

METHODS AND MATERIALS

Field Studies

Location information from herbarium specimens, Bartram (1933), Burton (1980), and Cuddihy *et al.* (1986) suggested the regions around Kilauea Caldera, the East Rift, Bird Park (Kipuka Puauulu), and Olaa Forest Tract (with the exception of the Olaa Trench) were already relatively well collected for moss species. The following areas and habitats appeared to deserve more focused collecting:

- Kahuku
- Puhimau Hotspot
- Kilauea Caldera hotpond and steam caves
- Ainahou Ranch
- Mauna Loa Caves
- Olaa Trench

General surveys for the presence/absence of moss species were conducted at these areas by searching likely microhabitats (such as rock crevices, tree trunks, shaded banks, etc.) and collecting specimens of mosses encountered for later identification. The Mauna Loa summit area above 3650 m (12,000 ft.) was not surveyed though other observers report that mosses are present in steam vents and water seepages. Particularly striking species and habitats were photographed using a Nikon 4500 digital camera.

Collected specimens were placed in Ziploc plastic bags labeled in the field with collection number, date, location, substrate, surrounding vegetation, and GPS position recorded with a handheld Garmin unit. Selected specimens were prepared to serve as voucher specimens for permanent records of species presence in each area. Vouchers were put in packets folded using acid-free, 100% rag, cotton paper. Label information was printed directly onto the paper before folding it into specimen packets. All voucher specimens were deposited at the HAVO Herbarium.

Information about species occurring in HAVO was entered into NPSpecies, the National Park Service biodiversity database. The data came from existing specimens at HAVO and the Bishop Museum, from the *Manual of Hawaiian Mosses* by Bartram (1933), and from new specimens collected for this 2004 inventory. Species names were updated to current taxonomy, both current names and old synonyms were entered.