

Bird songs change with environment

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Just as a changing radio landscape has made it tough for Foghat to get much airplay these days, so it is for birdsongs according to new research published in *The American Naturalist*.

Behavioral ecologist Elizabeth Derryberry (Louisiana State University) has found that the songs of white-crowned sparrows change over time in response to changing habitats. The research sheds light on the factors that drive the evolution of mating signals in birds.

Derryberry says she first noticed that sparrows seem to be changing their tunes while working on her doctoral research. She ran across some old recordings of classic sparrow songs from 1970, and noted that the old tunes seemed a little different from the ones the kids are singing today.

To evaluate how much the songs have changed—and what might be driving the change—Derryberry made new recordings in the same locations as the old ones. She then used [aerial photographs](#) to evaluate how vegetation had changed in each place. Using computer software to compare the songs then and now, she found that where vegetation had gotten thicker, the birdsongs had slowed down significantly in tempo.

"It's pretty good evidence that vegetation density can influence birdsong over time," Derryberry said.

Why would thicker vegetation cause slower songs?

Leaves create an echo. A slower tune, Derryberry says, is less apt to be

garbled by reverberation.

"Young male sparrows learn to sing by listening to adult males nearby," she explains. "Juveniles likely learn and repeat the songs they hear most clearly." Since the slower songs come through loud and clear in leafy surroundings, those are the ones that are learned and passed on to the next generation. After a while, the slower songs dominate.

Derryberry's study is the first to show that rapid habitat shifts can cause changes in birdsongs. She now plans to extend her research to investigate how habitat changes associated with [global warming](#) might cause birds to sing a different tune.

More information: Elizabeth P. Derryberry, "Ecology Shapes Birdsong Evolution: Variation in Morphology and [Habitat](#) Explains Variation in White-Crowned Sparrow Song," *The [American Naturalist](#)*, July 2009.

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