

Oak Woodlands and Chaparral



Klamath Bird
Observatory

Aligning chaparral-associated bird needs with oak woodland restoration and fuel reduction in southwest Oregon and northern California



Photo by Jaime Stephens

Why conservation is needed

Oak woodland habitat in southwest Oregon and northern California is comprised of a vegetation gradient that includes oak savanna, open oak woodlands with grass or chaparral understory, closed canopy oak woodlands, and oak conifer forests. Oak habitats are at risk due to development, encroachment of coniferous forest, invasion of exotic species, and lack of oak regeneration. Birds and other wildlife that depend on these ecosystems have been negatively affected by habitat threats.

What is chaparral and why is it important for birds?

“Chaparral” is a short, shrubby vegetation type that can be composed of a variety of plant species. In this region, chaparral habitat is often associated with oak woodlands. Chaparral is a natural part of oak habitats, but it also poses a risk of spreading severe fire which can put large, old oak trees at risk. Because oak woodlands are threatened by loss and degradation, management initiatives sometimes reduce chaparral to reduce the risk of high severity fire and promote a mix of low to moderate severity fire.

Still, functioning oak woodland mosaics in southern Oregon need many types of vegetation cover, including patches of chaparral. Restoring and managing oak woodland ecosystems in this region requires learning how to best achieve a balanced vegetation composition that includes chaparral habitat components.

KBO, in partnership with the Klamath Siskiyou Oak Network, has conducted studies to determine how we might best manage oak and chaparral habitat for bird species. We use birds as focal species to provide rapid assessment of overall management activities and a benchmark for oak habitat restoration goals.



Photo ©James Livaudais

Chaparral provides habitat for some species with recent population declines, such as the Wren-tit.

A history of management challenges

Despite the importance of shrubs for birds and other wildlife, land managers are often concerned about leaving shrub patches because of the risk of wildfire. Frequent mixed, low to moderate severity fires are an important component of healthy oak habitats and can help control non-native grasses, but large



severe fires can be detrimental to oak trees. So how can managers reduce fuel loads while still providing enough cover for chaparral-associated bird species? Understanding how birds respond to restoration projects can help inform ongoing management in oak-chaparral systems.

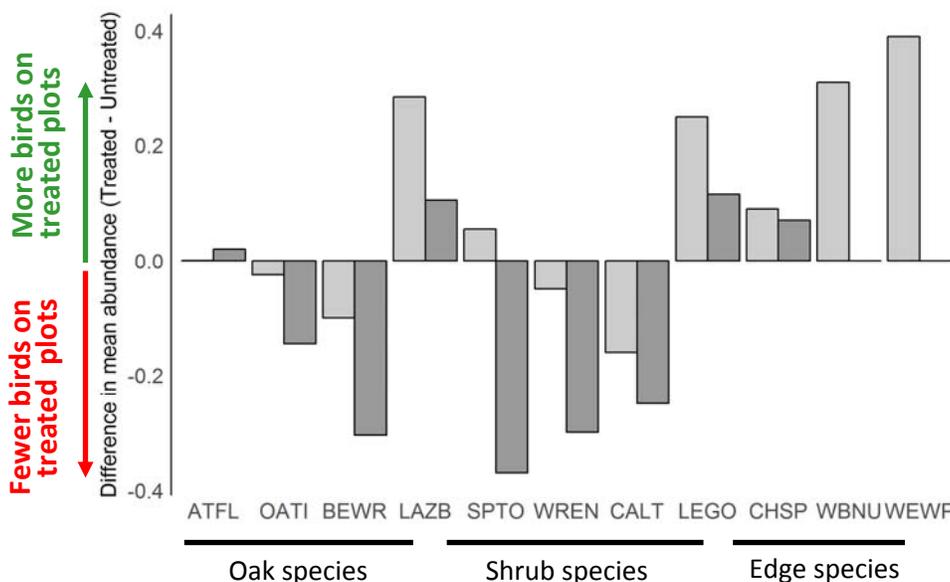


What we do

KBO uses standard protocols to survey for birds, which are easy to monitor and respond quickly to changes in vegetation. Each species serves as a measuring stick, telling us whether specific habitat needs are being met. Understanding whether the presence or abundance of each species changes following restoration is a useful tool for evaluating management success.

Does it matter how we reduce fuel loads in oak chaparral habitat?

Yes. In a case study, large-scale mechanical methods which remove large patches of shrubs with excavators (i.e., masticators) did not improve habitat for any oak-associated bird species and reduced



the presence of shrub-associated bird species.¹

However, another study showed smaller, manual treatments (i.e., hand pile and burn) improved habitat for bird species that require more open edges, without negatively affecting the

presence of shrub-associated birds.²

Species codes: Ash-throated Flycatcher (ATFL), Oak Titmouse (OATI), Bewick's Wren (BEWR), Lazuli Bunting (LAZB), Spotted Towhee (SPTO), Wrenit (WREN), California Towhee (CALT), Lesser Goldfinch (LEGO), Chipping Sparrow (CHSP), White-breasted Nuthatch (WBNU), Western Wood-Pewee (WEWP)

A balancing act

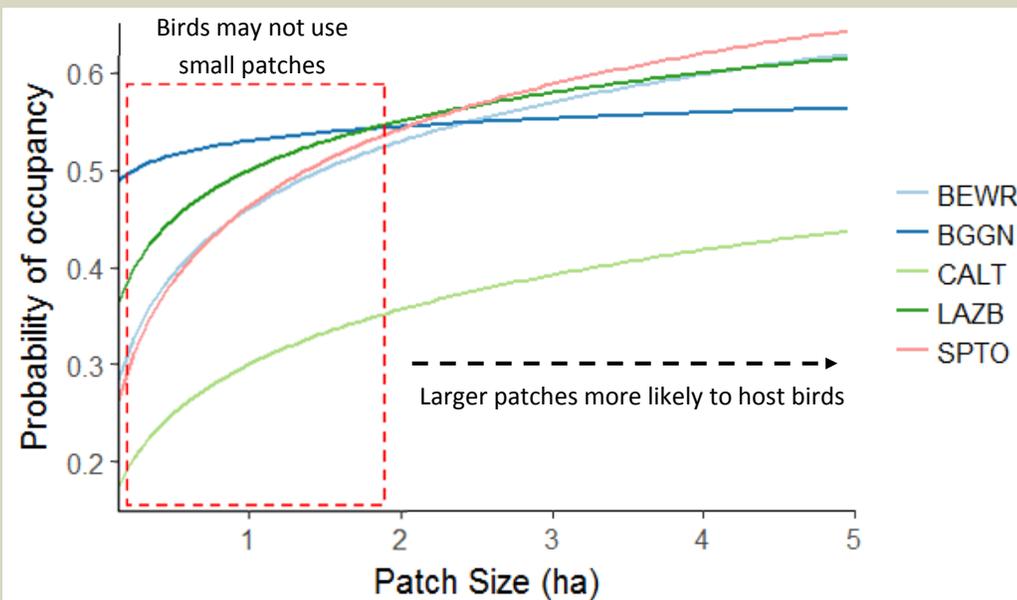
Oak habitats come in all shapes and sizes. Some have more dense stands of oak trees, some have more shrub and chaparral patches and understory in between trees, and others have more open space. Different bird species will settle in oak habitats depending on the type of vegetation that is available. One of the challenges for managers is designing restoration plans that will result in a balance of open grass, shrubs, and large oak trees so that each important habitat is represented.



How large do chaparral patches need to be?

Not all chaparral is created equal. Very small patches of shrubs may not have enough of the shelter and resources birds need to settle and reproduce in oak and chaparral communities. We surveyed different

sizes of chaparral patches and found that larger patches were more likely to provide habitat for chaparral-associated birds. Small patches (less than 2 hectares) were more likely to host chaparral bird species if they were close to other patches.³



Species codes: Bewick's Wren (BEWR), Blue-gray Gnatcatcher (BGGN), California Towhee (CALT), Lazuli Bunting (LAZB), Spotted Towhee (SPTO)

Did you know?

You can often tell the type of oak habitat you have on your land by noticing which species of birds are there. See our "Guide for Private Landowners" for details!

What You Can Do

- Restore a variety of oak woodland types and conditions to provide a diversity of habitats for different bird species
- Apply small-scale treatments like hand pile and burn rather than larger, mechanical treatments to achieve fuel reduction goals in oak-chaparral habitat
- Retain large (2-5+ hectare) patches of chaparral, and leave smaller patches nearby each other rather than separated by large distances
- When chaparral is removed retain and/or plant native perennial grasses
- Foster frequent, mixed low to moderate severity fire or maintain management practices that control non-native species



Stay Tuned!

KBO is working on a new project to better understand how the habitat on the landscape surrounding a restoration site may influence the presence of chaparral-associated birds.

References: 1) Alexander, J.D., Seavy, N.E., Hosten, P., 2007. Using bird conservation plans to evaluate ecological effects of fuels reduction in southwest Oregon oak woodland and chaparral. *Forest Ecology and Management* 238: 375–383. 2) Seavy, N.E., Alexander, J.D. and Hosten, P.E., 2008. Bird community composition after mechanical mastication fuel treatments in southwest Oregon oak woodland and chaparral. *Forest Ecology and Management* 256:774-778. 3) Stephens and Gillespie (*in prep*) Chaparral patch size and nearby chaparral amount influence songbird occupancy.



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