

Roles of Forest Insects and Pathogens

Most forest insects and pathogens in the Southwest are naturally occurring components of ecosystems and play an important role in dynamic processes. They affect short- and long-term vegetative structural diversity, provide food and habitat for animals, and contribute to biological diversity. These organisms, along with fire, are among the major disturbance agents in the Southwest. Outbreaks of forest insects and diseases can result in shifts in forest composition and structure. The degree of shift depends upon the particular insect and/or disease and on the condition of the ecosystem affected.

The actions of insects are often easily observed as their populations can quickly expand under favorable climatic conditions. Some insects are significant natural disturbance agents, capable of altering forest succession. For example, bark beetle populations can increase dramatically under drought conditions and cause large-scale tree mortality. In contrast, indigenous tree pathogens increase gradually and their presence and effects may go relatively unnoticed. Although most people see dwarf mistletoe in our forests, few realize that it is the primary agent of growth loss and will gradually kill trees. Insects and pathogens often interact, as is seen when bark beetles target diseased trees.

A key to insect and disease damage is provided in the “Guide to Forest Insects and Diseases” section, directing the reader to the appropriate insect or disease section. There is also a host index in the back of the book. A description for each insect and disease includes hosts, damage, symptoms, biology, and effects or impacts. References are also provided.

Please refer to your local Forest Service, Forest Health zone office, State Forest Health Specialist, Cooperative Extension Agent, or State Forester for information concerning specific control measures.

References: 16, 50, 58, 98, 99, 105