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UCSB wild bird fieldwork to begin at SB Zoo

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Sometime early this year, Santa Barbara Zoo visitors will get a chance to see UCSB researcher Corina Logan tackle the grackle. That's the great-tailed grackle, a bird that may have more than a birdbrain when it comes to cognitive abilities.

Dr. Logan will set up a field site at the zoo where she can examine the wild grackles' physical and social intelligence. The grackles already visit the zoo frequently, making it an ideal location for a study site.

A bird cool enough to dine on dead insects served up on the license plates of parked cars may be solving its foraging problems using cognition rather than by accident, she believes.

The scientist holds a junior research fellowship at UCSB's SAGE Center for the Study of the Mind. She will study the grackles by briefly capturing them and placing colored tracking rings on their legs. She hopes to have her final two tracking permits by the end of January.

Then she can start doing some public education by talking to small groups of zoo-goers. "There will be signs explaining my research and zoo visitors will be able to see science in action," she said.

"In some ways, the zoo is like a living laboratory that gives us the ability to study aspects of animal biology, including cognition, that we otherwise would not have the ability to do in the wild," explained Estelle Sandhaus, the zoo's director of conservation and research.

"In the case of the wild grackle, it gives us a window into more general principles of behavior that may have broader implications across species," she said.

Dr. Logan's Ph.D is in experimental psychology from the University of Cambridge. The 34-year-old researcher plans to put the grackles through a series of choice tests in the field to determine their physical and social intelligence. Birds will be able to approach and interact with the test apparatus at will.

A string-pulling test is commonly used in the study of crows, the most intelligent of birds. Food is tied to one end of a string while the other end is tied to a perch. If a grackle can pull up the food with its feet while standing on the perch, it will get a gold star from Dr. Logan.

Another is the water tube test, wherein the birds must raise the water level inside the tube to get food floating on the water's surface. The scientist hopes that the grackles will be as smart as crows and displace the water level by dropping in an assortment of stones left near the tube site.

As part of the social cognition study, demonstrator birds will be trained to get at food in special ways. If other hungry grackles mimic the demonstrators, then they are using social information to solve their foraging problems. If they do not mimic the demonstrators, then they rely more on their own information when finding food.

It was the grackle's enthusiastic social play on a Costa Rican beach that caused the scientist to consider this species as a study subject in the first place.

A National Geographic Society/Waite Grant will allow Dr. Logan to travel to New Caledonia this summer to conduct comparative tests on New Caledonian crows.

"Crows are among the largest-brained birds and are capable of solving even the most complicated tests of physical cognition that have been presented to birds so far," she emphasized. "I will compare test performance between crows and the much smaller-brained grackles to see what benefits large brains provide."

Originally from Central America, the wild grackle came to Santa Barbara from Central America about 20 years ago, according to the researcher.

"Since about 2005, researchers started looking for, and finding, highly intelligent birds, particularly in the large-brained crows and parrots," Dr. Logan explained. "What caused this explosion in avian cognition research, was the revision of bird-brain anatomy to name the parts according to what function they perform rather than what structure in the mammalian brain they look like," Dr. Logan said.

"Bird and mammal brains are structured very differently," the researcher explained. "People used to think that the whole bird brain was similar to the more primitive mammalian brain.



A male great-tailed grackle gives a wide berth to UCSB junior research fellow Corina Logan at the Andree Clark Bird Refuge. Dr. Logan will study the cognitive abilities of the species, allowing Santa Barbara Zoo visitors to see science in action.

MIKE ELIASON/NEWS-PRESS PHOTOS



Believed to have a high potential for possessing complex cognitive abilities, great-tailed grackles migrated to California about 20 years ago. A group of about 20 grackles currently nest in eucalyptus trees at the Andree Clark Bird Refuge and frequently drop in at a nearby restaurant.

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"If you look at the function of the different areas of bird brains, however, there is actually an area that performs functions similar to the mammalian neocortex, which is the cognitive processing center," Dr. Logan said.

In addition to the zoo, the scientist plans to do fieldwork at the Andree Clark Bird Refuge where the grackles seem to hang out in the afternoons. They also gravitate to a restaurant across the street from the refuge where they like to open blue, white and pink substitute sugar packets sitting on the tables.

"Grackles and humans are very similar: we are very innovative and we don't always make the healthiest choices," Dr. Logan said.

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