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PEST REPORT

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FIDS Pest Report 93-30

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FOREST INSECT AND DISEASE CONDITIONS IN THE WEST ARM DEMONSTRATION FOREST 1993

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The West Arm Demonstration Forest was established in 1992 by the B.C. Forest Service over about 14 500 ha, mostly in the Kokanee, Redfish, and Laird creek drainages along the West Arm of Kootenay Lake. It is an operational forest for demonstration and research projects involving all resource values and participants. This overview was conducted at the request of several agencies and was based on ground assessments in July, August, and September and an aerial survey in August.

In general, the Demonstration Forest is characterized by the chronic pest problems of aging natural stands where fire has been excluded. Increasing levels of root disease, dwarf mistletoe, bark beetles, and white pine blister rust are evident. For regional information on the pests below, or other insect and disease conditions, the annual regional report of forest pest conditions will be available later this winter.

Root diseases

Root diseases are currently 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, ***Innonotus 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.

Current seedling mortality caused by Rhizina root disease, ***Rhizina undulata***, occurred in a block burned in 1992 and planted spring 1993 at km 10 on the Redfish Creek Road. Patchy seedling loss throughout the block averaged approximately 15% overall when assessed in late September 1993.

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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. In an assessment of cumulative impact in a 46 year old stand near Kokanee Creek, 50% of the white pine were dead, 32% had stem cankers but were still alive, 10% had branch infections, and only 8% were healthy. Living stem-cankered trees had either sustained top kill only, from high infections, or were in the process of dying. These results were similar to other stands in the 30 to 60 year age class assessed in 1993 outside the Demonstration Forest.

Mountain pine beetle, *Dendroctonus ponderosae*

Occasional scattered patches of 5 to 10 red-stage (attacked 1992) lodgepole pine were observed. Five patches were mapped during aerial overview surveys, at mid-elevations from Redfish Creek to Laird 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 occur 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 the aging stands of the West Arm increase the risk of fire intensification and spread.

Needle Diseases

Fungal infection and discoloration of western larch and lodgepole pine foliage by needle blight, ***Hypodermella laricis***, and needle cast, ***Lophodermella concolor***, respectively, was at light intensity despite higher levels elsewhere in the region. Infections may increase in 1994 since wet weather at the time of sporulation probably increased the rate of successful infection.

Black army cutworm, *Actebia fennica*

Populations of this seedling defoliator remained endemic, consistent with other areas of the region, as determined by pheromone trapping at a susceptible site near Redfish Creek.

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