

Competition and climate change combine to threaten Bicknell's thrush

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A researcher sets up a playback experiment for a study of Bicknell's and Swainson's thrushes in the Adirondack Mountains. Credit: A. C. Freeman

Bicknell's Thrush (*Catharus bicknelli*) is a songbird that breeds in New England mountaintop forests threatened by climate change. Research

forthcoming in *The Condor: Ornithological Applications* shows that this threat could be exacerbated by competition from related birds living downslope. Climate change may cause Bicknell's Thrushes' preferred habitat of spruce-fir forests to shift to even higher elevations, constricting their range, and new data suggests that aggression from related Swainson's Thrushes (*Catharus ustulatus*) could drive them uphill even faster.

In playback experiments conducted in New York's Adirondack Mountains, Swainson's Thrushes approached a speaker in response to recorded Bicknell's Thrush songs in 9 out of 36 trials, but a Bicknell's Thrush approached the speaker in response to a Swainson's Thrush recording in only 1 out of 16 trials. Swainson's Thrushes were also more likely to be aggressive toward Bicknell's Thrush recordings at [higher elevations](#). This suggests that Swainson's Thrushes may be behaviorally dominant over Bicknell's Thrushes, and a warming climate could allow Swainson's Thrushes to move farther upslope and compete with vulnerable Bicknell's Thrushes.

Benjamin Freeman of Cornell University, the lead author of the paper, had never actually seen a Bicknell's Thrush before beginning this study and was worried that it would be very difficult to find them. "This, of course, would have deep-sixed the project, as you can't study a bird you can't find," he says. "But when we reached the ridgetop at dawn on our first day, we almost immediately heard a Bicknell's Thrush singing—then a second and a third! We were elated, and even the clouds of blackflies couldn't ruin the day." Once they located singing Bicknell's and Swainson's [thrushes](#), he and his colleagues played recorded songs of both species to test their reactions, such as how quickly they approached the speaker and how much they vocalized in response.

Along with protecting their winter range in Hispaniola and improving monitoring, mitigating the effects of climate change will be crucial for

Bicknell's Thrush conservation, and this interaction of [climate change](#) and animal behavior could create an additional challenge. According to Kent McFarland of the Vermont Center for Ecostudies, researchers had been noticing the aggressiveness of Swainson's Thrushes toward Bicknell's Thrushes for years, "but we lacked quantitative data, likely because the difficult habitat they breed in and their secretive nature discouraged many of us. With the perseverance of these authors and their field technicians, we now have that data," he says. "If Swainson's Thrushes are more aggressive, as this study suggests, we may have to consider intraspecific behavior as part of a Bicknell's Thrush conservation action plan in the future."

More information: 'Interspecific aggression by the Swainson's Thrush (*Catharus ustulatus*) may limit the distribution of the threatened Bicknell's Thrush (*Catharus bicknelli*) in the Adirondack Mountains' will be available Dec. 23, 2015, at www.aoucospubs.org/toc/cond/118/1

Provided by The Condor

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