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Black-backed Woodpeckers Depend on Burned Forests

The 4th in a special series by Deborah Richie Oberbillig

Like the legendary phoenix rising from the ashes, the black-backed woodpecker is superbly adapted to life after a blazing inferno. This bird flies straight for the forests where searing, crown fires created a bonanza of charred trees chock full of wood-boring beetle larvae. The fire-loving woodpecker should find ample pockets of such “stand replacing” burns within the 2.1 million acres that flamed in Idaho and Montana this year.

Take one look at this uncommon bird and you’ll see living proof that intense, hot fires have long been a part of the Northern Rockies ecosystem, according to Dr. Elaine Caton, University of Montana, whose doctoral dissertation focused on nesting black-backed woodpeckers.

Obviously, those soot-colored feathers camouflage perfectly on charred bark. The bird’s quarry, too, appears as attuned to fire as people are to the aroma of a baking apple pie. Adult wood-boring beetles of the genus *Melanophila* employ infrared sensors to find burned forests more than 100 miles away and sometimes before the smoke has even cleared.

Over 40 kinds of insects, mostly beetles, make a beeline to fires. They quickly get down to the business of mating and laying eggs under the charred bark. When the eggs of the wood-boring beetle hatch, the juicy, white larvae tunnel a couple inches into the dead trees—called snags—and feast on wood for a year or so until changing into adults. Thousands, however, will be speared by a single woodpecker’s barbed tongue.

Studying black-backed woodpeckers in a forest full of dead trees might sound like a dreary assignment. Far from it, said Caton who spent five seasons—from 1990-1995 -- in the Red Bench Fire area that burned in 1988 within Glacier National Park and on the Flathead National Forest.

“It was beautiful to walk through a carpet of purple wildflowers and green grasses contrasting with the black snags,” she said. “Searching for nests was like being on an Easter egg hunt. In unburned areas, cavity nests were few and far between. In the burned areas, I heard woodpeckers tapping in every direction.”

Once she had spotted a bird flaking off chunks of black bark and chiseling into wood, she waited until it flew with its precious meal to a nest hole in a large, dead larch or Douglas-fir. Usually, three fuzzy heads popped out with mouths open wide, demanding bugs—and lots of them. A single black-backed woodpecker can consume more than 13,500 insect larvae per year.

Caton’s discoveries were striking. Outside of the burn, she found no signs of black-backed woodpeckers. Inside the burn, eleven of 12 nests were located in the unlogged stands of mixed conifers within Glacier National Park. Only one nest fell within the Forest Service side of the burn where trees had been salvaged following the fire.

Two post-fire factors appear necessary for the black-backed woodpecker. First, all the nests

Caton found were in fairly large snags that had evidence of decay before the 1988 fire. Since it takes awhile for a tree to decay enough to house woodpeckers, a healthy number of snags before a fire is important. Second, the birds need plenty of wood-boring beetle grubs to feed their hungry youngsters. That means the dead trees have to be beetle-filled, plentiful and clumped close together.

The window for black-backed woodpecker activity is narrow, because beetle numbers dwindle after five or six years. In between burns, the birds disperse and must rely on stands of insect-ridden trees for survival.

As the Forest Service begins the process of evaluating this year's fires for potential restoration and salvage logging, research like Caton's provides guidance for protecting habitat for black-backed woodpeckers.

Dr. Richard Hutto, University of Montana, has just completed a review of all pertinent literature. "Every study shows a negative influence of salvaging on black-backed woodpeckers," he said. "They disappear even when there is partial salvaging."

He emphasized that where salvage logging is planned after a stand-replacing fire, managers take trees from one part of a burn and leave a substantial area completely alone.

Hutto's own research focused on 34 burns in western Montana and Northern Wyoming in the first two years after the 1988 fires. His data indicated that these birds also are picky about the species of burned trees that they feed upon. Standing, dead ponderosa pine, Douglas-fir and western larch revealed the most signs of black-backed woodpecker activity, as opposed to lodgepole pine, subalpine fir and Engelmann spruce. The favored trees, similarly, appeared to host the greatest numbers of beetle larvae.

When the Yellowstone fires swept through miles of lodgepole pine forests that are adapted to such intense burning, the aftermath did not produce terrific habitat for the black-backed woodpecker, according to Hutto. Instead, he found them where the fires had burned hot in the mid-elevation, mixed conifer forests.

Hutto listed 87 bird species in the burns he studied and further found that 15 bird species were more abundant in early, post-fire burns than any other habitat. From flashy mountain bluebirds that nest in abandoned woodpecker holes to Clark's nutcrackers that gorge on plentiful conifer seeds, an array of birds are drawn to blackened forests.

The burn-loving birds fall into three feeding strategy categories—excavators (woodpeckers), aerial insect hunters (like olive-sided flycatchers and mountain bluebirds) and seedeaters (including Clark's nutcrackers and pine siskins).

"The more specialized the birds' feeding and nesting requirements, the fewer burns they will occupy," Hutto said. "You can go out and see robins in every kind of burn, but you'll only find black-backed woodpeckers in 15-20 percent of burns and those have to be stand-replacing fires."

What bird researchers like Hutto and Caton are finding all point to evidence that fire intensities in the Northern Rockies naturally vary as much as the wildlife that lives in the wake of flames.

"The adaptations of birds to fire represents the tip of the iceberg biologically," Hutto said. "There are other stories related to animals that are just as fascinating, especially in relationship to plants. If you're interested in conservation of biological diversity, then you have to care about places that can be created in no other way."