Where Have All the Rainforest Flycatchers Gone—and Why?

This is part of an ongoing series profiling recent Grant-in-Aid of Research recipients.

An encounter with a mixed flock of colorful insect-eating birds in a Costa Rican rainforest is a memorable experience. Warblers, foliage gleaners, woodcreepers, flycatchers, wrens and antbirds forage together in a feeding frenzy hardly equaled in any other part of the world.

But Sigma Xi Grant-in-Aid recipient Cagan H. Sekercioglu says it's becoming harder to observe these birds in action because they're among the species most sensitive to habitat disturbance and forest fragmentation.

"Most of these species have lower population densities in forest fragments, and many are completely absent in such areas," says Sekercioglu, a doctoral candidate in ecology and evolution at the Stanford University Center for Conservation Biology.

Stanford University ecologist Cagan Sekercioglu, with assistant Parker VanValkenburgh (left) and bat researcher Margo Stoddard, on top of Costa Rica's highest peak.

"Although their disappearance has been well-documented," he says, "the reasons are not well known." Discovering the key to their vulnerability may help explain the disappearance of other small, specialized birds that comprise the majority of threatened bird species around the world.

Sekercioglu's field research on insectivorous birds, supported in part by a Sigma Xi grant from the Simons-Monroe Fund, led to a publication earlier this year in the *Proceedings of the National Academy of Sciences.*

An accomplished wildlife and travel photographer (see www.naturalphotos.com), the Turkish-born ecologist has written for a variety of newspapers and magazines. In 2001, *Aktuel* news magazine named him one of Turkey's top 100 scientists.

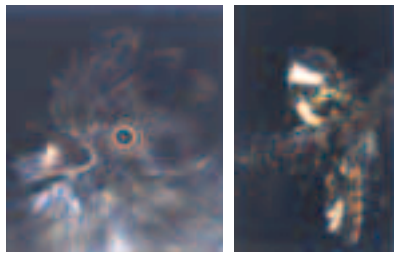
Sekercioglu's research suggests insectivorous birds have difficulty re-colonizing rainforest fragments where they have gone extinct. These findings imply it's important to establish vegetation corridors between forest fragments and improve the hospitality of open agricultural countryside to these birds.

"This was the first study to examine the effects of forest fragmentation on a bird community along with its diet and prey community," he says. "The loss of these birds may lead to the rise of damaging insect swarms in forests and surrounding croplands."

Sekercioglu has enjoyed working with local people to solve this mystery. "Even though my Costa Rican assistants were initially coffee farmers, they are now competent field assistants."

He feels it's important that they get involved in and profit from ecological research and eco-tourism so that they gain an understanding of their biological heritage and have a financial incentive to protect it.

"This research experience helped shape my career plans," Sekercioglu says. "With a project of this scale,



A flycatcher known as the scale-crested pygmy-tyrant (left) and a rufous-tailed jacamar.

there were bound to be problems and frustrations, but the fact that we were able to overcome them and turn the results into a good publication convinced me that this kind of ecological research, with a bit more emphasis on applied conservation, is what I really want to do."

The Grants-in-Aid program has been important at two critical stages in his career. While Sekercioglu was an undergraduate at Harvard University, a Sigma Xi grant helped finance an honors thesis field trip to research the effects of selective logging on forest birds of the Kibale Forest in Uganda.

"After that experience," he says, "I decided to go to grad school. The Kibale Forest project convinced my advisor I was capable of conducting good ecological research. The results were published in the June issue of *Biological Conservation.*

"Sigma Xi's Grant-in-Aid of Research also helped me get the necessary equipment to study the insectivorous birds and insects of Las Cruces. I knew it would be a challenging project, but Sigma Xi's support convinced me it was important to do it."

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