

Forest Birds in Hawai‘i: Frequently Asked Questions

Isn't work already being done on forest bird conservation in Hawai‘i?

Yes, and these resources are being well-spent. Ongoing habitat conservation and restoration actions will continue to be critical, but this research indicates that these efforts must be paired with new methods to deal with avian malaria and the spread of mosquitos in order to safeguard these unique species. Management agencies are presently working collaboratively to examine a number of strategies and techniques to more effectively protect native forest bird species in the face of climate change.

Hasn't previous research focused on the impact of avian disease and climate change on forest birds?

Although previous research has been published regarding avian disease impacts on a few of the most abundant forest bird species, this study greatly expands upon past work by focusing on the responses of all native forest bird species in Hawai‘i. This research also includes multiple highly endangered native forest bird species which were previously excluded from other analyses. By broadening the scope, the research shows that most of the rarest species are expected to suffer some of the largest losses in range by the end of the century, with several having no remaining habitat.

The comprehensive nature of these projections of climate change impacts to each of Hawai‘i's remaining native forest bird species provide one of the clearest examples of a large and unique group of species extremely vulnerable to climate change.

What can the management community do to confront this threat?

The study's authors conclude that without a major proactive collaborative effort, commencing as soon as possible, the livable habitat for forest birds during the 21st century will drastically change.

The current strategies of reducing habitat degradation by non-native plants and grazing mammals, controlling non-native predators, and protecting and restoring high elevation habitat remain essential. The maps created from this research can be used to target protection and conservation actions in areas that will likely be able to support forest birds under climate change.



'iwi on māmane (Robby Kohley)

But for those forest bird species that will be impacted significantly by climate change, conservation efforts must also tackle the causes of climate-based range loss, particularly avian malaria.

Removing the effects of disease could help forest birds regain habitat that is currently “off limits” because mosquitoes are present. For many Hawaiian forest birds, this is the best chance to prevent major population declines and potential extinction.

In order to “buy time” while these long-term strategies and solutions are being developed, natural resource managers are encouraged to pursue actions that delay climate change impacts for as long as possible. These actions include initiating reforestation and restoration at higher elevations, establishing captive populations of species before extreme endangerment, and considering inter-island translocations to move species to habitats predicted to remain suitable based upon these climate change projections.

What is the PICCC doing to address this threat?

As this research was completed within a large cooperative of entities working to adapt conservation efforts within a shifting climate, the PICCC has been working with stakeholders across Hawai‘i to begin examining a number of strategies that go beyond current conservation actions and aim to more effectively protect the native forest bird species.

The PICCC has developed the Hawaiian Islands Terrestrial Adaptation Initiative (HITAI) to address the needs of resource managers and decision-



'Akeke'e (Lucas Behnke)

makers in the Hawaiian Islands. The HITAI aims to develop a framework based on the best available climate information, engaging resource managers in the development of shared strategies and tools to address current stressors and prepare for significant change yet to come. By doing this, the PICCC can apply our technical, scientific, and communication capabilities to pursue these conservation and recovery actions. The goal of this HITAI is that conservation lands in the Hawaiian Islands are managed to accommodate native bird (and plant) distributions, and to maximize the chance of species persistence across the landscape under climate change. Dr. Jeff Burgett, the PICCC’s Science Coordinator, notes that “By pulling together resource partners to approach planning across a landscape scale, the PICCC is playing a critical role in applying research and localized management actions to larger conservation strategies across the main Hawaiian Islands.”

Is there hope for Hawai‘i’s forest birds?

Although the future for forest birds may appear dire, there is hope if actions to mitigate and minimize these impacts begin now. “We have to think of this as a golden opportunity,” states lead author Dr. Lucas Fortini. “Many species have gone extinct with researchers and managers having no idea about how to prevent declines. Our research, along with that from several fellow researchers, clearly shows what can be done to prevent projected impacts: if disease and mosquitos are addressed, these birds can be saved.”

Dr. Burgett adds, “The fate of these birds has not yet been determined. With this research we can visualize the worst-case scenario and begin mapping out solutions for a future where native birdsong continues to ring out in Hawai‘i’s forests.”

Where can I go for more information on climate change impacts and forest bird conservation?

For more information on PICCC’s efforts and those of our partners, please visit: <http://piccc.net>