UC SANTA BARBARA
THE Current

April 28, 2026
Sonia Fernandez

Grackle research reveals behavioral flexibility and adaptation in action

You've probably seen them: Glossy black, mid-sized birds with bright yellow eyes and a brazen attitude. They're grackles, and they live where humans like to be, hoping for handouts, picking through leftover food scraps, foraging and scavenging wherever they can.

"I first learned about grackles when I was in Costa Rica doing research on other animals," said UC Santa Barbara researcher Corina Logan. "I was sitting in a park eating my baguette and reading a newspaper, and these birds were coming up to me, looking me right in the eye like, 'Oh I'm taking your food.' And I thought if I ever wanted to work with a bird that wants to work with me, I think this might be a good species to try."

Fast-forward a few years and Logan, who now also leads the Comparative Behavioral Ecology Group at the Max Planck Institute for Evolutionary Biology, is back at the park waiting for grackles to come take her food. But this time she's at Santa Barbara's Leadbetter Beach Park doing it as part of her research, trying to understand how the highly social birds adapt to a variety of human-made environments.

Specifically, she's investigating behavioral flexibility, or how the birds respond to conditions when these conditions change. It's a crucial trait for species survival in a

variety of contexts in general, and especially today as they face climate change and habitat loss. And grackles, who have been expanding their range across the United States, seem to be masters of this ability. Native to Central America, the particular species Logan is studying, the Great-tailed Grackle, was observed as far north as South Texas in the 1880s. Some 140 years later, the birds can be found in Vancouver, BC.

“The hypothesis is that it requires flexibility to adapt to all these changes with your behavior in order to be able to move that kind of distance in that amount of time,” Logan said. And certainly, the birds make themselves at home wherever they go, be that in the grain fields of rural America to parking lots in urban commercial areas, to, in this case, the areas near Shoreline Café, where they are apparently fans of the French fries.

But Logan isn’t without her own tools. Goldfish crackers provide a suitable incentive for the birds to participate in an experiment, one that tests how quickly they can switch their preferences between a light gray and a dark gray remote controlled pet feeder. By dispensing the coveted crackers from only one of the feeders when the birds land near it, the researchers train them to prefer that feeder. And then they switch feeders to test a cognitive ability called reversal learning.

“We have these two parameters,” said animal behavioral researcher Dieter Lukas, Logan’s partner in both life and in research. “One is to see how they change their behavior after they get a reward.” The other is to see how often the birds deviate from what they just learned.

“You’re going to be really flexible if you can quickly update your previous preferences,” he explained. “You don’t stick to something you learned, but you learned something new that has a larger weight than what you learned before.”

In the process, the researchers also get a glimpse into grackle society. The birds have varying approaches to foraging — males typically assert their dominance, while the females usually resort to speed. Some are faster at figuring out the puzzles, an ability that often raises them in the social hierarchy, while others hang back and watch the puzzle-solvers figure things out before making their own choices, for better or for worse.

“It’s really interesting to see them getting frustrated when they make the wrong choice,” Lukas said. Just after they discover that the previously rewarded feeder is now not rewarded, he said, “they start vocalizing, they start throwing leaves around.” Though the researchers can’t prove that the birds are actually throwing tantrums, it’s hard not to interpret it that way.

These tests are the latest in a series of similar experiments Logan has conducted with other grackle populations across the country. As it turns out, grackles that had been trained to be more flexible are better at foraging in the wild. The team also found that grackles at the edges of their range tend to be more persistent relative to those farther from their boundaries.

“It makes sense — they’re trying things more, they’re engaging more and they’re willing to put more effort into figuring something out,” Logan said — essential behaviors for birds adapting to new environments. In her experiments, the edge populations had the most variance in flexibility, and regardless of whether the bird species was rapidly expanding its range (Great-tailed grackles), or not (Boat-tailed grackles), they had the same average flexibility.

This work feeds into a larger project called ManyIndividuals, in which collaborating field researchers from around the globe investigate hypotheses that involve generalizing across many individuals. One of the project’s main goals is to discern whether increasing flexibility in the populations they study — for instance, with reversal learning — can give these and other animals the tools to adapt to rapid changes in their environments.

“A lot of threatened and endangered species are having a hard time because there is so much human modification of the environment, and this is where the grackles really succeed,” said Logan. “So can we take the grackle successes and apply them to threatened and endangered species, and see if it helps them survive in human-modified environments? We’re in the process of finding out.”

In the meantime, the researchers will continue to give their puzzles to the grackles in Santa Barbara, which Logan acknowledges is on Chumash ancestral lands and she is working on her relation to it as a settler. The birds inadvertently give the researchers some of their own puzzles to solve, as they occasionally decamp to other locations for no discernible reason, and then emerge at the park again. On that note, the researchers would be excited to hear about local grackle sightings, in

backyards or anywhere else (send an email with your sightings to corina@ucsb.edu); they could be one of the birds she's been following around.

“The last time one of the birds, with a red band on his left leg, saw us was December of 2024,” Logan recalled. “Nine months later he saw us, landed on the railing right next to me and he was like, ‘Hey.’”

Media Contact
Sonia Fernandez
Senior Science Writer
(805) 893-4765
sonia.fernandez@ucsb.edu

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.