

# New study will help protect vulnerable birds from impacts of climate change

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Scientists from PRBO Conservation Science and the Department of Fish and Game have completed an innovative study on the effects of climate change on bird species of greatest concern. This first-of-its-kind study prioritizes which species are most at risk and will help guide conservation measures in California. The study was published this week in the journal *PLoS ONE*.

"What's most exciting about the study is that our unique approach is one that other scientists and resource managers can duplicate to help them conserve wildlife in the face of climate change," said PRBO Ecologist Tom Gardali, the study's lead author.

"Not only does our study look at which birds will be most at risk given a changed climate, it also evaluates how climate change, piled on top of all the existing threats such as development and invasive species, will affect birds. This gives a more comprehensive picture, and provides the information necessary to help allocate scarce dollars for conservation."

The study combines existing stressors such as [habitat loss](#) and degradation with the vulnerability of California's bird species to projected climate change impacts to produce a prioritized list of at-risk species for conservation action. The research shows that nearly 130 [species of birds](#) are vulnerable to the predicted [effects of climate change](#) and that 21 of the state's 29 threatened and endangered bird species (72 percent) will be further impacted by climate change, increasing their risk of extinction.

"Lists of at-risk species like ours are simply a first step. Now conservationists and resource managers need to use the list and other resources to identify how best to spend limited conservation dollars to benefit birds, other wildlife and [human communities](#)," noted Dr. Nat Seavy, study co-author and PRBO scientist.

The study also found that wetland species are more vulnerable than other groups of birds because they are specialized on habitats that will be threatened by [sea level rise](#) and changes in precipitation. The most vulnerable wetland birds include the California black rail, California and Yuma clapper rails and three species of song sparrow found only in the tidal marshes of San Francisco Bay. Species that make a living at sea or near-shore waters and that nest on islands or rocky shores are also highly vulnerable. These species include the Cassin's auklet, common murre, black oystercatcher and the iconic white and brown pelicans.

"By using this information to prioritize and implement conservation actions now, managers can help to reduce negative impacts of climate change," said DFG Chief Deputy Director Kevin Hunting. "This research is yet another example of how the DFG and partners like PRBO are actively addressing climate change, engaging in adaptation planning, and taking important steps towards safeguarding fish, wildlife, and habitats across the state for future generations to enjoy."

**More information:** The complete list of species and the climate vulnerability scores are available online through the California Avian Data Center ([data.prbo.org/apps/bssc/index....change-vulnerability](http://data.prbo.org/apps/bssc/index....change-vulnerability)).

Provided by PRBO Conservation Science

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