenance of these can be achieved in a number of ways, as outlined by the different indicators in this criterion. Landscape level goals (1.1.1 and 1.1.3) have been identified, but the tools necessary to monitor the targets are currently not available. Computer-modelling tools needed to define and monitor these goals will be developed in Phase III (2002–2007) of the Manitoba Model Forest program.

Density of roads is one of the indicators (1.1.3.3) defined to assess landscape patterns. This indicator is also relevant to other aspects of the forest. For example, in addition to altering landscape patterns, road density can also influence wildlife interactions (e.g., increasing predation) and affect hydrology (water flow) in watersheds. Road density influences road planning and construction, and potentially directs decommissioning activities. Watersheds, ranging from tens to hundreds of square kilometers, were chosen as the basis on which to assess road density because they are a predominant delineating feature used to scientifically assess impacts.

The road density target (1.1.3.3.1) of not exceeding 0.58 kilometers of road per

square kilometer was established by reviewing North America studies on road density and constraints. The target of 0.58 was adopted from the Fundy Model Forest suite of local level indicators. It is representative of mid- to lower ranges of road density figures found in the review.

Only active roads, of all classes under the responsibility of Tembec (all weather, harvest block and winter) were used in calculating the total length of road. If the maximum density of 0.58 km/km<sup>2</sup> is reached, Tembec has the option of decommissioning some of the existing roads in order to construct new roads within that watershed.



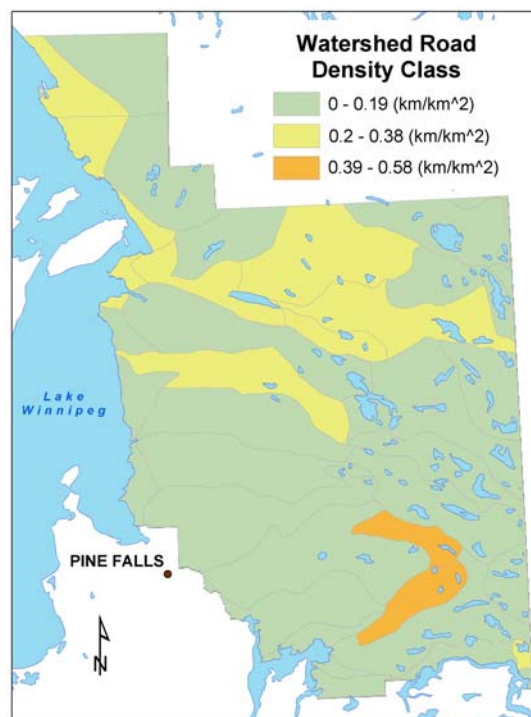
*Removable bridge over the Black River constructed out of a recycled railway flatcar.*



*Shrubs planted on the roadbed in riparian area of decommissioned bridge at Gem Lake.*

The target of 0.58 km/km<sup>2</sup> has been divided into three equal classes to display the current condition of the FML, Map 1. Most of the watersheds in the FML have very low road densities and are at the lower end of the road density classification.

Twenty-three of the watersheds (70%) fall in the low end (0 to 0.19 km/km<sup>2</sup>) of the density range, displayed in green. Five of the twenty-three low-range watersheds do not have any roads constructed at this time. Eight of the watersheds (24%) fall into the mid-range (0.2 to 0.38 km/km<sup>2</sup>) density classification, displayed in yellow. Only two of the watersheds (6%) fall into the high-end (0.39 to 0.58 km/km<sup>2</sup>) density classification, displayed in orange. Each of the high-density watersheds is currently at 0.39 km/km<sup>2</sup>, which is at the transition zone from medium to high density.



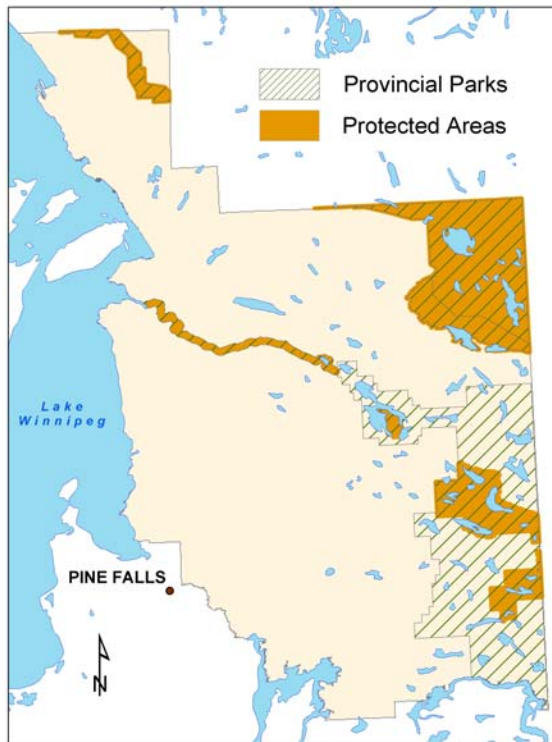
*Map 1: Road density per watershed.*

Protected areas are a key component of maintaining natural landscape patterns and biodiversity. Tembec has worked with Manitoba Conservation and the Canadian Nature Federation to identify Areas of Special Interest (ASI) for inclusion in the provincial protected area initiative (target 1.1.4.1.1). We did not meet our objective to complete the protected area process by the end of 2000. However, we support the completion of the protected area initiative in the FML.

Currently, 93,713 hectares (10.4% of the FML) are closed to mining, timber harvesting and hydroelectric development. The end of 2003 has been set as a date to finalize ASI for the FML. Manitoba Conservation will have to conduct a public consultation process before the ASI can be finalized.

The areas shaded in gold on Map 2 represent areas currently under full protection. These areas are sure to grow in future reports until the process of

protected areas for the FML is completed by Manitoba Conservation.



*Map 2: 10.4 % of the FML has protected status.*

Recently, much research and many on-the-ground forestry practices in Canada have been devoted to leaving more standing trees in harvest areas as a method to improve site and landscape diversity. A target designed to leave stand structure and diversity within harvest areas (i.e., deliberately leaving single trees and clumps or islands of trees in individual harvest areas) is contained in 1.1.5.1.1.

An operating procedure to leave 3% to 5% of the volume on site after harvest has been implemented with harvesting contractors. The protocol for measuring the residual area has been developed but not fully implemented at this time.

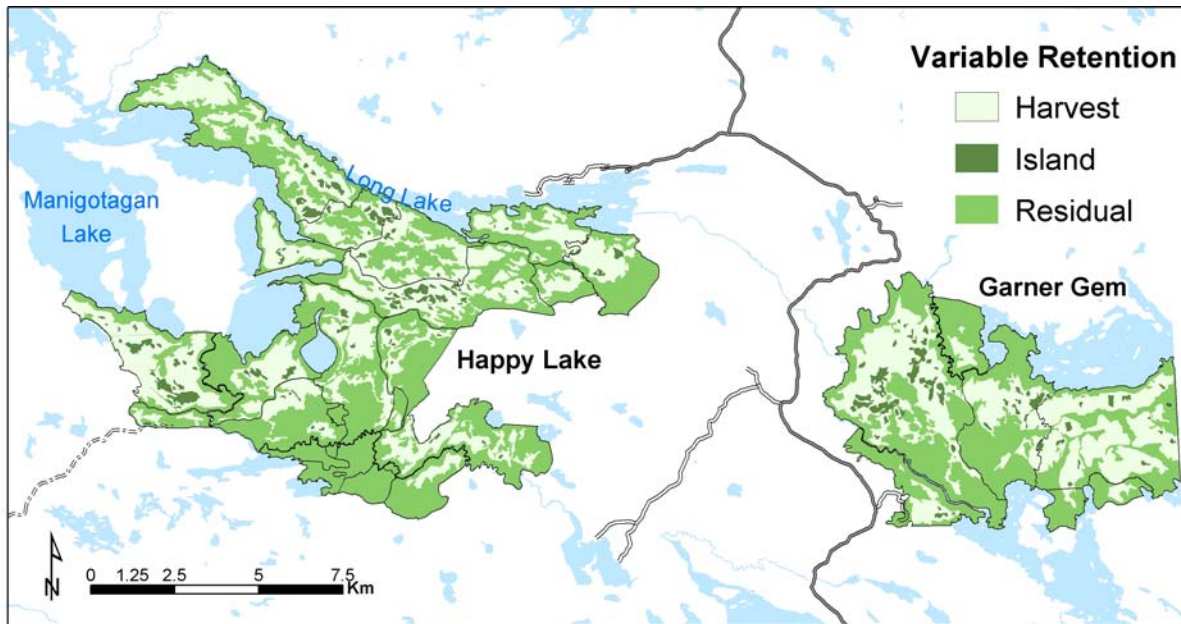
There are two methods of assessing how much stand structure remains after harvest. Larger islands of residual trees and corridors can be measured using Geographical Information System (GIS). The second method records the number and size of smaller islands of trees by reviewing aerial photos taken after harvest.

The 2002 report provides examples of two operating areas where harvesting has been completed. The detailed analysis in the monitoring results of target 1.1.5.1.1 incorporates only the GIS analysis. It does not include a further photo interpretation analysis, which will identify additional residual area. All future photo interpretation of harvest areas, starting in spring 2003, will include the residual assessment. Map 3 depicts residual islands remaining within harvest areas as well as residual structure remaining in the operating area.

Residual stand structure remaining as islands within harvest areas (i.e., within individual harvest blocks) ranged from 0% to 16% of the harvested area. In total, 5,600 hectares were harvested.

An operating area is defined as a group of individual harvest blocks within a larger area. When the residual area within the operating area was determined it accounted for 60% of the total 12,800 hectares. This means that for the two operating areas evaluated, approximately 60% of the area was not harvested. Leaving standing trees in islands and corridors within and between harvest blocks contributes to maintaining landscape patterns.



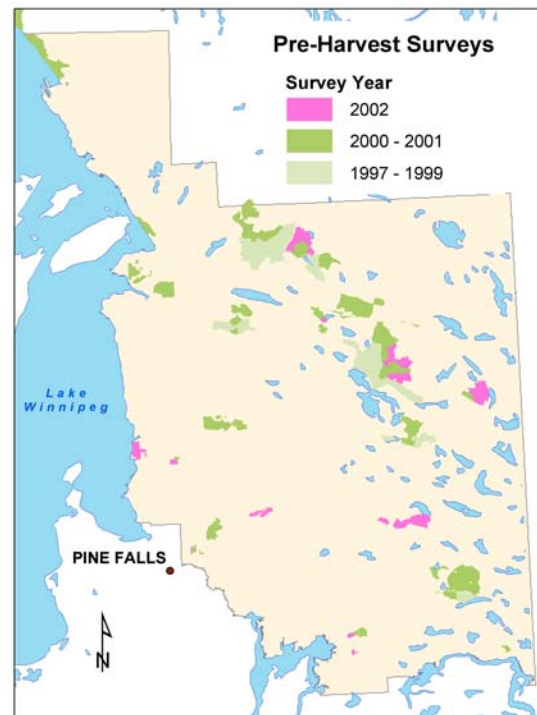


Map3: Happy Lake/Gem Lake area depicting residual structure after harvest.

### Value 1.2 Species Diversity

In 1997, the Pine Falls Operations began conducting field surveys before harvesting operations. The surveys are called pre-harvest surveys. These surveys continued for three years until the Manitoba Forest Practice Guideline Committee began work on a Pre-Harvest Survey Guideline in 2000. Survey procedures have been revised and refined over the past three years. An approved Provincial Pre-Harvest Survey Guideline is anticipated by 2003.

Tembec and Manitoba Conservation Eastern Region have refined the annual Operating and Renewal Plan (ORP) format to incorporate the site-specific information generated from the pre-harvest surveys.



Map 4: 1997–2002 Pre-Harvest Survey Blocks

The only harvest areas that did not receive a pre-harvest survey in 2002 were areas designated for firewood production. These areas are quite small and represented less than 300 cubic

metres of harvest volume. Aside from the firewood areas, there were 88 potential harvest blocks encompassing 8,815 hectares surveyed for the 2002 ORP.

An important component of species diversity in the FML is the maintenance of habitat for the Owl Lake caribou herd. The Eastern Manitoba Caribou Management Committee<sup>1</sup> advises Manitoba Conservation on caribou management issues. Caribou movement and habitat use is being determined through the use of Global Positioning System (GPS) collars placed on caribou. The collars record the animals' location over time and allow for determination of their ranges and habitat use.

Target 1.2.3.1.1 measures habitat values based on a management strategy that uses a Habitat Suitability Index (HSI) to define high-value habitat areas for caribou. The management strategy schedules forest management activities to cycle habitat over time, while maintaining other areas of high habitat value. The number of high habitat value units have essentially remained unchanged since 1995 as only small experimental harvests have taken place. An operational harvest trial, based on the management strategy, is scheduled to start in 2004.



*Caribou movement is tracked with the help of GPS collars.*

### **Value 1.3 Genetic Diversity**

In order to maintain the genetic diversity of the regenerating forest, all seed used for reforestation projects has been collected from natural stands within the area.

A joint Tembec/Manitoba Conservation tree improvement program was initiated in 1989 to provide a consistent source of black spruce seed for planting stock. Black spruce seeds were collected from 450 trees that exhibited desirable genetic traits. These trees were selected from over the entire seed zone to ensure a wide range of genetic variability. Seedlings were planted on three family test sites across the seed zone and in a seed-producing orchard. Assessment of the three family sites provides direction for thinning the seed orchard to provide the best genetic traits from across the seed zone. The first seed from the orchard was used in 2002 and accounted for 1% of the annual reforestation program. This percentage will increase with time.

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<sup>1</sup> The Committee is comprised of representatives from government, industry, First Nations, environmental groups and wildlife associations whose purpose is to research, develop and recommend strategies that will maintain or enhance current populations.

## Criterion 2: Forest Ecosystem Condition and Productivity

### ***Value 2.1 Disturbance and Stress***

Forest fires are the predominant forest disturbance in the FML. The monitoring results of target 2.1.1.1.1 provide the fire losses by decade. The three decades of the 1920s, 1930s and 1980s had the highest fire-caused losses, measuring as much as hundreds of thousands of hectares. As a result of the high fire losses in the 1980s, Manitoba Conservation has implemented a program that directs forest fire detection and initial attack preparedness based on fire hazard conditions.

The average annual fire loss over the past six years has been 3,683 hectares or 0.6% of the total productive area of the FML. Only six years were used, as 1997 was the first year that productive hectares within a fire were calculated. The average annual loss of 0.6% is above the target of 0.2% to 0.3%. This figure should improve over time if fire detection and suppression is successful. One fire incident in 1999 represents the majority of the productive area burned in the past six years.

### ***Value 2.2 Ecosystem Resilience***

All harvest areas on the FML are surveyed seven and fourteen years after harvest to ensure they meet standards established by Manitoba Conservation for reforestation and free-to-grow regeneration.

Target 2.2.1.1.1 sets an objective of 100% of harvested areas achieving Manitoba Conservation regeneration standards after seven years. The target was met in 2001 but fell short by 3% in 2002. A tree planting fill-in operation

has been prescribed for the remaining 3% to bring the naturally regenerating areas up to provincial standards. The regeneration survey identified three more naturally regenerating areas that achieved the standard but had low stocking levels. A fill-in planting operation was prescribed for these areas to increase the stocking level.



*Young jack pine/black spruce plantation ready for regeneration survey.*

Free-to-grow surveys are conducted fourteen years after harvest to confirm there is a proper growing environment for the regenerating saplings. The free-to-grow survey protocol is relatively new and a number of areas of concern have been identified within the standard. Manitoba Conservation has established a committee to review the free-to-grow procedures and standards.

Only 50% of the areas surveyed in 2002 achieved the provincial standard. The two major reasons for the low results were that black spruce regeneration on the slower growing organic sites did not meet the minimum height specifications, and that some competition standards, which deem a tree not free-to-grow, appear too stringent based on tree performance.

## Criterion 3: Conservation of Soil and Water Resources

### **Value 3.1 Physical Environmental Factors**

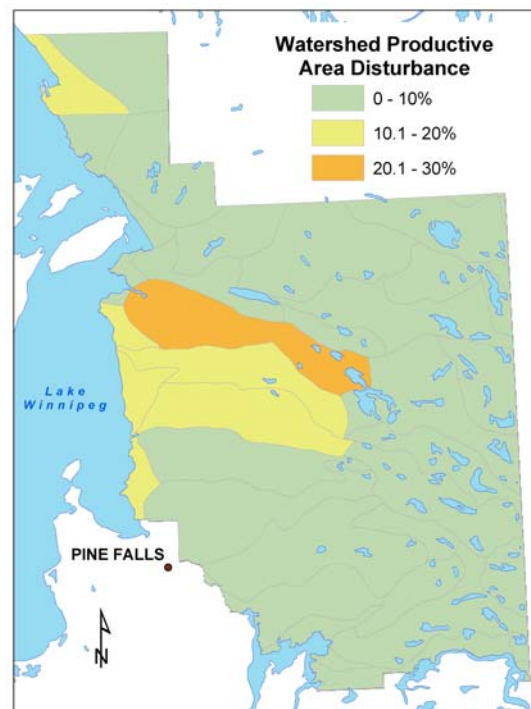
Disturbance in a watershed, whether caused by fire or forestry activities, can have an impact of water quality.

A target has been established that not more than 30% of the productive forest area within a watershed is to be recently disturbed (3.1.4.2.1). This target was based on research conducted in Eastern Canadian boreal forests that found there were no negative water quality impacts below the 30% level of disturbance. The same watershed delineation was used as in the road density target (1.1.3.1.1).

Any combination of forest fires and harvesting areas less than seven years old (same time period as Regeneration Surveys in 2.2.1.1.1) that exceeds the 30% threshold would require harvesting be postponed. Harvesting could resume when the addition of the planned harvest area resulted in a disturbance factor less than 30%.

The target of 30% has been divided into three equal classes in order to display the current condition of the FML, Map 5. Most of the watersheds in the FML have very little recent disturbance and are therefore at the lower end of the watershed disturbance classification. Twenty-eight of the watersheds (85%) fall in the low end (0% to 10%) of the disturbance range, displayed in green. Most of the low-range watersheds are actually less than 5%. Four of the watersheds (20%) fall into the mid-range (10.1% to 20%) of the disturbance

classification, displayed in yellow. Only one of the watersheds (3%) falls into the high end (20.1% to 30%) of the disturbance classification, displayed in gold. The current level of disturbance due to both fires and harvesting for the entire FML area is 5.5%.



*Map 5: Percentage of Disturbance per Watershed.*



## Criterion 4: Forest Ecosystem Contributions to Global Ecological Cycles

### ***Value 4.1 Contributions to Global Carbon Budget***

A recycling plant at Tembec's newsprint mill began production in 1996. It is capable of producing 100 metric tonnes of pulp per day, using 75% old newspapers and 25% old magazines. This production capacity represents approximately 20% of the total daily production of the Pine Falls newsprint mill. Use of recycled paper reduces our reliance on the forest as a source of fiber for our newsprint.

Production in the recycling plant has decreased from 85 to 98 metric tonnes per day between 1999 and 2002. The addition of recycled paper can negatively affect new paper quality due to a number of factors. The recycled content for new paper has been reduced for this reason.



*Bales of recycled paper ready for pulping.*

## Criterion 5: Multiple Benefits to Society

### ***Value 5.1 Productive Capacity***

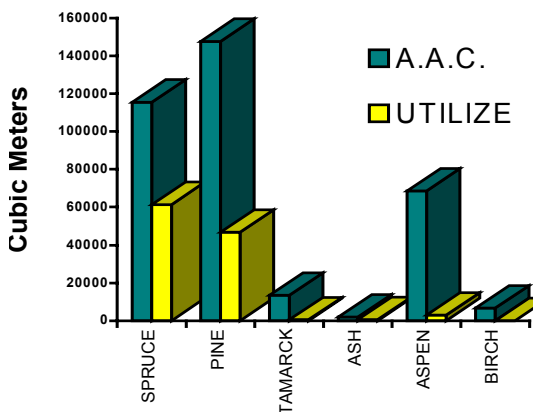
The volume of wood that can be sustainably harvested each year from an area such as the FML is known as the Annual Allowable Cut (AAC). If you expressed the AAC in economic terms, you could compare it to interest from a bank account. If you were to withdraw only the interest from your bank account, the principal or bank balance would never go down.

The AAC calculation is based on the same principle. In simple terms, the

AAC is equal to the amount of wood that the forest can grow each year. By ensuring that the AAC is not exceeded, a similar volume of wood will be available for harvest each year. In Manitoba, the AAC is calculated by Manitoba Conservation and provided to the licence holder.

Timber harvesting has decreased in the past few years on the FML, and a number of tree species have historically not been harvested on the FML. For those reasons the AAC has not been used to its full potential. The monitoring

results of target 5.1.1.1 compares the actual harvest by species to the AAC. Spruce had the highest utilization in 2002 at 53% of the AAC. As mentioned, harvesting has decreased in the past few years, and spruce utilization over the last four years is only 83% of the AAC. Figure 1 shows the portion of the sustainable harvest level that was used in 2002.



*Figure 1: 2002 AAC Utilization by Species*

## **Value 5.2 Competitiveness of Timber and Non-Timber Resource Industries**

Global market conditions for forest products historically follow a roller coaster cycle with market prices rising and falling in relation to economic trends and consumers' response to economic conditions. As the United States is the major export market for Canada's forest products, these cycles are closely tied to the American economy.

The report on goal 5.2.1 and its related indicators and targets reflects the current condition of Canada's resource industry. Market pricing of all forest products from pulp to paper to lumber is near the bottom of the pricing cycle, resulting in poor financial performance.

The economic indicators reported in the monitoring of 5.2.1 are for Tembec Industries Inc. as a corporation and not strictly for the Pine Falls Operations. The results for 2002 show that the annual economic performance was about one-half of that recorded for previous years and that shareholder equity had actually fallen into a negative position. As has always happened in the past, market conditions will eventually improve. The key for corporations like Tembec is to position themselves to weather the down cycles to be ready for the increased demand as the market improves.

A very important part of forest management planning and operations is communication and consultation with all interested and affected parties. The monitoring results of target 5.2.3.1.1 list activities that took place in different sectors. In total there were over 250 meetings, tours and symposiums accounting for 450 Tembec staff days.

Involving local communities in forest management planning and the development and expansion of economic opportunities remains a very high priority for the Pine Falls Operations. This commitment is demonstrated in the fact that 20% of these activities are in First Nation communities.

### ***Value 5.3 Contribution to Local, Provincial and National Economies of Timber and Non-Timber Resource Sectors***

The monitoring reported for target 5.3.1.2.1 summarizes the contract values for timber harvesting, road construction and forest renewal. Local contractors are the preferred choice when awarding contracts, which expands existing local operations and fosters new contractors.

Most harvesting is conducted by contractors from local and First Nation communities. All tree-planting contracts are performed by local Northern Affairs and First Nation community contractors. A newly established First Nation contractor has conducted all the

regeneration surveys for the past few years. Two new economic opportunities were developed in Hollow Water First Nation in 2002 - a road construction contract, and establishment of a new harvesting contractor (target 5.3.1.3.1).



*Hollow Water First Nation road construction operation.*

## **Criterion 6: Accepting Society's Responsibility for Sustainable Development**

### ***Value 6.1 Aboriginal and Treaty Rights***

Hollow Water First Nation has appointed a Traditional Area Advisory Committee (TAAC) to advise Chief and Council on all resource issues within their traditional area. As part of its mandate, this committee meets with Tembec on a bi-weekly basis. Tembec hopes to work with the communities of Black River First Nation and Sagkeeng First Nation to establish a similar process.

In developing this suite of local level indicators, Value 6.2 Participation by Aboriginal Communities in Sustainable Forest Management was intentionally left blank until a process to involve the communities could be developed. Once the process has been established, the

potential for the communities to develop the indicators for this value will be explored.

### ***Value 6.3 Sustainability of Forest Communities***

Economic opportunity for local communities is the goal of Values 6.3 and 5.3. In addition to these initiatives, Tembec has a corporate policy to donate at least 1% of its pre-tax profits to programs run by non-profit organizations (target 6.3.1.3.1). In 2002, this amounted to approximately \$2 million across Canada. Each Tembec operation has its own donation committee. The Pine Falls donation committee awarded 78 donations towards initiatives which were local, regional, provincial and international in scope.

#### **Value 6.4 Fair and Effective Decision-Making**

Initiatives to inform, involve and educate interested parties in forest management operations are listed in the report on target 6.4.1.1.1. A wide range of presentations and field tours were conducted with local and Winnipeg schools, universities, local communities, trappers, environmental organizations, and local and provincial advisory groups.



*Tour group inspecting temporary bridge installation*

#### **Value 6.5 Informed Decision-Making**

Tembec is fortunate to have the MBMF located within the FML. The MBMF conducts many stakeholder involvement and education initiatives. It also conducts scientifically based, provincially relevant forest ecosystem research.

Tembec provides support to the MBMF through participation on the board of directors and several committees. Tembec also participates and provides technical support to numerous MBMF projects. In-kind services such as office space, telephone and mail service is provided to the MBMF. Tembec has provided MBMF funding of \$100,000 per year over the last five-year period. Tembec has agreed to continue the in-kind and funding support to the end of Phase III (2002 – 2007).

The Sustainable Forest Management Advisory Committee (SFMAC) is a vehicle that is used to seek advice on forest management operations (target 6.5.5.1.1). The SFMAC has 22 members from local community councils, non-profit organizations, resource businesses and environmental organizations. The SFMAC meets approximately four times a year and provides advice to Tembec on ongoing projects and proposed initiatives.

First Nation communities have opted out of participation in the SFMAC, preferring to deal one-on-one with Tembec through initiatives such as the community-based planning described in Value 6.1.

#### **2002 Monitoring**

The detailed 2002 monitoring of local level indicators is provided in the Criteria Tables, Appendix I.



# Background for the Development of Sustainable Forest Management Indicators

## Development of Local Level Indicators by the Manitoba Model Forest

In setting objectives for Phase II (1997 – 2002) for the Canadian Model Forest program, the Canadian Forest Service identified certain requirements for each Model Forest. One requirement was the development of criteria and indicators to be applied at a regional or local scale. The agency responsible for forest management should ideally lead and adopt the development of local area indicators. The Province of Manitoba, through the establishment of the FML, assigns forest management responsibility to Tembec. For these reasons, the MBMF requested Pine Falls Paper Company, now Tembec, to take a lead role in developing local level indicators for the MBMF with the intent that Tembec accept responsibility for monitoring the related targets on the FML.

The following steps were taken in the development of local level indicators for the MBMF and their subsequent incorporation into Tembec's Environmental Management System (EMS).

1. Before the process to develop indicators could begin, people's values for the FML had to be identified. This was accomplished through two workshop settings. The first was an open workshop sponsored by the MBMF on April 21, 1998, in Winnipeg. Guest speakers explained the criteria and

indicator process to an audience of approximately 50 people. A facilitator then led the group in identifying and recording the values they individually held for each of the six criteria. The MBMF then produced a report that grouped all of the identified values into their respective elements. The second process involved a value exercise conducted with Tembec's Sustainable Forest Management Advisory Committee (SFMAC) on June 24, 1998. The SFMAC decided that they did not want to be constrained by the CCFM framework; therefore, a facilitator led a group of 11 committee members through an exercise, using breakout groups, to answer the question "*What is it about the forest that is important?*" The results of this value exercise were provided back to the SFMAC in the form of a report with the values grouped into areas of interest.

2. A subcommittee of the MBMF was struck to take the results of the value exercises and translate them into goals and indicators using the CCFM framework. The subcommittee decided to retain the CCFM structure unchanged to the element level. From that point, they reviewed the CCFM indicators to determine if they were applicable, if they required revisions to make them applicable at

a local level, or if new indicators needed to be developed. The local level indicators were compiled in the criteria/element format developed by the CCFM to provide a consistent format to assist people in reviewing the indicators.

3. The suite of indicators was then presented to Tembec for the development of measurable targets, which would be used to monitor and measure success in achieving sustainable forest management. Early on in the development of targets, Tembec realized that the current state of information, inventories, monitoring protocols and information management systems would not allow for the immediate monitoring of all targets. The phasing in of the monitoring as the technical ability becomes available is identified in the Local Level Indicator Tables.
4. The MBMF then sponsored three invitational workshops to review the indicators and targets developed to date. The six criteria were broken up into three groups of two, specifically Criteria 1 & 2, 3 & 4 and 5 & 6. Workshop participants were identified for each of the three workshops, attempting to provide a cross-section of expertise from local, provincial, national, scientific, regulatory, social and operational standpoints. Workshop participants were provided with a copy of the draft indicators and targets as well as the workshop goals to review prior to holding the workshops. There was a respective total of 20, 17 and 26 participants, exclusive of the eight to 11 facilitators, scribes and Tembec support staff, at the three workshops

held over four days from February 22 to March 3, 1999. The objective of the workshops was to form small breakout groups that would review specific elements and their related indicators and targets. Each breakout group was facilitated through a documented discussion asking the following questions:

- Does the proposed indicator address the goal?
- Is the indicator appropriate?
- Are there other potential indicators? If so, what are they?
- Does it provide meaningful information about the goal that it is supposed to measure?
- Does it measure something that forest management decisions have influence on?
- Is it measurable, practical and cost effective?
- Is it quantifiable? (Non-quantifiable indicators are acceptable where quantification is either not possible or practical.)
- Does the proposed target relate to the indicator?
- Is the target appropriate?
- Are there other potential targets?
- Is the proposed methodology (where indicated) for target selection appropriate?

Tembec used the results of these workshops to revise the draft indicators and targets and to develop a list of partnerships, monitoring requirements, management strategies, protocols, gaps

and issues that were identified throughout the workshops.

5. Following the revision of the draft indicators and targets, MBMF hosted another open workshop in Winnipeg on May 5, 1999. There were a total of 48 participants and 14 facilitators, scribes and Tembec support staff, many of whom were involved in some or all of the previous four workshops. This workshop used the same breakout format as the invitational workshop but in a condensed time frame. Concurrent sessions working on Criteria 1 & 2, 3 & 4 and 5 & 6 were conducted in the morning and then repeated in the afternoon. This format allowed participants to attend sessions

covering four of the six criteria or concentrate on only two criteria if they chose the same topic area in both the morning and afternoon sessions. Workshop participants were asked to review the indicators and targets within each of the subdivided criteria and were asked to answer the same group of questions that were used for the invitational workshops.

Tembec used the results of this final workshop to perform a final revision of the indicators and targets, before submitting the completed suite of local level indicators to MBMF, and to update the Research Priorities, Information Gaps and Issues tables.

## Appendix I



## Criterion 1: Conservation of Biological Diversity

### Value: 1.1 Ecosystem Diversity

Goal	Indicator	Target
1.1.1 Maintain overall forest composition for representation of different forest types and ages within the historical natural range of variability	<p>1.1.1.1 Composition of the forest of FML 01 in terms of forest types, and seral (age) stages (seral stages to be defined by forest type)</p> <p>1.1.1.2 Composition of the forest of FML 01 in terms of forest ecosystem FEC V-types</p>	<p>1.1.1.1.1 Maintain forest types composition and age class distribution resulting from harvesting and natural disturbances within the historical natural range of variability (to be determined through a backcasting analysis of the current inventory)</p> <p>1.1.1.1.2 Minimum total of late seral stage of each forest type to be X% of total productive forest of that type (includes buffers, isolated stands, parks and protected areas and other SFM practices)</p> <p>1.1.1.2.1 Maintain FEC V-types composition levels within the historical natural range of variability (to be determined through a backcasting analysis of the current inventory)</p>
<p><b>2001 – 2002 Monitoring Goal 1.1.1</b></p> <p>Establishment of protocols, development of baseline data or measurement tools has not yet been developed for these indicator(s).</p> <p>The Manitoba Model Forest is beginning a three year project to develop scenario planning tools. The determination of the natural range of variability will be one of the desired outcomes of the model development project. Indicator 1.1.1.1 is anticipated to commence monitoring in 2005 or 2006. The viability of indicator 1.1.1.2 will have to be examined as a recent thesis has shown that there is a very poor relationship between FEC V-types and FRI polygons. It is possible that a more reliable indicator may come out of the scenario planning project.</p> <p>A new inventory, which has age of disturbance data, has been developed for FML 01 and is currently being verified. Target 1.1.1.1.2 is anticipated to commence monitoring in 2003.</p>		
Goal	Indicator	Target
1.1.2 Maintain the integrity of non-forested ecosystems as a result of forest management activities	1.1.2.1 Areas of forested landscape managed primarily for soil and water conservation	<p>1.1.2.1.1 Identify all (100%) sensitive sites requiring soil and water protection through joint planning, pre-harvest surveys and other available sources of information</p> <p>1.1.2.1.2 100% of sensitive sites protected and/or maintained according to EMS procedures</p>

## 2001 – 2002 Monitoring Goal 1.1.2

1.1.2.1.1 There were 2 sensitive sites requiring soil and water protection identified in the 2002 Annual Plan.

A community based joint planning process has been initiated through a pilot program in Hollow Water First Nation. A Traditional Area Advisory Committee (TAAC) has been developed to meet with Tembec on a biweekly basis. The process has yet to identify any site specific sensitive sites; however, operations have been curtailed in some traditional areas, at the request of the TAAC, until some concerns over the strategic direction being undertaken can be resolved. Discussions with Little Black River and Sagkeeng to take place to initiate a similar process in those communities. The following is listing of meetings that occurred in 2003:

- There were 22 meetings, involving 29 Tembec staff, with Hollow Water First Nation
- There were 7 meetings, involving 12 Tembec staff, with Peguis First Nation
- There were 7 meetings, involving 12 Tembec staff, with Little Black River First Nation
- There were 4 meetings, involving 6 Tembec staff, with Sagkeeng First Nation
- There were 9 meetings, involving 11 Tembec staff, with trapper groups, northern affairs communities and other First Nation communities
- There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives

1.1.2.1.2 - 100% of identified sensitive sites were protected as harvest operations did not take place in either of the sensitive site areas. As no operations took place in the identified areas, no audits were conducted to confirm compliance.

Goal	Indicator	Target
1.1.3 Maintain a natural landscape pattern when managing for access development, harvesting and forest renewal activities	1.1.3.1 Fragmentation (patch distribution) patterns resulting from harvesting approximating natural landscape patterns  1.1.3.2 Nature of patch size and shape resulting from harvesting approximating natural landscape patterns  1.1.3.3 Density of roads	1.1.3.1.1 Maintain overall fragmentation indices (measures of interspersion and juxtaposition) within the natural landscape patterns according to the following indices: (these will be determined from landscape analysis)  1.1.3.2.1 Maintain overall patch size and shape resulting from harvesting according to the following Criterion: (these will be determined from landscape analysis)  1.1.3.3.1 Calculated density of Tembec roads not to exceed 0.58 km/km <sup>2</sup> within a watershed

## 2001 – 2002 Monitoring Goal 1.1.3

Establishment of protocols, development of baseline data or measurement tools has not yet been developed for indicator 1.1.3.1 and 1.1.3.2. The Manitoba Model Forest is beginning a three year project to develop scenario planning tools. Determination of a fragmentation indices will be one of the desired outcomes of the model development project. Indicators 1.1.3.1 and 1.1.3.2 are anticipated to commence monitoring in 2005 or 2006.

1.1.3.3.1 There were no watersheds in FML 01, which exceeded the target road density of 0.58 km/km<sup>2</sup>. The following table reports on the current road densities of all active permanent and temporary Tembec roads by watershed. Reforested, retired or decommissioned roads have been excluded from road density calculations.

2002 ROAD DENSITY per WATERSHED ANALYSIS for FML 01*	Area of Watershed (km2)	Class 1 Roads (km)	Class 2 Roads (km)	Class 3A Roads (km)	Class 3B Roads (km)	Class 4 Roads (km)	Class 4 Major Roads (km)	Total Length of Road (km)	Density of Roads per Watershed (km/km2)	Remaining Length of Road (km)	Total Length of Road Allowed (km)
Beaver Creek	532.03	-	30.08	18.77	20.39	73.66	-	142.90	0.27	165.67	308.57
Black Island Region	229.14	29.64	-	0.11	0.06	13.80	1.81	45.42	0.20	87.49	132.90
Black River Lower Region	414.44	-	49.95	4.44	3.25	19.35	-	77.00	0.19	163.38	240.37
Black River Upper Region	385.51	-	2.69	6.42	0.38	0.32	-	9.83	0.03	213.77	223.60
Bloodvein River Lower Region	313.16	-	-	-	-	4.29	-	4.29	0.01	177.35	181.63
Bloodvein River Upper Region	16.92	-	-	-	-	-	-	-	-	9.81	9.81
Broadleaf River	175.61	-	-	-	-	-	-	-	-	101.85	101.85
Cat Creek	118.72	16.89	17.93	5.83	2.74	-	3.50	46.88	0.39	21.98	68.86
Eaglenest Region	103.24	-	0.63	-	-	-	9.96	10.59	0.10	49.29	59.88
English Brook	236.67	2.65	13.54	11.28	6.63	2.12	-	36.23	0.15	101.03	137.27
Gammon River Lower Region	332.48	-	-	-	-	-	-	-	-	192.84	192.84
Gammon River Upper Region	25.56	-	-	-	-	-	-	-	-	14.82	14.82
Garner Lake	235.89	-	4.29	1.99	1.09	26.01	-	33.38	0.14	103.44	136.82
Gold Creek	107.14	-	4.65	-	4.31	20.99	-	29.95	0.28	32.19	62.14
Great Falls Region	793.56	21.12	9.86	12.83	-	56.43	49.27	149.50	0.19	310.76	460.27
Lac Du Bonnet Region	107.12	-	-	-	-	2.08	6.24	8.32	0.08	53.81	62.13
Lee River	72.43	-	-	-	-	9.68	-	9.68	0.13	32.32	42.01
Loon Strait-Rabbit Point Region	173.43	24.30	3.35	-	5.40	25.53	-	58.57	0.34	42.02	100.59
Manigotogan River Lower	509.23	-	14.26	5.58	11.35	31.53	-	62.72	0.12	232.63	295.36

Region												
Manigotogan River Upper Region	518.95	-	17.28	1.19	2.09	32.90	-	53.45	0.10	247.54	300.99	
Maskwa River	571.47	10.95	20.06	31.04	6.62	4.04	32.98	105.68	0.18	225.77	331.45	
Moose River	246.74	0.02	8.20	-	2.58	5.04	-	15.84	0.06	127.27	143.11	
Obukowin Lake	67.56	-	-	-	-	-	-	-	-	39.19	39.19	
O'Hanley River	433.02	-	17.41	19.87	2.91	11.00	-	51.19	0.12	199.96	251.15	
Oiseau River Lower Region	390.06	-	25.80	-	0.42	6.85	15.68	48.75	0.12	177.48	226.24	
Oiseau River Middle Region	118.68	-	0.55	-	7.66	1.27	-	9.48	0.08	59.36	68.83	
Peterson Creek	159.28	-	18.12	-	6.57	28.29	9.32	62.29	0.39	30.09	92.38	
Rice River	379.25	7.07	-	-	-	9.11	0.40	16.58	0.04	203.39	219.97	
Ryerson Lake	21.92	-	6.27	-	-	-	-	6.27	0.29	6.45	12.71	
Sandy River	355.28	-	43.41	4.70	17.09	25.71	-	90.91	0.26	115.15	206.06	
Traverse Bay-Observation Point Region	247.70	-	3.84	-	-	30.96	-	34.80	0.14	108.87	143.67	
Wanipigow River Lower Region	206.39	6.83	15.13	15.14	3.69	4.58	-	45.37	0.22	74.34	119.71	
Wanipigow River Upper Region	413.45	-	24.12	1.02	20.34	54.41	-	99.88	0.24	139.92	239.80	
Total	9,012.01	119.47	351.41	140.20	125.57	499.94	129.15	1,365.74	0.15	3,861.23	5,226.97	

Goal	Indicator	Target
1.1.4 Participate with Manitoba in helping to establish protected areas	1.1.4.1 Proportion of each ecoregion that is in protected status	1.1.4.1.1 Conclude establishment of representative Protected Areas within FML 01 by the end of 2000
<b>2001 – 2002 Monitoring Goal 1.1.4</b>  1.1.4.1.1 Protected areas for FML 01 have not been concluded to date. There are currently 93,713 hectares (10.4 %) closed to mining, timber harvesting and hydro electric development. MC priorities to proceed with protected areas work in Western Manitoba and the establishment of the East Side Lake Winnipeg Land Use Study has delayed completion of the protected areas for the east side of Lake Winnipeg.		
Goal	Indicator	Target
1.1.5 Maintain ecosystem diversity of FML Area to ensure adequate range of habitats at the stand level	1.1.5.1 Abundance and composition of residual stand structure	1.1.5.1.1 Average of 3% - 5% of dead and live volume left on-site in a variety of configurations
<b>2001 – 2002 Monitoring Goal 1.1.5</b>  1.1.5.1.1 A Work Instruction for the maintenance of in block stand structure was instituted at the beginning of fiscal year 2003. In preparation for the monitoring of this target, a protocol has been designed and is currently being tested. Reporting will include interior stand structure for completed harvest blocks and interior and residual exterior structure at the completed operating area level. Monitoring will include analysis using GIS for residual structures that are large enough to be digitized and identified, and using depletion photo interpretation for structures that are too small for GIS delineation.  The following are examples of two completed operating areas that have been analyzed at the GIS level only. Stand structure at residual levels less than 0.5 hectares has not been analyzed using depletion photography. Residual structure photo interpretation for all depletion areas will commence with the spring 2003 using depletion photography. Maps depicting maturity classes, working group classes for residual and island structure are contained in the Local Level Indicator Highlights section		



<b>Interior Island Stand Structure</b>					
<b><u>Operating Area</u></b>	<b><u>Block #</u></b>	<b><u>Harvest Area (Hectares)</u></b>	<b><u>Residual Island &gt;0.5 Ha (Ha)</u></b>	<b><u>Residual Island &lt;0.5 Ha (Ha)</u></b>	<b><u>Total Residual Structure (%)</u></b>
Garner / Gem	2201	837	136	Not determined	16%
Garner / Gem	2202	39	0	Not determined	0 %
Garner / Gem	2204	753	31	Not determined	4 %
Garner / Gem	2205	89	5	Not determined	6 %
Garner / Gem	509A	400	35	Not determined	9 %
Garner / Gem	GG-01	24	0	Not determined	0 %
Garner / Gem	GG-02	12	0	Not determined	0 %
<b>Total Garner / Gem</b>		<b>2,153</b>	<b>208</b>	<b>Not determined</b>	<b>10 %</b>
Happy Lake	501	525	74	Not determined	14 %
Happy Lake	502 B	32	0	Not determined	0 %
Happy Lake	503	135	5	Not determined	4 %
Happy Lake	504	201	17	Not determined	8 %
Happy Lake	507 A	295	11	Not determined	4 %
Happy Lake	507 B	10	0	Not determined	0 %
Happy Lake	510	48	0	Not determined	0 %
Happy Lake	511	235	5	Not determined	2 %
Happy Lake	512	503	35	Not determined	7 %
Happy Lake	513	138	6	Not determined	4 %
Happy Lake	514	165	25	Not determined	15 %
Happy Lake	515	278	12	Not determined	4 %
Happy Lake	516	484	59	Not determined	12 %
Happy Lake	517	243	5	Not determined	2 %
Happy Lake	518	163	11	Not determined	7 %
<b>Total Happy Lake</b>	Blocks 502 A, 519, and 520 have been deleted from the calculations as only experimental Caribou harvests were implemented	<b>3,455</b>	<b>265</b>	<b>Not determined</b>	<b>8 %</b>
<b>TOTAL ALL</b>		<b>5,608</b>	<b>473</b>	<b>Not determined</b>	<b>8 %</b>
<b>Residual Structure within the Operating Area (by working group and maturity classes)</b>					

<u>Operating Area</u>	<u>Block #</u>	<u>Total Block Area (Ha)</u>	<u>Residual Softwood (Ha)</u>	<u>Residual Mixedwood (Ha)</u>	<u>Residual Hardwood (Ha)</u>	<u>Total Productive Residual (Ha)</u>	<u>Percent Productive Residual</u>
Garner / Gem	2201	1,727	609	193	5	807	47 %
Garner / Gem	2202	260	60	136	3	198	76 %
Garner / Gem	2204	1,227	375	6	0	381	31 %
Garner / Gem	2205	340	224	13	0	237	70 %
Garner / Gem	509A	1,288	461	189	0	650	50 %
Garner / Gem	GG-01	111	75	0	0	74	67 %
Garner / Gem	GG-02	115	69	23	0	91	80 %
<b>Total Garner / Gem</b>		<b>5,067</b>	<b>1,873</b>	<b>559</b>	<b>8</b>	<b>2,438</b>	<b>48 %</b>
Happy Lake	501	757	142	26	52	220	29 %
Happy Lake	502 B	120	37	17	0	55	46 %
Happy Lake	503	451	84	60	1	144	32 %
Happy Lake	504	511	42	191	2	235	46 %
Happy Lake	507 A	772	96	108	0	204	26 %
Happy Lake	507 B	50	12	7	0	19	38 %
Happy Lake	510	268	142	0	0	142	53 %
Happy Lake	511	672	270	29	0	299	44 %
Happy Lake	512	1,118	386	111	0	498	45 %
Happy Lake	513	246	22	59	11	92	37 %
Happy Lake	514	316	120	13	0	132	42 %
Happy Lake	515	562	176	17	0	193	34 %
Happy Lake	516	853	121	118	3	242	28 %
Happy Lake	517	607	108	95	3	206	34 %
Happy Lake	518	422	137	59	21	216	51 %
<b>Total Happy Lake</b>	Blocks 502 A, 519, and 520 have been deleted from the calculations as only experimental Caribou harvests were implemented	<b>7,724</b>	<b>1,905</b>	<b>911</b>	<b>93</b>	<b>2,896</b>	<b>37 %</b>
<b>TOTAL ALL</b>		<b>12,792</b>	<b>3,778</b>	<b>1,470</b>	<b>101</b>	<b>5,334</b>	<b>42 %</b>

<u>Operating Area</u>	<u>Block #</u>	<u>Total Block Area (Ha)</u>	<u>Residual Immature (Ha)</u>	<u>Residual Mature (Ha)</u>	<u>Residual Non Productive (Ha)</u>	<u>Total Residual (Ha)</u>	<u>Percent Total Residual</u>
Garner / Gem	2201	1,727	169	638	219	1,026	59 %
Garner / Gem	2202	260	47	150	24	221	85 %
Garner / Gem	2204	1,227	110	271	126	506	41 %
Garner / Gem	2205	340	157	80	19	256	75 %
Garner / Gem	509A	1,288	199	451	274	924	72 %
Garner / Gem	GG-01	111	74	0	12	87	78 %
Garner / Gem	GG-02	115	16	75	12	103	90 %
<b>Total Garner / Gem</b>		<b>5,067</b>	<b>771</b>	<b>1,667</b>	<b>686</b>	<b>3,124</b>	<b>62 %</b>
Happy Lake	501	757	19	201	86	306	40 %
Happy Lake	502 B	120	1	54	34	88	74 %
Happy Lake	503	451	8	136	176	321	71 %
Happy Lake	504	511	64	171	91	326	64 %
Happy Lake	507 A	772	22	182	283	488	63 %
Happy Lake	507 B	50	2	17	21	40	79 %
Happy Lake	510	268	91	50	79	220	82 %
Happy Lake	511	672	143	156	144	442	66 %
Happy Lake	512	1,118	0	498	152	650	58 %
Happy Lake	513	246	11	81	22	114	46 %
Happy Lake	514	316	0	132	43	176	56 %
Happy Lake	515	562	0	193	103	296	53 %
Happy Lake	516	853	22	220	186	428	50 %
Happy Lake	517	607	24	183	162	369	61 %
Happy Lake	518	422	183	33	54	270	64 %
<b>Total Happy Lake</b>	Blocks 502 A, 519, and 520 have been deleted from the calculations as only experimental Caribou harvests were implemented	<b>7,724</b>	<b>589</b>	<b>2,307</b>	<b>1,634</b>	<b>4,533</b>	<b>59 %</b>
<b>TOTAL ALL</b>		<b>12,792</b>	<b>1,360</b>	<b>3,974</b>	<b>2,320</b>	<b>7,657</b>	<b>60 %</b>

## Value 1.2 Species Diversity

Goal	Indicator	Target
1.2.1 Protect vulnerable, threatened and endangered (VTE) species	<p>1.2.1.1 Percent of proposed harvest blocks subject to pre-harvest assessment</p> <p>1.2.1.2 Proportion of pre-harvest assessment crews trained in the recognition/identification of VTE species and habitats</p> <p>1.2.1.3 Proportion of identified VTE for which appropriate management action have been taken</p>	<p>1.2.1.1.1 100% of all blocks proposed in each annual plan subject to pre-harvest assessment</p> <p>1.2.1.2.1 100% of pre-harvest assessment crews trained in the recognition and identification of VTE species</p> <p>1.2.1.3.1 Protect 100% of sites where VTE plant species are identified</p> <p>1.2.1.3.2 Specific management strategies for all identified VTE species for FML 01 to be prioritized and developed with the appropriate expert by 2002</p>
<p><b>2001 – 2002 Monitoring Goal 1.2.1</b></p> <p>1.2.1.1.1 Pre-Harvest Assessment (PHA) surveys are being conducted based on the draft guidelines pending approval by MC. Data collected during the PHA is compiled and presented in the harvest block summary reports in the annual plan.</p> <p>In the 2002 Operating and Renewal Plan, there were 98 potentially active harvest blocks of which 88 (90%) received a PHA. The following is a breakdown of the types of surveys and the active status of the blocks</p> <ul style="list-style-type: none"> <li>• All (10 or 10%) of the unsurveyed blocks were fuelwood blocks designated for less than 300 cubic metres. There was only 1 of these blocks (1% of potentially active) that was active.</li> <li>• There were 16 potentially active harvest blocks ( 16%) which received a PHA utilizing the pre 2000 procedures</li> <li>• There were 72 potentially active harvest blocks ( 74%) which received a PHA utilizing the draft PRA guidelines pending approval by MC</li> </ul> <p>1.2.1.2.1 All five of the pre-harvest assessment crew members were trained in the identification of VTE plant species</p> <p>1.2.1.3.1 There were no sites identified containing VTE species; therefore, no protection strategies were required</p> <p>1.2.1.3.2 Woodland Caribou (classified as threatened) is the only VTE species with a specific management strategy developed to date. The management strategy is specific to the Owl Lake caribou herd only. Work is ongoing to determine the range of other herd(s) in the northern portion of FML 01 and beyond.</p>		

Goal	Indicator	Target
1.2.2 Maintain an adequate range of habitats at the stand and landscape levels across FML 01 to sustain species diversity	1.2.2.1 Area of habitat expressed as number of habitat units for selected representative species and species guilds	1.2.2.1.1 Habitat units for each selected species not to fall below the following as a result of forest management activities: Caribou: Elk: Moose: Marten: Magnolia Warbler: Pileated Woodpecker:
<b>2001 – 2002 Monitoring Goal 1.2.2</b>  Establishment of protocols, development of baseline data or measurement tools has not yet been developed for this indicator(s). Existing HSI models will need to be revised in order to run on the new data fields in the pending FRI for FML 01. Another option would be to develop wildlife indices in the scenario-planning project being initiated by the MBMF. Reporting on this indicator(s) is anticipated to commence in 2004 to 2006.		
Goal	Indicator	Target
1.2.3 Maintain the Owl Lake woodland caribou herd.	1.2.3.1 Number of habitat units for the winter range of Owl Lake woodland caribou herd  1.2.3.2 Continued partnership in the Integrated Forestry / Woodland Caribou Management Committee	1.2.3.1.1 Maintain 67% of the current 36,000 (high) HU (where high $\geq 0.8$ HU) in Zone 1 as specified in the Integrated Forestry / Woodland Caribou Management Strategy (TAEM, 1995)  1.2.3.2.1 Continue to be an active and supporting partner in the committee to ensure it continues to function
<b>2001 – 2002 Monitoring Goal 1.2.3</b>  1.2.3.1.1 There has been no harvesting activity in Zone 1 since the establishment of the management strategy except for two small experimental harvests in Zone 1B. The effect of these harvests on the high habitat units cannot accurately be determined, as the original figure of 36,000 high HU was an approximate number. The Integrated Woodland Caribou Committee is also reevaluating the location of Zone 1A in relation to its location in Zone 1; therefore, the high HU will have to be recalculated for a baseline position once a new Zone 1A has been finalized.		
<b>Zone</b>	<b>1995 High HU</b>	<b>2001 High HU</b>
1A	11,000	11,672.5
1B	24,000	24,005.4
<b>Total</b>	<b>36,000</b>	<b>35,677.9</b>
		<b>% of 1995 High HU</b>
		106
		100
		<b>99</b>
1.2.3.2.1 Tembec has provided continuing support to the Woodland Caribou Management Committee through active participation of the Environment Director, Divisional Forester and Operations Planning Forester through committee meetings and field activities. The committee is currently participating in the development of a Road Management Plan for the Happy Lake area and an operational harvest trial within the Owl Lake herd range.		

## Value 1.3 Genetic Diversity

Goal	Indicator	Target
1.3.1 Renewal of harvested areas such that regeneration and on-going stand dynamics and growth results in new forest stands with stand composition and genetic diversity within the range of natural variability	<p>1.3.1.1 Source for seed and/or seedlings utilized in forest renewal establishment for FML 01</p> <p>1.3.1.2 Utilization of commercial tree genetic material in tree propagation for FML 01</p> <p>1.3.1.3 Distribution of commercial tree establishment from provincial tree improvement sources, natural seed collection within seed zone and regeneration from local site seed source</p>	<p>1.3.1.1.1 100% of seed and/or seedling stock established on FML 01 planted within the same provincial seed zone</p> <p>1.3.1.1.2 Average of 3% - 5% of dead and live standing volume left on-site in a variety of configurations</p> <p>1.3.1.2.1 100% compliance with provincial MC Tree Improvement Program</p> <p>1.3.1.3.1 Natural regeneration: &gt;25%</p> <p>1.3.1.3.2 Artificial regeneration using tree improvement sources: &lt;25%</p> <p>1.3.1.3.3 Artificial regeneration using seeds collected within seed zone: &lt;50%</p>
<b>2001 – 2002 Monitoring Goal 1.3.1</b> <p>1.3.1.1.1 100% of all seed and/or seedling stock established on FML 01 was from the same provincial seed zone in which it was used</p> <p>1.3.1.1.2 A Work Instruction for the maintenance of in block stand structure was instituted at the beginning of fiscal 2003. In preparation for the monitoring of this target, a protocol has been designed and is currently being tested. Reporting will include interior stand structure for completed harvest blocks and interior and residual exterior structure at the completed operating area level. Monitoring will include analysis using GIS for residual structures that are large enough to be digitized and identified, and using depletion photo interpretation for structures that are too small for GIS delineation.</p> <p>Detailed tables for the Garner / Gem and Happy Lake operating areas are available in 1.1.5.1.1.</p> <p>1.3.1.2.1 Forest renewal activities were 100% compliant with provincial MC Tree Improvement Program</p> <p>1.3.1.3.1 Natural regeneration: 20%. The percent of natural regeneration has decreased from 56% in 2001, primarily due to a dramatic decrease in total harvesting and seedling growing contracts being awarded prior to the decreased harvest being known.</p> <p>1.3.1.3.2 Artificial regeneration (tree planting) using tree improvement sources: 1%</p> <p>1.3.1.3.3 Artificial regeneration (tree planting) using seeds collected within seed zone: 79%. The percent of artificial regeneration has increased from 44% in 2001, primarily due to a dramatic decrease in total harvesting and seedling growing contracts being awarded prior to the decreased harvest being known.</p>		



## Criterion 2: Forest Ecosystem Condition & Productivity

### Value 2.1 Disturbance and Stress

Goal	Indicator	Target
2.1.1 Reduce losses of forest productivity due to fires, insects and diseases while recognizing that these natural processes have and will continue to influence the ecosystem processes of FML 01	2.1.1.1 Ten year average area of productive forest depleted through forest fire	2.1.1.1.1 Reduce 10 year average area of productive forest depleted through forest fire to 0.2% - 0.3% (50% of historical levels) of the total productive land base
	2.1.1.2 MC fire detection and suppression success	2.1.1.2.1 Increase 5 year average of fires detected, at less than 0.5 hectares or final costs and losses less than \$25,000.00, by 10 %  2.1.1.2.2 Increase 5 year average of fire suppression, within the first burning period or final costs and losses less than \$25,000.00, by 10%
	2.1.1.3 Ten year average area of productive forest classified as “severe” or higher (insect infestation)	2.1.1.3.1 Reduce 10 year average area of productive forest classified by MC as “severe” or higher (insect infestation) by 0.2% - 0.3% of the productive land base
	2.1.1.4 Areas recommended for treatment from MC insect surveys	2.1.1.4.1 100% treatment of all recommended areas by MC
	2.1.1.5 Level of productive forest salvage harvested in insect and disease infected areas	2.1.1.5.1 Salvage 100% of economically viable areas within 5 years of MC survey results reaching severe or higher classification

#### 2001 – 2002 Monitoring Goal 2.1.1

2.1.1.1.1 The average annual productive hectares lost to fire is 3683 (productive losses have only been calculated on the past 6 years as 1997 was the first year where productive hectares were determined) or an average annual loss of 0.6% of the 598,057 productive hectares on FML 01. There is a variance of 3 fires comparing the Regional numbers used in 2.1.1.2.1 and the total hectares calculated by head office. As these fires would be small in size, it should not make a significant difference to the numbers reported here.

Decade	Total Hectares Lost	Average Annual Hectare Loss	Total Productive Hectares Lost	Avg Annual Productive Hectares Lost
2000-2009	113 (3 years only)	38 (3 year avg.)	52 (3 years only)	17 (3 year avg.)
1990-1999	28,954	2,895	22,048 (3 years only)	7,349 (3 year avg.)

1980-1989	178,692	17,869	not available	not available
1970-1979	41,011	4,101	not available	not available
1960-1969	9,753	975	not available	not available
1950-1959	18,568	1,857	not available	not available
1940-1949	26,635	2,664	not available	not available
1930-1939	93,868	9,387	not available	not available
1920-1929	203,726	20,373	not available	not available
<b>Total</b>	<b>601,308</b>	<b>7,245</b>		

2.1.1.2.1 The 2001/2002 average was 81% (44 of 54) of the fires detected at less than 0.5 hectares. This is a 17% reduction over the 1996-2000 average of 64% (60 of 94)

2.1.1.2.2 The 2001/2002 average was 81% (44 of 54) of the fires under control within the next burning period. This is a 7% decrease of fire suppression success over the 1996-2000 average of 88% (83 of 94)

<b>Year</b>	<b>Total Fires</b>	<b>Detected &lt;0.5%</b>	<b>Percent Detected &lt;0.5 Ha</b>	<b>Under Control 1<sup>st</sup> Burn Period</b>	<b>Percent Under Control</b>
1996 – 2000	94	60	64%	83	88%
2001	10	8	80%	10	100%
2002	44	36	82%	34	77%
2001 – 2005	54	44	81%	44	81%

2.1.1.3.1 Establishment of protocols, development of baseline data or measurement tools has not yet been developed for this indicator(s). Reporting on this indicator(s) is anticipated to commence in 2004 to 2006.

2.1.1.4.1 An aerial insecticide application was once again recommended in the Manigotagan area by Manitoba Conservation. The recommendation was not pursued due concerns raised during a community information meeting, conducted in 2001, which reviewed a proposed spray program. Of the areas recommended for treatment, 0% was treated.

2.1.1.5.1 Severe or greater Spruce Budworm infestation areas have been steadily declining on the FML over the past few years. Beginning in 2000, the only severe infestation areas are located in the Manigotagan / Hollow Water First Nation / Lake Winnipeg East Road / Observation Point areas. These areas are also showing a decline because for the first time in almost two decades, there were no areas identified in 2002 that were severe or greater. The following areas were identified as having severe or greater Spruce Budworm infestation from 1998 to 2002:

- Bird Lake – Immature wood was sprayed for protection. No salvage operations planned. Infestation levels declined beginning in 1999
- Garner/Gem Lakes – Salvage harvest conducted
- Happy Lake – Salvage harvest conducted
- Hay Bay - Immature wood was sprayed for protection. No salvage operations planned. Infestation levels declined beginning in 1999
- Long Lake North - Located around cottage subdivision. Infestation levels declined beginning in 1999. No salvage operations planned
- Manigotagan/Hollow Water First Nation/Lake Winnipeg East road – Spraying recommended but not conducted due to community concerns. Salvage operations will have to be addressed through joint planning with the Hollow Water TAAC
- Manigotagan River - The area is contained within Manigotagan River Park Reserve. The area is closed to timber harvesting. Infestation levels declined beginning in 1999
- Observation Point – Identified as Area of Special Interest for protected area program. No salvage operation planned. Infestation levels declined beginning in 2002
- O’Hanley River – Infestation levels declined beginning in 2000. Identified as part of next long term plan
- Quesnel/Turtle Lake – Within experimental harvest area proposed for Owl Lake caribou herd

- Quesnel Lake north – Scheduled for operation in 2004. Infestation levels declined beginning in 1999
- Rice /Horseshoe Lakes - Salvage operations ongoing
- Sandy River – Burnt in forest fire. Fire salvage conducted post burn
- Wanipigow Lake – Regenerating harvest area. Sprayed for protection. No salvage operations planned

## Value 2.2 Ecosystem Resilience

Goal	Indicator	Target
2.2.1 Renewal of harvested areas such that regeneration and on-going stand dynamics and growth results in new forest stands with stand composition within the range of that expected from natural disturbance when considered across the range of harvested and renewed sites	<p>2.2.1.1 Harvested area successfully reforested and certified as achieving site renewal objectives at 7 year regeneration survey</p> <p>2.2.1.2 Harvested area successfully reforested and certified as achieving site renewal objectives at 14 year FTG survey</p>	<p>2.2.1.1.1 100% of harvested areas successfully regenerated</p> <p>2.2.1.2.1 100% of harvested areas successfully classified as FTG</p>

### 2001 – 2002 Monitoring Goal 2.2.1

2.2.1.1.1 - 97% (3815 hectares) of areas undergoing regeneration surveys achieved provincial regeneration standards. The 3% (129 hectares) of the regeneration surveys that did not achieve provincial regeneration standards break down as follows:

- There were 2 naturally regenerated blocks (129.3 hectares) that were assessed as not sufficiently regenerated (NSR) and have been prescribed for fill-in planting
- There were an additional 3 artificially regenerated blocks (206 hectares) that achieved regeneration standards but had low stocking numbers and have been prescribed for fill-in planting as well

2.2.1.2.1 - 50% of areas undergoing FTG surveys achieved provincial FTG standards. The FTG survey procedures are new and areas of concern have been identified. MC has set up a committee to review the FTG procedures in relation to the regeneration survey standards

## Value 2.3 Extant Biomass: Net Biomass Production

Goal	Indicator	Target
2.3.1 Maintain and/or enhance productivity of Forest Types and age classes	2.3.1.1 Average mean annual increment ( $m^3/ha/yr$ )	<p>2.3.1.1.1 Initiate establishment of PSP by the year 2001 as defined by the Forest Land Inventory Technical Advisory Committee (FLITAC)</p> <p>2.3.1.1.2 No long-term decrease in mean annual increment measured within established PSP</p>

<b>2001 – 2002 Monitoring</b>		
2.3.1.1.1 Establishment of a permanent sample plot program has been put on hold until a comprehensive inventory program can be developed with MC		
2.3.1.1.2 No monitoring can be conducted until the PSP program, described above, has been implemented		

## Criterion 3: Conservation of Soil and Water Resources

### Value 3.1 Physical Environmental Factors

Goal	Indicator	Target
3.1.1 Minimize loss of gross productive forest land as a result of Tembec operations	3.1.1.1 Loss of gross productive forest land base	3.1.1.1.1 Loss of gross productive forest land base not to exceed 0.58 km/km <sup>2</sup> of each watershed due to conversion of land to Tembec forest access roads
<b>2001 – 2002 Monitoring Goal 3.1.1</b>		
3.1.1.1.1 There were no watersheds in FML 01 which exceeded the target road density of 0.58 km/km <sup>2</sup> . Complete data by watershed is provided in 1.1.3.3.1		
Goal	Indicator	Target
3.1.2 Maintain soil productivity within forest operating areas where forest harvesting, renewal and temporary (Class 3 in-block roads) access development have occurred	<p>3.1.2.1 Harvested sites with significant soil compaction, rutting or displacement</p> <p>3.1.2.2 Harvested areas successfully reforested and certified as achieving site renewal objectives at 7 year regeneration survey</p> <p>3.1.2.3 Percentage of potentially erodable sites treated according to Environmental Management System procedures</p> <p>3.1.2.4 Retention of soil nutrient sources on site in the form of tree limbs and tops left from logging activity</p>	<p>3.1.2.1.1 No incidence of sites assessed where rutting was not kept to a minimum</p> <p>3.1.2.2.1 100% of sites successfully regenerated within cutblocks including all Class 3 in-block roads and landings</p> <p>3.1.2.3.1 100% of potentially erodable sites treated according to Environmental Management System procedures for harvesting, forest renewal and road construction</p> <p>3.1.2.4.1 All (100%) logging slash including tree limbs and tops to be distributed across cutover areas</p>

**2001 – 2002 Monitoring Goal 3.1.2**

3.1.2.1.1 There were 28 sites assessed and 4 sites (14%) were found to have excessive rutting

3.1.2.2.1 This target cannot be assessed until the 7 year regeneration survey (2008); however, 97% of 2002 regeneration surveys achieved provincial regeneration standard

3.1.2.3.1 There were 6 sites requiring erosion protection identified in the 2002 Annual Plan. 100% of the sites were protected as prescribed. Only 1 audit was conducted as only 1 site was active during 2002.

3.1.2.4.1 There were 28 sites assessed and no sites were found (100% compliance) where limbs and tops were not sufficiently spread across the harvest block

Goal	Indicator	Target
3.1.3 Prevent long-term alterations to surface water and drainage patterns in wetland ecosystems	3.1.3.1 Areas significantly disturbed as a result of increases / decreases in water levels	3.1.3.1.1 No long-term disturbance to hydrologically sensitive sites as a result of flooding or drawdown caused by access development, harvesting or forest renewal activities

**2001 – 2002 Monitoring Goal 3.1.3**

3.1.3.1.1 Establishment of protocols, development of baseline data or measurement tools has not yet been developed for this indicator(s). Reporting on this indicator(s) is anticipated to commence in 2004 to 2006.

Goal	Indicator	Target
3.1.4 Maintain water quality in forested watersheds	<p>3.1.4.1 Exposure of ground surface adjacent to water bodies which could result in impairment of water quality</p> <p>3.1.4.2 Percent of gross productive forest area in recently disturbed condition (within 7 years of harvest and/or fire) (i.e. harvested and / or burned)</p>	<p>3.1.4.1.1 100% compliance to ground disturbance guidelines (e.g. buffer and stream crossing guidelines)</p> <p>3.1.4.2.1 Not more than 30% of the gross productive forest area within a watershed to be in a “recently disturbed” condition at any time.</p>

**2001 – 2002 Monitoring Goal 3.1.4**

3.1.4.1.1 There were 28 sites assessed and no sites were found (100% compliance) where the prescribed buffer was not adhered to and no sites were found (10% compliance) where siltation into a waterbody was evident

3.1.4.2.1 There were no watersheds where more than 30% of the gross productive forest area was in a “recently disturbed” condition.



## 2002 FML 01 Watershed Productive Area Disturbance Analysis

Minor Watershed Name	Total Area (ha)	Total Productive Area (ha)	Productive Area Disturbed by Fire (ha)	Productive Area Disturbed by Harvest (ha)	Total Productive Area Disturbed (ha)	Percent % Disturbed	Productive Area Remaining (ha)
MANIGOTOGAN RIVER LOWER REGION	50,923.34	37,719.75	10,019.98	201.35	10,221.33	<b>27.1%</b>	3,929.99
SANDY RIVER	35,527.95	25,992.16	4,221.12	112.5959	4,333.72	<b>16.7%</b>	6,162.75
LOON STRAIT-RABBIT POINT REGION	17,342.78	8,397.25	1.12	1,282.24	1,283.36	<b>15.3%</b>	4,086.45
TRAVERSE BAY-OBSERVATION POINT	24,770.10	11,960.79	1,571.38	73.8084	1,645.19	<b>13.8%</b>	5,454.47
BLACK RIVER LOWER REGION	41,443.93	30,731.80	3,708.02	226.47	3,934.49	<b>12.8%</b>	7,914.32
WANIPIGOW RIVER LOWER REGION	20,639.46	14,789.91	1,163.56	143.0969	1,306.66	<b>8.8%</b>	4,705.73
MANIGOTOGAN RIVER UPPER REGION	51,894.61	35,165.41	2.01	2,776.68	2,778.69	<b>7.9%</b>	12,245.18
GARNER LAKE	23,589.38	16,077.55	2.79	1,055.01	1,057.80	<b>6.6%</b>	6,079.47
ENGLISH BROOK	23,666.52	15,805.22	702.61	88.92	791.53	<b>5.0%</b>	6,312.59
MOOSE RIVER	24,673.76	14,921.85	1.81	550.15	551.96	<b>3.7%</b>	7,046.08
WANIPIGOW RIVER UPPER REGION	41,344.95	29,534.58	8.15	1002.1885	1,010.34	<b>3.4%</b>	11,368.62
BEAVER CREEK	53,202.57	36,159.48	35.58	1,195.11	1,230.69	<b>3.4%</b>	9,617.16
O'HANLEY RIVER	43,301.77	30,727.36	797.62	218.3815	1,016.00	<b>3.3%</b>	11,835.83
PETERSON CREEK							

	15,928.17	11,177.34	1.61	323.6118	325.22	<b>2.9%</b>	4,485.08
GOLD CREEK	10,713.55	7,567.06	1.43	186.53	187.97	<b>2.5%</b>	3,019.82
LEE RIVER	7,242.60	5,300.78	2.83	94.21	97.04	<b>1.8%</b>	2,072.96
OISEAU RIVER LOWER REGION	39,006.11	26,134.95	5.31	352.3399	357.65	<b>1.4%</b>	11,346.35
EAGLENEST REGION	10,323.76	8,058.32	74.28	5.84	80.11	<b>1.0%</b>	2,994.49
BLACK ISLAND REGION	22,914.46	11,923.08	0.20	108.43	108.63	<b>0.9%</b>	6,692.58
OISEAU RIVER MIDDLE REGION	11,867.89	7,375.36	1.16	40.0183	41.18	<b>0.6%</b>	3,518.67
GREAT FALLS REGION	79,027.24	53,607.15	42.03	154.15	196.18	<b>0.4%</b>	23,437.95
BROADLEAF RIVER	17,561.09	10,507.31	0.45	37.30	37.75	<b>0.4%</b>	5,227.45
CAT CREEK	11,871.57	8,769.07	0.62	15.84	16.46	<b>0.2%</b>	3,545.48
LAC DU BONNET REGION	10,711.67	8,767.46	2.90	10.57	13.47	<b>0.2%</b>	3,203.54
BLACK RIVER UPPER REGION	38,551.09	23,509.40	26.27	1.97	28.24	<b>0.1%</b>	11,536.45
MASKWA RIVER	57,147.07	42,302.58	11.95	1.18	13.14	<b>0.0%</b>	17,124.61
RICE RIVER	37,925.09	23,421.39	5.13		5.13	<b>0.0%</b>	11,336.53
BLOODVEIN RIVER LOWER REGION	31,315.74	14,639.03	0.20		0.20	<b>0.0%</b>	9,395.16
BLOODVEIN RIVER UPPER REGION	1,691.79	710.41	-		-	<b>0.0%</b>	507.49
GAMMON RIVER LOWER REGION	33,247.66	19,768.59	-		-	<b>0.0%</b>	9,974.30
GAMMON RIVER UPPER REGION	2,555.93	1,709.33	-		-	<b>0.0%</b>	1,533.56
OBUKOWIN LAKE	6,756.30	3,018.93	-		-	<b>0.0%</b>	2,026.89

RYERSON LAKE	2,192.05	1,654.48	-		-	<b>0.0%</b>	657.60
<b>Total Hectares</b>	<b>900,871.92</b>	<b>597,905.13</b>	<b>22,412.12</b>	<b>10,257.99</b>	<b>32,670.11</b>	<b>5.5%</b>	<b>230,395.58</b>

<b>Goal</b>	<b>Indicator</b>	<b>Target</b>
3.1.5 Effectively control Waste Generation / Disposal of : used oil, lubricants, used chemicals, domestic garbage, industrial garbage, solid waste, domestic sewage	<p>3.1.5.1 Number of reportable spills associated with the transportation, storage and handling of fuel and operation of machinery</p> <p>3.1.5.2 Number of reportable spills reported</p>	<p>3.1.5.1.1 100% of reportable spills reported</p> <p>3.1.5.2.1 50% reduction of reportable spills</p>

### **2001 – 2002 Monitoring Goal 3.1.5**

3.1.5.1.1 There were no reportable spills in 2002. A process was initiated in 2003 to track all spills regardless of whether they were reportable (>50 litres) or not. Results of this more comprehensive tracking will be reported in 2003.

3.1.5.2.1 There were no reportable spills in 2002. This is a 100% decrease in reportable spills in 2002 (0 reportable spills) over 2001 (2 reportable spill). The historical spill tracking incidence is as follows:

- 2002 – 0 reportable spills
- 2001 – 2 reportable spills
- 2000 – 1 reportable and 1 non-reportable spill

## **Value: 3.2 Policy and Protection Forest Factors**

<b>Goal</b>	<b>Indicator</b>	<b>Target</b>
3.2.1 Manage sensitive sites (water: riparian zones, lakes, ephemeral streams, and wetlands; soil: steep slopes, wet soils and shallow soils over bedrock) with a high priority placed upon soil and water conservation	3.2.1.1 Areas of forested landscape managed primarily for soil and water conservation	<p>3.2.1.1.1 Identify all (100%) sensitive sites requiring soil and water protection through joint planning, pre-harvest surveys and other available sources of information</p> <p>3.2.1.1.2 100% of sensitive sites protected and / or maintained according to Environmental Management System procedures</p>

### **2001 – 2002 Monitoring Goal 3.2.1**

3.2.1.1.1 There were 2 sensitive sites requiring soil and water protection identified in the 2002 Annual Plan.

A community based joint planning process has been initiated through a pilot program in Hollow Water First Nation. A Traditional Area Advisory Committee (TAAC) has been developed to meet with Tembec on a bi-weekly basis. The process has yet to identify any site specific sensitive sites; however, operations have been curtailed in some traditional areas, at the request of the TAAC, until some concerns over the strategic direction being undertaken can be resolved. The following is listing of meetings that occurred in 2003:

- There were 22 meetings, involving 29 Tembec staff, with Hollow Water First Nation
- There were 7 meetings, involving 12 Tembec staff, with Peguis First Nation
- There were 7 meetings, involving 12 Tembec staff, with Little Black River First Nation
- There were 4 meetings, involving 6 Tembec staff, with Sagkeeng First Nation
- There were 9 meetings, involving 11 Tembec staff, with trapper groups, northern affairs communities and other First Nation communities
- There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives

3.2.1.1.2 100% of identified sensitive sites were protected as harvest operations did not take place in either of the sensitive site areas. As no operations took place in the identified areas, no audits were conducted to confirm compliance.

<b>Goal</b>	<b>Indicator</b>	<b>Target</b>
3.2.2 Adhere to all provincial and federal legislation, related to forest management activities. Operate within policies and guidelines related to forest management activities including: road construction and stream crossing developments	3.2.2.1 Provincial and federal procedures, approvals, permits and licenses	3.2.2.1.1 Receive and be in possession of all required approvals, permits and licenses prior to forest management activities
	3.2.2.2 Disciplinary actions	3.2.2.2.1 No occurrences of follow-up disciplinary action

### **2001 – 2002 Monitoring Goal 3.2.2**

3.2.2.1.1 All required approvals, permits and licenses were in place. The following summarizes the 2002 activities

- The Forest Management Licence is valid until 2008. The 10 year extension was not completed at the end of 1998 due to ongoing discussions regarding a new FML area and agreement. There is now only 6 years remaining in the evergreen agreement which was designed to never go below 10 years. Tembec has requested Manitoba to extend the Forest Management Licence Agreement, as described in the Agreement, because it is uncertain if the East Side Lake Winnipeg Land Use Study will be completed in time to renegotiate a new FML Agreement before the current Agreement expires
- Environment Act Licence 1557E was extended on annual operating and renewal plans for the calendar years 2001 and 2002 due to a request from MC to not pursue the licencing of a long term plan until the end of the East Side Lake Winnipeg Land Use Study.
- There is no long-term forest management plan in place due to a request from MC to not pursue the licencing of a long-term plan until the end of the East Side Lake Winnipeg Land Use Study being conducted by Manitoba.
- Annual Operating and Renewal Plans were approved by MC for calendar years 2001 and 2002

- Registration of the ISO 14001 Environmental Management System was maintained
- There were a total of 98 potentially active harvest blocks. Work Permits were obtained for all blocks that were activated in the year.
- There was only 1 active road construction sites. A Work Permit was obtained
- There were 14 Timber Sales issued a General Permit which were active outside of FML 01 in 2002. 100% of the Timber Sales outside of FML 01 were authorized under a General Permit
- There were 2 active watercourse crossing construction sites which were deemed non-navigable by the Canadian Coast Guard; therefore, no permits were required under the Navigable Waters Protection Act
- There were 3 active quarry sites with permits and an additional 11 permitted quarry sites that were not active
- There were 6 active forest renewal projects and 7 Work Permits issued
- There was a total of 28 sites/projects receiving an environmental audit, all of which had a Work Permit. In 2 instances, the permits were not available on site at the time of the audit
- There were 2 herbicide projects (ground site preparation and ground release) both of which were covered by one Pesticide Use Permit

3.2.2.2.1 There were no occurrences of follow-up disciplinary action in 2002

## Criterion 4: Forest Ecosystem Contributions to Global Ecological Cycles

### Value: 4.1 Contributions to Global Carbon Budget

Goal	Indicator	Target
4.1.1 Minimize loss of carbon storage capability of forest of FML 01 by Tembec Industries Inc	4.1.1.1 Area of forested and non-forested land  4.1.1.2 Current annual growth of the productive forest	4.1.1.1.1 Calculated linear facility density not to exceed 0.58 km/km <sup>2</sup> of a watershed  4.1.1.2.1 Maintain or increase MAI
<b>2001 – 2002 Monitoring Goal 4.1.1</b>  4.1.1.1.1 There were no watersheds in FML 01 which exceeded the target road density of 0.58 km/km <sup>2</sup> . The following table reports on the current road densities of all active permanent and temporary Tembec roads by watershed. Reforested, retired or decommissioned roads have been excluded from road density calculations.		
2002 ROAD DENSITY per WATERSHED ANALYSIS for FML 01*	Area of Watershed (km2)	Class 1 Roads (km) Class 2 Roads (km) Class 3A Roads (km) Class 3B Roads (km) Class 4 Roads (km) Class 4 Major Roads (km) Total Length of Road (km) Density of Roads per Watershed (km/km2) Remaining Length of Road (km) Total Length of Road Allowed (km)
Beaver Creek	532.03	- 30.08 18.77 20.39 73.66 - <b>142.90</b> <b>0.27</b> <b>165.67</b> 308.57
Black Island Region	229.14	29.64 - 0.11 0.06 13.80 1.81 <b>45.42</b> <b>0.20</b> <b>87.49</b> 132.90
Black River Lower Region	414.44	- 49.95 4.44 3.25 19.35 - <b>77.00</b> <b>0.19</b> <b>163.38</b> 240.37
Black River Upper Region	385.51	- 2.69 6.42 0.38 0.32 - <b>9.83</b> <b>0.03</b> <b>213.77</b> 223.60
Bloodvein River Lower Region	313.16	- - - - 4.29 - <b>4.29</b> <b>0.01</b> <b>177.35</b> 181.63
Bloodvein River Upper Region	16.92	- - - - - - <b>-</b> <b>-</b> <b>9.81</b> 9.81



Broadleaf River	175.61	-	-	-	-	-	-	-	-	-	101.85	101.85
Cat Creek	118.72	16.89	17.93	5.83	2.74	-	3.50	46.88	0.39	21.98	68.86	
Eaglenest Region	103.24	-	0.63	-	-	-	9.96	10.59	0.10	49.29	59.88	
English Brook	236.67	2.65	13.54	11.28	6.63	2.12	-	36.23	0.15	101.03	137.27	
Gammon River Lower Region	332.48	-	-	-	-	-	-	-	-	192.84	192.84	
Gammon River Upper Region	25.56	-	-	-	-	-	-	-	-	14.82	14.82	
Garner Lake	235.89	-	4.29	1.99	1.09	26.01	-	33.38	0.14	103.44	136.82	
Gold Creek	107.14	-	4.65	-	4.31	20.99	-	29.95	0.28	32.19	62.14	
Great Falls Region	793.56	21.12	9.86	12.83	-	56.43	49.27	149.50	0.19	310.76	460.27	
Lac Du Bonnet Region	107.12	-	-	-	-	2.08	6.24	8.32	0.08	53.81	62.13	
Lee River	72.43	-	-	-	-	9.68	-	9.68	0.13	32.32	42.01	
Loon Strait-Rabbit Point Region	173.43	24.30	3.35	-	5.40	25.53	-	58.57	0.34	42.02	100.59	
Manigotogan River Lower Region	509.23	-	14.26	5.58	11.35	31.53	-	62.72	0.12	232.63	295.36	
Manigotogan River Upper Region	518.95	-	17.28	1.19	2.09	32.90	-	53.45	0.10	247.54	300.99	
Maskwa River	571.47	10.95	20.06	31.04	6.62	4.04	32.98	105.68	0.18	225.77	331.45	
Moose River	246.74	0.02	8.20	-	2.58	5.04	-	15.84	0.06	127.27	143.11	
Obukowin Lake	67.56	-	-	-	-	-	-	-	-	39.19	39.19	
O'Hanley River	433.02	-	17.41	19.87	2.91	11.00	-	51.19	0.12	199.96	251.15	

Oiseau River Lower Region	<b>390.06</b>	-	25.80	-	0.42	6.85	15.68	<b>48.75</b>	<b>0.12</b>	<b>177.48</b>	226.24
Oiseau River Middle Region	<b>118.68</b>	-	0.55	-	7.66	1.27	-	<b>9.48</b>	<b>0.08</b>	<b>59.36</b>	68.83
Peterson Creek	<b>159.28</b>	-	18.12	-	6.57	28.29	9.32	<b>62.29</b>	<b>0.39</b>	<b>30.09</b>	92.38
Rice River	<b>379.25</b>	7.07	-	-	-	9.11	0.40	<b>16.58</b>	<b>0.04</b>	<b>203.39</b>	219.97
Ryerson Lake	<b>21.92</b>	-	6.27	-	-	-	-	<b>6.27</b>	<b>0.29</b>	<b>6.45</b>	12.71
Sandy River	<b>355.28</b>	-	43.41	4.70	17.09	25.71	-	<b>90.91</b>	<b>0.26</b>	<b>115.15</b>	206.06
Traverse Bay-Observation Point Region	<b>247.70</b>	-	3.84	-	-	30.96	-	<b>34.80</b>	<b>0.14</b>	<b>108.87</b>	143.67
Wanipigow River Lower Region	<b>206.39</b>	6.83	15.13	15.14	3.69	4.58	-	<b>45.37</b>	<b>0.22</b>	<b>74.34</b>	119.71
Wanipigow River Upper Region	<b>413.45</b>	-	24.12	1.02	20.34	54.41	-	<b>99.88</b>	<b>0.24</b>	<b>139.92</b>	239.80
<b>Total</b>	<b>9,012.01</b>	<b>119.47</b>	<b>351.41</b>	<b>140.20</b>	<b>125.57</b>	<b>499.94</b>	<b>129.15</b>	<b>1,365.74</b>	<b>0.15</b>	<b>3,861.23</b>	<b>5,226.97</b>
4.1.1.2.1 No monitoring can be conducted until the PSP program, described in 2.3.1.1.1, has been implemented											

Goal	Indicator	Target		
4.1.2 Optimize the use of recycled fiber in the papermaking process	4.1.2.1 Production of recycled pulp from the de-inking plant	4.1.2.1.1 Maintain or increase recycled pulp production from the current level of 100 metric tonnes/day		
<b>2001 – 2002 Monitoring Goal 4.1.2</b>				
4.1.2.1.1 There was a total of 30,762 tonnes of post consumer waste recycled pulp produced in 2002. This was an average of 85 tonnes of recycled fiber produced per operating day. This is down from 98, 97 and 89 tonnes respectively in 1999, 2000 and 2001. Recycled content for 1999 to 2002 was 20, 20, 19 and 18 percent respectively. The reduction in recycled pulp production is due to pulp quality problems within the de-inking plant				
Goal	Indicator	Target		
4.1.3 Reduce use of fossil fuels and subsequent generation of greenhouse gas emissions	4.1.3.1 Level of fuel usage	4.1.3.1.1 Reduction of fuel use of 5% / m <sup>3</sup> of wood harvest		
<b>2001 – 2002 Monitoring Goal 4.1.3</b>				
4.1.3.1.1 There was an estimated 707,396 litres of fuel used in timber harvesting, hauling and road construction operations on FML 01. There was an estimated 16,500 litres of fuel used on forest renewal projects on FML 01. There was a total of 112,163 cubic meters of timber harvested on FML 01. Of all fuel used on FML 01, there was an average of 6.45 liters of fuel used per cubic metre of timber harvested. This is a decrease of 1.19 litres of fuel used per cubic metre of timber harvested over 2001. This is a 16% decrease in litres of fuel per cubic metre harvested. The main reason for the decrease is shorter hauling distances in 2002 compared to 2001.				
Year	Harvest Volumes (M3)	Fuel consumption – Forest Renewal	Fuel Consumption – Harvest / Hauling	Litres Per Cubic Meter
2001	146,544	20,000	1,100,000	7.64
2002	112,163	16,500	707,396	6.45
<b>Value: 4.2 Forest Land Conversion</b>				
Goal	Indicator	Target		
4.2.1 Minimize conversion of forested land to non-forested status by Tembec Industries Inc and agriculture	4.2.1.1 Area of forested and non-forested land on FML 01 converted to permanent roads	4.2.1.1.1 Calculated linear facility density not to exceed 0.58 km/km <sup>2</sup> of a watershed  4.2.1.1.2 Develop an action plan to reclassify forested crown agriculture land to forest status		

<b>2001 – 2002 Monitoring Goal 4.2.1</b>		
4.2.1.1.1 There were no watersheds in FML 01 that exceeded the target road density of 0.58 km/km <sup>2</sup> . Specific road densities by watershed are listed in 4.1.1.1.1 above.		
4.2.1.1.2 No work has been done to date to reclassify forested crown agriculture land to forest status. An action plan has been developed in the EMS to address the issue and the MBMF has identified this as a project area for Phase III (2002 – 2006).		
<b>Goal</b>	<b>Indicator</b>	<b>Target</b>
4.2.2 Identify opportunities for forestation of marginal agricultural land	4.2.2.1 Area of forested land	4.2.2.1.1 Develop an action plan to identify/reclassify potential crown agriculture land for forestation
		4.2.2.1.2 Initiate forestation of cleared, abandoned agricultural land
<b>2001 – 2002 Monitoring Goal 4.2.2</b>		
4.2.2.1.1. No work has been done to date to identify/reclassify forested crown agriculture land for forestation. An action plan has been developed in the EMS to address the issue and the MBMF has identified this as a project area for Phase III (2002 – 2006).		
4.2.2.1.2 No forestation work can begin until 4.2.2.1.1 above has been completed		
<b>Value: 4.3 Contribution to Hydrological Cycles</b>		
<b>Goal</b>	<b>Indicator</b>	<b>Target</b>
4.3.1 Minimize alterations to surface water flow and accumulation regimes	4.3.1.1 Maintain ratio of surface water to land surface for FML 01	4.3.1.1.1 Area of surface water as related to land surface area for FML 01
<b>2001 – 2002 Monitoring Goal 4.3.1</b>		
4.3.1.1.1 A more representative means of relating surface water to land surface area change has not been developed. The only current means available is using the forest resource inventory data, which is only updated every 10 to 15 years. The current ratio for FML 01 is 47,283 hectares of water and 853,911 hectares of land or water representing 5.2% of FML 01. A new inventory will be available for comparison in 2003.		
<b>Goal</b>	<b>Indicator</b>	<b>Target</b>
4.3.2 Prevent long-term alterations to surface water and drainage patterns in wetland ecosystems	4.3.2.1 Areas significantly disturbed as a result of increases/decreases in water levels	4.3.2.1.1 No long-term disturbance to hydrologically sensitive sites as a result of flooding or drawdown caused by access development, harvesting or forest renewal activities

**2001 – 2002 Monitoring Goal 4.3.2**

4.3.2.1.1 Establishment of protocols, development of baseline data or measurement tools has not yet been developed for this indicator(s). Reporting on this indicator(s) is anticipated to begin in 2004 to 2006.

## Criterion 5: Multiple Benefits to Society

### Value: 5.1 Productive Capacity

Goal	Indicator	Target
5.1.1 Maintain sustainable timber harvest levels which are a driver for multiple benefits to society in FML 01	5.1.1.1 Actual harvest level compared to the determined sustainable timber harvest level	5.1.1.1.1 Ensure that the actual timber harvest volume does not exceed the determined sustainable harvest volume approved in the SFMP as determined through wood supply modeling over each five year period
<b>2001 – 2002 Monitoring Goal 5.1.1</b>  5.1.1.1.1 The following is the percent utilization of the Annual Allowable Cut (AAC) by species for FML 01. Spruce – 53%, jack pine – 32%, tamarack – 4%, ash – 27% and aspen – 4%. As spruce is the only species that approaches full utilization of the AAC at this time, it is the only species that is required to be balanced on a five-year basis. Spruce utilization for the first 4 years of the 1999 – 2003 harvest control period is 83% of the AAC.		
Goal	Indicator	Target
5.1.2 Maintain habitat to support wildlife species for economic, cultural, recreational and aesthetic values	5.1.2.1 Determined sustainable wildlife habitat units	5.1.2.1.1 Maintain determined HSU at or above the targets for representative species
<b>2001 – 2002 Monitoring Goal 5.1.2</b>  5.1.2.1.1 Establishment of protocols, development of baseline data or measurement tools has not yet been developed for this indicator(s). Reporting on this indicator(s) is anticipated to commence in 2004 to 2006. However, specific management prescriptions have been developed for the Owl Lake caribou herd and are reported in 1.2.3.1.1.		
Goal	Indicator	Target
5.1.3 Develop forest access to ensure long-term access for timber harvesting while considering other forest values	5.1.3.1 Volume of standing timber to which appropriate road access has been developed	5.1.3.1.1 Five year supply of standing timber matching seasonal wood flow requirements to be accessed at any given time

### 2001 – 2002 Monitoring Goal 5.1.3

5.1.3.1.1 Using a 1 kilometre buffer on class 1, 2, 3a and primary 4 roads there are 1.7 million metres of spruce and 1.6 million metres of pine available in cutting class 3, 4 and 5. If only ½ of the cutting class 3 volume is considered merchantable, there is approximately 1.2 million metres available for each of spruce and pine. For spruce this represents a 10 year supply and pine represents an 8-year supply at the current AAC levels.

An additional analysis, using merchantable volume in existing operating areas, yields 4.9 years of spruce and 4.1 years of pine at the current AAC level.

## Value: 5.2 Competitiveness of Timber and Non-timber Resource Industries

Goal	Indicator	Target
5.2.1 To operate Tembec Inc. to achieve a level of profitability necessary for sustainable operations	5.2.1.1 Earnings before interest, taxes, depreciation and amortization (EBITDA)	5.2.1.1.1 Achieve objective of EBITDA representing 25% of net sales
	5.2.1.2 Cash return on capitol employed (CROCE)	5.2.1.2.1 Achieve objective of 15% for CROCE
	5.2.1.3 Return on shareholders equity	5.2.1.3.1 Achieve objective of 14% return on shareholders equity

### 2001 – 2002 Monitoring

5.2.1.1.1 EBITDA of \$275.5 million equivalent to 9.3% on net sales of \$2,976.8 million compared to the objective of 25%. EDITDA in 2001 represented 17.8% of net sales

5.2.1.2.1 Cash return on undepreciated capitol was 6.2% with the last 5-year average equaling 12.3%, compared to the objective of 15%.

5.2.1.3.1 Return on shareholders equity was negative 12.6% with the last 5-year average equaling 4.5%, compared too the objective of 14%.

Goal	Indicator	Target
5.2.2 Ensure a competitive wood cost	5.2.2.1 Ranking with respect to cost of delivered wood	5.2.2.1.1 Be ranked in the top half of cost competitiveness in the central Canada assessment of forest industries

### 2001 – 2002 Monitoring

A mechanism to report on this target has not been identified at this time

Goal	Indicator	Target
5.2.3 Undertake sustainable forest management planning and activities in a manner that enables other timber-based industry opportunities to develop	5.2.3.1 Consultations with potentially affected forest-based industries	5.2.3.1.1 Involve / consult forest-based industries through forums such as: <ul style="list-style-type: none"> <li>• Joint planning with aboriginal communities in FML 01</li> <li>• AORP meetings in selected FML communities</li> <li>• SFMAC to meet at least 4 times per year</li> <li>• User Group meetings</li> </ul> Respond to all requests for consultation with individual operators and industry or business groups
<p><b>2001 – 2002 Monitoring Goal 5.2.3</b></p> <p>5.2.3.1.1 The following initiatives took place in 2002:</p> <p><b>First Nation Limited Partnership</b></p> <ul style="list-style-type: none"> <li>• There were 21 meetings, involving 31 Tembec staff, that dealt with strategic issues around Kiiwetino Ma”iingan, Gaa-bi-mooka”ang, and FNLP</li> <li>• There were 24 meetings, involving 24 Tembec staff, regarding the Junior Ranger program</li> <li>• There were a total of 45 meetings, involving 55 Tembec staff, regarding FNLP</li> </ul> <p><b>Community Based Planning</b></p> <ul style="list-style-type: none"> <li>• There were 22 meetings, involving 29 Tembec staff, with Hollow Water First Nation</li> <li>• There were 7 meetings, involving 12 Tembec staff, with Peguis First Nation</li> <li>• There were 7 meetings, involving 12 Tembec staff, with Little Black River First Nation</li> <li>• There were 4 meetings, involving 6 Tembec staff, with Sagkeeng First Nation</li> <li>• There were 9 meetings, involving 11 Tembec staff, with trapper groups, northern affairs communities and other First Nation communities</li> <li>• There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives</li> </ul> <p><b>Forest Based Industries</b></p> <ul style="list-style-type: none"> <li>• There were 3 meetings, involving 9 Tembec staff, with the South East Quota Holders Association regarding protected areas in south east Manitoba</li> <li>• There were 8 meetings, involving 13 Tembec staff, with forest products companies regarding chip and/or log exchange and/or purchase agreements</li> </ul> <p><b>Non-Forest Based Industries</b></p> <ul style="list-style-type: none"> <li>• There were 3 meetings, involving 5 Tembec staff, with a local outfitter the mining association and Ducks Unlimited</li> </ul> <p><b>Recreational Groups</b></p> <ul style="list-style-type: none"> <li>• There was 1 meeting, involving 2 Tembec staff, with the Manitoba Recreational Canoe Association membership</li> </ul> <p><b>Manitoba Model Forest</b></p> <ul style="list-style-type: none"> <li>• There were 27 meetings, involving 45 Tembec staff, with regard to the board of directors, working groups, steering committees and specific projects</li> </ul> <p><b>Environmental Non-Governmental Organizations</b></p> <ul style="list-style-type: none"> <li>• There were 4 meetings, involving 9 Tembec staff, with the Canadian Nature Federation dealing predominately with the protected area strategy for FML 01 and South East Manitoba</li> </ul>		



**Manitoba Conservation**

- There were 12 meetings / field tours, involving 21 Tembec staff, that dealt with operational review / approval / issues that were conducted primarily with the Eastern Region IRMT
- There were 17 meetings, involving 39 Tembec staff, conducted with MC Branches dealing primarily with administration issues

**Manitoba Government**

- There were 8 meetings, involving 12 Tembec staff, with primarily regarding First Nation initiatives

**Federal Government**

- There were 4 meetings, involving 4 Tembec staff, with federal ministers and departments regarding First Nation initiatives

**Tours and Presentations**

- There were 8 presentations, involving 11 Tembec staff, conducted in local schools, and Winnipeg high schools and universities.
- There were 3 field tours, involving 6 Tembec staff, conducted with Winnipeg high schools and universities
- There were 4 field tours, involving 13 Tembec staff, conducted with local communities and trappers
- There were 6 field tours, involving 11 Tembec staff, conducted with ENGO, MBMF visitors and local and provincial advisory groups

**Workshops / Symposiums**

- There were 14 workshops / symposiums, involving 25 Tembec staff over 45 days, attending and participating in local, provincial and national events

**Committees**

- There were 31 committee meetings conducted over 43 days, attended by 36 Tembec staff representing 49 man days, acting as committee members on local, provincial and national committees.

**Open Houses on the 2003 Operating and Renewal Plan**

There were 8 open houses / invitational meetings, involving 19 Tembec staff, conducted in the following locations to solicit input to the 2003 Operating and Renewal Plan

- Bissett trappers meeting – 2 attendees
- Bissett community – 9 attendees
- Sagkeeng – 5 attendees
- Lac Du Bonnet – 15 attendees
- Peguis – 11 attendees
- Hollow Water – 5 attendees
- Winnipeg open – 14 attendees
- Winnipeg ENGO meeting – 7 attendees

**Sustainable Forest Management Advisory Committee**

- There were 4 SFMAC meetings, involving 10 Tembec staff, conducted in 2002

**Summary**

- There were 259 meetings, tours and symposiums, involving 415 Tembec staff for 448 days/events, conducted in 2002

**Requests for Consultation**

Requests for consultation have been incorporated into the compilation above. Specific requests that were addressed in 2002 include:

- A request to meet with Manitoba Recreational Canoe Association membership
- A request from environmental groups to review the 2003 ORP and discuss other issues
- Requests to meet with First Nation communities on specific issues

Goal	Indicator	Target
5.2.4 Undertake SFM planning and activities in a manner that enables non-timber resource industry and small business opportunities to develop	5.2.4.1 Issues identified and dealt with	<p>5.2.4.1.1 Involve / consult all non-timber resource industries and small business with respect to Tembec activities including:</p> <ul style="list-style-type: none"> <li>• Joint planning with aboriginal communities in FML 01</li> <li>• Annual ORP meetings in selected FML communities</li> <li>• SFMAC to meet at least 4 times per year</li> <li>• User Group meetings</li> <li>• Respond to all requests for consultation with individual operators and industry or business groups</li> </ul> <p>5.2.4.1.2 Monitor number of issues identified and resolved</p>

**2001 – 2002 Monitoring Goal 5.2.4**

5.2.4.1.1 All meetings and consultation has been summarized in 5.2.3.1.1

5.2.4.1.2 The following woodlands related issues, listed in chronological order, were identified to the Company in 2002:

- A concern was brought forward that trappers were not consulted prior to the decommissioning of Sandy River East road. MC had conducted consultation with all trappers that had registered for the Manigotagan Community line. The concerned trappers had either not registered for the community line or were interested in securing an unallocated Registered Trap Line; therefore, MC did not have a registered contact to consult with.
- A concern was raised about the safety of Pointer Lake bridge because a cribbing was not supporting the bridge. The bridge had been replaced and new supports for a rail car bridge installed. The crib in question was no longer needed for bridge support but was left in place to assist in reducing stream side disturbance instead of excavating and removal.
- A report was received that a harvest contractor was operating without a permit and that he was causing extensive damage to the road. MC investigated and determined that the wood was harvested, under a valid permit, the year before and that the wood was just being moved at this time. Tembec hires a local contractor to repair the road damage.
- A concern was raised regarding breaches of gates at Beaver Creek, Gem Lake and Rainy Lake. Tembec met with MC and established a priority ranking to responding to damage or destruction of gates and established a gate protocol for the operation of gates regarding active and inactive periods.
- A trapper was upset that harvesting operations were taking place along PTH 304 and he was not consulted. Tembec staff met with the trapper, on site, and modified the harvest design to the trappers satisfaction.
- A concern was received regarding insecure loads on pulp trucks and the amount of pulpwood that had fallen off trucks along the road. A letter was sent to all hauling contractors reminding them to check and secure loads prior to entering the highway. An action plan to address the root cause of the problem has carried over to 2003.
- Concerns were raised regarding harvesting in trap lines in the Hollow Water traditional area. All harvesting operations, with the exception of Hollow Water contractors, were shut down until the issue could be resolved by the Hollow Water Traditional Area Advisory Committee.
- A complaint was received that a harvest contractor had messed up a mining claim grid by destroying grid markers. Tembec initiated a process with Mines Branch to receive updated mine claims every 6 months. Constraints were put on the contractor through the contractor review process.

## Value: 5.3 Contribution to Local, Provincial and National Economies of Timber and Non-timber Resource Sectors

Goal	Indicator	Target
5.3.1 Provide long-term economic opportunities for local communities	<p>5.3.1.1 Number of jobs resulting from on-going operation of the Tembec Woodlands and Mills</p> <p>5.3.1.2 Number and value of contracts awarded to enterprises in FML 01</p> <p>5.3.1.3 Offers of economic opportunity to FML communities</p>	<p>5.3.1.1.1 Report on training and employment by skill categories and community consistent with competitive operation of Tembec Woodlands and Mills</p> <p>5.3.1.2.1 Report on the number and value of contracts</p> <p>5.3.1.3.1 Make economic opportunities available to each FML community</p>
<b>2001 – 2002 Monitoring Goal 5.3.1</b>  <p>5.3.1.1.1 There were 2 permanent hires in 2002 as follows:            Trades persons / office – 1</p> <ul style="list-style-type: none"> <li>• Lockport</li> </ul> <p>Staff – 1</p> <ul style="list-style-type: none"> <li>• Lorette</li> </ul> <p>5.3.1.2.1 Silviculture (forest renewal) contracts for fiscal 2002 totaled \$417,251</p> <ul style="list-style-type: none"> <li>• 3 – tree planting– 2 Sagkeeng First Nation, 1 Manigotagan</li> <li>• 5 – site preparation / supervision – Pine Falls (one contractor)</li> <li>• 1 – trucking – R.M. Alexander</li> <li>• 1 – survey – Brokenhead</li> <li>• 1 – cone picking – Gull Lake</li> </ul> <p>Timber harvesting and road construction contracts for fiscal 2002 totaled \$4,887,135</p> <ul style="list-style-type: none"> <li>• Timber harvesting agreements: There were 83 agreements on FML 01 and 142 agreements outside FML 01</li> <li>• All weather road construction contracts: There was 1 contract on FML 01 and 0 contracts outside of FML 01</li> </ul> <p>5.3.1.3.1 New community economic opportunity efforts were as follows:            Hollow Water First Nation</p> <ul style="list-style-type: none"> <li>• Establishment of a new harvesting contractor</li> <li>• Establishment of a road construction agreement</li> </ul>		

## Value: 5.4 Non-timber Values

Goal	Indicator	Target
5.4.1 Undertake SFM planning and activities in a manner that enables non-timber resource industry and small business opportunities to develop	5.4.1.1 Issues identified and dealt with	<p>5.4.1.1.1 Involve / consult all non-timber resource industries and small business with respect to Tembec activities including:</p> <ul style="list-style-type: none"> <li>• Joint planning with aboriginal communities in FML 01</li> <li>• Annual ORP meetings in selected FML communities</li> <li>• SFMAC to meet at least 4 times per year</li> <li>• User Group meetings</li> <li>• Respond to all requests for consultation with individual operators and industry or business groups</li> </ul> <p>5.4.1.1.2 Monitor number of issues identified and resolved</p>
<b>2001 – 2002 Monitoring Goal 5.4.1</b>  5.4.1.1.1 All meetings and consultation has been summarized in 5.2.3.1.1  5.4.1.1.2 Woodlands related issues identified to the Company are listed in 5.2.3.1.2		
Goal	Indicator	Target
5.4.2 Provide opportunities for recreational activities	5.4.2.1 Road management plan for FML 01	5.4.2.1.1 Complete a road management plan for existing and proposed road networks which considers opportunities for recreational activities
<b>2001 – 2002 Monitoring Goal 5.4.2</b>  5.4.2.1.1 There were no new operating areas or road management plans developed in 2002. There are 3 previously approved road management plans active at Rainy Lake, Beaver Creek and Okimaw Lake.		
Goal	Indicator	Target
5.4.3 Provide opportunities for the pursuit of holistic and subsistence uses of the forest and respect current First Nations cultural values of the forest	5.4.3.1 Include identified special use areas and areas of concern into planning processes as they are brought forward during joint planning with First Nations and other public consultation processes	<p>5.4.3.1.1 Identify, develop mitigation, implement mitigation and monitor and report on identified special use areas and areas of concern</p> <p>5.4.3.1.2 Regular joint planning meetings</p>

### **2001 – 2002 Monitoring Goal 5.4.3**

5.4.3.1.1 There were 15 sites requiring Special Use protection identified in the 2002 Annual Plan. 100% of the sites were protected as prescribed. Only 1 audit was conducted as only 1 site was operated during 2002.

5.4.3.1.2 A community based joint planning process has been initiated through a pilot program in Hollow Water First Nation. A Traditional Area Advisory Committee has been developed to meet with Tembec on a bi-weekly basis. The process has yet to identify any site specific sensitive sites; however, operations have been curtailed in some traditional areas, at the request of the TAAC, until some concerns over the strategic direction being undertaken can be resolved. Discussions with Little Black River and Sagkeeng re also taking place to initiate a similar process in those communities. The following is a list of meetings that occurred in 2003:

- There were 22 meetings, involving 29 Tembec staff, with Hollow Water First Nation
- There were 7 meetings, involving 12 Tembec staff, with Peguis First Nation
- There were 7 meetings, involving 12 Tembec staff, with Little Black River First Nation
- There were 4 meetings, involving 6 Tembec staff, with Sagkeeng First Nation
- There were 9 meetings, involving 11 Tembec staff, with trapper groups, northern affairs communities and other First Nation communities
- There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives

## Criterion 6: Accepting Society's Responsibility for Sustainable Development

### Value: 6.1 Aboriginal and Treaty Rights

Goal	Indicator	Target
6.1.1 Meet contractual and legal obligations and respect aboriginal treaty rights	6.1.1.1 Meet provincial and federal legislation requirements	6.1.1.1.1 100% compliance of all regulatory requirements
<b>2001 – 2002 Monitoring Goal 6.1.1</b>  6.1.1.1.1 There was 100 % compliance of all regulatory requirements in 2002  All regulatory requirements were within compliance; however, the following issue was dealt with: <ul style="list-style-type: none"> <li>Concerns were raised regarding harvesting in trap lines in the Hollow Water traditional area. All harvesting operations, with the exception of Hollow Water contractors, were shut down until the issue could be resolved by the Hollow Water Traditional Area Advisory Committee.</li> </ul>		
Goal	Indicator	Target
6.1.2 Create awareness of Tembec staff about aboriginal and treaty rights and cultural awareness (treaty/cross cultural)	6.1.2.1 Tembec staff participating in awareness workshops	6.1.2.1.1 Hold awareness workshops with Tembec staff
<b>2001 – 2002 Monitoring Goal 6.1.2</b>  6.1.2.1.1 There were no treaty rights or cultural awareness workshops held; however, the following initiatives took place <ul style="list-style-type: none"> <li>A field tour was conducted with Sagkeeng, Little Black River and Hollow Water trappers and was attended by 6 Tembec staff.</li> <li>Hollow Water established a Traditional Area Advisory committee to advise Chief and Council on resource issues.</li> </ul>		

## Value: 6.2 Participation by Aboriginal Communities in Sustainable Forest Management

Goal	Indicator	Target
6.2.1: Increase participation of local aboriginal communities in Sustainable Forest Management	(DEVELOP PROTOCOLS WITH ABORIGINAL COMMUNITIES TO DETERMINE INDICATORS AND TARGETS)	

### 2001 – 2002 Monitoring Goal 6.2.1

Goal 6.2.1 has been intentionally left blank until indicators and targets can be developed through Kiiwetino Ma"iingan Forest Stewardship Company and community based joint planning.

## Value: 6.3 Sustainability of Forest Communities

Goal	Indicator	Target
6.3.1 Sustain or improve economic and related social benefits derived from the forest for communities in and near FML 01	<p>6.3.1.1 Profitability of Tembec operation leading to sustainable employment levels</p> <p>6.3.1.2 Value of forest management contracts awarded to all local enterprises</p> <p>6.3.1.3 Tembec Inc. support of local, regional and provincial programs and initiatives</p> <p>6.3.1.4 Consultations with local community business organizations, individual enterprises and local elected officials regarding Tembec activities</p>	<p>6.3.1.1.1 Achieve objective of EBITDA representing 25% of net sales</p> <p>6.3.1.1.2 Achieve objective of 15% for CROCE</p> <p>6.3.1.1.3 Achieve objective of 14% return on shareholders equity</p> <p>6.3.1.2.1 Report on value of forest management contracts awarded to all local enterprises</p> <p>6.3.1.3.1 To donate at least 1% of pre-tax profits to programs run by non profit organizations to help communities improve their individual and collective way of life.</p> <p>6.3.1.4.1 Respond to all requests for consultation</p>

### 2001 – 2002 Monitoring Goal 6.3.1

Goal	Indicator	Target
<p>6.3.1.1.1 EBITDA of \$275.5 million equivalent to 9.3% on net sales of \$2,976.8 million compared to the objective of 25%. EDITDA in 2001 represented 17.8% of net sales</p> <p>6.3.1.1.2 Cash return on undepreciated capitol was 6.2% with the last 5-year average equaling 12.3%, compared to the objective of 15%.</p> <hr/> <p>6.3.1.1.3 Return on shareholders equity was negative 12.6% with the last 5-year average equaling 4.5 5, compared too the objective of 14%.</p> <p>6.3.1.2.1 Silviculture (forest renewal) contracts for fiscal 2002 totaled \$417,251</p> <ul style="list-style-type: none"> <li>• 3 – tree planting– 2 Sagkeeng FN, 1 Manigotagan</li> <li>• 5 – site preparation / supervision – Pine Falls (one contractor)</li> <li>• 1 – trucking – R.M. Alexander</li> <li>• 1 – survey – Brokenhead</li> <li>• 1 – cone picking – Gull Lake</li> </ul> <p>Timber harvesting and road construction contracts for fiscal 2002 totaled \$4,887,135</p> <ul style="list-style-type: none"> <li>• Timber harvesting agreements: There were 83 agreements on FML 01 and 142 agreements outside FML 01</li> <li>• All weather road construction contracts: There was 1 contract on FML 01 and 0 contracts outside of FML 01</li> </ul> <p>6.3.1.3.1 In 2002, Company donations amounted to some \$2 million in contributions to local and regional organizations across Canada. The company has contributed even larger amounts to education and R&amp;D including \$1 million for the Forestry Chair at the University of Toronto, and \$200,000 for the Rehabilitation Chair at University du Quebec en Abitibi-Temiscamingue. As part of the corporate donation program, the Pine Falls Operations donation committee awarded 78 donations towards local initiatives which were local, regional, provincial and international in scope.</p> <p>6.3.1.4.1 Specific requests that were addressed in 2002 include:</p> <ul style="list-style-type: none"> <li>• A request to meet with Manitoba Recreational Canoe Association membership</li> <li>• A request from environmental groups to review the 2003 ORP and discuss other issues</li> <li>• Requests to meet with First Nation communities on specific issues. There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives of which some were dealing with specific requests for consultation</li> </ul>		
Goal	Indicator	Target
6.3.2: Help to maintain the viability of existing forest communities through a localized planning process	6.3.2.1: The establishment of community development strategies where Tembec would participate in joint planning	6.3.2.1.1: Participate in community action planning when requested throughout the FML
<b>2001 – 2002 Monitoring Goal 6.3.2</b>		
<p>6.3.2.1.1 There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives. These meetings covered a broad range of topics. Some examples of community action planning include:</p> <ul style="list-style-type: none"> <li>• Economic opportunities for Hollow Water</li> </ul>		



Goal	Indicator	Target
<ul style="list-style-type: none"> <li>Harvest operations training for Peguis</li> <li>Economic opportunities for Sagkeeng</li> <li>Walleye Spawning project in Little Black River</li> <li>Harvest operations training for Little Black River</li> </ul>		

## Value: 6.4 Fair and Effective Decision-Making

Goal	Indicator	Target
6.4.1 Provide opportunities, encourage and engage, in meaningful and effective public involvement in forest management planning prior to decisions being made	<p>6.4.1.1 Variety and participation levels in forums for public involvement</p> <p>6.4.1.2 On –going community consultations</p> <p>6.4.1.3 Issues identified and dealt with at the community level</p> <p>6.4.1.4 Consultation early in the planning process</p>	<p>6.4.1.1.1 Implement the following forums:</p> <ul style="list-style-type: none"> <li>Joint planning with each aboriginal community in FML 01</li> <li>AORP meetings in selected FML communities</li> <li>SFMAC to meet at least 4 times per year</li> <li>User Group meetings</li> <li>Response to all requests for consultation with individuals and groups</li> </ul> <p>6.4.1.2.1 Report on activities and participation levels in the various forums</p> <p>6.4.1.3.1 Consult with all stakeholders with respect to planning activities</p> <p>6.4.1.4.1 Number of issues identified and resolved</p>

### 2001 – 2002 Monitoring Goal 6.4.1

6.4.1.1.1, 6.4.1.2.1 and 6.4.1.3.1 The following initiatives took place in 2002:

#### First Nation Limited Partnership (FNLP)

- There were 21 meetings, involving 31 Tembec staff, that dealt with strategic issues around Kiiwetino Ma”iingan, Gaa-bi-mooka”ang, and FNLP
- There were 24 meetings, involving 24 Tembec staff, regarding the Junior Ranger program
- There were a total of 45 meetings, involving 55 Tembec staff, regarding FNLP

#### Community Based Planning

- There were 22 meetings, involving 29 Tembec staff, with Hollow Water First Nation
- There were 7 meetings, involving 12 Tembec staff, with Peguis First Nation
- There were 7 meetings, involving 12 Tembec staff, with Little Black River First Nation
- There were 4 meetings, involving 6 Tembec staff, with Sagkeeng First Nation
- There were 9 meetings, involving 11 Tembec staff, with trapper groups, northern affairs communities and other First Nation communities

- There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives

#### **Forest Based Industries**

- There were 3 meetings, involving 9 Tembec staff, with the South East Quota Holders Association regarding protected areas in south east Manitoba
- There were 8 meetings, involving 13 Tembec staff, with forest products companies regarding chip and/or log exchange and/or purchase agreements

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#### **Non-Forest Based Industries**

- There were 3 meetings, involving 5 Tembec staff, with a local outfitter the mining association and Ducks Unlimited

#### **Recreational Groups**

- There was 1 meeting, involving 2 Tembec staff, with the Manitoba Recreational Canoe Association membership

#### **Manitoba Model Forest**

- There were 27 meetings, involving 45 Tembec staff, with regard to the board of directors, working groups, steering committees and specific projects

#### **Environmental Non-Governmental Organizations**

- There were 4 meetings, involving 9 Tembec staff, with the Canadian Nature Federation dealing predominately with the protected area strategy for FML 01 and South East Manitoba

#### **Manitoba Conservation**

- There were 12 meetings / field tours, involving 21 Tembec staff, that dealt with operational review / approval / issues that were conducted primarily with the Eastern Region IRMT
- There were 17 meetings, involving 39 Tembec staff, conducted with MC Branches dealing primarily with administration issues

#### **Manitoba Government**

- There were 8 meetings, involving 12 Tembec staff, with primarily regarding First Nation initiatives

#### **Federal Government**

- There were 4 meetings, involving 4 Tembec staff, with federal ministers and departments regarding First Nation initiatives

#### **Tours and Presentations**

- There were 8 presentations, involving 11 Tembec staff, conducted in local schools, and Winnipeg high schools and universities
- There were 3 field tours, involving 6 Tembec staff, conducted with Winnipeg high schools and universities
- There were 4 field tours, involving 13 Tembec staff, conducted with local communities and trappers
- There were 6 field tours, involving 11 Tembec staff, conducted with ENGO, MBMF visitors and local and provincial advisory groups

#### **Workshops / Symposiums**

- There were 14 workshops / symposiums, involving 25 Tembec staff over 45 days, attending and participating in local, provincial and national events

#### **Committees**

- There were 31 committee meetings conducted over 43 days, attended by 36 Tembec staff representing 49 man days, acting as committee members on local, provincial and national committees.

#### **Open Houses on the 2003 Operating and Renewal Plan**

There were 8 open houses / invitational meetings, involving 19 Tembec staff, conducted in the following locations to solicit input to the 2003 Operating and Renewal Plan

- Bissett trappers meeting – 2 attendees
  - Bissett community – 9 attendees
  - Sagkeeng – 5 attendees
  - Lac Du Bonnet – 15 attendees
- 
- Peguis – 11 attendees
  - Hollow Water – 5 attendees
  - Winnipeg open – 14 attendees
  - Winnipeg ENGO meeting – 7 attendees

#### **Sustainable Forest Management Advisory Committee**

- There were 4 SFMAC meetings, involving 10 Tembec staff, conducted in 2002

#### **Summary**

- There were 259 meetings, tours and symposiums, involving 415 Tembec staff for 448 days/events, conducted in 2002

#### **Requests for Consultation**

Requests for consultation have been incorporated into the compilation above. Specific requests that were addressed in 2002 include:

- A request to meet with Manitoba Recreational Canoe Association membership
- A request from environmental groups to review the 2003 ORP and discuss other issues
- Requests to meet with First Nation communities on specific issues

6.4.1.4.1 The following woodlands related issues, listed in chronological order, were identified to the Company in 2002:

- A concern was brought forward that trappers were not consulted prior to the decommissioning of Sandy River East road. Manitoba Conservation had conducted consultation with all trappers that had registered for the Manigotagan Community line. The concerned trappers had either not registered for the community line or were interested in securing an unallocated Registered Trap Line; therefore, MC did not have a registered contact to consult with.
- A concern was raised about the safety of Pointer Lake bridge because a cribbing was not supporting the bridge. The bridge had been replaced and new supports for a rail car bridge installed. The crib in question was no longer needed for bridge support but was left in place to assist in reducing stream side disturbance instead of excavating and removal.
- A report was received that a harvest contractor was operating without a permit and that he was causing extensive damage to the road. MC investigated and determined that the wood was harvested, under a valid permit, the year before and that the wood was just being moved at this time. Tembec hires a local contractor to repair the road damage.
- A concern was raised regarding breaches of gates at Beaver Creek, Gem Lake and Rainy Lake. Tembec met with MC and established a priority ranking to responding to damage / destruction of gates and established a gate protocol for the operation of gates regarding active and inactive periods.
- A trapper was upset that harvesting operations were taking place along PTH 304 and he was not consulted. Tembec staff met with the trapper, on site, and modified the harvest design to the trappers satisfaction.
- A concern was received regarding insecure loads on pulp trucks and the amount of pulpwood that had fallen off trucks along the road. A letter was sent to all hauling contractors reminding them to check and secure loads prior to entering the highway. An action plan to address the root cause of the problem has carried over to 2003.
- Concerns were raised regarding harvesting in trap lines in the Hollow Water traditional area. All harvesting operations, with the exception of Hollow Water

contractors, were shut down until the issue could be resolved by the Hollow Water Traditional Area Advisory Committee.

- A complaint was received that a harvest contractor had messed up a mining claim grid by destroying grid markers. Tembec initiated a process with Mines Branch to receive updated mine claims every 6 months. Constraints were put on the contractor through the contractor review process.

## Value: 6.5 Informed Decision-Making

Goal	Indicator	Target
6.5.1 develop partnerships and other opportunities with governments (Federal, Provincial and First Nations) and other interested parties to develop an increased knowledge base and public understanding of SFM planning	<p>6.5.1.1 Research partnerships and projects undertaken by Tembec with government and others</p> <p>6.5.1.2 Participation in and creation of public information forums</p>	<p>6.5.1.1.1 Implement and report on a partnership research program including funding levels for each project</p> <p>6.5.1.2.1 Participate in Model Forest partnership building activities</p> <p>6.5.1.2.2 Participate in forestry education activities</p> <p>6.5.1.2.3 Offer woodlands tours</p> <p>6.5.1.2.4 Continued operation of Web site</p> <p>6.5.1.2.5 Continued public consultation forums</p>

### 2001 – 2002 Monitoring Goal 6.5.1

6.5.1.1.1 The following is the financial contribution to project partnerships implemented/continued in 2002:

#### Manitoba Model Forest

- There was no financial contribution to the MBMF in their fiscal 2002/2003. Due to financial constraints, Tembec's 5-year (2002 – 20006) commitment of \$500,000 has been scheduled to be delivered equally in the last 4 years of phase 3. For this reason, the following represents Tembec's final contributions in phase 2 of the Manitoba Model Forest program
- Aquatic Indicator Project - \$10,000
- Woodland Caribou Management Committee - \$25,000
- Natural Disturbance Trial - \$11,600
- Archaeological Predictive Model - \$20,000
- Total Model Forest - \$66,600

#### Dr. Terry Dick – University of Manitoba

- Lake Sturgeon Habitat, Indices and Biomonitoring Project - \$22,500

#### Dr. Richard Baydack – University of Manitoba

- Ecosite Decision Support System Project - \$5,000

#### Ducks Unlimited

- Pasquia wetland assessment Project - \$25,000

Total Tembec funding for research projects - \$119,100

6.5.1.2.1: Tembec supported the MBMF in 2002 through financial contributions as detailed in 6.5.1.1.1 above, as well as through in-kind services such as:

- Administrative services
- Tembec representative on the Board of Directors
- Tembec representative on the Executive Committee (treasurer)
- Chairmanship of the Science & Technology (01)/ Forest Stewardship (02) Working Group
- Chairmanship of the Aquatic Projects sub committee
- Participation on the Social Issues (01)/ Local Involvement (02) Working Group
- Participation and technical support to numerous projects

6.5.1.2.2: Tembec staff participated in the following forestry education activities:

- Guest lecturer University of Manitoba – Wildlife Management
- Guest lecturer University of Winnipeg Collegiate – Forest Management
- Guest lecturer Pine Falls School – Science curriculum
- Guest lecturer Junior Ranger Program – Geographic Information Systems
- Guest lectures Puguish High School – Forest Management and Careers
- Presenter Beausejour High School Wildlife Symposium

6.5.1.2.3: The following field tours were provided by Tembec staff on request from interested parties:

- Premiers Economic Advisory Council
- University of Winnipeg – Wildlife Management course
- University of Winnipeg Collegiate grade 10 - 11
- Natural Resource Institute, University of Manitoba Wildlife Management course
- Tembec Sustainable Forest Management Advisory Committee
- Canadian Nature Federation
- 3 tours with local trapper groups
- Hollow Water / Junior Ranger – herbicides in forest management
- Committee for Moose Management

6.5.1.2.4: Individual operating site web pages, such as Pine Falls Operations, have been discontinued in favour of one corporate Tembec site located at [www.tembec.com](http://www.tembec.com)

6.5.1.2.5 A complete listing of public consultation forums is listed in 6.4.1.1.1 above.

Goal	Indicator	Target
6.5.2 Incorporate TEK into the SFM process	6.5.2.1 Communities that have provide TEK to the SFM process while respecting the proprietary nature of TEK	6.5.2.1.1 Provide opportunities for TEK to be brought forward
		6.5.2.1.2 Create and establish mechanisms to ensure the proprietary nature of TEK

## 2001 – 2002 Monitoring Goal 6.5.2

6.5.2.1.1 and 6.5.2.1.2 A community based joint planning process has been initiated through a pilot program in Hollow Water First Nation. A Traditional Area Advisory Committee has been appointed by Chief and Council to meet with Tembec on a bi-weekly basis and provide advise to Chief and Council on resource

sues. The operation of the committee is still in its early stages but will provide for the opportunity for TEK to be brought forward. It is Tembec's desire to work with Little Black River and Sagkeeng First Nations in establishing similar committees in their communities.

Goal	Indicator	Target
6.5.3 Develop databases, information management systems and monitoring programs for SFM planning and operations and for the assessment of progress made towards achieving SFM targets	<p>6.5.3.1 Available and timely forest information on which to plan and operate and assess achievement of targets</p> <p>6.5.3.2 A monitoring program for FML 01 that covers established indicators and targets</p>	<p>6.5.3.1.1 Implement and maintain a forest inventory, information and data collection program and associated Management Information System (MIS) to effectively assess performance and support informed sustainable forest management decision making including but not limited to:</p> <ul style="list-style-type: none"> <li>• Develop and maintain GIS database through SFMP development and on-going planning and operations monitoring to track all indicators related to the FML 01 land base</li> <li>• Pre-harvest surveys</li> <li>• Pre-crossing surveys</li> <li>• Regeneration surveys</li> <li>• Free-to-grow surveys</li> <li>• Environmental audits</li> <li>• Inventory updates including depletions and forest renewal</li> <li>• Available Community and Land Use information</li> <li>• Fire depletions and other natural disturbances</li> <li>• Infrastructure development</li> </ul> <p>6.5.3.2.1 Develop and implement a monitoring program that covers all established indicators)</p>

### 2001 – 2002 Monitoring Goal 6.5.3

6.5.3.1.1 Scoping work towards the development of a MIS, which would effectively assess performance and support informed sustainable forest management decision making is ongoing. Development of the system will probably not be completed until 2003 or 2004. The activities identified in this target are taking place and tracking and/or reporting systems have been developed as an interim measure until the MIS can be developed

6.5.3.2.1 A monitoring and reporting program for criteria & indicators has been incorporated into the Tembec Environmental Management System. Some indicators and targets, as identified in this report, cannot be monitored at this time because establishment of protocols, development of baseline data or measurement tools have not yet been developed. As monitoring programs for specific indicators are developed, they will be added to the EMS.

Goal	Indicator	Target
6.5.4 Develop and maintain a program for on-going education of Tembec staff, contractors and other third parties in implementation of SFM targets	6.5.4.1 Training and on-going forest education, related to implementation of EMS procedures	6.5.4.1.1 Progressively and continuously implement and report on EMS procedure training and education programs for all staff, contractors and operators working on FML 01

## 2001 – 2002 Monitoring Goal 6.5.4

6.5.4.1.1 The following training was conducted for woodlands staff and employees and contractors and their employees 2002:

- Work Instructions for Timber Harvesting: 69 persons
- Work Instructions for Road Construction: 3 persons
- Work Instructions for Road Access Decommissioning and Rehabilitation: 6 persons
- Work Instructions for Timber Hauling: 44 persons
- Transportation of Dangerous Goods Certificate: 3 persons
- Emergency First Aid Certificate: 51 persons
- ISO 14001 Auditor Training: 3 staff
- Due Diligence training: 6 staff

The following workshops, seminars and symposiums were attended by woodlands staff and for applicable technical sessions by woodlands employees and contractors and their employees:

- Junior Ranger Symposium - Winnipeg
- Forest of Northern Lights Conference – Hollow Water
- Traditional ecological Knowledge Workshop – Timmens
- National Parks and Recreation Conference – Winnipeg
- Vision 2020 workshop – Winnipeg
- ESRI GIS Workshop – Winnipeg
- National Round Table of the Economy and Environment Conservation Symposium – Winnipeg
- Sustainable Forest Management Network Variable Retention Logging Workshop – Montreal
- Boreal Forest Symposium – Winnipeg
- National Aboriginal Forestry Association Conference – Winnipeg
- Computer software training – Winnipeg
- Sediment and Erosion Control – La Riviere

Goal	Indicator	Target
6.5.5 Engage in on-going learning, education and public awareness processes related to the implementation of SFM	6.5.5.1 Opportunities to meet and discuss SFM	<p>6.5.5.1.1 Retain representation of a cross-section of community representatives, non-timber resource users and other interested parties on the SFMAC</p> <p>6.5.5.1.2 Develop and retain on-going joint planning processes with all aboriginal communities in FML 01</p> <p>6.5.5.1.3 Respond to all invitations to discuss forest management planning and operations with non-timber resource user associations and other interested parties</p> <p>6.5.5.1.4 Continue to play an active role in the research and learning environment provided by the Manitoba Model Forest and other learning institutions</p> <p>6.5.5.1.5 Maintain a role in forestry education of the general public through the support and membership in the Manitoba Forestry Association (MFA)</p> <p>6.5.5.1.6 Attend and report on participation in workshops, seminars and symposiums relevant to SFM activities</p>

		6.5.5.1.7 Continue liaison with MC and other government agencies regarding SFM 6.5.5.1.8 Membership in FPAC, FERIC and other relevant industry associations
<b>2001 – 2002 Monitoring Goal 6.5.5</b>  6.5.5.1.1 First Nation communities have declined participation on the SFMAC because they do not want to participate as stakeholders but wish to become involved at a Company to First Nation Government level. First Nation communities receive all notices and minutes for informational purposes only. The following groups/associations/communities have representation on the Sustainable Forest Management Advisory Committee: <ul style="list-style-type: none"> <li>• Agassiz School Division</li> <li>• Canadian Parks and Wilderness Society</li> <li>• Laverendry Trail Association</li> <li>• Lumber and Sawmill Workers Union</li> <li>• Manigotogan Community Council</li> <li>• Manitoba Conservation – Environmental Approvals</li> <li>• Manitoba Conservation – Forestry Branch</li> <li>• Manitoba Model Forest</li> <li>• Manitoba Recreational Canoe Association</li> <li>• Manitoba Trappers Association</li> <li>• P&amp;A Contracting – Contractor</li> <li>• Powerview Metis Association</li> <li>• Rural Municipality of Alexander</li> <li>• Rural Municipality of Lac Du Bonnet</li> <li>• Resource Conservation Manitoba</li> <li>• Shining Waters Heritage Region</li> <li>• South East Forest Products – Quota Holder</li> <li>• Seymourville Community Council</li> <li>• Time to Respect Earth's Ecosystem</li> <li>• Town of Bissett</li> <li>• Pinawa and Lac Du Bonnet Wildlife Associations</li> <li>• Windsock Lodge – Outfitter</li> </ul> 6.5.5.1.2 A community based joint planning process has been initiated through a pilot program in Hollow Water First Nation. A TAAC has been appointed by Chief and Council to meet with Tembec on a bi-weekly basis and provide advise to Chief and Council on resource issues. The operation of the committee is still in its early stages but will provide for the opportunity for TEK to be brought forward. It is Tembec's desire to work with Little Black River and Sagkeeng First Nations in establishing similar committees in their communities.  The following lists meetings conducted with aboriginal groups and communities as part of the on-going planning process:  <b>First Nation Limited Partnership</b> <ul style="list-style-type: none"> <li>• There were 21 meetings, involving 31 Tembec staff, that dealt with strategic issues around Kiiwetino Ma'iingan, Gaa-bi-mooka'ang, and FNLP</li> <li>• There were 24 meetings, involving 24 Tembec staff, regarding the Junior Ranger program</li> <li>• There were a total of 45 meetings, involving 55 Tembec staff, regarding FNLP</li> </ul>		



**Community Based Planning**

- There were 22 meetings, involving 29 Tembec staff, with Hollow Water First Nation
- There were 7 meetings, involving 12 Tembec staff, with Peguis First Nation
- There were 7 meetings, involving 12 Tembec staff, with Little Black River First Nation
- There were 4 meetings, involving 6 Tembec staff, with Sagkeeng First Nation
- There were 9 meetings, involving 11 Tembec staff, with trapper groups, northern affairs communities and other First Nation communities
- There were a total of 49 meetings, involving 70 Tembec staff, regarding community based planning initiatives

6.5.5.1.3 Meetings were either initiated or attended by Tembec in the following sector groups or categories:

**Forest Based Industries**

- There were 3 meetings, involving 9 Tembec staff, with the South East Quota Holders Association regarding protected areas in south east Manitoba
- There were 8 meetings, involving 13 Tembec staff, with forest products companies regarding chip and/or log exchange and/or purchase agreements

**Non-Forest Based Industries**

- There were 3 meetings, involving 5 Tembec staff, with a local outfitter the mining association and Ducks Unlimited

**Recreational Groups**

- There was 1 meeting, involving 2 Tembec staff, with the Manitoba Recreational Canoe Association membership

**Manitoba Model Forest**

- There were 27 meetings, involving 45 Tembec staff, with regard to the board of directors, working groups, steering committees and specific projects

**Environmental Non-Governmental Organizations**

- There were 4 meetings, involving 9 Tembec staff, with the Canadian Nature Federation dealing predominately with the protected area strategy for FML 01 and South East Manitoba

**Manitoba Conservation**

- There were 12 meetings / field tours, involving 21 Tembec staff, that dealt with operational review / approval / issues that were conducted primarily with the Eastern Region IRMT
- There were 17 meetings, involving 39 Tembec staff, conducted with MC Branches dealing primarily with administration issues

**Manitoba Government**

- There were 8 meetings, involving 12 Tembec staff, with primarily regarding First Nation initiatives,

**Federal Government**

- There were 4 meetings, involving 4 Tembec staff, with federal ministers and departments regarding First Nation initiatives

6.5.5.1.4 Tembec supported the MBMF in 2001 through financial contributions as detailed below, as well as through in-kind services such as:

- Administrative services
- Tembec representative on the Board of Directors
- Tembec representative on the Executive Committee (treasurer)

- Chairmanship of the Science & Technology (01)/ Forest Stewardship (02) Working Group
- Chairmanship of the Aquatic Projects sub committee
- Participation on the Social Issues (01)/ Local Involvement (02) Working Group
- Participation and technical support to numerous projects
- Aquatic Indicator Project - \$10,000
- Woodland Caribou Management Committee - \$25,000
- Natural Disturbance Trial - \$11,600
- Archaeological Predictive Model - \$20,000
- Total Model Forest cash- \$66,600

6.5.5.1.5 The Vice-President Woodlands represents Tembec on the MFA Board of Directors with an objective to provide input to MFA led programs such as education and awareness of forests and forest issues.

In addition, Tembec staff participated in the following forestry education activities:

- Guest lecturer University of Manitoba – Wildlife Management
- Guest lecturer University of Winnipeg Collegiate – Forest Management
- Guest lecturer Pine Falls School – Science curriculum
- Guest lecturer Junior Ranger Program – Geographic Information Systems
- Guest lectures Puguish High School – Forest Management and Careers
- Presenter Beausejour High School Wildlife Symposium

6.5.5.1.6 The following workshops, seminars and symposiums were attended by woodlands staff and for applicable technical sessions by woodlands employees and contractors and their employees:

- Junior Ranger Symposium - Winnipeg
- Forest of Northern Lights Conference – Hollow Water
- Traditional Ecological Knowledge Workshop – Timmins
- National Parks and Recreation Conference – Winnipeg
- Vision 2020 workshop – Winnipeg
- ESRI GIS Workshop – Winnipeg
- National Round Table of the Economy and Environment Conservation Symposium – Winnipeg
- Sustainable Forest Management Network Variable Retention Logging Workshop – Montreal
- Boreal Forest Symposium – Winnipeg
- National Aboriginal Forestry Association Conference – Winnipeg

6.5.5.1.7 Some areas where Manitoba Conservation and Tembec worked closely together to advance SFM include:

- Development and implementation of Manitoba Model Forest programs and projects
- Involvement and function of the Integrated Woodland Caribou Management Committee
- Involvement and function of the Committee for Moose Management
- Forest Practices Guideline Committee

#### 6.5.5.1.8

##### **Forest Industry Association of Manitoba (FIAM)**

Mike Martel, Bill Snell and Bob Durocher attended meetings representing Tembec. A list of issues impacting on all forest industry companies was developed and meetings with Provincial government representatives were aimed at communicating industry positions

##### **Forest Products Association of Canada (FPAC)**

Tembec – Pine Falls continues to support FPAC (formerly the Canadian Pulp and Paper Association). The major objectives have remained; however, FPAC now represents a broader base of the forest industry. FPAC staff is now operating in Ottawa with more focus on federal government policy.

Tembec representation is primarily at the corporate level with operating site support and involvement as required.

##### **Forest Engineering Research Institute of Canada (FERIC)**

The objective here is to create value from a focused set of priorities. Tembec – Pine Falls has attended priority-setting sessions and general research results meetings. Some of the new technologies are being field tested on the operations.

##### **Forest Practices Guideline Committee**

Vince Keenan, and other topic specific staff, represents Tembec – Pine Falls on the Manitoba Forest Practices Guideline Committee. The objective of the committee is to involve provincial government resource managers and forest industry representatives in the development of forest practices guidebooks for the planning, implementation and / or assessment of forestry operations. Completed guidebooks are presented to Manitoba for approval and publication.

## Appendix II

## Acronyms

AAC – Annual Allowable Cut	HSI – Habitat Suitability Index
AORP – Annual Operating and Renewal Plan	HU – Habitat Units
ASI – Areas of Special Interest	IRMT – Integrated Resource Management Team
CCFM – Canadian Council of Forest Ministers	MAI – Mean Annual Increment
CROCE – Cash Return on Capitol Employed	MBMF – Manitoba Model Forest
EBITDA – Earnings Before Interest, Taxes, Depreciation and Amortization	MC – Manitoba Conservation
EMS – Environmental Management System	MFA – Manitoba Forestry Association
ENGO – Environmental Non- Governmental Organization	MIS – Management Information System
ESRI – Environmental Systems Research Institute	NSR – Not Sufficiently Regenerated
FEC V-types – Forest Ecosystem Classification Vegetation types	ORP – Operating and Renewal Plan
FERIC – Forest Engineering Research Institute of Canada	PHA – Pre-Harvest Assessment
FIAM – Forest Industry Association of Manitoba	PSP – Permanent Sample Plot
FLITAC – Forest Land Inventory Technical Advisory Committee	SFM – Sustainable Forest Management
FML – Forest Management Licence 01	SFMAC – Sustainable Forest Management Advisory Committee
FNLP – First Nations Limited Partnership	SFMP – Sustainable Forest Management Plan
FPAC – Forest Products Association of Canada	TAAC – Traditional Area Advisory Committee
FRI – Forest Resource Inventory	TEK – Traditional Ecological Knowledge
FTG – Free-to-Grow	UNCED – United Nations Conference on Environment and Development
GIS – Geographic Information System	VTE – Vulnerable, Threatened, and Endangered species
GPS – Global Positioning System	