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SUMMARY

INSECTS

Bark and Engraver Beetles

Outside of southern California, activity of bark beetles was variable, but reports generally indicated a slight upward trend throughout California in 2003 with the exception of Jeffrey pine beetle. Mountain and western pine beetle were widely reported, but activity by Jeffrey pine beetle was about at 2002 levels in northeastern California, but was generally down in the central and southern portions of the Sierra Nevada Range. The fir engraver caused increasing levels of white fir mortality throughout much of the state. Pine engravers were not widely reported, but activity was described as somewhat increased in the east-central and southern Sierra Nevada. The red turpentine beetle was present at rates that could be described as light to moderate.

The western pine beetle was the principle bark beetle in the intensive and extensive mortality of ponderosa and Coulter pines in southern California. Numerous pine engraver species, California flatheaded borer, mountain pine beetle, Jeffrey pine beetle and red turpentine beetle were also highly involved at various locations. The fir engraver was involved with the death of white fir, but the mortality of fir has not yet become as severe as the loss of pine.

Defoliators and Others

A wide variety of defoliators and miscellaneous insects was reported. The fall webworm was no long noticeable in the Klamath and Trinity River drainages. On the other hand, defoliation of madrone increased on the Foresthill and Georgetown Divides. The lodgepole needleminer outbreak in Yosemite National Park continued at moderate to high levels. The outbreak of pandora moth on the Inyo National Forest also continued and moderate to heavy defoliation is expected in the spring and early summer of 2004. Trap catches of the European gypsy moth remained low. However, the first capture of an Asian gypsy moth in California was recorded in Los Angeles in July 2003. Trap density was increased in a nine-mile area around the find.

Trap catches of male Douglas-fir tussock moths increased in many locations. Thirty-five percent of the plots averaged more than 25 moths per trap compared with only 4% in 2002. A surge in moth activity seems indicated for 2004.

DISEASES

Abiotic

Drought, cold temperatures, fire, hail, heat, ozone and wind damage were reported in 2003. Mortality and dieback of young incense-cedar were noted at many locations in northern California. The damage is attributed to 2002 conditions – drought and a sudden cold snap in late October and early November. Drought continues to contribute to the susceptibility of pine forests in southern California to attack by the western pine and other bark beetles.

Biotic

Several canker conditions were reported in 2003. Cytospora canker of poplars and willows became more apparent. Diplodia blight is still apparent on ponderosa pine in various areas, including the upper Sacramento River Canyon and in and around the community of Paradise. *Dermea* and *Phomopsis* cankers were reported as occurring together. Several declines also were reported, and in most cases the causes were unknown.

Seven additional plant species were found to be susceptible to *Phytophthora ramorum* in California, bringing the total known susceptible species in California to 29. Additional species were also detected in Europe and Oregon; in all, 39 susceptible species have been identified. Newly recognized species include important horticultural plants and species common in the wildland and grown for Christmas trees.

Phytophthora nemorosa continued to be reported in 2003 and a third *Phytophthora* species has been isolated from laurel leaves and stem cankers on coast live oak – *Phytophthora pseudosyringae*. This species has been found in coastal counties from San Luis Obispo to Humboldt. Disease symptoms on California bay laurel and coast live oak are similar to those of *P. ramorum*. However, *P. pseudosyringae* does not appear to cause wide-spread mortality in oaks.

Powdery mildew is not commonly reported as a forest agent. However, both *Microsphaera alni* and *Sphaerotheca lanestrus* were reported on oaks in 2003.

Reports of root disease were limited, but their abundance is not reflected in the number of reports. Port-Orford-cedar root disease continues to expand and cause tree mortality in the upper Sacramento River Canyon. No new infestations were reported. However, two eradication efforts were conducted in 2003.

SURVEYS

About 25.9 million acres of the 39.5 million acres of California forests and woodlands were aerially surveyed for tree mortality in 2003. Almost 2.5 million acres had mortality from insects and diseases above annual background amounts. In addition, about 19 million acres were aerially surveyed for Sudden Oak Death and about 8.5 million acres were aerially surveyed for pinyon pine mortality. The latter was part of a larger survey of pinyon mortality in the southwestern United States.

The final report for the North Coast Change Detection Project was published and is available over the internet. The Northern Sierra Project report and the South Coast Project report are expected in 2004.

There was a slight increase in tree mortality in the Demonstration Thinning Plots in the Eastside Pine Type on the Lassen National Forest. This is the twenty-fourth year of continuous measurement.