



FIDS Pest Report 93-32

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SPECIAL REPORT

Forest Insect and Disease Conditions

in Kootenay National Park, 1993

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Forest Insect and Disease Survey

Some of the more important forest insects and diseases found in the park are discussed by host in this report. To obtain a broader perspective of these, and others agents affecting our forests, please refer to the annually published report, "Forest Insect and Disease Conditions, Nelson Forest Region, 1993", available later this winter. The major insect affecting trees remains the mountain pine beetle, which killed an estimated 77 900 lodgepole pine over 715 ha. Spruce budworm populations declined, with no defoliation noted along the Vermilion River. Spruce weevil was reduced by 50%. Foliage diseases increased, lightly affecting most of the lodgepole pine.

An annual aerial survey covered the park south of the Simpson River, during early August. This was part of a regional survey in cooperation with the British Columbia Ministry of Forests. Limited ground surveys were conducted at intervals between May and October.

This report is written in partial fulfillment of the requirements for obtaining and maintaining a Parks research/collection permit. Insect and disease conditions have, in most cases, been previously discussed with Parks personnel during the course of field surveys.

Pine

Mountain pine beetle, *Dendroctonus ponderosae*, activity continued to increase, with an estimated 77 900 trees discoloring on 715 ha in 1993 (see map). The area with 1992-killed trees increased slightly to 715 ha. In 1992, 72 900 trees were mapped over 600 ha. The main concentration of attack remains along the Kootenay River in the Pitts Creek to Mt. Daer area, where further concentrated attack can be expected along the fringes of the older part of the infestation.

However, an increasing portion of recent attack occurred as new spots, and in expanding small infestations from north of Kootenay Crossing to Cross Creek. Small new pockets of faders were also mapped along the Vermilion River near Wardle Creek. Infestations along Sinclair Creek generally declined due to depletion of mature pine.

Brood examinations and cruise data suggested that the 1993 attack was little changed from 1992. Reproductive ratios in the main infestation area were 3.8, which indicates a relatively static population. Fall stand sampling near Dog Lake had increased attack from 1992, with 39% current attack compared to 28% in 1992. However, due to the proximity to large beetle populations the high attack level is a result of beetles concentrating on the few areas with susceptible host trees, rather than indicating a major increase in beetle population. A very thorough survey of several small infestation near Kootenay Crossing indicated that current attack levels were only marginally larger than in 1992; current attack was 23% compared to 19% in 1992. The recent intensification trend is expected to continue at much the same rate within the Kootenay River drainage, along with increased spread up the Vermilion River.

Pine needle cast, *Lophodermella concolor*, lightly infected the 1992 lodgepole pine throughout the park. Moist late spring and early summer weather conditions favored high infection levels of the 1993 foliage, which will discolor in 1994.

Spruce

Spruce weevil, *Pissodes strobi*, destroyed 4% of the leaders in a young spruce stand examined annually near McLeod Meadows. This represented a 50% decrease from 1992. Cool, damp weather conditions during the spring egg-laying period affected the success of weevil attack.

Douglas-fir

No surveys for **Douglas-fir beetle**, *Dendroctonus pseudotsugae* were done in the Park, but scattered, single, recently killed trees continue on south aspect slopes along Sinclair Creek.

Douglas-fir needle cast, *Rhabdocline pseudotsugae*, infection levels decreased, with 20-30% of the 1992 foliage prematurely dropping along Sinclair Creek and Kootenay River. However, weather conditions during spore dispersal favored high infection levels on 1993 foliage. Fall spot checks along the Rocky Mountain Trench, including Redstreak campground, indicate extremely high infection levels, which show up in the fall as yellow blotches current foliage.

True fir

The **two-year-cycle spruce budworm**, *Choristoneura biennis*, populations were in the early instar larval stage in 1993, and little defoliation was expected. Both egg counts (21) in 1992 and spring bud counts in 1993 (5%) indicate a further decline in populations for 1994, with only trace defoliation anticipated.

Deciduous trees

No **gypsy moth**, *Lymantria dispar*, moths were caught in pheromone-baited traps at Redstreak and Marble Canyon campgrounds.

Areas of current mountain pine beetle infestations in Kootenay National Park,
Forest Insect and Disease Survey, 1993.

