A New Forest Health Unit in Interior Alaska

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Over the last half-century, the Forest Service Forest Health Protection Program has built an organization of specialists trained to provide technical assistance on forest health-related matters, particularly those related to forest disturbance agents such as native and non-native insects, diseases, and plants. Throughout the Forest Service, the current State and Private Forestry–FHP organization includes more than 250 entomologists, plant pathologists, and technical specialists. Forest Health Protection personnel cooperate with a network of forest health specialists from other federal agencies, all 50 States, and several U.S. Territories, universities, and other countries.

The boreal forest of Interior Alaska is a mosaic of spruces, aspen and birches.

A close partnership with the Alaska Division of Forestry is maintained to provide the services of this skill pool to state, private and federal land managers. Alaska has 18 full-time forest health specialists (13 federal and 5 state) located in three FHP field offices; Anchorage, Juneau, and now, Fairbanks. FHP staff serving southeast Alaska are located in Juneau (in the PNW Lab on Sherwood Lane). FHP staff serving South Central Alaska, and statewide in the case of invasive plants, are located in Anchorage (in the S&PF main office and the State Division of Forestry central office), and FHP staff serving interior Alaska are located in Fairbanks (in the Division of Forestry's Northern Regional Office).

Establishment of the new Fairbanks unit is an excellent example of a working partnership with the Alaska Department of Natural Resources Division of Forestry (ADNR-DOF) that enables the Alaska Region Forest Health Program to address insect and disease problems specific to the Interior boreal forest ecosystem. The Fairbanks FHP Unit consists of: James Kruse, Ph.D., Forest Entomologist (Forest Service); Robert Ott, Ph.D., Forester/ Forest Ecologist (ADNR-DOF), and Angie Ambourn, M.Sc., Entomologist/Pathologist (Forest Service).

The boreal forest served by this field unit is characterized by a mosaic of white and black spruce and hardwoods (mostly birch and aspen), with some 42 million acres of forested land. The State of Alaska manages about half of this area, but other significant land holdings include: six national wildlife refuges; six national parks, monuments, recreation areas, conservation areas, or preserves; several Native corporations with active forest management programs; as well as military bases and reservations, the University of Alaska Fairbanks, and Bureau of Land Management lands.

Major forest health issues in the Interior include post-fire population surges and spread of insects and diseases; *Ips* engraver beetles; defoliating and leaf mining insects such as spruce budworm and amber-marked birch leaf miner; invasive plants and insects; and wood decay from fungal pathogens. Much of this acreage is considered fire dependent, a condition that all were made well aware of this year with over 6.7 million acres burned. The vast acreage burned in the Interior is bordered by nearly 3 million additional acres of forest that may be infested by pest populations (particularly bark beetles and wood boring beetles). These populations will be boosted by additional food in the form of dead or dying trees left by the fires. Long-lasting impacts of severe spruce mortality in this ecosystem include: loss of old growth forest; conversion of spruce forests to other forest types; potential long-term conversion to non-forest types; altered watershed characteristics; changes in wildlife habitat; declines in scenic quality; reduction of the commercial timber base; and increased fire hazard.

Alaska's interior forests also endure the largest proportion of periodic outbreaks of defoliating insects in the state. Outbreaks often exceed 200,000 acres in size in aspen, larch, and spruce forests. Spruce budworm is one of the most destructive insect pests of white spruce in North America. It is once again increasing to outbreak levels in the Interior. The first recorded outbreak in 1990-96 defoliated over 123,500 acres of white spruce along the Tanana and Yukon Rivers. During an outbreak, the budworm is responsible for significant mortality of young white spruce as well as reducing cone production

on mature trees whose tops have died from severe defoliation.

A severe larch sawfly outbreak during the 1990s in the Interior has impacted nearly 450,000 acres. This defoliator caused up to 80% mortality of mature larch, raising concerns that the presence of this tree species in Alaska will be greatly diminished.

Non-native, invasive plants and insects remain a constant threat in the boreal forest. Increased temperatures in Alaska over the last 50 years have allowed non-native species to persist throughout the winter, and native species to increase viability, compress their life cycles, or adopt irruptive outbreak cycles where no such patterns existed previously. The amber-marked birch leaf miner, an invasive insect originating in Europe, is the most recent invasive insect to arrive in the Interior, presumably by repeated introductions via nursery and landscaping stock from the Anchorage area.

These are a few of the forest health issues and challenges facing this new Alaska Forest Service outpost. This interior Alaska FHP staff is ready to face these challenges and are proud to be Alaska Region Forest Service representatives providing leadership to maintaining the health and productivity of Alaska's vast interior forests.

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Angie Ambourn and Jim Kruse of the new Fairbanks Unit of the USDA Forest Service Forest Health Protection Program

For more information on the Alaska Region Forest Health Program or for specific forest health information, visit our web site at www.fs.fed.us/r10/spf/fhp or contact any of the three Forest Service FHP field offices. ⌘