WOODPECKER CONCENTRATION IN BURNED FOREST

By JOHN L. BLACKFORD

On July 20, 1945, a fire in the Kootenai National Forest, previously controlled and held to twenty acres, broke out and swept an additional 660 acres of recovering, cut-over Douglas fir (*Pseudotsuga taxifolia*) and yellow pine (*Pinus ponderosa*) forest seven miles south of Libby in northwestern Montana. The area is chiefly low, valley benchland lying between Cherry and Libby creeks. Heavy timber had been cut from the valley levels, but such timber still was to be found on adjoining, partially logged hill and mountain slopes several miles distant. Young trees in this section were at once

Fig. 1. Fire damaged and borer infested Douglas fir south of Libby, Montana.

fire-killed. Larger, scattering 8- to 10-inch firs were so badly seared and scorched that most of them died the following season. Federal Highway No. 2 divides the burn.

Subsequent mass attack on the fire-damaged and weakened trees by boring beetles and their larvae, together with their extensive destruction in turn by a woodpecker "task force" drawn to the burn, soon became apparent. Notes and the accompanying photographs were taken in the first winter month following the fire. On three trips during November, 1945, I worked over about 60 acres, or approximately one-twelfth of the burned area, traversing one of the most heavily wooded parts of the burn and covering this same area west of the highway on each occasion. Although my interests were photographic, as accurate a count of the woodpecker population of this comparatively small section was made as circumstances permitted. Due to individuals flying swiftly from one portion of the area to another, moving from plots checked to others

not yet covered, exact count was lost in certain instances and approximations had to be made.

Numbers of Woodpeckers on 60 Acres of Recent Burn

	Nov. 20	Nov. 22	Nov. 25
Hairy Woodpecker (*Dendrocopos villosus*)	6	0	8–10
Black-backed Woodpecker (*Picoïdes arcticus*)	5	many, ±20	±12
Three-toed Woodpecker (*Picoïdes tridactylus*)	6	0	4
Red-shafted Flicker (*Colaptes cafer*)	0	1	1

Numbers were obviously greater over these wooded 60 acres than throughout the more open parts of the burn, but an overall high concentration was still indicated. Attraction of the woodpecker population from a sizeable portion of the surrounding country is inferred. The species listed are those most active and valuable in year-round control of insect outbreaks in destroyed coniferous forest of this region. The presence of so many Three-toed Woodpeckers (*Picoïdes tridactylus*), an uncommon species here, is of special interest.

Fig. 2. Thick layers of charred chips spread about base of Douglas fir, the result of woodpecker activity. Almost every tree in the burn received similar attention.

In connection with the foregoing it is interesting that for the first time in more than a dozen years no Hairy Woodpeckers were observed in the unburned woods about my former home, or at the feeding station there, throughout the winter of 1945–1946. Typically from three to four Hairy Woodpeckers are present in winter at that location, which is about eight miles north of the Cherry Creek burn.

Many questions for future investigation are suggested: What factors alert and bring woodpeckers in unusual numbers to a burned area from considerable distances? Does the absence of Hairy and Three-toed woodpeckers from this portion of the burn on November 22 indicate that each species is quite social under these conditions, and that each shifted as a group to some other part of the burn, then back again? Does the irregular, yet quite typical drilling and hewing pattern seen on all the Douglas fir boles represent an accurate outlining of larval dispersal beneath the thick, corky bark of these trees? If so, what may it tell us about tunneling habits of the bark borers, chief food source of *Dendrocopos* and *Picoïdes*?

On a succeeding trip to the burn on March 5, 1946, no woodpecker of any species was seen or heard; glasses were used to check superficially other sections not visited on foot. Trunks of practically all fire-blackened trees showed the same efficient and intensive pattern of bark-drilling and scaling that already marked the majority of them in November. It appeared that the woodpeckers had done a rapid "clean-up" job on these 680 acres and departed.

Libby, Montana, August 9, 1954.