

# Researchers survey for rare birds among Mayan ruins

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Orange-breasted falcon. Chris Wood/Cornell Lab of Ornithology

(PhysOrg.com) -- During a trip to the forests of northern Guatemala earlier this year, Cornell natural sounds expert Greg Budney and his cohorts captured the first recording of a Caribbean dove in Guatemala and one of only a handful of known recordings of the bare-throated tiger heron, which emits a "spectacular low-deep" croon.

Budney, audio curator of Cornell's Macaulay Library, and other researchers from the Cornell Laboratory of Ornithology traveled to Guatemala's Petén region to inventory bird species and collect audio recordings at two pre-Columbian Mayan archaeological sites within the 5 million-plus-acre Maya Biosphere Reserve.

Invited by the Foundation for Anthropological Research and Environmental Studies (FARES), a Guatemalan archaeological research organization, the Cornell ornithologists recorded 184 bird species. The reserve holds one of the largest intact tropical forests in Central America as well as key Mayan archaeological sites at El Mirador and Tintal, where the Cornell researchers focused their surveys. The bird count may help with long-term biodiversity conservation plans at the reserve.

"The Mayans ruled in this area for 400 to 500 years and modified the environment drastically," said Eduardo Iñigo-Elias, coordinator of the lab's Neotropical Conservation Initiative and project leader of the Guatemala expedition. Budney described flying by helicopter and seeing isolated forested peaks, which were actually the ruins of huge pyramids, and white lines, or sakbej, created by ancient Mayan roads that transected the forest to connect ancient cities.

"The Mayans raised the forest floor by one or two meters for paths" that redirected water in these lowlands, created pockets of wetlands now used by water birds and altered the soil and vegetation over time, said Iñigo-Elias. The ruins have created a diverse habitat for birds and wildlife.

Budney recorded sounds of such species as the ocellated turkey, whose feathers are iridescent blue; the great curassow, a black pheasant-like bird with a yellow beak; as well as black howler and spider monkeys. The researchers were encouraged to see these birds and monkeys in large numbers because they are heavily hunted in other parts of Central America by coal miners and loggers.

"The lack of roads keeps it pristine," said Chris Wood, a member of the Guatemala team and project co-leader of the lab's eBird citizen-science project, through which birders update a permanent database with their sightings. "Roads are a huge predictor of species richness."

The researchers also sighted and collected audio of many neotropical migrants, birds that breed in North America and winter in the neotropics, including the yellow-bellied flycatcher. Of the many warblers sighted, the northern parula and golden-winged warbler in particular are considered rare for northern Guatemala.

The Cornell group, which included eBird co-leader Marshall Iliff and lab research associate Thomas Schulenberg, has plans to continue working with FARES and other Guatemalan organizations to assess important conservation sites and to possibly develop a large conservation program.

The trip was partly funded through a gift to Cornell from the Wolf Creek Charitable Foundation and another gift to the Cornell Lab of Ornithology from anonymous donors interested in supporting research and conservation of the orange-breasted falcon, one of the birds that lab researchers sighted in Guatemala. The trip was also funded by FARES and the Republic of Guatemala's Institute of Anthropology and History.

Provided by Cornell University

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