

## Terrestrial Invertebrates

### Yellow-faced bee

*Hylaeus facilis*

#### SPECIES STATUS:

Federally Listed as Endangered

State Listed as Endangered

**GENERAL INFORMATION:** *Hylaeus facilis* (F. Smith, 1879) is a medium-sized bee found on O‘ahu and Maui Nui. It has a broad habitat range, from the coast through lowland and montane dry to mesic shrubland and open forest. Once the most abundant and widely collected of Hawaiian bee species, it is now exceedingly rare. The reasons for its decline all across its range are unclear, as other related species continue to thrive in the same habitats on at least some islands. Its floral hosts probably include the same ones used by related species in the same habitat, including naupaka (*Scaevola taccada*), ‘ilima (*Sida fallax*), and the introduced tree heliotrope (*Heliotropium foertherianum*, formerly known as *Tournefortia argentea*) at the coast, and ‘a‘ali‘i (*Dodonaea viscosa*), pūkiawe (*Leptecophylla tameiameiae*), and ‘ōhi‘a lehua (*Metrosideros polymorpha*) in upland areas.

**DISTRIBUTION:** *Hylaeus facilis* was historically found from Maui to O‘ahu, though there are no records from Kaho‘olawe. It prefers the drier leeward areas, from the coast to about 1,524 meters (5,000 feet) elevation.

**ABUNDANCE:** Unknown. While it was common on all islands through the 1930s, sometime between then and when intensive collecting resumed in 1998 it experienced a severe collapse in numbers. There are only four records from the past 50 years, each of single individuals: two from O‘ahu in 1969 and 1975, one from Maui in 1993, and one from Moloka‘i in 2005.

**LOCATION AND CONDITION OF KEY HABITAT:** Native coastal vegetation has declined dramatically, and only a tiny fraction of its original extent currently exists. Dry shrubland is also highly degraded and rare on O‘ahu and Maui Nui, except for subalpine areas of East Maui above 2000 m where *H. facilis* was never found. Much of what remains is invaded by alien ants, which dominate lowland areas. As a result, native bees are often found in marginal habitat. Some suitable areas appear to exist, but *H. facilis* has not been found in them. In some of these areas, other native *Hylaeus* that were historically collected in company with *H. facilis* are still present. Thus, *H. facilis* may have specialized habitat requirements that are currently unknown. The closely related *H. simplex* of Hawai‘i was also formerly abundant but has completely disappeared and is probably extinct.

#### 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 (particularly *Apis mellifera*, *Ceratina smaragdula*, *Lasioglossum* spp., and *Hylaeus strenuus*), ants

(primarily *Anoplolepis gracilipes*, *Linepithema humile*, and *Pheidole megacephala*), and wasps (*Vespula pensylvanica*), can directly compete with or prey on this species.

- Stochastic events. Events such as droughts, tsunamis, and high tides 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 facilis* specifically, management needs include the following:

- Conduct surveys to determine distribution and abundance.
- Protect remaining habitat from development and ant invasion.

**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.
- Develop and refine methods for conducting quantitative surveys.
- Evaluate life history and essential habitats to better direct conservation measures, such as determining habitat requirements for nest sites.

**References:**

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