

## TRILOBITES

# Birds That Eat Fire, Pet Food and Sugar Packets to Live Another Day

A willingness to experiment with new foods and ways of foraging may make some birds less vulnerable to extinction.

By Asher Elbein

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Rufous treepies, birds in the crow family native to South and Southeast Asia, usually eat insects, seeds or fruits. But some of them have learned to eat fire.

Well, not exactly, but close. At a small temple in the Indian state of Gujarat, the caretakers regularly set out small votive candles made with clarified butter. The birds flit down to steal the candles, extinguish the butter-soaked wicks with a quick shake of their heads and then gulp them down.

This willingness to experiment with new foods and ways of foraging is an indicator of behavioral flexibility, and some scientists think it is evidence that certain species of birds might be less vulnerable to extinction.

“The idea is that if a species has individuals that are capable of these novel behaviors, they’ll respond with changes in their behavior more easily than individuals from species that do not tend to produce novel behaviors like that,” said Louis Lefebvre, a professor at McGill University in Montreal and an author on the study. “The idea is pretty simple. The problem was to be able to test it in a convincing way.”

A team of researchers, led by Simon Ducatez of Spain’s Center for Research on Ecology and Forestry Applications and including Dr. Lefebvre, combed through 204 ornithological journals for mentions of novel behaviors and feeding innovations, comparing the number of sightings in each species with their risk of extinction. Their results were published this month in *Nature Ecology & Evolution*.

Dr. Lefebvre said the approach provided backup to earlier cognition experiments he had led with wild-caught birds, such as testing their ability to figure out how to open boxes full of food.

“People that watch birds — ornithologists, bird watchers — tend to report whenever they see unusual feeding behaviors,” he said. “That’s a gold mine to get a database on all possible species all over the world.”

Some of the reported innovations were subtle, with seed-eaters like Northern cardinals feasting on nectar from nonnative garden plants. Others were more remarkable: cormorants in New Zealand using the strong currents left in the wake of ships to go fishing, green herons deploying bread crumbs as bait to catch fish, great blue herons hunting squirrels on golf courses and — famously — gulls stealing bags of chips.

The team’s own observations complemented the data from ornithology journals. In Barbados, for example — where Dr. Lefebvre maintains a field station — tourists often see native bullfinches eating remains of food on tables, including sugar from bowls. But the birds also steal packets of sugar, which they take away, peck open and devour. Native Carib grackles on the island also take dry pet food and dip it in rain puddles to soften and eat it.

Both of these behaviors require step-by-step deductions, which are remarkable for a bird. But in Barbados, such innovations are necessary.

“There’s nothing left of the natural habitat that used to be on this island,” said Dr. Ducatez. “Almost everything is an agricultural or urban area, and there’s very few bird species remaining there. And the few that are there are the ones that were able to adapt to human presence.”

But the team cautions that behavioral flexibility isn’t a get-out-of-extinction-free card.

Parrots, for example, are both famously intelligent and relatively adaptable feeders. But the slow-growing, slow-reproducing animals are threatened by the wildlife trade. And birds on small islands are often wiped out by mammalian predators regardless of their feeding innovations.

“The causes of population declines and extinction risk are variable and complex, and this study suggests even innovative bird species are still vulnerable to threats like overexploitation and invasive species,” said Daniel Baldassarre, a bird behavior specialist at the State University of New York at Oswego, who was not involved in the research. “In other words, being able to modify their foraging behavior does not totally protect them from extinction risk.”