

## Terrestrial Invertebrates

### Yellow-faced bee

*Hylaeus longiceps*



*Hylaeus longiceps*. Photo: Karl Magnacca.

**SPECIES STATUS:**  
Federal Candidate for Listing  
State Recognized as Endemic

**GENERAL INFORMATION:** *Hylaeus longiceps* (Perkins, 1899) is a medium-sized bee found on O‘ahu and Maui Nui. It lives primarily in coastal areas, sometimes extending up into lowland dry forest on Lāna‘i. The island populations form two genetic clusters, with O‘ahu individuals distinct from those on Maui, Moloka‘i, and Lāna‘i. Therefore, it is important to conserve all island populations. This and other coastal species are the only native bees that regularly visit flowers of an introduced plant, the tree heliotrope (*Heliotropium foertherianum*, formerly known as *Tournefortia argentea*). With the loss of most of the native coastal vegetation, tree heliotrope is now a critical floral resource. Other important plants visited for pollen and nectar include naupaka (*Scaevola taccada*), ‘ilima (*Sida fallax*), ‘ōhai (*Sesbania tomentosa*), naio (*Myoporum sandwicense*), and ‘akoko (*Euphorbia* spp.).

**DISTRIBUTION:** *Hylaeus longiceps* is found from Maui to O‘ahu. While it still occurs on all islands in that range except Kaho‘olawe, the loss of native coastal vegetation has caused the occupied area to contract dramatically. It is currently known from only two or three sites on each island. On Maui, it is found at relictual dune sites east and west of Kahului on the north shore. On Moloka‘i, it is known only from the Nature Conservancy’s Mo‘omomi Preserve, but much of the coast is unexplored. Two sites are known for O‘ahu, Ka‘ena Point and Kahuku Point, but *Hylaeus* have all but disappeared from the former since 2011, and at the latter they have not been seen since the arrival in 2013 of an alien yellow-faced bee from India, *Hylaeus strenuus*.

**ABUNDANCE:** Unknown. *Hylaeus longiceps* is generally found in very low numbers where it occurs. At most sites, it is restricted to narrow stretches of coastal strand less than 30 m wide, and sometimes only a single row of trees or shrubs. One site on Maui is a small dune with a patch of native vegetation at the top, surrounded by a golf course, and is probably unsustainable in the long term. The largest population on O‘ahu, at Ka‘ena Point, has virtually disappeared since 2011 for unknown reasons. The Lāna‘i population is the most widely distributed, but the island is often subject to drought conditions and no surveys have been made for *Hylaeus* there since 1999.

**LOCATION AND CONDITION OF KEY HABITAT:** Native coastal vegetation has declined dramatically, and only a tiny fraction of its original extent currently exists. Much of what remains is invaded by alien ants, which dominate lowland areas. As a result, most coastal bees are only found in marginal habitat that is too dry for ants to live in. Native *Hylaeus* do not visit introduced plants except for tree heliotrope, and observations suggest they cannot survive on naupaka (the most common coastal shrub) alone. Current populations of *Hylaeus longiceps* are widely scattered, so that they are unlikely to disperse on their own to sites where vegetation

restoration is carried out. The recently introduced alien bee *Hylaeus strenuus* appears to be a major competitor in coastal and lowland dry habitats, and has displaced native *Hylaeus* from several sites on O‘ahu. It has already been detected on Kaua‘i and will likely spread to the other islands as well.

#### **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 *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 longiceps* specifically, management needs include the following:

- 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 historic and novel sites.
- Conduct studies on captive rearing for reintroduction to establish new populations.
- Evaluate life history and essential habitats to better direct conservation measures, such as determining habitat requirements for nest sites.

#### **References:**

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