

# Klamath Bird Observatory



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

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**An improved method of assessing the value of habitats to wildlife:  
Incorporating behavior into measures of species diversity**

Managers charged with stewarding public and private lands strive to protect, maintain, and restore healthy forest conditions that are resilient to drought, flood, and severe wildfire. Managers often rely on the presence of indicator species and species richness (i.e., the number of species present) to assess the value of different forest conditions to wildlife; however, relying on an indicator species or estimates of richness does not directly measure in what way focal habitats support the life history needs of individual species. For example, a bird provisioning food to nestlings is a more meaningful metric than a bird of the same species simply dispersing through a focal habitat. Unfortunately, classical measures of richness often treat these two hypothetical birds as similar when assessing the value of forests to wildlife. While past conservation planning has largely focused on wildlife presence, new research suggests assessing habitat value throughout the entire avian life cycle will provide a more holistic approach to management.

Recognizing the need for a better assessment of forest value to wildlife, a team of researchers from Klamath Bird Observatory, the Forest Service, and Michigan Technological University developed the “informed indices” concept. This new and impactful method scales diversity estimates by meaningful phases of each species lifecycle, such as breeding and feather replacement (i.e., molt). For proof-of-concept, the collaborative team used 18 years of bird capture data from across multiple forest types in California and Oregon to determine how the value of forests changes for bird communities across the breeding and molting seasons.

“We were surprised to find that forests with diverse breeding bird communities sometimes hosted relatively depauperate molting communities, demonstrating that a single location’s value is dynamic, changing from high to low depending on what part of the avian lifecycle a manager is considering” said Dr. Jared Wolfe, Klamath Bird Observatory Research Associate and lead author of the study.

“Instead of relying on simple measures of presence and absence, our informed indices concept assesses wildlife across biologically-meaningful seasons. This is an important improvement because it identifies essential variation in the value of forest to wildlife, thereby allowing managers to properly conserve wildlife throughout North America and beyond” said Dr. John Alexander, Klamath Bird Observatory Executive Director and co-author of the study.

You can read the team’s study in the latest issue of *Ecology and Evolution*, an open-access journal [<https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.5008>].

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About Klamath Bird Observatory: Klamath Bird Observatory advances bird and habitat conservation through science, education, and partnerships. We work 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](http://www.KlamathBird.org).

Image 1 [Study Area (150ppi 5xX).jpg]: Data from long-term monitoring efforts in the Klamath-Siskiyou Bioregion of southern Oregon and northern California were used to develop a new index of habitat value.

Image 2 [Informed species richness (96ppi 5xX).jpg]: "Informed" estimates of species richness unveiled the importance of an inland riparian forest (GERB) as compared to other sites in the region.