



Why are Black-backed Woodpeckers important?

Widely considered keystone species across their range, Black-backed Woodpeckers create cavities that are used by many secondary cavity nesters in coniferous forests. The population that resides in Oregon and California has been proposed for listing as threatened or endangered at both the state and federal levels. Black-backed Woodpeckers often colonize burned areas immediately after fire, where they consume abundant beetle and wood borer larvae. Thus, fire suppression and post-fire salvage logging have been cited as concerns for this species. Recent studies have documented Black-backed Woodpeckers in coniferous forests that have not recently burned, but the importance of green unburned forest (i.e. > 10 km from a burn within the last 15 years) to support populations remains poorly understood.

Field Study

Black-backed Woodpecker occupancy in green unburned forests in the southern Cascade Mountains of Oregon is higher than expected

In 2014 and 2015, Klamath Bird Observatory, in partnership with the National Council for Air and Stream Improvement and Wildlife Investigations, studied Black-backed Woodpecker occupancy in green unburned mixed true fir/pine, lodgepole pine, and ponderosa pine forests on the Fremont-Winema National Forest¹. The study assessed the presence of Black-backed Woodpeckers along transects in green unburned coniferous forest and examined habitat associations with forest structure. Each transect surveyed the approximate area of a pair's territory. Playback surveys were used to monitor 90 transects three times a year between April and July with detection of woodpeckers highest at the peak of the breeding season in mid-June.

Similar to other recent studies in northern California and South Dakota, the southern Oregon study found Black-backed Woodpeckers present in green unburned forests. Individuals or pairs were present on 86% of green unburned forest transects that were surveyed, which was much higher than expected based on previous studies².



But are they breeding there? A pilot study within the same study area found active nests on 23% of transects, confirming that Black-backed Woodpeckers are breeding in green unburned forests, but more study is needed to assess vital rates.³ While burned forests provide high prey availability for nestlings, it's possible that green unburned forests produce more fledglings annually simply because of the amount of habitat available.⁴

What forest structures are associated with occupancy in green unburned forest?

- Woodpecker occupancy in this study was high across all transects, suggesting the use of a wide range of forest structural conditions.
- While this reduced our ability to further understand fine scale habitat preference, occupancy did not vary with large snag density, snag basal area, precipitation, or elevation. Other studies have found that occupancy can vary with snag density, elevation, latitude, or forest type.
- Tree density, tree basal area, and shrub cover were lower on transects where a breeding pair was detected than transects without any individuals.
- The number of snags did not differ among transects with observations of pairs, single individuals and those lacking detections.¹



What we still need to know

Further study is needed to establish the relative importance of green unburned forest versus recently burned forest for individual habitat selection, productivity (# of young/nest), and dispersal. Landscape-scale studies are needed to evaluate the importance of both green unburned and recently burned forest for sustaining healthy populations of Black-backed Woodpeckers throughout their range.

1. Verschuyf, J., Stephens, J. L., Kroll, A. J., Halstead, K. E. & Rock, D. 2020. Black-backed woodpecker occupancy is extensive in green conifer forests of the southern Cascade Mountains, Oregon. *Avian Conservation and Ecology* 16(1):4. <https://doi.org/10.5751/ACE-01725-160104>
2. Mean occupancy across all transects was 0.87 (95% CI: 0.78-0.93)
3. Halstead, K. E. & Stephens, J. L. 2015. Black-backed Woodpecker nest search surveys in the Upper Klamath Basin, Oregon: Klamath Bird Observatory 2015 summary report. Rep No. KBO-2015-0009. Klamath Bird Observatory, Ashland, Oregon.
4. Tremblay, J. A., Ibarzabal, J. & Savard, J.-P. L. 2015. Contribution of unburned boreal forests to the population of black-backed woodpecker in eastern Canada. *Écoscience*; Sainte-Foy 22:145–155.

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