

Listening for Bats at Pearl Harbor National Memorial

National Park Service
U.S. Department of the Interior

Natural Resource Stewardship & Science
Inventory & Assessment Program



The Hawaiian hoary bat, or ‘ōpe‘ape‘a, is Hawai‘i’s only native land mammal and is federally endangered. Though rarely seen, these bats are among the wildlife that move through Pearl Harbor National Memorial.

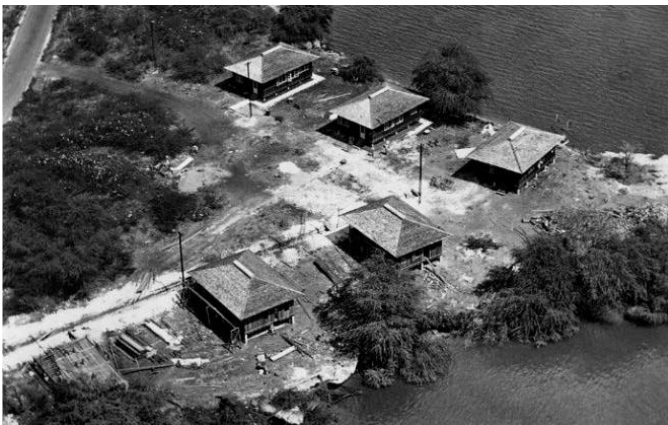
As the park prepared for upcoming preservation and management work, staff needed reliable information to guide their planning. [Inventory and Monitoring Program](#) research helped answer a critical question: were endangered bats present in areas under consideration for management actions?



Hawaiian hoary bat, ‘ōpe‘ape‘a. Photo credit: USGS/K. Monoya-Aiona

Balancing Historic Preservation and Wildlife Protection

Among the historic features at Pearl Harbor National Memorial are the [Chief Petty Officer Bungalows](#) on Ford Island, a residential neighborhood built before World War II for senior enlisted Navy personnel. Today, the bungalows are protected cultural resources within the park, and the park’s founding legislation calls for them to be repaired and made available for visitors. To meet that mandate, management plans included restoring the bungalows and removing nearby trees that were damaging them.



Ford Island Chief Petty Officer’s Bungalows Neighborhood under construction, October 17, 1923. These historic bungalows are now part of ongoing preservation efforts at Pearl Harbor National Memorial. Photo credit: NPS

Federal endangered species [laws](#) require parks to consider how their actions may affect protected wildlife, so the park needed site-specific information about bat activity.

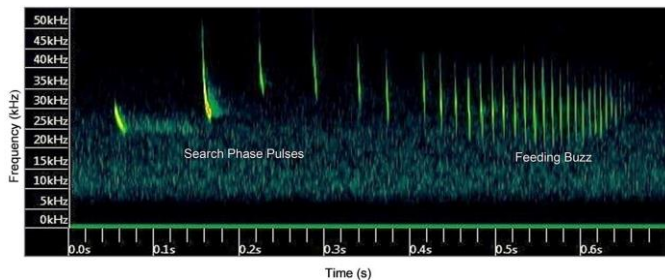
Acoustic Monitoring to Detect Bats

From June to December 2024, researchers from the U.S. Geological Survey [Pacific Island Ecosystems Research Center](#) used acoustic detectors to listen for bat echolocation calls. These devices record the high-frequency sounds bats use to hunt insects. Acoustic monitoring was especially useful because Hawaiian hoary bats are rare, usually live alone rather than in groups, and rest among tree leaves, making them difficult to spot through visual surveys.

Four monitoring stations collected over 350,000 recordings. Scientists also surveyed nearby trees that could serve as potential bat roosts—places where bats rest during the day.



Acoustic detectors record bat echolocation calls, allowing researchers to study bat activity with minimal disturbance to wildlife or park operations. Photo credit: USGS /K. Courtot

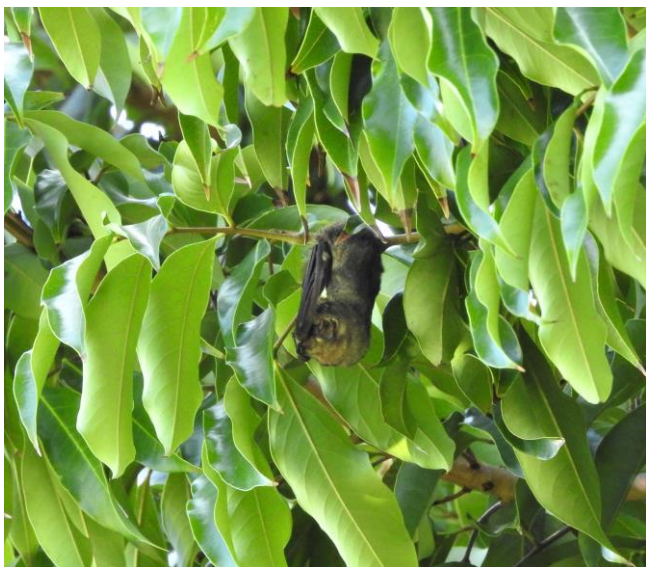


Example spectrogram of a Hawaiian hoary bat echolocation call. Spaced pulses show the bat searching for insects, followed by a rapid feeding buzz as the bat approaches prey. Researchers use spectrograms to confirm bat presence and activity. Figure credit: USGS /K. Montoya-Aiona

Bats Use the Area, But Don't Appear to Live On-Site

Bats were detected at the park, but activity was low and mostly seasonal. Researchers found no evidence that bats were roosting in trees or historic structures near the restoration areas.

Detection patterns suggest that bats were likely passing through the area while traveling to other feeding locations. While bats use the landscape, the park does not appear to be a primary roosting or feeding site.



This photo shows a Hawaiian hoary bat roosting outside Pearl Harbor National Memorial; no roosting bats were documented within the park. Photo credit: USGS /K. Montoya-Aiona

How This Research Guides Park Management

The results of this inventory had clear, practical benefits for park management. The study helped managers:

- Confirm that building restoration and tree work would not disturb roosting bats
- Avoid unnecessary restrictions where bats are unlikely to be present
- Support compliance with federal endangered species laws
- Establish a baseline to support future planning and monitoring

By using science to guide decisions, the National Park Service ensures that protecting history does not come at the cost of protecting wildlife.

Want to learn more?

Check out the [final report](#) from this project for additional details about the study and its findings.

Explore more about the [Hawaiian hoary bat](#) (ʻŌpeʻapeʻa) and [efforts to conserve](#) this endangered species.

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