



MOUNTAIN PINE BEETLE

INFESTATION MANAGEMENT RESPONSIBILITIES



Alberta



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An unforeseeable mountain pine beetle flight from British Columbia in the summer of 2006 significantly increased the number of infested stands in Alberta. This flight also introduced beetles far deeper into the province than previously, requiring a major expansion in the scope of beetle mitigation efforts. This paper updates the roles and responsibilities found in *Alberta Forest Health Strategy and Shared Roles and Responsibilities between SRD and the Forest Industry*, of December 10, 2003, to reflect this changed situation.

As the infestation grows and our experience with control activities improves, it needs to be clear who will be responsible for undertaking specific activities and the related costs. This document clarifies how existing policies apply to the current situation relating to mountain pine beetle in Alberta.

There are a number of different land management jurisdictions in Alberta, each with a different party responsible for management activities. Given the severity of the current beetle infestation and the significant risk of further spread, Alberta Sustainable Resource Development (ASRD) and other land management agencies must incorporate forest health considerations into their forest management planning efforts. These agencies must together deliver a long-term strategy to improve forest health conditions, mitigate the significant environmental, social and economic impact of the current infestation and reduce the likelihood of future infestations.



PROVINCIAL-LEVEL ACTIVITIES

ASRD is responsible for a number of activities. Its responsibilities include setting management standards for the mountain pine beetle infestation on all provincial Crown lands with input from stakeholders, including other levels of government, the scientific community, forest tenure holders and other land managers. Direction provided by the department will influence activities on lands outside the provincial government's mandate but still in Alberta.

The department will:

- lead all provincial level extension services, such as forest health training, public education, documentation of forest health conditions and communications;
- co-ordinate and house all forest health data, which will be readily available to all tenure holders and other stakeholders to ensure the best information is broadly accessible;
- develop, in cooperation with stakeholders, public education programs aimed at improving awareness of the infestation;
- communicate through a variety of media, including the department's Forest Health website, annual reports related to forest health conditions in Alberta, newsletters and various informational brochures;
- work with other Alberta government departments, Parks Canada, the British Columbia Ministry of Forests and Range, Natural Resources Canada and forest industry stakeholders to deliver public outreach and education programs; and
- continue to represent Alberta's interests in national and international venues, although other stakeholders, such as environmental non-government organizations, First Nations and the forest industry, may have opportunities for representation.

The department will also continue to promote research and development projects that improve forest health conditions and actively participate in national research groups and federal government initiatives. ASRD encourages stakeholders to initiate forest health-related research projects and share resources for joint research. Ongoing and frequent communication between, for example, land managers, municipalities and the scientific community will provide the coordination needed to focus on priority projects and avoid duplication of effort.

OPERATIONAL-LEVEL ACTIVITIES

The land managers responsible for more detailed, operational-level mountain pine beetle activities are:

- Forest Management Agreement (FMA) holders within FMAs, under the direction of ASRD;
- ASRD on non-FMA Crown lands within the Green Area;
- ASRD within parks and protected areas under the memorandum of understanding with Alberta Tourism, Parks, Recreation and Culture;
- Parks Canada, Department of National Defence and Indian and Northern Affairs Canada on federal lands; and
- municipalities and land owners on private lands.

The management of large scale mountain pine beetle infestations requires intensive planning and cooperation between these land managers. Each is responsible for activities within its mandate, while coordinating efforts with other agencies to make the most efficient use of scarce manpower and equipment. When the infestation involves multiple land managers, ASRD will coordinate joint efforts and operations.

Monitoring & Surveying

Detection is an important component of an integrated forest health program. However, no one agency can provide surveillance over an area the size of Alberta. Every individual using the forest, whether they work for resource agencies or industries or use the forest for recreational purposes, helps monitor forest health conditions. The Government of Alberta relies on the cooperation and contributions of these individuals.

In outbreaks such as the current one, ASRD coordinates and is responsible for operational surveys to maximize their efficiency and ensure appropriate coverage. The

department frequently relies on, and in many cases directs, assistance from other stakeholders, due to the sheer magnitude of the mountain pine beetle infestation-related activities.

Pheromones are one of the most effective and economical tools to detect, monitor forest insect populations and hold beetle populations in an area until control treatments are applied. The department maintains an extensive series of pheromone monitoring plots to detect pest activities and forecast population trends. However, since inappropriate use can invite unwanted insect infestations and may lead to pest outbreaks, ASRD strictly controls the use of pheromones on forested Crown land. Other land managers may be asked, or may offer, to assist in this effort. When another stakeholder wishes to use pheromones to monitor pest conditions, they must send proposals to ASRD for review and, where appropriate, approval.

Forest Management Planning, Operational Planning and Harvest Activities

On non-FMA Crown lands, ASRD is responsible for all planning activities related to the mountain pine beetle infestation.

ASRD will remain responsible for all Level 1 treatment, although it may require the participation of other parties due to the magnitude of the current infestation. The department may direct tenure holders to treat individual infested trees or stands or high-risk stands within a certain time frame.

At the direction of ASRD, FMA holders will amend forest management plans to best accommodate and reflect the current pest situation in an affected area. They will continue to be responsible for planning harvest operations within their FMA, whether in response to beetle infestations or proactively to reduce the presence of susceptible pine on the landscape.

Despite the best intentions and efforts, severe pest outbreaks can

Forest Management Agreements (FMAs) allow companies to establish, grow, harvest and remove timber from a particular area. The agreements require FMA holders to take on certain responsibilities for the province, including forest management plans and reforestation.

The Green Area is public land that includes forested land for forest management planning and protection of important watershed areas. The authority to make regulations and decisions rests primarily with the provincial government.



Level 1 treatment includes, but is not limited to individual tree treatment such as grinding, peeling or burning and insecticide treatments.

Level 2 treatment refers to block or patch harvesting of infested areas.

cause extensive tree mortality. Unlike wildfire kills, forest pest-related tree mortality tends to progress over years. With this massive infestation, it is likely that the province will lack the capacity to treat and process the volume of trees available for salvage. Tenure holders will develop salvage plans consistent with provincial direction, such as provincial policies and local priorities, and complete salvage operations to the extent possible. Salvage plans, similar to typical forest management plans, must recognize and include steps to protect both timber and non-timber values, such as watersheds or wildlife habitat.

Municipal government officials will work with land owners to address mountain pine beetle infestations. The provincial government has provided grants to municipalities to help offset some of the costs involved, where treatments in the municipality are strategically important to control the spread of the beetle infestation on private and provincial lands.

Prescribed Burning

Due to the risk posed to other resources, ASRD will continue to lead prescribed burning efforts on all provincial Crown lands. Within protected areas, where timber harvest is typically restricted, prescribed fire will be the dominant management tool, while within the working forest it will be one of several management options.

Federal government agencies will remain responsible for lands under their jurisdiction, including national parks, First Nations' lands and Department of National Defence lands. Municipalities and land owners will need to co-ordinate their efforts for prescribed burns on private lands.

FUTURE DIRECTION IN TREATMENT RESPONSIBILITIES

The Government of Alberta has enhanced its management approach to improve the efficacy of treatment activities. This approach segregates the mountain pine beetle infestation into three distinct beetle management zones:

- Leading-edge Zone – high priority areas where beetle populations threaten to spread along the eastern slopes



and eastwards to the boreal forest. This is the front line of the infestation. Control will generally consist of Level 1 treatment.

- Holding Zone – areas that have significantly more infested trees than the leading-edge zone but still require control efforts to reduce or hold the beetle population in check. Control consists of Level 2 treatment supplemented with Level 1 treatment.
- Salvage Zone – areas with a large number of infested trees or where beetle-control treatments are typically ineffective. Harvesting of stands achieves other forest management objectives.

Because there are different management objectives in each zone, each sees a slightly different approach to the infestation. Adding complexity, within each zone different entities are responsible for various land management activities. This complexity means treatment activities require coordinated effort from all land managers.

The segregation of affected areas into these zones will help ensure more efficient and effective treatment activities. By identifying and focussing certain efforts in the most appropriate locations, ASRD hopes to reduce and mitigate the impact of the beetle as much as possible. Additionally, when the department establishes these zones, and updates them as better information becomes available, all parties will immediately know who is responsible for which activities. This clarity will support the most timely response possible.

ASRD will produce maps showing the location of each zone in the fall, shortly after completing aerial surveys and population forecasts of the status of the beetle throughout the province.

ASRD will monitor the remainder of the province to determine the presence of beetle populations and adjust management zone boundaries accordingly.

ASRD, with the Forest Resource Improvement Association of Alberta (FRIAA), has developed a contract for services that allows other land managers to deliver activities that traditionally fall under the department’s mandate. The attached table indicates potential eligible activities and

circumstances with an asterisk (*).

Additionally, the provincial government has provided municipal grants to help offset treatment costs incurred by a municipality on lands within the municipality. The attached table indicates eligible potential activities as approved by ASRD by a “+” symbol. The grant agreement provides further information. Again, these activities have been and remain the responsibility of the provincial government.

The department will continue to coordinate management activities on First Nations’ lands with Indian and Northern Affairs Canada.

Tables of Organizations and Responsibilities for Various Activities, by Management Zone



A) Leading-edge Zone

High priority areas with a relatively low number of infested trees. This is the front line of the infestation.

Activity	FMA	Non-FMA Crown land	Parks & Protected Areas	Federal land	Municipality Private land
Baiting					
Baits – monitoring		ASRD*	ASRD	NRCAN	MD+
Baits – containment		ASRD*	ASRD	NRCAN	MD+
Surveying – Ground					
Ground truth		ASRD		NRCAN	MD+
Walkthrough		ASRD*	ASRD	NRCAN	MD+
Concentric		ASRD*	ASRD	NRCAN	MD+
Transect		ASRD*	ASRD	NRCAN	MD+
Infestation extent		ASRD*	ASRD	NRCAN	MD+
R-Value		ASRD		NRCAN	MD+
Surveying – Aerial					
Overview		ASRD*	ASRD	NRCAN	ASRD+
Detailed Heli-GPS		ASRD*	ASRD	NRCAN	ASRD+
Treatment – Beetle Strategy					
Set Beetle Policy Priorities		ASRD		NRCAN	ASRD
Level 1 – Control		ASRD*	ASRD	NRCAN	MD+
Level 2 – Forest Mgmt Planning		ASRD		NRCAN	Land Owner+
Level 2 – Harvest Planning	FMA	Tenure Holder	ASRD/TPRC	NRCAN	Land Owner+
Level 2 – Harvest Operations	FMA	Tenure Holder	ASRD/TPRC	NRCAN	Land Owner
Level 2 – Prescribed Burns		ASRD		NRCAN	MD
Grid Baiting of Cutblocks	ASRD*	ASRD	--	--	Land Owner+
Treatment – Pine Strategy					
Prescribed Burns		ASRD		NRCAN	--
Forest Management Planning		ASRD		NRCAN	Land Owner+
Harvest Planning	FMA	Tenure Holder	ASRD/TPRC	NRCAN	Land Owner+
Harvest Operations	FMA	Tenure Holder	ASRD/TPRC	NRCAN	Land Owner
Reforestation	FMA	Tenure Holder	ASRD	NRCAN	Land Owner

ASRD – Alberta Sustainable Resource Development

FMA – Forest Management Agreement

MD – Municipal District

NRCAN – Natural Resources Canada

TPRC – Tourism, Parks, Recreation & Culture

B) Holding Zone

Areas with significantly more infested trees than the Leading-edge Zone but still require control efforts. Control consists of Level 2 treatment supplemented with Level 1 treatment where appropriate.

Activity	FMA	Non-FMA Crown land	Parks & Protected Areas	Federal land	Municipality Private land
Baiting					
Baits – monitoring		ASRD*	ASRD	NRCAN	MD+
Baits – containment		ASRD*	ASRD	NRCAN	MD+
Surveying – Ground					
Ground truth		ASRD		NRCAN	MD
Walkthrough		ASRD*	ASRD	NRCAN	MD
Concentric		ASRD*	ASRD	NRCAN	MD+
Transect		ASRD*	ASRD	NRCAN	MD+
Infestation extent		ASRD*	ASRD	NRCAN	MD
R-Value		ASRD		NRCAN	MD+
Surveying – Aerial					
Overview		ASRD*	ASRD	NRCAN	MD
Detailed Heli-GPS		ASRD*	ASRD	NRCAN	MD
Treatment – Beetle Strategy					
Set Beetle Policy Priorities		ASRD		NRCAN	ASRD
Level 1 – Control		ASRD*	ASRD	NRCAN	MD+
Level 2 – Forest Mgmt Planning		ASRD		NRCAN	Land Owner+
Level 2 – Harvest Planning	FMA	Tenure Holder	ASRD	NRCAN	Land Owner
Level 2 – Harvest Operations	FMA	Tenure Holder	ASRD	NRCAN	Land Owner
Level 2 – Prescribed Burns		ASRD		NRCAN	MD
Treatment – Pine Strategy					
Prescribed Burns		ASRD		NRCAN	--
Forest Management Planning		ASRD		NRCAN	Land Owner+
Harvest Planning	FMA	Tenure Holder	ASRD	NRCAN	Land Owner
Harvest Operations	FMA	Tenure Holder	ASRD	NRCAN	Land Owner
Reforestation	FMA	Tenure Holder	ASRD	NRCAN	Land Owner

ASRD – Alberta Sustainable Resource Development
FMA – Forest Management Agreement

MD – Municipal District
NRCAN – Natural Resources Canada

C) Salvage Zone

Areas with a large number of infested trees or where beetle-control treatments are typically seen as ineffective. Tree harvesting will meet other forest management objectives.

Activity	FMA	Non-FMA Crown land	Parks & Protected Areas	Federal land	Municipality Private land
Baiting					
Baits – monitoring		ASRD*	ASRD	NRCAN	--
Baits – containment		ASRD*	ASRD	NRCAN	MD
Surveying – Ground					
Ground truth		ASRD		NRCAN	MD
Walkthrough		ASRD*	ASRD	NRCAN	MD
Concentric		ASRD*	ASRD	NRCAN	MD
Transect		ASRD*	ASRD	NRCAN	MD
Infestation extent		ASRD*	ASRD	NRCAN	MD
R-Value		ASRD		NRCAN	--
Surveying – Aerial					
Overview		ASRD		NRCAN	ASRD+
Detailed Heli-GPS	--	--	--	--	--
Treatment – Beetle Strategy					
Set Beetle Policy Priorities		ASRD		NRCAN	ASRD
Level 1 – Control	--	--	--	--	--
Level 2 – Forest Mgmt Planning		ASRD		NRCAN	Land Owner+
Level 2 – Harvest Planning	FMA	Tenure Holder	--	--	Land Owner
Level 2 – Harvest Operations	FMA	Tenure Holder	--	NRCAN	Land Owner
Level 2 – Prescribed Burns		ASRD		NRCAN	MD
Treatment – Pine Strategy					
Prescribed Burns		ASRD		NRCAN	--
Forest Management Planning		ASRD		NRCAN	Land Owner+
Harvest Planning	FMA	Tenure Holder	--	NRCAN	Land Owner
Harvest Operations	FMA	Tenure Holder	--	NRCAN	Land Owner
Reforestation	FMA	Tenure Holder	ASRD	--	Land Owner

ASRD – Alberta Sustainable Resource Development
FMA – Forest Management Agreement

MD – Municipal District
NRCAN – Natural Resources Canada

