

## Terrestrial Invertebrates



*Hylaeus mana*. Photo: Karl Magnacca.

### Yellow-faced bee

*Hylaeus mana*

#### SPECIES STATUS:

Federal Candidate for Listing  
State Recognized as Endemic

**GENERAL INFORMATION:** *Hylaeus mana* is one of the smallest native bees. It is endemic to O'ahu, where it lives in lowland mesic forest and is mainly found in association with sandalwood or 'iliahi (*Santalum freycinetianum*). This makes it one of the few native *Hylaeus* to show any signs of ecological specialization. It was only discovered in 2002, and little is known of its habits. It has an unusual amount of coloration in the female, which makes both sexes immediately identifiable in the field.

**DISTRIBUTION:** *Hylaeus mana* is restricted to the Ko'olau range of O'ahu. While it occurs relatively widely on leeward ridges from Mau'umae (Olympus) in the south to Mānana in the north, it is restricted to the narrow zone around 1500–1700 feet elevation where 'iliahi is found. Below this elevation, the vegetation is either predominantly alien or shrubland, and above it becomes wetter.

**ABUNDANCE:** Unknown. *Hylaeus mana* is generally found in low numbers where it occurs. The most that have been observed or collected at a site at once is three.

**LOCATION AND CONDITION OF KEY HABITAT:** Mid-elevation dry and mesic forests have declined dramatically, and only a tiny fraction of their original extent currently exists. Much of what remains is invaded by alien ants, which dominate lowland areas. While upper elevation wet habitat remains relatively intact, alien plants invading from below in the aftermath of ungulate disturbance have seriously impacted the habitat favored by *H. mana*. In addition, 'iliahi was heavily logged in the early 19th century for the sandalwood trade, greatly reducing its abundance. As a result, *H. mana* is restricted to small ridgetop patches, often isolated by broad and deep gulches dominated by alien plants.

#### THREATS:

- **Habitat loss and degradation.** Habitat is threatened by invasive plants, non-native ungulates, development, and fire.
- **Competition and predation.** Non-native Hymenoptera, including bees, ants (primarily *Anoplolepis gracilipes* and *Pheidole megacephala*), and wasps (*Vespula pensylvanica*), can directly compete with or prey on this species.
- **Stochastic events.** Events such as droughts are threats to the species.

**CONSERVATION ACTIONS:** The goals of conservation actions are not only to protect current populations and key breeding habitats, but also to establish additional populations and maintain sustainable populations of host plants, thereby reducing the risk of extinction. For *Hylaeus mana* specifically, management needs include:

- Conduct surveys to determine distribution and abundance.
- Protect remaining habitat from development and ant invasion.
- Establish reintroduced populations where appropriate.

**MONITORING:** Continue surveys of known populations in order to assess their stability and trends.

**RESEARCH PRIORITIES:**

- Survey for new populations, in both historical and novel sites.
- Evaluate life history and essential habitats to better direct conservation measures, such as determining habitat requirements for nest sites.

**References:**

Daly, HV, and Magnacca, KN. 2003. Insects of Hawaii, Volume 17: Hawaiian *Hylaeus* (*Nesoprosopis*) Bees (Hymenoptera: Apoidea). Honolulu: University of Hawaii Press.

Magnacca, KN. 2007. Conservation status of the endemic bees of Hawaii, *Hylaeus* (*Nesoprosopis*) (Hymenoptera: Colletidae). *Pacific Science* 61(2): 173-190.

Magnacca, KN, and King, CBA. 2013. Assessing the presence and distribution of 23 Hawaiian yellow-faced bee species on lands adjacent to military installations on O’ahu and Hawai’i Island. Technical Report No. 185. Pacific Cooperative Studies Unit, University of Hawai’i, Honolulu, Hawai’i. 39 pp.

U.S. Fish and Wildlife Service. 2011. Endangered and threatened wildlife and plants; 12-month finding on five petitions to list seven species of Hawaiian yellow-faced bees as endangered. *Federal Register* 76:55170–55203.