



Forests for Tomorrow

Annual Report 2005/06

Helping to ensure sustainable forests and forest benefits for future generations



Library and Archives Canada Cataloguing in Publication Data

British Columbia. Forests for Tomorrow.

Annual report. -- 2005/06-

Annual.

Running title: FFT annual report.

ISSN 1911-1894 = Annual report (British Columbia. Forests for Tomorrow)

1. British Columbia. Forests for Tomorrow - Periodicals. 2. Forest management - British Columbia - Planning - Periodicals. 3. Forests and forestry - British Columbia - Planning - Periodicals. I. British Columbia. Ministry of Forests and Range. II. Title. III. Title: FFT annual report. IV. Title: Forests for Tomorrow annual report.

SD147.B7B74

634.9'209711

C2006-960125-9

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Note

PricewaterhouseCoopers LLP was engaged in September 2005 by the Forests Practices Branch of the Ministry of Forests and Range to assist in the production of the Forests for Tomorrow program Annual Report for fiscal 2005/06. The information contained in this report is based on the compilation of data provided by the Ministry of Forests and Range, combined with reasoned interpretations of this data related to the local operating environment for the Forests for Tomorrow program in British Columbia. The analysis and compilation activity undertaken does not constitute an audit and consequently PricewaterhouseCoopers LLP does not express an opinion on this report.

Acknowledgements

The Forest for Tomorrow program gratefully acknowledges the following people who provided information and peer review: Steve Quinn, Nigel Fletcher, John McClarnon, Lorne Bedford, Henry Benskin, Susan Hoyles, Al Randall, Mike Madill, Gord Nigh, Graham Hawkins, Ljiljana Knezevic, Colene Wood, Brian Barber, Rocky Chan, Cathy Talbot, and Albert Nussbaum.



Message from the Chief Forester

I am pleased to present the Forests for Tomorrow annual report. The Forests for Tomorrow program aims to improve the future timber supply affected by wildfires and the mountain pine beetle and reduce the risks to biodiversity, water, fish, wildlife, and habitat through silviculture treatments and restoration activities. The program focuses on land that is primarily within the timber harvesting land base yet outside of forest industry obligations; and is guided by the principles of value-for-money, good stewardship, and First Nations involvement.

A lot of good work was done during the fiscal 2005/06 and I believe we have made significant progress in the Forests for Tomorrow program. Staff are to be commended for the leadership they have demonstrated in getting this program so far along in such a short period of time. Going into the new fiscal year, we have an established program framework and an effective program delivery mechanism. Both of these have been designed in partnership with the Operations Division, First Nations, and partners in other agencies and industry. Reforesting areas affected by fires and the Mountain Pine Beetle epidemic poses many challenges, but we now have a solid foundation from which to move ahead.

Sincerely,



Jim Snetsinger
Chief Forester



1. Program Overview

In response to the recent catastrophic mountain pine beetle (MPB) infestations and the 2003/2004 wildfires, the provincial government created the Forests for Tomorrow (FFT) reforestation program. A budget was allocated for 2004/05 to 2008/09 (see the budget profile in Figure 1, in section 6). The FFT program involves the planning and establishment of young forests on non-satisfactorily reforested lands under provincial responsibility, with an overall objective of improving the long-term timber supply in the province. Anticipated to be a long-term program, FFT has an annual budget that is projected to increase to \$53.9 million by 2008/09, and to continue at that level for another five years or longer to deal with the MPB-impacted areas where timber salvage, is not possible.

The FFT program is in keeping with the mandates and strategies of the provincial government, the Ministry of Forests and Range, and the Ministry of Environment. These mandates and strategies involve undertaking stewardship measures to maintain and restore productivity in a manner that reduces the risk of future timber losses and maintains biodiversity and other non-timber values.

The FFT also directly supports British Columbia's Mountain Pine Beetle Action Plan 2005–2010, as well as the provisions of the First Nations and Ministry of Forests and Range Mountain Pine Beetle Commitments, by providing an opportunity for First Nations businesses and employees to build capacity. As the reforestation program grows over time, capacity and expertise will be required to meet the replanting needs created by the MPB epidemic.

2. Highlights of the Year

The first year of full operation for the FFT program resulted in the successful implementation of a delivery framework focused on aggressive reforestation of wildfire-affected areas, and the enhancement of the long-term timber supply of mountain pine beetle (MPB) attacked areas. The Forests for Tomorrow (FFT) program and the staff involved made excellent progress in achieving the objectives set out in the Annual Work Plan (see Appendix H – Overall Summary of the FFT Program in 2005/06).

Six key objectives were established to guide the achievement of the FFT goal of addressing the increasing non-satisfactorily restocked forests, outside industry obligations, while initially focusing on areas affected by large fires and MPB. The progress in meeting each objective is summarized below.

Objective 1: To speed the recovery of the timber supply, biodiversity and other non-timber forest values in forest management units affected by catastrophic MPB infestations and large fires, through strategically planned reforestation and brushing.

Significant progress was made on the reforestation of wildfire areas. Large project areas have been identified for reforestation and treatment plans have been developed. The result of these efforts has been the ordering of over 11 million seedlings for future planting (Appendix A).



Identifying and treating large project areas for brushing was also a priority within high-priority MPB-affected management units. However, there was limited availability of reliable information to indicate which stands required these treatments. To address this issue, the Ministry of Forests and Range authorized backlog file reviews to identify and prioritize areas for treatment in subsequent fiscal years. As a result, large areas have been identified for follow-up surveys and treatments.

Objective 2: To revise silviculture strategies of management units catastrophically impacted by MPB, and survey, assess, and plan the high-priority silviculture work not legally required of licensees.

Fourteen of the 16 high-impact MPB management units had silviculture strategies completed. These strategies will play an important role in guiding future investments on the land base in these management units.

Objective 3: To ensure that licensees restore burnt plantations with free-growing obligations by funding reforestation according to Section 108 of the Forest and Range Practices Act.

Almost \$2 million was distributed to the licensees from the Ministry of Forests and Range for the reforestation of areas destroyed by wildfires. These areas are being aggressively reforested to minimize the impact of wildfires on the long-term timber supply.

Objective 4: To make cost-effective investments by ensuring that young forests established under the program achieve free-growing status.

A return on investment of at least 2% was established and implemented as the benchmark for the reforestation of wildfire areas. This objective was a high priority to ensure that limited funding resources were used to reforest the most cost-effective areas in the identified management units.

Objective 5: To update information for accurate timber supply forecasts and other planning to support informed decision-making.

Approximately 79% of the 2003/04 wildfire areas were surveyed and 44% were mapped for vegetation inventory purposes. Approximately 53% of aerial photography acquisition of the MPB-affected areas was completed. These tasks are required inputs for strategic planning and reforestation activities.

Objective 6: To ensure a sound scientific and technical foundation by incorporating research, effectiveness evaluation, monitoring and timber supply analysis into the program decision-making framework and treatments.

Tasks for these objectives were focused in fiscal 2005/06 on developing guidance relevant to FFT delivery and establishing baseline monitoring in high-impact MPB management units. Projects included:

- two workshops delivered on restoration techniques;
- an assessment of tree condition and worker safety concerns in MPB-killed and fire-damaged lodgepole pine stands in the central Interior of British Columbia;
- vole population monitoring and protection of new plantations;



- lodgepole pine provenance trials; and
- improvement of lodgepole pine select seed utilization through understanding germination behaviour.

3. Report on Performance

This first annual report for the Forests for Tomorrow (FFT) program reports progress on achieving planned goals, objectives, and the Key Performance Indicator for the year from April 1, 2005, to March 31, 2006.

At the outset of fiscal 2005/06, a Program Management Plan and an Annual Work Plan (outlining the program objectives and delivery framework) were developed by the Forest Practices Branch and subsequently approved by the Chief Forester and Assistant Deputy Minister of Operations. The Forest Practices Branch established quarterly review meetings to closely monitor the progress and achievement of the objectives and tasks outlined in these plans.

In addition to FFT planning staff, 14 working committees were established as part of the delivery hierarchy:

- six core topic committees that oversaw the program management functions; and
- eight specialized topic committees that focused on specialized aspects of the Ministry of Forests and Range planning work.

Throughout the fiscal year, these committees helped ensure that projects approved for funding were directly related to the FFT objectives. The progress of FFT is based on the achievement of specific tasks for each objective as identified in the Annual Work Plan.

For 2005/06, FFT staff had identified 24 tasks to support its six program objectives (outlined in section 2). The results in achieving these tasks during the fiscal year are classified in Table 1. A detailed discussion of task progress/results for each forest region in 2005/06 is provided in Section 3.2.

Table 1: Synopsis of 2005/06 Results

FFT Objective	FFT Task	Result
1. To speed the recovery of the timber supply, biodiversity and other non-timber forest values in forest management units affected by catastrophic MPB infestations and large fires, through strategically planned reforestation and brushing.	Southern Interior Forest Region	
	• 1.1 Collate sowing requests for 6 million seedlings or greater.	Over-achieved task
	• 1.2 Identify large project areas for brushing and/or discretionary reforestation for every very high- and high-priority MPB-impacted timber tree supply area (TSA) and farm licence (TFL).	Over-achieved task
	• 1.3 Develop 15 large project area treatment plans, sufficient for planting 6 million or more seedlings.	Over-achieved task
	• 1.4 Incorporate environmental information and priorities, provided by the Ministry of Environment, into 15 large project area plans.	Substantially achieved task



Table 1: Synopsis of 2005/06 Results continued

FFT Objective	FFT Task	Result
	Northern Interior Forest Region <ul style="list-style-type: none"> 1.5 Identify large project areas for brushing and/or discretionary reforestation for every very high- and high-priority MPB-impacted TSA and TFL. 	Over-achieved task
	<ul style="list-style-type: none"> 1.6 Complete surveys for 10 large project areas in high-priority MPB-impacted management units. 	Partially achieved task
	<ul style="list-style-type: none"> 1.7 Develop treatment plans for eight large project areas and approve them for tendering. 	Partially achieved task
	<ul style="list-style-type: none"> 1.8 Incorporate into eight large project areas environmental information and priorities provided by the Ministry of Environment. 	Substantially achieved task
2. To revise silviculture strategies of management units catastrophically impacted by MPB, survey, assess, and plan the high-priority silviculture work not legally required of licensees.	<ul style="list-style-type: none"> 2.1 Complete management unit analyses (spatial and/or non-spatial) for high- and very high-impact MPB areas. 	Achieved task
3. To ensure that licensees restore burnt plantations with free-growing obligations, by funding reforestation according to Section 108 of the Forest and Range Practices Act.	<ul style="list-style-type: none"> 3.1 Complete Section 108 reforestation of burnt plantations with free-growing obligations. 	Achieved task
4. To make cost-effective investments by ensuring that young forests established under the program achieve free- growing status.	<ul style="list-style-type: none"> 4.1 Develop and implement a return on investment methodology to ensure that only cost-effective investments are made when determining which wildfire areas to reforest. 	Achieved task
5. To update information for accurate timber supply forecasts and other planning to support informed decision-making.	<ul style="list-style-type: none"> 5.1 Survey or assess all wildfire areas greater than 250 hectares in the Southern Interior Forest Region. 	Achieved task
	<ul style="list-style-type: none"> 5.2 Complete a provincial timber supply MPB-impact analysis interim aspatial report. 	Partially achieved task
	<ul style="list-style-type: none"> 5.3 Develop a prioritized schedule for all inventory updates. 	Partially achieved task
	<ul style="list-style-type: none"> 5.4 Update all wildfire areas in RESULTS. 	Substantially achieved task
	<ul style="list-style-type: none"> 5.5 Update all MPB-surveyed areas in RESULTS. 	Not applicable
	<ul style="list-style-type: none"> 5.6 Map 2003 and 2004 wildfire areas. 	Substantially achieved task
	<ul style="list-style-type: none"> 5.7 Develop a new "cut in" tool for automatically getting RESULTS forest cover into the forest inventory files. 	Achieved task
6. To ensure a sound scientific and technical foundation by incorporating research, effectiveness evaluation, monitoring and timber supply analysis into the program decision-making framework and treatments.	<ul style="list-style-type: none"> 6.1 Develop new models and/or techniques for non-timber and growth and yield modelling in MPB-stands. 	Substantially achieved task
	<ul style="list-style-type: none"> 6.2 Develop MOE guidance for seven topic areas relevant to FFT delivery and make accessible from the FFT web page. 	Partially achieved task
	<ul style="list-style-type: none"> 6.3 Collate non-timber information such as aquatics, hydrological baselines, and species at risk and provide it to the Ministry of Forests and Range for all priority management units. 	Substantially achieved task
	<ul style="list-style-type: none"> 6.4 Develop watershed use or watershed fish sustainability plans for the two management units that have Type II Silviculture Strategies being developed. 	Not applicable
	<ul style="list-style-type: none"> 6.5 Deliver one workshop on ecosystem restoration techniques. 	Achieved task
	<ul style="list-style-type: none"> 6.6 Develop a strategy for non-timber resource allocation inventory. 	Not applicable



3.1 Key Performance Indicator

The Key Performance Indicator for the FFT program is:

the ratio of fire and MPB area reforested to total area lost to fire and pest with no industry obligation, for each impacted management unit (e.g., TSA or TFL) and in total for the impacted management units.

This indicator is intended to indicate the success of the program in addressing reforestation. It can also be integrated into the Key Outcome Indicator from the ministry's Service Plan goal of sustainable forest resources, measured as **the ratio of area reforested to area harvested or lost to fire and pests, on a five-year rolling average**. The potential MPB area to reforest is defined as the area that cannot be salvage-logged under licence, including any areas that are planned and left for retention purposes (up to 20%).

The calculation of the area lost for each impacted management unit as a result of fire and pest (with no industry obligation) is currently undergoing sensitivity analysis at the ministry to ensure that a representative definition is established. The ministry will review the results of this analysis during fiscal 2006/07 to determine the applicability of this Key Performance Indicator metric for FFT.

3.2 Program Achievement

Objective 1: To speed the recovery of the timber supply, biodiversity and other non-timber forest values in forest management units affected by catastrophic MPB infestations and large fires, through strategically planned reforestation and brushing.

The tasks for Objective 1 have been reported separately because of differences in regional funding priorities for 2005/06.

Southern Interior Forest Region (SIFR)

Task 1.1: Collate sowing requests for 6 million seedlings or greater.

- **Key Outcome Indicator:** *Over-achieved task*
- **Result:**
In 2005/06, approximately 11 million seedlings were sown to assist in the reforestation of areas destroyed by wildfires in the region. These seedlings will be planted in fiscal 2006/07 and 2007/08. In addition, 651,805 seedlings were planted within wildfire areas during 2005/06.

See Appendix A for a summary, by management unit, of sowing requests within the SIFR.

Task 1.2: Identify large project areas for brushing and/or discretionary reforestation for every very high- and high-priority MPB-impacted timber supply area (TSA) and tree farm licence (TFL).

- **Key Outcome Indicator:** *Over-achieved task*



- **Result:**
The objective to identify large project areas for brushing and/or discretionary reforestation was approached in two stages in the SIFR. The first stage involved the completion of the file reviews for openings identified by the Ministry of Forests and Range as impeded or non-satisfactorily restocked. The current file status of these openings was ascertained and a determination was made on whether there was a need for follow-up field surveys and treatments for each opening.

While most of the projects did not start until the fourth quarter, file reviews were completed on 289,038 hectares; field surveys carried out on 27,095 hectares; and treatment layout was finalized on 271 hectares for brushing. However, the initial success of the file review also resulted in the identification of large areas for follow-up surveys and treatments – work that surpasses the funding that is available for fiscal 2006/07. Because the contribution to timber supply that many of the impeded stands will have in the very high- and high-priority MPB-impacted TSA and TFLs, many licensees may consider funding this work under the Forest Investment Account's Land Base Investment Program.

See Appendix B for a summary, by management unit, of the areas identified for brushing within the SIFR.

Task 1.3: Develop 15 large project area treatment plans, sufficient for planting 6 million or more seedlings.

- **Key Outcome Indicator:** *Over-achieved task*
- **Result:**
The area denuded by catastrophic wildfires within the SIFR, not including parks and private land, was 157,319 hectares (Ministry of Agriculture and Lands' Land Information services). Subtracting non-operational areas, parks, and areas that have already been salvaged-logged left only 62,190 hectares. A reconnaissance and/or walkthrough survey was conducted on 48,896 hectares and the remaining 13,294 hectares will be scheduled for surveying during the 2006/07 fiscal year. From the completed surveys, activity prescriptions for 10,000 hectares were developed for follow-up works.

Task 1.4: Incorporate environmental information and priorities, provided by Ministry of Environment, into 15 large project area plans.

- **Key Outcome Indicator:** *Substantially achieved task*
- **Result:**
Some of the Ministry of Environment concerns have been incorporated into the five Type I Silviculture Strategies that were conducted in the SIFR management units heavily attacked by MPB. In addition, a multi-phase aerial silviculture survey project that focuses on wildlife habitat assessment for the Quesnel and Williams Lake Timber Supply Areas was started in 2005/06 and is still under way. This is a preliminary evaluation of the feasibility of using large-scale digital aerial photography to identify wildlife habitat features.



Northern Interior Forest Region (NIFR)

Unlike in the Southern Interior Forest Region where the regional and district staff were already engaged in activities to reforest the 2003/04 large fires, the FFT program in the NIFR was not well established at the beginning of the 2005/06 fiscal year. Activities in the first two quarters were focused on hiring staff and strategically planning the program development and implementation in the region. Consequently, most projects did not begin until after the second quarter and thus many of the tasks presented in the ministry's Program Plan were not attainable for the NIFR.

Task 1.5: Identify large project areas for brushing and/or discretionary reforestation for every very high- and high-priority MPB-impacted TSA and TFL.

- **Key Outcome Indicator:** *Over-achieved task*
- **Result:**
The objective to identify large project areas for brushing and/or discretionary reforestation was approached in two stages in the NIFR. The first phase was to complete file reviews for openings identified as impeded or non-satisfactorily restocked, to review the current status based on the information in the file and then to make a determination on follow-up surveys and treatments. Once this phase was completed, subsequent field work could follow.

Even with the later start, file reviews were completed for 144,423 hectares and field layout was completed on 610 hectares. As in the SIFR, the success of the review in the NIFR has resulted in identifying large areas for follow-up surveys and treatments – work that surpasses the funding that is available for the 2006/07 fiscal year. However, because of the important contribution to timber supply that many of the impeded stands will have in the very high- and high-priority MPB-impacted TSAs and TFLs, many licensees in these areas are considering funding this work under the Land Base Investment Program.

See Appendix B for a summary of areas identified for brushing within the NIFR.

Task 1.6: Complete surveys for 10 large project areas in high-priority MPB-impacted management units.

- **Key Outcome Indicator:** *Partially achieved task*
- **Result:**
As noted, the backlog review in the NIFR did not begin until later in the fiscal year, resulting in a limited opportunity to complete surveys. Approximately 610 hectares of surveys were completed. However, the backlog file reviews that have occurred identified large project areas for follow-up surveying. This will be completed as funding becomes available.

Task 1.7: Develop treatment plans for eight large project areas and approve them for tendering.

- **Key Outcome Indicator:** *Partially achieved task*



- **Result:**
Brushing was completed on 333 hectares to reduce vegetation competing with conifers. It is anticipated that this will increase substantially in the following years (subject to funding) based on the large areas that have been identified as part of the backlog file review. Prioritization of these brushing opportunities will be based on the follow-up field survey work.

Task 1.8: Incorporate into eight large project areas environmental information and priorities provided by the Ministry of Environment.

- **Key Outcome Indicator:** *Substantially achieved task*
- **Result:**
The Ministry of Environment participated in six Type I Silviculture Strategies in the NIFR, and some of the Ministry of Environment's concerns have been incorporated into the strategies. The Type I Strategies were conducted in management units heavily infested by MPB.

Objective 2: To revise silviculture strategies of management units catastrophically impacted by MPB, and survey, assess, and plan the high-priority silviculture work not legally required of licensees.

Task 2.1: Complete management unit analyses (spatial and/or non-spatial) for high- and very high-impact MPB areas.

- **Key Outcome Indicator:** *Achieved task*
- **Result:**
Thirteen Type I Silviculture Strategies were completed within the high impact MPB management units, leaving only two management units (TFL 05 and TFL 35) that were not started in 2005/06. In addition, four Type II Silviculture Strategies (spatial modelling) and one of the Type III Silviculture Strategies (habitat modelling) were also completed. These strategies will help guide future investments on the land base in these management units.

Refer to Appendix C for a list of completed silviculture strategies by management unit.

Objective 3: To ensure that licensees restore burnt plantations with free-growing obligations by funding reforestation according to Section 108 of the Forest and Range Practices Act.

Task 3.1: Complete Section 108 reforestation of burnt plantations with free-growing obligations.

- **Key Outcome Indicator:** *Achieved task*
- **Result:**
Within the NIFR and SIFR, \$1.8 million was distributed by the ministry to licensees for reforestation of areas destroyed by damaging events (such as wild fire). This amount was greater than expected, and thus the majority of affected licensees have now been compensated to ensure that plantations are restored.

Refer to Appendix D for a list of Section 108 areas funded, by licensee.



Objective 4: To make cost-effective investments by ensuring that young forests established under the program achieve free-growing status.

Task 4.1: Develop and implement a return on investment methodology to ensure that only cost-effective investments are made when determining which wildfire areas to reforest.

- **Key Outcome Indicator:** *Achieved task*
- **Result:**
A return on investment of at least 2% was established and implemented by the ministry as the benchmark for the reforestation of wildfire areas.

Objective 5: To update information for accurate timber supply forecasts and other planning to support informed decision-making.

Task 5.1: Survey or assess all wildfire areas greater than 250 hectares in the SIFR.

- **Key Outcome Indicator:** *Achieved task*
- **Result:**
The area denuded by catastrophic wildfires within the SIFR was 157,319 hectares (Ministry of Agriculture and Lands' Land Information services). A total of 62,190 hectares remained after non-operational areas, parks and areas already salvaged-logged were subtracted. A reconnaissance and/or walk through survey was conducted on 48,896 hectares and the remaining 13,294 hectares will be scheduled for this in the next fiscal year. From the completed surveys, activity prescriptions for 10,000 hectares were developed.

Task 5.2: Complete a provincial timber supply MPB-impact analysis interim aspatial report.

- **Key Outcome Indicator:** *Partially achieved task*
- **Result:**
A timber supply analysis at the provincial scale was not completed during the fiscal year. The only FFT-funded MPB impact analysis completed was for the Kamloops Timber Supply Area.

Task 5.3: Develop a prioritized schedule for all inventory updates.

- **Key Outcome Indicator:** *Partially achieved task*
- **Result:**
A prioritized schedule for all inventory updates was not developed. The priorities for inventory updates are the management units most heavily affected by MPB. However, only small-scale salvage areas and major fire-induced disturbances were updated during 2005/06.

Task 5.4: Update all wildfire areas in RESULTS.

- **Key Outcome Indicator:** *Substantially achieved task*



- **Result:**
RESULTS is in the process of being updated with wildfire information. There are 128,000 hectares of the 2003/04 wildfires that remain to be mapped to the Vegetation Resource Inventory (VRI) standards and also updated into RESULTS. During 2005/06, 54,000 hectares of VRI mapping of fires was completed and will be updated to the vegetation inventory cover when the new Vegetation Update Tool (VRIMS) is delivered. The remaining 68,000 hectares along with the 10,000 hectares being planted in 2006/07 will be mapped to VRI standards in the next fiscal year.

Task 5.5: Update all MPB-surveyed areas in RESULTS.

- **Key Outcome Indicator:** *Not applicable*
- **Result:**
This task was not initiated and the funds were reassigned to other higher priority FFT projects.

Task 5.6: Map 2003 and 2004 wildfire areas.

- **Key Outcome Indicator:** *Substantially achieved task*
- **Result:**
Approximately 54,000 hectares of wildfires have been mapped on Vegetation Resource Inventory (VRI) stands, and the remaining 68,000 hectares will be mapped to VRI standards in the 2006/07 fiscal year.

Task 5.7: Develop a new “cut in” tool for automatically getting RESULTS forest cover into the forest inventory files.

- **Key Outcome Indicator:** *Achieved task*
- **Result:**
The tool was substantially developed and is scheduled to undergo testing during the 2006/07 fiscal year.

Objective 6: **To ensure a sound scientific and technical foundation by incorporating research, effectiveness evaluation, monitoring and timber supply analysis into the program decision-making framework and treatments.**

Task 6.1: Develop new models and/or techniques for non-timber and growth and yield modelling in MPB-stands.

- **Key Outcome Indicator:** *Substantially achieved task*
- **Result:**
This is part of a multi-component ongoing project. As a result, a simplified spatial model using the Forest Service Spatial Analysis Model (FSSAM) was developed that provided options for managing lodgepole pine while addressing environmental concerns, managing risk, and addressing mid-term timber supply questions.



Task 6.2: Develop Ministry of Environment guidance for seven topic areas relevant to FFT delivery and make this accessible from the FFT web page.

- **Key Outcome Indicator:** *Partially achieved task*
- **Result:**
Work on guidance for two topics was completed and the remaining five were postponed until the 2006/07 fiscal year. The first report on guidance focused on the use of herbicides and the legal requirements, tools in legislation, and regulations designed to protect species, habitats, and ecosystems from impacts of forest pesticide use. The second report focused on the impacts to amphibians from glyphosate herbicides used in forestry.

Task 6.3: Collate non-timber information such as aquatics, hydrological baselines, and species at risk and provide it to the ministry for all priority management units.

- **Key Outcome Indicator:** *Substantially achieved task*
- **Result:**
In the Cariboo Region, existing data was assembled on aquatic ecosystems where pine forests dominate, to locate and identify high aquatic values at a scale of 1:50,000. Gaps were identified that require field verification; and the application of the model elsewhere in the province was verified.

To establish hydrological baselines, ranking criteria was selected and drainages were modelled in conjunction with a strategy for managing hydrological functioning. In addition, sites were identified for treatment and monitoring; initial methods were tested; and a report was produced recommending monitoring regimes, methods, and funding.

In the Thompson Region, existing inventory information on aquatic resources was compiled; interviews were conducted with local managers on aquatic issues related to fires and MPB; and watersheds were prioritized for further review and potential monitoring or management treatments.

Task 6.4: Develop watershed use or watershed fish sustainability plans for the two management units that had Type II Silviculture Strategies being developed.

- **Key Outcome Indicator:** *Not applicable.*
- **Result:**
This task was not initiated and the funds were reassigned to other FFT projects.

Task 6.5: Deliver one workshop on ecosystem restoration techniques.

- **Key Outcome Indicator:** *Achieved task*
- **Result:**
Two workshops were delivered on restoration techniques (in Kamloops and Prince George). Article contributions were also made to four issues of the Streamlines restoration newsletter.



Task 6.6: Develop a strategy for non-timber resource allocation inventory.

- **Key Outcome Indicator:** *Not applicable*
- **Result:**
This task was not initiated and the funds were reassigned to other FFT projects.

3.3 First Nations Participation

First Nations participation is important to the Forests for Tomorrow program. While the 2005/06 fiscal year was mainly focused on plan development, backlog review, and surveys to prioritize future on-the-ground works, First Nations were involved with several of the projects relating to on-the-ground silviculture activities. Looking forward, it is anticipated that opportunities for First Nations participation will grow.

3.4 Fertilization Program

Fertilization is an eligible activity to address mid-term timber supply issues in target management units. Fertilization of suitable stands was conducted by the Forest Investment Account, Land Base Investment Program and Forests for Tomorrow program (see Appendix G – Provincial Fertilization Program in 2005/06). The 3342 ha fertilized under the Forest for Tomorrow program will help these stands become merchantable sooner to ameliorate the anticipated timber supply gap.

4. Program Analysis

The budget for the Forests for Tomorrow (FFT) program at the beginning of fiscal 2005/06 was \$26 million, but was reduced over the course of the year, resulting in a final budget of \$21 million.

Two delivery streams were used by FFT during fiscal 2005/06. PricewaterhouseCoopers delivered approximately half of the program allocation through an existing third-party administration delivery agreement with the ministry, while the remaining 2005/06 budget was directly administered by the Forest Practices Branch. A summary of the value of program projects approved by the end of the fiscal year, by delivery agent, is provided in Table 2.

Table 2: Summary of Funding for FFT, 2005/06

	Budget (\$)	Actual (\$)	Variance (\$)
Ministry of Forests and Range, Forest Practices Branch	11,261,000	11,131,224	(129,776)
Third-party administration (PricewaterhouseCoopers)	9,739,000	8,233,342	(1,505,658)
Total	\$21,000,000	\$19,364,566	\$(1,635,434)



A negative variance in the planned expenditures to the actual expenditures was recorded in fiscal 2005/06. This variance was primarily a result of delays experienced with the roll-out of the new program and the missed biological time for some of the field activities that were anticipated for completion in 2005/06.

4.1 Ministry of Forests and Range Delivery

Initially, the Forest Practices Branch was to administer \$12 million, but this was reduced to \$11.3 million in October. The Forest Practices Branch administered these funds with assistance from ministry Regional and District staff, the Ministry of Environment, and the Integrated Land Management Bureau. A detailed summary of the expenditures is presented in Appendix E.

4.2 Third-Party Administration

Initially, PricewaterhouseCoopers was to administer \$14 million directly, but the funding was reduced in September to \$9.7 million. A total of 123 projects were approved by PricewaterhouseCoopers under the FFT program, with an average value of \$66,938 per project and an aggregate value of \$8.2 million. The variance of approximately \$1.5 million can largely be attributed to a delayed program start, which resulted in biological windows being missed for various field activities. A summary of the FFT-approved projects is provided in Appendix F.

5. Administrative Analysis

5.1 Financial Statements

As of March 31, 2006, \$19.4 million of the Forests for Tomorrow (FFT) program funds had been expended by Forest Practices Branch.

5.2 Performance and Financial Audits

Due diligence in program effectiveness and efficiency is supported through monitoring, audit, and evaluation. The portion of the FFT program that was delivered through PricewaterhouseCoopers includes performance and financial audits on selected projects delivered by FFT recipients. Performance audits are targeted at the works on the ground, while financial audits focus on recipient accounting and the administration of the FFT funds.

Planning was finalized for the 2005/06 performance audits in the fourth quarter. PricewaterhouseCoopers contacted recipients who were to be audited under the FFT program before the end of the fourth quarter. This audit work was completed in June 2006 and audit reports were provided to the Forest Practices Branch.

6. Looking Forward

In 2006/07, the Forests for Tomorrow (FFT) program will continue to invest in the priority projects identified in 2005/06.

Fiscal years 2004/05 and 2005/06 focused on planning, surveying, brushing impeded areas, preparing prescriptions, and making sowing requests for the rehabilitation



(through reforestation) of areas affected by wildfire and mountain pine beetle (MPB). The budget for fiscal 2006/07 was projected to drop to \$7.5 million, but has since been increased to \$15.7 million to fund priority reforestation projects. In the coming years, the program is forecasted to increase to \$53.96 million in 2008/09 (Figure 1) and then to increase to a stable level of \$50 million – \$60 million per year.

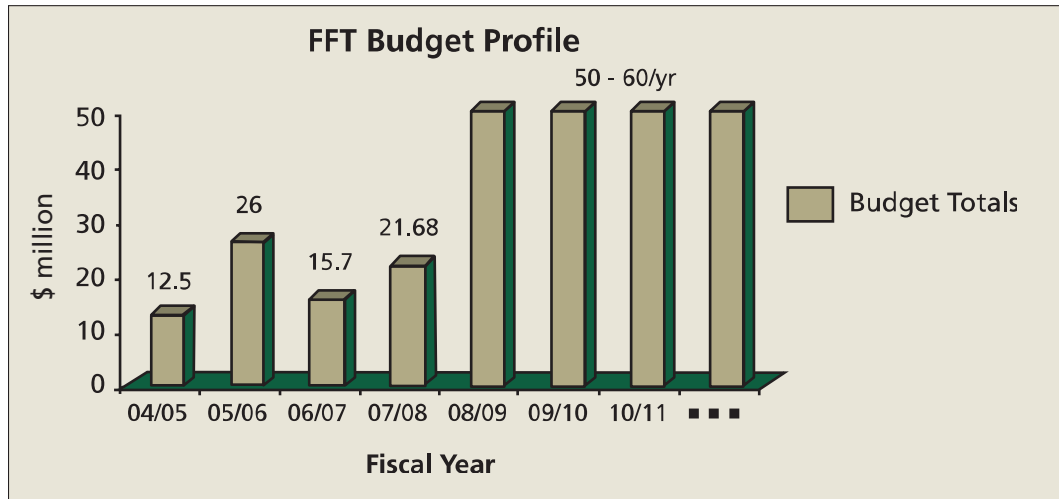


Figure 1: Budget Profile (\$ million)

The 2006/07 funding requested from FFT recipients in the high-impact MPB and wildfire areas to deal with backlog reforestation in the province exceeded \$40 million, but only a fraction of those recipients anticipate receiving a budget allocation. Many are considering using a portion of their Land Base Investment Program allocation in an effort to address the backlog reforestation issues identified. FFT staff will continue to work with recipients and other ministries to identify and adjust priorities that meet the program objectives.

One key goal is to deliver 90% of the program via competitively awarded recipient agreements after 2007, but this is subject to logistical and capacity issues. The successful contractors will then be responsible for planning, delivering, and reporting on FFT projects. In an effort to build new relationships, bidders on tendered Recipient Agreements will be favoured if they commit to engaging and developing partnerships with First Nations.

Building on the first year's success, the FFT program will continue to work with recipients, the third-party administrator, and other ministries to refine the delivery model to meet the program objectives in an efficient manner.



Appendix A – Sowing Requests in 2005/06, by Management Unit

Southern Interior Forest Region

SPAR Seedling Request Report	
District	Seedlings
Arrow Boundary	4,600
Cascades	922,700
Chilcotin	321,500
Headwaters	377,000
Kamloops	3,979,600
Kootenay Lake	1,189,200
Okanagan Shuswap	1,393,900
Rocky Mountain	2,785,500
Total	10,974,000

Northern Interior Forest Region

SPAR Seedling Request Report	
District	Seedlings
Fort St. James	921,900
Total	921,900

Appendix B – Impeded and Non-Satisfactorily Restocked Areas Identified for Brushing in 2005/06, by Management Unit

Southern Interior Forest Region

Management Unit	Backlog Review (ha)	Surveyed (ha)	Treated (ha)
Arrow (TSA 1)	4,771		
Boundary (TSA2)	5,067		
Cranbrook (TSA 5)	67,361		
Golden (TSA 7)	13,161	746	150
Invermere (TSA 9)	30,237		
Kamloops (TSA 11)	12,000	252	94
Kootenay Lake (TSA 13)	23,130		70
Merritt (TSA 18)	29,400		
Okanagan (TSA 22)	46,956	2,949	100
100 Mile House (TSA 23)		4,280	260
Quesnel (TSA 26)	1,680	7,330	
Williams Lake (TSA 29)	35,000	8,048	
Mac-Cariboo (TFL 5)		292	
Clearwater (TFL18)	8,807		
Arrow Lakes (TFL 23)	1,428		
Okanagan (TFL 49)	10,832		
Bowron-Cottonwood (TFL 52)		3,198	11
Naver (TFL 53)			
Total	289,038	27,095	685

Appendix C – Completed Silviculture Strategies in 2005/06, by Management Unit

Southern Interior Forest Region

Management Units	Silviculture Strategies		
	Type I	Type II	Type III
Cranbrook (TSA 5)	✓		
Kamloops (TSA 11)	✓		
Merritt (TSA 18)	✓		
Okanagan (TSA 22)	✓		
100 Mile House (TSA 23)	✓		
Quesnel (TSA 26)	✓	✓	✓
Williams Lake (TSA 29)		✓	
Western Supply Blocks			
TFL 15	✓		
TFL 18		✓	
TFL 52		✓	



Northern Interior Forest Region

Management Units	Silviculture Strategies		
	Type I	Type II	Type III
Lakes (TSA 14)	✓		
Mackenzie (TSA 16)	✓		
Morice (TSA 20)	✓		
Prince George (TSA 24)	✓		
TFL 42	✓		
TFL 53	✓		

Appendix D – Section 108 Areas Funded in 2005/06, by Licensee

Licensee	Actual (\$)
BC Timber Sales	48,514
Canadian Forest Products Ltd.	770,329
Carrier Lumber Ltd.	159,472
L&M Lumber Ltd.	55,722
Lytton Lumber Ltd.	177,897
Morricetown	17,042
Northwest Squamish Forestry Ltd.	135,014
Tolko Industries Ltd.	307,987
Triumph Timber Ltd.	54,459
Pope & Talbot Ltd.	18,350
Weyerhaeuser Company Limited	16,790
Total	\$1,761,576

Appendix E – Detailed Summary of FFT Funds Administered by the Forest Practices Branch in 2005/06

	Actual (\$)
Forest Practices Branch	
Implementation	631,605
Third-party administration	561,000
Program development	922,434
Worker safety	76,093
Silviculture strategies	185,333
Species management	21,370
Vole monitoring	34,992
Evaluation	13,000
FRPA Section 108	1,761,576
Fertilization administration	1,500
Planting (Kamloops District)	68,301
Fire survey maps (Kootenay Lake District)	6,929
Special projects	984,022
Subtotal	5,268,157
Southern Interior Forest Region	
Program implementation	322,145
Seed purchase	12,600
Recreation site rehabilitation	110,000
Surveys on wildfires	970,000
Implementation of wildfires	186,500
Aerial reconnaissance on wildfires	52,089
Backlog small scale aerial photography	152,300
Silviculture strategies	25,000
Wildfire maps	18,250
Brushing	1,526
Research projects	185,000
Pine mushroom project	68,000
Seedling survival study	14,000
Understory light conditions	17,000
Subtotal	2,134,410



	Actual (\$)
Northern Interior Forest Region	
Program implementation	252,000
Recreation sites rehabilitation	81,928
NRFL outstanding silviculture obligation	16,714
Backlog NSR and impeded stands	4,356
MPB epidemic on AC 2,3,4, Pli leading	24,550
FFT project management	80,000
Cone collection	133,405
Tamarack DNA study	8,000
Rust infected backlog stands	29,988
Small Scale Salvage Program reforestation	21,128
Strategic level guidance for harvesting	132,834
Salvage and harvesting opportunities	15,000
John Prince Research Forest	1,450
Cone collection and seed purchase	37,987
DVA forest regeneration study	23,592
DJA brushing on All Nations project	2,784
G+Y curve analysis for MPB damage stands	48,000
Rate and pattern of forest harvesting habitat	20,000
Impacts of MPB on slope stability	68,000
Sortie model development for MPB damage	30,000
Assessment of regeneration in MPB areas	60,000
Subtotal	1,091,716
Forest Analysis and Inventory Branch	
Program implementation	40,308
Mapping	15,220
Imagery and change detection	126,160
VRI amortization tool	81,300
LRDW	70,000
VIR	80,628
LIDAR	84,000
MPB (MEL)	168,276
Subtotal	802,891
Tree Improvement Branch	
Project support	7,000
Seed planning and analysis	19,092
Lodgepole pine seed	54,693
Subtotal	80,785
Research Branch	
MPB information acquisition	100,862
MPB research strategy	23,181
MPB kill Verification	36,637
MPB policy support	31,193
BEC refinements	183,996
Pli provenance	114,499
Pli genetic resistance	37,897
FFT research strategy	25,000
Subtotal	553,265
Ministry of Environment	
Project planning	132,000
Contract administration	55,000
Stewardship guidance for non-timber objectives	66,000
Implementation contracts	51,000
Silviculture strategy habitat supply monitoring	135,000
Management unit level Ecosystem Restoration Plans	116,000
Regional Ecosystem Restoration Plans	25,000
Extension: Restoration natural disturbance	20,000
Inventory collection methods	66,000
Inventory method (low level photo)	7,000
Retention mapping	130,000
Aquatic ecosystem information for Silviculture Strategies	48,000
Hydrology base line	48,000
Caribou forage study	41,000
Wildlife tree assessment	87,000
Ungulate winter range review	25,000
Caribou habitat use study	38,000
Encroachment in drier ecosystems	20,000
Community watershed trials	25,000



	Actual (\$)
Ministry of Environment (continued)	
Invasive plant treatments – Okanagan	10,000
Invasive plant treatments – Thompson	8,000
SAR restoration – tailed frog	25,000
Dickie fire CWS restoration	22,000
Subtotal	1,200,000
Total	\$11,131,224

Appendix F – Summary of FFT-Approved Projects Administered by a Third Party in 2005/06

Activity	No.	Actual (\$)
Brushing	15	911,975
Fertilization	6	1,783,052
Forest health strategy	1	54,322
Growth and Yield	2	237,700
Monitoring	1	38,420
Photo acquisition	2	372,557
Planting	26	1,738,314
Predictive ecosystem mapping	1	240,208
Silviculture strategy	14	783,413
Site preparation	8	545,610
Spacing	1	34,858
Surveys	41	1,212,330
Vegetation Resource Inventory	1	54,951
Wildlife and wildlife habitat mapping	4	225,632
Total approved	123	\$8,233,342

Appendix G – Provincial Fertilization Program in 2005/06

Company	Location	FFT-Funded (ha)	FIA-Funded (ha)	
Canfor	Woss		98.9	
Dunkley	Prince George	3342.1		
Tolko	Williams Lake		396.3	
West Fraser	Quesnel		797.2	
Western Forest Products	Gold River		667.5	
Western Forest Products	Port McNeill		1804.7	
Teal Cedar	Harrison		291.7	
Total		3342.1	4056.3	7398.4

Appendix H – Overall Summary of the FFT Program in 2005/06

Region	Office Review of NSR and Impeded (ha)	Field Survey of NSR and Impeded (ha)	Field Survey of Fires (ha)	Area Brushed (ha)	Area Planted (ha)	Seedlings Ordered	Fertilization (ha)
SIFR	289,038	27,095	48,896	685	348	10,974,000	0
NIFR	144,423	610	0	333	0	921,900	3342.1
Total	433,461	27,705	48,896	1,018	348	11,895,900	3342.1



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<http://www.for.gov.bc.ca/hfp/fft/>

Published by B.C. Ministry of Forests and Range, and
Ministry Responsible for Housing

