

Mountain Pine Beetle Emergency Response - Canada-B.C. Implementation Strategy



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Preamble

The Mountain Pine Beetle (MPB), an endemic species of bark beetle adapted to infesting and killing older aged pine trees, has become epidemic in recent years in British Columbia. It threatens to kill 80 to 95 per cent of the mature pine in central B.C. and has the potential to spread across the boreal forest to impact most of western and central Canada. British Columbia has been working tirelessly to stop the spread of the beetle within the province, but the infestation, promoted by large areas of mature pine and warm winters has spread to most areas of susceptible forests. In February 2005, B.C. appealed to the Government of Canada for financial assistance to help manage the MPB issues. In response, Canada offered a contribution of \$100 million, publicly stating that the two governments would work together on the issue.

The following plan lays out B.C.'s intent to expend this funding over a three-year period. It includes program descriptions, delivery approaches, identifies other sources of funding and provides estimates of deliverables for this funding and the longer-term view. Guidance for developing this Implementation Plan was found in the overall objectives of the provincially approved MPB Action Plan, and the priority areas of interest of the federal government as outlined in the March 31, 2005 letter from the Honourable David Emerson, Minister of Industry.

This Implementation Strategy describes a three-year program to expend the federal contribution incrementally and synergistically with the other initiatives currently underway within the province. Three-year performance measures are shown in the context of 10-year objectives. Program projections to 10 years are included to demonstrate the extent, duration and cost of the described mitigation program to successfully resolve the impacts of the beetle over the 12 million hectares pine forest at risk of infestation.

Federal Response

Following B.C.'s February 2005 request for a cost-sharing partnership with the federal government, Minister Emerson wrote to the Premier of British Columbia, the Honourable Gordon Campbell. In his letter, Minister Emerson recognized the need for both governments to act cooperatively to combat the MPB infestation and acknowledged that British Columbia had already incurred significant costs associated with the infestation. Minister Emerson indicated that the Governments of Canada and British Columbia should continue to work together on the MPB issue, in a manner consistent with jurisdictional responsibilities.

The letter informed the Premier that the federal government would make a payment of \$100 million to B.C. to assist the Province in meeting its costs to combat MPB spread and mitigate damage. Minister Emerson noted six areas of federal priority and stated that he was looking to the Province to work with the Government of Canada to advance them. They are:

1. Delivering additional control measures to reduce the spread;
2. Protecting sensitive fish streams/rivers and species at risk;
3. Undertaking fuel management on lands surrounding high-risk communities;
4. Continued development of additional markets and products;

5. Scientific and operational research to improve processes for existing products and developing new ones as well as developing existing and new markets; and,
6. Undertaking long-term strategic planning for communities and First Nations to respond to changes arising from the infestation.

Funding Strategy

The 2005-2010 Mountain Pine Beetle Action Plan serves as the cornerstone of the B.C. government's coordinated response to the MPB infestation. In the Action Plan, the Province commits to actions that will mitigate the impacts of this unprecedented attack on forest values, communities and the provincial economy in the short term, and ensure sustainability in the long term. It provides a high-level framework to direct provincial ministries and assist coordination between all levels of government, First Nations, industries and stakeholders. With the federal government's six priorities in mind, the Province plans to distribute the \$100 million across activities consistent with the objectives of the MPB Action Plan (see Table 1).

Table 1. Funding Distribution by Activity

Activity	3 Year Distribution (\$ millions)
Community Diversification and Stability	\$13.2
Natural Range	\$4.5
Fuel Management	\$24.8
R&D – Wood Products	\$6.3
Parks/Protected Areas MPB Mitigation	\$2.7
Spread Control	\$21.7
Inventory	\$10.9
R&D – Bio-physical	\$6.7
Ecosystem Restoration	\$7.0
Corporate Support	\$2.2
Total	\$100.0

Table 2 shows the funding distribution, performance measures and targets by fiscal year that will be reported annually for each activity. The Province considered potential impacts on deliverables due to uncertainty on when, within 2005/06, the funding would be secured and allocated to the implementation teams. This timing has a significant and direct effect on planned projects that are constrained by field conditions or time limitations. If the funding is delayed targets will be shifted between program areas or targets and associated funding must be carried over into future years. Also, in recognition of obtaining additional input from First Nations and key stakeholders, the Province will modify this plan for years two and three.

The Province is confident that the \$100 million will be spent effectively over the three-year period but there remains a pressing need for further federal support to satisfactorily resolve the issues described in the MPB Action Plan.

Table 2. \$100 Million MPB Three-Year Implementation Summary

Activity	Performance Measures	2005/06 Targets	2006/07 Targets	2007/08 Targets	Funding Distributions (\$ millions)			Total
					2005/06	2006/07	2007/08	
Community Diversification and Stability	Number of regional community association economic diversification plans for MPB mitigation.	1 plan	1 plan	2 plans	\$2.0	\$4.8	\$6.4	\$13.2
Natural Range	Animal Unit Months (AUMs) of forage protected from loss due to MPB infestation.	24,000 AUMs	68,000 AUMs	77,000 AUMs	\$0.6	\$1.9	\$2.0	\$4.5
Fuel Management	Hectares treated for fuel management in interface areas impacted by MPB.	6,000 ha	10,000 ha	10,000 ha	\$6.94	\$8.95	\$8.95	\$24.8
R & D - Wood Products	Number of new products/applications for MPB timber identified and introduced to markets.	3 products	4 products	4 products	\$1.35	\$2.25	\$2.7	\$6.3
Parks and Protected Areas MPB Mitigation	Percent of at risk sites treated in parks and protected areas to mitigate impacts of the MPB infestation.	19%	56%	100%	\$0.5	\$1.0	\$1.2	\$2.7
Spread Control*	Hectares treated through single tree treatments to control rate of spread of MPB.	5,000 ha	3,750 ha	2,100 ha	\$11.0	\$7.0	\$3.7	\$21.7
Inventory	Number of map sheets imaged of area susceptible to MPB infestation.	300 map sheets	400 map sheets	300 map sheets	\$3.2	\$4.5	\$3.2	\$10.9
R & D- Bio-Physical	Number of peer reviewed project reports or extension events for priority MPB issues.	25	70	70	\$0.55	\$2.8	\$3.35	6.7
Ecosystem Restoration	Number of watersheds treated for specific target watersheds and/or locations in B.C.	1 watershed	8 watersheds	11 watersheds	\$0.4	\$2.6	\$4.0	\$7.0
Corporate Support	Governance and program planning support				0.66	0.75	0.75	2.2
TOTALS					\$27.2	\$36.55	\$36.25	\$100.0

*Note: This is the area of spot treatments. The area of forest over which the spread will be controlled is much larger.

First Nations' Involvement

Throughout this plan there are references to program values and delivery components attributable to First Nations. The program planning has paid particular attention to how these activities address concerns on the land base where First Nations have an interest and to where it is feasible for local First Nations bands to undertake the delivery. The Province will work with First Nations to identify First Nations' activities and expenditures during implementation of the strategy. More than 70 bands have traditional territories within the MPB-affected zone. Enhancing the value of these lands through economic or environmental investments will make them more productive.

Programs where First Nations' interests are explicitly supported include:

- **Community Diversification and Stability** – provides support to affected First Nations and communities.
- **Natural Range** – includes First Nations' involvement to maintain forage production threatened by the loss of natural barriers on the landscape.
- **Fuel Management** – includes resources and planning support to manage the fire risk around First Nations' communities. This program also contains a First Nations delivery component.
- **Spread Control** – will include any First Nations areas that are in the infestation boundary areas. This program also contains a First Nations delivery component.
- **Parks MPB Control** – contains a First Nations delivery component.
- **Inventory** – support from this program area will include aerial photography, inventory and data management on affected First Nations' interest areas.
- **Ecosystem Restoration** – work will include First Nations' interest areas.

Table 3. 10-Year Performance Target Projections for Federal Funded Programs

Activity	Performance Measures	2005/06 to 2014/15 Total Targets
Community Diversification and Stability	Number of regional community association economic diversification plans for MPB mitigation.	4 regional community plans written and updated at least once (33 communities and over 70 First Nations).
Natural Range	Animal Unit Months (AUMs) of forage protected from loss due to MPB infestation.	300,000 AUMs
Fuel Management	Hectares treated for fuel management in interface areas impacted by MPB.	150,000 ha of interface areas treated.
R & D - Wood Products	Number of new products/applications for MPB timber identified and introduced to markets.	20 products
Parks and Protected Areas MPB Mitigation	Percent of at risk sites treated in parks and protected areas to mitigate impacts of the MPB infestation.	100% of 18 high priority and 34 medium priority parks treated.
Spread Control	Hectares treated through single tree treatments to control rate of spread of MPB.	20,000 ha
Inventory	Number of map sheets imaged of area susceptible to MPB infestation.	3,500 map sheets
R & D - Bio-Physical	Number of peer reviewed project reports or extension events for priority MPB issues.	200 reports 480 extension events
Ecosystem Restoration	Number of watersheds treated for specific target watersheds and/or locations in B.C..	80 watersheds

Supporting B.C.'s 2005-2010 MPB Action Plan

Five of the seven key objectives of the 2005-2010 MPB Action Plan are supported by the activities to be funded by the \$100 million federal contribution, as follows:

Objective #1

Encourage long-term economic sustainability for communities affected by the epidemic.

a) Community Diversification and Stability

Funding Distribution

Fiscal 2005/06:	\$2.0 million
Fiscal 2006/07:	\$4.8 million
Fiscal 2007/08:	<u>\$6.4 million</u>
Total:	\$13.2 million

Description

Communities in the beetle infestation zone could suffer serious economic and environmental effects from the MPB infestation and subsequent reduction in harvesting and wood processing following the end of the salvage harvesting. This funding is necessary to support the development and implementation of strategic regional business plans for these forest-dependent communities and First Nations. It will also support initial costs associated with updating land use plans in the affected areas. Communities have indicated a need for support in the areas of community economic planning (including work to explore possibilities for economic diversification), economic pre-feasibility analysis on opportunities, investment recruitment, business retention, community marketing and general economic research.

Synergies with Other Funding Programs

The funding provided to communities under this program will be used to leverage and complement other economic development funding such as the newly created Northern Development Initiative (NDI) with its \$30 million identified for MPB mitigation. The NDI funding is not specifically time limited but for planning and economic mitigation purposes a 10-year program is assumed.

There are also a number of federal, provincial and joint federal/provincial programs focused on First Nations' economic development initiatives that this program can work in concert with. There are a number of programs that make funding available for a range of activities, including business planning, start-up, expansion and marketing and to increase their capacity to participate in the provincial economy. These programs include Aboriginal Business Canada (\$5.2 million), the First Citizen's Fund (\$72 million), the First Nations Forestry Program (approximately \$250,000/year), and the First Nations Benefit Trust (\$15 million). In addition, First Nations are able to apply to the Nechako-Kitimat Development Fund Society (\$15 million) and the Northern Development Initiative (\$30 million specifically for MPB) for funding to support various types of community and economic development activities.

Delivery Method

This activity will be delivered through grants from the Province to regional associations of communities and First Nations. Criteria will be established and proposal based grants will awarded to the associations once they are established. The associations will be responsible

for tendering projects/activities that support the general criteria of community diversification and stability.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The 10-year objective of this program is to ensure that all communities and First Nations' bands have the opportunity to develop and implement economic diversification plans as part of regional strategies to mitigate the negative economic impacts of the MPB infestation. The program is expected to complete the first round of planning in the northern part of the infestation zone and begin implementing those plans. By the end of the first 10-year period all regional areas, their communities and First Nations' bands will have completed and updated their plans at least once and implementation will be well underway. The program is expected to wind up a few years after the end of salvage harvest program (about 2022 in the northwestern portion and 2028 in the areas affected last by the beetle).

b) Natural Range

Funding Distribution

Fiscal 2005/06:	\$0.6 million
Fiscal 2006/07:	\$1.9 million
Fiscal 2007/08:	<u>\$2.0 million</u>
Total:	\$4.5 million

Description

This activity will help mitigate the impact of MPB on livestock production by controlling livestock distribution and protecting environmental values in affected communities. This will be facilitated through the replacement of natural range barriers and range developments lost or damaged during timber harvesting and associated road construction (not associated with forest licensee responsibilities under the *Forest and Range Practices Act*). The funding will help support developments to redistribute livestock to utilize forage produced in beetle-kill areas and to control invasive plant spread. The planning and delivery process will involve First Nations and will include planning to investigate and develop new opportunities for forage allocation.

Synergies with Other Funding Programs

The Investment Agriculture Foundation has funded a feasibility study on agroforestry, which will assist with planning for economic mitigation and new opportunities. There is also a small amount of funding for range developments (water sources, fencing) that becomes available intermittently through programs such as the National Water Supply Expansion Program. Many ranchers are still suffering economic hardships from the BSE crisis and have limited capacity to undertake range development projects that are not legislatively or contractually required.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The objective of this program is to maintain the production and utilization of forage at its current yearly capacity of roughly 900,000 Animal Unit Months (AUMs) by ensuring that the loss of natural barriers and other environmental consequences do not reduce access to or the number of AUMs that are produced and utilized. This includes controlling the spread of invasive plants and range encroachment. This work will continue through the period of harvest of salvaged pine in MPB-affected areas. In addition, economic diversification planning is expected to identify range as an economic opportunity and to that end, additional funding to enhance the AUMs will be needed for 10-year and longer planning.

Objective #2

Maintain and protect public health, safety and infrastructure.

a) Fuel Management

Funding Distribution

Fiscal 2005/06:	\$6.94 million
Fiscal 2006/07:	\$8.95 million
Fiscal 2007/08:	<u>\$8.95 million</u>
Total:	\$24.80 million

Description

This activity involves fuel treatments on Crown provincial lands within two kilometres of communities at risk. The program will also work co-operatively with federal initiatives, to ensure that Crown provincial land adjacent to First Nations' communities is assessed and treated as required. This initiative will be linked to and used to accelerate implementation of the Provincial Fuel Management Strategy, for MPB-affected stands. The focus of this activity will be on red- and green-attack stands to reduce the potential for large loss from wildfire to the communities of B.C. Specific treatments include reducing flammability of stands through prescribed burning, slash removal on old harvesting sites, planning and integration with other fuel management activities and removal of non-economic MPB-affected stands.

Synergies with Other Funding Programs

The provincial Protection Program currently has long-term funding to address fuel management in response to the Filmon report following the 2003 fires. This funding is administered under a Memorandum of Understanding with the Union of B.C. Municipalities (UBCM) to jointly administer and fund Community Wildfire Protection Plans, Fuel Management Pilot projects and Operational Fuel Management projects. However, the objective for the funding is not exclusively MPB but includes all forest areas within the community interface zone.

Delivery Method

Delivery for community projects will be through UBCM and other agencies, such as the First Nations' Emergency Services Society. Delivery of fuel management work required in provincial parks and protected areas will be done in conjunction with Ministry of Environment staff. There are four eligible areas of funding: (i) community wildfire protection plans, (ii) pilot plans (iii) operational fuel treatments and (iv) interface fuel reduction treatments in provincial parks. Communities would be required to complete community plans under the Provincial Fuel Management Strategy. All workplan proposals would have to be linked back to a community wildfire protection plan.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The objective of this program is to reduce the risk to communities within the MPB-affected area from catastrophic wildfire. Significant fuel loading caused by the dying pine trees dramatically raises the risk of wildfire either starting or accelerating in forests close to habitation. An estimated 460,000 hectares of Crown land within two kilometres of medium- to high-risk communities is to be assessed for fuel reduction techniques to reduce this risk and an estimated 150,000 hectares will be treated with the 10-year funding. The overall cost over 10 years is estimated at \$215 million. Completing the program as quickly as possible

also reduces the ongoing risk. It is projected that the program can be completed within 10 years. Once the fuels have been reduced and the forest areas around communities are greened up and growing the risk will have been mitigated and the program reduced to ongoing maintenance.

Objective #3

Recover the greatest value from dead stands before it burns or decays, while respecting other forest values.

a) Research & Development – Wood Products

Funding Distribution

Fiscal 2005/06:	\$1.35 million
Fiscal 2006/07:	\$2.25 million
Fiscal 2007/08:	<u>\$2.7 million</u>
Total:	\$6.3 million

Description

This activity will support additional MPB-related work directed at current wood utilization challenges and exploring new opportunities, in the fields of:

- Product development and technical research;
- Product and market opportunity analysis;
- Market access and phytosanitary issues; and
- International customer communications.

Over the next three years this federal funding will bring about intensified, collaborative efforts between various agencies, universities, institutes and industry for:

- Supporting studies to determine the shelf life of the infested pine forest;
- Investing in research to examine the impacts of increasingly dry pine coming into the mills;
- Identifying and qualifying other markets for blue-stain timber and products;
- Investing in broad product research to develop new composite products from blue-stain timber;
- Investing in research to determine the impacts on the pulp and paper industry of a changing chip/pulp resource;
- Investing in value-added strategies to develop products for niche markets;
- Establishing a strategic market intelligence service for Interior B.C. lumber manufacturers — to monitor and report on major competitors in the key markets of Japan; and,
- Developing and delivering a communication program for offshore markets, with input from the B.C. industry.

Synergies with Other Funding Sources

The Ministry of Forests and Range currently invests \$21.5 million each year in product development and international marketing initiatives. These funds are invested in activities that respond to the priorities of various sectors of the forest industry, supporting the full range of commercial species, in a wide range of international markets. Some of this funding is focused on projects that address issues and support opportunities associated with British Columbia's MPB-impacted lodgepole pine.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

This program is needed to support the salvage and utilization of the dead trees. Without a viable market for the large quantities of dry, stained wood the salvage program will not be successful nor will the accompanying industry-funded reforestation program. The objective is to solve immediate manufacturing problems as quickly as possible to improve the profitability of the dead dry wood and develop new products and markets for the material. Marketing support will be required throughout the full period of salvage operations. Product development is most important early in the program to establish profitability and maximize value of salvage cutting rights.

Objective #5

Prevent or reduce damage to forests in areas that are susceptible but not yet experiencing epidemic infestations.

a) Spread Control

Funding Distribution

Fiscal 2005/06:	\$11.0 million
Fiscal 2006/07:	\$7.0 million
Fiscal 2007/08:	<u>\$3.7 million</u>
Total:	\$21.7 million

Description

This activity involves measures to control MPB populations and minimize or eliminate the potential for infestation spread from Crown forests, including provincial parks into Alberta and the boreal forest. The objective is to protect environmental values, remove and destroy bark beetle infested trees, and effectively manage MPB within forest districts bordering Alberta. Eligible work includes aerial and ground surveys, spot treatments, prescribed burns and incremental costs for strategic harvesting to destroy the beetles before they emerge and spread. In the areas where this involves commercial harvesting, program costs would include only incremental costs such as access improvement planning, with operators being responsible for logging and reforestation costs.

Synergies with Other Funding Sources

A Memorandum of Agreement with Alberta has been signed for a five-year program that will undergo annual evaluation based upon beetle flight information and a continued need for Alberta to contribute funds. The B.C. Forest Investment Account (FIA) has a provincial total for bark beetle suppression activities of approximately \$4.7 million per year. Licensees also receive a separate allotment of FIA land-based investment program money, some of which can be used at their discretion to contribute towards bark beetle activities. Beetle suppression activities will be shifted to areas of priority based on values at risk, infestation risk and risk of spread outside of B.C. based on the annual projections of spread from the aerial surveys.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The primary objective for this program is to prevent the spread of the beetle infestation to Alberta and beyond. A secondary objective is to slow the spread southward and into high value areas such as parks and protected areas. The success of this will be measured over time by comparing actual infestation levels with previous endemic levels and computer projections of spread rates. It is expected to be completed within the first 10-year period primarily by treating 20,000 hectares with single tree beetle control treatments.

b) Parks MPB Control

Funding Distribution

Fiscal 2005/06:	\$0.5 million
Fiscal 2006/07:	\$1.0 million
Fiscal 2007/08:	<u>\$1.2 million</u>
Total:	\$2.7 million

Description

This activity mitigates the impact of the epidemic on provincial parks and protected areas through controlled burns or other control treatments to mitigate the impacts of the beetle. Eligibility for funding will be guided by criteria and analysis established in the recently completed reports, *Wildfire Threat Assessment for Parks and Protected Areas* and *Parks and Protected Areas Mountain Pine Beetle Assessment*, in combination with annual surveys and ground probes. Infestations inside parks and protected areas need to be managed in a manner that complements actions taken to mitigate impacts and reduces risk to park values on adjacent areas.

Synergies with Other Funding Sources

Parks and protected areas will be included in and funded by geographically oriented mitigation strategies such as fuel management within two kilometres of communities and spread control across the four eastern forest districts that border the Rocky Mountains. This program will complement the fuel management and spread control programs to deliver mitigation treatments within high- and medium-priority parks outside of those geographic areas. There is also currently federal funding for beetle control in national parks where further co-ordination can occur.

Delivery Method

This activity will be co-ordinated by the Ministry of Environment which has jurisdiction over provincial parks and will be guided by BC Parks' Mountain Pine Beetle Management Strategy. Implementation will be integrated with other control programs to ensure seamless delivery of spread control and fuel management activities across the landscape.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The overall objective of this program is to resolve MPB issues within parks and protected areas on a priority basis. Work will include protecting the public from falling snags and fire, fuel management, spread control using controlled burns and ecosystem restoration to protect critical species. In total 87 parks will be affected by 2020, and 18 high-priority and 34 medium-priority parks will be treated to mitigate the impacts within the first 10 years. Annual measures will report percentage of these parks treated annually.

Objective #6

Restore the forest resources in areas affected by the epidemic.

a) Inventory

Funding Distribution

Fiscal 2005/06:	\$3.2 million
Fiscal 2006/07:	\$4.5 million
Fiscal 2007/08:	<u>\$3.2 million</u>
Total:	\$10.9 million

Description

This activity addresses the challenge of providing up-to-date timber and non-timber inventory information for resource managers, given the rapidly changing dynamics of the forest as a result of the MPB infestation. The funding will only support inventory work that is incremental to current activities, and is specifically aimed at beetle infestation issues and mitigation analysis work. The focus will be on current inventory measurement to support a more accurate “snapshot in time” of what timber volumes and non-timber values are being affected by the infestation. This early, periodic inventory information will aid spread and mitigation control planning and support decisions to increase harvesting, as well as manage other non-timber resource allocation decisions. This program will include aerial photography, inventory and data management of affected First Nations’ interest areas.

Inventory work will occur under four main categories:

- Monitoring forest resources (imagery and on the ground verification);
- Monitoring non timber resource values;
- Base mapping; and,
- Land status updates.

Future funding will focus on longer-term needs to re-inventory affected areas and develop new baseline information for ongoing timber supply analyses to support allowable annual cut determinations and the ongoing management of non-timber forest resources.

Synergies with Other Funding Sources

Currently there is some long-term funding for inventory planning work from B.C.’s Forests for Tomorrow initiative. Combining the two sources creates a program of \$4.5 million per year over the term of this plan. In addition, some funding is expended by licensees under the Land Base Investment Program of FIA.

Delivery Method

Activity delivery may vary by component. Leading-edge imagery work will be directed by the Ministry of Forests and Range with the support of academic and federal partners. Aerial photography will be contracted following established standards.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The objective of this support program is to ensure that the various mitigation initiatives that require land, inventory and mapping information have what they need to accomplish their task. Information acquisition investments must be well-planned to achieve maximum benefit as the overall need far exceeds the funding available. The primary short-term objective is to provide planning information on the spread of the beetle to support the spread control, salvage and follow-up mitigation programs. Over the first 10-year period approximately

3,500 map sheets will require this work. In the longer term, the objective is to project the consequence of those treatments in terms of the state of the future forest. In total, upwards of 15,000 map sheets will require updating with new inventory data as the forest cover changes over infestation and recovery period. Ongoing inventory support will be needed for the entire 30 years of mitigating the beetle impacts.

b) Research & Development – Bio-physical

Funding Distribution

Fiscal 2005/06:	\$0.55 million
Fiscal 2006/07:	\$2.8 million
Fiscal 2007/08:	<u>\$3.35 million</u>
Total:	\$6.7 million

Description

This activity will supplement applied research efforts that provide MPB-related information for policy evolution and for resource planning and decision-making. Work will provide credible and relevant scientific knowledge to support the conservation of long-term forest values identified in land use plans and restoration of forest resources in areas affected by the epidemic, on such topics as:

- Reforestation and restoration in riparian zones, environmentally sensitive areas and community watersheds;
- Forest productivity restoration (e.g. erosion mitigation, soil rehabilitation);
- Maintenance of biodiversity (including species at risk, anadromous fish, non-timber forest products, coarse woody debris, critical wildlife habitat structures);
- Silviculture options and improving timber growth and value;
- Maintenance of watershed and hydrologic functioning;
- Decision support tools to define and evaluate mitigation options; and,
- Forest harvesting/engineering for MPB stands.

Synergies with Other Funding Sources

The Forest Investment Account-Forest Science Program (FIA-FSP) is currently budgeted to spend \$10.5 million in 2005/06 on a variety of forest improvement projects and extension activities. Some of these projects are directly related to addressing knowledge gaps associated with MPB. In addition federal funding supplied through the Mountain Pine Beetle Initiative and administered by Natural Resources Canada continues to support longer-term MPB research. Under this strategy, these ongoing projects will be enhanced and new projects and extension activities focused on the short-term implementation needs of the various activities.

Delivery Method

This activity will be primarily delivered through the Forest Sciences Board with some direct funding to ministries (Ministry of Forests and Range and Ministry of Environment) to provide scientific support for policy development. The Forest Science Board is a voluntary advisory body comprised of users and providers of scientific knowledge drawn from industry, governments, and the forest science community. The Forest Science Board will establish criteria for the funding and utilize its established call for proposal process. In some cases the Forest Science Board will use direct awards and partnerships with universities and other research or information management agencies.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The objective of this operational support program is to answer questions on environmental response to the beetle and proposed treatments. It is estimated that over a 10-year period this program will need to undertake 200 research projects and conduct 480 extension events to communicate best practice to practitioners. Research support will be needed throughout the period of mitigation treatments expected to continue until 2035.

c) Ecosystem Restoration

Funding Distribution

Fiscal 2005/06:	\$0.4 million
Fiscal 2006/07:	\$2.6 million
Fiscal 2007/08:	<u>\$4.0 million</u>
Total:	\$7.0 million

Description

This activity addresses MPB impacts through planning, surveys and treatments for terrestrial and aquatic species and habitat restoration, water quality/quantity and other non-timber objectives including:

- Mitigation options for species at risk;
- Treatments in unharvested areas, e.g. old growth management areas, wildlife conservation areas, around riparian areas and stream sides;
- Modification of habitat, including the use of silviculture techniques;
- Treatments that improve fish passage and water quality, e.g. culvert replacement, habitat restoration or road deactivation; and,
- Effectiveness evaluations of treatments.

Synergies with Other Funding Sources

B.C.'s Forests For Tomorrow provides limited funding on an ongoing basis and assists with ecosystem restoration projects utilizing reforestation techniques. This funding is directed at all non-licensee reforestation needs and not just those from the MPB. In addition, B.C.'s Forest Investment Account makes some funding available for licensees to use for restoration projects.

Outcomes Anticipated for Three years, Ten Years and at the End of the Program

The 10-year and longer-term specific objectives are being developed during the first few years of this program. It is estimated that within 10 years, 80 watersheds will be treated. The priority will be to assess the environmental damage in high priority areas to minimize the long-term effects on fish, water quality, endangered species and biodiversity. More specific measures will be included in annual performance plans and after the initial assessments have been completed.

Corporate Support

Funding Distribution

Fiscal 2005/06:	\$0.66 million
Fiscal 2006/07:	\$0.75 million
Fiscal 2007/08:	<u>\$0.75 million</u>
Total:	\$2.2 million

Description

This funding will provide local and program level planning and corporate governance support for the overall program. A program of this size requires significant planning and co-ordination such as the identification of projects, local implementation planning and the resolution of conflicts at the forest district level. It also requires coordination between delivery agencies and corporate level program planning, reporting and oversight.

Conclusion

The above activity funding envelopes have been developed after careful consideration of the federal direction provided within the March 31, 2005 funding commitment, the objectives of British Columbia's Mountain Pine Beetle Action Plan and a comprehensive review of existing Mountain Pine Beetle funding from other existing programs. The goal is to use these resources over a three-year period, taking into consideration the ramp-up requirement for most project work, operational/seasonal constraints and the magnitude of the incremental activities contemplated under this plan. As with the province's Mountain Pine Beetle Action Plan, this implementation strategy will be updated annually with input from the federal government, First Nations, communities, forest industry, environmental groups, and the latest scientific and technical information.