Songbirds rise above the din to learn the right notes

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Noise, whether from the city or nature, may be enough of a nuisance to convince birds to change their tune over time, according to a new study co-authored by a Tulane University evolutionary ecologist.

When baby swamp sparrows learn to memorize songs, they tune out noise to become clear singers as adults. (Photo by Robert Lachlan)

Like fuzzy reception on a cell phone, some birds' songs become distorted when broadcast through vegetation or over loud noises in the city. “If you're a bird trying to learn a new song, which do you copy ? the clear one or the fuzzy one?” asks Elizabeth Derryberry, an assistant professor in the Department of Ecology and Evolutionary Biology.

Derryberry, along with Duke University researchers Susan Peters and Steve Nowicki, studied how baby swamp sparrows learned to memorize songs. They raised nestlings in a soundproof room, playing 16 recorded song types from adult males.

Eight songs were degraded, or noisy, while the rest were clean copies of similar-sounding, but different songs. When the birds matured, they only sang the clear songs.

Over time, these choices could lead to cultural selection that changes the way birds sing in response to changes in habitat and urban noise, Derryberry says.

“There has been a lot of different research that shows that birds' songs vary with different habitats, but we didn't know how songs evolved in response to the selection pressure from the environment,” Derryberry says. “This study is the first to show how that may take place.”

The broad implications are that noise from people in the city can lead to changes in the songs birds sing, she says.

The results were published on June 20 in the journal *Biology Letters*.