

# Penguins' calls are influenced by their habitat

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Variation in Little Penguin calls appears to be driven by small differences in habitat, rather than by geographic isolation. Credit: D. Colombelli-Negrel

Birds use vocalizations to attract mates, defend territories, and recognize fellow members of their species. But while we know a lot about how variations in vocalizations play out between populations of songbirds, it's far less clear how this variation affects birds such as penguins in which calls are inherited. A new study from *The Auk: Ornithological Advances* examines differences in the calls of Little Penguins from four colonies in Australia—nocturnal birds for whom vocalizations are more important than visual signals—and finds that disparities in habitat, rather than geographic isolation or other factors, seem to be the key driver of variation in the sounds these birds use to communicate.

Diane Colombelli-Négrel and Rachel Smale of Australia's Flinders University recorded calls from four Little Penguin populations across a small area of South Australia, one of which had previously been shown to have subtle genetic differences from the other three, and used playback experiments to test penguins' ability to distinguish between calls from different colonies. They found that agonistic calls, which are used in pair displays and aggressive situations, varied among the four populations, and that the calls' characteristics appeared to depend on small-scale differences in the habitat where the penguins lived. However, [birds](#) did not discriminate between calls originating from different colonies, which suggests that agonistic calls don't seem to play a role in isolating the two different genetic groups.

Penguins breeding in open habitats produced lower-frequency calls than those breeding in habitats with denser vegetation—the opposite of the trend typically observed in songbirds. The authors speculate that agonistic calls may be subject to different selective pressures because they're used in close encounters with other birds rather than to communicate across distances, and could also be influenced by variation in the noise level of wind and surf. "I was excited to find that calls were influenced by [habitat](#), as this hasn't been investigated much in seabirds and most of our knowledge in this area comes from studies on

songbirds," says Colombelli-Négrel. "This new research suggests that many factors influence call variation in birds, which also depends on the function of the calls. This study highlights that many questions remain and that studies need to investigate more than one factor in conjunction with the function of the calls to fully understand call variation in seabirds."

"This work tells an interesting story of vocal diversification in Little Penguins, and gives insight into how individual and micro-scale variation effects behavior," according to Stony Brook University's Heather Lynch, an expert on penguin calls who was not involved in the study. "Non-vocal-learning birds are relatively understudied in terms of vocalizations, and it is great to see penguin vocalizations being studied in such a way."

**More information:** "Habitat explained microgeographic variation in Little Penguin agonistic" November 1, 2017, [www.bioone.org/doi/full/10.1642/AUK-17-75.1](http://www.bioone.org/doi/full/10.1642/AUK-17-75.1)

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