

## INTRODUCTION

The Biological Inventories Project of the National Park Service Inventory & Monitoring program (NPS; I&M) sponsored the Lowland Bird Inventory of Hawai'i Volcanoes National Park (HAVO). The NPS I&M program has prioritized the following three objectives to scientifically inventory and document park vertebrate biodiversity: (1) document at least 90% of vertebrate and vascular plant species within park boundaries through existing data and targeted field surveys, (2) demonstrate relative abundance and distribution of species of concern, including T&E species, aliens, and species of management interest; and (3) establish baseline information to develop a monitoring plan for the park.

In this report, we summarize surveys conducted to inventory birds in lowland HAVO (regions of the park < 1,200 m elevation; I&M is conducting additional research on plants to complete objective 1). The bird habitat of the HAVO lowlands constitutes a vast mosaic of successional plant communities across a steep gradient of rainfall, extending from rainforest in the northeast, through shrublands and woodlands, to sparsely vegetated desert-like conditions in the southwest. Periodic lava flows and fires maintain the successional mosaic. This study covered open habitats and human development on all of Kīlauea Volcano within the park, excluding only rainforest.

Past surveys (Baldwin 1941; Banko and Banko 1979) have shown that bird populations in the park lowlands exist at very sparse densities, probably only a few birds/km<sup>2</sup> over broad areas. Exceptions include areas where birds are attracted to human activity (e.g., office and maintenance facilities, picnic and camping areas, and interpretive waysides). Anchialine pools along the coast, which are sources of standing fresh and brackish water, may attract birds. Sites of human activity and anchialine pools may both serve as colonization sites for alien species new to the park.

Lastly, one non-native species of partridge, the Close-barred Francolin (*Francolinus adspersus*), has been shown to occur exclusively at HAVO within the entire Pacific Island Network (PACN) park system, and here only in the vicinity of the historic Āinahou Ranch headquarters. This species has not been reported with certainty for the past decade although there have been several anecdotal observations within the last five years. Therefore, we sought to determine if the species is extant in the park. To survey and quantify these very different bird communities, and the one rare partridge, we sampled birds using two sampling methods, area search and line transect, each aimed to inventory avian species diversity and abundance in park lowlands.