Monitoring is a vital component of bird conservation, helping managers to know if management efforts are working. Monitoring is often expensive, requiring experienced personnel and a lot of time. Add to this a need to access remote areas through rough terrain and the urgency of working on species on the brink of extinction and one begins to understand the challenges of monitoring birds in Hawai‘i.

A recent study conducted on the island of Kaua‘i by the Kaua‘i Endangered Seabird Recovery Project, a program of the Hawai‘i Division of Forestry and Wildlife and the Pacific Cooperative Studies Unit, and supported by the Association of Zoos and Aquariums’ Conservation Endowment Fund, the Disney Worldwide Conservation Fund, and American Bird Conservancy, suggests that technological advances may help to overcome some of the challenges of monitoring Hawaiian birds. The study, initiated in 2008, used autonomous recording units (ARUs) to test the use of automated monitoring to increase the efficiency of gathering information on the status and distribution of endangered Hawaiian seabirds. An ARU is a weather-proof sound recording unit designed to record at pre-set intervals and durations and save the recordings to a built-in hard drive. The units are placed in areas where researchers want to track populations. At the end of the survey period, the units are recovered and the sound data are downloaded and analyzed using computer sound analysis software.

Three ARUs were deployed at known breeding sites for three rare seabirds – Newell’s shearwater (listed as Threatened under the Endangered Species Act (ESA)), Hawaiian petrel (listed as Endangered) and Band-rumped storm-petrel (a candidate for listing). The ARUs successfully detected all three target species, suggesting that ARUs have potential for monitoring seabirds which are rare, return to breeding sites after dark, and nest in difficult to access habitat. ARUs may facilitate monitoring of these species by increasing the spatial and temporal scales of monitoring without the need for additional field personnel. Future research will address whether the calling rates of the seabirds correlate with local breeding population sizes and if acoustic monitoring can be used to study long-term trends in the relative abundance and distribution of threatened seabirds on Kaua‘i.