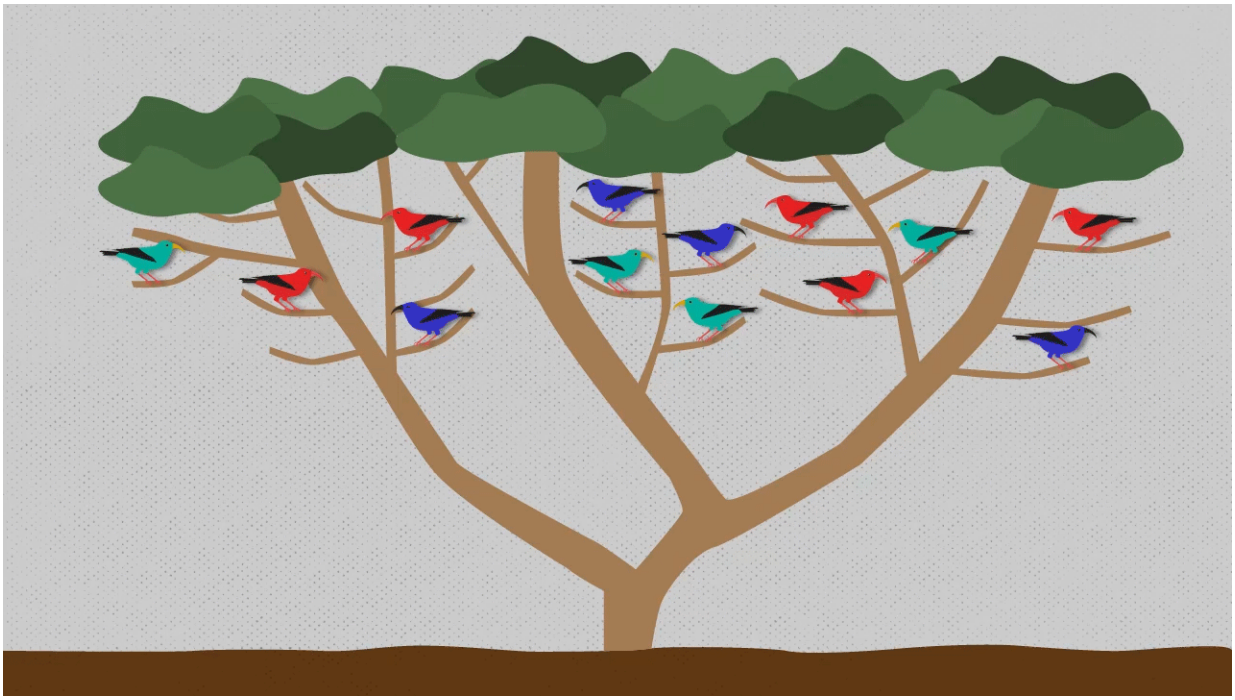
Climate change blamed for collapse of Hawaiian forest birds

September 7 2016, by Jennifer Sinco Kelleher



Researchers documented the rapid collapse of native avifauna, including Hawaiian honeycreepers, on the island of Kaua'i. They predict multiple extinctions in the next decade, if the current rates of decline continue. Credit: AAAS / Carla Schaffer

Native forest birds on the Hawaiian island of Kauai are rapidly dying off and facing the threat of extinction as climate change heats up their habitat and allows mosquito-borne diseases to thrive, according to a

study released Wednesday.

Higher temperatures caused by global warming increase the spread of diseases such as avian malaria in wooded areas once cool enough to keep them under control, the research says. The findings are an early warning for forest birds on other islands and other species worldwide that rely on rapidly disappearing habitat, according to the study published in the journal *Science Advances*.

Most of Hawaii's forest birds are restricted to forests in high elevations where disease has been seasonal or absent. A sharp increase in disease has occurred over a 15-year period in the upper-elevation forests of Kauai's Alakai Plateau, a highly eroded crater of an extinct volcano, the study said.

"If native species linearly decline at a rate similar to or greater than that of the past decade, then multiple extinctions are likely in the next decade," it warns.

Two Hawaiian honeycreeper species—akikiki and akekee—are endangered. A petition is asking for the iiwi to be listed as endangered, too, said co-author Lisa Crampton, a wildlife ecologist and conservation biologist who is also coordinator for the Kauai Forest Bird Recovery Project.

The authors used long-term survey data collected by state and federal biologists to document the decline of Kauai's native forest birds, along with surveys tallying the prevalence of avian diseases. Some co-authors went into the forests to count birds, while others analyzed the data, Crampton said.

The scientists found an increase in mosquitoes in the birds' habitat, along with warmer temperatures in the area. Those are some of the

correlations that led them to believe climate change is accelerating diseases, Crampton said.

While global warming is a "prime suspect" for the precipitous decline in the birds, other factors such as non-native plants and animals are contributing to the problem, the study said.

The authors describe climate change as a "tipping point" for the sensitive birds.

The study is a "signal that we need to do something about global warming and mosquitoes," said Sam Ohu Gon, senior scientist and cultural adviser for the Nature Conservancy of Hawaii, which was not part of the study.

It's only a matter of time before mosquito-borne diseases become commonplace in Hawaii, he said.

There are also cultural reasons to care about the study, he said, explaining that Native Hawaiians view birds, plants and animals as ancestors.

Crampton notes that feathers adorned regalia of ancient Hawaiian chiefs.

"If we lose these forest birds, we lose our connection to our past," she said, adding that they are also integral to Hawaii's watersheds.

"Even though the situation is dire, it's not too late," she said. "It's not hopeless."

State, federal and nonprofit agencies are moving to control rodents that prey on nests and fence off habitats to invasive animals such as pigs and goats, among other actions requiring public support, Crampton said.

In addition, individuals' efforts to reduce their carbon footprint will go a long way.

"Everything we can do to slow down the rate of climate change is going to help the birds," she said.

More information: Collapsing avian community on a Hawaiian island, DOI: 10.1126/sciadv.1600029 , advances.sciencemag.org/content/2/9/e1600029