

# Klamath Bird Observatory



Advancing bird and habitat conservation through science, education, and partnerships

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**PRESS RELEASE -- FOR IMMEDIATE RELEASE**

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## **New study shows how wildfire changes forests and the birds that live there a decade after a mixed-severity fire in southwest Oregon**

Ashland, Oregon: As much of the West is experiencing drought-related wildfire, new research on the effect of wildfire on forests and bird communities has just been released. Researchers from Klamath Bird Observatory just published results from a 10-year study looking at the effects of the 2001 Quartz Fire that burned in southwest Oregon. They found that not only did the forest structure change dramatically over time, but the bird community changed as well, with many species benefitting from the fire, a finding that was only obvious at the end of the 10-year period. In addition, the researchers documented the role of the fire's severity showing that for half of the species affected by the fire their response was dependent on fire severity more so than simply whether the area was burned.

This study is important because it looks at the interacting effects of fire severity and time since fire, and provides forest managers with scientific evidence of how wildfire can create a forest that meets the needs of both wildlife and forest management, especially as forest restoration efforts are increasing. Their results are published in the journal *The Condor: Ornithological Applications* ([http://www.aoucospubs.org/doi/abs/10.1650/CONDOR-14-58.1?="](http://www.aoucospubs.org/doi/abs/10.1650/CONDOR-14-58.1?=)).

The Quartz Fire of 2001 burned over 6000 acres of mixed conifer broad-leafed forest (a mix of conifers and trees such as Pacific madrone and black oak). Wildfires are an important part of southwest Oregon forests, and usually burn in a pattern called mixed-severity – which means the fire burns unequally, in a patchwork of lightly to heavily burned areas interspersed with unburned patches. The resulting mosaic is important for wildlife and healthy forests.

“One important takeaway from our study was the interaction of fire severity and time since fire. Often, fire-related studies measure the short-term impact and compare only burned versus unburned areas, however, in this case, we saw bird species that initially decreased, increasing by the end of the study and doing so with greater magnitude in areas that were more severely burned,” says Jaime Stephens, Klamath Bird Observatory’s Science Director and the study’s lead author.

Some of the birds that increased over the longer term were species like the Olive-sided Flycatcher, a species of conservation concern in the West. Immediately after the fire, this species was decreasing, but over time, it increased because areas that burned with high-severity resulted in standing dead trees where the flycatchers nest, and a shrub understory re-growth that provided the flycatchers with ample insect food. The House Wren, Lazuli Bunting, and Lesser Goldfinch had a similar story – they increased in areas that were burned and more so with increasing fire severity. The length of the study shed light on how a forest recovers from a mixed severity burn, detecting patterns that otherwise would have gone unnoticed.

“After more than 100 years of fire suppression, and now exacerbated by the effects of climate change, our forests may be at-risk of burning at uncharacteristically high severities. Today, forest managers are trying to remedy this problem with thinning and controlled fire, however, these common techniques sometimes fail to replicate the impact of a natural wildfire,” says Jaime Stephens, Science Director, Klamath Bird Observatory.

“The findings of this study can inform management actions, particularly when objectives relate to maintaining or improving ecosystem function” says Jena Volpe, Fire Ecologist, Bureau of Land Management. “Additionally, having long-term post-fire data, relevant to southwest Oregon, greatly improves our understanding of vegetation succession and fuel condition changes across our diverse landscape.”

So what does the study mean for forest management? The challenge of managing western forests in the face of climate change, drought, and a history of fire suppression is not easy. Results from this study show the importance of management techniques that mimic conditions created by a mixed-severity fire: a patchwork forest type, an abundance of snags, and allowing natural regeneration of shrubs. Using these techniques will make it more likely future fires will burn in a mosaic pattern as well, which will benefit birds and create healthy forests for years to come.



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This study was funded by the Joint Fire Sciences Program, Rogue River-Siskiyou National Forest, Bureau of Land Management Medford District, and Secure Rural Schools and Community Self-Determination Act of 2000 Title II.



Photo caption: Olive-sided Flycatchers are often associated with burned forests, where open habitat, in combination with standing dead trees, creates abundant foraging opportunities. Photo copyright James Livaudais.



Photo caption: Quartz Fire in 2013, 12 years after the fire, with a healthy shrub understory and standing dead trees. Photo copyright Jaime Stephens.

Klamath Bird Observatory ([www.klamathbird.org](http://www.klamathbird.org)) is fueled by partner-driven science programs. We use birds as indicators of the healthy and resilient ecosystems on which we all depend. Our science involves three integrated aspects: 1) long-term monitoring, 2) theoretical research, and 3) applied ecology. We bring our results to bear through science delivery involving partnership driven engagement in conservation planning, informing the critical decisions being made today that will have lasting influences on the health of our natural resources well into the future. Klamath Bird Observatory's award-winning model was developed in the ruggedly beautiful and wildlife-rich Klamath-Siskiyou Bioregion. We now apply this model more broadly throughout the Pacific Northwest. Plus, our intensive professional education and international capacity building programs expand our influence into Mexico, Central and South America, and the Caribbean.

Press Packet with high resolution images available at <http://www.klamathbird.org/the-klamath-call-note/announce/press/2936>.

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