



Harvesting on the “working forest” portion of the Foothills Model Forest

## Indicator 5.1.1

### Timber Harvest Relative to Annual Allowable Cut

**[1] Foothills Model Forest value**  
Sustainable use of biological resources.

**[2] Objective**

For the “working forest”<sup>1</sup> portion of the Foothills Model Forest, it is essential that the harvest of wood fibre does not exceed levels approved by the Government of Alberta. The Annual Allowable Cut (AAC) represents the amount of wood fibre that can be sustainably removed each year, in perpetuity. The objective, therefore, is to ensure that the annual harvest does not exceed the AAC.

**[3] Statement of indicator**

The annual harvest (in cubic metres per year) as a ratio of the annual allowable cut (in cubic metres per year), expressed as a percentage.

**[4] Indicator measure**

Annual harvest of fibre (in cubic metres) expressed as a percentage of the allowable annual harvest (in cubic metres).

**[5] Rationale for indicator**

**a. Significance of indicator to landscape-level management**

The basic tenet of sustainable resource management is that renewable resources should be managed so that there is a consistent flow of goods and services from the landscape, in perpetuity. Resources must be managed intelligently, based on the principles of ecological integrity and appreciation for all values of the landscape. With respect to the “working forest” portion of the Foothills Model Forest, it is essential that the annual harvest is within the limits of the approved annual harvest. Due to extenuating circumstances, the harvest in any year could exceed the annual allowable cut; however, any differences must be reconciled in subsequent years.

**b. Meaning of indicator**

The Annual Allowable Cut is a volume of either coniferous or deciduous fibre, approved

<sup>1</sup>That portion of the forested landbase specifically allocated to the production of timber, and for the achievement of other socially acceptable objectives

by the Government of Alberta, which may be harvested from a particular forest management unit each year. Each AAC is normally associated with some type of tenure agreement between the government and a forest company. The two most common tenures in Alberta are the Forest Management Agreement and the Timber Quota.

**c. Relation of indicator to Foothills Model Forest and to sustainability**

The Foothills Model Forest endorses the principles of managing sustainably. Sustainable forest management implies that management activities directed towards providing the flow of goods and services to the community must occur without negative impacts on the resource. Maintaining the productive capacity of the landbase for future generations is paramount.



**[6] Current status of indicator**

Table 1 - Harvest statistics for Hinton Wood Products – A division of West Fraser Mills Ltd., for the period 1993 to 2008, as provided by Alberta Sustainable Resource Development

Cut control number	Cut control period <sup>2</sup>	Species group	Annual Allowable Cut (AAC) (m <sup>3</sup> ) <sup>3</sup>	Periodic allowable cut (m <sup>3</sup> ) <sup>4</sup>	Audited production (m <sup>3</sup> ) <sup>5</sup>	Percentage of AAC produced
1	15-Jun-88 to 14-Jun-93	Conifer	1,740,000	8,700,000	5,385,436	61.9%
		Deciduous	181,200	906,000	291,360	32.2%
2	15-Jun-93 to 14-Jun-98	Conifer	1,900,000	9,718,525	11,024,309	113.4%
		Deciduous	126,000	630,000	610,229	96.9%
3	15-Jun-98 to 14-Jun-03	Conifer	2,236,129	11,180,645	10,845,578	97.00%
		Deciduous	169,449	847,245	730,796	86.3%
4	15-Jun-03 to April 30, 2006	Conifer	2,236,129 <sup>5</sup>	10,462,399	6,840,444 (to April 30, 2006)	65.4% (to April 30, 2006)
		Deciduous	169,449	963,694	488,391 (to April 30, 2006)	50.7% (to April 30, 2006)

**[7] Interpretation**

The social well-being of forest-based communities and the financial health of the forest industry depend on a

<sup>2</sup>A period of five consecutive forest management operating years or other period agreed to by the Minister. It is the period during which the AAC is applied.

<sup>3</sup>The volume of timber that can be harvested under sustained-yield management in any one year, as stipulated in the pertinent approved forest management plan. In Alberta it is the quadrant cut divided by the number of years in that quadrant, usually five.

<sup>4</sup>The total annual allowable cut over a five-year period, or as determined by the Minister.

<sup>5</sup>That which has been confirmed by audit.

<sup>6</sup>The AAC is the sum of designated AAC plus a “carry forward” amount that represents unused AAC which is being captured in the respective cut control period. As inventories are refined, a new AAC will be determined.

uniform flow of values from the forest. While annual harvests may vary, they must balance over time. If harvests continually exceeded the AAC, the capacity of the forest to provide a sustainable flow of fibre might decline, resulting in diminished ecological integrity. At extreme levels, serious impacts might arise for wildlife, water quality and quantity, and communities' economic stability.

Harvest levels over time are a major determinant of sustainability. Current data indicate that harvests from 1988 to 2006 in the Foothills Model Forest were sustainable; i.e., trends were consistent with or below annual allowable cuts.

### [8] Rationale for allowable variance (threshold)

Variances in harvest levels can be attributed to a myriad of factors, ranging from insect control and fire salvage to new industrial development. Economic circumstances also play a role in decisions that determine the level of harvest; however, to maintain sustainable forest management, there must ultimately be a balance.

### [9] Analytical considerations

#### a. Calculation of indicator

The determination of the Annual Allowable Cut is based on inventories, growing stock, rates of growth and the amount of available productive landbase. Accounting procedures are used to record actual harvests and validate harvested volumes.

The measure for this indicator is calculated as follows:

Timber harvest relative to AAC (%) =  $\frac{\text{Annual harvest (cubic metres per year)}}{\text{AAC (cubic metres per year)}} \times 100$

#### b. Special considerations

There are no special considerations for this indicator.

### [10] Responsibility

Data comes from the FMA holder or Alberta Sustainable Resource Development.

### [11] Monitoring

Records of harvesting can be accessed through Alberta Sustainable Resource Development. Apart from the determination of percentage of AAC

achieved, there are no other statistics required for the reporting of this indicator.

### [12] General discussion

Inconsistencies in data may be encountered depending on when the data become available, relative to the cut control periods. However, these are immaterial, as consistency over time and magnitude of variation are most important in evaluating sustainability.



Maintaining the annual harvest below the annual allowable cut (AAC) helps ensure a consistent flow of goods and services from the landscape, and also helps preserve its ecological integrity