



FIDS PEST REPORT 94-25

November 1994

FOREST INSECT AND DISEASE CONDITIONS IN THE WEST ARM DEMONSTRATION FOREST 1994

A. J. Stewart
Forest Insect and Disease Survey

The West Arm Demonstration Forest, one of two in the Nelson Forest Region, covers about 14 500 ha, mostly in the Kokanee, Redfish, and Laird creek drainages along the West Arm of Kootenay Lake. It was established in 1992 by the B.C. Ministry of Forests as an operational forest for demonstration and research projects involving all resource values and participants.

In general, the area is characterized by the chronic pest problems of aging natural stands where fire has been excluded. Increasing levels of root disease, white pine blister rust, bark beetles and dwarf mistletoe are evident. For region-wide information on the agents below, or other insect and disease conditions, the annual FIDS report for the Nelson Forest Region will be available this winter.

Root diseases

Root diseases remain the most significant pest feature of the Demonstration Forest. Infection centers caused by *Armillaria* root disease, *Armillaria ostoyae*, are particularly common at lower to mid-elevations. Tomentosus root disease, *Inonotus tomentosus*, is occurring in higher elevation spruce-fir stands in the ESSF biogeoclimatic zone. The extent of these diseases has not been quantified; however, chronic infection centers will continue to spread as stands age. Some salvage logging has been conducted in stands heavily infected by *Armillaria* root disease.

White pine blister rust, *Cronartium ribicola*

Infections by this introduced disease continue to intensify throughout the Nelson Region, decreasing the biodiversity of natural stands within the range of white pine. An accumulated infection rate of 92%, including 50% mortality, was recorded at Kokanee Creek in 1993, similar to levels reported beyond the forest.

Douglas fir beetle, *Dendroctonus pseudotsugae*

Increasing populations of this beetle caused patches of mortality throughout the host range in the Demonstration Forest, consistent with a general build-up throughout the region. Twenty-six patches of up to about 20 trees each were mapped in the forest, often associated with root disease centers.

Mountain pine beetle, *Dendroctonus ponderosae*

Ten patches of 5 to 10 red-stage (attacked 1993) lodgepole pine were mapped at mid-elevations from Kokanee Creek to east of Redfish Creek. Populations will probably continue to linger at low levels since the host trees are a relatively minor stand component overall. Trees weakened by root disease are especially susceptible to attack, and some of the white pine weakened by white pine blister rust are infested.

Larch dwarf mistletoe, *Arceuthobium laricis*

Infections by this parasitic plant are common throughout the host range in the Demonstration Forest. Of particular concern in the Forest is dispersal into regeneration where infected seed trees are left in partially cut blocks and where infected fringe trees occur near clearcut blocks. In addition, mistletoe brooms are ladder fuels which increase the fire hazard; increasing broom formation and size in aging stands increases the risk of fire intensification and spread.

Needle Diseases

Discoloration of western larch foliage by a needle blight, *Hypodermella laricis*, declined to trace levels in 1994. Discoloration of year-old lodgepole pine foliage by a needle cast, *Lophodermella concolor*, was at light to moderate levels, similar to elevated levels throughout the southern half of the region.

Wind damage

High winds have caused top breakage of about half the trees left in recent seed tree blocks at West Kokanee Creek. Individual seed-trees are even more susceptible to wind breakage than partially-cut stands.

Poplar and willow borer, *Cryptorhynchus lapathi*

Chronic low levels of current attack by this introduced insect were observed in the Demonstration Forest, consistent with its distribution throughout the region. Single stems of willow shrubs are most commonly infested while attacks on aspen or cottonwood stems are uncommon.

Western spruce budworm, *Choristoneura occidentalis*

A trapping site to calibrate an attractant pheromone was established in the forest in 1994, one of six sites in the Nelson Region. This ongoing study is to relate moth catches to subsequent defoliation. Moth catches averaged two per trap, consistent with endemic populations at other locations. No current defoliation was observed.
