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of British Columbia

**Forest Renewal BC:  
Planning and Accountability  
in the Corporation  
The Silviculture Programs**

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## auditor general's comments

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This is my sixth report to the Legislative Assembly for the 1999/2000 year. It contains the results of two audits of Forest Renewal BC—a Crown corporation established in 1994 with a mandate focusing on forest resources and the forest economy. Both have been important elements in the province's economy since the beginning of the century. As the century closes, their importance remains strong. In particular our forests are recognized for what they are—a public resource that can provide significant values and benefits to a wide range of stakeholders.

In the past, successive governments have acknowledged the need to manage the province's forest resources better and to consider more fully the range of forest values that are important to society: environmental, social, and cultural, as well as economic. Many attempts have been made to make improvements; however, progress has been hampered by lack of reliable inventories and adequate scientific tools to help manage the forests better. In addition, the challenges posed by ensuring sustainability of the resources, increased international competition, finding better ways of getting more value from wood harvested, addressing the problems of forest dependent communities, and maintaining a high level of employment in the forest sector, also had to be dealt with.

To address the above issues, the government in 1994, established Forest Renewal BC as a Crown corporation to implement the newly developed Forest Renewal Plan. The corporation was provided with a broad mandate to renew the forest economy of British Columbia, enhance the productive capacity and environmental value of forests lands, create jobs, provide training for forest workers and strengthen communities. To finance these activities, it was provided with a dedicated portion of the revenue fees companies pay for the right to harvest timber on Crown land. In the brief period of its existence—just over five years—Forest Renewal BC has gone from an organization spending \$40 million on programs in its first year to spending \$622 million at its peak in 1997/98. Its revenues also fluctuated significantly, reaching a high of \$534 million

in 1997/98 and a low of \$179 million in 1998/99. During its existence, the corporation has had to manage its activities in a challenging environment which has included addressing stakeholder needs and pressure to spend, major fluctuations in revenue, and issues posed by a period of significant change and difficulty in the forest economy.

This report includes the results of two audits: Planning and Accountability in the Corporation, and the Silviculture Programs. We undertook these audits because I believe that these are areas of fundamental importance to the achievement of Forest Renewal BC's mandate.

The first audit assessed whether Forest Renewal BC has clearly established where it wants to go and identified how it will get there, and whether it has adequately reported on how well it is performing. The corporation has to plan in a complex environment. To meet its broad legislated mandate, it has to deal with the needs of a large number of stakeholders and many competing demands that generally exceed available funds. In this type of environment, good planning that sets out clearly how funds are to be allocated is critical, as is an appropriate accounting for performance. We were pleased to note that the corporation has recognized that improvements are needed in these areas. The corporation has taken a significant step towards making such improvements with the issuance of its first corporate strategic plan in August 1999. This document sets the direction for the corporation for the next five years. The corporation has also recognized that better reporting of its performance is needed and has undertaken to adopt the recommendations in "Enhancing Accountability for Performance: A Framework and an Implementation Plan," produced by the Deputy Ministers' Council and my office.

The second audit assessed whether Forest Renewal BC is spending wisely on its silviculture programs. Our audit focused on the management of these programs, recognizing that there is a debate going on within the forest sector about the efficacy of some silviculture treatments. The programs are carried out to provide current and future social, environmental, and economical benefits to the province. Although funded by Forest Renewal BC, they are delivered by the Ministry of Forests and the forest industry. Since the corporation spends a significant amount of money on these programs—more than \$400 million by March 31, 1999—it is important that the corporation has a

clear picture of what it wants to achieve from the money invested. As we carried out our audit we noted a greater recognition by the corporation of the need to be able to demonstrate that funds are spent wisely; however, we believe that further improvements are needed. This includes more clearly identifying what the corporation hopes to achieve from its investments in the silviculture programs, providing better direction to those who deliver the programs as to its expectations and better measurement of what is being achieved.

My report coincides with a major restructuring at Forest Renewal BC necessitated by the recent reductions in revenue. I believe that my report will help the corporation in this restructuring. By implementing our recommendations, the corporation should be in a better position to demonstrate how efficiently and effectively it is carrying out its mandate of rejuvenating the province's forest economy.

I wish to acknowledge the assistance and cooperation we received in the course of our work from officials and staff of Forest Renewal BC, other government agencies involved—particularly the Ministry of Forests and the Ministry of Environment, Lands and Parks—forest industry stakeholders, as well as the advisors who assisted us with these audits.

*George L. Morfitt, FCA*  
*Auditor General*

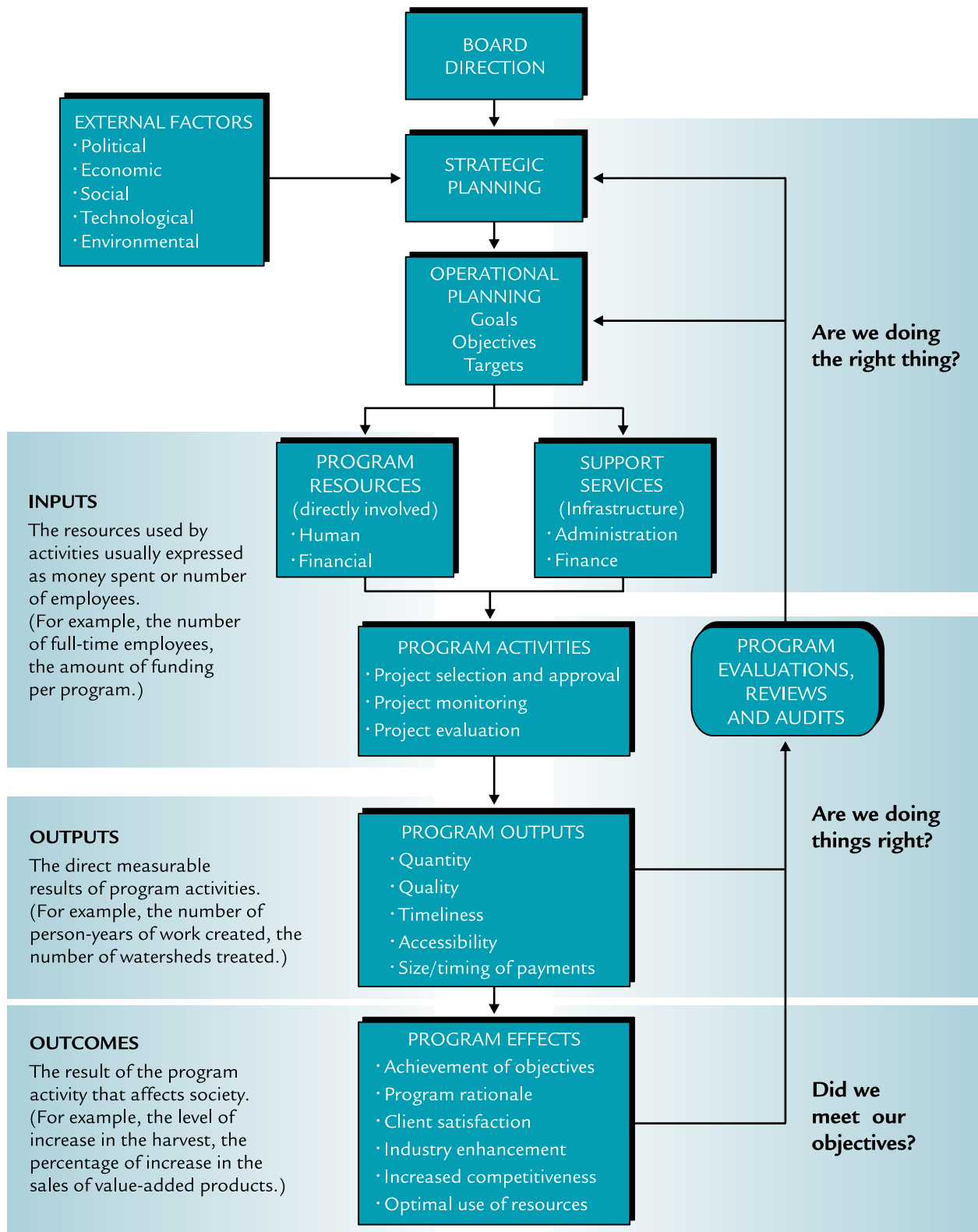
*Victoria, British Columbia*  
*October 1999*



# introduction

# Exhibit 1.1

## General Management Model





# introduction

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This report contains the results of two performance audits of Forest Renewal BC conducted in 1998.

In the first audit, we looked at how the corporation plans for its program investments and accounts for its performance. Forest Renewal BC has many objectives, including enhancing forest resources and the environment, job creation, and supporting workers and communities in times of stress. The corporation plays an important role in terms of achieving the government's objectives for the forest economy and environment. After four years of existence, the corporation has spent more annually than have many ministries. Annual program funding has increased from \$37 million in 1994/95 to \$597 million in 1997/98. In its first five years of existence, the corporation has spent about \$1.8 billion on program investments and administration. For 1998/99 and subsequent years, Forest Renewal BC will be faced with a reduction in its revenue and an increase in demand for its investment funds. As a result, how Forest Renewal BC plans and allocates its funds will greatly affect the extent to which it is able to achieve its goal to renew the province's forest economy.

Our second audit focused on the corporation's silviculture programs—the Enhanced Forestry Program and the Backlog Program. Both are a priority for the corporation, and together received about 27% of Forest Renewal BC program expenditures in 1998/99. The only program that received more funding than Enhanced Forestry was Resource Inventory. The purpose of this audit was to assess whether Forest Renewal BC was spending wisely on its silviculture programs—that is, spending to ensure economy, efficiency, and effectiveness.

Both audits are based on the premise that good management practices contribute to good performance. Exhibit 1.1 defines terms (e.g., inputs, outputs, and outcomes) that are used throughout this report and shows our expectations for appropriate linkages between plans, goals and objectives, and the inputs applied by the corporation to achieve targeted outputs and outcomes.

The corporation's responses to these audits is published along with our reports. The corporation has indicated that a number of initiatives are underway to address many of the issues we raised. We will publish accounts of the organization's progress in our future annual reports to keep legislators and the public informed of the results of these initiatives, and will also follow-up on these matters when we carry out future audits in the corporation.



background



# background

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## The State of the Forest Economy in British Columbia

The forest economy in British Columbia is under stress and going through major changes. With increasing international competition on the one hand and pressure to manage the forest resource sustainability on the other, the province is having to find ways to produce wood economically, while demonstrating sound stewardship of the forest environment.

The challenges facing the forest sector are not completely new. Over the past 90 years, several commissions have been struck to look into forestry matters (Appendix A). Government proposals in 1987 to expand the Tree Farm License system led to establishment of a British Columbia Forest Resources Commission to review several issues related to the forest economy. Government policies from the early 1990s regarding old growth strategies, land use planning and the doubling of parkland have had impacts on the land base available for harvesting. Implementation of the Forest Practices Code in 1995 has affected harvesting practices and increased costs. More recently, the settling of First Nations claims has begun. This will lead to changes in tenures and in how industry carries on its business.

In some areas of the province, the processing sector has overcapacity in relation to the area's harvest levels, and adjustments are needed if operations are to be efficient. The necessary rationalization of the industry is still underway, and more changes may be forthcoming. The first round of Timber Supply Reviews did not reduce the provincial allowable cut significantly. However, because of timing, that review did not include all of the adjustments needed to accommodate land use decisions and Forest Practices Code requirements. It is expected that the second review, now underway, will lead to substantial reductions in some areas of the province. These will have an impact on the size of the forest industry that the land base can support.

Competing for market share has also become much more difficult. International competition has increased as more countries enter the international marketplace. As a result, some of British Columbia's traditional markets are now being serviced by other jurisdictions, which may have competitive advantages in terms of costs and growth rates.

Since the last Royal Commission in the 1970s, successive governments have initiated a series of investments designed to minimize the impact of the social, economic, and technological changes on the forest industry (Exhibit 1.2). The success and longevity of these investments have varied greatly. Forest Renewal BC is the latest of initiatives to renew the forest economy.

According to the most recent PricewaterhouseCoopers (1999) report on the forest industry, in the year that Forest Renewal BC was established (1994), the forest sector had export sales of \$16 billion—62% of total provincial exports. For 1998, export sales totalled \$15 billion—51% of total provincial exports. In 1994, there were 95,900 direct and 192,000 indirect jobs in the forest sector. In 1998, direct jobs totalled 91,400 and indirect jobs were 182,800. For both 1994 and 1998, these jobs comprised 15% of the provincial workforce.

While the forest sector has contracted overall and relative to the general economy, it is still a significant contributor to the wealth of the province. Forest Renewal BC has stated that approximately 140 communities in British Columbia are largely dependent on the forest industry (i.e., 10% or more of local income is generated by the forest sector).

## The Creation of Forest Renewal BC

### Forest Sector Strategy Committee

In the early 1990s, concerns about the forest industry prompted government to establish the Forest Sector Strategy Committee. Its formation was announced in April 1993. Consisting of representatives from stakeholder groups, government, industry, labour, communities, First Nations and environmental interests, the committee's chief focus was to establish a forest sector strategy for the province.

The committee was instrumental in the development of the Forest Renewal Plan. Discussions about the government's priorities centred on the need for a "package" that included investment in the land, with additional components for job creation and transition, the identification of value-added opportunities, a contribution to environmental values, and more research and community support. It proposed that a fund be established to cover the cost of these initiatives. This led to the government introducing Bill 32—the Forest Renewal Act—in April 1994, and to the Forest Renewal Plan, a document that outlined the priorities and focus of this new initiative.

## Exhibit 1.2

### Recognizing the Need to Invest in Renewing the Forests

Date	Investment Initiative
1978	An Accelerated Reforestation Program provided \$10 million for reforestation. This was supplemental to the regular budget appropriation of \$19.8 million for reforestation.
1980	A special fund—the Forest and Range Resource Fund—was established. The \$146.6 million in the fund was directed towards silviculture. The fund was terminated within three years, with only part of the funds having been used for silviculture. Ministry of Forests documents indicated that neither industry nor government were funding silviculture to the levels that were required during the early 1980s.
1985	<p>The Province and the federal government committed over \$300 million in a five-year program—the Forest and Resource Development Agreement (FRDA)—intended to “sustain or increase the forest resource and strengthen the employment potential of the forest industry.” The program components were:</p> <ul style="list-style-type: none"> <li>■ reforesting areas not yet restocked (Backlog NSR),</li> <li>■ enhanced silviculture activities,</li> <li>■ conducting research, and</li> <li>■ assisting industry in marketing and product development.</li> </ul> <p>The program ended up focusing on restocking forest areas that had not been adequately replanted.</p>
1986	The British Columbia government announced the establishment of the Forest Stand Management Fund to complement FRDA. The government expected contributions to be made by itself, the federal government, the forest industry, labour and the municipal sector. The fund was to have a balance of \$70 million and be used for intensive silviculture activities (weeding, fertilizing, thinning) to increase the return from the reforestation investment. Only the provincial government contributed to this fund and it continues to this day with small amounts of funding.
1991	FRDA expired at the end of 1989/90 and a second, smaller program—FRDA II—was negotiated. Both governments committed a total of \$200 million. This funding was incorporated into a provincial Forest Renewal Program, a five-year \$1.4 billion program for 1991 to 1995. It also focused on restocking “not satisfactorily restocked” (NSR) areas. The goal was to ensure that NSR forest lands were restocked by the end of the decade. Funding for this program was transferred to a new special account—the Sustainable Environment Fund. The Cabinet Committee on Sustainable Development managed this fund.
1994	The Forest Renewal Plan was established, and monies for forest renewal activities were no longer transferred to the Sustainable Environment Fund. The fund (about \$22 million) exists today primarily to fund activities related to environmental pollution prevention.
1996	In September 1996, Forest Renewal BC took over the responsibility for NSR land restocking and announced a new program for NSR lands, covering a 10-year period. Planned spending of \$250 million over the 10 years is expected to restock 110,000 of the 250,000 hectares still remaining.

Source: Compiled by the Office of the Auditor General of British Columbia

## The Forest Renewal Plan

In the spring of 1994, the government released its Forest Renewal Plan. Legislation established the authority and structures needed to implement it. The Forest Renewal Plan recognized that governments, in the past, had taken the forests for granted, neglecting long-term stewardship of the forest resource in favour of a short-term strategy of harvesting more and more each year. According to the plan, these old concepts had to be discarded and a sustainable, long-term approach to forest management developed.

The goals of the plan were to:

- renew the land and keep the forests healthy;
- invest in the forest lands that generate much of the province's wealth;
- ensure sustainable use and enjoyment of the province's forests;
- ensure the continued availability of good forest jobs; and
- ensure the long-term stability of communities that rely on the forests.

These were to be achieved by:

- collecting an estimated \$2 billion over the next five years from increased stumpage rates;
- dedicating this investment to the forests, the people who work in the forests, and their communities;
- creating a new partnership of government, industry, workers, First Nations, communities and environmentalists to manage this reinvestment in the forests; and
- developing policies to complement and enhance the investments in the forests.

The plan listed five principles. It stated that forest renewal investments will be:

- permanent—investments will be used to sustain the public forest for the long-term;
- independent—no money will go into general government revenues;
- equitable—investments will be distributed fairly throughout the province;
- effective—all partners will take part in making decisions on where the dollars are invested; and
- accountable—the government will bear responsibility to the public and to taxpayers.

Another important part of the plan was the proposal to establish Forest Renewal BC, a Crown corporation, as the delivery agent for the new program.

During the debate on Bill 32 in 1994, many members of the Legislature questioned the benefit to the public of using a Crown corporation for delivery. Some members felt it would assure the permanence of funding, a continuity that previous initiatives had been unable to maintain.

Others, however, were concerned about the creation of another bureaucracy. This was something government did not want and anticipated that the corporation would be kept small, in the neighbourhood of 20 or so employees initially and 25 for the long term. It was suggested that the infrastructure for providing many of the programs already existed in the Ministry of Forests. As well, it was clear that there were many similarities between the mandates of Forest Renewal BC, the Ministry of Forests, the Ministry of Environment, Lands and Parks, BC21, and the Ministry of Skills, Training and Labour (which had then announced a two-year, \$200 million program that could also provide training for forest workers).

While the sections of the Bill were discussed at length, little was expressed about what the Province was trying to accomplish by spending the money and how any accomplishments would be measured.

## Forest Renewal Act

In June 1994, the Forest Renewal Act was passed and Forest Renewal BC came into being. Its purpose is “to renew the forest economy of British Columbia, enhance the productive capacity and environmental value of forest lands, create jobs, provide training for forest workers and strengthen communities.” The Act directs Forest Renewal BC to do this by planning and implementing a regionally equitable (fair and equal treatment) program of expenditures.

Stumpage rates were increased effective May 1, 1994, to provide the contributions that would build the fund. Under the legislation, the increased stumpage was expected to provide Forest Renewal BC with an average of about \$400 million per year. These new funds were to be dedicated to implementing the Forest Renewal Plan. The legislation also required the corporation to comply with any general or special direction made by order of the Lieutenant Governor in Council.



Forest Renewal BC is also governed by the applicable provisions of the Public Service Act, the Public Service Labour Relations Act, the Financial Information Act and the Financial Administration Act.

## About Forest Renewal BC

### Organizational structure

An organizational chart of Forest Renewal BC is depicted in Exhibit 1.3.

The corporation is governed by an 18-member, government-appointed board of directors made up of six government and 12 non-government members, including representatives from labour, First Nations, environmental groups, industry and communities. The Chair is a full-time paid chair who is appointed by Cabinet. The corporation is required to report on its performance annually, through the Minister, to the Legislative Assembly.

As required by the Forest Renewal Act, the board of directors has set up five committees to provide it with advice on each of the following activity areas:

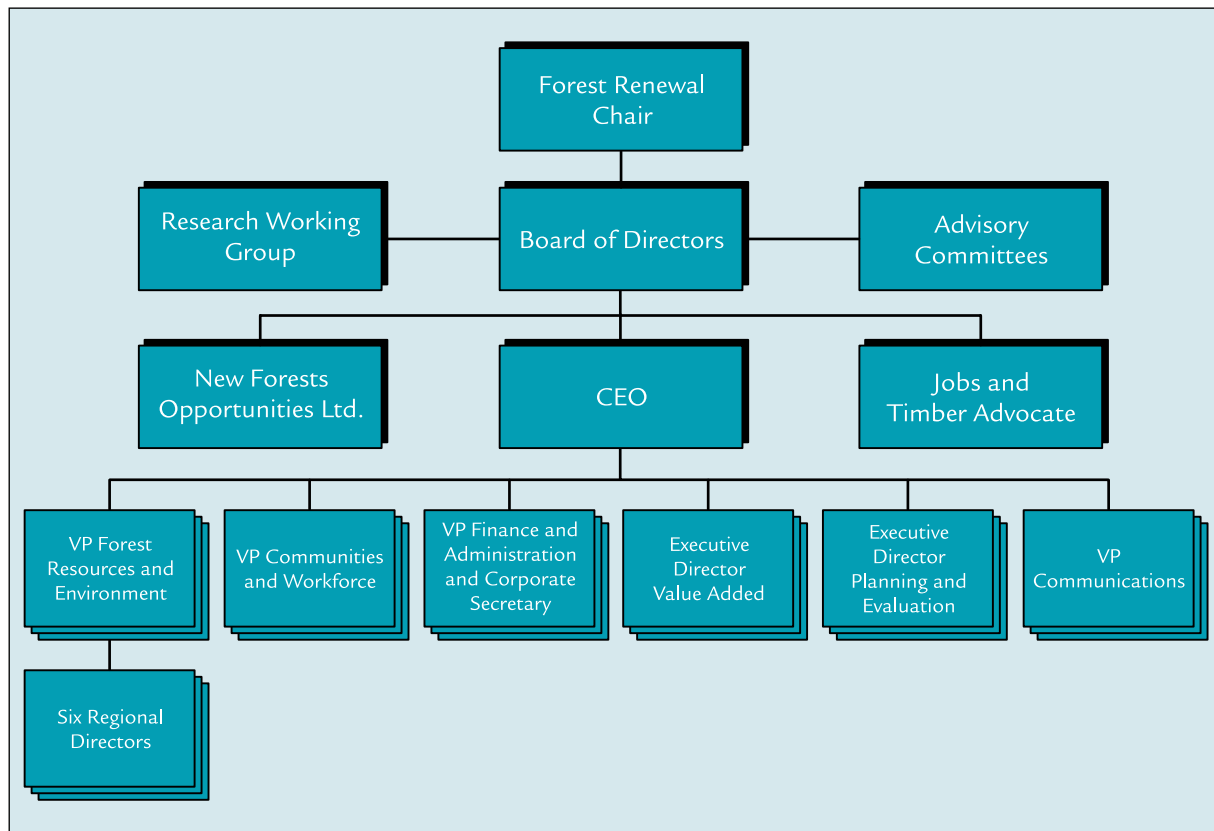
- Land and Resources,
- Environment,
- Value-Added,
- Workforce, and
- Communities.

The Minister of Forests appoints committee members on the recommendation of the board and government. Membership includes the same types of stakeholders as are found on the board and also includes representation from the province's geographic regions. Forest Renewal BC has also established a research working group to advise on research priorities and program implementation mechanisms.

The corporation has divided responsibility for its five activity areas into the following three operational business units: Forest Resources and Environment, Communities and Workforce, and Value-added. It also has three support units (Finance and Administration, Communications, and Corporate Planning and Evaluation), as well as six regional offices that report to the Vice President, Forest Resources and Environment.

## Exhibit 1.3

## Forest Renewal BC Organizational Structure as at December 31, 1998



Source: Forest Renewal BC

Forest Renewal BC has adopted the regional boundaries used by the Ministry of Forests, but has renamed them (Exhibit 1.4). Offices have been established in Williams Lake, Prince George, Kamloops, Smithers, Cranbrook and Campbell River. The regional offices are accountable for the delivery of programs within the overall governance framework provided by the Victoria office. The regions:

- consult with regional stakeholders regarding regional investment priorities;
- approve projects;
- negotiate agreements within the region's funding allocation;
- monitor and track project status; and
- manage the issues that occur in relation to regional investments.

Exhibit 1.4

Forest Renewal BC Regions



Source: Forest Renewal BC

The corporation also has two wholly-owned subsidiary organizations: New Forest Opportunities Ltd. and the Jobs and Timber Advocate. Both were created to fulfill Forest Renewal BC’s obligation under the Jobs and Timber Accord. New Forest Opportunities Ltd. is expected to assist displaced coastal workers find employment in Forest Renewal BC’s land-based programs. It also delivers the Forest Worker Transition Program for the Coast. The goals of the new agency are to create:

- stable, long-term jobs—with sufficient continuity of employment;
- well-paying jobs—with sufficient compensation and working conditions to support families; and
- fair access to jobs—giving priority to displaced forest workers in the region for Forest Renewal BC land-based work and increasing opportunities for First Nations and qualified local people.

A different mechanism is expected to fulfill this function in British Columbia’s Interior, but, at the time of our audit, an approach had not yet been determined.

The Jobs and Timber Accord also required the establishment of a Jobs and Timber Advocate office. The role of the advocate is “not only to monitor and report and advocate, as identified in elements in the accord but, particularly, to look at the state of the industry, to look at the effectiveness of the present strategies and to bring recommendations to the parties about where changes should be made in the accord in order to deal with changing circumstances and realities.” The office is jointly funded by the Ministry of Forests, the forest industry, and

### The Jobs and Timber Accord

In June 1997, the Province announced the Jobs and Timber Accord. The Accord was a commitment from government and industry to create more direct and indirect jobs in British Columbia’s forest sector—a total of 37,800 jobs by the year 2001. Through the Accord, Forest Renewal BC committed to:

- creating 5,000 direct and 5,000 indirect jobs each year for the term of the Accord;
- applying 70% of its total expenditures (up to \$300 million) to land-based activities, which include enhanced forestry, inventories, watershed restoration, recreation and land-based training;
- setting aside \$25 million for enhanced forest management pilots and innovative forest practices agreements;
- tying ongoing funding allocations to forest companies to the achievement of their job creation targets; and
- establishing regional value-added facilitators.

The Province committed to providing the financial and human resources needed to achieve the job targets identified.

Forest Renewal BC (the main contributor). A board consisting of two industry representatives, two government representatives, and the advocate manages the office. The office reports to the Forest Renewal board, the executive committee of Council of Forest Industries (COFI) and to government, and is expected to provide Forest Renewal BC with an annual report.

## Staffing

In its 1994/95 annual report, the corporation stated that it expected eventually to have 60 staff in Victoria and between 40 and 48 employees in the regions. As Exhibit 1.5 shows, for 1998/99 there were 71 Victoria staff and 122 regional staff. For the same year, another 60 “full-time equivalent” staff (FTEs) were employed by the subsidiary corporations. The corporation also has numerous agreements with a variety of different delivery agents to deliver its programs (Exhibit 1.5 does not include the personnel that Forest Renewal BC funds to deliver its programs). Each of these delivery agents uses a portion of the funding it receives from Forest Renewal BC to support the staff needed to deliver the programs. For example, two of the corporation’s largest delivery agents, the Ministry of Forests and the Ministry of Environment, Lands and Parks, have over 300 staff members who were funded by Forest Renewal BC for 1998/99.

However, in February 1999, faced with reductions in revenue (as described in the next section), Forest Renewal BC announced a restructuring plan. The plan calls for the corporation to reduce its full-time staff across the province to

### Exhibit 1.5

#### Staffing Levels for Forest Renewal BC

	1994/95	1995/96	1996/97	1997/98	1998/99
Regional staff	3	42	60	104	122
Victoria staff	27	48	59	96	71
Total Forest Renewal BC staff	30	90	119	200	193
New Forest Opportunities					53
Jobs and Timber Advocate					7
Total staff	30	90	119	200	253

Source: Compiled by the Office of the Auditor General of British Columbia from Forest Renewal BC annual reports and business plans, New Forest Opportunities, and the Jobs and Timber Accord Advocate

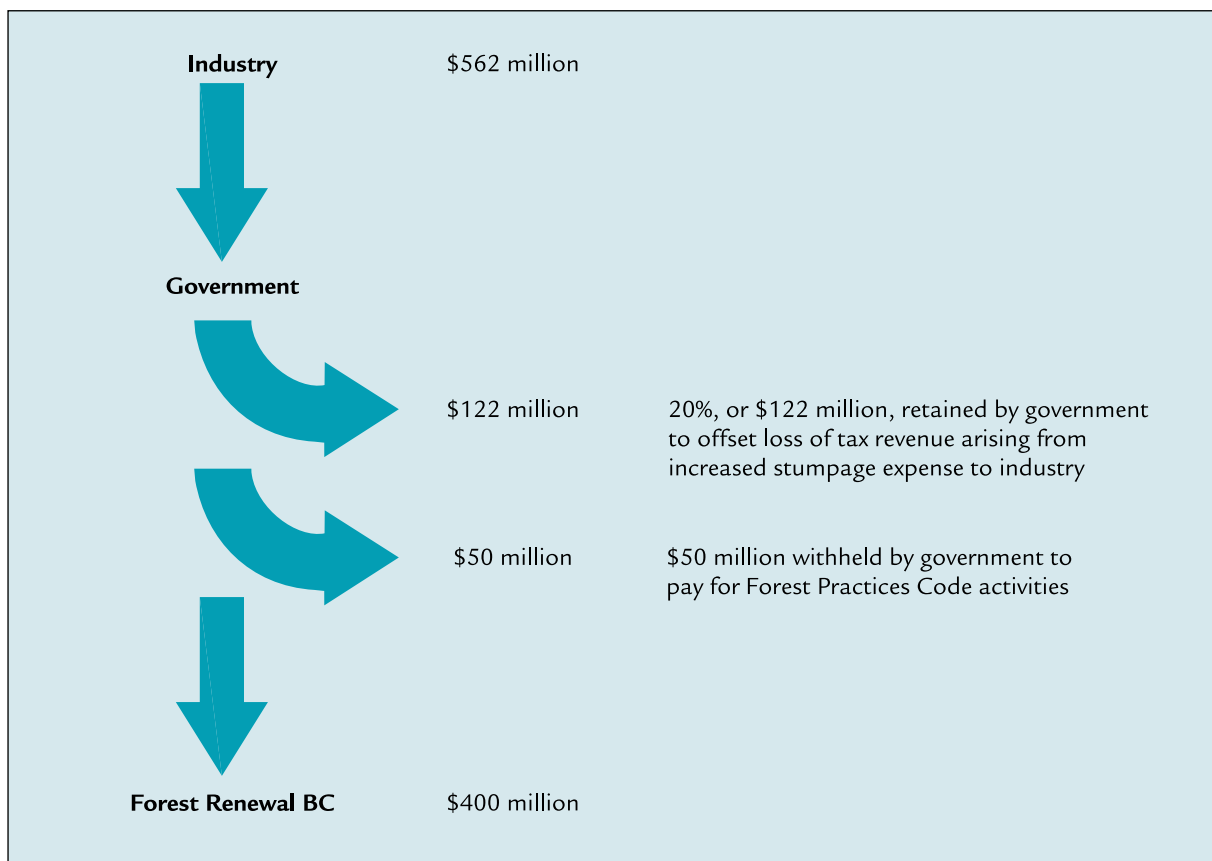
115 from 193 (a 40% reduction), but it will maintain offices in all of its regions. Within the next two years, the corporation expects to reduce its numbers to about 58 Victoria staff and 57 regional staff. The announcement did not include any information on staff reductions within the corporation’s delivery partners (e.g., the Ministry of Forests and Ministry of Environment, Lands and Parks) or in its subsidiary corporations.

## Revenue Sources

Funding for Forest Renewal BC comes from stumpage paid by forest companies for the right to harvest timber on Crown land in British Columbia. Stumpage and royalty increases were implemented on May 1, 1994, to provide the funding for Forest Renewal BC. The proposed distribution of these revenue increases is shown in Exhibit 1.6.

### Exhibit 1.6

#### General Expectation at May 1, 1994 of Funding for Forest Renewal BC



Source: Compiled by the Office of the Auditor General of British Columbia from Ministry of Forests documents

Under the authority of the Forest Renewal Act, the corporation is entitled to 80% of the increased royalty and stumpage revenue resulting from changes to the Forest Act in 1994, less an offset of \$50 million annually. The \$50 million was intended to fund some of the incremental government expenditures on forest management initiatives, such as the Forest Practices Code. The actual stumpage revenue varies from year to year as a result of changing harvest levels, the Canada/U.S. exchange rate, and a volatile lumber market.

In 1995/96, the corporation established a program continuity reserve to secure the corporation against several consecutive years of low revenues. During downturns in the forest economy, the corporation planned to use these funds to support programs in need. Additional reserves were established at March 31, 1998. The corporation also receives investment income as a result of the provincial treasury's investments of unexpended Forest Renewal BC funds.

The 1998/99 Business Plan stated that stumpage revenue was expected to be down to \$370 million (\$90 million less than 1997/98) because of the low U.S. lumber prices and the soft Asian market. In fact, however, because the government also lowered stumpage fees in 1998, the stumpage revenue available to Forest Renewal BC is estimated to be only \$156 million for 1998/99 (\$214 million less than originally estimated—Exhibit 1.7). Although the corporation anticipates that revenue will eventually increase from the 1998/99 levels, it does not ever expect it to reach the levels it had before the stumpage rates were reduced. Exhibit 1.7 shows that if planned revenues and expenditures for 1998/99 and 1999/2000 are met, Forest Renewal BC's equity will be reduced to \$304 million at the end of fiscal 2000.

## Expenditure Programs

For 1998/99, Forest Renewal BC funded 29 separate programs with planned annual expenditures ranging from \$150,000 for the Forest Excellence Awards program to over \$90 million for the Resource Inventory Program. A summary of the corporation's programs is provided in Appendix B. Exhibit 1.8 provides Forest Renewal BC's actual or forecasted expenditures for each of its activity areas and its administration for the period 1994/95 to 1998/99.

As shown in Exhibit 1.8, the 1997/98 Business Plan reflected a significant increase in funding, while the 1998/99 plan forecasted a decrease of about \$80 million. Administrative expenses during the last five years ranged from 4% to 8% of total expenditures.

## Exhibit 1.7

### Forest Renewal BC Fiscal Performance (Actual and Planned)

(\$ Millions)

	1994/95 Actual	1995/96 Actual	1996/97 Actual	1997/98 Actual	1998/99 Planned	1999/2000 Planned
<b>Revenue:</b>						
Total Stumpage Revenue	455	452	485	483	156	212
Investment Income	7	30	36	51	23	12
<b>Total Revenue</b>	<b>462</b>	<b>482</b>	<b>521</b>	<b>534</b>	<b>179</b>	<b>224</b>
<b>Expenditures:</b>						
Program Investments	37	145	396	597	518	300
Corporate Administration	3	13	20	25	26	18
<b>Total Expenditures</b>	<b>40</b>	<b>158</b>	<b>416</b>	<b>622</b>	<b>544</b>	<b>318</b>
Excess (deficiency) of revenue over expenditures	<b>422</b>	<b>324</b>	<b>105</b>	<b>(88)</b>	<b>(365)</b>	<b>(94)</b>
Equity, beginning of year	<b>0</b>	<b>422</b>	<b>746</b>	<b>851</b>	<b>763</b>	<b>398</b>
<b>Equity, end of year</b>	<b>422</b>	<b>746</b>	<b>851</b>	<b>763</b>	<b>398</b>	<b>304</b>

Source: Forest Renewal BC

## Exhibit 1.8

### Forest Renewal BC Expenditures for Each Activity Area for the Five Years 1994/95 to 1998/99

Activity Area	1994/95 Actual		1995/96 Actual		1996/97 Actual		1997/98 Actual		1998/99 Forecast	
	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)	(\$000)	(%)
Land and Resources	18,634	50	96,693	67	140,198	35	267,920	45	242,847	47
Environment	9,654	26	28,120	19	177,320	45	231,307	39	170,637	33
Workforce	4,738	13	15,407	11	50,185	13	65,113	11	74,793	14
Communities	24	0	1,064	1	22,519	6	19,761	3	15,060	3
Value-added	4,250	11	3,920	2	5,264	1	12,233	2	14,138	3
<b>Total Program Investments</b>	<b>37,300</b>	<b>100</b>	<b>145,204</b>	<b>100</b>	<b>395,486</b>	<b>100</b>	<b>596,334</b>	<b>100</b>	<b>517,475</b>	<b>100</b>
Corporate Administration	2,326	6	13,185	8	20,047	5	25,302	4	26,440	5
<b>Total Expenditures</b>	<b>39,626</b>		<b>158,389</b>		<b>415,533</b>		<b>621,636</b>		<b>543,915</b>	

Source: Compiled by the Office of the Auditor General of British Columbia from Forest Renewal BC annual reports and business plans



## Operating in a Dynamic Environment

Forest Renewal BC operates in a dynamic and challenging environment. As noted above, it has gone from delivering about \$37 million in program investments in 1994/95 to delivering \$597 million in 1997/98 and its staff has increased from 30 to 200 during the same period.

The corporation has no source of revenue other than what is directed to it by the Lieutenant Governor in Council, and investment income. This revenue can vary significantly depending on harvest levels, the Canada/U.S. exchange rate, and the lumber market. This means that the corporation must plan its investment expenditures without certainty regarding the size of the revenue it will have to support its plan. Recent downturns in the forest sector have resulted in a significant decrease in revenue and an increase in the demand for Forest Renewal BC funds to help displaced forest workers, forest-based communities, and the industry in general. Statistics Canada data shows that the British Columbia labour force in harvesting and processing went from approximately 87,600 in 1995 to 76,000 in 1998. The government's response has been to decrease stumpage rates, and this decrease, borne solely by Forest Renewal BC, has resulted in significantly reduced revenue for the corporation.

Compounding these challenges is the governance environment in which Forest Renewal BC operates. Through the Forest Renewal Act, government can direct the corporation to allocate its funding to any particular initiative that it deems a priority. This has occurred several times over the history of the corporation. Past examples of this direction include Orders-in-Council that required Forest Renewal BC to provide funding or loans to a number of different organizations, including Evans Forest Products Ltd., Canadian Woodworks Ltd., Woodland Lumber Ltd., Scana Industries and Woodland Windows Ltd.

Government can also direct the corporation in other ways. Through the Jobs and Timber Accord, for example, the corporation committed to establishing the Jobs and Timber Advocate and New Forest Opportunities. As well, the government can use other legislation to direct the corporation. For example, Fisheries Renewal BC legislation requires Forest Renewal BC to provide the newer agency with \$22.2 million over three years.

## Corporate Response to Environment

Forest Renewal BC has responded to this challenging environment in a number of ways. It has changed its reporting structures and information management systems. It has reorganized its staff into business lines that match its strategic objectives. It has changed its executive almost completely, appointing, in 1997/98: a new Chief Executive Officer; a Vice President, Forest, Resources and Environment; an Executive Director, Value-Added; a Vice President, Communities and Workforce; and an Executive Director, Planning and Evaluation.

### The new land-based delivery system

One of the corporation's most significant changes in recent years has been the establishment of a new system for delivering its largest programs. In its first few years of existence, Forest Renewal BC was one of the only organizations criticized for not spending money fast enough. In this environment, Forest Renewal BC did not strategically plan for its program investments; instead, it invited and approved proposals that were consistent with its mandate and funding principles. However, considerable effort was involved in reviewing all the proposals, and there were complaints from stakeholders that the process was cumbersome and time-consuming. The contracts tended to be numerous, relatively small, and limited to one-year. Also of concern was the inability of Forest Renewal BC to ensure that the funded projects addressed its priorities and output targets.

In response to these issues, the corporation established a new delivery system for its land-based programs. "Land-based" refers to the regionally delivered and larger programs within the Land and Resources and Environment activity areas (i.e., Enhanced Forestry, Watershed Restoration, Resource Inventory, Recreation, Bridge Replacement, Backlog, and Innovative Forest Practices and Enhanced Forest Management Pilot Projects), as well as Land-Based Training which is in the Workforce activity area.

A list of the corporation's programs and how much funding has been allocated to each for the 1998/99 fiscal year is provided in Appendix B.

The new land-based delivery system was approved in 1997 and used to guide the corporation’s 1998/99 land-based program investments. Exhibit 1.9 provides a comparison of the old and new delivery systems for these land-based programs. Further details on the new land-based delivery system are provided in Appendix C.

*Non-land-based programs*

“Non-land-based” programs are all other Forest Renewal BC programs within each of the corporation’s activity areas. The Land and Resources and Environment activity areas include the following non-land-based programs: Tree Improvement, Woodlot Expansion, Crown Land-Use Planning Enhancement, Private Forest Biodiversity, Ecosystem Restoration Pilot, and Small Woodlands. These programs are distinct from land-based programs because they are delivered centrally rather than through the regions, and they are not recognized as eligible activities for meeting the job targets set in the Jobs and Timber Accord.

The remaining non-land-based programs are within the other three activity areas (Workforce, Communities, and Value-Added) as well as the three corporate-wide programs (Research, Forestry Innovation Development, and Endowment).

The delivery systems for these programs vary considerably, although many were still proposal-driven in 1998/99. However, the corporation is gradually moving the majority of these programs to a more planned model.

**Exhibit 1.9**

**Comparison of Old and New Land-based Delivery Systems**

“Old” Proposal-Based Land-Based Delivery	“New” Allocation-Based Land-Based Delivery
Funding based on proposals received	Funding based on strategic planning and balanced priorities
Usually single-year commitments	Multi-year funding commitments
Ministry-based contracting	Forest Renewal BC-based contracting
8,000 proposals requiring review	A few hundred proposals to review
3,500 smaller contracts	250 larger contracts
Provided intermittent work	Leads to full-season, continuous jobs

Source: Forest Renewal BC Business Plan 1998/99

## Forest Renewal Funding Principles

Shortly after Forest Renewal BC was established, it developed nine funding principles to help guide its program investments:

**Consistency with corporate mandate:** *Forest Renewal BC will fund only those proposals that are consistent with its mandate to renew the forest economy of British Columbia by enhancing the productive capacity and environmental values of forest lands, creating jobs, providing training for forest workers, and strengthening local communities that depend on the forest industry.*

**Incrementality:** *Forest Renewal BC investments should be used to expand the overall level of investment in the forest economy rather than displace existing spending. Forest Renewal BC will only invest in programs and projects that would not otherwise be undertaken by government or project proponents.*

**Wise spending:** *Projects funded by Forest Renewal BC should demonstrate economy of delivery, efficiency of operation, and effectiveness in achieving desired results.*

**Regional equity and sensitivity:** *Forest Renewal BC-funded projects should contribute to the corporation's goals of obtaining regional input into decision making and delivering regionally equitable programming.*

**First Nations participation:** *To the greatest extent possible, projects funded by Forest Renewal BC should encourage the participation of First Nations.*

**Community stability:** *Forest Renewal BC-funded projects should help enhance long-term community stability and emphasize local employment.*

**Jobs:** *Forest Renewal BC investments should sustain or create jobs, or help create conditions that support permanent jobs.*

**Sustainability:** *Forest Renewal BC investments should promote sustainability by integrating environmental, economic and social objectives and benefits.*

**Environmental values:** *Projects funded by Forest Renewal BC should contribute to restoring and maintaining the ecological integrity and environmental sustainability of the forests.*



planning and  
accountability  
in the corporation



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## Planning and Accountability in the Corporation

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# highlights



# planning and accountability in the corporation

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## ***An audit of how Forest Renewal BC plans and accounts for its investments***

Forest Renewal BC's mandate calls for it to "plan and implement a program of investments." In planning and allocating its program investments, the corporation must consider each of its mandated objectives and the divergent interests of its numerous stakeholders. For 1998/99 and subsequent years, Forest Renewal BC will be faced with reduced revenues and potentially increasing demands for its investment funds. As a result, how the corporation plans and allocates its funds will greatly affect the extent to which it is able to achieve its goal to renew the province's forest economy. As with all government bodies, Forest Renewal BC is also accountable to the Legislative Assembly for its performance. Comprehensive reporting, consistent with current accountability expectations in British Columbia, will allow the Legislative Assembly to assess the extent to which the corporation is meeting its goals and objectives.

## Audit Purpose, Scope and Approach

The purpose of the audit was to assess whether Forest Renewal BC is adequately planning and allocating its program investments to renew the province's forest economy and whether it is adequately accounting for its performance. To achieve adequacy, we expected the corporation to have:

- established clear and appropriate roles, authorities, and responsibilities for all those involved in the planning and allocation process;
- communicated long-term strategic direction and performance measures and targets to all those involved in the planning and allocation process;
- allocated program investments in accordance with clear investment priorities;
- established and used funding principles and project approval criteria to make funding decisions; and
- monitored and evaluated corporate performance and reported the results.



These criteria evolved from our interpretation of the requirements of the Forest Renewal Act, Forest Renewal BC's mandate and funding principles, and various guidelines developed for use in a government or Crown corporation setting (namely, Forest Renewal BC guidelines/directives, BC Crown Corporations Secretariat guidelines for strategic planning and business planning, federal Crown corporation planning guidelines, the BC Accountability Framework, Deputy Ministers' Council annual report guidelines, and federal guidelines for Crown corporation annual reports).

We reviewed the Forest Renewal BC planning and allocation processes used to develop plans for fiscal 1998/99. To this end, we interviewed Forest Renewal BC board members and senior management, and staff in Victoria and in three of the corporation's six regions. We also interviewed staff from the Ministry of Forests, the Ministry of Environment, Lands and Parks, and a number of other government ministries, as well as industry representatives. To supplement and support these sources, we also reviewed relevant documents and conducted our own analyses where necessary.

We did not assess the appropriateness of the corporation's administration, its level of resources, its organizational structure, or other human resource issues. In addition, we did not directly evaluate actual program or project outcomes. Rather, we looked at how Forest Renewal BC evaluates program and project outcomes.

The findings and conclusions included in this report are based on evidence available up to December 31, 1998. In preparing the report, we discussed our findings and conclusions with Forest Renewal BC.

Our examination was performed in accordance with value-for-money auditing standards recommended by the Canadian Institute of Chartered Accountants and accordingly included such tests and other procedures we considered necessary in the circumstances.

## Overall Conclusion

Forest Renewal BC has made significant changes to the planning and allocation process during the last year; however further improvements are needed before it can demonstrate that it is adequately planning and allocating its program investments to renew the forest economy. The corporation also needs to make major improvements in measuring and publicly reporting on its performance.

The planning and allocation process was not directed by clear definitions of what Forest Renewal BC wanted to achieve in its efforts to renew the forest economy. In the absence of a strategic plan and clearly defined objectives, investment decisions were guided by the board's reliance on the 1994 Forest Renewal Plan and input from various committees. The planning and allocation process, especially for land-based programs, focused more on how to distribute funds among regions and proponents than on allocating according to what Forest Renewal BC wanted to achieve in the long-term. Since its inception in 1994 until 1997/98, the corporation has spent about \$1.2 billion without a strategic plan and clear objectives to guide program investments.

Forest Renewal BC has not fully considered what information it needs to allow it to exercise its accountability obligations for the expenditure of public funds. As a result, current reporting is untimely and deficient in providing useful performance information to the Legislative Assembly and the public.

Forest Renewal BC operates in an environment that is dynamic and challenging. It is accountable to multiple stakeholders (including the Legislative Assembly, the government, the forest industry, forest-dependent communities, forest workers, First Nations, and environmental groups) with objectives that may compete or conflict with each other. Its revenue is decreasing at the same time that the demand for its funds is increasing. These pressures have made it difficult for the corporation to concentrate on establishing good management processes.

However, Forest Renewal BC is moving in the right direction by attempting to become a performance-based investment agency through its continuing efforts to complete its strategic plan, establish performance measures and targets, implement a new investment management system, develop return-on-investment tools, and establish an evaluation plan. If the corporation succeeds in these endeavours, it will be in a better position to understand and report on the extent to which its program investments have led to meeting its intended results.

## Key Findings

The overlap in the mandates of Forest Renewal BC, the Ministry of Forests, and the Ministry of Environment, Lands and Parks needs to be clarified to ensure roles and responsibilities are clear

Forest Renewal BC and its partners have worked diligently to ensure that everyone involved in the planning and allocating of program investments are clear on their roles and responsibilities. Committees, ongoing communications, and numerous documents have all contributed to this clarity. Nevertheless, confusion still exists on some matters, largely because the mandates for Forest Renewal BC, the Ministry of Forests, and the Ministry of Environment, Lands and Parks overlap.

Each organization has both social and resource objectives within its mandate. For example, where Forest Renewal BC is expected to “enhance the productive capacity of forest lands,” the Ministry of Forests is expected to “encourage maximum productivity of the forest.” As well, while Forest Renewal BC is to “create jobs” and “strengthen communities”, the Ministry of Forests and the Ministry of Environment, Lands and Parks are supposed to manage, protect and conserve the resources, “having regard to the immediate and long-term economic and social benefits they may confer on BC.” We believe that further effort is required to clarify the differences among these three mandates, to ensure that there is no duplication and to ensure that forestry and environment priorities are managed in a coordinated manner.

In completing a strategic framework, the corporation is moving in the right direction but needs to establish performance measures and targets

The corporation’s board of directors completed a strategic framework in early 1998. The board is currently working on reviewing its priorities and developing outcome-based performance measures and targets. Without these measures and targets, the corporation cannot know whether its expenditures to date have been linked to the corporation’s intended results. We believe that clear strategic direction is vital, especially with the recent revenue reductions that jeopardize Forest Renewal BC’s ability to meet its objectives. A final strategic plan, complete with outcome-based performance measures and targets, is still in the process of development.

## Subsequent event

On August 5, 1999, Forest Renewal BC announced the public release of a strategic plan that will chart Forest Renewal BC's direction for the next five years. Because the release occurred at the time this report was being assembled for printing, we have not described or assessed it in this report.

The corporation's business planning process was reasonable, but direction to the regions did not include a balanced consideration of both resource and social objectives

The corporation's 1998/99 Business Plan, although meeting many of our expectations, lacks performance measures, targets and a comparison of the corporation's past performance to those targets.

Given the absence of a strategic plan, Forest Renewal BC undertook a reasonable planning process for developing its 1998/99 Business Plan. It was a top-down, bottom-up process. It involved the board considering the guidance it received from government, its advisory committees and stakeholders, and setting funding targets for each of its activity areas and regions. The regions then took this board direction and allocated funding among the corporation's programs and projects. The process was flexible and iterative, with funding being reallocated to meet key needs as they arose.

In making allocation decisions, however, the regions received little direction from headquarters. For land-based programs, the board directed most of the regions to allocate 45% of their total land-based funding allocation to the Enhanced Forestry and Backlog programs. (The one exception was the Pacific region, which was asked to allocate between 32 and 35% to silviculture programs in 1998/99, up to 45% by the end of five years.) Since Enhanced Forestry was recognized as the biggest job creator per dollar spent, this direction was linked to the corporation's need to meet the job creation targets specified in the Jobs and Timber Accord—it was not based on an identified resource objective. Without resource targets to balance the job targets, regional staff were unclear as to how to make trade-offs between resource and employment objectives.

Also a concern is how regional land-based investment dollars were allocated to district planning units and licensees. Although regional staff considered other factors, the allowable annual cut (AAC) was the predominant criterion in determining the amount of funding proponents received. We believe that

allocation by AAC limits the corporation's ability to ensure that funding is allocated where it is most needed and where it can be used cost-effectively, and that more focus needs to be placed on allocating program investments according to the needs and priorities of the districts and regions.

The corporation needs to ensure that its investment allocations are in keeping with its approval criteria and funding principles

To ensure that Forest Renewal BC funds only projects that meet its goals and objectives, it is important that eligibility criteria and approval guidelines be developed and used. We found that, for most Forest Renewal BC programs, eligibility criteria have been established and used as a basis for determining project eligibility. However, the guidelines are often too general and need to be enhanced to allow staff to compare the value of competing projects. For land-based programs, in particular, no one is required to assess the financial or economic viability of proposed projects. As a result, staff have incomplete information with which to make decisions on specific projects.

Forest Renewal BC has established clear funding principles and policy guidelines for most of these principles. It has managed its First Nations principle well, but has struggled with the principles of wise spending, incrementality and regional equity. To meet the requirements of wise spending, we expected that Forest Renewal BC would assess the financial, economic and social costs and benefits of its major proposed initiatives, programs and projects. However, we found that this was not usually being done. In most cases, only a cursory level of analysis was completed before an investment proposal was approved or rejected.

The principle of incrementality is a greater concern. Over the years, the corporation has broadened its definition of the principle. In its first two years of operation, the corporation supported program investments only if they were "above and beyond what industry or government was already doing or obligated to do." In 1997, however, the corporation broadened this definition to include "beneficial initiatives," and took on a number of programs—such as Bridge Replacement, Resource Inventory, and Backlog—that were previously the responsibility of the Ministry of Forests. The result is that some funding decisions historically made by the Legislative Assembly are now being made by Forest Renewal BC's board; and there is less funding than would otherwise be available for the truly incremental programs the corporation was originally established to undertake.

As for its principle of regional equity, we found that Forest Renewal BC does not have the information it needs to assess whether its program investments are consistent with the principle. The board established a policy statement that included 10 factors to be considered in determining regional equity, but it did not create a mechanism, such as a rating system, to ensure the criteria would be used transparently. In the absence of documentation, it was not clear to us whether the board's allocation between regions was consistent with its interpretation of the regional equity principle.

The corporation has not adequately measured or reported on its performance, but is attempting to rectify this deficiency

To date, Forest Renewal BC has not reported adequately on its performance. As required by the Forest Renewal Act, the corporation prepares an annual report. However, it is not produced in a timely manner and it does not meet current accountability expectations for performance information or existing guidelines for annual report content. As a result, it provides incomplete information about Forest Renewal BC's performance and the factors affecting its ability to perform.

The corporation's new investment management system will likely serve as an effective monitoring and management reporting system for financial and output information once it is fully operational. The corporation has also recognized the need for conducting program evaluations on a periodic basis, and the framework of an evaluation plan is in place. The plan needs to be refined and clearly linked to the corporation's strategic objectives, funding principles, accountability needs, expected outcomes, and related performance measures once they are developed.





# summary of recommendations

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## Clarifying roles and responsibilities

***The terms of reference for the board of directors of Forest Renewal BC should be reviewed and updated to ensure that they are comprehensive and include current governance expectations. These should also be incorporated into one handbook.***

***Forest Renewal BC should further clarify the roles and responsibilities between itself, the Ministry of Forests and the Ministry of Environment, Lands and Parks to ensure that there is no duplication between these three organizations, and to ensure that forestry and environment priorities are managed in a coordinated manner.***

## Providing strategic direction

***The board of directors of Forest Renewal BC should complete its strategic plan and have it reviewed and approved by government and reported publicly.***

## Developing the business plan

***The direction given by Forest Renewal BC's board to its staff for allocating program investments should include both social and resource targets. Targets should include recognition of both short-term and long-term objectives, and guidance should be provided about how these targets are to be balanced so that staff can make informed trade-offs in their allocation decisions.***

***For land-based programs, allocations by Forest Renewal BC should be directed to where the needs are the greatest and to where the funding can be used cost-effectively.***

***Forest Renewal BC should enhance its business plan to ensure that it contains adequate accountability information. For guidance on how to achieve this enhancement, the corporation should review the "Guidelines for Crown Corporations for the Preparation of Strategic and Business Plans," produced by the Crown Corporations Secretariat and "Enhancing Accountability for Performance: A Framework and an Implementation Plan," produced by the Deputy Ministers' Council and the Office of the Auditor General.***

## Allocating investment funding—adherence to the corporation's funding principles and approval criteria

***Wise spending guidelines for Forest Renewal BC's programs should be developed and communicated.***

***Forest Renewal BC should ensure that an appropriate level of analysis—one that includes financial, economic and social considerations—is conducted and the resulting information shared with the board for major investment allocation decisions.***

***Forest Renewal BC should ensure that all of its programs have approval criteria and guidelines that, when applied, allow staff to compare the merits of one project over another. Guidelines should be updated to reflect the corporation's most current direction, and corporate priorities and principles should be provided in all program guidelines.***

## Monitoring and measuring performance—knowing what is being achieved

***Forest Renewal BC should develop an accountability framework that allows it to meet its accountability responsibilities. The framework should encompass information in three areas: operational, financial and compliance performance.***

***Forest Renewal BC should review the purpose of the Outputs report and ensure that the document satisfies the corporation's information management and accountability needs. Once the corporation has finalized its strategic plan, any subsequent reporting should be clearly linked to its goals, objectives, performance measures and targets. In particular, information about jobs must be more specific, put into context, and linked to the corresponding strategic objective.***

***Once fully operational, Forest Renewal BC should assess the Investment Management System to ensure that it meets the corporation's information management and accountability needs.***

***Forest Renewal BC should establish a current and formally approved audit plan for the corporation, and the progress of the plan should be monitored and reported to the Audit Committee.***



**As it has with its First Nations participation principle, Forest Renewal BC should measure the extent to which the corporation is meeting the requirements of its funding principles—incrementality, regional equity and wise spending—and report this information fully to the board and the public.**

**Forest Renewal BC should continue to develop its performance measures and targets, including operational, financial and compliance measures, for both outputs and outcomes, and report them to the public once they are established.**

**Forest Renewal BC should enhance its current evaluation plan to include a detailed workplan with proposed evaluations that are clearly linked to the corporation’s strategic objectives and accountability needs. Management should monitor and report on the progress of this workplan to its board.**

**Forest Renewal BC should ensure that the secondary impacts of its programs are included in its evaluation plan.**

## Reporting on performance—informing the public and the Legislative Assembly

**Forest Renewal BC should ensure that its annual report is produced within six months of the fiscal year-end.**

**Forest Renewal BC should enhance the contents of its annual report to provide performance information as described in the joint report on accountability produced by the Deputy Ministers’ Council and the Office of the Auditor General, and in the Deputy Ministers’ Council 1997 report “Guidelines for Ministry Annual Reporting.”**



# detailed report



# clarifying roles and responsibilities

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The Forest Renewal BC planning and allocation process is complex and involves numerous individuals and organizations, such as the Ministry of Forests, Ministry of Environment, Lands and Parks, forest licensees, and a number of stakeholders and other agencies. For Forest Renewal BC to plan and allocate program investments efficiently and effectively, we expected it to have established clear roles, authorities and responsibilities for all those involved.

## Conclusion

Roles and responsibilities for planning and allocating Forest Renewal BC program investments have been established and communicated by the corporation and the agencies involved. When planning for land-based program investments first began, the roles and responsibilities for planning and allocating program investments were unclear to both Forest Renewal BC Regional Project Officers and Ministry of Forests' district staff. Over time, these roles and responsibilities have become clearer, but there continues to be a need for clarification, especially between the corporation and the Ministry of Forests.

Also needed is a review of the appropriateness of the respective mandates of Forest Renewal BC and several other agencies. Overlap has made it difficult to set roles and responsibilities without duplication resulting, and it has created challenges for Forest Renewal BC and the Ministry of Forests in coordinating their priorities. Having these responsibilities split has intensified the time and effort required to plan for program investments.

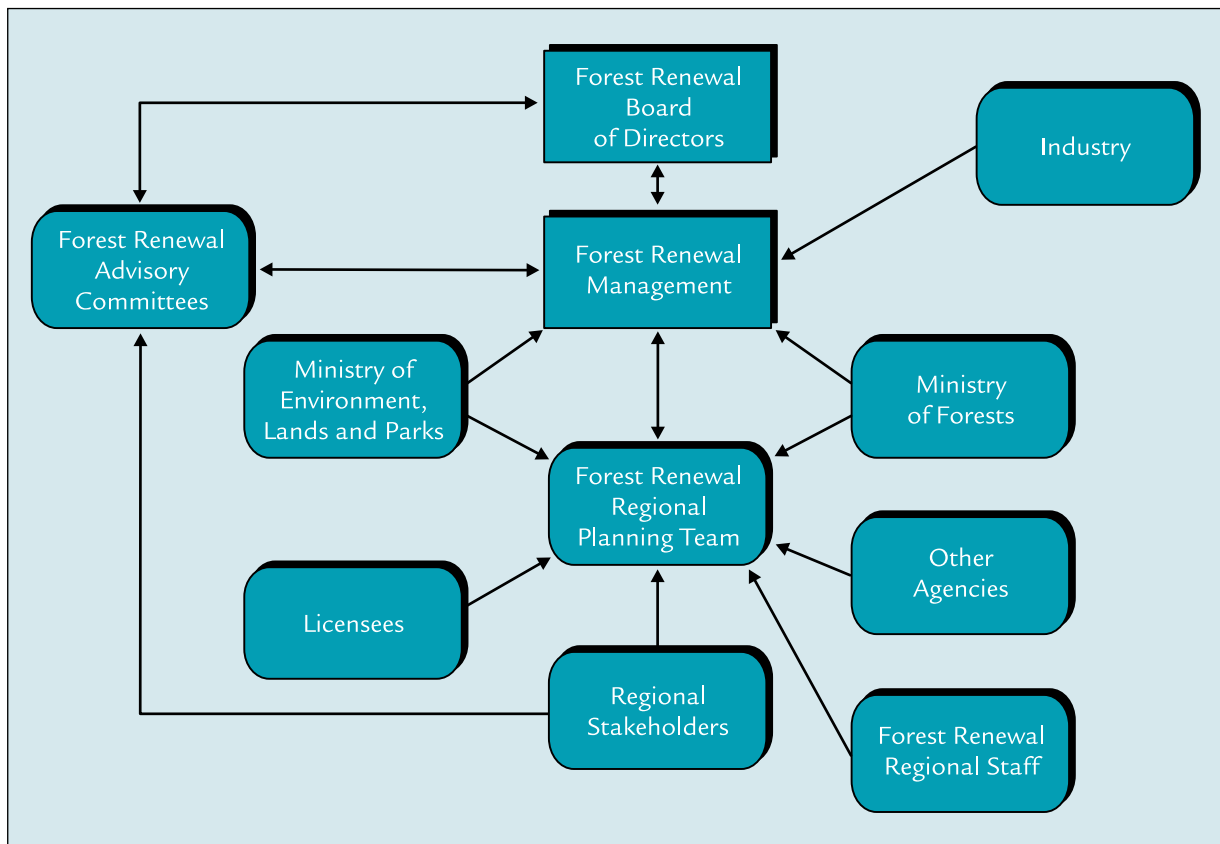
## Findings

Roles and responsibilities are becoming clearer, but mandates overlap

We expected Forest Renewal BC to establish roles and responsibilities that were clearly understood, appropriate and accepted by all those involved in planning and allocating the corporation's program investments (as shown in Exhibit 2.1).

## Exhibit 2.1

### Participants Involved in Planning and Allocating Forest Renewal BC Program Investments



Source: Compiled by the Office of the Auditor General of British Columbia using information provided by Forest Renewal BC

#### *The Forest Renewal BC Board of Directors is generally clear on its roles and responsibilities*

The majority of the board directors we interviewed indicated that they understood their roles and responsibilities. They attributed this to the numerous discussions held at board meetings. The existing terms of reference for the board also provide some guidance, but are insufficient in addressing all major governance roles of the board and its members. The document includes the board's mandate and duties, the Chair's duties, as well as procedural and administrative matters. To ensure clarity for future directors, additional efforts are needed to provide adequate direction to the board.

Missing is: information about other governance agents and their roles; strategic planning roles and process; a board/director and CEO evaluation process; information about the orientation process for new directors; legislative guidelines; and guidance as to the accountability concepts and expectations of the board. Boards need to be clear that they are responsible for approving the accountability framework through which the corporation exercises its public reporting obligations.

Recent events in British Columbia relating to board performance and understanding of roles suggest that the more comprehensive the documented guidance, the greater the opportunity for boards to act effectively.

### *Recommendation*

***The terms of reference for the board of directors of Forest Renewal BC should be reviewed and updated to ensure that they are comprehensive and include current governance expectations. These should also be incorporated into one handbook.***

*Forest Renewal BC staff are generally clear on their roles and responsibilities*

Most Forest Renewal BC staff indicated that they understood their roles and responsibilities. Regional Project Officers for land-based programs said there was some confusion after the introduction of the new land-based delivery system, but they are now clearer about their responsibilities. Both headquarters staff and Regional Project Officers for all of the other programs indicated that their roles and responsibilities were clear.

Part of this clarity can be attributed to various documents that clearly outline roles and responsibilities. For regionally delivered land-based programs, there is the “Land-Based Programs Guidebook” (draft). This guidebook includes a description of the roles and responsibilities of everyone in the implementation of the new system. Staff also have job descriptions to guide them. However, these descriptions have not caught up with recent organizational changes and are, for the most part, out of date, particularly for a number of senior management positions and for the land-based project officers.

To define responsibilities and accountabilities for output performance, Forest Renewal BC also developed a program delivery agreement between senior management in Victoria and the Regional Directors; however, this agreement was never implemented.



Courtesy: Forest Renewal BC

*Converting timber to log homes adds value to forest products*

### *Clarity of roles is improving for Forest Renewal BC partners*

Although Forest Renewal BC has a number of partners, the Ministry of Forests and the Ministry of Environment, Lands and Parks play the most significant roles. Most participants were clear on their roles and responsibilities as they related to planning and allocating Forest Renewal BC land-based program investments for the 1998/99 fiscal year. Some Ministry of Forests district staff and industry proponents, however, were not clear. Some of this confusion was to be expected, since many roles in these matters had changed significantly over a short period of time. Over time, as with Forest Renewal BC staff, we believe that understanding of the roles will improve.

Another area of confusion was over who had the final authority for a particular funding allocation decision when a disagreement arose between the Ministry of Forests and a licensee. In some cases, since the Ministry of Forests District Manager must sign all multi-year plans, it appears that the manager was able to dictate what would or would not be funded for land-

based program investments. However, the District Manager was expected to sign any multi-year plan that contained activities that were both eligible and would have, at a minimum, a neutral impact on the resource. In other words, the District Manager was not in a position to reject a plan simply because it did not contain the district's top priorities. As long as the proposed projects were not harmful to the resource base, the District Manager was expected to approve the plan. However, this was not clearly understood by all those involved in the new land-based planning process for the 1998/99 fiscal year.

To achieve clarity, the ministries and Forest Renewal BC developed a number of documents. Both ministries, for example, had Operational Guidebooks for their program staff to assist them in this delivery. However, these guidebooks became outdated once the new land-based delivery system was initiated and were not revised until August 1998, approximately one year after implementation had begun. In the interim, roles and responsibilities for all those involved in the new land-based delivery system were identified in the "Land-Based Programs Guidebook" (draft) and in other temporary documents.

The ministries also have a number of agreements with Forest Renewal BC that identify each party's roles and responsibilities. Service agreements require the ministries to provide resource management and program administration services for land-based programs. Multi-year agreements are for delivering some of Forest Renewal BC's land-based projects. The required activities are found in the multi-year plans and annual work schedules contained in the schedules at the back of the multi-year agreements.

The corporation also has contracts with a number of other organizations for delivering Forest Renewal BC programs (e.g., the Science Council of British Columbia, the Land Use Coordination Office, various Communities Futures Development Corporations and Aboriginal Capital Corporations, the Nature Trust, Forintek Canada Corp. and the University College of the Cariboo). Roles and responsibilities are generally documented in the contribution agreements between Forest Renewal BC and these delivery agents. To clarify roles, authorities and responsibilities, the corporation also has Memorandums of Understanding (MOUs) with a few organizations, including the Ministry of Forests, the Ministry of Environment, Lands and Parks, and (for its Forest Worker Transition Program) Human Resources Development Canada. However, the latter MOU is somewhat vague, leaving much to be determined at a later date, such as the extent of involvement of the Human Resource Centres of Canada in the delivery of the Transition Program.

*Coordinating the planning and allocating activities is challenging*

For the corporation to plan and allocate its program investments adequately, it must coordinate the activities of all those involved in the process.

*Coordination within Forest Renewal BC has been challenging but generally successful*

Coordination within Forest Renewal BC has been challenging and time-consuming, but we found it to be generally successful. For the new land-based delivery system, coordination between regional offices and Victoria was accomplished through a number of mechanisms, including committees, weekly conference calls, and the corporation's Intranet site. In addition to these formal mechanisms, there was also open communication between the offices so that the regional staff could contact Victoria staff with their questions.

For non-land-based programs, coordination was achieved through periodic meetings and ongoing informal communication. For Communities and Workforce, there were

teams that included both regional and business unit staff. These teams met as and when needed. For Value-Added, monthly meetings between the Regional Directors and Regional Project Officers allowed both parties to discuss issues and the status of ongoing projects. This, in turn, was supplemented by quarterly meetings involving Victoria management and staff, regional staff, and key clients. A great deal of informal communication between regional staff and business unit staff also took place.

*Coordination between Forest Renewal BC and other agencies has been challenging as a result of overlapping mandates*

Forest Renewal BC maintains linkages with a number of other agencies whose programs may affect or be affected by Forest Renewal BC's programs. These include provincial agencies (the Ministry of Forests, the Ministry of Environment, Lands and Parks, the Ministry of Aboriginal Affairs, Columbia-Basin Trust, and the Tree Improvement Council), federal agencies (Human Resources Development Canada, Indian and Northern Affairs of Canada, Community Futures) and local governments. Coordination is done through the regional advisory process, various committees, and ongoing communications between Forest Renewal BC staff and representatives from these organizations.

Coordination efforts between Forest Renewal BC and its two main partners—the Ministry of Forests and the Ministry of Environment, Lands and Parks—have been challenging, time-consuming, and less successful than were the efforts within Forest Renewal BC. Although the corporation can make funding decisions independently, the support of these government ministries is required because both ministries have stewardship responsibilities over land and environmental matters. Any activities carried out on the land base require ministry approval beforehand.

The main reason that coordination between Forest Renewal BC and these ministries has been challenging is the overlapping mandates between the three organizations. We reviewed the Ministry of Forest Act, the Ministry of Environment Act and the Forest Renewal Act, and we noted that all include similar social, economic and resource objectives (Exhibit 2.2). Clarification of the distinction between the mandates of the three organizations is improving, but efforts must continue.

Of even greater concern to us is the appropriateness of overlapping mandates and the fact that the responsibilities for the forest and the environment are split between the three organizations. In our view, such a split has increased the time and effort required to plan for program investments.



**Recommendation**

**Forest Renewal BC should further clarify the roles and responsibilities between itself, the Ministry of Forests and the Ministry of Environment, Lands and Parks to ensure that there is no duplication between these three organizations, and to ensure that forestry and environment priorities are managed in a coordinated manner.**

**Exhibit 2.2**

**Comparison of the Mandates of the Ministry of Forests, the Ministry of Environment, Lands and Parks and Forest Renewal BC**

The Ministry of Forest Act	The Ministry of Environment Act	Forest Renewal BC Act
<p>The ministry is expected to:</p> <ul style="list-style-type: none"> <li>■ encourage maximum productivity of the forest and range resources;</li> <li>■ manage, protect and conserve the forest and range resources of the government, having regard to the immediate and long term economic and social benefits they may confer;</li> <li>■ plan the use of the forest and range resources of the government, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, water, outdoor recreation and other natural resource values are coordinated and integrated, in consultation and cooperation with other ministries and agencies of the government and with the private sector;</li> <li>■ encourage a vigorous, efficient and world competitive timber processing industry.</li> </ul>	<p>The ministry is expected to:</p> <ul style="list-style-type: none"> <li>■ manage, protect and conserve all water, land, air, plant life and animal life, having regard to the immediate and long term economic and social benefits they may confer;</li> <li>■ encourage and maintain an optimum quality environment through specific objectives for the management and protection of land, air and living resources of British Columbia.</li> </ul>	<p>Forest Renewal BC is expected to:</p> <ul style="list-style-type: none"> <li>■ enhance the productive capacity of forest lands;</li> <li>■ create jobs;</li> <li>■ strengthen communities;</li> <li>■ plan and implement a regionally equitable program of expenditures in order to carry out the purpose of this Act;</li> <li>■ enhance the environmental value of forest lands;</li> <li>■ renew the forest economy of British Columbia.</li> </ul>

Source: Compiled by the Office of the Auditor General of British Columbia



## providing strategic direction

Forest Renewal BC has multiple objectives as well as multiple stakeholders with different priorities. To achieve its mandate, Forest Renewal BC must clearly identify and communicate its strategic direction, including its goals, objectives, strategies, performance measures, and performance targets. We expected the corporation to have developed a strategic plan with all of these elements, using a reasonable process that included an analysis of the corporation's external environment, consideration and analysis of alternative strategies, and stakeholder input. We also expected the strategic plan to be developed in a coordinated manner, with appropriate linkages to government direction and other corporate plans, and to be reviewed and approved by government and then communicated to its staff, partners and stakeholders.

### Conclusion

In Forest Renewal BC's governance environment, where government can change the direction of the corporation at any time, strategic planning is challenging, but all the more important. In early 1998, the board approved a strategic framework and communicated its contents internally and externally through the corporation's 1998/99 Business Plan. However, since clearly defined and specific outcomes had not been established, it is unclear whether expenditures to that date (\$1.8 billion to 1998/99) were linked to the corporation's intended results.

The corporation's 1998 strategic framework includes the major elements required in a plan, but it lacks performance measures and targets. Forest Renewal BC is in the process of reviewing its priorities and setting its strategic direction, its goals and objectives, and its performance targets. Given that Forest Renewal BC faces a sharp reduction in its revenue, this exercise is vital to ensure that its future investment decisions are focused and provide efficient and effective results. We believe that, once the strategic plan is completed, it should be

#### Subsequent event

On August 5, 1999, Forest Renewal BC announced the public release of a strategic plan that will chart Forest Renewal BC's direction for the next five years. Because the release occurred at the time this report was being assembled for printing, we have not described or assessed it in this report.

reviewed and approved by government and made available to the public.

## Findings

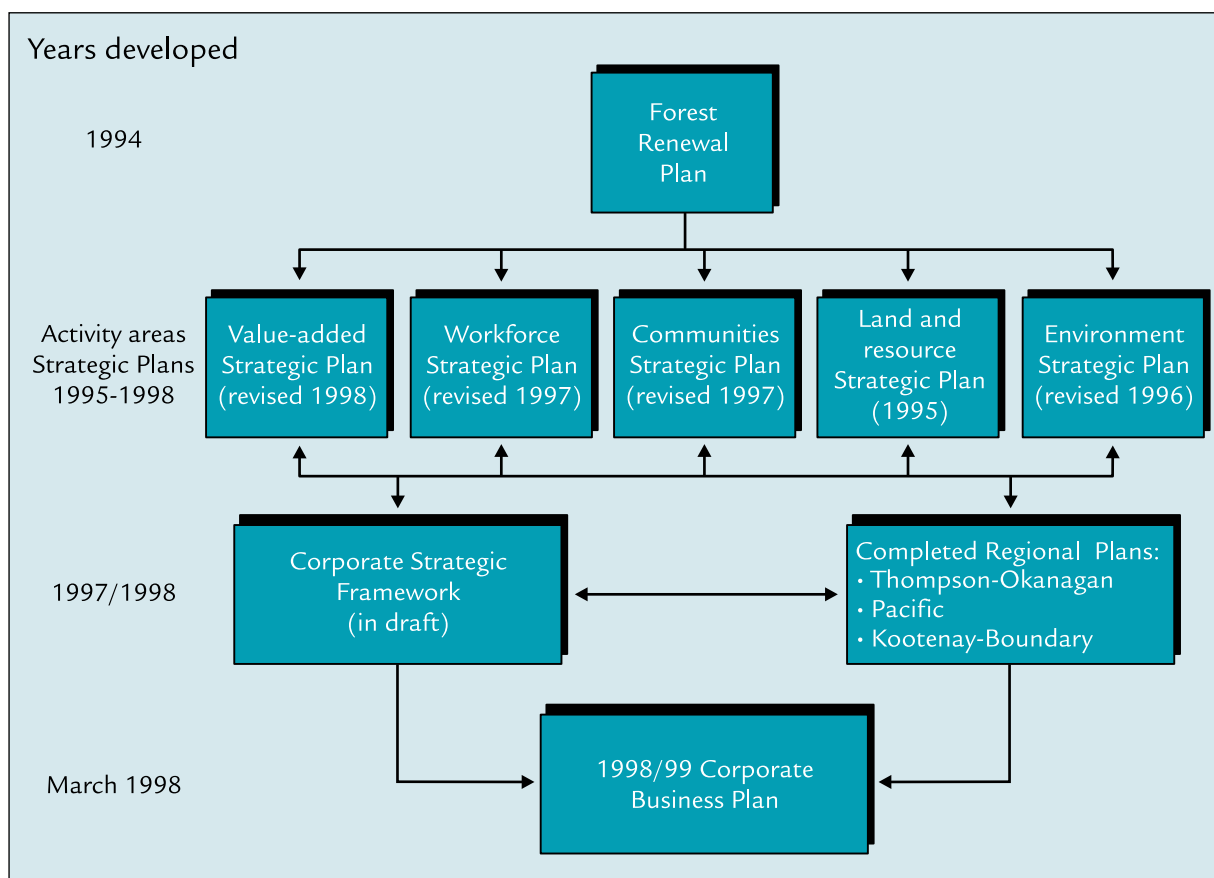
A strategic plan is taking shape but performance measures and targets are needed

We expected Forest Renewal BC’s strategic plans to be developed in a coordinated manner, using a reasonable process that included stakeholder input, an analysis of the corporation’s external environment, the analysis of alternative scenarios and board approval.

Since its inception, Forest Renewal BC has developed a number of different plans. Exhibit 2.3 shows the relationship between each of these, as well as the Forest Renewal Plan, and shows when they were created and which ones have influenced the others.

### Exhibit 2.3

#### The Plans of Forest Renewal BC



Source: Compiled by Office of the Auditor General of British Columbia using information obtained from Forest Renewal BC

*Some strategic direction was established early but was incomplete*

When the advisory committees were formed, each undertook a strategic planning exercise to identify the types of program investments they felt the corporation should be making in the activity areas assigned to them. The resulting plans were shared among the committees and staff and approved by the board in October 1995. Most of these plans have since been updated, and the board has approved those updates.

The format and content of the plans differed, but all included a reasonable process for development. The Value-Added strategic plan is the most complete and up-to-date; the Land and Resources plan is the least complete and the most outdated. In general, all of the plans lacked specific performance measures and targets. Staff have recognized this deficiency and are in the process of developing these.

Each region has completed, or is in the process of completing, its own regional plan. The plan is generally based on outputs from the regional advisory process. The completed plans were reviewed and approved by the Management Committee in Victoria.

*The corporate strategic plan is in the process of development*

We expected the corporation's strategic plan to meet current expectations for public sector strategic plans. Based on our research and experiences, we believe that the most basic form of strategic plan for Forest Renewal BC should contain:

- a mission statement, including an interpretation of the corporation's mandate and vision;
- a situation analysis, including both internal and external assessments;
- strategic objectives;
- alternative strategies for achieving the objectives and analysis of these alternatives;
- recommended strategies; and
- performance measures and targets.

The Forest Renewal Act does not call for the development of a strategic plan, but, in 1997, the board recognized the need for one and proceeded to develop such a plan. By that time, however, the corporation had already committed to expenditures of about \$1.2 billion.



Courtesy: Forest Renewal BC

*Value-added manufacturing of window frames contributes to the economy of a Kootenay community*

At the time of our audit, Forest Renewal BC was still finalizing its strategic plan. A strategic framework was completed early in 1998. We found the process to develop this framework to be reasonable, involving the assistance of an independent consulting firm, a review of the corporation's internal and external environment, and discussion of where the corporation wanted to be and how it should get there. The consulting firm also reviewed the strategic plans that had been developed for each activity area and included other related individuals in these discussions, such as Ministry of Forests staff.

The strategic framework was communicated to Forest Renewal BC staff and to the public through the corporation's 1998/99 Business Plan. The strategic framework contains much of what we expected in a strategic plan (i.e., statements of mandate, vision, founding commitments, strategic objectives, some preliminary targets, and actions

accompanying each objective). However, it is missing some key elements, including strategic alternatives and the analysis of these alternatives, as well as performance measures and targets. Moreover, it lacks sufficient background information to allow the reader to assess whether the strategic framework is based on provincial needs. Exhibit 2.4 shows how the corporation's purpose, strategic objectives and programs are linked.

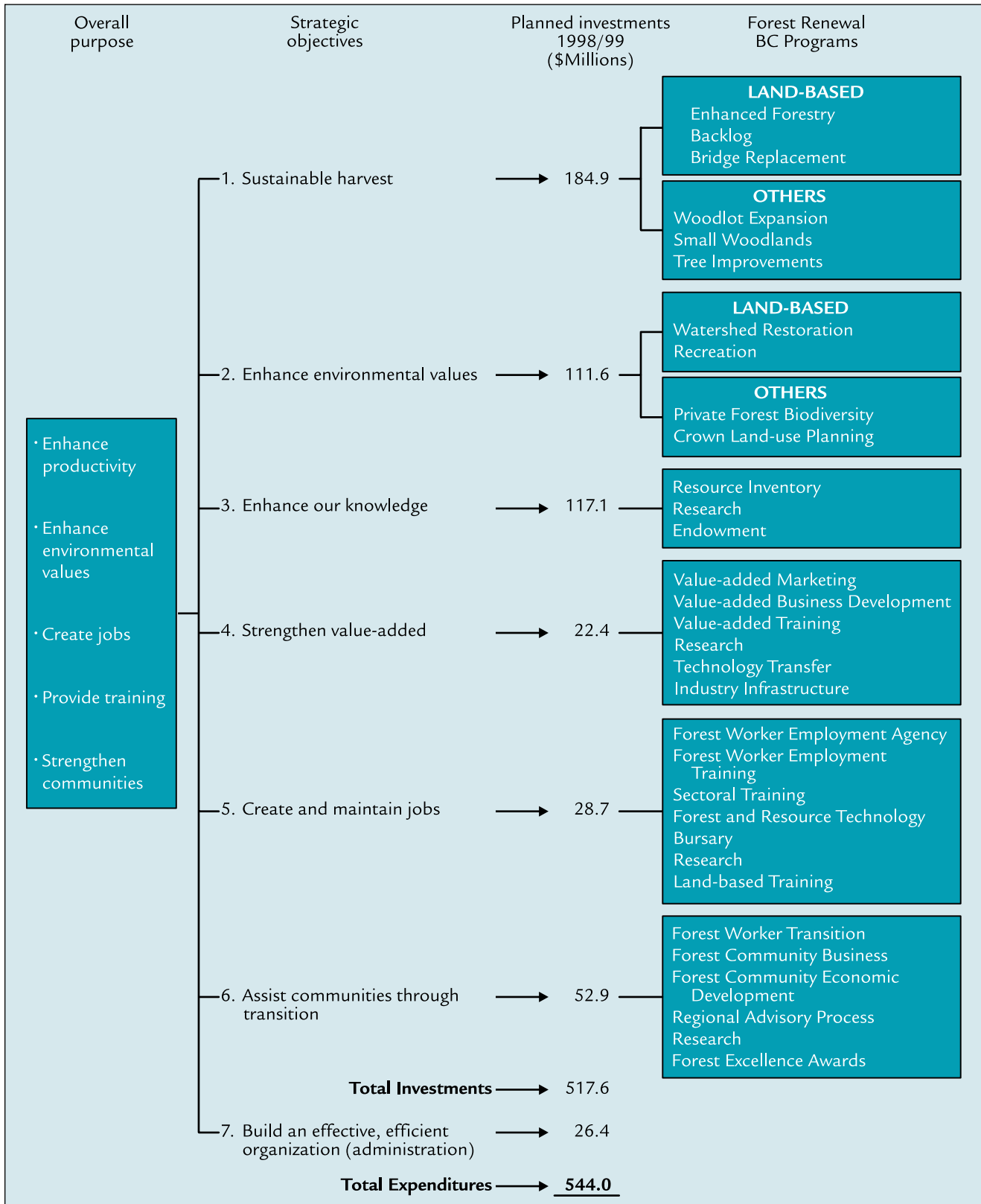
The current plan is based on the assumption of \$400 million in revenue per year. Yet, as shown earlier in Exhibit 1.7, recent changes to the stumpage formula have Forest Renewal BC projecting total revenues of \$179 million for 1998/99 and \$224 million for 1999/2000. Given this significant reduction in revenue, the board is in the process of reviewing its priorities.

### *Recommendation*

***The board of directors of Forest Renewal BC should complete its strategic plan and have it reviewed and approved by government and reported publicly.***

## Exhibit 2.4

### Forest Renewal BC's Purpose, Strategic Objectives, and Programs



Source: Compiled by the Office of the Auditor General of British Columbia using information provided by Forest Renewal BC

## Stakeholders have had much input into the corporation's strategic planning

Forest Renewal BC involved stakeholders in its strategic planning in a number of different ways. The composition of its board and advisory committees ensures that stakeholders have input into corporation planning. As well, in the summer of 1998, members of the executive toured the province, discussing the corporation's strategic direction with its stakeholders in light of its revenue reductions. Related information on the corporation's priorities was provided on its Internet site for public viewing. Essentially, the corporation invited the public and its stakeholders to view and comment on the direction Forest Renewal BC was headed for in 1999/2000 and thereafter.

In addition, the regional advisory process provides input from hundreds of stakeholders into the corporation's plans. The regional advisory process is a board initiative to involve partner groups in identifying regional issues and priorities. It is one of the key means by which Forest Renewal BC ensures stakeholder input.

Forest Renewal BC provided the regions with terms of reference for the regional advisory process and some guidance for the development of the regional plans. With these general guidelines, each region developed its own process, terms of reference, and regional plan.

For the 1997 regional advisory process, most of the regions conducted an annual forum and several sub-regional forums. In each case, the regions invited a large selection of people from each partner group within their region to provide input into Forest Renewal BC's priorities and effectiveness.

In regards to the three regions we visited, we noted that outputs from the regional advisory process were summarized and given back to the participants for their review and were taken into consideration in developing the regions' plans. The results of all the regional sessions were also summarized into one report that was provided to Forest Renewal BC staff for information, and to the advisory committees for use in developing their recommendations for the 1998/99 Business Plan.

## Plans were generally linked

We expected Forest Renewal BC to develop its strategic plans in a coordinated manner and to incorporate any relevant government direction, such as the Jobs and Timber Accord.

We found that the corporate strategic framework was appropriately linked with the direction provided in the Jobs and Timber Accord. One of the preliminary performance targets listed in the strategic framework was to create or maintain 5,000 direct and 5,000 indirect jobs as stipulated in the Accord.

We also found that the development of the activity area strategic plans and the corporate strategic framework were adequately linked. Essentially, the activity area plans were developed first and were reviewed and considered in the development of the corporate strategic framework. Where the board's direction in the corporate strategic framework was different from the direction provided by the activity area plans, the latter were reviewed and revised to reflect the board's direction.

However, the development of the regional plans was not initially linked to the development of the corporate strategic framework. Essentially, these documents were developed in parallel but with the regional plans starting first. Early in 1997, the board held the view that, if Forest Renewal BC was to be a success, a regional business plan process should drive it. The board wanted the regions to take more of a leading role in setting up the business plan. Therefore, during 1997, regions began developing regional plans. The Board's strategic planning process started later and, in most cases, the first drafts of the regional plans were completed before the corporate strategic framework was completed. This caused some delay in the process as the regions reviewed their plans to ensure they were consistent with the corporate strategic framework. In some cases, the plans were essentially rewritten to reflect this new direction.





## developing the business plan

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The Forest Renewal Act requires Forest Renewal BC to submit a business plan each year to the Minister of Forests. As part of this exercise, the corporation must make investment allocation decisions. We expected Forest Renewal BC to have used its strategic direction to guide program investment allocation decisions. We looked at how the corporation's business plan was developed to assess the reasonableness of the process, and we reviewed the business plan itself to assess whether or not it met both legislated requirements and current expectations for public sector business plans.

### Conclusion

Given the absence of a strategic plan to guide program investments, Forest Renewal BC undertook a reasonable planning process for developing its business plan for the 1998/99 fiscal year. The corporation's 1998/99 Business Plan meets most of our expectations, but lacks performance measures and targets. The investment allocations made for 1998/99 were consistent with the corporation's mandate and the guidance it received from government and its stakeholders. However, in the absence of outcome-based performance objectives, it is impossible to tell whether the allocations are consistent with Forest Renewal BC's long-term expectations.

The allocations between land-based programs were not based on a balanced consideration of all the corporation's objectives. The board's direction to the regions focused mainly on meeting the corporation's short-term job targets; it did not include resource-based targets or downstream job targets. As well, although other factors were considered, allocations between land-based planning units and licensees were generally proportional to the size of their allowable annual cut. We believe that the needs and priorities of the districts and regions should be the primary consideration.

## Findings

In the absence of a strategic plan, the 1998/99 business planning process was reasonable

Forest Renewal BC developed a new business planning process for the 1998/99 fiscal year. This is set out in Exhibit 2.5. Virtually everyone we interviewed agreed that the corporation's new land-based delivery system was an improvement over the old proposal-driven delivery model. This new system allows for a more planned approach to land-based program investments. We believe that the overall business planning process undertaken by Forest Renewal BC was reasonable, particularly considering the fact that the corporate strategic plan was not yet in place.

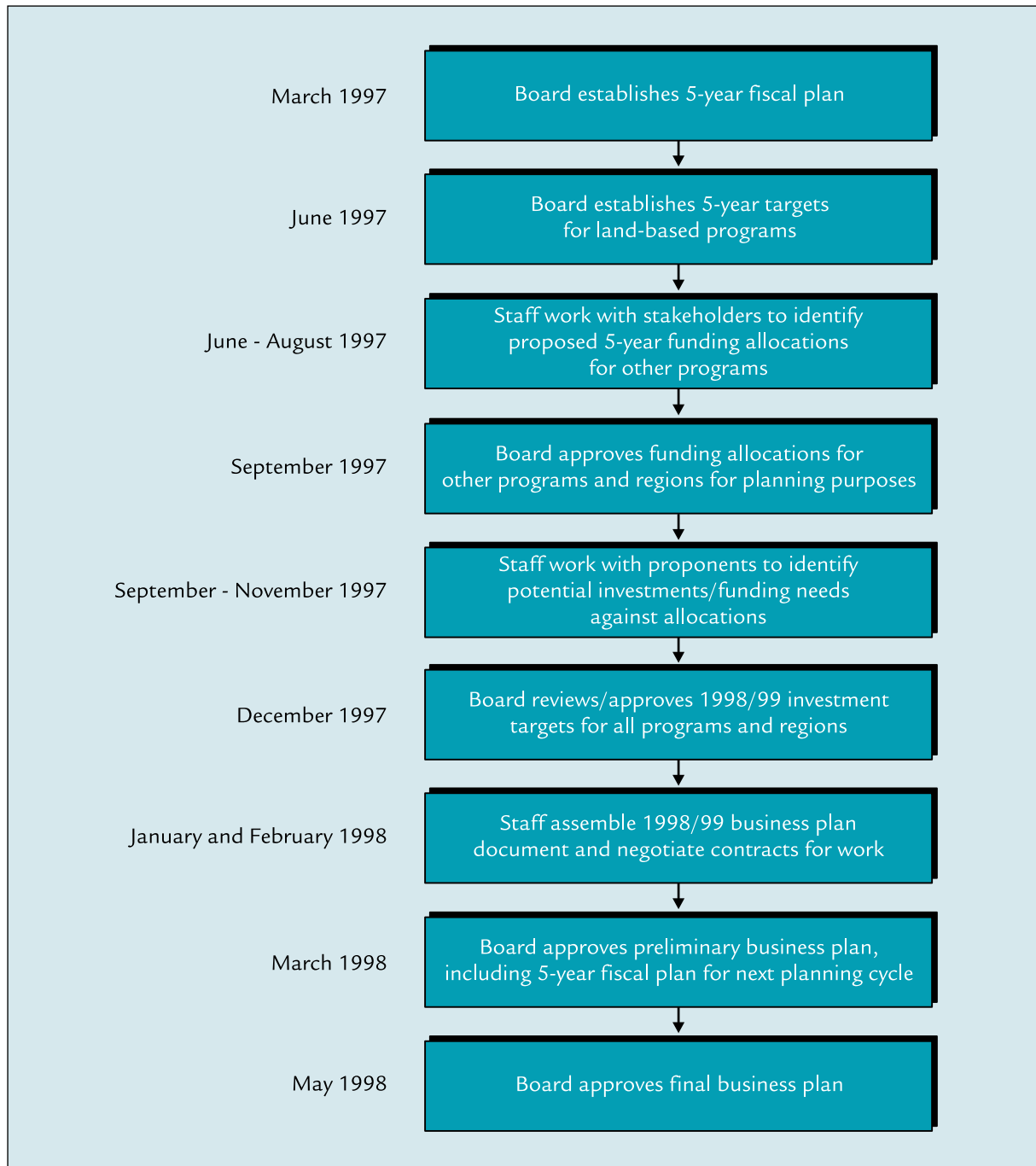
In June 1997, the board set a program investment target of \$500 million for 1998/99 and of \$425 million thereafter, as well as a five-year target for its land-based programs of 65% of total program expenditures (i.e., \$325 million in 1998/99 and \$275 million each year thereafter). This land-based allocation was essentially in keeping with the Jobs and Timber Accord that directed Forest Renewal BC to allocate 70% of total program expenditures, up to \$300 million, to land-based program investments. The board also set funding allocations and job targets for each region for their land-based programs and directed all of the regions, with the exception of the Pacific region, to allocate 45% of their allocation to silviculture programs. The Pacific region was directed to allocate between 32 and 35% to silviculture programs for 1998/99. Since silviculture programs were widely recognized as the biggest job creator per dollar spent, this direction was linked primarily to achieving the job targets and not to a targeted resource objective.

The remaining 35% (\$175 million) of program expenditures were to be directed at the corporation's non-land-based programs. However, initial regional land-based investment plans for the land-based programs did not result in the regions meeting either their resource needs or job targets. The plans indicated a job shortage of 1,097, and there was insufficient funding targeted at the Backlog and Bridge Replacement programs. Consequently, management requested and received additional funding from the board to meet these needs and targets. Initial allocations were adjusted accordingly and additional funds were added to compensate for these shortfalls. The final approved allocation was \$518 million (\$374 million to land-based and \$144 million to non-land-based).

The board approved the preliminary business plan in March 1998 and the final plan was approved by the board and tabled in the Legislature in May 1998.

## Exhibit 2.5

### The Business Planning Process for 1998/99



Source: Forest Renewal BC

## Direction to the regions did not include a balanced consideration of both resource and social objectives

We expected that Forest Renewal BC would allocate its funding to meet its mandate, strategic objectives and intended outcomes.

During the development of its business plan, Forest Renewal BC is required to make decisions on how to allocate its funds amongst its activity areas, its programs, its regions, and finally its projects (Exhibit 2.6).

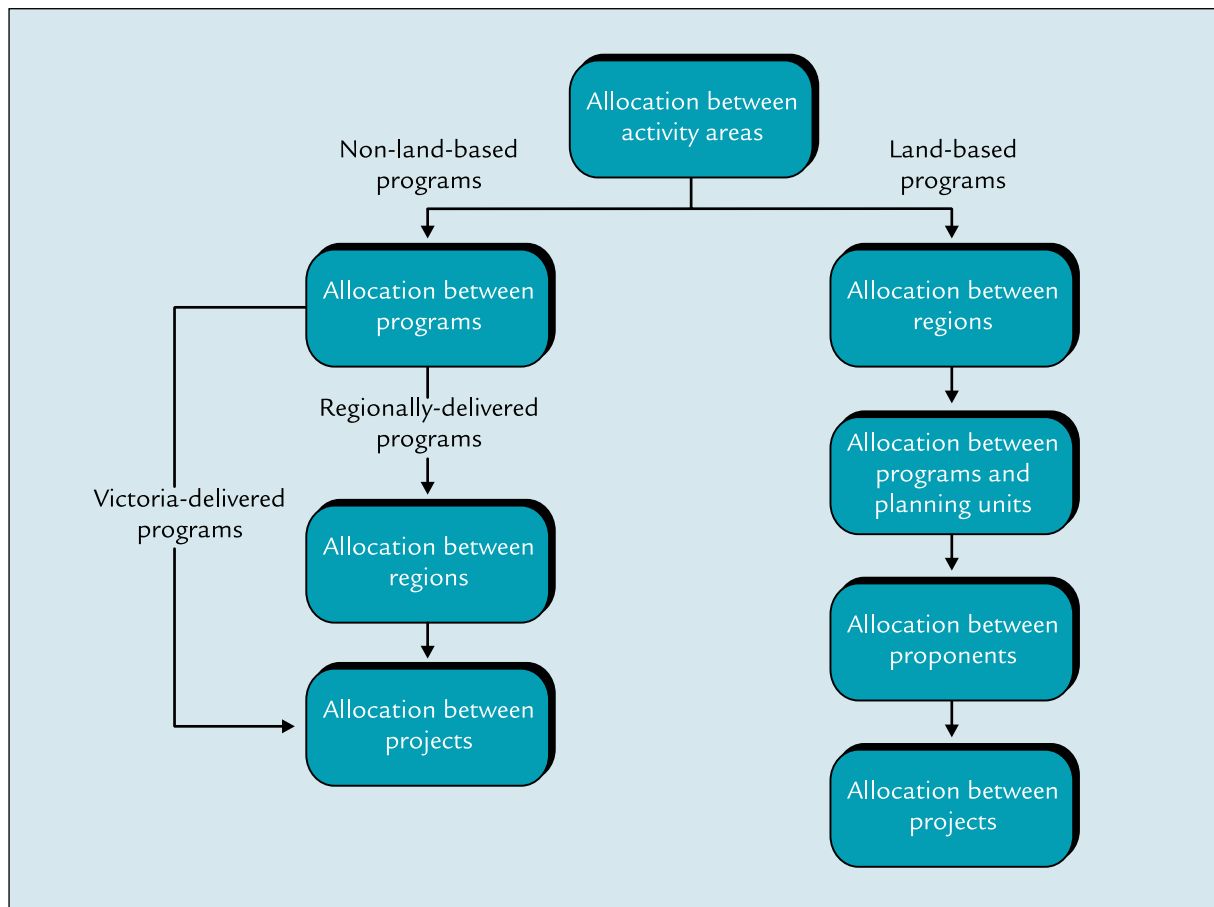
Under the new land-based delivery system, Forest Renewal BC must also make allocation decisions between planning units and licensees. Based on management representations of historical spending patterns and existing opportunities, the board approved allocations to each region for delivering land-based programs. With input from various stakeholders, the Regional Directors then allocated this funding among the planning units, which then allocated funding among the unit participants. Further details on this process are available in Appendix C.

In general, we found the allocations made for 1998/99 to be consistent with the corporation's mandate, strategic objectives and the guidance it received from government and its stakeholders. However, because the program expenditure target for 1998/99 was about \$80 million less than in 1997/98, the majority of the corporation's funding for 1998/99 was allocated to existing commitments, leaving little room for new projects. As well, because Forest Renewal BC did not have specified outcome-based performance objectives, we were unable to conclude whether the allocations would meet the corporation's long-term intended results.

We also found that, while the allocations within the land-based programs may have been made with a clear understanding of the number of short-term jobs that needed to be created, they were not made with an equally clear understanding of the resource objectives to be achieved or the downstream jobs that would be created. As well, we noted that allocation decisions between planning units and their participants were more influenced by the allowable annual cut of the participants than by their particular needs and priorities. Each of these issues is discussed in greater detail.

Exhibit 2.6

The Investment Allocation Process Followed in 1998/99

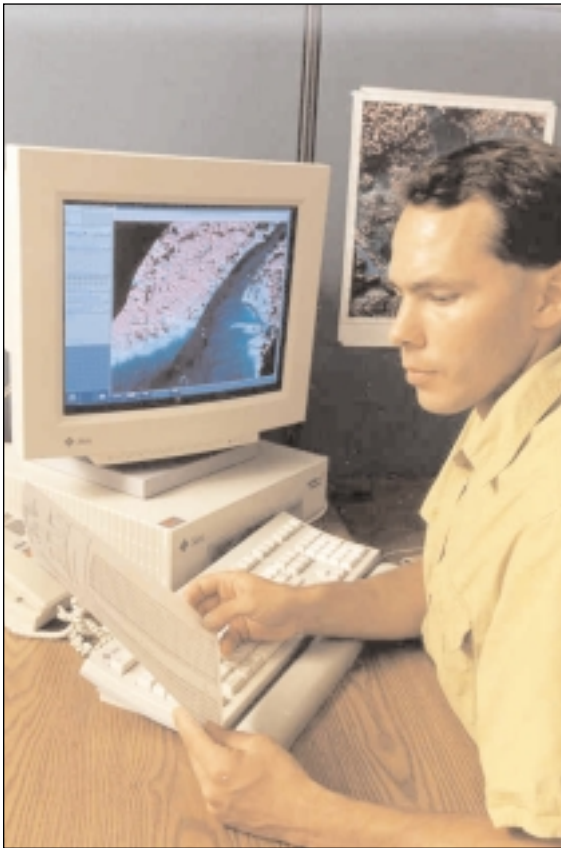


Source: Compiled by the Office of the Auditor General of British Columbia using information provided by Forest Renewal BC

*Job targets were established but resource targets were not*

In the Jobs and Timber Accord, Forest Renewal BC committed to creating 5,000 direct jobs and 5,000 indirect jobs each year. To meet these job targets, Victoria provided each region with a specific job target. It did not provide either long-term or short-term resource-based targets along with these job targets. An example of a short-term resource target (output) might be the number of hectares to be treated, while a long-term target (outcome) might be a specific increase in the quality or quantity of the wood supply.

Forest Renewal BC had limited criteria/guidelines by which staff and proponents could determine trade-offs between resource objectives and job targets. Essentially, staff



Courtesy: Forest Renewal BC

*Resource inventory project-use of digital images of forest areas for operational planning*

could contact management in Victoria if they were unclear. However, without resource targets to balance the job targets, staff and proponents were unclear about how to make these trade-offs, and the result was inconsistent decision-making.

We are not sure to what extent the establishment of job targets affected allocations between land-based programs and projects. Although many participants claimed that job targets had little or no impact on the allocations at the planning tables, it is clear that at least some participants placed the achievement of job targets ahead of any resource objective. One region, for example, allocated 50% of its land-based allocation to silviculture, partially in an attempt to increase the number of jobs likely to be created. As well, this same region told the planning units that allocations between programs might need to be adjusted to meet employment targets. Where a choice had to be made, the focus was to be on jobs. Victoria also told regional Project Officers that employment targets take precedence over resource priorities if the latter do not result in creating the necessary number of jobs.

Creating direct jobs is an output benefit of the land-based activities funded by Forest Renewal BC, and we believe that it should not be the main driver of the corporation's investment decisions. Rather, the corporation should make investment decisions based on a clear understanding of all of the costs and benefits expected, including the downstream jobs that are an outcome of many of these land-based activities. We concluded that, in planning for its land-based program investments for 1998/99, the corporation placed too much emphasis on creating short-term jobs, when its strategic objective is to "create and maintain sustainable forest jobs."

The job targets were based on information provided by BC Stats. All of the regions we visited said that the job targets they were given initially were unrealistically high and could not be accomplished with the base allocation. One region had a target of 400; the plans totalled 389, but staff felt 250 to 270 was a more reasonable expectation. Another region projected only 449 jobs compared to the target of 600. To meet the job targets, Forest Renewal BC had to allocate additional funding to the regions.

Regional staff had no input into development of the targets, and most were not aware of how they were determined. Based on the BC Stats coefficients, it was clear that the job targets could be achieved only if most of the land-based funding were allocated to Enhanced Forestry activities.

### *Recommendation*

***The direction given by Forest Renewal BC's board to its staff for allocating program investments should include both social and resource targets. Targets should include recognition of both short-term and long-term objectives, and guidance should be provided about how these targets are to be balanced so that staff can make informed trade-offs in their allocation decisions.***

*Allowable annual cut was the main driver in the regions' allocation decisions for land-based programs*

Allocation decisions among planning units and among licensees were based on a number of factors, but heavily weighted on one particular criterion—the allowable annual cut (AAC). In other words, the higher the AAC, the more funding the planning unit or licensee received from Forest Renewal BC. Allocation by AAC was chosen because it was seen as the only objective way to distribute the funding. Some districts tried to allocate funding using a different model that considered resource priorities rather than simply AAC, but encountered opposition from the licensees who wanted a more transparent and objective allocation criterion, such as that afforded by the AAC.

The planning units did try to accommodate particular needs through negotiations or the use of additional dollars. On occasion, the initial distribution was adjusted to reflect a high priority or a lack of capacity. For example, in one region, one licensee gave \$200,000 to another for 1998/99 because the first licensee did not have the management capacity to deliver the total amount allocated to it for 1998/99.

For 1998/99, the impact of this allocation method was likely minimal, since the majority of the funding went to existing commitments anyway. However, in our view, allocation by AAC should not be the main driver for the allocations because it does not address impending timber supply problems in a direct manner and limits Forest Renewal BC's ability to allocate funding to where it is most needed. An alternative model would be to allocate program investments based on priorities, needs and capacity—not on AAC.

*Recommendation*

***For land-based programs, allocations by Forest Renewal BC should be directed to where the needs are the greatest and to where the funding can be used cost-effectively.***

The business plan meets legislative requirements but lacks performance measures and targets

To satisfy the requirements of the Forest Renewal Act and good practices, we expected that the corporation would produce and submit an appropriate business plan with performance targets.

*The business plan fulfills legislated requirements*

Forest Renewal BC is required by its legislation to submit a business plan to the Minister of Forests at least once in every fiscal year. The Minister, “as soon as is practicable,” tables the plan and it is referred to the Select Standing Committee on Forests, Energy, Mines and Petroleum Resources. This is the only Crown corporation to have its business plan referred automatically to a Select Standing Committee of the Legislative Assembly. Forest Renewal BC has met these requirements and submitted a business plan in every fiscal year to the Minister of Forests.

The legislation is not clear as to the mandate of the Select Standing Committee. The committee’s terms of reference require it to develop a report on the results of committee deliberations and to present all reports to the Legislative Assembly. The role of the board in relation to the Select Standing Committee is also undefined. For example, it is unclear whether the Select Standing Committee should expect a formal response from the board to its report.

The Select Standing Committee has not reviewed the corporation’s business plan in a timely manner. As is evident from Exhibit 2.7, the review of the plan is completed five to seven months after it has been tabled in the Legislative Assembly and nine to 11 months after the beginning of the plan’s fiscal year.

This timetable provides the Select Standing Committee with little opportunity to have a real voice in planning for Forest Renewal BC activities. The plan for one fiscal year is being reviewed at a time when substantial parts of the projects have already been delivered, so proposed adjustments cannot be incorporated into the plan. At the same time, planning for the next year is already far along, so input into next year’s planning issues is also limited.



## Exhibit 2.7

### Business Plan Tabling and Review Dates

Plan Year	Tabled in Legislative Assembly	Reviewed by Select Standing Committee
1995/96	July 5/95	Sept./95 – Jan./96
1996/97	Aug. 19/96	Nov./96 – March/97
1997/98	July 2/97	July/97 – Jan./98
1998/99	May 4/98	Nov./98 – underway

Source: Hansard

However, we noted that when the committee was discussing the corporation’s business plan for 1998/99, it also reviewed the results of the 1997/98 fiscal year. We believe that this is an appropriate step in the process to hold the corporation responsible for its performance.

### The business plan meets most content expectations but lacks performance measures, targets and comparative information

In reviewing the appropriateness of the content of the corporation’s business plan, we focused on the most recent business plan available to us (1998/99). We found that it contains some of the most important elements of a business plan (i.e., strategic objectives, output targets, an analysis of the corporation’s external environment, and a detailed budget). The plan is also clearly linked to the corporation’s strategic framework. The corporation’s planned program investments are listed by strategic objectives.

However, the business plan is also missing a number of elements we believe are important, including performance measures and targets beyond the output targets. It lists potential measures, but then states that final measures and targets for each of the strategic objectives are expected to be developed in the coming year.

The only strategic objective with a specific target for 1998/99 is “to create and maintain sustainable forest jobs.” Forest Renewal BC committed to creating 5,000 direct and 5,000 indirect jobs on average per year for the term of the Jobs and Timber Accord. The business plan states that “performance targets and measures for this objective will be drawn from the employment goals set out in the Jobs and Timber Accord.”

With the exception of job targets, annual expenditure targets are not clearly linked to specific outcomes. The implied rationale is to fund at a level that is capable of being carried out by available resources and, for land-based, to meet the Jobs and Timber Accord expectations. For example, the corporation plans on spending \$76 million in 1998/99 on the Watershed Restoration Program. It is not clear, however, what immediate or long-term outcome Forest Renewal BC expects from this expenditure or how it is linked to the goals and objectives of this program and of the corporation.

The mix of information between strategic objectives, activity areas and references to land-based programs makes it difficult to track relationships and compare figures. For example, the report notes that land-based programs and related training total \$356 million, but it does not list all of the programs within this category. When we added together the funding allocated to the individual programs included in the corporation's definition of "land-based programs," we found that the total for land-based programs and related training did not add up to \$356 million. Instead, it came to \$374 million.

For the first two years of Forest Renewal BC, the business plans were reported by activity area. For 1997/98, it reported by program investment themes and, in 1998/99, it reported by strategic objective. Fortunately, the business plans also report by program, making it possible to compare expenditures of one year to the next. However, when we tried to compare the 1997/98 fiscal year business plan with the updated forecast that appeared in the 1998/99 plan, we discovered significant discrepancies. Exhibit 2.8 provides a comparison for these two forecasts for each activity area. As is apparent, there were some significant changes in the revised 1997/98 forecast, particularly in the Land and Resources, and Environment areas. However, no explanation has been provided for these changes.

Similarly, although there is an overall variance of 1%, there are significant variances within programs that would merit explanation, as shown in Exhibit 2.9.

### *Recommendation*

***Forest Renewal BC should enhance its business plan to ensure that it contains adequate accountability information. For guidance on how to achieve this enhancement, the corporation should review the "Guidelines for Crown Corporations for the Preparation of Strategic and Business Plans," produced by the Crown Corporations Secretariat and "Enhancing Accountability for Performance: A Framework and an Implementation Plan," produced by the Deputy Ministers' Council and the Office of the Auditor General.***

## Exhibit 2.8

### 1997/98 Original and Revised Forecasts, by Activity Areas

	1997/98 Business Plan <sup>a</sup>		1997/98 Forecast <sup>b</sup>	
	(\$000s)	%	(\$000s)	%
Land and Resources	324,120	52	264,249	43
Environment	107,620	17	233,471	38
Workforce	83,670	13	74,147	12
Communities	20,120	3	33,304	5
Value-added	23,470	4	14,307	2
Contingency	66,000	11		
<b>Total</b>	<b>625,000</b>		<b>619,478</b>	

Source: <sup>a</sup>1997/98 Forest Renewal BC Business Plan

<sup>b</sup>1998/99 Forest Renewal BC Business Plan

## Exhibit 2.9

### 1997/98 Original and Revised Forecasts by Selected Programs

	1997/98 Business Plan <sup>a</sup>	1997/98 Forecast <sup>b</sup>	Variance from business plan
	(\$000s)	(\$000s)	%
Resource Inventory	102,000	126,600	+24
Backlog	60,000	49,392	-18
Recreation	22,975	30,203	+32
Sectoral training	14,000	8,978	-36

Source: <sup>a</sup>1997/98 Forest Renewal BC Business Plan

<sup>b</sup>1998/99 Forest Renewal BC Business Plan



# allocating investment funding —adherence to the funding principles and approval criteria

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In selecting programs and projects, Forest Renewal BC must choose between a multitude of options with different objectives. To help ensure that it is getting good value for the money it spends, the corporation must choose the programs and projects that will best meet its objectives and will provide the greatest benefits to the province. We expected the corporation to establish clear funding principles and guidelines and to allocate its program investments to meet these principles. We also expected the corporation to establish solid approval criteria or guidelines for assessing projects that were consistent with corporate priorities and funding principles.

## Conclusion

Clear funding principles have been established and the corporation has developed policy guidelines for most of the key ones. For the First Nations principle, for example, the corporation has developed standards and guidelines to help staff with investment allocation decisions. However, it has not done something similar for the “wise spending” principle. Although it has developed guidelines for the regional equity principle, the guidelines are quite general in nature and difficult to apply to a specific decision. As a result, Forest Renewal BC does not have the information it needs to assess whether its program investments are consistent with the principle. We also have concerns with the corporation’s interpretation of the “incrementality” funding principle. In recent years, the corporation has broadened its definition of “incrementality” and committed significant funding to programs that were the responsibility of government or industry. The result is that there is now less funding than would have otherwise been available for the truly incremental programs the corporation was originally established to undertake.

For most Forest Renewal BC programs, eligibility criteria have been established and used as a basis for determining project eligibility. However, for land-based programs, there

are no criteria with which to assess the financial or economic viability of proposed projects and, for many non-land-based programs, the guidelines are out-of-date, too general for staff to apply consistently, and lack a mechanism for comparing the value of competing projects. As a result, staff have incomplete information with which to make decisions on specific projects.

## Findings

Funding Principles have been established but some lack supporting guidelines for interpretation

As discussed earlier, Forest Renewal BC has established the following nine funding principles to help guide its program investments:

- Consistency with corporate mandate
- Incrementality
- Wise spending
- Regional equity and sensitivity
- First Nations participation
- Community stability
- Jobs
- Sustainability
- Environmental values

Five of the nine funding principles are restatements of the corporation's mandate (i.e., consistency with the corporate mandate, community stability, jobs, sustainability, and environmental values) and are not so much principles as rationales for programs. The remaining four principles require separate consideration and discussion.

The corporation has developed policy guidelines for its incrementality, regional equity, and First Nations participation principles. It has not, however, done something similar for the wise spending principle. Such guidelines are needed to help staff interpret this principle consistently and make funding decisions and recommendations that help meet the corporation's standards.

### *Recommendation*

***Wise spending guidelines for Forest Renewal BC's programs should be developed and communicated.***

## The definition of the incrementality principle has been broadened beyond its original intention

We expected Forest Renewal BC's program and project allocations to meet the corporation's definition of incrementality. However, in recent years, the principle's definition has been broadened to such an extent as to make almost any proposed program or project incremental. Although we noted that all programs are consistent with the corporation's current definition of incrementality, we also found that several were inconsistent with the corporation's original definition.

The principle of incrementality was not included in the Forest Renewal Act, but it was one of the first principles established by the Forest Sector Strategy Committee and accepted by Forest Renewal BC. At the April 1994 meeting of the committee it stated clearly that Forest Renewal BC's work should be incremental—that is, that it fund only work that would not otherwise be done. Similarly, public pronouncements at the time the Act was being debated indicated that the corporation's monies would be spent only on programs and activities beyond those which government was already carrying out, or was obligated to carry out.

As defined in the dictionary, "incremental" is the state of increasing or becoming greater, especially gradually and as one of a series on a fixed scale. The following definition provided in Forest Renewal BC's 1995/96 annual report, was consistent with the dictionary's definition: "Forest Renewal BC investments must be above and beyond what industry or government are already doing or are obligated to do to renew or protect forest resources." The premise was that Forest Renewal BC funding ought to increase the level of activity in the forest sector with the injection of "new" money.

The need to maintain rigour on incrementality was reinforced by the Chair of Forest Renewal BC. At an October 1995 meeting of the Select Standing Committee, he offered a strong, supporting voice to the concept. He noted that, if Forest Renewal BC was not working on the incremental side of programs, then it would simply be a pot of \$400 million earmarked to be spent in the future. In such a situation, he noted, a corporation would not be needed.

Nevertheless, a weakening in the original incrementality principle occurred in September 1996 at a board meeting to discuss how funds might be transferred to government. The corporation, which was still developing its long-term expenditure targets, had experienced higher-than-anticipated

revenues and believed that it had funds in excess of its long-term needs. Consequently, staff provided the board with several options for transferring some of its surplus to government. The option approved was to use a formula that would result in a transfer of between \$300 million and \$400 million to government on March 31, 1997. The exact amount would depend on the surplus left after the corporation had identified its long-term needs.

Another option that the board considered was to fund programs that were the responsibility of government or industry. This would require relaxing the incrementality guideline. The following Ministry of Forests' programs were proposed as candidates for this Forest Renewal BC funding:

- Roads and bridges—proposed \$70 million over five years (\$70 million approved on December 12, 1996);
- Backlog—proposed \$250 million over 10 years (\$250 million approved on September 12, 1996); and
- Inventory, recreation, land acquisition—proposed \$400 million over five years (\$56 million approved for inventory on March 13, 1997).

With the approval to transfer between \$300 million and \$400 million to government and with the approvals to provide funding for ministry programs in the amount of \$376 million, Forest Renewal BC had designated between \$676 million and \$776 million for government purposes by the end of 1996. However, in September 1997, the board rescinded the proposed transfer after the decision came under a great deal of criticism from many of the corporation's stakeholders.

During 1997, the incrementality policy was broadened to include "beneficial initiatives." Under this definition, Forest Renewal BC could fund any program or project that government or industry decided to stop funding, as long as it was considered beneficial. The policy allowed for a change in funding source—for example, from government to Forest Renewal BC—not for an increase in quantity of funding, which was the initial premise under which Forest Renewal was established.

In the board's approval of the Backlog Program, the Resource Inventory Program, and the Bridge Replacement Program, it recognized that these were the responsibility of government, but felt that Forest Renewal BC funding could be used to accelerate the initiative. In other words, government funding was expected to continue at comparable levels, with Forest Renewal BC funding topping-up the level to accelerate the achievement of the objectives of the program. In fact,

however, we found that, in each case, government has either decreased its funding levels substantially (as with the Resource Inventory Program) or has eliminated it altogether (as with the Backlog and Bridge Replacement programs).

Another example is funding that was provided to the Ministry of Forests in April 1997 for forest health, road and bridge maintenance, recreation sites, and inventory. Up to \$32 million was provided on a one-time transition basis. Similarly, for 1998/99, the Ministry of Forests sought funds from Forest Renewal BC to meet some of its obligations and received approval from the corporation to use unexpended funds from the prior year to fund forest health and inventory.

In funding a number of programs for which the government is responsible, Forest Renewal BC has diverged from the original intention of the principle of incrementality, with the result that less funding is available for the truly incremental programs that the corporation was originally established to undertake. For 1999/00 and beyond, the corporation is unable to maintain the planned \$400 million in expenditures. Part of the reason is that it has spent much of its reserves (i.e., the monies Forest Renewal BC had set aside to ensure that it could maintain a steady level of expenditures each year) on funding programs that were the responsibility of government, rather than maintaining the monies for use during future years with reduced revenues.

The recent revenue reductions in the corporation appear to be changing this situation. Forest Renewal BC is now looking at its programs and projects more critically. One criterion used by the corporation in reviewing priorities for 1999/00 and beyond is whether or not someone else should or would fund the program if the corporation stopped funding it.

Regional equity has been integrated into the corporation's allocation decisions but it is not possible to assess whether or not it has been met

We expected Forest Renewal BC to allocate its program investments in keeping with its principle of regional equity. We found that it was unclear whether it has accomplished this because the corporation's regional equity guidelines are too general. Therefore, it does not have the information we required to make this assessment.

The Forest Renewal Act states that "Forest Renewal BC must plan and implement a regionally equitable program of expenditures in order to carry out the purpose of this Act." In striving for regional equity, the board does not simply ensure



that each region receives the same proportion in funding as it provides to the Crown in revenues. Rather, it determines regional equity by considering the following 10 factors:

1. revenue contributed by the region;
2. ecological restoration needs;
3. employment needs;
4. value of the forest resource;
5. contribution to sustainability;
6. contribution to the future vision of the forest;
7. contribution to economic diversification within the forest sector;
8. proportionate population of First Nations within the region;
9. pressure exerted on the region by changes to its AAC; and
10. investment productivity of the region.

This means that Forest Renewal BC may invest more in regions contributing less revenue because they have greater need of the programs offered by the corporation. However, we found no evidence that explained how the allocation for 1998/99 met these 10 factors. Regional allocations were based on management representations of historical spending patterns and existing opportunities.

It is unclear exactly how Forest Renewal BC defines what a “fair share” for each region would be. The corporation recognizes that a simple comparison of stumpage revenues to expenditure allocations does not provide sufficient information about whether its program investments have been regionally equitable, but it has no alternative approach. It is therefore impossible to know whether investment allocations have been in keeping with its interpretation of the regional equity principle.

The First Nations participation principle has been well integrated into the corporation’s allocation decisions

The Forest Renewal Act contains several provisions that require the corporation’s advisory committees to “take into account the need for increased participation of First Nations and aboriginal persons in the forest economy.” In January 1996, the corporation established its First Nations Strategy. This document summarizes the status of First Nations participation, interprets Forest Renewal BC’s mandate in regard to First Nations participation, and establishes principles for meeting the mandate. Forest Renewal BC’s definition of First Nations



Courtesy: Forest Renewal BC

*Mechanical spider performing work in creek as part of a Forest Renewal BC-funded project to restore fish habitat*

participation reads, “To the greatest extent possible, projects funded by Forest Renewal BC should encourage the participation of First Nations.” To meet this definition, we expected the corporation to consider First Nations participation in its investment allocation decisions. We found that this has been done.

For example, the First Nations principle was included in the proposal evaluation criteria for most programs. In general, proposals with First Nations partnerships received higher ratings than those that were otherwise the same but without this participation.

Forest Renewal BC has not set an overall target for what should be an acceptable level of participation for First Nations, or a dollar amount for what should be allocated to First Nations. This was avoided intentionally because the corporation believes that it is not possible to establish a target that would be acceptable to most people. Instead, the corporation has concentrated on ensuring that its programs are accessible to First Nations participants, and on monitoring and measuring participation levels.

One target the corporation has established, however, is that of maintaining previous levels of First Nations participation under the new land-based system. To this end, the corporation’s multi-year agreements include a provision that states:

*The Recipient acknowledges Forest Renewal’s mandate to increase First Nations participation in the forest economy and agrees that, over the Term of this Agreement, it will cooperate with Forest Renewal in maintaining the Recipient’s existing First Nations partnerships and in developing new First Nations partnerships*

To assess the extent to which Forest Renewal BC has maintained existing participation levels, the corporation engaged BC Stats to conduct a survey to establish a baseline of First Nations participation in Forest Renewal BC projects. The corporation will be able to compare participation since the new land-based delivery system was introduced in 1998/99 to the data collected by BC Stats for 1996/97 and 1997/98. Participation information for 1998/99 and the years following will be captured through regular reporting and entered into the corporation’s Investment Management System.

## The wise spending principle has not been fully integrated into the corporation's allocation decisions

We expected the corporation to make investment decisions that were consistent with its principle of wise spending. According to the corporation, “projects funded by Forest Renewal BC should demonstrate economy of delivery, efficiency of operation, and effectiveness in achieving desired results.” To meet these requirements, we expected that the cost-benefit implications of proposed initiatives, programs and projects would have been analyzed before a decision was made. We found that this was not always done.

### *Adequacy of information to support program-level investment decisions*

We found that the board received little analysis with which to assess investment alternatives for the corporation's business plan. The board briefing notes presented summaries of the differences between two main options, as well as the different impacts each was expected to have on the goals of Forest Renewal BC. However, the analysis lacked sufficient detail on expected outcomes, making it difficult for the board to understand the relative value of the investment options. For example, one of the options presented was increasing funding to Value-Added programs, and the impact identified was the acceleration of market intelligence. However, information was not provided on the extent to which market intelligence would be accelerated, nor was there information on what the ultimate outcome of this acceleration would likely be.

In most cases, only a cursory level of analysis was provided to the board before it made its decision to approve or reject a proposed program. The board usually received information on program costs and qualitative information on the overall benefits of the proposed program, but little or no information on the expected outcome of the investment or quantitative information on benefits.

### *Adequacy of information to support project-level investment decisions*

We also expected the corporation to understand the economic and financial implications of significant projects. Within land-based programs, it is the Ministry of Forests that is most able to make the assessments on the costs and benefits of a particular project. However, ministry staff are no longer required to assess the cost-benefit or any other financial aspect of any proposed project. In fact, no one is currently required to conduct a financial or cost-benefit analysis of Forest Renewal BC land-based projects before approving them. Forest Renewal

BC staff review the multi-year plans from a high-level perspective to assess whether the costs are in line with previous years, but they do not do a cost-benefit or financial/economic analysis. The only benefits that are measured appear to be the number of jobs created.

In some regions, Ministry of Forests staff are continuing to do financial/economic analyses, and they sometimes share this information with Forest Renewal BC. But, since this is not a requirement, it is not being done consistently. Generally, Forest Renewal BC relies on licensees to propose only projects that are cost-effective, and on the Ministry of Forests to approve only those projects that, at the very least, will not damage the resource. We believe that Forest Renewal BC must take steps to understand better the economics of its decisions.

We have similar concerns about projects approved directly by the board. We found, for example, that the board approved a 10-year, \$12 million basic reforestation project in the Omineca-Peace region with insufficient information about the region's need for it or its potential economic benefits. The information provided was at a basic level with almost no real analysis of the value of the project. We concluded that this decision is an example of where project approval objectives and criteria were inadequate. Overall, there was insufficient information for the board to exercise financial accountability for its decision and to be able to show that this decision complies with the corporation's wise spending principle.

For non-land-based projects, we found that the assessment process has similar weaknesses. Cost-benefit analyses or multiple account evaluations were not usually done. Rather, staff simply ensured that the project was consistent with Forest Renewal BC's mandate, the board's direction and program guidelines. For Value-Added programs/projects, however, the process is changing. For 1999/00 and beyond, the corporation plans to review all projects using a return-on-investment template to assess the relative merits of one project over another. We believe this is an appropriate process that will help the corporation to ensure wise spending in the value-added activity area.

### *Recommendation*

***Forest Renewal BC should ensure that an appropriate level of analysis—one that includes financial, economic and social considerations—is conducted and the resulting information shared with the board for major investment allocation decisions.***

## Project approval criteria have been established and are consistent with the corporation's funding priorities and principles

We found that, for most Forest Renewal BC programs, eligibility criteria have been established and used as a basis for determining project eligibility. In most cases, the criteria are consistent with the corporation's priorities and funding principles, although those are often not specified in the guidelines. We believe that the corporation's strategic objectives and funding principles should be included in each of its guidelines.

For land-based programs, the guidelines include a list of eligible activities. Forest Renewal BC no longer uses evaluation criteria to review proposed projects. Instead, if a proponent has been allocated funds and wants to do a project, the project will be approved by Forest Renewal BC as long as it falls within the list of eligible activities and is approved by the Ministry of Forests and/or the Ministry of Environment, Lands and Parks, depending on the project.

Non-land-based programs guidelines are often out of date and missing key new policy directives. They are also too general for staff and delivery agents to apply consistently and lack a mechanism to compare competing projects. An exception is Value-Added programs, which, as described earlier, will require that all proposed projects be reviewed and assessed using a Return on Investment Measurement Template.

In the absence of adequate documented guidelines, staff have contacted program managers in Victoria to receive vocal or e-mail direction to assist them in their project approval decisions. This process has helped staff, but it has not ensured efficient and consistent decision-making.

The Research Program is a corporate-wide program that is administered by the Science Council of British Columbia. Forest Renewal BC's guidelines for this program include a list of priority needs for eligible topics, evaluation criteria, and a ranking system for each criterion. However, the guidelines do not rank one corporate priority above another, which makes it difficult for reviewers to score one proposal higher than another based solely on priorities. Instead, the tendency has been to score some proposals higher than others based primarily on technical merit.

*Recommendation*

***Forest Renewal BC should ensure that all of its programs have approval criteria and guidelines that, when applied, allow staff to compare the merits of one project over another. Guidelines should be updated to reflect the corporation's most current direction, and corporate priorities and principles should be provided in all program guidelines.***

Approved projects are consistent with the approval criteria

As well as developing approval criteria and program guidelines, Forest Renewal BC must ensure that projects are reviewed and approved or rejected based on the established approval criteria and guidelines.

We found that Forest Renewal BC had established sufficient controls in its process, in the form of multiple reviews and sign-offs, to ensure that its approved projects were in line with its established approval criteria. Staff are expected to ensure that they only approve proposed projects that are consistent with the corporation's funding principles. We did note, however, that one principle may contradict another (e.g., wise spending versus job creation or community stability), and it is not always clear to staff which should take priority. As a result, there are different interpretations as to how these contradictions should be handled.



# monitoring and measuring performance— knowing what is being achieved

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We expected Forest Renewal BC to have an information and monitoring system that captured appropriate data in support of the corporation's information requirements. Clearly defined information needs and well-designed information systems are fundamental to performance measurement. Timely acquisition of relevant, reliable information is key to determining whether directions and policies are being implemented in the manner that was intended, and whether outputs and costs are in line with plans.

We also expected the corporation to have an appropriate evaluation plan, along with relevant performance measures and targets. By appropriate, we mean a plan that encompasses comprehensive information on the intended results of Forest Renewal BC's programs, including information about outcomes and cost-effectiveness (cost per outcome). As well, we expected the corporation to use its plan to conduct periodic evaluations of its major programs and initiatives to assess the results being achieved.

## Conclusion

Forest Renewal BC has not identified its accountability information needs in a comprehensive way.

The corporation is in the process of implementing a new information system that will integrate financial and operational information. Previous systems were not integrated and did not provide timely information for monitoring performance. The new system, we believe, will change this.

The corporation also monitors the performance of its delivery agents through the inclusion of output targets as well as the requirement for audits or evaluations in many of its contribution agreements.

As well, the corporation has developed an evaluation plan covering its major programs. If the corporation implements its plan, it will be better able to understand and account for program results. However, additional effort will be needed to ensure that the evaluation plan meets the board's accountability needs, once the corporation establishes what those needs are.

## Findings

The corporation does not yet know what accountability information it should be reporting

Performance measurement is a key component of effective accountability and is essential for good management. It allows an organization to know how well it is doing in achieving its strategic direction, and to be able to report this information. Three aspects of performance should be measured: operational, financial and compliance. Measuring operational performance involves answering the question: Is the program/service achieving the intended results in the least costly manner and is the program/service developing and maintaining the capacity to deliver results in the future? Financial performance measurement assesses the achievement of financial objectives and the soundness of financial controls. Compliance performance measurement assesses whether business is conducted in a fair and ethical manner and whether the corporation is complying with applicable legislation and regulations.

We found that Forest Renewal BC has not determined the accountability framework it should use to report on its performance. As a result, it has not identified the information it needs to exercise its accountability obligations.

Public sector accountability initiatives are underway in British Columbia and other jurisdictions to provide public agencies with guidance as to current and evolving expectations for performance information. An April 1996 joint report of the Deputy Ministers' Council and the Auditor General of British Columbia titled *Enhancing Accountability for Performance: A Framework and Implementation Plan*, provides guidance to ministries and Crown corporations on establishing an appropriate accountability framework. As well, the Crown Corporations Secretariat, the main central agency for overseeing the government's major Crown corporations (excluding Forest Renewal BC) produced *Crown Corporation Accountability: Reporting on Performance in 1996*. This guideline provides an outline of a Crown corporation accountability framework and performance measurement concepts. We believe that Forest Renewal BC should use these various guidelines to develop an appropriate accountability framework.

### Recommendation

***Forest Renewal BC should develop an accountability framework that allows it to meet its accountability responsibilities. The framework should encompass information in three areas: operational, financial and compliance performance.***



## Information and monitoring systems are being improved

Until 1998, the corporation's information management systems were inadequate and uncoordinated. The systems used by the corporation to track its projects, outputs and financial status were not integrated. Output information and related costs, for example, were gathered by BC Stats through a survey of service providers.

*Outputs have been measured and reported, although some improvements are needed in the corporation's output reports*

For 1996/97 and 1997/98, Forest Renewal BC used BC Stats to measure the corporation's outputs. BC Stats surveyed each of the projects funded by Forest Renewal BC in 1996/97 and 1997/98, where funding had a direct effect on the hiring of workers and the production of measurable physical outputs.

The survey collected information on outputs (e.g., number of person-years of employment created, hectares of work on the land, number of workers trained, or number of studies completed), as well as the level of participation of partner groups, such as First Nations, and measures of sub-contracting and methods of tendering. The results of the 1996/97 survey were provided in a report dated September 1997, and the results of the 1997/98 survey were in draft at the time of our audit. For 1997/98, BC Stats also provided Forest Renewal BC with quarterly outputs reports for Workforce, Communities, and Value-Added programs only, as well as semi-annual reports for Research.

The Outputs report focuses on immediate outputs only—employment, primarily—leaving longer-term outputs and outcomes for Forest Renewal BC to assess through other research initiatives. The report does not provide sufficient information to help the corporation know how well it is meeting its strategic objectives. For example, one strategic objective is to “create/maintain sustainable forest jobs,” yet the report does not show whether the corporation is making progress toward this objective. “Sustainable” is not defined, and most of the jobs counted are dependent on continued funding. Similarly, there is no data on whether the jobs created were long term or short term, or on the number of displaced workers employed. The corporation expects that much of this data will be included for the 1998/99 program investments, and is currently working on defining sustainability and identifying performance measures for downstream jobs.

The value of the output data is, of course, lessened because there are no targets to compare the outputs against, nor are

there explanations of how the outputs are connected to the desired ultimate outcomes of the programs. For example, the 1996/97 report indicates that Watershed Restoration Program activities resulted in 60,685 kilometres of detailed assessment being completed. In itself this number is meaningless unless we know what Forest Renewal BC intended to accomplish and how this output result compares to the total need and contributes to the long-term objectives of the program. These numbers do not allow the corporation to assess the relative value of a program and the program investments made in it.

In general, the Outputs report also lacks analysis. For example, the report illustrates the extent of competitive versus direct awards on a regional basis for each activity area, but offers no explanation for the ranges. There is no analysis, for instance, as to why the Pacific region, for the Environment activity area in 1996/97, has a 69% rate of direct award, while the Omineca-Peace region has only a 16% rate of direct award. It leaves the reader questioning the reason for this disparity.

In 1998, realizing that using a survey to collect output information did not result in timely access to this information, Forest Renewal BC developed the Investment Management System. It is now implementing the new system, which is described below.

### *Recommendation*

***Forest Renewal BC should review the purpose of the Outputs report and ensure that the document satisfies the corporation's information management and accountability needs. Once the corporation has finalized its strategic plan, any subsequent reporting should be clearly linked to its goals, objectives, performance measures and targets. In particular, information about jobs must be more specific, put into context, and linked to the corresponding strategic objective.***

*The Investment Management System (IMS) will likely meet the corporation's operational monitoring and reporting needs*

At the time of our audit, Forest Renewal BC's IMS was up and running for land-based programs, and the remaining programs were expected to follow later in the fiscal year. In the interim, the non-land-based programs were using spreadsheets to track investment performance.

The IMS appears to be a sound system that should meet much of the information and reporting needs of the corporation and its stakeholders when it is fully implemented. It can capture financial and operational information, both actual and projected, and it provides Forest Renewal BC with

the capability to monitor progress on a more timely basis. Information will be provided quarterly, supplemented by an annual report that will contain additional information on achievements related to social objectives. Through this system, Forest Renewal BC managers will receive information that allows them to compare actual costs and outputs to planned costs and outputs.

### *Recommendation*

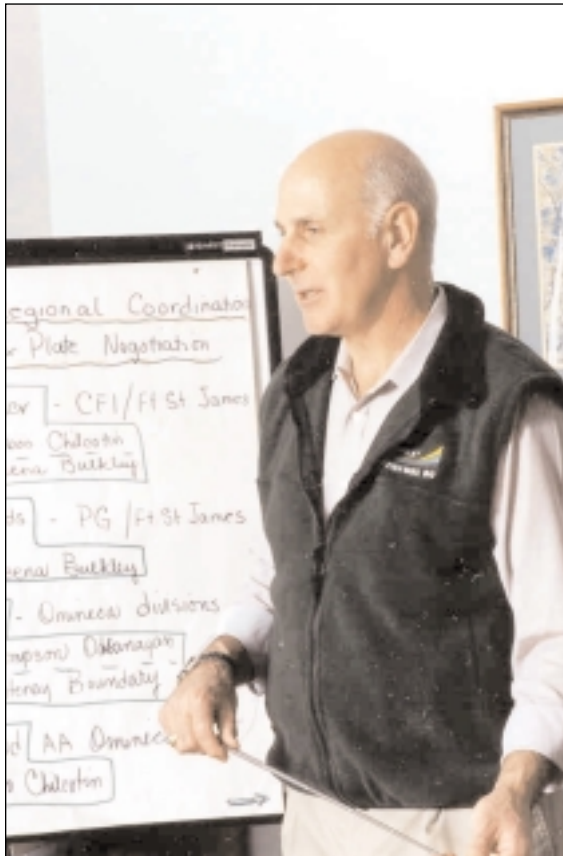
***Once fully operational, Forest Renewal BC should assess the Investment Management System to ensure that it meets the corporation's information management and accountability needs.***

### *Forest Renewal BC delivery contracts include requirements for performance monitoring*

In addition to what the IMS does, performance is monitored on a regular basis through several processes. In general, ongoing monitoring is achieved through the specification of key deliverables in the contracts between Forest Renewal BC and its various delivery agents. Value-Added agreements, for example, have various output targets (e.g., volume and employment targets) that must be met, and most Value-Added agreements contain requirements for annual performance audits or reviews. We did not assess whether or not these contract provisions were being followed.

Significant agreements in the Workforce area (e.g., the BC Wood Specialties Value-Added Training project) also require the completion of evaluations and the reporting of performance according to identified targets. Smaller agreements do not. Instead, Forest Renewal BC plans to include smaller projects in its program evaluations (discussed below). In addition, guidelines for the Forest Transition Program require compliance checks and a 10% bi-annual spot check.

All the corporate-wide programs have monitoring and evaluation requirements. For the Research Program, for example, every approved project is assigned two monitors—one technical and one administrative—who conduct progress checks every six months. For the Endowment Program, every funded project is expected to have an advisory committee established to monitor performance annually and to conduct in-depth program evaluations every five years. As the delivery agent, the Science Council of British Columbia is also required to conduct financial audits for both the Research Program and the Endowment Program. The Forestry Innovation Development Program requires the delivery agent to conduct project monitoring and financial auditing.



Courtesy: Forest Renewal BC

Land-based planning meeting in Omineca-Peace region

Land-based projects also require a degree of monitoring and evaluation. Watershed Restoration, for example, requires monitoring for at least one year after the project is complete. However, in the past, Watershed Restoration projects have been monitored informally, on an ad-hoc basis, or not at all. Another example is the Private Forest Biodiversity Program, which is delivered by the Nature Trust of British Columbia. As part of the contribution agreement, Forest Renewal BC has committed to conducting an audit and an annual review of the program's effectiveness in terms of its program goals, objectives, outputs, principles, evaluation criteria, critical success factors, and activities.

In September 1996, the Office of the Comptroller General, Internal Audit, completed a five-year audit plan for the corporation. While some audits have been undertaken, the plan is still in draft form and has not been formally accepted by the corporation which, at the time of the audit, was in the process of negotiating the role of Internal Audit in implementing the plan.

#### *Recommendation*

***Forest Renewal BC should establish a current and formally approved audit plan for the corporation, and the progress of the plan should be monitored and reported to the Audit Committee.***

#### *Forest Renewal BC is not monitoring adherence to most of its funding principles*

We have some concerns that the corporation is not monitoring the extent to which it is meeting the requirements of its major funding principles. Current information systems have provided sufficient data on the corporation's ability to meet its First Nations participation principle, but very little on its meeting the incrementality, regional equity, and wise spending principles.

For example, Forest Renewal BC has not established baselines or measured the extent to which its programs and projects are incremental. To measure and monitor incrementality, we expected Forest Renewal BC to have established a baseline of program expenditures that existed before the corporation was created. Some baselines were established, while others were not. Regardless, the corporation has not monitored or

reported on the baselines it did establish or on the extent to which its program investments have been incremental.

The corporation has also been unable to report on its principle of regional equity, at least not beyond dollars-in-dollars-out comparisons between regions. However, the corporation has recognized regional equity (based on need) as one of its founding commitments and has therefore committed to developing a performance measure for this principle.

Monitoring wise spending requires improvement as well. The addition of subsidiary corporations—both by Forest Renewal BC itself and by some proponents needing the agencies to manage their land-based agreements—has added to the administrative costs of the corporation’s programs. With the large number of agencies involved in program delivery, we expected total administrative and overhead costs to rank high in Forest Renewal BC’s information needs. In fact, we found that these have not been assessed or reported. Forest Renewal BC frequently quotes its corporate administrative costs at less than 5%. We believe that this statement does not provide complete information since it excludes the administrative costs accrued by the corporation’s delivery partners.

#### *Recommendation*

***As it has with its First Nations participation principle, Forest Renewal BC should measure the extent to which the corporation is meeting the requirements of its funding principles—incrementality, regional equity and wise spending—and report this information fully to the board and the public.***

#### Performance measures and targets are in the process of development

As we noted earlier, Forest Renewal BC is in the process of developing performance measures and targets. In February 1998, it initiated the Corporate Performance Measures Project to develop performance measures for each of its seven strategic objectives and three founding commitments. At the time of our audit, draft performance measures were available for almost all Forest Renewal BC programs.

#### *Recommendation*

***Forest Renewal BC should continue to develop its performance measures and targets, including operational, financial and compliance measures, for both outputs and outcomes, and report them to the public once they are established.***

## An evaluation plan has been established but requires some refinements

Forest Renewal BC established a corporate evaluation plan in October 1996. This plan had 12 evaluation issues that included effectiveness, efficiency, output monitoring, and public perception surveys. However, because the plan was produced before the board established its strategic framework, it needed to be updated after this direction was received—something the board did in 1997.

The updated evaluation plan is more a framework than a plan. It does not include a detailed workplan specifying the evaluations to be undertaken in coming years. It does state, however, that the following are to be completed by the end of fiscal 1998/99:

- 10 corporate performance measures (one for each strategic objective and founding commitment);
- evaluation plans for each of the corporation's 30 programs; and
- eight program evaluations.

Since neither the original evaluation plan nor the updated plan includes a specific workplan, we found it difficult to assess to what extent these plans have been implemented. However, clearly some progress has been made and a number of evaluations have been completed. We were told that the goals for the evaluation plan for 1998/99 were not likely to be completed by the end of the fiscal year, with probably two instead of eight evaluations being completed and five others underway, as well as five program evaluation plans being completed and another 10 drafted.

We noted that the current evaluation plan focuses on operational issues and the intended outcomes of programs. We believe that Forest Renewal BC also needs to consider secondary impacts. Secondary impacts are impacts that the corporation's activities have beyond the primary ones. Most, if not all, public sector programs have secondary impacts associated with them. These can be positive or negative. It is likely that the corporation's programs do have significant side effects, such as the elimination or reallocation of funding from other organizations. To the extent that Forest Renewal BC activities have effects that are significant, either intended or unintended and either positive or negative, these should be assessed and reported on.

*Recommendations*

***Forest Renewal BC should enhance its current evaluation plan to include a detailed workplan with proposed evaluations that are clearly linked to the corporation's strategic objectives and accountability needs. Management should monitor and report on the progress of this workplan to its board.***

***Forest Renewal BC should ensure that the secondary impacts of its programs are included in its evaluation plan.***

The results of monitoring and evaluating are used in decision-making

To complete the cycle, we expected Forest Renewal BC to have incorporated the results of its monitoring and evaluating efforts into subsequent decision-making. We found this to be the case. In general, findings from an evaluation, review or audit are presented to the Management Committee in Victoria, which makes a decision on how to respond to the findings. If a policy or procedure revision is required, this is done and communicated to staff for implementation. For example, some of the recommendations provided by a 1997 evaluation of the Forest Worker Employment and Training Program were implemented. The consultant recommended that Forest Renewal BC provide clarification of the wages-in-training component of the program and, in March 1998, the Management Committee did so.



# reporting on performance—informing the public and the legislative assembly

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Reporting on performance is an important component of the accountability cycle. It provides the opportunity for those with the delegated responsibility to show how they have discharged their accountability requirements, the outcomes of their programs, and the extent to which they have the capacity to meet their obligations in the future. It also allows policy-makers and those that confer authority to make informed assessments as to whether the governance mandates are being effectively carried out. We expected Forest Renewal BC to report on its performance to the Legislative Assembly, in accordance with current accountability expectations.

## Conclusion

Both the contents and timeliness of Forest Renewal BC's annual report must be improved if the report is to serve as a useful accountability document. Significant deficiencies in the reporting of performance information need to be addressed.

## Findings

The annual report is the corporation's key accountability document

The accountability documents produced by Forest Renewal BC are its business plan and annual report. Both are required by Forest Renewal BC's legislation as part of the Legislative Assembly's accountability expectations. The business plan sets out what the corporation intends to do for the fiscal year, while the annual report shows how well the corporation actually did. We expected the information in these documents to be linked and, together, to provide a complete picture of the corporation's performance for the Legislative Assembly and the public.

The Forest Renewal Act requires that the board submit a report to the minister on Forest Renewal BC operations, as well as a financial statement. There is no reference in the legislation as to what the report on operations should contain. We expected the annual report to be timely and to provide complete and useful information.



Our findings focus on the 1996/97 Forest Renewal BC annual report, the most current one available at the time of our audit, though we also considered the timeliness of previous reports as well.

*The annual report is not produced in a timely manner*

The Forest Renewal Act requires that the annual report be submitted to the Minister of Forests “as soon as is practicable after the end of the fiscal year.” We found that the corporation’s annual reports tend to be released at least 12 months after the end of the fiscal year. While we acknowledge there is no legislation defining a reasonable release period, we believe that Forest Renewal BC has been taking an undue amount of time to release its annual reports. This makes their contents less useful, as the information may have lost much of its relevance.

Treasury Board policy calls for ministries to submit their annual reports within six months after year-end. There is no similar policy covering Crown corporations; however, we believe that six months is a reasonable expectation. Federal legislation is more stringent. It calls for Crown corporation annual reports to be submitted within three months after year-end and provides more specific expectations as to report contents. The recently established Fisheries Renewal BC, we noted, tabled its first annual report (covering the 1997/98 period) within four months of year-end.

*Recommendation*

***Forest Renewal BC should ensure that its annual report is produced within six months of the fiscal year-end.***

*Annual report contents do not meet current expectations for an accountability document*

Several sets of guidelines have been developed to help public agencies identify expectations for the contents of annual reports. Two we felt were particularly relevant to Forest Renewal BC. In May 1993, the federal government issued *The Preparation of Crown Corporation Annual Reports*. In British Columbia, the Deputy Ministers Council put out a report in February 1997 called *Guidelines for Ministry Annual Reporting*, although directed at ministries, it is equally applicable to Forest Renewal BC and other Crown corporations. Both of these documents call for similar content for annual reports. We used them as a guide for reviewing Forest Renewal BC’s annual report.

Forest Renewal BC did not use any particular reporting framework in developing its 1996/97 annual report. The report contained a corporate overview, a management perspective, performance information, corporate context, and information for key stakeholders.

*Corporate overview is adequate*

The 1996/97 annual report provides background information on the corporation's mandate, structure, and function. There is also a general description of the purpose of each of Forest Renewal BC's programs. Appendices include descriptions of Forest Renewal BC's funding principles and identification of board directors and advisory committee members. There are also references to some aspects of the corporation's legislation as it applies to the funding process, regional equity and accountability requirements. Overall, we concluded that there is reasonable information about the corporation.

*Management perspective lacks explanatory and forward-looking information*

We looked for some discussion and analysis of recent corporate results, financial condition/health, future outlook, and risks and uncertainties affecting the corporation.

The report contained messages from the Minister and the Chair of the board, providing their assessment of Forest Renewal BC's status and progress. There was also commentary on overall corporate results, but with insufficient discussion or analysis. For example, the report states that Forest Renewal BC spent \$395 million when it was projected to spend \$275 million. The report suggests that this is a sign of a successful and dynamic corporation. However, there is no explanation as to why spending increased to this level or what additional outputs were obtained. Spending could have increased, for example, because of higher costs, the loss of control over expenditure levels, or the addition of new or off-loaded programs or projects. The report simply notes that spending increased in each activity area. Without more information, it is difficult to understand why spending exceeded planned amounts by so much and whether the increased spending level really represents a success.

We also noted there was little forward-looking information. The information is limited to a reference to the new land-based planning approach and the requirement to establish a forest worker agency. Considering the lateness of the report, we think it would have been useful for readers to have a summary of the 1997/98 Business Plan. A note to the



Courtesy: Forest Renewal BC

*Use of horses for a watershed restoration project to minimize damage to the environment*

audited financial statements stated that the plan was for \$651 million. As this is more than twice what the 1996/97 Business Plan proposed, some detail should have been provided as to why and where the major increases were proposed. This would have enabled the reader to see short-term trends, changes in programs, and so on.

In addition, the Jobs and Timber Accord affects more than half of Forest Renewal BC's business plan and includes very specific performance expectations for the corporation, but there is no information about this in the report. It would also have been useful to have a summary of financial information showing financial trends since Forest Renewal BC's inception.

*Performance information is inadequate*

The report contains some information on how the corporation has performed but, as noted earlier, it is not based on an assessment by the board of the corporation's accountability information needs. As a result, it is unclear what the corporation's main performance indicators are.

The report does not identify the corporation's strategic objectives. Program goals are identified, but are at such a general level that they are more a program description than a basis against which performance can be judged.

The greatest deficiency is the lack of performance information that could be used by the reader to compare Forest Renewal BC's performance with its targets and previous year's performance. Rather, performance information is limited to the

number of person-years of employment created per region and overall, and the extent of First Nations participation, but even this information is not related to specific targets. For example, the annual report states that Forest Renewal BC spent \$395 million and created 4,970 person-years of employment in 1996/97, but it does not state that the 1996/97 business plan suggested that the proposed \$275 million in expenditures would create 6,090 person-years of employment. The corporation spent 44% more than planned and achieved 18% fewer jobs than estimated. There was no explanation for this significant variance.

The report also states that, for the Enhanced Forestry Program, 11,000 hectares were pruned, 19,000 hectares fertilized, 49,000 hectares spaced and 3,600 hectares were treated. These are simply references to operational outputs and say little about what is being achieved from this level and mix of outputs. Reference to 3,600 hectares being treated is meaningless because there are a number of activities to which this may be referring. The report also makes no reference to what the operational output targets were so the reader can compare the results to planned performance. The information cannot be compared to the related business plan either, because the 1996/97 business plan did not provide a similar level of detail as to planned outputs. As noted before, the business plan outputs refer to the number of projects only.

At a higher level, information is also lacking about what needs to be done to meet the program's objective of increasing the productivity of the province's forests. As well, reporting of expenditures is limited to activity areas. There is no summary of how much has been spent on a per-program basis, making it impossible for a reader to compare spending to the program targets reported in the 1996/97 Business Plan.

As required by its legislation, the report does contain audited financial statements—the corporation's financial statements and auditor's report. The statements include a schedule of total expenditures for each activity area and, while it compares these to the previous year's expenditures, it does not compare these to the targets established in the business plan.

Overall, significant improvements in performance information are required if Forest Renewal BC is to demonstrate that it managed public funds in a prudent manner.

*Corporate context is lacking*

We looked for information about external events that are significant to Forest Renewal BC's condition, prospects and capacity to perform. In a Crown corporation environment, we also expected some discussion of major government policies affecting the corporation.

We found limited information about the external environment. The report refers to the forest sector facing a number of pivotal challenges but does not delineate these in detail. We believe reference to the then-recently completed Timber Supply Reviews and their results would have provided additional information about the state of the forest sector and how Forest Renewal's programs can alleviate forest sector challenges.

Also missing from the annual report is information about government policies affecting Forest Renewal BC. For example, identifying the Orders-in-Council issued as direction to Forest Renewal BC would enable the reader to better understand some of the direction government is providing to the corporation.

The incrementality principle recognizes that Forest Renewal BC programs are linked to other government programs. The report, however, provides no information about other government programs and how they relate to Forest Renewal BC's programs. For example, there is no recognition of the important role played by staff at the Ministry of Forests and Ministry of Environment, Lands and Parks in program delivery. In fact, more staff in those two ministries are involved with delivering Forest Renewal BC's programs than exist in the corporation.

*The annual report does not specifically target key stakeholders*

An annual report should recognize the information needs of key stakeholders such as the Legislative Assembly and regional interests.

We found that Forest Renewal BC's report contains details of program descriptions and expenditure levels for each of the regions. This is useful for stakeholders and interested public in the regions.

Missing, however, is information specifically directed at the Legislative Assembly. One example would be commentary on the application of the corporation's funding principles. Principles are expected to have some stability and changes should be explained so that the reader can understand why significant shifts are made.

As discussed earlier, the board, in March 1997, broadened its definition of the incrementality principle to allow for a significant expansion of its eligibility requirements. The annual report contained a revised definition but made no reference to the change or what its impacts would be. Considering that incrementality has been of major interest to the Legislative Assembly, we believe that more information should have been provided. The corporation needs to inform the Legislative Assembly of its interpretation of the incrementality concept and the impact of this interpretation on its funding decisions.

*Recommendation*

***Forest Renewal BC should enhance the contents of its annual report to provide performance information as described in the joint report on accountability produced by the Deputy Ministers' Council and the Office of the Auditor General, and in the Deputy Ministers' Council 1997 report "Guidelines for Ministry Annual Reporting."***



# forest renewal bc response

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## Overview

- *We welcome the opportunity to respond to the conclusions and recommendations of the Auditor General on how Forest Renewal BC planned its investments for the 1998/99 fiscal year and how it has accounted for its performance.*
- *The corporation is pleased that the Auditor General has recognised the significant progress that Forest Renewal BC has made in bringing more clarity and rigour to its planning processes and greater definition to its corporate objectives.*
- *With the recent publication of its 1999-2003 Strategic Plan and the 1999/00 Business Plan, we believe Forest Renewal BC is one of the leaders among public agencies in implementing performance-based management as a means of improving corporate effectiveness and efficiency and accountability to the public for the resources it employs.*
- *It is Forest Renewal BC's intention to operate in a manner consistent with the Auditor General/Deputy Ministers Council framework for Enhancing Accountability for Performance in the public sector. With the improvements to our planning processes already put into place and updated accountability reporting now being implemented, the corporation believes it is well on the way to meeting that goal. In fact, sixteen of the Auditor General's eighteen recommendations have already been implemented or are in progress of being addressed.*

## Conclusions and Recommendations:

### *Roles and Responsibilities*

- *While the audit found that roles and responsibilities for planning and allocating Forest Renewal BC investments were clearly established and communicated, the corporation will ensure that clarification is provided as necessary to reflect ongoing evolution in how we do business.*

### *Strategic Direction*

- *Forest Renewal BC was established in 1994 as part an overall strategy set out in the Forest Renewal Plan. In the first two years of its existence, this strategic direction was enhanced by developing strategic plans for each of the corporation's major business areas: land and resources, environment, workforce, communities and value-added. These plans, together with overall investment principles developed by the Board of Directors, provided a clear strategy and objectives for the corporation's programming and investments during its early establishment phase.*

- *The recently released Corporate Strategic Plan for 1999–2003 represents the formalisation into a single document of the strategic direction that has guided the corporation since its inception in 1994. The new strategic plan takes this guidance a step further by establishing corporate performance measures and targets linked to achievement of strategic objectives.*
- *The plan establishes an accountability framework by which the legislature and public can better understand what the corporation intends to accomplish and how they will know if we are successful.*

### *Business Plan*

- *With the publication of the 1999/00 Business Plan, Forest Renewal BC has taken a further step in clarifying what the public can expect from our investments by providing additional information on what we plan to achieve this year and how such outputs relate to our five year objectives.*
- *The corporation has also worked to improve the guidance given to staff to allow them to make better-informed decisions and evaluate potential tradeoffs between objectives by incorporating strategic plan targets into the annual business planning cycle.*

### *Allocating Funding-Principles and Approval Criteria*

- *Forest Renewal BC is pleased that the Auditor General has acknowledged that the Board of Directors has established reasonable factors for allocating investments to achievement of corporate objectives and that investment priorities are clearly stated and communicated.*
- *As part of its commitment to performance-based operations, Forest Renewal BC has acted to improve the rigour with which it analyses investment options in terms of their potential outcomes, returns to achievement of strategic objectives and in meeting corporate commitments to First Nations participation, employment creation and regional equity.*
- *Although the OAG concluded that, for the most part, project approval criteria were clearly linked to corporate priorities and that the approval process ensured that individual investments met these criteria, the corporation is working to ensure that these criteria and processes are updated and firmly linked to the strategic objectives and outcome measures established for the next five years of operations.*



## Measuring Performance

- *Prior to the audit commencing, Forest Renewal BC recognised that it needed to do a better job of measuring its achievements and reporting on them. Despite the difficulties inherent in trying to define something like “regional equity” in a measurable way, the corporation has made good progress in establishing the means to track its performance.*
- *We now have in place monitoring processes and an information system capable of providing investment output data to management that ensure we are able to keep track of the performance of our investments over time.*
- *The newly developed Corporate Performance Report will also assist the Board in determining how well investment priorities are being addressed.*
- *In addition, implementation of the corporate evaluation plan is providing the Board of Directors with longer-term assessments of the degree to which desired outcomes have been achieved.*

## Reporting on Performance

- *Forest Renewal BC is committed to being a performance-based organization and has made significant progress in putting in place the measurement and reporting processes necessary to be able to report performance to the Legislative Assembly in a more meaningful way.*
- *Beginning with the 1997/98 and 1998/99 Annual reports, the corporation is providing an analysis of performance relative to the targets established in the Business Plans for those years.*
- *The 1999/00 Annual report will provide performance data linked to strategic plan outcomes as well as annual business targets.*

*We look forward to continuing to work with the Office of the Auditor General as we address the audits' recommendations and continue implementation of performance-based management.*



# the silviculture programs



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## The Silviculture Programs

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# highlights



# the silviculture programs

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## Introduction

Two of Forest Renewal BC's legislated goals are to enhance the productive capacity of forest lands and to create jobs. Forest Renewal BC's silviculture programs (Enhanced Forestry and Backlog) are two of the main programs in achieving both of these goals. In addition, these programs can meet economic objectives by creating wealth or providing some level of return on public expenditures.

The Ministry of Forests defines silviculture as the art and science of controlling, and manipulating the establishment, growth, composition, health and quality of forests and woodlands to meet the diverse needs and values of society on a sustained basis. Silviculture activities include those related to harvesting, regeneration of harvested sites and stand tending of immature stands.

There are two categories of silviculture activities:

- 1) **Basic silviculture**—Activities such as site preparation, planting and brushing required to establish a free growing crop of trees after harvest. Since 1987, this is a legal requirement of licensees. After harvesting a site, the licensee is obligated to ensure that a stand of commercially acceptable species, meeting minimum density standards, is regenerated to a free growing state. Free growing means the trees are sufficiently higher than surrounding vegetation that they can grow to a mature forest. Forest Renewal BC does not fund these activities.
- 2) **Incremental silviculture**—Activities such as site rehabilitation, spacing, pruning and fertilization carried out on free growing stands to maintain or increase the yield and value of the timber. These are discretionary activities and are not legally required. It is these activities that the Enhanced Forestry program funds.

As noted above, to 1987, there was no legal obligation requiring licensees to achieve free growing site status. As a result, up to 1987, hundreds of thousands of hectares of land were not regenerated. Today, some of this land is still not satisfactorily restocked. Through the Backlog program, Forest Renewal BC funds activities to establish stands on lands

harvested before 1987 and which are not yet classed as free growing. Because reforestation of these sites is not a legal requirement, the Backlog program is also an incremental silviculture program.

Activities under both the Enhanced Forestry and Backlog programs can meet a number of objectives. They are carried out primarily to achieve some resource objective (increase in timber value or quantity, or a non-timber resource objective such as habitat improvement). They can also meet social objectives such as creating jobs or channelling income to particular segments of society. Lastly these programs provide an opportunity to increase the economic wealth of the province by making program investments that provide a net economic benefit to the province.

Thus these programs can achieve multiple objectives. These three areas of resource, social and economic objectives are not mutually exclusive. The level of desired benefits in one area may affect what can be achieved in another area. Knowing what objectives can be achieved and specifying what those are is fundamental to ensuring that the right mix of activities in the right areas is contracted for by Forest Renewal BC.

## History of Funding Enhanced Forestry and Backlog Activities

Government has a history of funding these types of activities that goes almost two decades. Forest Renewal BC's Enhanced Forestry and Backlog programs continue the province's long involvement in funding program investments in the land base.

### Enhanced Forestry

From 1979 to 1984, the provincial government started making large program investments in incremental silviculture through a \$50 million federal-provincial agreement. A one-year extension to that agreement brought total spending to \$61 million. 43% percent of this funding was for juvenile spacing.

Then, under the Forest and Resource Development Agreement (FRDA I), a \$300 million shared federal-provincial program from 1985 to 1990, \$81 million was allocated for incremental silviculture (brushing, spacing, fertilization) to treat approximately 180,000 hectares. Pruning was not identified as an eligible activity. When this agreement expired, the provincial Sustainable Environment Fund contributed \$7 million for 1990/91.

After FRDA I expired in 1990 the federal and provincial governments agreed to support FRDA II (a joint \$200 million program) from 1991 to 1995. FRDA II provided \$121 million for spacing, fertilization and pruning. A total of 120,000 hectares were to be treated. The British Columbia government rolled these funds into a larger provincial program—the Forest Renewal Program. Under this strategy, \$1.4 billion was to be invested in treating a total of 232,000 hectares between 1991 and 1995.

Enhanced Forestry is one of Forest Renewal BC’s largest programs, with more than \$326 million invested from 1994/95 to 1998/99. Twelve separate activities are eligible for Forest Renewal BC funding within the Enhanced Forestry Program, but three account for approximately 70% of the funding for 1998/99. These are juvenile spacing, pruning and fertilization. Other activities funded include forest health studies and treatments, silviculture studies, stand conversion, and landing rehabilitation.

### Backlog Not Satisfactorily Restocked (NSR)

“Backlog NSR” refers to land that is harvested or otherwise disturbed by disease, pests or fire such that it is not satisfactorily restocked (NSR) with commercial species within a reasonable time (defined as being three years on the Coast and five years in the Interior). In the two-year period, 1997/98 to 1998/99, Forest Renewal BC has invested a total of \$109 million in the Backlog Program. However, the program itself goes back almost 20 years to 1979. Since then there have been a number of initiatives to reduce or eliminate the NSR backlog lands, as noted below.

Year	Estimated backlog NSR lands in hectares	Backlog NSR initiatives
1976	342,000	A 1979-1985 federal-provincial agreement allocated 49% of the \$61 million program to fund replanting of backlog NSR lands.
1984	738,000	FRDA I, 1985-1990, included \$200 million to fund a backlog NSR program.
1991	339,000	The provincial Forest Renewal Program, 1991-1996, committed to funding backlog NSR so it would be eliminated by the year 2000.
1996	110,000	Forest Renewal BC approves a \$250 million program over 10 years to complete replanting of backlog NSR.

In 1976, there was no legislation requiring reforestation of harvested lands. The backlog NSR was about 342,000 hectares and growing. With the 1979-1985 federal-provincial agreement, the government started tackling the problem. However, this investment was not enough to keep up with additions to the backlog NSR, and by 1984 NSR lands totalled 738,000 hectares.

Under FRDA I, the federal and provincial governments committed \$200 million to continue backlog NSR reforestation, focusing on lands that had been harvested before 1982.

In October 1987, legislative changes made reforestation a legal obligation. Licensees were now obligated to bring harvested lands back to a free growing state. While this ensured that no new backlog lands would be created, it did not address the 500,000 hectares of the 1982-1987 backlog for which no legal obligation existed. The Ministry of Forests therefore undertook the obligation of reforesting those lands.

By 1991, all of these initiatives had reduced the backlog NSR to an estimated 339,000 hectares. Under the government's Forest Renewal Program (1991 to 1996), the government committed to eliminating the backlog by the year 2000. By 1996, there were approximately 110,000 hectares still remaining to be replanted. In September 1996, the Forest Renewal BC board approved a \$250 million program to reforest remaining backlog NSR lands. The decision was based on the Ministry of Forests' proposal to continue funding the maintenance of established plantations while Forest Renewal BC funded the reforestation of NSR sites—a responsibility the ministry could no longer meet because of budget constraints. The ministry estimated that it would cost \$250 million over 10 years to reforest and maintain the 110,000 hectares of NSR sites to free growing status. It was this proposal that the board approved in principle.

## Audit Purpose, Scope and Approach

Between the Enhanced Forestry and Backlog programs, Forest Renewal BC will have spent more than \$400 million by March 31, 1999. Forest Renewal BC does not deliver the silviculture programs itself. Rather, it buys services from industry proponents and the Ministry of Forests. In this capacity, and given the size of the program investments being made, it is therefore critical that the corporation spends wisely by being a prudent purchaser of these services.

The purpose of this audit was to assess whether Forest Renewal BC is spending wisely on its silviculture programs



—that is, spending to ensure economy, efficiency, and effectiveness in the use of its funds.

With our focus being on those systems and processes that are part of the new land-based delivery model, we looked primarily at how Forest Renewal BC's silviculture programs were planned in 1998/99. As well, although responsibility for program planning and delivery is shared among Forest Renewal BC, the Ministry of Forests, and industry proponents, our audit centred on the corporation's role in developing and managing the delivery system to ensure economy, efficiency and effectiveness. At the same time, however, we assessed whether the Ministry of Forests' role in the process has been adequately defined, and whether the ministry is providing Forest Renewal BC with the information and tools the corporation needs to support the investment decisions it is making.

We also assessed the extent to which Forest Renewal BC has identified how the silviculture programs are contributing to the achievement of the corporation's resource, economic and social objectives.

The findings and conclusions included in this report are based on evidence available up to December 31, 1998. In preparing the report, we discussed our findings and conclusions with Forest Renewal BC.

Our examination was performed in accordance with value-for-money auditing standards recommended by the Canadian Institute of Chartered Accountants and accordingly included such tests and other procedures as we considered necessary in the circumstances.

## Overall Conclusion

We concluded that significant improvements are required in several areas before Forest Renewal BC can demonstrate that it is spending wisely. While some initiatives in this direction are underway, there are still a number of matters needing attention.

We found that Forest Renewal BC has not clearly identified what it expects to achieve from its investments in the silviculture programs. While one of the corporation's strategic objectives is to grow more and better quality timber, and it has linked the silviculture programs to this objective, the corporation has not defined, in measurable terms, its expectations for achieving this objective. Without clearly stated objectives, Forest Renewal BC is unable to demonstrate that the activities it purchases are the right ones in the right

quantities to do the job. While a clear jobs target has been set, it is not clear what the effect of meeting that target means in terms of the achievement of forest resource benefits. A province-wide strategic planning process initiated by the Ministry of Forests and funded by Forest Renewal BC is expected to provide the information the corporation needs to set measurable objectives.

A recently implemented information system will soon be providing management with more timely information than it is currently getting about the status of work undertaken (outputs, costs and jobs). However, Forest Renewal BC still needs to develop systems to provide information about the effects its programs are actually having on the forest resource and the economic viability of its program investments. In addition, the corporation needs to provide more complete information about the results of its job creation efforts.

## Key Findings

Forest Renewal BC program investments in enhanced forestry and backlog silviculture have been carried out in the absence of an overall provincial strategy

Spending by Forest Renewal BC for the silviculture programs was not guided by a clear strategy. Although the Ministry of Forests has recognized the need for a provincial strategy for some time, one has not yet been completed. With Forest Renewal BC funding, the ministry has started to develop regional Resource Management Plans for the next planning cycle. However, the ability of the individual regions to set strategic targets differs considerably due to variations in the adequacy of inventory information. In the absence of these strategic level plans, there is no reliable information of the extent to which different areas of the province will benefit from enhanced forestry activities.

Forest Renewal BC's objectives for its silviculture programs are not clear

Forest Renewal BC did not identify clear resource or economic objectives for its programs. Forest Renewal BC's spending levels and allocations are not linked to any clear expected outcome—not to resource benefits, economic benefits, or long-term social benefits. The corporation's focus on spending levels and short-term jobs is insufficient for prudent management of these programs.

Extensive information is available about the potential benefits of enhanced forestry activities, but there is continuing debate in the forest sector about how effective some of the activities are

Forestry companies, resource managers and the Ministry of Forests all agree that some spacing, fertilization and pruning are beneficial under the right circumstances, but there is no consensus about what those benefits are realistically and whether they are of economic value. Some licensees have determined that spacing is of little benefit to them, but they accept that it can be carried out to achieve non-timber values such as improving wildlife habitat or creating jobs, as long as Forest Renewal BC funds the work. Timber supply review documents note that spacing increases quality rather than volume, but may be a useful tool to mitigate projected timber supply shortfalls.

More research is needed before Forest Renewal BC can better understand what the actual benefits of enhanced forestry activities might be in all forest types.

Forest Renewal BC's spending targets for its silviculture programs were generally met, but without specific objectives it is not clear whether the right level and mix of activities have been funded

For 1998/99, Forest Renewal BC regions generally met their spending targets for the silviculture programs in their Regional Investment Plans. However, the specified target was beyond the needs of some of the regions, notably those in the interior of the province. Because the spending levels have never been linked to clear objectives, the corporation is spending money without knowing what it wants to achieve.

Similarly, since the Backlog Program is not linked to identified strategic needs, why Forest Renewal BC is funding it is not clear. The decision to fund delivery of the program on behalf of the Ministry of Forests was made with insufficient information as to the need or benefits of doing so.

Because Forest Renewal BC did not provide its expectations as to resource quality or economic objectives, the work actually funded in either program may provide less benefit than the corporation would find acceptable if it turned itself to identifying its expectations more clearly. The results of several ad hoc studies indicate that some work carried out under Forest Renewal BC will likely have little or no resource benefit at all.

The inconsistency in the funding for forest health raises concerns that the funding level for 1998/99 is not based on a reasoned consideration of the risks and opportunities involved with forest health activities.

Overall, Forest Renewal BC does not know if the “right” activities have been carried out in the “right” places.

### Job creation targets are limited to the short-term

Forest Renewal BC has provided information about jobs expected from current funding. However, it does not know the extent to which these jobs are sustainable without corporation funding. Neither does it estimate what effects current spending will have on future jobs in the harvesting and processing sectors.

### There are risks that costs will be higher than they have been historically

Adding social objectives to Forest Renewal BC’s mandate (such as the creation of partnerships and establishment of New Forest Opportunities) has meant that services purchased by the corporation are not at least cost. Furthermore, the policies established by Forest Renewal BC for tendering are less demanding than government policies and the corporation has not indicated that unit cost guidelines are to be followed when approving work. Overall, this means there is a greater risk that costs will be higher under the new system than if ministry policies were followed.

To ensure that the costs being claimed were actually incurred by service providers, Forest Renewal BC has instituted audit requirements. However, the audits do not review whether costs incurred were reasonable in the circumstances.

### Contract administration is generally adequate, except that the contracts do not define Forest Renewal BC’s quality expectations

Contracts contain clear performance expectations as to outputs to be achieved and job targets to be met. However, there is no requirement for identifying the level of site quality acceptable to Forest Renewal BC. Thus there is no assurance that work is focused on areas where there will be sufficient resource benefits to warrant the costs.

The reporting system requires quarterly and annual reports from proponents and captures the information that is in the work plans. Ministry staff provide assurance as to the technical quality of the completed work, through a sample-based quality review process expected to review 10% of completed work. The reporting system allows Forest Renewal BC to summarize costs and outputs in reports that should meet the needs of all management levels.

Some assessments are being carried out, but not to the extent required to adequately measure and report on the effects of its silviculture programs

Some ad hoc monitoring initiatives are underway, but a more coordinated and extensive approach is needed if Forest Renewal BC is to understand the short-term impacts of its silviculture programs. The corporation does not yet have a clear plan as to how it will measure the long-term effects its programs are actually having.

Information about jobs is limited to short-term results, is not put into context and does not address the projected long-term prospects. Furthermore, Forest Renewal BC does not have the economic information it needs to be able to account for the projected value of its program investments. Thus the corporation is not sure how much of its investments in enhanced forestry and backlog silviculture programs are providing positive economic returns to the province.



## summary of recommendations

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### Providing strategic direction and setting clear objectives

***A strategy similar to that identified as being required by the Forest Sector Strategy Committee in 1995 should be developed by integrating existing documents, and should be used as a basis to guide strategic requirements for incremental silviculture activities. Development of this strategy should be a coordinated initiative by the Ministry of Forests, Forest Renewal BC and industry.***

***Forest Renewal BC should identify its resource objectives in terms of expected outcomes, to show clearly what it projects the future resource benefits from these investments are likely to be.***

***Forest Renewal BC should identify its financial and economic objectives for the silviculture programs.***

***Forest Renewal BC should ensure that its social objectives identify both short-term job creation and long-term job creation in the harvesting and processing sectors.***

***Forest Renewal BC should clearly define the extent to which it wants its funds to focus on social objectives and the extent to which it wants them to focus on resource objectives.***

### Knowing what can be purchased

***Forest Renewal BC should ensure that strategic-level enhanced forestry research needs are addressed in its planning of research programs. In addition, it should work with the Forest Productivity Council to identify growth and yield information needs and provide the funding needed to ensure that such information is being adequately collected for managed stands.***

***Forest Renewal BC should use the available information to a greater extent in making decisions about its investment level for various activities in the Enhanced Forestry Program.***

### Purchasing only what is needed

***Forest Renewal BC should identify the financial, economic, and resource quality criteria it expects proponents to apply when they are considering potential projects for their work plans.***

***Forest Renewal BC should base future allocations of funds for silviculture programs on an understanding of the opportunities, resource strategies, and the unique timber supply situation within each region.***

***Forest Renewal BC should ensure that its funding of forest health activities is based on an adequate assessment of provincial forest health requirements.***

***Forest Renewal BC should ensure that its planning processes provide the corporation with qualitative and quantitative information about the potential value of the work it funds.***

***Forest Renewal BC should more thoroughly analyze the implications of different funding scenarios for the Backlog Program.***

***Forest Renewal BC should ensure that it obtains information about the extent to which the activities it funds are creating conditions for maintaining and creating future jobs in the harvesting and processing sectors.***

## Purchasing at least cost

***Forest Renewal BC should determine how it will obtain assurance that the monies expended by proponents provide value-for-money.***

***Forest Renewal BC should provide clearer direction as to the level of costs it is willing to accept to meet its social objectives.***

## Knowing what services are actually provided

***Forest Renewal BC should ensure that it has information about the quality of the resource benefits it is purchasing. Acceptable limits should be incorporated into the agreements so they become contractual obligations.***

***Forest Renewal BC should assess the level of assurance it needs, and ensure that the Ministry of Forests' quality assurance review process has the resources to meet that requirement.***

## Knowing what is being accomplished

***Forest Renewal BC should work with Ministry of Forests and industry to identify monitoring needs and implement an appropriate program so that the impacts of its funded activities are identified.***



***Forest Renewal BC should reassess the evaluation needs of the Enhanced Forestry Program to ensure the corporation will be able to identify the actual outcomes of the program it funds, and relate these quantitatively to the forest level outcomes.***

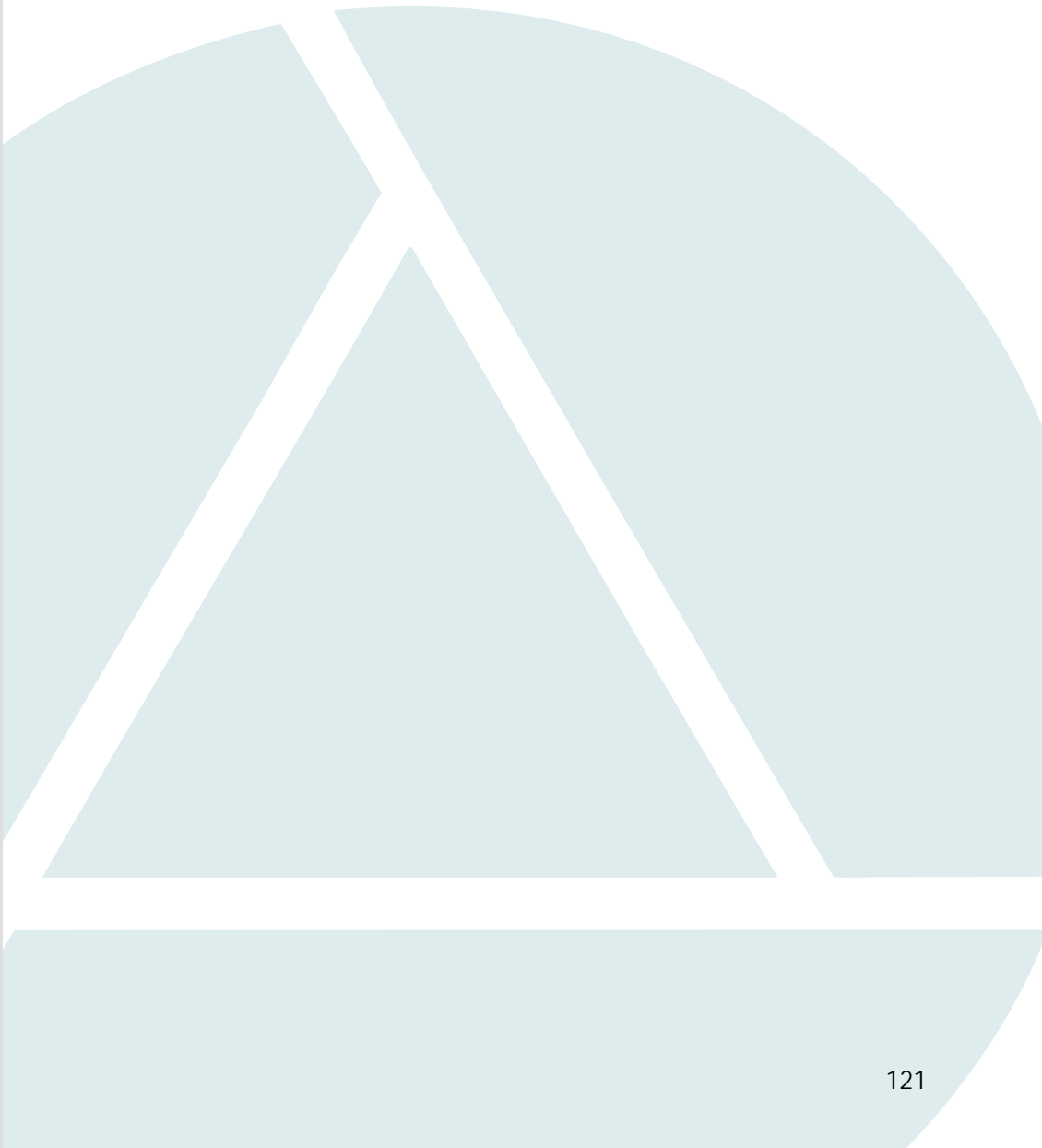
***Forest Renewal BC should ensure that its reporting on job creation puts the short-term job creation into proper context and identifies the effect of its programs on the silviculture community and future harvesting and processing jobs.***

***Forest Renewal BC should ensure that available analytical tools are used so it can understand the financial and economic implications of its decisions.***





# detailed report



## providing strategic direction and setting clear objectives

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Forest Renewal BC's strategic objective for the silviculture programs is a sustainable harvest. At the same time, however, the programs are also expected to contribute to other corporate goals, such as creating jobs. Given the sizeable program investments being made and the high level of public expectation about what the programs are to achieve, we therefore expected Forest Renewal BC to have clear goals and objectives for the programs.

Specifically, we expected Forest Renewal BC to be following a provincial strategic plan that identifies the desired future state of the provincial forest in qualitative and quantitative terms. Such a plan would enable the corporation to ensure that the goals and objectives it sets and the programs and activities it funds fit within that long-term vision. In support of this, we expected there to be plans identifying the desired future state of the province's forest at the regional/subregional level.

### Conclusion

We concluded that, while a provincial strategy for managing the forest does not yet exist, there is widespread awareness of the need for one. Initiatives are underway that, if carried through, could lead to the development of such a strategy. We believe that existing plans and proposals, together with regional and subregional strategies, need to be consolidated into an overall provincial picture. This would help Forest Renewal BC understand where investment opportunities lie and how specific programs or activities that the corporation funds can meet strategic needs.

Forest Renewal BC does not have clear goals and objectives for its silviculture programs. It has stated its resource objectives as outputs only—that is, hectares treated; it has not specified outcome expectations—what it expects to accomplish as a result of its outputs, such as increased yields or improved timber quality expressed in quantitative terms. The development of Resource Management Plans will more clearly define resource managers' management strategies and expectations, and allow Forest Renewal BC to identify the expected resource outcomes it wants its funds to achieve.

Forest Renewal BC has adequately identified short-term social objectives. However, it is not clear what long-term

impacts it expects its activities to have on jobs in the harvesting and processing components of the forest economy, and it has not identified economic objectives for its programs. Overall, the programs appear to be driven by funding allocations, not by clear objectives.

## Findings

### A Clear Provincial Strategy is Needed for Managing the Forest

Forest management in British Columbia has, for many years, been applied in the absence of any overall strategic planning. Even today, there is no statutory obligation on the Ministry of Forests to carry out strategic planning for enhanced forestry activities. Under the Forest Practices Code, or any other forest legislation, no one is designated as being responsible for incremental silviculture. Ministry staff have been pressing for development of a forest management strategy for at least a decade, and the need for integrating a silviculture strategy into an overall plan is well recognized.

For example, a 1993 Ministry of Forests report on factors influencing silviculture investments noted the lack of clear public goals for the long-term husbandry of the province's forest resources, and the lack of funding to meet such goals. At about the same time, ministry staff issued two discussion papers aimed at initiating development of a provincial silviculture goal and strategy.

In 1996, an evaluation report on the FRDA II program noted similar gaps. In the absence of a strategic plan, the report's authors were unable to assess whether the distribution of funds for stand tending activities was appropriate. The report noted that future incremental silviculture activities (particularly those for improving the stability of the wood supply) would benefit from being directed through a strategic plan. It recommended that a strategic forest plan be developed, based on provincial and regional land use strategies. And, until a strategic plan could be developed and adopted, the report suggested that a mixed portfolio of forest stands be considered as the primary quality objective.

A year earlier, another report (prepared for, and endorsed by, the government-appointed Forest Sector Strategy Committee in 1995) had called for the development of a forest management strategy for the production of timber and other forest resource values—a strategy with measurable resource targets, time lines, budgets, responsibilities and critical success factors. The report, *A Forest Management Strategy and Action Plan for British Columbia*, recommended that the strategy recognize the forest

as it is, present a clear image of what it could be, and provide a plan to achieve the desired state over the long-term. It also called for the establishment of up to four pilot areas to test concept practicality. Three are now in place as part of Forest Renewal BC-funded Enhanced Forestry Management Pilot Projects. As well, the corporation is funding the development of Resource Management Plans, which are intended to address strategic investments in incremental silviculture at the management unit level.

In 1998, the Ministry of Forests prepared presentation materials devoted to discussing the need for an incremental silviculture strategy in British Columbia. These noted that, although a variety of planning methods has been considered over the years, a strategy for incremental silviculture has never been adopted in the province. Both Forest Renewal BC and the Ministry of Forests have acknowledged the need for more forest level analyses of incremental silviculture opportunities to ensure wise stewardship and spending of limited funds. Overall, the presentation document indicates that the Ministry of Forests is pushing the issue in the right direction. The need for a more strategic process is clearly recognized and a solution is being sought.

### *Recommendation*

***A strategy similar to that identified as being required by the Forest Sector Strategy Committee in 1995 should be developed by integrating existing documents, and should be used as a basis to guide strategic requirements for incremental silviculture activities. Development of this strategy should be a coordinated initiative by the Ministry of Forests, Forest Renewal BC and industry.***

### *Forest Management Plans Are Becoming More Strategic*

To ensure it is based on real opportunities and needs, a provincial strategy must be based on strategies developed for forest management units. There are two types of such units in British Columbia:

Timber Supply Areas (TSAs)—These are geographic units within which harvesting rights are provided to a number of licence holders. Harvesting rights are volume-based, not area-based. These units cover approximately 78% of the province's land base.

Tree Farm Licences (TFLs)—These are tenures that give a licence holder the right to harvest timber from the licenced area. These units cover approximately 8% of the province's land base.

The Chief Forester sets the allowable annual cut (AAC) for both types of management units.

Planning for incremental silviculture in TSAs and TFLs is a Ministry of Forests and licensee role. Forest Renewal BC has no formal responsibility in developing the plans. We examined a number of forest management plans for TSAs and TFLs to assess the enhanced silviculture strategies they contained. Our comments below therefore relate to what has been developed by the ministry and licensees.

**TSAs:** We found that few TSAs we reviewed had silviculture strategies in place to guide investments. Our findings were confirmed by a 1998 Ministry of Forests study that looked at 11 districts within all the forest regions in the province. The authors concluded that silviculture investment strategies for nearly all TSAs were lacking, incomplete or informal. We also note, however, that the Ministry of Forests currently has a number of initiatives underway to define strategic needs for incremental silviculture more clearly.

**TFLs:** Development of management plans for TFLs is the responsibility of licensees. The plans are prepared every five years and are approved by Ministry of Forests district managers.

The TFL plans we examined all incorporated silviculture objectives, although these were usually stated in terms of activities and their scale, not specific outcomes. The plans showed what enhanced forestry will be done and where, but they did not state what the benefits of this work will be. Although the plans we reviewed varied in the clarity of their objectives for incremental silviculture activities, we concluded that there was sufficient information to suggest a shift was taking place from a budget-based planning approach to a more strategic approach.

### *Resource Management Plans Offer Potential For a Strategic Approach*

In 1995, a consultant's report noted that no formal link existed between Forest Renewal BC and provincial initiatives such as land use planning and timber supply reviews. During the last annual planning cycle for Forest Renewal BC, a link was created, but the connection is, in our opinion, still incomplete because of the lack of the incremental silviculture strategies noted above. This could change with the development of Resource Management Plans. These are forest level plans that focus on identifying strategic silviculture program opportunities.

Multi-year silviculture plans guided program investments in the past, but these were primarily budget-based rather than strategy-based. Recently, however, the Ministry of Forests

proposed the development of strategic plans for incremental silviculture. This led to an agreement by Forest Renewal BC that the ministry would develop Resource Management Plans as a basis for investment planning for 1999/2000.

To this end, the ministry is developing incremental silviculture strategies based on detailed assessments of opportunities, needs and objectives for every management unit. District offices are responsible for developing these plans, which will be consolidated into a regional Resource Management Plan by the Ministry of Forests regional office. Each plan is by program (Enhanced Forestry, Backlog, Watershed Restoration, Operational Inventory, and Recreation), and each is intended to show the link between the work carried out and the strategic objectives specific to each program.

For example, the Mackenzie Resource Management Plan, 1999/2000, states:

*Enhanced forestry and Backlog NSR investments must be based on sound program planning and accurate estimates of their contribution to TSA strategic objectives. This principle will ensure a reasonable measure of cost effectiveness of Forest Renewal investment decisions. No basis currently exists for making these investment decisions, other than qualitative perceptions of stand level biological response, or arbitrary perceptions of forest worker employment requirements.*

All plans were to be completed by September 30, 1998, after which provincial targets would be established by summing the individual targets. However, the process is complex, requires significant levels of information and is time-consuming. In its 1999/2000 business plan, Forest Renewal BC notes that these forest level plans will be developed over the next two years.

We also noted that the ability of regions to identify strategic targets varies, because some Resource Management Plans do not yet reflect a strategic focus. Some districts, for instance, have an insufficient information base to set a clear strategy and require better inventory before they can understand the land base well enough to develop a meaningful strategy.

We concluded that existing plans currently provide varying levels of guidance, and that more detailed plans will have to be developed to define incremental silviculture needs. Although few incremental silviculture strategies yet exist at the regional or subregional levels, the Resource Management Plans being developed by Ministry of Forests can meet that need.

## Forest Renewal BC's Objectives for its Silviculture Programs Are Not Clear

To be effective, all programs need clearly defined long-term and short-term goals and objectives. We looked to see whether Forest Renewal BC had these and whether they were consistent with the corporation's mandate and existing plans, and whether they included social and economic references. Given the similarity in mandates, we also expected to find that the goals and objectives of Forest Renewal BC for silviculture programs were congruent with those of the Ministry of Forests.

*The program objectives are not well defined*

### *Resource objectives*

Forest Renewal BC's legislation identifies one of the corporation's purposes as being to enhance the productive capacity of forest lands. This purpose is reflected in the 1998/99 business plan, where it is referred to as Strategic Objective 1: Sustainable Harvest. It states that Forest Renewal BC aims to grow more and higher quality timber by investing in:

- fertilizing, spacing and forest health activities to enhance growth and yield;
- pruning to increase the value of the wood; and
- the accelerated reforestation of backlog areas not-satisfactorily restocked after past harvesting or natural disturbances such as fire.

We found that Forest Renewal BC still has not spelled out the magnitude or timing of the benefits it expects to derive from its program investments (Exhibit 3.1). It has no specific information about what it wants to accomplish from its level of program investments. The business plan identifies expected

### Exhibit 3.1

#### Budget for 1998/99—Enhanced Forestry and Backlog

(\$ Millions)

	Provincial total
Enhanced Forestry	80.4
Backlog	60.0
Total	<u>140.4</u>
Hectares treated	172,000

Source: 1998/99 Forest Renewal BC Business Plan

outputs in terms of hectares treated, but provides no information about the level of achievement expected from the resource.

There is no quantitative information about intended outcomes. Phrases such as “increase the value” and “enhance growth and yield” identify a general expectation, but they do not specify the level of achievement to be attained. Quantitative objectives are needed for a clear understanding of expectations—for example: What level of volume growth is expected? What value increase will be achieved? How is Forest Renewal BC measuring the value? When will these benefits be derived? None of these questions is answered in the 1998/99 business plan. There is no quantified objective to which Forest Renewal BC’s silviculture activities can be related.

Management has recognized that the corporation needs to move from outputs to outcomes and is considering, for instance, potential targets for its silviculture programs, such as maintaining short-term AACs to within 10%, increasing the Long Run Sustained Yield by 10%, and increasing premium log quality by 10%.

Another problem we noted is that the business plan links spacing to enhancing growth and yield. This, as we will discuss in “Knowing What Can Be Purchased,” may be contributing to a lack of public understanding of what the real benefits and limitations of silviculture programs are. Spacing does not always produce more volume. Rather, it makes wood from a stand available sooner, by allowing the trees left after spacing to reach a merchantable size sooner. The actual effects on volume depend on the timing of the harvest. The business plan does not say that one of the main reasons Forest Renewal BC is undertaking spacing is to help stabilize the wood supply by allowing industry to manipulate the harvest queue to meet future shortfalls in supply.

The outputs information in the business plan also does not provide adequate detail to allow the reader to understand what activities are being focused on. Total numbers are provided; there is no distinction between backlog and enhanced forestry. And the “area treated” provides little information about what is actually planned, and gives no indication of where Forest Renewal BC’s focus lies. One cannot discern how much effort is devoted to increasing growth, how much to increasing value, and how much simply to providing industry with greater harvesting plan flexibility, or to helping the Province meet social objectives.



The impact of inadequate objectives is described in a Ministry of Forests district document as follows: “Without quantified strategic objectives, Forest Renewal BC projects provide only a means of spending public funds, with no assurance that the effects on resource production contribute favorably to forest management objectives. This is contrary to the spirit and regulations of the Forest Practices Code.”

The objectives for the accelerated reforestation of backlog areas are not much clearer. Forest Renewal BC’s business plan states that the Backlog NSR Program can help stabilize the wood supply, but it does not provide any information about planned or potential outcomes. The program goals documented relate only to the number of hectares to be treated. There is little identification of the strategic issues that the specific program is intended to address or of the degree to which Forest Renewal BC’s program will alleviate these issues. It is not clear exactly what the corporation has committed to in terms of projected outcomes.

#### *Recommendation*

***Forest Renewal BC should identify its resource objectives in terms of expected outcomes, to show clearly what it projects the future resource benefits from these investments are likely to be.***

#### *Economic objectives*

The identification of economic objectives for the programs is an important first step to ensuring that value-for-money is achieved from the silviculture investments. That such objectives can be set was demonstrated in the 1991 Forest Renewal Program, an initiative similar in many ways to Forest Renewal BC’s silviculture programs. A computer analysis of incremental silviculture was used to arrive at economic objectives. It showed that an annual investment of \$18 million could add 1.4 million m<sup>3</sup> of additional growth and that a \$64 million net benefit to the province would be recognized (using a 4% discount rate). Forest Renewal BC, in comparison, has not identified as clear a set of economic objectives for its silviculture programs.

The need for such economic analyses is widely understood. The Ministry of Forests, for example, has a policy of using a 4% discount rate to assess the financial/economic viability of incremental silviculture projects (for which it is the lead proponent) on a project-by-project basis. This is to be considered along with other factors in decision-making. Its *Backlog NSR Review and Implementation Strategy*—

1996 includes a discussion of the cost-benefit of the backlog program and states that, to justify the program, there must be a return on that investment.

Backlog NSR is an economic definition, not a biological one. It does not refer to the overall health or productivity of the forest, but rather to sites that are not satisfactorily restocked with healthy well-spaced trees of a commercially acceptable species. Thus market conditions, rather than the number of trees, can affect whether a site is categorized as NSR or not. For example, Ministry of Forests documents note that some sites previously well stocked with aspen were defined as NSR simply because there was no market for the species. Subsequently when markets were found, the sites were reclassified as satisfactorily restocked because the sites had economic value. The decision to replant the backlog, then, is made primarily for economic reasons—to provide additional, marketable timber or fibre supply. As such, the decision should be made with an understanding of the economic objectives involved in the decision.

Nevertheless, Forest Renewal BC has not carried out an economic analysis of its investment in the Backlog Program. We found that the board made its decision with insufficient information about the economic values related to this program or about its strategic need. In our view, if Forest Renewal BC is truly “investing,” it should fully consider the economic parameters of its decisions.

We noted that members of the Select Standing Committee on Forests, Energy, Mines and Petroleum Resources have also called on Forest Renewal BC to identify its economic objectives, most recently during a review of the 1998/99 business plan. There was an expectation that the corporation’s silviculture investments would be made in areas where the Province could expect to receive a return on the dollars invested, and also that the corporation would have a clear idea of what those returns were going to be. In our opinion, given that Forest Renewal BC has a funding principle of “wise spending”—that is, spending for economy, efficiency and effectiveness—a clear statement by the corporation about its anticipated financial and economic returns is reasonable to expect.

### *Recommendation*

***Forest Renewal BC should identify its financial and economic objectives for the silviculture programs.***

## *Social objectives*

One of Forest Renewal BC's purposes, as stated in its legislation, is to create jobs. We reviewed the information that the corporation provided about its objectives for job creation.

According to the 1998/99 business plan, 3,800 person-years of employment are to be created through the programs under Strategic Objective 1: Sustainable Harvests. Of the \$185 million to be spent under that objective, \$140 million is for the silviculture programs. Thus, most of the projected jobs are expected from the silviculture programs. We are concerned, however, about the reliability of these projections. For 1997/98, Forest Renewal BC projected spending \$94 million in enhanced forestry and creating 2,520 jobs. The results were expenditures of \$101 million (7% higher than the projected amount), but the creation of only 1,917 jobs (24% less than the projected amount). Similarly for backlog, spending was projected to be \$60 million and intended to create 1,505 jobs. Only \$49 million was actually spent (18% less than projected) and only 840 jobs created (44% less than projected).

Based on the previous year's results and our review of regional plans and their job projections for the silviculture programs, we believe that the output target of 3,800 jobs in the business plan for strategic objective 1 is overstated by approximately 20%.

Strategic Objective 5 in the 1998/99 business plan refers to the creation and maintenance of sustainable forest jobs. However, we found that the job creation targets in the plan focus on short-term jobs linked directly to the activities being funded, and do not identify long-term employment expectations from current silviculture programs.

The business plan also notes that sustainable employment is the direct result of successful land-based activities that enhance the health and productivity of British Columbia's forests. To achieve the job creation goals, Forest Renewal BC directed that \$374 million be spent on land-based programs. What it has not done, though, is identify how it interprets "sustainable jobs." In our view, the jobs funded by the silviculture programs are not sustainable except, perhaps, with Forest Renewal BC funding.

In addition, the business plan does not address the issue of what impact Forest Renewal BC wants to have on traditional forestry jobs. The 1994 Forest Renewal Plan referred to the continued availability of "good forest jobs" as one of its goals. This referred to the jobs in the harvesting and processing areas.

Forest Renewal BC, however, has not specified what its objectives are for this sector. It is therefore unclear whether the corporation’s activities are intended to maintain existing jobs at some level or to increase them by some unstated factor. And, while the 5,000 direct jobs Forest Renewal BC has committed to under the Jobs and Timber Accord are an annual jobs target, the corporation has not indicated what impact these activities are meant to have on the jobs in the harvesting and processing components of the forest economy.

**Recommendation:**

**Forest Renewal BC should ensure that its social objectives identify both short-term job creation and long-term job creation in the harvesting and processing sectors.**

*Regional level objectives are not well defined*

Exhibit 3.2 shows the budget and other information that is provided in the 1998/99 business plan for each Forest Renewal BC region for the Enhanced Forestry and Backlog programs.

We expected that regional investment plans would provide more detailed direction for the silviculture programs. Instead, we found that the regional plans have no quantified outcome targets for enhanced forestry or backlog activities. They contain only information similar to that provided in the business plan (funds budgeted, employment in person-years, and hectares to be treated for each activity).

We concluded that, at the regional level, resource objectives had been no better defined or quantified for each Forest Renewal BC region than they had been at the corporate level.

**Exhibit 3.2**

**Regional Budgets for Silviculture Programs—1998/99**

*(\$ Millions)*

Program	Cariboo -Chilcotin	Kootenay -Boundary	Omineca -Peace	Pacific	Skeena -Bulkley	Thompson -Okanagan	Total Regional
Enhanced Forestry	7.8	6.3	14.1	29.6	6.8	8.9	73.5
Backlog	6.8	5.9	22.3	8.0	9.8	6.9	59.7
Total	14.6	12.2	36.4	37.6	16.6	15.8	133.2
<b>Outputs</b>							
Hectares treated	26,000	14,000	41,000	54,000	20,000	17,000	172,000

Source: Forest Renewal BC 1998/99 Business Plan

## Congruency of goals and objectives between Forest Renewal BC and the Ministry of Forests exists at some levels

We found that between Forest Renewal BC and the Ministry of Forests, some goals and objectives of the two agencies are congruent at both the legislative level and the strategic level. At the legislative level, Forest Renewal BC aims to “enhance” the productivity of the forest and the Ministry of Forests aims to “maximize” the productivity of the forest. At the strategic level, Forest Renewal BC’s objective is to grow more and higher quality timber, while the Ministry of Forests’ objective (as stated in the Resource Management Plans) is to manage incremental silviculture activities for their maximum resource benefits.

At the operational level, however, Forest Renewal BC’s goals and objectives for its silviculture programs diverge from those of the Ministry of Forests and industry. Forest Renewal BC has focused on social objectives, but it has not clarified how far the ministry and industry should go in adjusting their resource objectives to meet the corporation’s social objectives. Part of the reason for this lack of clarity is that Forest Renewal BC is not sure how much of its program investments are to address social objectives (to redistribute income) and how much are to focus on resource objectives (to create wealth). Throughout the ministry and industry, there is a widespread perception that Forest Renewal BC’s primary interest lies in the social objectives it has set. We found documented evidence that supported these perceptions. In the last planning process, for example, the corporation directed regions to spend 45% of their total dollar allocation on silviculture (32-35% in the Pacific region) and to create a specified number of jobs. There was an implied link between the jobs and the silviculture allocations, as those programs provide higher person-years of work per dollar expended than do most of the other land-based programs.

We concluded that, although their mandates overlap, Forest Renewal BC and the Ministry of Forests have tried to clarify their respective responsibilities, with Forest Renewal BC focusing on social objectives and the Ministry of Forests on resource objectives. However, we found no guidance available to assist the ministry and industry in balancing resource and social objectives. Forest Renewal BC has not provided any direction this way, such as stating how much of each region’s dollars should be allocated to maximize resource benefits and how much should be allocated to social forestry. Thus, the differences in the roles of the two agencies have simply made



Courtesy: Forest Renewal BC

*Bobcat operator churns soil that was once a landing for sorting and piling logs so that it can be replanted to productivity*

it more difficult for each party to meet its priorities and expectations. This, we found, manifested itself differently in the Pacific and Interior regions, as we describe below.

*Pacific*

In the Pacific region, the Ministry of Forests and industry believed that the fertilization program for several districts should be funded by Forest Renewal BC because it offers better productivity gains than either spacing or pruning. However, Forest Renewal BC was reluctant to do so because the number of related jobs was not high enough. Trading fertilization for spacing was not, in the view of ministry staff, prudent resource management. A balanced approach is needed, but Ministry of Forests staff believed Forest Renewal BC was not allowing this to happen.

One coastal company held out signing an agreement with the corporation until August 1998, because Forest Renewal BC opposed the focus on fertilization in the company's plan. The company's view was that spacing was inappropriate for its management needs, though it finally agreed to carry out juvenile spacing just to get the agreement finalized.

In our audit, we noted that fertilization is one of the few activities within the Enhanced Forestry Program that has a real effect on productivity in terms of creating additional volume. For example, according to the Chief Forester's latest AAC determination for TFL 44, fertilization of Douglas-fir 10 years

before harvest was credited with resulting in a 2% increase in harvest volume. We have therefore concluded that fertilization is completely consistent with Forest Renewal BC’s mandate to “enhance productivity.”

### *Interior*

In the Interior, we found that lack of congruence of goals and objectives at the operational level was evident in how each agency views the value of inventory relative to enhanced forestry work.

In the Thompson-Okanagan region, for example, the need for better resource inventory information has been clearly identified as a top priority—well above the need for enhanced forestry—by industry, the Ministry of Forests, and the regional advisory process. Thus, when the Forest Renewal BC board directed that 45% of allocated funds had to be used for silviculture programs, it meant that the Ministry of Forests and industry had to cut back on the inventory work they wanted to do. Inventory is also an issue in the Omineca-Peace region, where, for a large portion of the Dawson Creek TSA, inventory information for the last AAC determination was based on photos that were 25 years old. And for the Mackenzie district, the inventory did not meet provincial standards for identifying species composition. Clearly, such out-of-date inventory information poses a serious impediment to good planning and timber supply analyses.

The most recent timber supply review has lent support to this position. The 1998 analysis for the Revelstoke TSA shows more stability in the wood supply than was suggested in the 1993 review. This was credited mainly to a new inventory, which resulted in a 7% increase in the harvesting land base. The AAC for an interior TFL was increased by 11%, effective December 1997. Again the Chief Forester noted that significant amounts of inventory allowed for a better understanding of the factors affecting the AAC.

### *Recommendation*

***Forest Renewal BC should clearly define the extent to which it wants its funds to focus on social objectives and the extent to which it wants them to focus on resource objectives.***



## knowing what can be purchased

Forest Renewal BC should know what it needs to purchase to accomplish the goals and objectives of its silviculture programs. We expected to find an extensive body of information and guidelines about silviculture treatments, benefits and their applicability in site-specific conditions, and we expected to find Forest Renewal BC using these to help it determine the type and extent of silviculture treatments it should fund.

### Conclusion

There is extensive information about silviculture treatments and their effects, but some gaps still remain and debate continues within the forest sector about the efficacy of some treatments.

Monitoring of growth and yield in managed stands is insufficient, and therefore not enough information is known about the real benefits being achieved. There is some information from recent studies about potential unintended impacts, but these are limited and more research is needed. Information from the Chief Forester's determinations shows that some silviculture activities have little or no impact on the AAC, though they may meet other management objectives.

### Findings

#### Guidelines for Silviculture Treatments Are Abundant, But Gaps Exist

At the provincial level, many guidelines exist from several sources. For example, a 1996 listing of FRDA publications contains almost 30 pages of reports covering 10 years of studies that deal with forest renewal issues. Many of these reports cover the activities funded by Forest Renewal BC under the Enhanced Forestry Program, providing guidance for many incremental silviculture activities.

As well, several Forest Practices Code guidebooks pertain to enhanced forestry, including those covering stand management prescriptions, spacing, pruning, forest fertilization, forest health, and green-up.

The Forest Practices Branch of the Ministry of Forests also issues guidance in a number of studies and reports. For example, *Potential Gains from Stand Level Silviculture Expenditures for a Selection of Coastal and Interior Sites* (March 1996) offers a basis for establishing guidelines to determine the types of



stands to be considered for treatment. Other research facilities, such as Forintek Canada Corp., also provide guidance for enhanced forestry activities through their research reports.

However, while all of these provincial-level guidebooks are a good starting point from which to determine what is needed to achieve the goals and objectives of the silviculture programs, guidance is still needed at the region and district levels. We found, overall, that appropriate efforts were underway in each of the regions we visited to develop region- and district-specific guidelines. As better knowledge is developed, we believe it will continue to be incorporated into local practices. At the same time, for the value of the treatments to be judged most effectively, a clear understanding is required of the strategic needs the treatments are to address.

#### *Further research in some areas is required*

Despite the guidance that exists, there is still a need for further research and better information on a number of issues. One such example, identified by the Ministry of Forests, is the link between forest health and some treatments. Research in the Kamloops area looked at the interaction between brushing of deciduous species and the growth of coniferous species. It found that there may be benefits to leaving more deciduous stems on the sites. More research will likely be required before this issue is completely understood. We noted that Ministry of Forests staff have reported that work began in May 1998 to revise the guideline that calls for the removal of all broadleaf trees overtopping conifers. Some enhanced forestry treatments are available to prevent forest health problems, especially in the interior dry belt. Ministry of Forests staff have used spacing to create variable densities in some infected stands. Pruning in certain stands and ecosystems may also provide health benefits. Overall, however, there is insufficient guidance about what techniques should be prescribed and where they would work best. Lodgepole pine, for example, is highly susceptible to infestations. Because of this, some enhanced forestry treatments actually provide an opportunity for insects or disease to get into the stand more easily.

Another concern we heard was whether the prescriptions being made are the right ones in terms of adequately recognizing what the health issues are. With the extent of the silviculture programs, many interviewees questioned whether the skills and knowledge to identify and deal with health issues existed in sufficient quantity. Two recent studies have determined that pest occurrence and their potential impact is not being properly recognized when treatments are developed.

It is up to the silviculturalists and those writing the prescriptions to ensure they use the information and guidebooks available or to contact researchers to get better information. According to the people we talked to, this interaction has not occurred to the extent it should to deal with forest health issues effectively.

Overall, therefore, we concluded that British Columbia's extensive history with stand tending treatment has left a legacy of knowledge and experience for many areas of the province. This has been consolidated into extensive provincial and regional guidelines. Nevertheless, some gaps remain in knowledge about the real benefits being achieved and the forest health risks of some treatments.

### *Growth and yield information is inadequate*

There is still much debate about the efficacy of silviculture treatments amongst foresters. While the guidebooks are clear as to how activities should be carried out, there is less information about how or whether these treatments translate into greater growth and yield. For example:

- The Forest Practices Code spacing guidebook notes that there is limited growth and yield data for certain species.
- A 1994 FRDA report reviewed applicability of intensive silviculture to British Columbia forests. The report noted that because the province's second-growth forests have not been managed for a long time, the impacts of treatments on growth and yield are not well understood.
- A March 1996 economic evaluation of several FRDA II projects noted that economic models needed to be supported by much more information about the growth and yield of managed stands than was currently available.
- A final evaluation of FRDA II noted that a significant weakness was in growth and yield monitoring. No models could adequately handle mixed-species stands or the complexity of young stands in terms of their species, age and size.
- A recent Ministry of Forests document notes that sample plots to measure growth and yield for managed stands are limited to only a few forest types. It calls for greater emphasis on treated stands.

In each region we visited, the Ministry of Forests and industry representatives we spoke to echoed similar concerns over the lack of understanding about the real biological impacts of stand tending treatments. Many individuals felt that, while it was generally clear what types of treatments could be carried out, hard data about the timing and level of treatment benefits were not widely available.

*Recommendation*

***Forest Renewal BC should ensure that strategic-level enhanced forestry research needs are addressed in its planning of research programs. In addition, it should work with the Forest Productivity Council to identify growth and yield information needs and provide the funding needed to ensure that such information is being adequately collected for managed stands.***

## The Benefits and Limitations of Enhanced Forestry Activities Are Not Fully Understood

The gaps in research and information described above are actually part of a greater concern we have with Forest Renewal BC's process for delivering its silviculture programs. Specifically, that concern has to do with the question of just how efficient and effective silviculture treatments, broadly applied, really are. We expected to find Forest Renewal BC using up-to-date information about the value of applying these treatments. We also expected the corporation to have an understanding of what effects these treatments can have at the stand level and on the forest as a whole—and of what their limitations are.

*Site quality is important to treatment success*

Site quality is a key factor in the decision to carry out a treatment. Forest Practices Code guidebooks for spacing, pruning and fertilization suggest how different sites should be considered. In British Columbia, “site index” is used as an indicator of site productivity and forest growth. It is a measure of the height growth that can be expected in 50 years by a particular tree species (as measured by the tree's growth rings 1.3 m above the ground) on a given site. Site index is used in timber supply planning to predict future stand volume. And it is used in silviculture to help resource managers make sound decisions about management options such as reforestation, spacing, pruning, fertilization and commercial thinning. The productivity of a site largely determines how quickly trees will grow on it, the volumes that will be attained, and the time it will take the stand to reach merchantable size or harvest age.

Potential benefits from treatments may not be realized if a site's quality is inadequate. For instance, a Forintek Canada Corp. report notes that while spacing increases tree size, it also increases knot size for some species. On a good site, the tree size increase is usually sufficient to offset the effect of increased knot sizes in terms of how the tree will be graded for quality. On a poor site, however, spacing does not achieve much in the way of greater tree size and the increased knot



Courtesy: Forest Renewal BC

*Pruning is expected to provide higher value timber products*

size lowers the quality rating. The result is reduced lumber grade yields and lower stand values.

*Spacing, pruning and fertilization are not effective everywhere*

Generally, to have an impact on the AAC, spacing and fertilization activities need to be carried out consistently and in accordance with a clear strategy of the objectives being sought. If the area treated is limited or the application is inconsistent, analysis of the impacts can become impractical and there may be no AAC impact credited.

*Juvenile spacing*

Spacing is not generally very effective if the objective is to increase volume. Spacing may also reduce the resistance of the remaining trees to pests, disease or natural hazards. We noted that one licensee had stopped spacing because of the damage that later resulted in stands. Another had stopped because the company's experience showed it was receiving no real benefit from the treatment. For some species, growth and yield data are so limited that the effects of spacing are uncertain.

The real benefit from juvenile spacing is generally seen as that of providing a minimum merchantable piece size at an earlier age than if the site had not been spaced. Spacing reduces competition for nutrients, allowing the remaining trees to grow faster and yield larger diameters than they would if the stand were left at its current density. However, because there are fewer trees, the total volume is generally not significantly different at harvest age for spaced vs. non-spaced stands. It is the timing of the harvest that changes.

Thus, juvenile spacing controls stocking for the purpose of moving a stand forward in the harvest queue to meet an identified future shortfall. For example, the AAC rationale for TFL 24 notes that the licensee's spacing program could potentially offset a projected shortfall in timber supply in about 40 to 60 years. The juvenile stands that have been spaced will be large enough in diameter to be harvested at an earlier age than if they had not been spaced.

### *Pruning*

While pruning is viewed as providing the highest level of increased value (for some species, clear wood that is free of knots can yield three to five times the value of structural grade wood), it is also the most costly form of intervention. It therefore requires that the need and objectives be clearly identified. The timing of treatment, the stand density and the site quality affect the economic impact of the procedure. For instance, late pruning will result in a lesser amount of clear wood; trees in a high density stand will not have as much growth as trees in a low density stand; and lower quality sites may not return sufficient clear wood to be economically viable. If a stand were harvested too soon, wood quality and value could actually be lower than had no treatment occurred. Thus, pruning would not normally be carried out in conjunction with spacing if the purpose of the spacing was to move a stand forward in the harvest queue. In these instances, pruning would not be cost-effective.

The Forest Practices Code guidebook that discusses pruning states that, to be economically viable, pruning must occur on stands of site index 20 or greater. It is also known that some species do not respond well to pruning and the desired results are difficult to achieve. Furthermore, pruning is not recommended for remote sites where access is difficult or costly.

### *Fertilization*

Although fertilization is the primary way of producing more volume on fixed rotations, the amount of increase depends on the site index, the species and the stand density. With lodgepole pine, for example, it is estimated that fertilization will produce an increase of 10 m<sup>3</sup> per hectare on stands with a site index of 19, but an increase of up to 50 m<sup>3</sup> per hectare on stands with a site index of 25. Therefore, where it is applied, significantly determines the effectiveness of the procedure. The precise benefits of fertilization are still a subject of further research for some species and sites. For example, in the Interior, little is known about how species other than lodgepole pine will respond, and more research is needed. Similarly, on the Coast, the growth implications on cedar/salal sites is not fully quantified.

*Timber supply review documents show potential impacts of enhanced forestry activities*

The AAC for each of British Columbia's 37 TSAs and 33 TFLs is assessed every five years by the Chief Forester through the timber supply review. The AAC and the reasons behind it are contained in a document called the rationale statement. Among the many types of information used to make an AAC decision is that about the incremental silviculture activities being carried out. We examined the AAC rationale statements for a number of TSAs to identify how the Chief Forester addressed the impact of spacing, pruning, and fertilization activities (Exhibit 3.3). All of them suggested that much of the spacing and pruning work funded by Forest Renewal BC is having no effect on improving the total volume available.

**Exhibit 3.3****Extracts from Chief Forester's Rationale Statements for a Selection of TSAs****Bulkley TSA, July 1995**

Intensive Silviculture – Chief Forester notes that the yield curves used in the analysis are based on well-spaced, fully stocked stands. Therefore, juvenile spacing is not anticipated to increase harvest levels beyond those shown in the timber supply forecast. He also notes that current stocking standards are designed to provide an opportunity for commercial thinning. However, the age class structure does not provide any significant opportunities for commercial thinning, so he has assumed no contribution to the AAC from the intensive silviculture activities.

**Merritt TSA, January 1996**

Spacing and pruning were not assumed in the timber supply analysis – they improve quality rather than the quantity of timber produced.

**Kootenay Lake TSA, June 1995**

Juvenile spacing does not generally increase stand yields, except where excessive densities have suppressed growth. However, when used with fertilization, stand volumes may be increased and green-up ages may be reduced. Pruning does improve the quality of growing timber, but it does not usually affect the volume of timber produced.

**Williams Lake TSA, January 1996, and Kamloops TSA, July 1996**

Public input expressed considerable optimism that incremental silviculture practices will improve the timber supply. Most current research indicates that while such practices improve the quality of timber within a forest stand, they have little effect on the actual volume of timber produced, in most cases.

**Fraser TSA, April 1995**

The Ministry of Forests timber supply analysis assumed that all poor sites and half of the medium sites of Douglas-fir stands are fertilized. Based on this current practice, a 4% increase in timber supply at harvest age has been incorporated into the ministry's analysis.

**Kingcome TSA, November 1996**

Since 1980, approximately 5,000 hectares have been spaced. However, spacing improves the quality, not the quantity, so no adjustments have been made to the volume estimates, or to the projected initial harvest level.

**Kamloops TSA, July 1996**

Approximately 2,400 hectares are spaced annually and approximately 180 hectares are pruned each year in the TSA. These activities improve quality rather than increase the quantity, therefore, there is no adjustment to account for these activities in the AAC determination.



Courtesy: Forest Renewal BC

*The forest sector is a major contributor to the economy of British Columbia's interior*

When an increased volume was indicated, it was in conjunction with some level of fertilization.

The statements in Exhibit 3.3 are based on the assumption that the stands are at density levels where spacing will not provide any additional benefits. Stands that are at higher densities than assumed may benefit from spacing.

*TFL documents show some licensees question the value of some activities*

The Chief Foresters' comments are echoed in a summary of TFL management plan information compiled by a Ministry of Forests coastal district. In that district, three of the five companies with TFLs identified fertilization as the main activity for increasing timber supply, and each identified spacing and pruning as being used only to improve quality or to bring stands within operability limits sooner. The other two licensees viewed spacing with disfavour.

One of the latter two licensees stated an intention to gradually phase out spacing and pruning altogether in its timber production program, noting that, on balance, conventional spacing strategies reduce merchantable volume without improving stand value. The company remains committed, however, to using public funding (Forest Renewal BC) to carry out spacing to enhance non-timber values, such as wildlife habitat and for social benefits.

The other licensee has noted that there has been considerable debate on the benefits of spacing, including data from second-growth managed stands that indicate a decline in volume and even a reduction in log quality over natural stands in some cases. The company has determined that if government funding is available for employment and community stability purposes, it will consider undertaking spacing treatments— as long as they do not adversely affect the future value of treated stands.

We noted in a number of AAC rationale statements for TFLs an acceptance of spacing as a means of mitigating timber supply shortfalls projected to occur 40 to 60 years from now. The ministry's yield information shows that spaced stands will have trees of a large enough diameter to make harvesting feasible at an earlier age. In one instance, the rationale statement notes that spacing is an important tool in helping



achieve “economic timber supply objectives” and recommends that the licensee increase its spacing program “in order to realize opportunities to reduce harvest ages and decrease the projected shortfall.”

The documents referred to above show that much of the work funded in the Enhanced Forestry Program provides little productivity gain in terms of additional volume. However, the work can instead provide benefits by changing the mix or quality of the wood supply or making wood supply available to mitigate a shortfall. As well, a study provided to the Forest Sector Strategy Committee in 1994 showed that fertilization, forest health and backlog planting were activities that did have the potential to increase timber volume. Spacing and pruning were not.

Information from Forest Renewal BC’s Outputs report for 1996/97 and the draft report for 1997/98 is shown in Exhibit 3.4.

For those two years, approximately \$86 million was spent on activities that will not have a major effect on increasing total volume. While these activities may be improving the quality of the timber, they are not increasing the total quantity of wood available, though spacing can make the existing volume available sooner. Spacing will also help ensure that the assumptions used in the timber supply reviews can be achieved.

*Recommendation*

***Forest Renewal BC should use the available information to a greater extent in making decisions about its investment level for various activities in the Enhanced Forestry Program.***

Exhibit 3.4

Forest Renewal’s Outputs Report for 1996/97 and the Draft Report for 1997/98

	1996/97 Results			1997/98 Results		
	Hectares	Cost/ hectare	Total cost (millions)	Hectares	Cost/ hectare	Total cost (millions)
Spacing	48,930	\$623	\$30.48	47,967	\$691	\$33.14
Pruning	10,948	\$938	\$10.27	17,521	\$680	\$11.91
<b>Total</b>	59,878		\$40.75	65,488		\$45.05

Source: Forest Renewal BC 1996/97 and draft 1997/98 Outputs reports



## Forest Renewal Has Identified the Activities Eligible for Funding

We looked at whether Forest Renewal BC had identified the silviculture activities it believed fit within its mandate and objectives and therefore eligible for funding.

Forest Renewal BC annually prepares a schedule of eligible land-based activities for all programs, including Enhanced Forestry and Backlog. We found that most Ministry of Forests and industry staff we spoke with generally felt that the list was clear and understandable for these two programs.

There is, nevertheless, some need for clarification as to what is eligible. For example:

- The eligibility information is brief, so it is sometimes difficult to decide what is acceptable and what is not. For example, in forest health matters, Forest Renewal BC distinguishes between the Ministry of Forests' obligations for basic forest health work and the enhanced activities Forest Renewal BC will fund. However, the distinction is not clearly defined.
- Forest Renewal BC's shift in its definition of incrementality makes it unclear as to what licensees and the Ministry of Forests are responsible for and what Forest Renewal BC will fund. Some activities previously viewed as being ministry or industry obligations have recently been approved for funding by the corporation.
- Changes to eligibility criteria have resulted in what appears to be inconsistencies. For example, for 1997/98, forest health maintenance activities were eligible (funded under a block funding provision by Forest Renewal BC), but for 1998/99 they were not. Even if Forest Renewal BC intended it as a single funding, the change has left the impression that the corporation is inconsistent in what it will approve.

We concluded that, overall, Forest Renewal BC has identified eligible activities, but frequent changes have resulted in some confusion about Forest Renewal BC's direction.



## purchasing only what is needed

Forest Renewal BC should purchase only what it needs to accomplish the goals and objectives of its silviculture programs. We expected to find that Forest Renewal BC had provided direction to the Ministry of Forests and industry as to the corporation's resource, social and economic objectives. We also expected to find processes in place to ensure that approved projects meet Forest Renewal BC's requirements.

### Conclusion

We concluded that Forest Renewal BC is unable to assess whether the activities being funded in the silviculture programs meet all of its expectations, because it has not provided direction about its resource and economic objectives. Forest Renewal BC's directions have so far focused primarily on identifying spending targets and job targets. The spending targets are not linked to identifiable resource or economic objectives. Job target objectives have only been for Forest Renewal BC's short-term job targets under the Jobs and Timber Accord. They do not include expectations on future jobs in the harvesting and processing sectors.

### Findings

#### Direction about Forest Renewal BC's Expectations is Too General

We looked at the guidance that Forest Renewal BC provides to allow others to understand which projects should be considered in work plans. We found that the guidance was general in its description and does not provide clear direction as to resource quality and financial or economic parameters.

Planning guidelines state clearly that all plans and work undertaken using Forest Renewal BC expenditures must contribute to carrying out the corporation's mandate. Documents describing the corporation's planning process also indicate general approval criteria. Among the factors that must be considered in prioritizing program investments:

- existing resource plans,
- resource priorities established by ministries and proponents,
- development and maintenance of partnerships with First Nations communities,
- a target of 45% to silviculture activities, and
- employment targets.



Courtesy: Forest Renewal BC

*Manual brushing provides employment and enhances growth opportunities for commercial tree species*

In our opinion, these approval criteria are only at a general level; they do not provide for the detailed assessment process that existed before this new land-based delivery system was introduced. Previously, each project was assessed against ranking criteria to give a numerical weighting for the project. Now, however, Forest Renewal BC no longer assesses the merits of one project against another. As long as proposed projects are eligible activities, proponents can include them within their plans.

In our view, no direction is being provided by the corporation in two important areas: resource quality and financial or economic targets.

As we noted earlier, there are limitations in the extent to which benefits will derive from enhanced forestry activities. These are generally linked to site quality and species. Not all species will benefit in the same manner from certain activities and the quality of the site is a major factor in the degree to which different species will benefit. Forest Practices Code guidebooks set some guidance as to how these issues should be considered, but Forest Renewal BC has not provided any clear direction as to its expectations.

Thus, work may be carried out that provides less resource benefit than the corporation would accept if it had turned itself to identifying its minimal expectations more clearly.

Similarly, for financial or economic indicators, Forest Renewal BC has not identified what it considers to be acceptable limits.

We therefore concluded that the approval criteria are general in their description and omit important information about how decisions should be made. This is particularly a concern given that Forest Renewal BC has not defined its resource objectives.

*Recommendation*

***Forest Renewal BC should identify the financial, economic, and resource quality criteria it expects proponents to apply when they are considering potential projects for their work plans.***

## Funding allocations for the silviculture programs are not linked to well defined needs

As already discussed, Forest Renewal BC funds two silviculture programs: enhanced forestry and Backlog. In 1998/99, each region was allocated a base budget for land-based programs and directed to allocate 45% to silviculture activities (except for the Pacific region, which was to allocate a minimum of between 32–35% for 1998/99, before going to 45% by the fifth year). Overall, the board's direction was adhered to.

We have noted that, in response to queries by the Select Standing Committee on Forests, Energy, Mines and Petroleum Resources about the 45% target and its focus on spacing and pruning, Forest Renewal BC suggested these directions had come from the Forest Sector Strategy Committee. Our review of committee documents indicates that the committee members were concerned primarily with activities that would increase volume and did not recognize spacing and pruning as appropriate for that objective.

At the same time, concerns were also being expressed by many in Forest Renewal BC, the Ministry of Forests and industry as to the implications that this level of funding had for the value and quality of work. These are concerns we share, for two reasons.

First, the issues facing the forest sector differ markedly between and within regions. In the first timber supply review, AACs were reduced in 32 management units, increased in 19 and held the same in 20. Across the province, 3 regions saw decreases in their AAC while 3 saw increases. Within regions, even adjoining management units had markedly different scenarios. In the Williams Lake TSA, the AAC in the main TSA area was projected to decline after only one decade. In the adjoining Quesnel TSA, the wood supply was highly stable and the AAC could potentially be maintained for seven decades. The Prince George TSA, adjoining Quesnel is even more favourably placed. According to the timber supply review, the Prince George TSAs cut could be 6% higher for another 250 years. And, while the Prince George region is well positioned overall with its wood supply, none of this was considered when the 45% target was set.

Second, as we have already discussed above, this funding direction was not linked to any specific resource objective. It focused on how much to spend rather than on what to achieve. Some regions felt this target was too high.

In the Kootenay-Boundary region, for example, participants in a Forest Renewal BC regional planning meeting felt that the target should be reduced to 40% making more money available to other programs where needs existed. Other documents also suggested caution about spending levels is needed. For instance, the East Kootenay Land Use Plan noted that the region had fewer opportunities for incremental silviculture than other areas of the province because of the low site quality in much of the south part of the region. And the timber supply analyses for many of the management units in the region have noted that spacing opportunities are limited by endemic root rot in many of the stands. Carrying out spacing in this environment could cause the disease to spread.

Forest Renewal BC staff in the Thompson-Okanagan region were of the view that 30-35% was a more realistic spending target. This assessment was consistent with the findings of two Ministry of Forests documents which reported that a history of stand tending activities had left the region with few good sites available. Proponents we talked to also doubted that these activities would increase the timber supply. They suggested that the most effective and immediate means of increasing timber supply would be to provide the Chief Forester with better inventory information for setting the AAC.

### *Recommendation*

***Forest Renewal BC should base future allocations of funds for silviculture programs on an understanding of the opportunities, resource strategies, and the unique timber supply situation within each region.***

## What was Purchased Cannot be Linked to Clear Objectives

### *Enhanced Forestry*

Based on the guidelines they were expected to follow, the regions determined what they would purchase for the silviculture programs. Exhibit 3.5 shows the main activities purchased in the Enhanced Forestry Program.

### *Spacing, pruning, fertilization*

As Exhibit 3.5 shows, spacing, pruning and fertilization accounted for \$37.2 million of the \$52.1 million total regional spending for enhanced forestry in 1998/99. Since only fertilization enhances productivity in terms of increasing volume (as discussed earlier), we question whether this mix of activities purchased fits with Forest Renewal BC's mandate of enhancing productivity. In our view, it focuses mainly on quality rather than volume.

Exhibit 3.5

Enhanced Forestry Program: What Was Purchased, 1998/99

Activity	Spacing		Pruning		Fertilization		Total
	Cost (\$ millions)	Output (ha)	Cost (\$ millions)	Output (ha)	Cost (\$ millions)	Output (ha)	
Region							Cost (\$ millions)
Pacific	9.261	4,886	5.850	2,705	2.493	5,564	17.604
Thompson-Okanagan	2.481	3,058	1.290	1,271	0.139	246	3.910
Kootenay-Boundary	2.677	2,924	0.184	237	0.005	1	2.866
Omineca-Peace	3.444	4,966	0.592	527	0.270	520	4.306
Skeena	4.239	4,361	0.135	102	0	0	4.374
Cariboo-Chilcotin	3.806	6,210	0.124	100	0.175	1,221	4.105
Total	25.908	26,405	8.175	4,942	3.082	7,552	37.165

ha = hectares

Source: Compiled from information provided by Forest Renewal BC

The *1994 Forest, Range and Recreation Resource Analysis Report* noted that the AAC is projected to drop substantially in the future. It pointed to fertilization as a means of mitigating this decline and noted that significant opportunities exist for an expanded fertilization program under the Forest Renewal Plan. Such an expansion, however, has not transpired. As shown in Exhibit 3.5, 7,552 hectares will be fertilized in 1998/99. This is comparable to the area fertilized in the early 1990s, before Forest Renewal BC was started and about half of the amount fertilized annually under the FRDA I program.

We concluded that, in the absence of clear objectives, these silviculture activities cannot be linked to any identifiable resource targets.

**Forest health**

Included within the Enhanced Forestry Program as eligible activities are forest health studies and treatments. Forest Renewal BC’s treatment of forest health funding is another issue that concerns us because the corporation has treated health issues inconsistently. The 1997/98 business plan allocated \$9 million for forest health; the 1998/99 business plan included only \$3.1 million. We believe this runs contrary to expectations about what the program is to accomplish. One of the goals of the Forest Renewal Plan was to renew the land





Courtesy: Forest Renewal BC

*Thinning a stand of pine outside Fort St. James*

and keep the forests healthy. The Forest Renewal BC business plan itself states that sustainable employment depends on activities that enhance the health of the forest. Similarly, the Forest Sector Strategy Committee identified forest health as an investment that can provide substantial volume increments for the dollars invested. And the Ministry of Forests has identified forest health maintenance as a top priority, noting that it is the main way to ensure that (where it is economically viable to do so) mature timber is protected from insects and disease. The ministry has also reported that volume losses due to insects or disease are equivalent to approximately 25% of the annual allowable timber harvest (on regulated lands only). (By comparison, forest fires claim less than the equivalent of 2% of British Columbia’s annual allowable harvest.)

In 1997/98, Forest Renewal BC provided funding for forest health maintenance activities, as a one-time initiative. For 1998/99, these same activities were ineligible for funding. Instead, the corporation considered only forest health enhanced activities (activities to enhance the value of the forest resource where doing so is

economically viable). However, Forest Renewal BC’s change in the incrementality definition made basic forest health issues acceptable candidates for consideration. The value of basic forest health activities in “renewing the forest and keeping the forest healthy” should have been judged against the value of other activities. This was not done. As a result, funding to maintain the health of the forest resource was not provided through the planning process. The Ministry of Forests sought approval from Forest Renewal BC—after the planning was completed—to re-allocate \$5.5 million of funding from other programs to cover forest health requirements. Instead, the corporation allowed the ministry to use some of the unspent Forest Renewal funds the ministry had remaining from the 1997/98 programs for forest health activities in 1998/99. This indicates to us a planning system unable to work toward achieving one set of common goals.

The imbalance between the funds allocated to spacing and those allocated to forest health issues reflects the lack of clear resource objectives of Forest Renewal BC. Given the goals laid out in the Forest Renewal Plan, we have concluded that Forest Renewal BC has not met its obligations to keep the forest healthy.

*Recommendation*

***Forest Renewal BC should ensure that its funding of forest health activities is based on an adequate assessment of provincial forest health requirements.***

*Value of the work being funded*

Both the allocation process and the requirement to spend 45% of allocations on silviculture can have an effect on whether the highest priority work is carried out. Forest Renewal BC staff we spoke to felt that much of the work being done had some resource benefits. They were also satisfied that resource objectives could be met with the right balance of activities, though they said they could not always be clear as to what resource value is actually obtained from certain enhanced forestry activities.

However, we have several concerns about the value of the work being funded. We found a number of examples where it appears that program investments are being made to meet Forest Renewal BC's requirements for job creation and equity, with little attention being paid to the resource returns:

- Ministry of Forests and industry staff told us that some treatments funded may have, at best, a neutral effect on the resource base. In other cases, while some work may have a high resource value in the immediate area, it would rank lower if compared to other opportunities in a different geographical area of the district or region.
- Several districts noted that there have been some licensee projects that the Ministry of Forests did not support at the planning stage because they were deemed to be of neutral resource value. However, since the projects provided jobs, Forest Renewal BC approved them.
- In one district in the Omineca-Peace region, a proponent has received approval for a \$400,000 landing rehabilitation program. Although the Ministry of Forests recommended the program be deferred until better planning could assess the value of the work, Forest Renewal BC funded it nevertheless. As ministry staff pointed out, most landings in the area will come back on their own over time. Since there will be only a marginal effect on timber supplies, and at a high cost, the work cannot be said to provide good resource benefits.
- In the same district as the one noted above, Forest Renewal BC approved a \$250,000 spacing project primarily to generate jobs. Ministry staff told us that the site was one that the Forest Practices Code guidebook identifies as not being



recommended for spacing. As well, \$200,000 was approved for a “research” project in a lodgepole pine stand rated poor in site quality. Both sites were viewed by Ministry of Forests staff as too poor in quality to spend money on.

- Concerns about the value of the work carried out led to the Ministry of Forests initiating a province-wide study. The study covered 11 districts in 6 regions and looked at 49 stands. Stands were selected based on their having a recognized forest health problem at the time of the silviculture treatment. The study examined the sites to assess the appropriateness of the treatments, given the existing health issues, and the potential effect of the work carried out. A major finding of this study was that silviculture treatments in 71% of the stands had limited biological benefit or would produce only minor improvements in product value.
- A 1998 study carried out in the Kamloops region examined pruning and spacing activities that had been carried out between 1996 and 1998. The study sites were randomly selected and totalled 57% of the sites that had been pruned or spaced in that period. The study found that it was questionable whether many of the sites treated were really suitable for the treatment.
- One proponent in the Kamloops area told us that an area spaced in the previous year was now almost totally defoliated by spruce budworm, and severe mortality would likely result if the stands were not treated this year. District ministry staff advised the proponent that no forest health funds were available to treat the area. Meanwhile spacing was underway in other areas where the same problem may occur.

The total extent to which work of little resource value is being carried out is unknown. There is no data collected as Forest Renewal has not asked that this be tracked and reported. We believe this information is necessary if Forest Renewal is to understand the impact its social objectives may be having on resource objectives.

### *Recommendation*

***Forest Renewal BC should ensure that its planning processes provide the corporation with qualitative and quantitative information about the potential value of the work it funds.***

## Backlog

Replanting of backlog lands is carried out primarily to speed up nature’s own processes. A ministry report notes that over time, all forest land will restock naturally. It may take a few years or many decades before a commercial stand is established. Rather than wait decades for a site to restock naturally, replanting will lead to a commercial crop sooner. Thus, the decision to replant is linked more to economic imperatives than to biological or ecosystem needs. Exhibit 3.6 shows the main backlog reforestation activities purchased by Forest Renewal BC for 1998/99.

Prior to the existence of Forest Renewal BC, the Ministry of Forests was carrying out a program to reforest and maintain backlog lands until they reached a free growing state. It was government policy that these lands would be restocked by the year 2000. However, in September 1996, the Forest Renewal BC board approved a \$250 million program over 10 years to assume responsibility for reforesting backlog lands, relieving the Ministry of Forests of this funding obligation. The maintenance of backlog sites already planted was to remain a

### Exhibit 3.6

#### Backlog Program: What Was Purchased, 1998/99

*The regional investment plans identify a total of approximately \$56 million for the 1998/99 regional programs, the major components of which are shown in this table*

Activity	Brushing-Backlog Impeded Stands		Surveys-Backlog Impeded Stands		Planting -Backlog NSR Stands		Surveys-Backlog NSR Stands	
	Cost (\$ millions)	Output (ha)	Cost (\$ millions)	Output (ha)	Cost (\$ millions)	Output (ha)	Cost (\$ millions)	Output (ha)
Pacific	5.457	5,306	0.869	21,743	0.668	585	0.347	10,622
Thompson-Okanagan	2.724	6,120	0.690	24,648	1.192	**	0.509	22,964
Kootenay-Boundary	2.728	5,167	0.586	17,309	1.011	**	0.640	68,306
Omineca-Peace	11.518	19,142	2.476	52,237	3.275	**	2.530	87,158
Skeena	4.896	8,372	1.454	46,449	1.187	2,075	0.357	11,495
Cariboo-Chilcotin	2.709	16,006	0.832	27,778	1.445	2,638	0.655	23,875
Total	30.032	60,113	6.907	190,164	8.778		5.038	224,420

ha = hectares  
 \*\*The output data for planting was reported inconsistently so some targets are unknown.

Source: Compiled by Office of the Auditor General of British Columbia from information provided by Forest Renewal BC

ministry responsibility. The Ministry of Forests was to reduce its expenditures from \$80 million to zero over the 10 years, as lands it had replanted reached free growing status. In 1997/98, this changed. The budget for backlog was removed from the ministry altogether and Forest Renewal BC assumed responsibility for all backlog silviculture, including the maintenance (brushing) of sites. Thus, while the corporation's funding was intended to be incremental to Ministry of Forests funding, the ministry, in fact, had no backlog funding for 1998/99.

These changes are problematic for several reasons:

- The Forest Renewal BC business plan refers only to accelerating reforestation of backlog areas and identifies 250,000 hectares of land that might be restocked. There is no reference to the extensive maintenance program the corporation is funding for sites already replanted by the ministry. Ministry documents identify that some 110,000 hectares, not 250,000, could be replanted and maintained to free growing by spending \$250 million over 10 years. In addition, \$37 million of the \$56 million regional program is really for backlog impeded stands—stands that are satisfactorily restocked with well-spaced trees but not yet free growing. Thus, most of the money in the program is allocated to fund an obligation that the ministry had (namely, to maintain sites to free growing).
- During the planning for the 1998/99 programs, the timeline for the Backlog Program was extended to 15 years. However, there was no adjustment to the funding level required to meet both planting and brushing of impeded stands. With the addition of the impeded stands to the program, the \$250 million funding commitment by Forest Renewal BC is insufficient to meet projected planting requirements on backlog lands. Thus, the information in the business plan now reflects a funding commitment only and not the funds needed to complete the backlog reforestation program.
- It is unclear whether the program actually funded for 1998/99 is what Forest Renewal BC intended to purchase, and whether the corporation was aware of the scale of the new program it undertook to fund. We noted major differences between the information used by the board to approve the \$50 million Backlog Program for 1998/99 and the program defined in the regional investment plans (\$56 million). Brushing, identified to the board as an \$18 million component to cover 34,000 hectares, turned into a \$30 million allocation for 60,000 hectares. Site preparation



Courtesy: Forest Renewal BC

*Spacing on an enhanced forestry project*

and seedling production, proposed as a \$10 million requirement, ended up at \$5 million. These changes are significant and break the link between approved funding and total program requirements.

The business plan also states that the purpose of the backlog program is to help stabilize the wood supply. We found, however, many areas where backlog exists already have a stable wood supply. For example, the Omineca-Peace region receives approximately 39% of backlog funding. Within this region, the Prince George TSA encompasses three forest districts and has approximately 36,000 hectares of backlog. Ministry field staff had projected restocking this over 30 years. In his determination, the Chief Forester noted that there is a high degree of stability in the timber supply and that a harvest level of 6% higher than the existing level could be maintained for 250 years without declining.

Similarly, but on a smaller scale, Forest Renewal BC has funded backlog activities in the Fort St. John TSA, where about 17,000 hectares of backlog exists. Yet, in the 1996 AAC determination, the Chief Forester stated that the AAC could be increased 95% to 1.76 million m<sup>3</sup> for 140 years. In both cases, where there is clearly no wood supply problem, we think the need for an accelerated program for treating the backlog is highly questionable without a more strategic analysis in place. The Dawson Creek and Mackenzie TSAs are also areas with substantial backlog programs even though no long-term timber supply problems exist. Overall, most of the backlog funds are allocated to a region which has no long-term timber supply problems. When making its decision in 1996, the board received no information as to what the timber supply implications would be for different funding scenarios, including what a no funding option would mean.

Without any clear objectives being related to the volume or harvest level increases that Forest Renewal BC is trying to achieve, we have no assurance that the monies being spent on backlog are providing the best return to the corporation. Furthermore, the resource return on the investments being made will not be realized for 80 to 100 years. A no-funding

option, coupled with a longer wait for a harvestable forest, could well be a better economic alternative.

Government funding to reduce backlog lands began in 1979 at a time when there was no legislation requiring reforestation and the backlog was growing by about 50,000 hectares per year. Today, there is legislation and the backlog is under control. In our view, the current Backlog Program is based on an outdated strategy, one that needs to be re-assessed.

### *Recommendation*

***Forest Renewal BC should more thoroughly analyze the implications of different funding scenarios for the Backlog Program.***

The jobs purchased are short-term in nature, and the long-term prospects have not been determined

#### *Short-term employment targets*

As we noted in the planning and accountability audit, Forest Renewal BC's employment targets did not fit well with the dollars allocated. No region was able to meet its target with the base budget dollars; all were off the target by about 20–25%. Transition funding was subsequently provided and an additional \$20 million allocated to the regional silviculture programs. From the base budget total of \$96.7 million, these silviculture programs expanded to \$117.9 million. The business plan shows that Forest Renewal BC's program investments are expected to result in 6,900 person years of direct employment. Of these, approximately half are expected from the silviculture programs.

We concluded that, with regard to this social objective of job creation, Forest Renewal BC has provided sufficient funding to meet its objectives.

#### *Future employment targets*

One Forest Renewal Plan goal is ensuring the continued availability of good forest jobs. We looked at how this provision for future employment was incorporated into the approval process.

One regional planning guideline noted that projects which generate higher employment should be rated higher than other projects unless other projects are essential for the sustainability of the resource or are a prerequisite for employment generation in the future. However, we found a lack of clear direction from Forest Renewal BC as to the relative importance of providing

short-term jobs vs. maintaining the resource's capacity to provide sustainable, long-term jobs. Many proponents we interviewed felt that the corporation has focused too much on short-term job creation to the detriment of future jobs.

For example, the AAC for the Soo TSA is predicated on a strategy that calls for a certain amount of fertilization each year. The AAC is based, in part, on the expectation that this fertilization program will be carried out. At the Soo Ministry of Forests planning table, all participants agreed unanimously that fertilization is the top priority in the Enhanced Forestry Program for the TSA. Yet, Forest Renewal BC decided not to fund the activity because of its low job coefficient. Industry and ministry staff both agree that while fertilization may not create many current jobs, it will prevent loss of jobs in those situations where it has been a factor in the AAC determination.

*Recommendation*

***Forest Renewal BC should ensure that it obtains information about the extent to which the activities it funds are creating conditions for maintaining and creating future jobs in the harvesting and processing sectors.***





## purchasing at least cost

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We expected Forest Renewal BC to be paying the least cost possible in purchasing contract services for its silviculture programs. We therefore looked to see if the corporation was using standard cost guidelines as benchmarks in making purchasing decisions, and was basing silviculture investment decisions on reasonable cost assumptions. We expected some reasonable accommodation for higher costs arising from social objectives.

### Conclusion

Forest Renewal BC's cost management system is adequate for identifying planned costs and outputs, but carries a greater risk of higher costs being accepted than does the system used by the Ministry of Forests. The social objectives of Forest Renewal BC and the processes that it has instituted have an upward pressure on costs, but the corporation has taken steps to ensure it understands the extent to which higher costs are occurring.

### Findings

#### Risk of Higher Costs Exists

##### *Unit cost guidelines*

Both the Ministry of Forests and industry carried out incremental silviculture programs before Forest Renewal BC was established, and even in the first few years of the corporation's operation the ministry was the main delivery agent for enhanced forestry programs. As a result of these past activities, the ministry and (to a lesser extent) industry have established a database of historical costs for enhanced silviculture activities which they use as cost guidelines (Exhibit 3.7) for their own projects. Some proponents also have similar historical cost information.

In general, the ministry direction is that projects should not be considered when costs exceed the limits shown, unless they are required to meet social objectives. The values represent the upper limits for treatments, but average costs should be lower. However, Ministry of Forests staff no longer have a role in the financial assessment of proposed Forest Renewal BC projects being undertaken by proponents and therefore are not required to consider costs when approving prescriptions.

In a review of the regional investment plan information for 1998/99 we found that, while the average costs for spacing are within the Ministry of Forests guidelines, those for pruning and fertilization costs exceed suggested limits for a number of regions (shaded areas in Exhibit 3.8). These costs do not include training costs that may be needed for First Nations partnership or displaced forest workers.

Forest Renewal BC has not set any cost guidelines of its own because it knows the Ministry of Forests and proponents have their own information. As well, the ministry is required, under the services agreement, to send its historical unit cost guidelines (minimum, maximum, and average) to the corporation. When Forest Renewal BC project officers review on-line information during the planning phase, they are able

### Exhibit 3.7

#### Ministry of Forests Unit Cost Guidelines

(\$ per hectare)

	Spacing	Fertilization	Pruning
Pacific	2,000	300	1,500
All other regions	1,000	300	1,200

Source: Ministry of Forests Planning Process for the Forest Renewal BC Enhanced Forestry Program, 1998/99

### Exhibit 3.8

#### Average budgeted costs per regional investment plan information for 1998/99

Activity (\$ per hectare)

Region	Spacing	Fertilization	Pruning
Pacific	1,895	448	2,163
Thompson-Okanagan	811	564	1,016
Kootenay-Boundary	916	n/a	778
Omineca-Peace	694	519	1,123
Skeena	972	n/a	1,319
Cariboo	613	144	1,236
Provincial average	981	408	1,654

Activities where unit costs exceed unit cost guidelines

Source: Office of the Auditor General of British Columbia review, based on Forest Renewal BC regional investment plan data



to compare average costs to the ministry's information and, if discrepancies are found, the corporation can address these with the proponents. However, licensees are no longer required to provide cost information when reporting to the ministry on work completed on Forest Renewal BC projects. Cost reporting is now optional. The result is there will be some loss of information about unit costs and trends in the future.

### *Tendering provisions*

Forest Renewal BC also relies on contract provisions to promote reasonable and competitive costs. The agreements require that proponents use "best efforts" to ensure work is carried out economically and under the most favorable conditions to Forest Renewal BC. In addition, Forest Renewal BC (being a Crown corporation) has specified its own tendering provisions in the agreements with proponents, rather than following government guidelines. We found that these are sufficiently different that the risk of higher costs being paid is greater under Forest Renewal BC's practices than under the ministry's. For example, the Ministry of Forests requires that at least 30% of total contract work be tendered, while Forest Renewal BC requires that at least 20% be tendered.

Furthermore, the maximum direct award allowed by the ministry is \$25,000; the maximum allowed by the corporation is \$250,000.

We concluded that the Ministry of Forests' process overall permitted more competition which, theoretically, results in lower costs. Forest Renewal BC's practices provide proponents with more flexibility and possibly savings in administrative costs, but these come at a greater risk to the taxpayer.

### *Audit requirements do not address whether costs incurred are reasonable*

To minimize the risk to taxpayers, Forest Renewal BC does require proponents to be audited annually to verify they have incurred the costs claimed. The multi-year agreement calls for an external audit report to be provided within 60 days of year-end. Because this annual audit requirement is new, there were no reports for us to review. We did examine, however, audit guide documentation and a sample letter of engagement with auditors. Neither made any reference to auditors conducting value-for-money reviews. We therefore concluded that while the audit requirements should be sufficient to provide Forest Renewal BC with assurance that the expenditures claimed have been incurred, they will not be sufficient to provide assurance that value-for-money has been achieved.

*Recommendation*

***Forest Renewal BC should determine how it will obtain assurance that the monies expended by proponents provide value-for-money.***

## Cost pressures are pushing costs higher

We noted that two important factors under Forest Renewal BC's delivery system have put an upward pressure on costs: partnership requirements and New Forest Opportunities.

*Partnership requirements*

The Act calls on Forest Renewal BC to take into account the need for increased participation of First Nations and aboriginal persons in the forest economy. For 1997/98, the Outputs report showed that First Nations workers made up 17% of the workers in the Land and Resources programs and that First Nations groups received 9% of the expenditures in the Land and Resources programs. These numbers varied greatly across the province. For example, First Nations groups received 18% of the expenditures in the Cariboo-Chilcotin region and 3% in the Kootenay-Boundary region.

The multi-year agreements have a provision recognizing that partnerships may employ workers who may not have the skills or qualifications of those who would otherwise be employed. This can lead to lower productivity with new work crews and higher unit costs. As well, the geographic requirements of some partnerships means having to find sites within a specified area. This can lead to lower priority sites being accepted for treatment.

Forest Renewal BC has not identified the extent to which proponents should accept higher costs in partnership arrangements. One industry proponent told us the company had developed its own approach, considering proposals that were 10–25% above historical cost guidelines. Another noted that partnerships require higher administration costs in the early stages. The general concern we heard is that higher partnership costs will eventually drive up acceptable unit costs in the entire industry.

The social objective of using partnerships has clearly created some inefficiencies in the short-term. The additional costs of partnerships are not fully evident in the Enhanced Forestry and Backlog Program budgets. Training costs, for example, are funded as a separate program and not included as part of the delivery cost of these programs.

## *New Forest Opportunities*

On the Coast, the creation of New Forest Opportunities Ltd. in 1998 raised concern about the effect this new placement agency would have on delivery costs. Its administrative budget of \$2.5 million for 1998/99 was an incremental cost that did not exist in the prior year.

At the time of our field review in the region, the agency was only several months old and had little work underway. A number of bids had been received, which some proponents told us were 30–50% higher than historical levels. This evidently was expected, at least initially, as contractors factored in the additional risk associated with using New Forest Opportunities. New Forest Opportunities management told us that its average costs were 14–15% higher than expected after approximately three months of fieldwork.

In addition to concern over unit costs, proponents expressed frustration with the timetable for establishing New Forest Opportunities and with the extensive paperwork involved in meeting its information requirements—both of which had led to delays in fieldwork. Some Forest Renewal BC projects did not start until September 1998.

Management itself also recognized that the initial systems established were unwieldy and has re-assessed them to find efficiencies. It has also committed to industry to undertake a third-party audit at year-end to identify what the cost experience has been. We support the need for such an audit because of the many concerns and questions by all parties about the real cost impacts of the agency. The audit should address costs at the broadest level by looking at the costs of the system, not just those for labour.

### *Recommendation*

***Forest Renewal BC should provide clearer direction as to the level of costs it is willing to accept to meet its social objectives.***



# knowing what services are actually provided

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Cost-effective delivery of any program requires that the agent responsible knows what services have been rendered and pays for those services only. We expected Forest Renewal BC to have established contracts and agreements that contain appropriate performance objectives, and to have staff with sufficient experience and training in contract management. We also expected that Forest Renewal BC contract administrators would receive timely reporting on performance, and that procedures would be in place to ensure that the quality of work performed by proponents is acceptable.

## Conclusion

While the agreements with proponents contain performance objectives in relation to the quantity of work to be carried out and the technical standards to which it is to be done, they do not contain indicators of Forest Renewal BC's quality expectations that would ensure only work deemed of sufficient value is approved.

The project reporting system is adequately designed to provide Forest Renewal BC with timely information about the costs and services rendered in relation to what was planned.

There is a quality assurance process to assess whether completed work meets technical standards. This process is conducted on a sampling basis, and Forest Renewal BC has yet to critically assess the extent of reviews required to meet its assurance needs.

Forest Renewal BC has an Investment Management System that can provide adequate information to management, ministries and the board about the costs and outputs for the silviculture programs.

## Findings

Forest Renewal BC has identified the quantity but not the quality of what it is willing to purchase

Multi-year agreements identify the rights and obligations of Forest Renewal BC and proponents, but they do not contain specific performance objectives related to silviculture programs. Those objectives are identified in the multi-year plans linked to

each agreement. These plans show the activities, the funding level and output targets for each activity in the plan.

### *Quantity objectives*

We examined a number of multi-year plans and found that, in terms of quantity measures, the performance objectives in them are limited to *output* information. This information includes planned spending levels, expected outputs in hectares, and employment information for each eligible activity. We concluded that these contracts contain clear expectations as to the outputs and job targets to be met.

However, the documents provide no information as to the expected *outcomes* of the investments in the various enhanced forestry activity areas. There is no information as to whether the treatment is intended: to increase volume by spacing to alleviate repression; to meet strategic needs such as adjusting stand densities or tree sizes to address harvest timing/wood product issues; or to achieve social forestry objectives. The multi-year plan is merely a listing of funded activities, with no indication of what the plan is expected to achieve beyond the operational output level.

### *Quality objectives*

In terms of quality measures, we found that the contracting process focuses on identifying the technical standards to which the work is to be done, more than on identifying the acceptable quality of sites to be treated.

#### *Identifying the technical standards to which the work is to be done*

As steward of the land, the Ministry of Forests has an obligation to ensure that activities carried out are done so in an acceptable manner. Technical requirements are established by the ministry and defined in standards agreements that are integral to the multi-year agreements. The standards agreement is a contract between the ministry and the proponent, detailing activity—and site-specific standards as necessary.

We concluded that these agreements provide adequate guidance as to the ministry's expectations for service quality.

#### *Identifying the acceptable resource quality of sites to be treated*

Because forest productivity varies considerably from site to site, we expected Forest Renewal BC to have set some benchmarks identifying the lowest limit of acceptable sites at which work would be carried out. We found that it has not done this: no quality expectations have been identified from

a resource standpoint. For example, the pruning guidebook suggests that pruning not be carried out on sites rated below site index 20 or on sites which have more than 900 trees per hectare in the interior or 800 on the coast. These guidelines are to ensure that sites with some opportunity to provide an acceptable return are considered. However, as Forest Renewal BC has not specified that these guidelines are to be adhered to, there is no assurance that work is being limited to areas where taxpayers will receive a sufficient return on these investments.

Forest Renewal BC cannot expect Ministry of Forests district managers to act as adjudicators of the acceptable level of quality. Prior to the Forest Practices Code, district managers had complete authority over whether enhanced forestry activities would be carried out. Under the Forest Practices Code, a district manager is now required to approve a stand management prescription if it meets regulatory requirements. The Stand Management Prescription Guidebook notes that the district manager should approve prescriptions if the treatments proposed “adequately manage and conserve the forest resources.” Whether he or she feels the work is necessary or is of sufficient value is not a factor.

We believe that, if district managers had a clearer understanding of Forest Renewal BC’s expectations, they could provide better information about the treatment options available and provide greater assurance to Forest Renewal BC as to the values and results that should accrue from the work actually undertaken.

As we have noted earlier, there are areas of the province where the availability of good sites is limited. The Land Use Plans for the Kootenays noted low quality sites in the south part of the region and recommended that good assessments of site quality be carried out to identify the best areas for investment. Similarly, ministry staff in the Kamloops region have noted the limited availability of good sites. In the circumstances, there is an onus on Forest Renewal BC to safeguard public funds by providing more critical direction as to acceptable limits for the use of its funds.

### *Recommendation*

***Forest Renewal BC should ensure that it has information about the quality of the resource benefits it is purchasing. Acceptable limits should be incorporated into the agreements so they become contractual obligations.***

## Staff Is Experienced in Contract Management

We found that Forest Renewal BC has satisfactorily undertaken activities to ensure that staff have sufficient experience and training in contract management. In each of the regions we visited, many of the project officers involved in land-based programs had come to Forest Renewal BC from the Ministry of Forests. Many of these individuals had related contract management experience in dealing with ministry programs. Similarly, many of the senior managers in regional offices had a Ministry of Forests' background and were aware of contract administration requirements.

As well, Forest Renewal BC has provided its staff with contract management training. Each regional office we spoke to told us that staff had been provided with contract management/negotiations courses.

## A Performance Reporting System Has Been Implemented

Forest Renewal BC staff use a combination of informal monitoring and formal reporting to obtain financial and estimated output information on a regular basis. Managers expect staff to monitor work status informally through contacts with proponents. We noted, for example, that under the multi-year agreement, Forest Renewal BC can contact proponents and ask for information. Proponents reported to us that they had frequent contact by telephone with Forest Renewal BC staff, and that staff have requested some ad hoc reports from them.

As well, the multi-year agreement contains requirements for formal quarterly and annual reporting through the new Investment Management System.

- *Quarterly reports* have to be submitted into Forest Renewal BC's on-line system within 30 days of the end of each quarter. Information requirements follow the information contained in multi-year plans and proponents have to report on how close they are to meeting their work plan and explain variances for costs and outputs.
- *Annual reports* have to be submitted within 60 days of year-end. Annual reporting requirements focus primarily on obtaining information related to Forest Renewal BC's social objectives. For the individuals employed during the year, proponents are to identify the category they fit into (such as union, youth or First Nations). However, the categories overlap, so some double counting results.



Courtesy: Forest Renewal BC

*Quality assurance inspection of recent pruning*

As this is the first year of the system's operation, there were no reports we could review.

### *Quality Assurance*

As we noted earlier, Forest Renewal BC performance expectations focus on the quantity of work to be done and the way it should be done.

We found that technical quality is being assured through Forest Renewal BC's reliance on the proponents' supervision and on the Ministry of Forests' role in conducting quality assurance (QA) inspections and issuing QA certificates. However, we also noted that the corporation has accepted the ministry's historical level of QA inspection (10% of work conducted) without determining whether it meets its assurance needs. We concluded that Forest Renewal BC needs to ensure that this level of review meets its needs for quality assurance information. With the introduction of partnerships and use of

displaced forest workers, higher levels of review might be required in the short-term until a track record is established.

### *Recommendation*

***Forest Renewal BC should assess the level of assurance it needs, and ensure that the Ministry of Forests' quality assurance review process has the resources to meet that requirement.***

*The new reporting system will be able to meet management's information needs*

The new Investment Management System captures the financial and operational information provided by proponents in one database. The information in the system is expected to enable all users—from those in the field to those on the board—to determine actual outputs to planned outputs and actual costs to planned costs, and to explain major variances. The goal is to have quality reporting information on an on-line system once the system is up and running. Forest Renewal BC will be able to compare results between proponents and between regions of the province.



Report formats have also been developed. In addition to standard reports, the system allows for the development of custom reports. We were not able to review actual reports, because the system was being implemented at the time of our review. Nevertheless, the standard report formats available, combined with the capability of producing custom reports, suggests to us that this system will be able to provide all management levels with relevant cost and output information.

We also noted that while the Investment Management System focuses on operational outputs (hectares spaced, hectares pruned, hectares fertilized), it says nothing about how effective the outputs are expected to be in achieving program objectives. Forest Renewal BC, we concluded, still needs to assess performance in terms of actual outcomes. We discuss this issue in the next section.



## knowing what is being accomplished

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We looked to see whether Forest Renewal BC has the information systems required to meet the needs of management, ministries and the board. We expected to find management information being developed about outputs, short-term impacts, and long-term outcomes related to its social, resource and economic objectives.

### Conclusion

Forest Renewal BC needs to conduct further monitoring to ensure there is adequate information about the short-term impacts of the programs, both positive and negative. Without sufficient monitoring, there is insufficient information to support changes to policies or practices. In addition, Forest Renewal BC's approach to evaluating actual outcomes needs to be updated and clarified.

Information about jobs is limited to short-term results and needs to be improved and expanded to place the results into context and to address the projected long-term prospects.

Forest Renewal BC has not asked for information from economic analyses and, without it, the corporation cannot clearly identify whether there is a real economic return on its silviculture investments. In the absence of such information, it is unclear whether the results from the activities funded are sufficient to warrant the cost. Lack of such information also diminishes the ability of the corporation to account fully for its performance.

### Findings

Monitoring of the short-term impacts of enhanced forestry activities is inadequate

As we noted earlier, the Ministry of Forests is to provide Forest Renewal BC with assurance that all silviculture work has been carried out to technical standards. Forest Renewal BC has no monitoring program with which to assess whether the corporation's resource objectives are being achieved (the intended results) or whether other impacts are occurring on treated stands (unintended impacts).

We noted the need for more monitoring information about short-term impacts. In the Interior, for example, there is a major gap in monitoring the impact of pests and disease associated with second-growth stand tending activities. One study, carried

out in the Nelson region in late 1997, found that 37 of 40 sites spaced more than a decade ago had pest damage that was ranked as pest impact III or IV (III = significant current volume loss and potential long-term losses; IV = significant long-term volume losses). The study described these findings as a red flag and concluded that some form of monitoring plan needs to be developed for managed stands.

We found widespread recognition among both Ministry of Forests and industry staff of the insufficient monitoring being conducted to assess the impacts (intended and unintended) of the enhanced forestry treatments. Ministry of Forests and industry have legal obligations up to the free-to-grow stage, and backlog and basic silviculture treatments are monitored up to that point. After that stage has been achieved, however, monitoring is not performed as formally or extensively. For enhanced silviculture treatments, there is no legal obligation to monitor impacts after the work has been certified as meeting standards. The lack of information being collected about post-treatment impacts makes it hard to know whether the activities are in fact providing a resource benefit—or value for the money spent.

In particular, the unintended impacts of the treatments on forest health (described earlier under “Knowing What It Needs to Purchase”) were a concern. The ministry has reported that there is only limited data available to monitor pest activity. It describes the need as urgent, especially in second growth. Feedback is a necessary part of program design and Forest Renewal BC should ensure an adequate monitoring program is in place to monitor impacts of its decisions. This need has been exacerbated by the withdrawal of the Canadian Forestry Service from its oversight monitoring of forest health in BC in 1995.

We noted, however, that some ministry and industry monitoring initiatives have been started anyway, because staff realize the importance of monitoring previous enhanced silviculture treatments to determine their biological and economic effectiveness. One district in the Prince George region, for instance, has initiated a “Silviculture Treatment Performance Assessment Survey” to assess the impacts of past work. This is a statistical sampling approach to obtain information about growth performance and the health of young stands that received silviculture treatments between 1980 and 1994. This survey is intended to identify success factors and problems, and to make recommendations that would improve future prescriptions on similar sites. Such an undertaking is an example that meets our expectations about post-performance monitoring.

Another example is a forest company in the Interior which has adopted a similarly formal approach to the monitoring of treated stands. Some of its silviculturalists have questioned the activities being proposed and funded by Forest Renewal BC (such as the spacing of lodgepole pine, which often results in increased branch growth, then making pruning necessary). The company is concerned there are activities that have been carried out that may not be good for the resource, and it wants to assess what the real situation is, to see what works and what does not. Knowing it needs better information, the company is therefore developing an internal system for post-performance monitoring.

A 1998 Ministry of Forests study proposed that more monitoring be carried out, particularly in areas where there have been concerns over the quality of proposed work.

We concluded that a comprehensive system for monitoring and evaluating the long-term impacts of enhanced forestry work is needed, and that it must be an integral part of a forest management strategy. The information gathered will enable Forest Renewal BC, the Ministry of Forests and industry to identify potential and actual impacts so that future strategies can be modified as needed, thereby improving cost-effectiveness in the long-term.

### *Recommendation*

***Forest Renewal BC should work with Ministry of Forests and industry to identify monitoring needs and implement an appropriate program so that the impacts of its funded activities are identified.***

### Long-term Resource Outcomes are not Clear

We observed that the information available through the Investment Management System focuses on the outputs (hectares treated, etc.) rather than on the outcomes of the activities carried out (such as the level of growth actually being achieved or the increase in value). Forest Renewal BC has recognized the need to establish clearer links between the outputs (the activities and their level of coverage) and the outcomes arising from that level. In 1996, it prepared an evaluation plan, which included consideration of an approach to evaluate the outcomes of the Enhanced Forestry Program. The plan, however, should be updated to reflect the fact that Forest Renewal BC is now funding on the basis of long-term plans (not just site-specific proposals as it did before), which means it is time to develop an evaluation methodology that is linked to the new approach for land-based programs. To

achieve this, we concluded that—once the corporation has set clear, measurable objectives (discussed earlier in “Providing Strategic Direction for Silviculture Programs”)—it should identify performance measures that it can use to track progress in realizing those objectives, and then commit to carrying out a measurement process.

One potential measure may be to track the effects of Forest Renewal BC’s activities through the timber supply review. The impacts of Forest Renewal BC’s silviculture programs may be discretely identifiable and reflected in the long-term projections. However, the Chief Forester has noted that the yield curves generated by TIPSY, a computerized stand yield model, showed no significant difference in projected stand volumes for spaced and unspaced stands. It is therefore unclear how much information the timber supply reviews can provide about the extent to which Forest Renewal BC’s intended results are being achieved.

### *Recommendation*

***Forest Renewal BC should reassess the evaluation needs of the Enhanced Forestry Program to ensure the corporation will be able to identify the actual outcomes of the program it funds, and relate these quantitatively to the forest level outcomes.***

## Information about the Achievement of Social Objectives is Limited and Without Context

As we described in our planning and accountability audit of Forest Renewal BC, the silviculture programs are a major contributor to jobs creation under the Jobs and Timber Accord.

We found that when it comes to evaluating and reporting results, Forest Renewal BC is reporting on short-term results (i.e., jobs provided to carry out its activities), but it is not clearly identifying the extent to which it has created additional jobs beyond those provided under silviculture programs before the corporation was established. The corporation’s information about short-term jobs is incomplete in that no context is provided. This omission results in the public not being provided with complete information about the actual performance of Forest Renewal BC and government in job creation.

We reviewed Forest Renewal BC’s performance in creating jobs by comparing spending levels and activity levels (outputs).

As Exhibit 3.9 shows, the level of spending on silviculture programs is less for 1998/99 than what it was before Forest Renewal BC’s establishment in 1994. As there is generally a

relationship between dollars spent and the jobs provided, it may be that fewer jobs, overall, are being provided now through silviculture programs than in the early 1990s.

The actual number of jobs provided by these dollars depends on the activities actually funded. To compare the jobs that are provided for those engaged in doing the actual pruning, spacing or fertilization work, we compared the activity levels for the three years prior to Forest Renewal BC to the most recent three years. We applied the Ministry of Forests employment factors to identify the job potential for the levels of activity actually carried out. Exhibit 3.10 shows the results.

### Exhibit 3.9

#### Expenditures on silviculture programs by the Ministry of Forests and Forest Renewal BC

(\$ Millions)

	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99
Ministry of Forests	189.9	181.2	183.2	187.2	144.2	97.8	37.9	38.0
Forest Renewal				10.6	25.4	55.0	150.0	140.4
Total	189.9	181.2	183.2	197.8	169.6	152.8	187.9	178.4

Source: Coopers & Lybrand Silviculture Study, Aug., 1997. Office of the Auditor General of British Columbia analysis for 1996/97, 1997/98 and 1998/99

### Exhibit 3.10

#### Comparison of Job Potential based on Employment Factors

	Spacing		Pruning		Fertilization		Total
	Hectares	Person-years	Hectares	Person-years	Hectares	Person-years	Person-years
<b>Pre-FRBC</b>							
1991/92	45,838	891	2,606	87	7,600	4	982
1992/93	45,734	889	3,113	104	7,829	4	997
1993/94	55,990	1,089	5,309	177	5,180	3	1,269
Average person years		956		123		4	1,083
<b>Post-FRBC</b>							
1996/97	48,930	951	10,948	365	19,004	11	1,327
1997/98	47,967	933	17,521	584	986	1	1,518
1998/99	26,405	513	4,942	165	7,552	4	682
Average person years		799		371		5	1,175

Source: Compiled by Office of the Auditor General of British Columbia from Ministry of Forests and Forests Renewal BC information

Comparing performance on a three-year average basis, Forest Renewal BC has potentially provided the equivalent of about 9% more jobs than were being provided prior to Forest Renewal BC in these major areas of the Enhanced Forestry program. The incremental effect Forest Renewal has had in short-term job creation is not significant. It may be more appropriate to suggest that Forest Renewal BC has been maintaining jobs, rather than creating jobs. This raises questions about whether Forest Renewal BC's implementation of government policies directed at giving priority for these jobs to workers from outside of the traditional silviculture community is having a negative impact on that community. Forest Renewal BC's new information system should allow it to identify and report on the impacts actually occurring.

In terms of how Forest Renewal's programs may affect future jobs in the harvesting and processing sectors, Forest Renewal BC has provided no information in its Annual Report.

### *Recommendation*

***Forest Renewal BC should ensure that its reporting on job creation puts the short-term job creation into proper context and identifies the effect of its programs on the silviculture community and future harvesting and processing jobs.***

### The Investment Return Is Not Understood

Enhanced Forestry and Backlog investments are basically capital investments, carried out in anticipation of some future return. It is important that policy makers understand what those returns are so decisions about the size of these programs is made with a clear understanding of the benefits to be derived. It is important for legislators and the public to understand whether the silviculture investments today are creating wealth or are merely redistributing income.

Incremental silviculture programs in British Columbia have historically been carried out with little cost-benefit or economic analysis. Funding levels rather than economic efficiencies were the main drivers of such programs. Dr. Peter Pearse, Commissioner for the 1975 Royal Commission on Forest Resources, commented in the early 1980s about the lack of economic analyses tools for incremental silviculture programs. He stated, "The dearth of economic analysis is remarkable, and it is alarming that such major policy decisions must be made with so little guidance."

Under FRDA I and FRDA II, studies and research were carried out to develop methods to assess the economic and social benefits resulting from incremental silviculture activities. By the early 1990s, computer tools started to become more widely available for use by field staff.

Today, the need to conduct economic analyses on incremental silviculture activities is widely recognized. Provincial and regional Ministry of Forests guidelines, directions and policies all call for economic analysis to be part of decision-making information. Forest Practices Code guidebooks and many research studies also note the need for decisions to be made based on an understanding of the economics involved. The guidelines for developing stand density management regimes, for example, call for an economic analysis to be undertaken to determine the relative efficiency of proposed treatments. Ministry of Forests policy calls for economic analyses using a 4% discount rate. This information is to be considered with other factors in decision-making.

This expectation has even been implemented into the land use planning process. The East Kootenay Land Use Plan recommended that intensive silviculture treatments be subject to comprehensive site quality assessment and cost-benefit analysis.

Forest Renewal BC has indicated publicly that this is necessary information, and members of the Select Standing Committee on Forests, Energy, Mines and Petroleum Resources have asked for assurance that program investments are positive. The Chair of Forest Renewal BC, for example, in explaining the 1995/96 business plan to the Select Standing Committee, noted that the corporation was “concerned about the return on investment; we want to make sure that we are putting money into areas where the timber crop, for instance, will improve enough to recover that investment at the time of harvest.”

Similar concerns were raised during the review of the 1998/99 business plan. Forest Renewal BC, however, has not provided any quantitative information about the returns it expects from its silviculture investments. To date, the Select Standing Committee has had to accept, on faith, that these investments are worthwhile. We believe more is needed and that it can and should be provided. Public accountability requires that Forest Renewal BC identify clearly whether it expects its investments to achieve positive financial and economic returns.



Many tools (see Appendix D) now exist to allow for assessment of economic benefits at both the stand level and the forest level. TIPSY Economist, for example, was developed in 1996. It provides information about yields and economic returns from spacing treatments. The Ministry of Forests provides access to it, and it is frequently updated to provide for greater assessment capability. It is viewed as being a conservative model that will indicate lower returns than some other stand level models would show. However, it is a widely available stand level assessment tool now used by most forestry professionals in British Columbia. In the southern interior of the province, PROGNOISIS, another stand level model, is being used because of its capability to model mixed-species and uneven-aged stands. It will allow for economic analysis. Depending on the assumptions used, it is not uncommon for stand level assessments to show that the cost of the activity is not offset by the increased value arising from that activity. Different assumptions may show different outcomes. The current stand density guidelines contain examples of results using TIPSY for a coastal and interior spacing project on good quality sites. For both, the analysis showed that a “no spacing” decision would provide the best economic return.

Even where the economic returns do not warrant the work, additional assessments at the forest level may show other benefits that would justify the work. Tools exist to do this level of analysis. For example, WOODSTOCK, a forest level model, can account for production costs and the economic operability of any forest management activity. This model is being used in Forest Renewal BC’s Enhanced Forestry Management Pilot Projects.

Despite the recommended practice and the many tools available to determine the financial or economic benefits of silviculture treatments at both the stand level and the forest level, we found that Forest Renewal BC has not been requesting such information from proponents. Ministry staff are no longer required to look at the costs or financial impacts of project proposals. Industry proponents also indicated that Forest Renewal BC has not been asking for information about the economic efficiency of their projects.

We believe that this information is needed if the corporation is to account for its decisions adequately. For example, Forest Renewal BC identifies its pruning activities as being for the purpose of increasing value. The regional investment plans show more than \$8 million allocated to pruning for 1998/99 in the province. If Forest Renewal BC

does not know the projected economic value associated with that spending, it cannot identify whether its silviculture investments are likely to provide a positive return. Moreover, the corporation cannot clearly understand whether the benefits of its social objectives outweigh the costs.

Because Forest Renewal BC has not been asking for such analyses, two issues arise. First, the board, in our view, does not have sufficient information with which to make informed decisions. We think it should expect a much more rigorous financial and economic analysis than it currently gets to support funding requests. In the absence of this information, there is no assurance that Forest Renewal BC investments are not disinvestments to the province. Second, lack of such information has prevented Forest Renewal BC from responding with specific information to legislators' queries about the real economic returns expected from these program investments. This inability hampers the legislative oversight process.

We believe that, overall, better information about the economics of these investments could produce:

- more effective allocation of funds;
- a more efficient timetable for program implementation; and/or
- an adjustment of resource and/or social objectives.

We recognize that many factors besides projected financial or economic returns will be considered in the decision-making process. For example, silviculture treatments may be carried out for habitat improvements. In such a case, the economics of the decision may not be a major factor. As well there are many uncertainties in projecting 80–100 years in the future: Will quality wood still command a premium price? Will social or resource policies allow for extraction of the return? What is the best mix of quality versus quantity of wood supply for the future? However, projections always involve uncertainty. We believe that if prudent decisions are to be made, information about financial and economic returns should be based on the best available knowledge.

### *Recommendation*

***Forest Renewal BC should ensure that available analytical tools are used so it can understand the financial and economic implications of its decisions.***



# forest renewal bc response

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## Overview

- *Forest Renewal BC has reviewed with interest the findings, conclusions and recommendations of the Auditor General contained in the audit of our silviculture programs.*
- *The corporation has no hesitation in stating that its silviculture programs represent a sound investment of public funds that will result in more and higher quality timber being available in our forests in the future.*
- *Extensive analysis of the British Columbia situation, both funded by the corporation itself and undertaken prior to the establishment of Forest Renewal BC, plus experience in many other parts of the world has consistently demonstrated that it makes good sense to plant trees and tend the new stands until they are ready for harvest.*
- *Although financial analysis has a number of limitations in terms of its usefulness in guiding investments designed to achieve multiple, non-financial objectives, Forest Renewal BC has already implemented improvements in investment analysis and in defining program objectives in a measurable way. Fourteen of the twenty-one recommendations contained in the audit have already been addressed or are nearing the implementation stage.*
- *The corporation intends to continue to vigorously pursue its goal of becoming a performance-driven organisation. Forest Renewal BC will further review its business processes for silviculture programs in the coming months and will implement all of the other recommendations that prove to be practical and cost effective.*

## Conclusions and Recommendations:

### *Overall Audit Conclusion*

- *Forest Renewal BC is spending wisely through its silviculture programs and has made significant progress in being able to demonstrate this in a concrete way. The objectives of our silviculture programs have been clear from the start—to grow more and higher value timber in provincial forests and in so doing to create employment opportunities for people across this province both now and in the future. We have pursued these objectives in a way that keeps costs within acceptable boundaries and ensures that local investment priorities are taken into account in decision making.*
- *Over the past twenty years, provincial and federal governments have undertaken a number of silviculture programs, including both*

*planting and stand tending activities. Many of British Columbia's competitors in the marketplace, including the major lumber producing provinces in Canada, many jurisdictions in the United States, Sweden, Finland and Germany, undertake silviculture programs similar to our own.*

- *Forest Renewal BC and its industry and government partners have built on this experience plus dozens of analyses and studies on the economics and resource benefits of silviculture treatments in making silviculture investment decisions over the past five years.*
- *Our first five years of investments are projected to result in 12 million metres of new timber being available for future harvest. At today's prices, this timber would be worth about \$300 to \$400 million in direct stumpage revenue to the province. Based on previous economic analyses, the total benefit to the provincial economy, which could be derived from this volume, is in the order of \$1.1 billion. Along with such economic benefits are the thousands of people provided with direct employment in carrying out program activities and the 15,000 jobs in harvesting and processing that could be maintained in future.*

### *Strategic Direction and Objectives*

- *Although, as the OAG points out, a single comprehensive strategic plan for silviculture programming did not exist when the corporation began operating in 1994, Forest Renewal BC provided funding to allow such a strategy to be developed.*
- *As a result, an Incremental Silviculture Strategy for British Columbia, was prepared by the Ministry of Forests in the spring of 1998, and is now in use to guide investment planning for each of the management units in the province. It builds on district and regional strategies that have existed for a number of years and links them into an overall provincial framework.*
- *The provincial objectives contained in the strategy are based on over 140 current, independent reports and analyses of the resource and economic benefits to be realised from silviculture investments and how best to distribute investment dollars to optimise such benefits.*
- *The objectives of Forest Renewal BC's silviculture programs have been clear from the start—to increase the volume and value of timber available in the province's forests. In its first four years of operations, the corporation used existing Ministry of Forests silviculture plans as the basis for its investment decisions. These included broad strategic direction on resource objectives, site and treatment priorities and treatment cost caps. The provincial plans, linked to locally developed resource objectives, together with stand management guidebooks incorporating stand-level financial analyses have ensured that investments will provide real long-term benefits at an acceptable cost.*

- *More recently, the measures of timber volume and value included in the Corporation's five year Strategic Plan and program planning guidelines have allowed for more consistent investment planning across the province and will make it easier to report in quantitative terms on the expected outcomes of our silviculture programs.*

### *Knowing What to Purchase*

- *As the audit report recognises, there is a vast array of information and guidance available to silviculture planners built up by the Ministry of Forests over many years and accelerated in the past five years with Forest Renewal BC funding. The corporation, the ministry and industry have used such guidance to help make prudent silviculture investment decisions from the earliest days of the program.*
- *Much of the debate as to the relative merits of particular silviculture treatment regimes is as much about the objectives they should be targeted to achieve as it is about the economic benefits that will be realised. Government, industry and wildlife interests continue to debate the weight that should be given to forest level timber volume objectives versus stand level value objectives versus habitat objectives.*
- *Since the corporation has been in existence, it has allocated significant funding to silviculture research, growth and yield studies and inventory work to fill gaps in our knowledge about the biological response of our forests to silviculture treatments.*
- *While gaps certainly still exist, Forest Renewal BC has to date, and will continue, to fund work that provides better understanding of forest ecosystems so as to continue to improve our silviculture investment decision making.*

### *Purchasing Only What is Needed*

- *The corporation agrees with the OAG that formal analysis and comparison of potential investment options is important in ensuring that the overall pattern of silviculture investments clearly addresses program objectives and overall corporate strategic objectives. Forest Renewal BC has relied on such analyses in the past to ensure that the right investments have been made in the right places and, through our current investment planning process, is ensuring that even better information will consistently be available to make wise decisions in the future.*
- *Last year, the corporation began funding a two-year effort to complete development of detailed silviculture strategies for each management unit in the province. These build on the already extensive resource and economic analyses used to guide silviculture planning and include measurable resource objectives and targets to be achieved through our investments.*

- *As the Auditor General points out, there are a number of analytical tools that have recently become available to help make forest investment decisions. Forest Renewal BC has funded the continued development and implementation of a number of them as well as training for professional foresters in how to use them.*
- *In fact, Stand Management Prescriptions that are prepared by professional foresters and provide legal approval from the Ministry of Forests to undertake Forest Renewal BC funded work, include analyses that set out the biological and economic benefits of proposed treatments. In this way, the corporation is assured that individual treatments are meeting sound financial, economic and resource quality criteria before they are accepted for investment.*
- *The strategic need for ongoing investments in planting and tending recently planted sites to reduce the backlog of Not Satisfactorily Restocked (NSR) land is recognised by both the forest industry and government. Timber supply analyses that drive current Annual Allowable Cut (AAC) determinations assume that these areas will be brought to Free to Grow status either through planting or on the basis of new data indicating that they are no longer NSR. Failing to meet this key assumption could reduce future AACs—even in management units that at present appear to have no timber supply problems.*
- *It must also be recognised that there is continuing intense pressure on the province's forest land base to meet multiple expectations from the public of what it wants from our forest resources. This means that it will continue to be the case that the more forest land there is in the province actually growing trees, the more options we will have as a society in trying to decide how best to meet our forest objectives.*
- *It is in this context that the issues raised by the Auditor General around the potential economic payoffs to silviculture investments and the audit's prescription for extensive new analysis need to be placed. A study commissioned by the corporation in September, 1996, as part of assessing the proposal to bring 110,000 hectares of forest land back into timber production through our Backlog Silviculture Program, found that an investment of \$250 million could generate total economic returns to the province on the order of \$9 billion. Whether or not the investment needed to achieve such returns meets an arbitrary financial criterion is far less important, however, than the strategic options it will allow British Columbians in the future.*

### *Purchasing at Least Cost*

- *Forest Renewal BC agrees with the Auditor General's view that there may be a tendency for unit costs for silviculture treatments to increase compared to historical norms as a greater proportion of the work is carried out by partner groups than had been the case previously.*



- *Given that the social objectives of increasing participation of First Nations in forestry activities and helping displaced forest workers to find alternative employment are part of the corporation's legislated mandate, however, the key question is not whether unit costs are higher compared to previous programs that did not necessarily have these objectives. Rather, what is of interest is whether or not the corporation has acted appropriately to ensure costs are kept at reasonable levels as it seeks to achieve those objectives.*
- *In this regard, Forest Renewal BC has continued to use the unit cost guidelines established by the Ministry of Forests in analysing and approving proposed budgets for silviculture treatments. In general, average treatment costs have remained within historical ranges established by previous provincial programs.*
- *In the case of New Forest Opportunities' operations in the Pacific region, costs were higher initially, as contractors tended to raise their bids to cover their uncertainty as to how the new system worked. In addition, the crews were less experienced in some cases. As they acquire experience, we are finding that unit costs are moving downwards, towards the levels incurred by experienced crews.*
- *As the Auditor General has pointed out, obtaining value for money in public investments is much more than buying at least cost. In the case of Forest Renewal BC's silviculture programs, our delivery contracts require that proponents have an auditable system of contract management to ensure that funds were used as approved to implement treatments. Proponents are also required to ensure that the best possible value is obtained in purchasing services. In practice, this means that some proponents will accept other than the lowest bid for a particular project if experience has shown that a particular contractor delivers consistently higher quality work and thus provides better value for money.*
- *The Corporation's tendering policy in use by proponents ensures that a sufficient proportion of the work is put out for bid to keep costs in line with accepted cost guidelines.*

### *Knowing What Services are Actually Provided*

- *We agree with the Auditor General that it is important to ensure that acceptable standards for site quality are defined and used in planning our silviculture investments. In fact the system of standards agreements combined with detailed guidelines used to develop prescriptions for silviculture treatments ensure that funds are only invested where they make sense in terms of potential response to treatment.*

- *For the past several years, we have provided the Ministry of Forests with resources to carry out quality assurance work. The level of assessment actually carried out is based on a review of risk and is adequate to meet the corporation's and ministry's needs.*

### *Knowing what is Being Accomplished*

- *For a number of years the corporation has funded an extensive monitoring program through the Ministry of Forests to keep track of the short-term results of its silviculture investments. Forest Renewal BC recognises the importance of evaluating its programs on an ongoing basis to provide good information on investment outcomes and has built the silviculture program into its current evaluation plans.*
- *We will continue to review the level of monitoring of silviculture projects to maintain our evaluation and monitoring effort at appropriate levels.*

*We appreciate the efforts of the Auditor General and his staff during these audits. We look forward to working with them and the Ministry of Forests in continuing to improve silviculture investment planning processes and program management systems in the future.*





# glossary

# glossary

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## *Activity areas*

The corporation's programs fall into five activity areas: land and resources, environment, workforce, communities, and value-added. These areas correspond to the activities listed in the Forest Renewal Act.

## *Allowable annual cut (AAC)*

The annual rate of timber harvesting specified for an area of land by the chief forester. The chief forester sets AACs for timber supply areas (TSAs) and tree farm licenses (TFLs) in accordance with section 7 of the Forest Act.

## *Brushing*

Silviculture activities designed to eradicate or reduce the growth of non-commercially valued vegetation in order to reduce its interference with the survival, growth and production of commercially valuable tree species.

## *Corporate-wide programs*

These programs are included in each of the corporation's activity areas. They are Research, Endowment, and Forestry Innovation Development programs.

## *Discount rate*

The rate of interest used to measure future expected costs and revenues in today's dollars. The rate of interest used for discounting is a function of social time preference, the opportunity cost of capital, and investment risk.

## *Fertilization*

Fertilization is the addition of fertilizer to promote tree growth on sites deficient in one or more soil nutrients or to gain additional volume from good sites. It is the primary way of producing more volume on a fixed rotation period. Fertilization can also affect rotation length, because fertilized stands reach merchantable size earlier than non-treated stands. The reduction in rotation period can be up to 10 years or more on higher quality sites. As well, the treatment is used to improve the vigour of crop trees following juvenile spacing or commercial thinning, and to reduce the time it takes a forest to reach the height required before harvesting is allowed in adjacent areas (the green-up period).

*Forest and Resource Development Agreement (FRDA)*

A five-year program initiated in 1985 and sponsored by the Province of British Columbia and the federal government. It was intended to “sustain or increase the forest resource and strengthen the employment potential of the forest industry.”

*Forest estate/forest level*

A collection of stands, of varying types, ages, etc., administered as an integrated unit and managed for some continuity of harvest volume.

*Forest estate/forest level model*

A representation of the growth and natural dynamics of a pre-defined area of forest; used to simulate the effects of harvesting and silviculture on the long-term availability of timber supply from defined forest areas.

*Free growing stand*

A stand of healthy trees of a commercially valuable species, the growth of which is not impeded by competition from plants, shrubs, or other trees.

*Green-up period*

Green-up refers to the requirement, generally, that a stand must be at least 3m in height and meet the stocking requirements set out in the silviculture prescription before an adjacent stand can be harvested. The green-up period is the time it takes to meet this requirement. This time period can be affected by the silviculture treatments employed.

*Growth and yield model*

One or more mathematical relationships which employ tree, stand and treatment (e.g., spacing) variables to project the growth and yield of stands.

*Immature stand*

A stand where the age of the leading species is less than the specified cutting age. Cutting ages are established to meet forest management objectives. Stands with lodepole pine and whitebark pine or a deciduous species are considered immature if less than 81 years old. Other conifer stands are immature when the stand age is less than 121 years.

*Juvenile spacing*

In Forest Renewal BC’s listing of eligible activities, juvenile spacing is described as a treatment to remove less desirable trees within a young stand for the purpose of controlling stocking,

maintaining or improving growth, increasing wood quality and value, or achieving some other resource management objective. This work is carried out before the stems removed are large enough to be used or sold as a forest product.

### *Land-based programs*

These are the large and regionally delivered programs within the Land and Resources activity area and Environment activity area. They are Enhanced Forestry, Watershed Restoration, Resource Inventory, Recreation, Backlog, Bridge Replacement, and the Innovative Forest Practices and Enhanced Forest Management Pilot Projects. Land-Based Training is also included, although this program is actually within the Workforce activity area.

### *New land-based delivery system*

This allocation-based delivery system was introduced in 1997 for land-based programs only. Further details are included in Appendix C.

### *Non-land-based programs*

These are all of the programs not listed above under the definition of land-based programs or in corporate-wide programs. They include: Forest Worker Transition, Value-Added Training, Sectoral Training Initiatives, Forest Worker Employment and Training, Forest and Resource Technology, Bursary Program, Forest Community Economic Development, Forest Community Business, Forest Excellence Awards, Value-Added Marketing, Industry Infrastructure, Value-Added Business Development, Technology Transfer, Tree Improvement, Woodlot Expansion, Crown Land Use Planning Enhancement, Private Forest Biodiversity, Ecosystem Restoration Pilot, and Small Woodlands.

### *Pruning*

Pruning is the manual removal of side branches, live or dead, from standing, generally plantation-grown trees. It is carried out to improve the market value of the timber. Pruning increases the production of clear, knot-free wood. It can also be used to meet wildlife habitat needs or to achieve forest health goals. The Forest Practices Code guidebook, for example, states that pruning can reduce the impact of white pine blister rust.

### *Regional advisory process*

A process involving partner groups in identifying regional issues and priorities. It included annual and sub-regional forums in each of Forest Renewal BC's regions.

*Resource Management Plans*

The Resource Management Plans (RMP) are a compendium of resource management objectives and priorities, determined by the Ministry of Forests, Ministry of Environment, Lands and Parks, and Tree Farm License holders, that provides the basis for funding agency investment decisions. The RMP will be used to direct Forest Renewal BC investments, through a recommended list of resource management activities, as well as to direct other government and partnership funding towards Ministry of Forests and Ministry of Environment, Lands and Parks resource management objectives.

*Social objectives*

Government objectives that address the distribution of income or wealth in society. For silviculture programs, this has meant using silviculture activities as an economic development tool to provide employment in the forest. In this context, it is important to distinguish between wealth generation and redistribution of income.

*Stand*

A contiguous group of trees sufficiently uniform in species composition, arrangement of age classes, and condition to be a homogeneous and distinguishable unit.

*Stand tending*

Stand tending refers to activities carried out to maintain a healthy forest and to increase the quality and quantity of timber produced. These activities include juvenile spacing, pruning, fertilizing and commercial thinning. Stand tending can also lead to improved wildlife habitat and improved recreation opportunities.

*Stumpage*

Stumpage is the fee that individuals and firms are required to pay the government when they harvest Crown timber in British Columbia. Stumpage is determined through a complex appraisal of each stand or area of trees that will be harvested for a given timber mark. A stumpage rate (\$ per m<sup>3</sup>) is determined and applied to the volume of timber that is cut (m<sup>3</sup>). Invoices are then sent to individuals or firms.

*Timber supply*

Timber supply is the rate at which timber is projected to be made available for harvesting in response to social, economic and environmental conditions. The rate is measured in cubic metres per year.



# appendices

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# appendix a

## Commissions of Inquiry into Forest Resources

Date Created	Background, Purpose and Result of Commission
1909	<p><b>Royal Commission of Inquiry on Timber and Forestry (Fulton Commission)</b></p> <p><i>Background leading up to the commission</i></p> <p>From 1904 to 1907, the number of licences in the province increased from approximately 1,500 to more than 15,000. The government was overwhelmed by the demand. The forest industry was expanding rapidly and government wanted guidance as to how it could fulfill its responsibilities.</p> <p><i>Purpose of the commission</i></p> <p>The "Fulton Commission" was established to make "inquiry into and concerning the timber resources of the Province, the preservation of the forests, the prevention of forest fires, the utilization of timber areas, afforestation, the diversification of tree growing, and generally all matters connected with the timber resources of the Province."</p> <p><i>Result of the commission</i></p> <p>Twenty-one recommendations were provided and most were followed, including the establishment of a Department of Forestry with the passage of the Forest Act in 1912. This new organization was headed by a Chief Forester.</p> <p>Two recommendations were not implemented: penalties for wasteful logging practices and the establishment of a special fund for forestry.</p>
1943	<p><b>Royal Commission Relating to the Forest Resources of British Columbia (Sloan Commission)</b></p> <p><i>Background leading up to the commission</i></p> <p>By 1940 the industry was well established, but there had been no real changes to the legislation since 1912. A new anxiety arose. Both government foresters (concerned about the state of the forest and future timber supply) and industry (seeking access to more forest for industry expansion) urged that forest policy be reviewed.</p> <p><i>Purpose of the commission</i></p> <p>The "Sloan Commission" was charged with looking into all matters related to forestry, including sustained yield forestry.</p> <p><i>Result of the commission</i></p> <p>The Royal Commission recommended implementation of a sustained yield policy. Sustained yield was defined as meaning "a perpetual yield of wood of commercially usable quality from regional areas in yearly or periodic quantities of equal or increasing volume." The achievement of this policy required a "normal" forest of trees with an approximately equal distribution of all age classes up to the crop rotation age. Old-growth forest, viewed as overmature timber, was to be harvested as quickly as possible for conversion to faster growing second-growth forest. The Forest Act was amended in 1947 to implement sustained yield. The harvest was now regulated by a formula designed to calculate the appropriate harvest rate for a sustained yield. The province was divided into large management units, Forest Management Licences, which became Tree Farm Licences in the 1950s.</p>

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Date Created	Background, Purpose and Result of Commission
1955	<p><b>Royal Commission to Enquire into the Forest Resources of British Columbia (second Sloan Commission)</b></p> <p><i>Background leading up to the commission</i></p> <p>By 1955, an additional 4 million acres of land had been alienated for the forest industry, and the additional availability of timber supply had led to rapid capital expansion. New concerns about industry expansion and whether the forest was being overcut led to a third Royal Commission of Inquiry.</p> <p><i>Purpose of the commission</i></p> <p>The second "Sloan Commission" was to review the implementation of sustained yield over the previous 10 years.</p> <p><i>Result of the commission</i></p> <p>The Commission's 1956 report supported the government's implementation of sustained yield.</p>
1975	<p><b>Royal Commission on Forest Resources (Pearse Commission)</b></p> <p><i>Background leading up to the commission</i></p> <p>By the 1970s a new set of problems needed to be examined—a fully allocated timber supply, environmental problems, additional demands on other forest resources, and the forest industry's concentration and performance.</p> <p><i>Purpose of the commission</i></p> <p>In addition to looking at tenure, timber supply and forest management provisions, the "Pearse Commission" was asked to consider the contribution of forest resources in terms of the diverse commercial and environmental benefits they could confer.</p> <p><i>Result of the commission</i></p> <p>The Commission was active from June 1975 to September 1976 when it issued its report. The Commissioner proposed a change in forest policy. He suggested two main objectives for forest management: the protection and enhancement of forest productivity to produce a range of industrial and environmental values; and the regulation of harvesting to produce maximum long-term economic and social benefits. Under this proposal, the protection of the productivity of the forest would take priority, and the forest would be managed for more than timber production, with an emphasis on the long term. The formula method adopted in 1947 to regulate the harvest was no longer applicable. A new process that considered options and other resource needs was proposed. The government implemented many of the Commission's recommendations through the introduction in 1978 of the Ministry of Forests Act, the Range Act, and a new Forest Act.</p>

Date Created	Background, Purpose and Result of Commission
1989	<p><b>British Columbia Forest Resources Commission</b></p> <p><i>Background leading up to the commission</i></p> <p>In 1987 the government announced that it wanted to expand the Tree Farm License system. Public debate and comment about forest management ensued, including calls for a Royal Commission. Although not a Royal Commission, the British Columbia Forest Resources Commission was established in mid-1989 by the government, with the Chair reporting to a government minister. It was intended to be a permanent body.</p> <p><i>Purpose of the commission</i></p> <p>The commission was initially charged with three mandates. It was to advise on the effectiveness of the Tree Farm License system as a form of tenure, on ways to improve public participation in forest planning and management, and on ways to improve forest harvest practices—focusing on clearcutting. In late 1989, an additional mandate was added. The commission was to provide an assessment of the values of the forest, how those values might be managed to protect and enhance them, and the total economic impact of the forests to the province. In January 1992, the commission was also given the mandate to make recommendations on the framework for a Forest Practices Code.</p> <p><i>Result of the commission</i></p> <p>The commission produced a number of reports and recommendations addressing the areas it was mandated to examine. <i>The Future of Our Forests</i> and <i>Providing the Framework: A Forest Practices Code</i> provided the direction for many of the current practices in land use planning and forest harvesting. The commission was not permanent. In March 1992, the government announced that it was being wound up and its work continued by the new Commission on Resources and Environment.</p>



# appendix b

## Forest Renewal BC Programs 1998/99

Forest Renewal BC Programs <sup>a</sup>	Funding <sup>b</sup> Forecasted (\$ Thousands)	Percent of Total Expenditures (%)	Program Objective
<b>Land, Resources and Environment</b>			
Resource Inventory	90,575	17.5	<ul style="list-style-type: none"> <li>■ To increase the quantity and improve the quality of resource inventory information available for forest management purposes in British Columbia.</li> </ul>
Enhanced Forestry	80,437	15.6	<ul style="list-style-type: none"> <li>■ To increase the productivity of the province's forests.</li> </ul>
Watershed Restoration	76,223	14.7	<ul style="list-style-type: none"> <li>■ To accelerate the recovery of watersheds that have been adversely affected by past timber harvesting or natural causes.</li> </ul>
Backlog Silviculture	59,993	11.6	<ul style="list-style-type: none"> <li>■ To reforest approximately 250,000 hectares of Crown forest land harvested before 1987 and not-satisfactorily-restocked with commercial tree species.</li> </ul>
Recreation	23,136	4.5	<ul style="list-style-type: none"> <li>■ To enhance forest-based recreation and tourism opportunities in British Columbia,</li> <li>■ To increase public awareness and appreciation of the values of the province's forests,</li> <li>■ To improve forest recreation management, and</li> <li>■ To increase public awareness of Forest Renewal BC's mandate.</li> </ul>
Bridge Replacement	18,006	3.5	<ul style="list-style-type: none"> <li>■ To rehabilitate or replace bridges on Forest Service roads that provide critical access to silviculture and harvesting sites or represent a threat to stream habitat because of their state of deterioration.</li> </ul>
Innovative Forest Practices and Enhanced Forest Management Pilot Projects	17,630	3.4	<ul style="list-style-type: none"> <li>■ To test innovative or new treatment regimes designed to improve forest productivity and enhance or maintain employment.</li> </ul>
Tree Improvement	5,200	1.0	<ul style="list-style-type: none"> <li>■ To increase the productive capacity of forests while maintaining their genetic diversity by taking seeds from the most adaptable trees in both wild and cultivated stands and using them to breed seedlings for qualities such as rapid growth, disease resistance, and high density.</li> </ul>
Woodlot Expansion	3,100	0.6	<ul style="list-style-type: none"> <li>■ To double the number of woodlot licences in the province and provide technical assistance to licence holders.</li> </ul>

Forest Renewal BC Programs <sup>a</sup>	Funding <sup>b</sup> Forecasted (\$ Thousands)	Percent of Total Expenditures (%)	Program Objective
Crown Land-Use Planning Enhancement	3,000	0.6	<ul style="list-style-type: none"> <li>■ To support the development of information, data, planning and monitoring tools to improve Crown land-use planning which, in turn, fosters certainty for all resource users.</li> </ul>
Private Forest Biodiversity	1,500	0.3	<ul style="list-style-type: none"> <li>■ To invest in private lands in order to conserve bio-diversity and increase the area of productive forest.</li> </ul>
Small Woodlands	500	0.1	<ul style="list-style-type: none"> <li>■ To expand the area of productive forest lands in the province by informing land owners about opportunities available through forest management and encouraging them to manage their lands for small-scale forestry.</li> </ul>
Ecosystem Restoration	200	0.0	<ul style="list-style-type: none"> <li>■ To expand the activities of the Watershed Restoration Program, to address a broader range of forest productivity, biodiversity and wetland restoration needs.</li> </ul>
<b>Workforce</b>			
Forest Worker Transition	37,900	7.3	<ul style="list-style-type: none"> <li>■ To help displaced forest workers find new jobs, either within or outside the forest industry, by providing eligible forest workers with career counseling, funding for training, or income support during training.</li> </ul>
Value-Added Training	8,250	1.6	<ul style="list-style-type: none"> <li>■ To help workers and employers find the skills training they need—from entry-level to highly technical—for jobs in the value-added sector.</li> </ul>
Sectoral Training Initiatives	8,066	1.6	<ul style="list-style-type: none"> <li>■ To support sectoral groups in human resource planning, training and adjustment activities.</li> </ul>
Land-Based Training	8,000	1.6	<ul style="list-style-type: none"> <li>■ To ensure that forest workers have the skills they need to carry out land-based projects, by supporting training in such activities as silviculture, resource inventories, and environmental restoration.</li> </ul>
Forest Worker Employment and Training	2,500	0.5	<ul style="list-style-type: none"> <li>■ To help workers and employers identify new work opportunities,</li> <li>■ To help at-risk workers retain existing jobs, and</li> <li>■ To match displaced workers with alternate forest jobs available in their own communities.</li> </ul>
Forest and Resource Technology	1,777	0.3	<ul style="list-style-type: none"> <li>■ To meet the growing demand for trained forest workers by increasing the number of spaces available in two-year forest and resource technology diploma programs.</li> </ul>
Bursary Program	200	0.0	<ul style="list-style-type: none"> <li>■ To encourage training in forest-related studies by providing bursaries to eligible high school and post-secondary students.</li> </ul>

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Forest Renewal BC Programs <sup>a</sup>	Funding <sup>b</sup> Forecasted (\$ Thousands)	Percent of Total Expenditures (%)	Program Objective
<b>Communities</b>			
Forest Community Economic Development	9,000	1.7	<ul style="list-style-type: none"> <li>■ To expand, diversify or otherwise support the economies or forest communities through community-developed economic development planning, project feasibility studies and transition planning.</li> </ul>
Forest Community Business	4,350	0.8	<ul style="list-style-type: none"> <li>■ To provide loans and business planning support to small businesses in the forest sector, which in turn will help forest communities diversify, stabilize, and expand their economic and employment opportunities.</li> </ul>
Forest Excellence Awards	150	0.0	<ul style="list-style-type: none"> <li>■ To recognize individuals, companies and groups that have made a significant contribution to improving and renewing the forest sector.</li> </ul>
<b>Value-Added</b>			
Value-Added Marketing	7,000	1.4	<ul style="list-style-type: none"> <li>■ To help British Columbia's value-added producers jointly market their products.</li> </ul>
Industry Infrastructure	2,773	0.5	<ul style="list-style-type: none"> <li>■ To help the value-added industry diversify and grow by funding needs analyses, member surveys, wood forums and conferences, association development activities, and other industry initiatives.</li> </ul>
Value-Added Business Development	1,625	0.3	<ul style="list-style-type: none"> <li>■ To provide loans, business planning, and mentoring services to new or expanding value-added wood manufacturing firms that would not otherwise be able to obtain similar financing.</li> </ul>
Technology Transfer	1,400	0.3	<ul style="list-style-type: none"> <li>■ To provide technical assistance and information in areas critical to the value-added sector.</li> </ul>
<b>Corporate-Wide</b>			
Research	28,000	5.4	<ul style="list-style-type: none"> <li>■ To expand knowledge of all aspects of the forest sector by supporting research and extension.</li> </ul>
Endowment	1,250	0.2	<ul style="list-style-type: none"> <li>■ To increase our understanding of the key issues facing the forest sector, both now and in the future, by building teaching and research capacity at British Columbia's degree-granting post-secondary institutions.</li> </ul>
Forestry Innovation Development	0	0.0	<ul style="list-style-type: none"> <li>■ To invest in the development or adaptation of new forestry products or processes that are commercially viable.</li> </ul>
<b>Sub-total Programs</b>	<u>501,741</u>	<u>96.9</u>	

Forest Renewal BC Programs <sup>a</sup>	Funding <sup>b</sup> Forecasted (\$ Thousands)	Percent of Total Expenditures (%)	Program Objective
<b>Non-program items</b>			
Fisheries Renewal BC	7,500	1.5	
Forest Worker Employment Agency	7,500	1.5	
Regional Advisory Process	634	0.1	
Other Proposals	100	0	
<b>Sub-total Non-program Items</b>	<u>15,734</u>	<u>3.1</u>	
<b>Total</b>	<u><u>517,475</u></u>	<u><u>100%</u></u>	

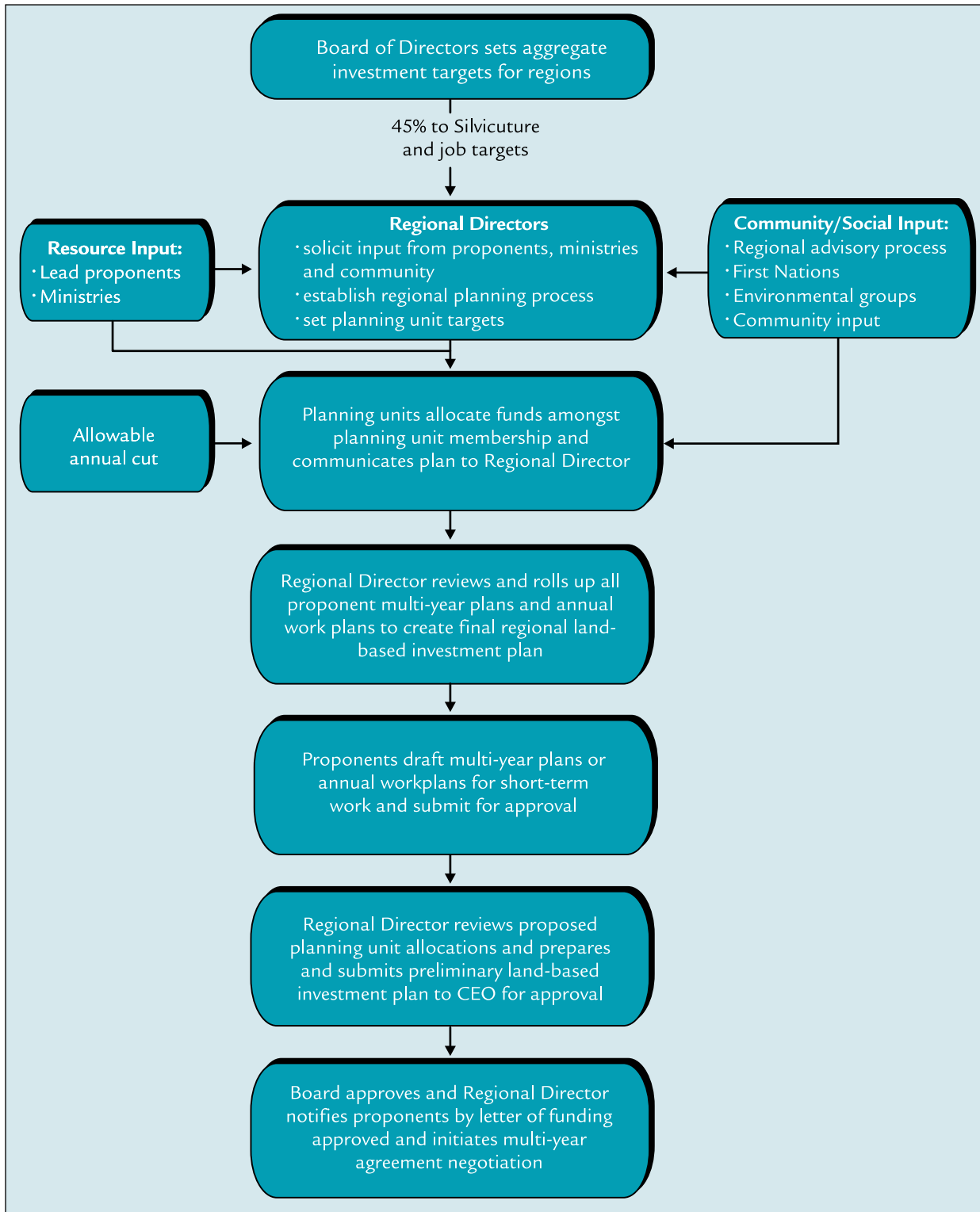
Source: <sup>a</sup> Forest Renewal BC Business Plan 1997/98 and Forest Renewal BC Business Plan 1998/99

<sup>b</sup> Forest Renewal BC Business Plan 1998/99



# appendix c

## The New Land-based Delivery System



Source: Forest Renewal BC

## Description of the Process

The first planning step in the new process was for the Board of Directors to establish program investment targets by region and assign funding based on these targets. In an August 7, 1997, memo, all Regional Directors were given a specific job target and funding allocation and told to allocate a minimum of 45% of their total land-based funding allocation to silviculture. The one exception was the Pacific region, which was allowed to invest a minimum of 32% for 1998/99, and up to 45% over the period of five years.

In the next step, the Regional Directors solicited input from proponents, ministries and the community, and then established a regional planning process. The process varied somewhat in each region, but generally all the regions chose planning units based on Ministry of Forests forest districts, with some program allocations (e.g., Bridge Replacement, some Resource Inventory, and sometimes Recreation) being planned by a regional planning unit. The number of individuals involved in the planning units also varied according to district, from just the two ministries, Forest Renewal BC and one licensee, to the ministries, the corporation and many licensees.

Next, the Regional Directors set targets for each planning unit, including employment targets and funding targets for each program and planning unit participant. This step, like the one before, was also done somewhat differently in each region we visited. In general, however, the Regional Directors obtained advice and consensus from key partners on an appropriate method of allocation.

The planning units then met to decide how best to allocate funding amongst the members of the unit. Most units chose to allocate funds according to the Allowable Annual Cut, with some adjustments being made to account for high priority or capacity issues. Specific activities were not discussed here, just high-level discussions about whom should get what for which program. Next, the Regional Directors reviewed and finalized the preliminary land-based investment plans submitted by the planning units and forwarded them to the CEO for approval.

Once the regional business plans were developed, the proponents developed their multi-year plans and an annual workplan.

The proponents then drafted either multi-year plans that included proposed multi-year and annual work, or annual workplans for short-term work and submitted them to the Regional Director, Forest Renewal BC, and the Ministry of



Forests and Ministry of Environment, Lands and Parks for approval. Forest Renewal BC provided guidelines for developing these plans. The workplans identified the agreed-upon program output goals (e.g., number of hectares of land treated under the Enhanced Forestry Program, the number of kilometres of road deactivation under the Watershed Restoration Program, and the number of person-years employed).

The Regional Directors reviewed and consolidated all proponent multi-year plans and annual workplans to create a final regional land-based investment plan that was then sent to the Vice President, Forest, Resources and Environment, who in turn reviewed and consolidated the seven land-based investment plans, identifying priorities and output and expenditure gaps. The Vice President then forwarded seven land-based investment plans and recommendations to the Forest Renewal BC board of directors for consideration and approval. The Forest Renewal BC board reviewed and approved one province-wide and six regional land-based investment plans. It then notified the Regional Directors of the allocation approved and directed them to enter into multi-year agreements. The applicable ministries approved the prescriptions and developed standard agreements.



# appendix d

## Stand and Forest Level Analysis Tools

**Exhibits 4.1 and 4.2 provide a brief description of some commonly available stand and forest level analysis tools that may be used to analyze the effects of stand density management treatments.**

### Exhibit 4.1

#### A List of Some Available Stand Level Decision Support Models

Tool	Description	Comments
FINSIL3	Spreadsheet program for financial analysis of silviculture treatments.	Based on data obtained in mid- to- late 1980s, can easily be updated with new data.
PROGNOSIS	Stand Prognosis Model—growth and yield model for single and mixed species, even- and uneven-aged stands.	Part of a family of models that allows analysis of economics, pests, tree crowns and environmental indicators. Calibrated for 14 regions of the U.S. Being calibrated by the BC Forest Service for BC Interior species, starting in the Nelson Forest Region.
PRUNSIM, DF PRUNE	Spreadsheet programs that estimates the financial return from pruning coastal Douglas-fir stands.	Helps determine how many and which trees in a stand should be pruned. Calibrated for southern Oregon.
STIM WINSTIM	Stand and Tree Integrated Model—growth and yield model.	Also projects the growth of spaced and thinned stands. Calibrated for hemlock in British Columbia and Pacific Northwest.
SYLVER	A system of silviculture practices models that evaluates the impact on yield, lumber value and economic return.	Consists of models that grow stands, buck logs, saw lumber, grade boards and perform financial analyses.
TASS	Tree and Stand Simulator—biologically based growth and yield model for even-aged pure-species stands.	Calibrated for most even-aged stands of pure coniferous species of commercial importance in coastal and interior British Columbia forests.
TIPSY	Table Interpolation Program for Stand Yields—retrieves and interpolates stand yield information from a data-base generated by SYLVER.	Windows system that generates tables for standing yield (including stand and stock tables), mortality, snags, products (logs, lumber and chips) and economic return. Regression has recently been added for lodgepole pine.
XENO	A distance-dependent stand growth model capable of growing single or mixed species under both natural and managed regimes.	Model simulates development of Douglas-fir and western hemlock; also allows for economic analysis in consideration of wood quality attributes.

Source: Guidelines for Developing Stand Density Management Regimes, Ministry of Forests

## Exhibit 4.2

### A List of Some Available Forest Estate Level Decision Support Models

Tool	Description	Comments
COMPLAN	Forest estate simulation model for timber supply and forest estate activity planning.	Flexible data input structures, allows for explicit recognition of spatial constraints and objectives; also considers some economic issues.
FSSIM	FS Simulator—timber supply simulation model.	Approximates spatial harvest restrictions. Good for strategic-level analysis; lacks economic analysis capability.
SIMFOR	Simulates the effects of forest management and stand development, and predicts landscape composition, ecosystem pattern and habitat distributions for selected species.	Landscape size may vary from 5,000 to 50,000 hectares.
TREEFARM	Timber supply simulation model.	Approximates spatial harvest restrictions. Good for strategic-level analysis.
COMPLAN	Forest estate simulation model for timber supply and forest estate activity planning.	Flexible data input structures, allows for explicit recognition of spatial constraints and objectives; also considers some economic issues.
WOODSTOCK	Flexible Forest Modelling System—timber supply model that allows the use of either simulation or linear programming.	Allows the analysis of random events (such as fire); is also used for economic analysis of forest level outputs.

Source: Guidelines for Developing Stand Density Management Regimes, Ministry of Forests



## appendix e

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### Office of the Auditor General: 1999/2000 Reports Issued to Date

**Report 1**

1999 Follow-up of Performance Audits/Reviews

**Report 2**

Report on Government Financial Accountability  
for the 1997/98 Fiscal Year

**Report 3**

Maintaining Human Capital in the British Columbia  
Public Service: The Role of Training and Development

**Report 4**

Managing the Woodlot Licence Program

**Report 5**

A Review of the Fast Ferry Project:  
Governance and Risk Management

**Report 6**

Forest Renewal BC:  
Planning and Accountability in the Corporation  
The Silviculture Programs



## appendix f

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### Office of the Auditor General: Performance Auditing Objectives and Methodology

Audit work performed by the Office of the Auditor General falls into three broad categories:

- Financial auditing;
- Performance auditing; and
- Compliance auditing.

Each of these categories has certain objectives that are expected to be achieved, and each employs a particular methodology to reach those objectives. The following is a brief outline of the objectives and methodology applied by the Office for performance auditing.

#### Performance Auditing

##### *Purpose of Performance Audits*

Performance audits look at how organizations have given attention to economy, efficiency and effectiveness.

The concept of performance auditing, also known as value-for-money auditing, is based on two principles. The first is that public business should be conducted in a way that makes the best possible use of public funds. The second is that people who conduct public business should be held accountable for the prudent and effective management of the resources entrusted to them.

##### *The Nature of Performance Audits*

An audit has been defined as:

*... the independent, objective assessment of the fairness of management's representations on performance, or the assessment of management systems and practices, against criteria, reported to a governing body or others with similar responsibilities.*

This definition recognizes that there are two primary forms of reporting used in performance auditing. The first—referred to as attestation reporting—is the provision of audit opinions on reports that contain representations by management on matters of economy, efficiency and effectiveness.

The second—referred to as direct reporting—is the provision of more than just auditor’s opinions. In the absence of representations by management on matters of economy, efficiency and effectiveness, auditors, to fulfill their mandates, gather essential information with respect to management’s regard for value-for-money and include it in their own reports along with their opinions. In effect, the audit report becomes a partial substitute for information that might otherwise be provided by management on how they have discharged their essential value-for-money responsibilities.

The attestation reporting approach to performance auditing has not been used yet in British Columbia because the organizations we audit have not been providing comprehensive management representations on their performance. Indeed, until recently, the management representations approach to value-for-money was not practicable. The need to account for the prudent use of taxpayers’ money had not been recognized as a significant issue and, consequently, there was neither legislation nor established tradition that required public sector managers to report on a systematic basis as to whether they had spent taxpayers’ money wisely. In addition, there was no generally accepted way of reporting on the value-for-money aspects of performance.

Recently, however, considerable effort has been devoted to developing acceptable frameworks to underlie management reports on value-for-money performance, and public sector organizations have begun to explore ways of reporting on value-for-money performance through management representations. We believe that management representations and attestation reporting are the preferred way of meeting accountability responsibilities and are actively encouraging the use of this model in the British Columbia public sector.

Presently, though, all of our performance audits are conducted using the direct reporting model; therefore, the description that follows explains that model.

Our performance audits are not designed to question government policies. Nor do they assess program effectiveness. The Auditor General Act directs the Auditor General to assess whether the programs implemented to achieve government policies are being administered economically and efficiently. Our performance audits also evaluate whether members of the Legislative Assembly and the public are provided with appropriate accountability information about government programs.

When undertaking performance audits, auditors can look either at results, to determine whether value-for-money is actually achieved, or at management processes, to determine whether those processes should ensure that value is received for money spent.

Neither approach alone can answer all the legitimate questions of legislators and the public, particularly if problems are found during the audit. If the auditor assesses results and finds value-for-money has not been achieved, the natural questions are “Why did this happen?” and “How can we prevent it from happening in future?” These are questions that can only be answered by looking at the process. On the other hand, if the auditor looks at the process and finds weaknesses, the question that arises is “Do these weaknesses result in less than best value being achieved?” This can only be answered by looking at results.

We try, therefore, to combine both approaches wherever we can. However, as acceptable results information and criteria are often not available, our performance audit work frequently concentrates on managements’ processes for achieving value-for-money.

We seek to provide fair, independent assessments of the quality of government administration. We conduct our audits in a way that enables us to provide positive assessments where they are warranted. Where we cannot provide such assessments, we report the reasons for our reservations. Throughout our audits, we look for opportunities to improve government administration.

### *Audit Selection*

We select for audit either programs or functions administered by a specific ministry or public body, or cross-government programs or functions that apply to many government entities. There are a large number of such programs and functions throughout government. We examine the larger and more significant ones on a cyclical basis.

We believe that performance audits conducted using the direct reporting approach should be undertaken on a five- to six-year cycle so that members of the Legislative Assembly and the public receive assessments of all significant government operations over a reasonable time period. Because of limited resources, we have not been able to achieve this schedule.

## *Our Audit Process*

We carry out these audits in accordance with the value-for-money auditing standards established by the Canadian Institute of Chartered Accountants.

One of these standards requires that the “person or persons carrying out the examination possess the knowledge and competence necessary to fulfill the requirements of the particular audit.” In order to meet this standard, we employ professionals with training and experience in a variety of fields. These professionals are engaged full-time in the conduct of performance audits. In addition, we often supplement the knowledge and competence of our own staff by engaging one or more consultants, who have expertise in the subject of that particular audit, to be part of the audit team.

As performance audits, like all audits, involve a comparison of actual performance against a standard of performance, the CICA prescribes standards as to the setting of appropriate performance standards or audit criteria. In establishing the criteria, we do not demand theoretical perfection from public sector managers. Rather, we seek to reflect what we believe to be the reasonable expectations of legislators and the public. The CICA standards also cover the nature and extent of evidence that should be obtained to support the content of the auditor’s report, and, as well, address the reporting of the results of the audit.





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