

Study documents effects of road noises on migratory birds

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Credit: Ashley Jensen

(Phys.org) —A first-of-its-kind study by Boise State University researchers shows that the negative effects of roads on wildlife are largely because of traffic noise.

Biologists have known that bird populations decline near roads. But pinpointing noise as a cause has been a problem because past studies of the effects of road noise on wildlife were conducted in the presence of the other confounding effects of roads. These include visual disturbances, collisions and chemical pollution, among others.

"We present the first study to experimentally apply traffic noise to a roadless area at a landscape scale, thus avoiding the other confounding aspects of roads present in past studies," said Christopher J. W. McClure, post-doctoral research associate in the Department of Biological Sciences.

"Understanding the effects of road noise can help wildlife managers in the selection, conservation and management of habitat for birds," said Jesse R. Barber, assistant professor of [biological sciences](#) and one of McClure's fellow researchers.

Beside McClure and Barber, researchers in the study include Heidi E. Ware, graduate student; Jay Carlisle, assistant research professor and research director of the Idaho Bird Observatory; and Gregory Kaltenecker, executive director of the Idaho Bird Observatory.



Researchers created a phantom road on a ridge southeast from Lucky Peak, near the Idaho Bird Observatory's field site. Putting speakers in trees, they played roadway sounds at intervals, alternating four days of noise on with four days off during the autumn migratory period. The researchers conducted daily bird surveys along their phantom road and at a nearby control site.

"We documented more than a one-quarter decline in bird abundance and almost complete avoidance by some species between noise-on and noise-off periods along the phantom road," Barber said. "There were no such effects at control sites. This suggests that traffic noise is a major driver of the effects of [roads](#) on populations of animals."



The results of the Boise State study, "An experimental investigation into the effects of [traffic noise](#) on distributions of [birds](#): avoiding the phantom road," has been published in the *Proceedings of the Royal Society B*.

Provided by Boise State University

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