



Al-Pac

## 3. The Forestry Sector Today

### Overview of the Forest Industry in Alberta

In 1999, the most recent year for which complete data are available, 42,000 ha of forest were harvested in Alberta, producing 19.4 million m<sup>3</sup> of timber (CFS, 2001: 29). An additional 7.2 million m<sup>3</sup> of fire-killed timber, from the large fires of 1998, was salvage logged in fiscal-year 1999 (ARD, 2000: 52). Even though the volume of timber logged through fire salvage can be large, as in 1999, it is not considered part of the regulated harvest.

Revenue to the Government of Alberta, in the form of timber royalties and fees, was \$72.9 million for the fiscal year 2001, offset by government expenditures on forest management and protection (AE, 2001a: 47-48). In 2000, 11,352 people were directly employed in the primary forest sector (logging, lumber mills, pulp and paper, and panelboard) and 11,796 in secondary wood manufacturing (AFPA, 2001). The major export products of the forest industry in Alberta are wood pulp and softwood lumber (Fig. 3.1). The U.S. is the major market for Alberta wood products (Fig. 3.2).

There are three types of timber allocation in Alberta: timber permits, timber quotas, and Forest Management Agreements (FMAs). Timber permits involve relative small volumes intended for smaller operators and community use. Quotas are intended to

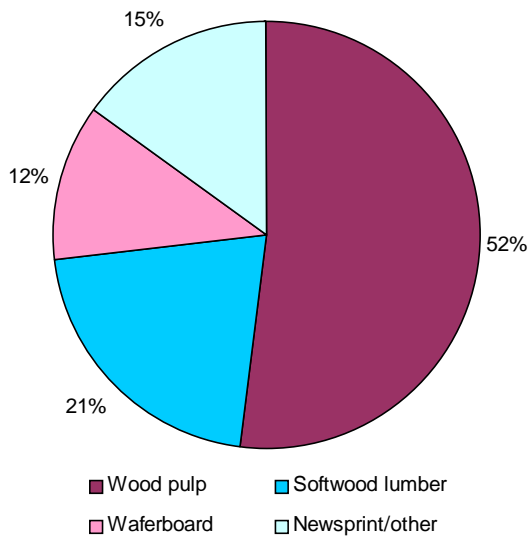


Fig. 3.1. Alberta wood product exports in 2000 by product type. Source: CFS, 2001: 29.

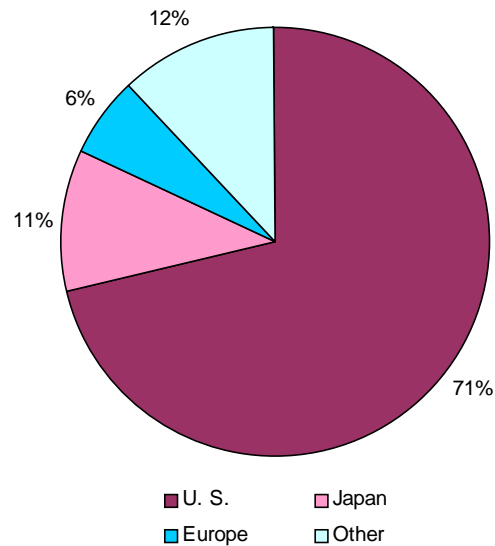


Fig. 3.2. Major export markets for Alberta wood products in 2000. Source: CFS, 2001: 29.

provide small to medium-sized operators with a long-term secure wood supply. As of 1996 there were approximately 50 registered quota holders in Alberta (AEP, 1996: 9). Forest management planning for quota holders is primarily the responsibility of the government. Instead of a fixed land base they are allocated a specific volume of timber.

An FMA is a long-term contractual agreement between the province and a company to establish, grow, and harvest timber on a defined land area (AEP, 1996: 9). As of 2000, 11 companies held one or more FMAs in Alberta and two other FMAs were pending (Fig. 2.12; Table 3.1). FMA holders must develop and follow a management plan that is approved by the government. They are also responsible for their own inventory studies, road development, and forest regeneration.

## Provincial Forestry Policy

### *The Alberta Forest Conservation Strategy*

The Alberta Forest Conservation Strategy (AFCS) was developed to fulfill commitments made by the Government of Alberta under the National Forest Strategy. It is the product of over three

**Table 3.1. Size of FMAs of the 5 largest companies in Alberta in 2000. Source: Forest Watch Alberta.**

Company	Size of FMA (km <sup>2</sup> )
Alpac	58,000
Tolko <sup>1</sup>	39,400
Weyerhaeuser <sup>1</sup>	29,648
Daishowa-Marubeni	29,000
International Paper <sup>1</sup>	16,949

<sup>1</sup>Multiple FMAs

## Alternative Futures

years of work by an 11-member multi-stakeholder steering committee, a stakeholder advisory group (representing over 60 stakeholder groups), urban and rural working groups, and strategic issues working groups. In total, over 800 Albertans participated in the development of the *Strategy*. Given this broad representation and concerted effort, the AFCS is the best available guide to the vision and goals held by Albertans regarding public forests.

A fundamental principle of the AFCS is that forest ecosystem health must be maintained if we are to continue to receive benefits from the forest in the future (AFCSSC, 1997, p. 4):

*The forests of Alberta will be appreciated as ecosystems and our activities managed in ways that conserve ecological integrity, biological diversity, long-term forest productivity and the forest landbase.*

To maintain ecosystem health the AFCS recommends “*that the Government of Alberta and forest land users adopt and implement ecosystem-based forest management as quickly as practicable.*” (AFCSSC, 1997, p. 11). The key elements of ecological forest management (EFM) include harvesting that emulates natural disturbances (the natural disturbance model), adaptive management (changing management plans in response to feedback from the system), protected area benchmarks (for monitoring and risk management), public involvement in decision-making, and application of the precautionary principle (erring on the side of caution when the consequences of actions are uncertain). A large body of scientific literature is now available regarding EFM (reviewed in Chapters 6 and 7).

### ***Current Government Policy***

The *Forests Act* provides the legal framework for the management of forests in Alberta (GOA, 1999). It defines the basic rules governing forest tenure and provides the Minister and Cabinet with the power to set policies and regulations governing logging methods, wood utilization standards, and broader issues concerning use of forest land (Moen, 1990, p. 8). The *Act* itself provides minimal guidance as to how the forests should be managed, except that the harvesting of timber should be designed to provide a perpetual sustained yield (GOA, 1999, sec. 16(1)).

Given the limited scope of the *Forests Act*, governance of forest management in Alberta is primarily conducted through policy directives, not law. Consequently, major management decisions are not subject to legislative debate, nor can the government be held legally accountable for its management of the forest.

An overview of current provincial forestry policy is found in *The Alberta Forest Legacy* (AEP, 1998a), produced in response to the AFCS. The *Alberta Forest Legacy* accepts the vision, goals, and principles of the AFCS (AEP, 1998a, p. 7); however, it provides little direction for actual implementation and is largely devoid of explicit commitments or measurable objectives. Five years after the completion of the AFCS, a plan for implementation is still lacking.

The shift in forestry policy embodied in the *Alberta Forest Legacy* has not yet resulted in substantive change at the operational level. The existing rules and regulations are still fundamentally based on the concept of sustained-yield management. What sustained-yield management means in practical terms is that the annual rate of cut cannot exceed the annual rate of tree growth, less

losses due to natural causes (AEP, 1996, p. 4). The concept was developed at a time when forests were valued primarily for their timber; therefore, there are no explicit requirements to maintain ecosystem integrity or to conserve biodiversity. The objective is to sustain the flow of timber, not the forest itself.

Quota holders and FMA holders typically operate within the same forests (utilizing different tree species), but different systems of management apply to each. In the case of quota holders, harvest planning and operating practices are directed by the *Alberta Timber Harvest Planning and Operating Ground Rules* (AEP, 1994). For FMA holders, basic requirements are defined in the individual FMA contracts. Each FMA holder must also develop a detailed forest management plan that is approved by the government (see below). An additional complication of the existing system is that all commercial forest stands are permanently designated as either coniferous or deciduous, and different rules regarding allocation and management apply to each.

In summary, although the provincial government has accepted the goals and principles of the AFCS, it has taken no substantive action with respect to implementation. Instead, there is every indication that the government remains fundamentally committed to policies set in the late 1980s of full utilization of the forest and maximization of economic returns. For example:

1. Government business plans continue to include targets such as “*Sustain growth opportunities in the forest sector through maximization of the wood fibre opportunity*” and “*Increase the timber cut and reduce the gap between the harvest and the Annual Allowable Cut (AAC) cap.*” (ARD, 2001: 43).
2. The Annual Allowable Cut and new forest allocations continue to be based on sustained-yield management, progressively removing what little flexibility remains in the system.
3. The regulation of harvest practices continues to be based on sustained-yield management, lagging substantially behind the changes being proposed by many FMA holders in the province (see below). Moreover, the efforts of progressive FMA holders to implement new management techniques are hampered by the outdated government regulations, that include requirements for total utilization.
4. As part of proposed revisions to the provincial operating ground rules the government is considering to allow harvesting within riparian areas (AE, 2001b). These areas are currently classified as environmentally sensitive and harvesting is not permitted.
5. Government permits for the application of herbicides have risen from almost none in 1994 to over 30,000 ha in 1999 (Fig. 3.3). This reflects a general trend to intensive forest management, in place of progress towards EFM.

Another likely reason for the government's lack of action is that earlier policies have left little flexibility in the system for change. Virtually all of the coniferous land base and most of the deciduous land base have been allocated on the basis of the old system of sustained-yield management (Fig. 3.4). The overall rate of harvest is nearing full utilization on this basis (Fig. 3.5). Consequently, a reduction in cut levels, as required to implement certain features of EFM (such as maintaining older age classes of forest or retain-

## Alternative Futures

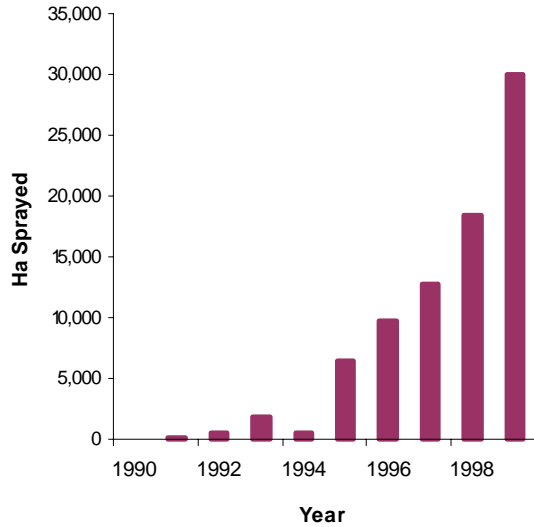


Fig. 3.3. Amount of forest in Alberta sprayed with herbicides, 1990-1999. Source: CFS, 2002: Table 9.2.

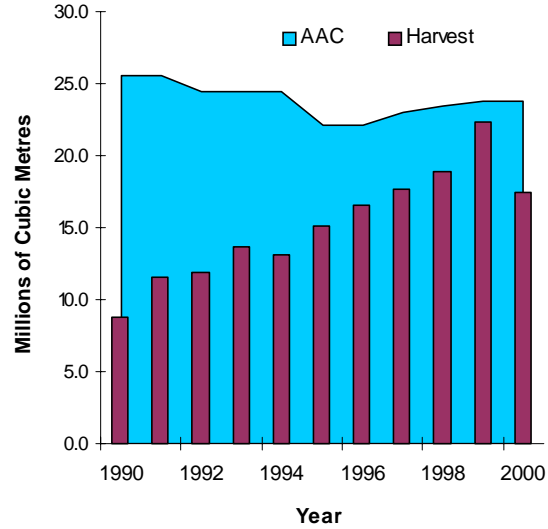


Fig. 3.5. Annual allowable cut (AAC) and actual harvest levels in Alberta from 1991 to 2000. 1999 value includes fire salvage, 2000 value does not. Source: ARD, 2000: 52.

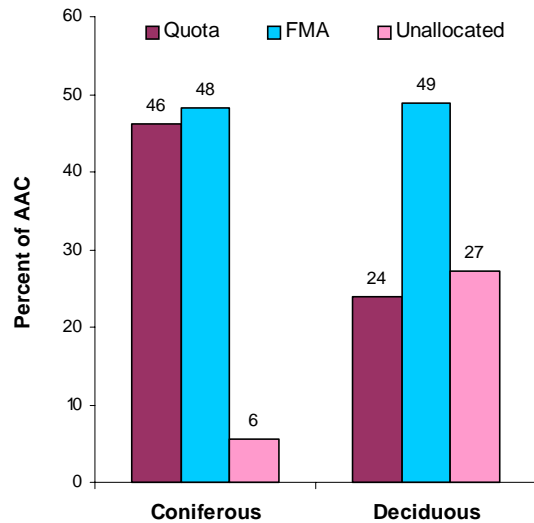


Fig. 3.4. Allocation of the annual allowable cut (AAC) in Alberta, under sustained-yield management, as of 1995. Source: AEP, 1996:16.

ing live trees on harvest blocks), would be resisted by many existing forestry companies on the basis of existing rights. Simulation studies by Cumming and Armstrong (1999) have demonstrated that timber supplies to existing companies could likely be maintained by eliminating inefficiencies associated with the current system of overlapping tenures and dual land bases. However, this would entail a major overhaul of the tenure system — an undertaking that may be giving the government cause to hesitate.

## Harvest Planning and Practices

### Overview

The information provided in this section was primarily derived from a survey of FMA holders conducted by Forest Watch Alberta in the fall of

2000 (FWA, 2001). The survey was based on information contained in the most recent detailed forest management plans submitted by FMA holders to the government. These plans provide only an approximation of actual practices because (1) plans and projections provided by the companies are often overly optimistic relative to what is actually implemented on the ground, and (2) some companies are in the process of updating their plans. Although the government monitors compliance with certain regulations (e.g., cutblock size), a complete audit of a company's performance relative to its management plan is not required.

The management plans vary tremendously in terms of format and content. Although the *Interim Forest Management Planning Manual* (AEP, 1998b) was developed to help guide and standardize the development of management plans, it does not appear to have had any appreciable impact on the plans that have been developed since its release.

In the Forest Watch Alberta survey it was apparent that the language of EFM is becoming widely adopted by forestry companies across the province (Table 3.2). However, only Alpac and Daishowa-Marubeni have management plans that are actually based on EFM principles, as described in the AFCS and scientific literature (albeit, with various shortcomings). Not coincidentally, Alpac and Daishowa are both deciduous operators working on a virgin land base that provides them with the flexibility required to implement EFM. Weyerhaeuser has also embraced EFM, but its transition from sustained-yield management is less advanced. Canfor, Millar Western, and Weldwood, are in transition from sustained-yield management to alternative systems of their own design. These three companies

plan to implement some of the elements of EFM, but there remains a strong emphasis on the use of indicator species and habitat modelling to achieve locally defined forest management objectives (contrary to the spirit and intent of the AFCS). Sundance and Sunpine also appear to be in transition to EFM; however, their plans are grossly deficient with respect to ecological targets and implementation strategies. Alberta Newsprint, Tolko, and West Fraser continue to pursue sustained-yield management and declined to provide any details regarding their future plans when surveyed.

Quota holders continue to be managed by the Department of Resource Development on the basis of sustained-yield management, using the *Alberta Timber Harvest Planning and Operating Ground Rules* (AEP, 1994). The *Ground Rules* were developed in 1994 and contain no mention of EFM, nor do they incorporate any form of long-term landscape-level planning. Because quota holders account for almost half of the coniferous harvest, and a third of the deciduous harvest (Fig. 3.4), and because two of the largest FMA holders remain committed to sustained-yield (Tolko and West Fraser), the majority of the timber in Alberta continues to be harvested under sustained-yield management. The government is currently in the process of updating the *Ground Rules*, but it has set an extended six-year timeline for doing so (AEP, 2000). It is unclear to what extent EFM principles will be incorporated in the new *Ground Rules*.

Alpac, Daishowa, and Weyerhaeuser appear to understand EFM well, and their management objectives are reasonably comprehensive. However, the implementation strategies proposed by these companies are incompletely developed and there is considerable doubt as to whether their

## Alternative Futures

stated objectives can be achieved. In particular, traditional harvest models (Woodstock and Stanley) continue to be used to select and schedule forest stands for harvest, even though these models cannot incorporate ecological outcomes or the potential impacts of wildfire (Baskent, 1999).

In place of active ecosystem-based planning, these companies hope to achieve ecological objectives primarily through ad hoc measures. These measures are likely to succeed in adding variability into the system, but will fall significantly short of emulating the distributions and patterns that are actually produced by natural disturbances. For example, even without explicit planning, some old-growth will be retained on the landscape due to inoperable sites, isolated stands, and riparian buffers. However, the amount of old-growth, its distribution on the landscape, and the size of patches, will not be the same under this “default” approach as the patterns produced by natural disturbances (Ohman and Eriksson, 1998). The plans of these companies represent an important step in the right direction, but are still a long way from true EFM (see Chapters 6 and 7).

### *Stand-level Practices*

Conventional harvesting is based on a two-pass clearcut system in which half of the merchantable timber in an operating area is removed in an initial cut, and the remaining timber is removed after the initial cutblocks have regenerated to a prescribed standard (AEP, 1994: sec 2.2). Under the traditional system cutblocks are generally square and of fixed size, leading to a “checkerboard” pattern (Fig 3.6).

Most FMA holders have now adopted the objective of maintaining natural patterns in stand shape and size, in place of the “checkerboard”

harvest, on the basis of EFM principles. Companies generally plan to achieve this objective through whole-stand harvesting (though cutting is still generally done in two passes, because of provincial regulations). This approach will introduce much-needed variability into the system, but additional effort will be required to overcome constraints on the minimum and maximum size of cutblocks so that the natural distribution of stand sizes can be fully achieved. Additional effort will also be required to counteract the impact of linear disturbances, such as seismic lines and roads, which reduce the average size of stands through fragmentation.

Another feature of conventional clearcut harvesting is that the cutblock is largely devoid of residual structure after the completion of cutting. In order to maintain structure within stands, as

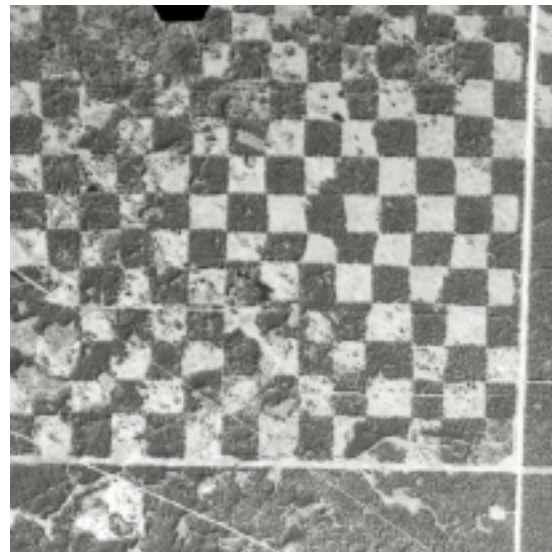


Fig. 3.6. Traditional “checkerboard” harvest pattern (Twp 34, Rge 7, W5th ; dimension of photo = 2.8 x 2.8 km; taken in 1992). (Photo: Air Photo Services, Alberta Sustainable Resource Development)

**Table 3.2. General management approach of FMA holders in Alberta. Source: Extracted from Detailed Forest Management Plans and other company documents.**

Company	General approach to forest management
Alberta-Pacific Forest Industries (Alpac)	The objective of forest <b>ecosystem management</b> is to reduce the risk to the forest ecosystem by developing strategies that will maintain biodiversity. Harvesting, following an ecosystem management approach, should approximate the historical structure and pattern of vegetation at the regional, landscape and stand levels. The goal is to approximate fire effects as closely as possible within the bounds of economic, social, cultural and ecological influences. Using this approach there is no need for species specific wildlife management strategies except where species might be considered at risk (i.e., woodland caribou) or to accommodate overriding social demands.
Alberta Newsprint Company (ANC)	This FMA area is being managed with great care to supply a renewable, <b>sustained yield</b> of wood fibre in perpetuity. ANC is committed to the use of sound, progressive forest management strategies to ensure our long term wood supply and the health of the lands in our care.
Canadian Forest Products (Canfor)	Canfor will use forest <b>ecosystem management</b> that encompasses entire forest landscapes and that forecasts the future condition of forests for 100 years or more. The use of a forest ecosystem model allows correctly formulated anthropogenic disturbances to replace natural disturbance processes. Seven species of special management concern were selected for <b>HSI modeling</b> or habitat constraint modeling. These seven species were selected because they represent a broad and variable range of habitat characteristics. Thus, if the habitat is maintained and available for these species, it is assumed that the FMA will contain a wide range of habitat conditions suitable for all other species in the planning area.
Daishowa-Marubeni International (DMI)	This approach was derived from the <b>ecological management</b> approach developed in the <i>Alberta Forest Conservation Strategy</i> . The ecological management approach is to design human disturbances (like harvesting) in a way that they can replicate some of the effects of natural disturbances, and to place them on the landscape in a way that they can contribute towards the production of a desired future forest state. The approach assumes that the future forest, if it is similar in structure and function to the historical natural forest, should support a similar range of biological life. No specific objectives are set for individual habitat types or individual species; rather, the approach minimizes the risk of loss of habitats or species in the absence of sufficient knowledge to manage for them.
International Paper - Sunpine	Conduct forestry practices which maintain a <b>sustained yield</b> of timber from the productive forest land while adhering to the principles of <b>ecological forest management</b> . Focus on maintaining diversity at both the landscape and stand levels and approximating natural processes. In general, the intent will be to approximate the natural distribution of stand ages, size and structure.
International Paper - Weldwood	Commitment to practice sustainable forest management as defined by the Canadian Council of Forest Ministers (1992). <b>Habitat supply modeling</b> used to ensure that no habitat supply bottlenecks occur at the FMA scale for any of the modeled species. 30 species selected to represent each of 16 terrestrial associations.

## Alternative Futures

Table 3.2 (Continued)

Company	General approach to forest management
Weldwood (cont.)	Harvesting within the limits of regeneration and natural growth in a manner that preserves the diversity of complex and interlinked ecosystems.
Millar Western	The preferred strategy represents the most feasible approach to meet the forest-level goals and objectives derived from a public involvement process. <b>Biodiversity indicator forecasts</b> for each strategy will be analyzed, compared and evaluated, leading to reformulation and retesting of management strategies. This process continues until an acceptable management strategy is achieved. Since MWI is facing a shortage of fibre for its mills, an <b>enhanced silviculture strategy</b> has been developed to increase (almost double) the annual allowable cut from the landbase.
Sundance	The timber supply analysis procedure for the Sundance FMA was designed to meet the wood supply needs of the company while meeting or exceeding current provincial management standards. Agreement to establish, grow, harvest, and remove timber on a <b>sustainable basis</b> . The future forest will resemble the existing forest in terms of species composition as closely as possible given the need for access and resource extraction. Effects of fire will be partially emulated.
Tolko - High Prairie - High Level	Tolko is committed to evolving towards sustainable forest management from the current principle of <b>sustained yield management</b> with multiple objectives. Overall, Tolko's corporate goals are consistent with the objectives of the <i>Alberta Forest Legacy</i> and include: sustainable forest management and the consideration of a broad range of forest values in the development of effective forest mgmt. strategies.
West Fraser - Blue Ridge Lumber	Blue Ridge Lumber will be moving from a <b>sustained yield</b> to an ecologically based approach of sustainable forest management. Harvesting the older, high-risk timber is a high priority and is required to maintain a healthy forest.
West Fraser - Slave Lake Pulp	Achieve and maintain a perpetual, <b>sustained yield</b> of timber while not diminishing the productivity of the forest land. Slave Lake Pulp believes that management of the timber resources within the FMA needs to take place in a manner that recognizes and protects biodiversity within an objective range of natural variability. Strategies will be developed during the term of this plan to provide for forest sustainability through management of vegetation associations. Place priority on planning and conducting harvest operations on sites containing stands of overmature, decadent timber.
Weyerhaeuser Forest Products (WFP): - Drayton Valley - Edson - Grande Prairie - Slave Lake	Weyerhaeuser Canada is committed to the conservation of biological diversity and the long-term sustainability of managed forest ecosystems. The long-term sustainability of forest ecosystems and the ecological requirements of most species can be achieved by mimicking the natural process of disturbance and succession that are characteristic of a site or region. In <b>ecologically-based forest management</b> , planning for future forest landscapes means maintaining a range of age structures, seral stages, and abundance of forest cover types that are characteristic of each Subregion.

prescribed by EFM, most companies now plan to retain snags and downed logs on harvest sites. Some companies are also distributing logging debris on the harvest site; however, the burning of debris is still common. The retention of live clumps of trees after harvest has received the least attention, presumably because there is a direct impact on harvest volume. Daishowa's technical committee determined that 15% of merchantable timber should be retained on harvest blocks to achieve ecological objectives at the stand level, and this value was subsequently set as the company's target (DMI, 1999). But 15% retained structure is substantially less than what typically remains after a fire; therefore, it remains to be determined whether this target will in fact be sufficient. The management plans of most other FMA holders have no target at all for live-tree retention, and of the few that do, targets are between 1-5%.

In Alberta all merchantable stands are designated as either coniferous or deciduous based on the volume of conifer at the time of initial inventory, and managed separately, generally by different operators (Cumming and Armstrong, 1999). Regeneration efforts are, by regulation, intended to produce relatively pure stands of either deciduous or coniferous trees, depending on the initial land base designation. Most coniferous sites continue to be regenerated using monoculture plantation techniques, including invasive site preparation, planting of genetically selected seedlings, and mechanical or chemical control of competing vegetation (Fig. 3.3). The regeneration of most deciduous sites is accomplished through natural regeneration.

There are two major problems with the current system of regeneration. First, the intensive techniques used on coniferous sites (Fig. 3.7) cause significant disruption of the soil and of

natural forest processes (Easton and Martin, 1998; Stelfox et al., 2000). This represents a significant risk to the maintenance of forest integrity. Second, the focus on producing pure deciduous and coniferous stands implies the liquidation of the mixedwood stand type. Mixedwood stands are structurally complex and play a critical role in supporting the biodiversity of Alberta's boreal forest (Stelfox, 1995: *viii*).

A working group was recently established in Alberta for the purpose of developing and refining so-called "mixedwood management" techniques. Under mixedwood management, deciduous and coniferous trees regenerate together on the same site, with minimal intervention (see Chapter 6). Several issues pertaining to government regeneration standards, the dual land base system, and integration between FMA holders and quota holders must first be resolved before mixedwood management can be implemented on a wide scale.



Fig. 3.7. Mound scarifier, used in preparing ground prior to planting conifers. (Photo: D. Mussell)

## **Alternative Futures**

Because they are outdated, the provincial *Ground Rules* do not incorporate mixedwood management or any of the other practices related to EFM. In the *Ground Rules*, the regulations pertaining to forest protection are focussed on watershed protection (via buffer strip prescriptions), mitigation of the impacts of road construction, and the maintenance of habitat for game species.

### ***Landscape-level Planning***

Under the conventional sustained-yield harvest system, the rate of harvest and the selection of stands is based on the objective of sustaining an even flow of timber over a long planning horizon. There are no additional landscape-level objectives.

One of the key attributes to be maintained at the landscape level under EFM is the natural age structure of the forest (Bergeron et al., 1999). Of greatest concern is the proportion of old-growth, as old-growth stands have the highest levels of species diversity but are destined for liquidation under sustained-yield management (Stelfox, 1995; *vs.* Burton et al., 1999). The two most progressive deciduous operators, Alpac and Daishowa, have deciduous old-growth targets of only 8%, which is substantially less than the current proportion of old-growth on the landscape (see Chapter 8). The average old-growth targets of Weyerhaeuser are even lower, and most of the remaining companies have not defined any targets for merchantable old-growth. The provincial *Ground Rules* specify that 10% of all management units must be retained in mature or overmature forest; however, this may be achieved using “*unmerchantable stands, watercourse protection buffers, and other areas not scheduled for harvest*” (AEP, 1994: sec. 4.3.2).

Another core element of EFM at the landscape level is the maintenance of natural patterns in the spatial distribution of forest stands (Baskent, 1999). Although FMA holders implementing EFM all include this as an objective, implementation is again limited to passive measures such as whole-stand harvesting. This is not the same as the natural disturbance model, which involves developing a detailed description of the natural patterns and then actively selecting harvest blocks to achieve targets based on these patterns in perpetuity. The spatial distribution of old-growth patches, especially the larger ones, is at significant risk of being altered without such active management (Ohman and Eriksson, 1998). As expected, most companies without a strong commitment to EFM have no targets for landscape patterns. The provincial operating ground rules are likewise mute on this issue.

The final element of EFM at the landscape level is the maintenance of stand types. Those companies implementing EFM include the maintenance of natural proportions of stand types as an objective. However, realization of this objective requires the successful implementation of mixedwood management. Companies that are not committed to EFM do not include targets for maintaining natural proportions of stand types.

### ***Other Issues***

A serious deficiency common to the management plans of all FMA holders is that they fail to account for changes to the forest beyond those resulting from harvesting operations. For example, given current rates of burning it is certain that large fires will sporadically occur in each of the FMAs over the typical 200-year planning horizon. However, there is no mention in any of the

plans of how ecological attributes of the forest will be maintained under the combined impact of forest harvesting and wildfire. Similarly, the ecological impact of oil and gas exploration and extraction is ignored in all of the management plans, even though the oil and gas industry annually disturbs almost the same area of forest as the forest industry (see Chapter 4). Most oil and gas industry disturbance arises from seismic exploration and road development and has the effect of (1) increasing the proportion of young forest (by removing mature trees), (2) reducing the average patch size (through fragmentation), and (3) increasing human access to the forest. Unless FMA holders account for these impacts, the implementation of EFM cannot succeed. Indeed, success in achieving ecological objectives will likely be possible only if the oil and gas industry also adopts EFM (involving changes in practices) and enters into integrated planning with FMA holders.

Under the current management system, every merchantable forest stand in Alberta that is part of the allocated land base (i.e., virtually all of the Green Zone), will eventually have a road constructed to it (Fig. 3.8). Indeed, expenditures on road development have been growing rapidly in recent years (Fig. 3.9). These roads result in the loss and fragmentation of habitat, changes in animal movement patterns, soil erosion, disruption of water and fish movements, and increased access by humans (resulting in increased hunting and poaching) (Trombulak and Frissell, 2000). Many FMA holders plan to decommission local haul roads leading to individual stands once harvesting is complete; however, once roads are constructed it is very difficult to prevent all-terrain vehicles and snowmobiles from accessing an area. Furthermore, it is only the short in-block roads



Fig. 3.8. Logging access road under construction. (Photo: Canadian Parks and Wilderness Society - Edmonton)

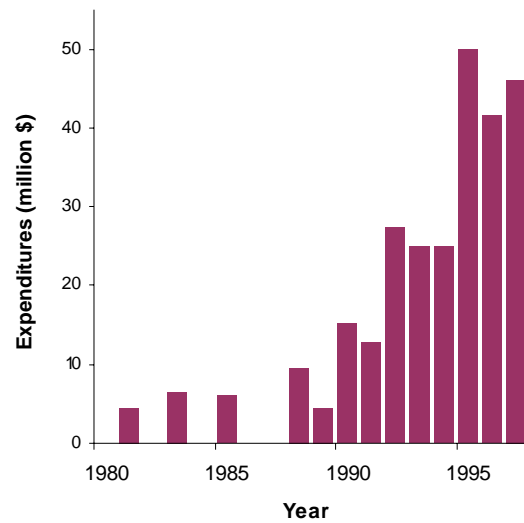


Fig. 3.9. Expenditures on forest access development by the forestry sector in Alberta, 1980-1997. Source: CFS, 2002: Table 7.2.

## Alternative Futures

that are being decommissioned. The main arterial road network that is being constructed to provide access throughout Alberta's forests is intended to be permanent. There is no mention in any of the management plans of alternatives to such a permanent dispersed road network.

Most FMA holders that harvest coniferous trees intend to implement at least some elements of intensive forest management (also known as enhanced forest management) on their FMAs. Intensive forest management involves the application of techniques to increase the growth rate of forest stands (AEP, 1997: 1), at the cost of disrupting natural processes (Easton and Martin, 1998). The growing trend toward intensive management is not being offset by increases in protected areas or the advancement of EFM, and hence is a serious cause for concern.

## Public Involvement

In addition to changes in operating practices, the AFCS calls for changes in the way that decisions are made about the use of our forests. Specifically, the AFCS recommends that, "*meaningful public involvement must be an integral component of all major decisions*" (AFCSSC, 1997: 24).

Five years after the release of the AFCS, there is no evidence of substantive change in the way major timber allocations and policy decisions are made. A case in point is the proposed Grande Alberta Paper FMA in northwestern Alberta. The proposed FMA overlaps the last opportunity for the establishment of a large protected area in the northern Foothills Natural Region, of which less than 2% is currently protected. Despite this land use conflict, and several other concerns involving the public interest (Walsh, 2000), negotiations have all been conducted privately between the

government and the industrial proponent. Not only has the public been excluded from involvement, but information regarding the negotiations can be obtained only through challenge under the Freedom of Information process (M. Wenig, pers. comm.).

In recent planning processes that have involved substantial public consultation the government has established a record of disregarding the public will. The Special Places 2000 process and the AFCS itself are prime examples of this. As a consequence, instead of progress towards "meaningful public involvement", the situation in Alberta is one of growing polarization between groups representing public forest interests and the government.

FMA holders are required to incorporate public involvement into their development of management plans. Typically, this is accomplished through the input from permanent public advisory committees that are organized and supported by the FMA holders. In practice, the success of public advisory committees in ensuring that the goals and principles of the AFCS are incorporated into management plans is limited by several factors. First, most advisory committees are dominated by forest "user" groups and local economic interests, and there is little or no representation of interests pertaining to the conservation of biodiversity. Second, forest management has become very complex, involving much technical detail. Public advisory groups generally do not have the technical capacity necessary to independently analyze, critique, and offer alternatives to proposals made by the FMA holder. This problem is exacerbated by the fact that advisory committees rely on the FMA holder as their primary source of information. Finally, the scope of advisory committee discussions is con-

strained by limits imposed by the FMA holder and existing forestry policy. For example, it is assumed that existing mills are to be used at full capacity. Advisory committees are expected to work within this constraint, even though under EFM it is the forest's capacity to supply timber that is supposed to define harvest rates, not the requirements of existing mills.

Another issue related to public involvement in decision-making is access to information. The AFCS recommends that "*all of the information used in planning and decision-making processes should be available to those who wish to be involved*" (AFCSSC, 1997: 23). In reality, Alberta remains a difficult jurisdiction in which to obtain information on forestry. Gaining access to forest management plans is generally problematic, even though the Internet provides an obvious mechanism for facilitating access. Forest inventory data, now that it is being collected by the FMA holders instead of the government, is considered proprietary information and, therefore, not publicly available. Finally, in contrast to many other jurisdictions (especially in the U.S.) basic digital maps compiled by the government using tax dollars (such as the boundaries of FMAs) are not provided to the public as a free service.

### Literature Cited

- AE (Alberta Environment). 2001a. Annual report 2000/2001. Alberta Environment, Edmonton, AB. (Available at: [www.gov.ab.ca/env/dept/](http://www.gov.ab.ca/env/dept/)).
- AE (Alberta Environment). 2001b. Riparian management models. Supplement #4 in: Draft guidelines to Alberta ground rules renewal. Alberta Environment, Edmonton, AB.
- AEP (Alberta Environmental Protection). 1994. Alberta timber harvest planning and ground rules. Alberta Environmental Protection, Edmonton, AB. (Available at: [www.gov.ab.ca/env/forests.html](http://www.gov.ab.ca/env/forests.html))
- AEP (Alberta Environmental Protection). 1996. The status of Alberta's timber supply. Alberta Environmental Protection, Edmonton, AB. (Available at: [www.gov.ab.ca/env/forests.html](http://www.gov.ab.ca/env/forests.html))
- AEP (Alberta Environmental Protection). 1997. Policy requirements for implementation: report of the Enhanced Forest Management Task Force. Alberta Environmental Protection, Edmonton, AB.
- AEP (Alberta Environmental Protection). 1998a. The Alberta forest legacy. Alberta Environmental Protection, Edmonton, AB. (Available at: [www.gov.ab.ca/env/forests.html](http://www.gov.ab.ca/env/forests.html)).
- AEP (Alberta Environmental Protection). 1998b. Interim forest management planning manual - guidelines to plan development (ver. 4.1). Alberta Environmental Protection, Edmonton, AB. (Available at: [www.gov.ab.ca/env/forests.html](http://www.gov.ab.ca/env/forests.html)).
- AEP (Alberta Environmental Protection). 2000. A strategy for ground rules renewal. Alberta Environmental Protection, Edmonton, AB. (Available at: [www3.gov.ab.ca/srd/forests/](http://www3.gov.ab.ca/srd/forests/)).
- AFCSSC (Alberta Forest Conservation Strategy Steering Committee). 1997. Alberta forest conservation strategy. Alberta Environmental Protection, Edmonton, AB. (Available at: [www.borealcentre.ca/reports/reports.html](http://www.borealcentre.ca/reports/reports.html)).
- AFPA (Alberta Forest Products Association). 2001. Alberta forest products industries: overview of economic impact. Alberta Forest Products Association, Edmonton, AB.
- ARD (Alberta Resource Development). 2000. Annual report 1999/2000. Alberta Resource Development, Edmonton, AB. (Available at: [www3.gov.ab.ca/srd/forests/](http://www3.gov.ab.ca/srd/forests/))
- ARD (Alberta Resource Development). 2001. Annual report 2000/2001. Alberta Resource Development, Edmonton, AB. (Available at: [www3.gov.ab.ca/srd/forests/](http://www3.gov.ab.ca/srd/forests/))
- Baskent, E. 1999. Controlling spatial structure of forested landscapes: a case study towards landscape management. *Land. Ecol.* 14:83-97.
- Bergeron, Y., B. Harvey, A. Leduc, and S. Gauthier. 1999. Forest management guidelines based on natural disturbance dynamics: stand and forest-level considerations. *For. Chron.* 75:49-54.
- Burton, P., D. Kneeshaw, and D. Coates. 1999. Managing forest harvesting to maintain old growth in boreal and sub-boreal forests. *For. Chron.* 75:623-631.
- CFS (Canadian Forest Service). 2001. The state of Canada's forests: 2000/2001. Canadian Forest Service, Ottawa, ON. (Available at: <http://nrca.gc.ca/cfs/proj/ppiab/sof/common/latest.shtml>).

## **Alternative Futures**

---

- CFS (Canadian Forest Service)**. 2002. National forestry database, on-line, Canadian Forestry Service, Ottawa, ON. (Available at: [http://nfdp.ccfm.org/framesinv\\_e.htm](http://nfdp.ccfm.org/framesinv_e.htm))
- Cumming, S. and G. Armstrong**. 1999. Divided land bases and overlapping tenures in Alberta's boreal forests: a simulation study of policy alternatives. Working Paper 1999-3, Sustainable Forest Management Network, Edmonton, AB. (Available at: <http://sfm-1.biology.ualberta.ca/english/home/index.htm>).
- DMI (Daishowa-Marubeni International)** 1999. Detailed forest management plan: 1999-2009. Daishowa-Marubeni International, Peace River, AB.
- Easton, W. E. and K. Martin**. 1998. The effect of vegetation management on breeding bird communities in British Columbia. *Ecol. Appl.* 8:1092-1103.
- FWA (Forest Watch Alberta)**. 2001. Planning and practices survey of Forest Management Agreement holders in Alberta. Forest Watch Alberta, Edmonton, AB. (Available at: [www.forestwatchalberta.ca](http://www.forestwatchalberta.ca))
- GOA (Government of Alberta)**. 1999. The forests act. Queen's Printer for Alberta, Edmonton, AB. (Available at: [www.gov.ab.ca/qp/](http://www.gov.ab.ca/qp/)).
- Moen, A.** 1990. Demystifying forestry law: an Alberta analysis. Environmental Law Centre, Edmonton, AB.
- Ohman, K. and L. Eriksson**. 1998. The core area concept in forming contiguous areas for long-term forest planning. *Can. J. For. Res.* 28:1032-1039.
- Stelfox, J. B.** 1995. Relationships between stand age, stand structure, and biodiversity in aspen mixedwood forests in Alberta. Alberta Environmental Centre, Vegreville, AB. (Available at: [www.borealcentre.ca/reports/reports.html](http://www.borealcentre.ca/reports/reports.html)).
- Stelfox, J. G., J. B. Stelfox, W. Bessie, and C. Clark**. 2000. Long-term (1956-1996) effects of clearcut logging and scarification on forest structure and biota in spruce, mixedwood, and pine communities of west-central Alberta. (Available at: [www.borealcentre.ca/reports/reports.html](http://www.borealcentre.ca/reports/reports.html))
- Trombulak, S. and C. Frissell**. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. *Cons. Biol.* 14:18-30.
- Walsh, H.** 2000. Alberta's Chinchaga wilderness. Albertans for a Wild Chinchaga, Fairview, AB. (Available at: [www.telusplanet.net/public/bwalsh/](http://www.telusplanet.net/public/bwalsh/))