

**THE NEED FOR ACTION**  
**WHAT IS BEING DONE IN THE FORESTS OF ALBERTA**  
**AND**  
**PLANS FOR THE FUTURE**

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Although not proven conclusively, we believe the mountain pine beetle infestation in southwestern Alberta is a result of the spread of this insect from Montana and British Columbia. Beginning with a small infestation on the west side of Glacier National Park in 1972, the beetles moved up the Flathead River Valley into British Columbia and, hence, into Alberta. The first infestation in Alberta was noticed in 1977. At that time, researchers who had been involved in previous beetle infestations indicated that, because of our severe winter climate, the beetles would probably not last the winter. Thus, no action was taken. However, with three consecutive mild winters, the infestation spread from five small patches to 8 000 acres of dead trees within three years (exclusive of Waterton National Park). The most severely affected area was the forested area bounded by Montana, British Columbia, and Highway 3 in the southwestern corner of Alberta. At the same time, beetles continued to spread beyond this area. In 1980, hundreds of infested pockets of pines were found to the north and east in the Porcupine Hills and in the East Livingstone Range. Beetles were also found 200 miles east in the Cypress Hills of Saskatchewan and Alberta and 180 miles to the northeast in Drumheller. Trees in farm shelterbelts throughout southern Alberta had been attacked. Pine trees in urban areas such as Lethbridge were infested as well.

Recent surveys in British Columbia indicate there is some buildup of beetles along the Alberta boundary. Because of the dramatic buildup and long-distance dispersal of this insect, as indicated by the current infestations, we are concerned about further in-

festations along our western flank. Beetles know no political boundary and, unless coordinated action is taken, recurrence of this scenario is expected every time a beetle epidemic occurs. Researchers indicate that proper management of the forests would limit the problems. However, where management alternatives are limited, as in the national parks, these areas could be a haven for huge infestations, as witnessed in the past decade. The fear of further spread of the beetles from British Columbia and from the national parks required prompt action. Contacts were made with these agencies to promote direct communication, to review the problem area, and to initiate appropriate action.

#### **ACTION TAKEN**

In the spring of 1980, the Alberta Forest Service reviewed the pine beetle problem. With already widespread infestation of the beetles in the area south of Highway 3, this zone was considered for salvage only. However, north of this highway in the Porcupine Hills and in the East Livingstone Range, a major infestation had not yet developed. Thus, a concerted control action was considered and initiated. The preliminary planning indicated that only one hundred spots of infestation were to be treated. However, once the control program had begun, many more spots were discovered, so that a major operation had to be initiated. Since no effective biological or chemical control of the beetle has yet been developed, the basic procedure was to cut the affected trees. These trees were then

salvaged for lumber, with slabs and edges burned, or the trees were debarked on site. The other alternative, where salvage was not feasible, was to pile and burn.

Since the spring of 1980 to August 1981, 6 000 infested patches were treated, with almost 42 000 trees removed. Most of these trees were salvaged. The cost of the program, thus far, has been approximately \$2.7 million. Both crown land and private lands were treated.

In the past year, helicopter logging was initiated in remote inaccessible areas and on private lands where the environmental impact was to be minimized. Although this was a costly operation (costing from \$60 to \$100 per tree), our staff feels the program was worthwhile.

Salvage of infested trees in the area south of Highway 3 was taking place concurrently with the control operation. The total volume of trees infested by the beetle in this area is 120 million board feet. To date, 45 million board feet has been salvaged. The salvage program was initiated in a period when the lumber market was very poor—a condition that has actually worsened since salvage commenced. Thus, in recognition of this situation, the government recently announced an incentive program, whereby a payment of \$34 per 1 000 board feet would be made to operators for salvaging fire, or beetle-killed, trees. We are therefore hopeful that eventually the majority of the merchantable timber will be salvaged.

In addition to the actual control and salvage operations, public relation and education programs were launched. Four public meetings were held; brochures and pamphlets were issued; posters warning residents and campers about the danger of transporting infested logs were posted in the area; and a major symposium on beetles was held.

Our most recent endeavor in our ongoing beetle control program was to request that both the Province of British Columbia and the National Park Service of Canada take some action on the beetle infestations in their jurisdiction that are threatening our forests. Early last January, a meeting initiated by Alberta was held with the Canadian National Park Service to discuss the ramifications of beetle spread from the parks to provincial land. In this discussion, Parks Canada indicated that unless British Columbia took action on adjoining areas, any proposed action would be ineffective. Thus, in the middle of January, representatives of four agencies—Canadian Forestry

Service, Alberta Forest Service, B.C. Ministry of Forests, and National Parks Service—met and a senior mountain pine beetle management committee was proposed. In April, this committee was formalized and named "The Interagency Committee on Mountain Pine Beetle". The committee is chaired by Dave Kiil of the Canadian Forestry Service, with senior personnel representing the Forest Services of British Columbia, Alberta, and the National Parks. The objective of this committee is to communicate, coordinate, and discuss policy needs and action on the mountain pine beetle problems.

At the same time, a technical subcommittee was formed with the same agencies as members. The objective of the subcommittee is to keep abreast of action taken by members, to monitor and survey the problems, and to discuss research needs. The subcommittee was directly responsible to the inter-agency committee.

Thus far, two meetings of each committee have been held. A great deal of cooperation among the members has been shown. Certainly the committee formation was a step in the right direction.

#### SUCCESS OF THE CONTROL PROGRAM

The success of the control program is difficult to measure. By controlling spot infestations, we certainly decreased the population of the beetles within a stand. This would limit the spread of the beetles to adjoining stands. However, beetles from outside sources are always available to further infest the sanitized area. Thus, a continuing control program is necessary until the beetle population declines. Had we not taken action on the Porcupine Hills and the East Livingstone Area, we are certain that all the mature, and almost-mature, pines would have been devastated similarly to the B.C. Flathead Valley and our Castle River drainage. Further to this, if a population buildup had occurred in this area, the beetles would have had a greater opportunity to spread further north. Our lodgepole pine stands are almost continuous from the Peace River country along the east slope of the Rockies to the United States border. This area encompasses approximately 35 000 square miles. Our existing inventory indicates there are more than 6 million acres of pure, or predominantly pure, lodgepole pine type with a volume of approximately 8 billion cubic feet. Much

of this forest is in a mature to overmature condition—just perfect for beetle attack. Within this area, there are four forest management agreement areas (a fifth one is presently being established), with a combined annual cut of 128 million cubic feet. Two major pulp mills, a plywood plant, and numerous sawmill complexes depend upon this growing stock. Besides the forest industry, a multimillion dollar recreation complex known as Kananaskis Country is located in the heart of the lodgepole pine stands. The magnitude of the effect of a major beetle infestation would be difficult to comprehend. Whether the actual infestation or the fires after the infestation devastate the forest, both the long- and short-term impact on the forest industry and on the economy of this province would be enormous.

#### FUTURE NEEDS

Research on the beetles has been carried on for the past decade; yet, the only recommended short-term

method of control is the sanitation cut. Sanitation cuts are satisfactory, but can be very costly. Biological control methods involving pheromones have shown some promise. However, more research is necessary to improve this method and to provide the forest managers with alternatives. Research is also needed in the area of flight dispersal of the beetles. The use of knowledge about dispersal could certainly assist in pinpointing problem areas and in decreasing the cost of control. Last, but not least, the use of silvicultural methods as a tool for beetle control has always been one of the major recommendations of many entomologists. Although limited studies have been initiated in the use of this procedure, there is need for silvicultural research programs that show positive results.

The gathering together of the agencies involved in pine beetle problems of the northwest is a right step toward greater cooperation and coordination of action. In the past, we have been remiss in communication with our counterparts in adjoining jurisdictions. However, in the future, we will see that this does not occur.