

LOSING KEY COMPONENTS OF HAWAII'S FOREST ECOSYSTEMS: THE STATUS OF A DIVERSE GROUP OF HAWAIIAN MOTHS.

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Arthropods constitute over 70% of Hawaii's native terrestrial biota, however little effort has been directed toward their conservation. Lepidoptera represent at least one fifth of Hawaii's terrestrial arthropods and are a key component of Hawaii's forest ecosystems in their role as herbivores, pollinators and prey for vertebrates and parasitic hymenoptera. Recently, the U.S. Fish and Wildlife Service sponsored an evaluation of the conservation status of *Scotorythra* (Lepidoptera: Geometridae), a diverse group of endemic macrolepidoptera suspected to be experiencing population declines. Between 1996 and 2000 current populations of these moths were surveyed throughout the Hawaiian Islands, the genus was revised taxonomically, and ecological data were gathered for several species. The results of these surveys were compared with historical collections held at Bishop Museum and at The Natural History Museum in London. The results suggest that 5 species are extinct, while 3 species are extremely rare. Ecological observations show several species of *Scotorythra* to be highly specialized, feeding on a single host plant. The rarity of these species in conjunction with their ecological specialization and increasing habitat degradation renders them susceptible to extinctions. Currently, no legal protection is afforded *Scotorythra*. However, the presented data demonstrate that their conservation status merits re-evaluation.

Ideas: check what has been required for listing of other Lepidoptera/ insects.

Host plant associations panel comparing historical to current populations

Summary of revision - why this was important.