

Mini video cameras offer peek at hard-to-observe bird behavior

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This still image, taken from a video clip captured remotely with a miniature camera, captures the moment when a Grasshopper Sparrow chick leaves its nest. Credit: C. Ribic, USGS

Fledging behavior—when and why baby birds leave the nest—is something scientists know very little about. Rarely is someone watching a nest at just the right moment to see fledging happen. To get around this, the researchers behind a new study from *The Auk: Ornithological Advances* deployed miniature video cameras to monitor over 200 grassland bird nests in Alberta, North Dakota, Minnesota, and Wisconsin, and they found that fledglings' decision-making process is more complex than anyone guessed.

Christine Ribic from the U.S. Geological Survey and her colleagues tested two competing hypotheses about fledglings' decision making. Birds might leave the [nest](#) early in the day to maximize the amount of time they have to find a safe place to hide from predators before nightfall. Alternatively, once their siblings start to leave, the remaining birds might decide to stay in the nest longer to take advantage of reduced competition for the food their parents provide, resulting in spread-out fledging times. Video data analyzed by Ribic and her colleagues showed that the more siblings in a nest, the longer it took for all of them to fledge, consistent with the idea that some young may stay behind to take advantage of reduced competition after the first nestlings leave. Ribic and her co-authors discovered that 20% of nests took more than one day to completely finish fledging. Fledging behavior also varied between species and over the course of the breeding season, for reasons that remain unclear.

As they decide when to fledge, the nestlings of [grassland birds](#) are balancing two competing demands. On one hand, staying in the nest longer gives them more time to grow and develop before facing the risky outside world. On the other hand, predation risk might increase with time spent in the nest.

"It was exciting to see events naturally occurring in an area of avian biology where very little is known, and was only possible due to the use

of [video](#) surveillance systems," says Ribic. "It seems fledging is more complex than we previously thought. We were surprised by the span of time over which grassland bird species fledge, with some species starting to fledge in the early morning and others closer to noon, and by the frequency of fledgings that spanned multiple days."

"Considerable research attention has focused on the breeding biology of birds, but until recently some events have been difficult to observe. Luckily, decreases in the size and cost of video equipment have allowed researchers to study these hard-to-observe events, such as the brief moments when a predator causes a nest to fail. This study took things a step further to begin exploring the point in time when young birds fledge from the nest," adds the University of Illinois's T.J. Benson, an expert of bird nesting behavior who was not involved in the study. "There are relatively few existing ideas for what influences the timing of nest departure by young [birds](#), and Ribic and her colleagues put forth an interesting idea about the potential role of food availability in influencing fledging. Use of video technology to examine [nest predation](#) has become widespread, and this paper provides a great example of the other interesting aspects of breeding biology that can be examined in such studies."

More information: "Diel fledging patterns among grassland passerines: Relative impacts of energetics and predation risk" *The Auk: Ornithological Advances* [DOI: 10.1642/AUK-17-213.1](https://doi.org/10.1642/AUK-17-213.1)

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