

Chickadees slow to return to feeders while predators are nearby

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A new study led by graduate student Josue Arteaga-Torres in the Department of Biological Sciences examines chickadee behaviour, and took place in the UAlberta Botanical Gardens. Credit: Gail Kozun

Chickadees will change their feeding behavior if they think predators are nearby, according to new research by University of Alberta biologists.

The study, led by graduate student Josue Arteaga-Torres in the Department of Biological Sciences, took place in the UAlberta Botanical

Gardens. The researchers simulated the presence of predators using visual and [auditory cues](#) and examined how these cues affected the feeding behavior of black-capped chickadees. The results show that chickadees are slower to return to feeders when they have seen [visual cues](#) that suggest predators are nearby, while [alarm calls](#) made by other birds do not deter them for as long.

"These birds are constantly using information around them to make life or death decisions," explained Arteaga-Torres. "The way birds respond to cues in their environment can vary greatly depending on the type of cue, but also it varies at the individual level. Some individuals will be more affected by particular sources of information than others."

Black-capped chickadees are a subject of study due to their ability to survive challenging environmental conditions, such as Edmonton's harsh winter, with very limited food supplies.

"This makes them amazing creatures to study," added Arteaga-Torres, who is studying under the supervision of Kimberley Mathot, an assistant professor and Canada Research Chair in Integrative Ecology.

The researchers also examined the relationship between the weather and the [predator](#) simulation.

"On average-temperature winter days, we found that the birds responded the same way to visual cues as they did to auditory and visual cues combined," said Arteaga-Torres. "To our surprise, this pattern was weather dependent; it changed completely at [lower temperatures](#) when the combination had less effect than the visual cue alone."

By knowing how animals respond to different sources of information in their environment and the interactions between cues about predation risk, scientists can develop ways to deter or attract certain animals, such

as [invasive species](#) or animals who are endangered or at risk.

More information: Josue David Arteaga-Torres et al. Visual cues of predation risk outweigh acoustic cues: a field experiment in black-capped chickadees, *Proceedings of the Royal Society B: Biological Sciences* (2020). [DOI: 10.1098/rspb.2020.2002](https://doi.org/10.1098/rspb.2020.2002)

Provided by University of Alberta

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