

CENTRAL ROCKY MOUNTAINS

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Conditions in Brief

The Black Hills beetle was the most important forest insect in the central Rocky Mountains and infestations of serious proportions occurred on the Pike and San Isabel National Forests, Colo., the northern Black Hills, S. Dak., and the Bighorn Mountains, Wyo. Mountain pine beetle infestations increased on the Shoshone National Forest, Wyo. The Engelmann spruce beetle was less of a problem than in prior years, but a serious infestation continued in the vicinity of Wolf Creek Pass, southern Colorado. The scope and severity of



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Adult and larval galleries of the fir engraver, *Scolytus ventralis* LeC., Dixie National Forest, Utah.

spruce budworm infestations in Colorado declined. Damage by the pandora moth was moderate on parts of the Medicine Bow, Roosevelt, and Routt National Forests, and is expected to increase in 1963.

Federal and State agencies made a major effort in 1962 to suppress insect outbreaks in the central Rockies and check the losses caused by them. To the extent possible, bark beetles were suppressed by logging infested trees and the use of trap trees. Unusually cold temperatures aided in controlling the Black Hills beetle along the Front Range of the Rockies. Spruce budworm infestations in southern Colorado were suppressed by aerial application of DDT.

Status of Insects

Black Hills beetle, *Dendroctonus ponderosae* Hopk. Five outbreaks of the Black Hills beetle occurred in stands of ponderosa pine in the central Rocky Mountains. On the Pike National Forest, near Lake George, Colo., approximately 96,120 trees were killed on 38,160 acres. In the northern Black Hills, near Deadwood, S. Dak., some 20,680 trees were killed—a greater number than in 1961. Populations remained high in the Bighorn Moun-

tains in Wyoming; in the north Powderhorn area, near Gunnison, Colo.; and in an area southwest of Pueblo, Colo. Federal and State agencies plan to suppress the outbreaks in all affected areas.

Mountain pine beetle, *Dendroctonus monticolae* Hopk. The mountain pine beetle remained a serious problem in stands of lodgepole pine near Dubois, Wyo., where approximately 19,000 trees were killed. Plans are being made to suppress the outbreak.

Engelmann spruce beetle, *Dendroctonus engelmanni* Hopk. The Engelmann spruce beetle was less of a problem in the central Rocky Mountains than in 1961. However, infestations of significance occurred at two locations and each will need to be suppressed to prevent intensification of tree killing and spread. The most serious problem was on the San Juan National Forest, south of Rico, Colo. There, several thousand overmature spruce trees were blown down by severe winds in October 1961. These down trees have since become infested and the emerging population poses a threat to standing green trees. The infestation on the San Juan and Rio Grande National Forests, in the vicinity of Wolf Creek Pass, southern Colorado, remained at a high level.

The timely cutting of green spruce trees to trap the Engelmann spruce beetle is being used extensively to control infestations in affected areas. Chemical sprays and the logging of infested trees also are used, as needed, to supplement control achieved by trapping.

Spruce budworm, *Choristoneura fumiferana* (Clem.). A reversal occurred in the trend of spruce budworm infestations in the mixed conifer forests in Colorado. Instead of the increase in acreage and severity of infestations noted in 1961 and prior years, a decline in scope and intensity of defoliation occurred in 1962. On the basis of budworm egg mass surveys in affected areas, the downward trend of infestations is expected to continue in 1963.

Two spruce budworm outbreaks in southern Colorado were successfully controlled in June 1962. The largest, on the Rio Grande National Forest, involved aerial spraying on 84,285 acres. The other, encompassing but 600 acres, was in the vicinity of Ouray, Grand Mesa-Uncompahgre National Forests. Fixed-wing aircraft and helicopters were used in the spray programs. The latter were used to spray infested areas adjacent to streams so as to minimize possible adverse effects to fish and fish food organisms.

Pandora moth, *Coloradia pandora* Blake. An infestation of pandora moth has persisted in stands of lodgepole pine along the Colorado-Wyoming border for the past several years. Defoliation by first-year larvae in 1961 was not severe, but it was heavy enough to be visible from low-flying aircraft on some 36,000 acres. Defoliation by the second-year larvae in 1962 was not reported as severe. However, a heavy moth flight was

noted in August, with moths attracted to lights in towns far distant from known infestation centers. Overwintering larvae are numerous, and heavy defoliation is expected in 1963.

Oregon pine ips, *Ips oregonis* (Eichh.). A sharp decline occurred in populations of the Oregon pine ips in the Black Hills of South Dakota and Wyoming. The decline is attributed to above average precipitation in 1962, the second wettest year on record. It is predicted that the insects will cause little or no damage in the Black Hills during 1963.

Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopk. Douglas-fir beetle infestations were at low endemic levels in all but one location in stands of Douglas-fir in the central Rocky Mountains. The single exception was an outbreak in the north Powderhorn area, southwest of Gunnison, Colo., where some 5,560 trees were killed.

Western balsam bark beetle, *Dryocoetes confusus* Sw. This bark beetle, at times a serious pest of subalpine fir in Colorado and Wyoming, was endemic in 1962.

Great basin tent caterpillar, *Malacosoma fragile* (Stretch). For a decade or more, this defoliator occurred in outbreak numbers throughout the stands of aspen in southern Colorado. Beginning in 1958, populations were materially reduced by natural control factors and infestations began to wane. The downward trend in infestations continued in subsequent years, and in 1962 only light defoliation at scattered locations was reported.

Large aspen tortrix, *Choristoneura conflictana* (Wlk.). At periodic intervals, the large aspen tortrix occurs in outbreak numbers in stands of aspen throughout southern Colorado. The last reported outbreak was in 1958, at which time some 220,000 acres were affected. Infestations were noted again on the San Juan, Grand Mesa-Uncompahgre, and Gunnison National Forests during 1962. The intensity of defoliation increased in these forests during 1962, but in general, damage was light.

Pine needle miner, "*Recurvaria*" sp. An unidentified needle miner has caused light defoliation in stands of ponderosa pine at various places in Colorado for several years. In 1961 light defoliation was reported on several thousand acres in the southern part of the State. Damage in 1962 was less severe than in 1961 and was noticed only in one area, west of Durango.