Klamath Bird Observatory

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

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Studying select songbirds paints a broader picture of overall ecosystem health

Ashland, OR – A new study on songbirds in the Pacific Northwest, released on March 11th, empirically tests the use of focal species as indicators of ecosystem health.

Focal species are often monitored to understand overall ecosystem health and thereby inform and improve natural resource management. However, few studies have empirically tested how well this approach works. The new study, *Established and empirically derived landbird focal species lists correlate with vegetation and avian metrics,* published by scientists at Klamath Bird Observatory and the Klamath Inventory and Monitoring Network of the National Park Service, tested the focal species approach against site-specific empirical data and found that a suite of bird focal species represented other birds and vegetation in some, but not all instances, and the application of focal species may be improved with more site-specific data.

In the Pacific Northwest, Partners in Flight (PIF) – a broad partnership aimed at conserving bird populations – has been using birds as focal species for nearly 20 years. The premise of the focal species approach is that a suite of songbird species that are closely tied to key habitat features will represent many other bird species and other elements of biodiversity. The study, published in the scientific journal *Ecological Applications* (https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/eap.1865), used data from six national parks in southern Oregon and northern California to evaluate the focal species approach in the Pacific Northwest. Specifically, the study examined whether PIF focal species represented three broader ecosystem components of biodiversity: vegetation, other songbirds, and more specifically, songbirds in decline. The researchers then tested whether they could develop a focal species list from existing park-specific bird surveys that would do a better job at representing the broader suite of species and vegetation.

“If focal species do a good job at representing others aspects of biodiversity, then we can confidently apply them to decisions about managing natural areas. In this time of unprecedented human altered environments, ensuring that the best available science informs decision-making in an efficient manner is crucial,” explains Jaime Stephens, KBO's Science Director and lead author of this paper. Jaime suggests that this study identifies not only how this approach can be useful to land managers, but importantly, also the limitations of the focal species approach.

The research team found that PIF focal species represented the broader suite of species and vegetation in some, but not all, instances. For example, Partners in Flight focal species did a good job of representing other songbirds at four of the six national parks included in the study. For all parks combined, the new focal species developed from the park-specific bird surveys were slightly better at representing other songbirds, with more improvement in some parks than others.

In contrast to the close association of focal species with the group of all songbirds combined, the PIF focal species represented songbirds in decline at only two of the parks. John Alexander, KBO Executive Director and a co-author

of the study, highlights that “It is likely that the species in decline experience different threats than the focal species.” Alexander goes on to explain that these underrepresented declining species may face threats when they leave the parks during the migration – the focal species are chosen to help understand conditions in each park where the songbirds breed.

“I've worked through many uses of indicator and focal species approaches as a way for us to "see" and perhaps improve how a system works, and this is among the best approaches I know," says PIF National Coordinator Bob Ford. He adds, “This approach provides a blueprint for how multi indicator species can be applied to advance conservation in other North American biomes.” He believes this is an important part of the PIF toolbox, adding value to the full lifecycle approaches that PIF applies to addressing conservation needs for priority and declining species.

This study, funded by the National Park Service Inventory and Monitoring Program, takes advantage of the first decade of long-term bird monitoring in the six national parks of the Klamath Network. This monitoring program was designed to answer pressing questions for park managers and local conservation practitioners over the short-term, while monitoring long-term trends in bird populations over the long term. "Our long time partners at KBO provide valuable expertise that allows us to extend the value of our datasets and answer important questions that support natural resource stewardship in Klamath Network parks and beyond,” says Alice Chung-MacCoubrey, the NPS Klamath Network Inventory and Monitoring Program Manager. Continued long-term monitoring in the parks is critical to understanding local bird population dynamics in comparison to trends for the same species at regional and national scales.

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About Klamath Bird Observatory:
Klamath Bird Observatory advances bird and habitat conservation through science, education, and partnerships. We achieve bird conservation in the Pacific Northwest and throughout the migratory ranges of the birds of our region. We developed our award-winning conservation model in the ruggedly beautiful and wildlife-rich Klamath-Siskiyou Bioregion of southern Oregon and northern California. Emphasizing high caliber science and the role of birds as indicators of the health of the land, we specialize in cost-effective bird monitoring and research projects that improve natural resource management. Also, recognizing that conservation occurs across many fronts, we nurture a conservation ethic in our communities through our outreach and educational programs. Visit Klamath Bird Observatory at www.KlamathBird.org.

About Klamath Inventory and Monitoring Network of the National Park Service:
The Klamath Network tracks the ecological health of six national park units in southern Oregon and northern California. We inventory park natural resources and then regularly monitor the condition of a carefully selected subset, called “vital signs,” at Crater Lake NP, Lava Beds NM, Whiskeytown NRA, Lassen Volcanic NP, Redwood National and State Parks, and Oregon Caves National Monument and Preserve. Our small staff of scientists partners with park scientists and other organizations to monitor nine vital signs: cave environments and communities, rocky intertidal zone communities, landbird communities, land cover and use within and surrounding parks, lake water quality and aquatic communities, stream water quality and aquatic communities, vegetation communities, invasive plants, and whitebark pine trees. Learn more about the Klamath Network and browse the published results of our science at https://www.nps.gov/im/klmn/index.htm.

Photo captions and credits:
The Hermit Warbler is a Partners in Flight focal species for Oregon/Washington western coniferous forests. The focal species list developed from park-specific bird surveys suggest adding them as a focal species in California as well. Photo credit James Livaudais.

The Hairy Woodpecker was selected for the focal species list at three of the six parks when data from park-specific bird surveys were used. Photo credit James Livaudais.