

Yellow-Faced Bees

COMMON NAME: Yellow-faced bee

HAWAIIAN NAME: nalo meli maoli

SCIENTIFIC NAME: *Hylaeus anthracinus* / *Hylaeus longiceps*

LEGAL STATUS: Endangered

APPEARANCE: *Hylaeus* species have a wasp-like appearance but can be distinguished from wasps because they have hair on their bodies.

Hylaeus anthracinus is a medium-sized black bee with clear to smoky wings and black legs. Males have a single large yellow spot on the face below the antennal sockets. Females are entirely black.

Hylaeus longiceps is a medium-sized black bee with clear to slightly smoky wings. Distinguishing characteristics are its long head and facial marks on males. The male's lower face is entirely yellow, and the yellow area extends to the sides in a broad stripe above the antennal sockets. Females are black and unmarked. This species has not been found on MCBH shorelines.



NATIVE RANGE: *Hylaeus* species are the only genus of bees native to Hawai'i. *Hylaeus anthracinus* are endemic to the Hawaiian Islands. They are known to occur on the islands of O'ahu, Moloka'i, and Maui, Hawai'i, Kaho'olawe, and formerly Lāna'i. *Hylaeus longiceps* are endemic to the Hawaiian Islands. They are known to occur on the islands of O'ahu, Moloka'i, and Maui.

HABITAT: *Hylaeus anthracinus* are generally found in coastal strand habitat, rarely at higher elevations in dry forest. *Hylaeus longiceps* are generally found in coastal strand habitat, but also inhabit dry shrubland.

DIET: *Hylaeus anthracinus* and *Hylaeus longiceps* have an affinity for native plants, including naupaka (*Scaevola taccada*), ilima (*Sida Fallax*), akoko (*Euphorbia* spp.), pohuehue (*Ipomea pes-caprae* subsp. *brasiliensis*), 'ohai (*Sesbania tomentosa*), akulikuli (*Sesuvium portulacastrum*), Pau-u-o-hi'iaka (*Jacquemontia sandwicensis*), o'helo kai (*Lycium sandwicense*), alena (*Boerhavia repens*), 'Iliahialo'e or coastal sandalwood (*Santalum ellipticum*) and naio (*Myoporum sandwicense*). The non-native tree heliotrope or beach heliotrope (*Heliotropium foertherianum*, formerly *Tournefortia argentea*) is also a preferred food and nesting source.

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REPRODUCTION: Egg, larva, pupa, and nesting habits are not well understood. *Hylaeus anthracinus* are believed to nest in holes in the stems of coastal shrubs, holes in stems within tree and shrub litter, and holes in coral rock.

ECOLOGICAL THREATS: Habitat alteration of native coastal strand vegetation due to development and increased non-native species competition with the Hawaiian bees limits available habitat for yellow-faced bees. Yellow crazy ants (*Anoplolepis gracilipes*) exclude yellow-faced bees from coastal strand habitat both by direct predation and by feeding on the nectar bees rely on. *Hylaeus strenuus*, a non-native bee species present on O'ahu, is spreading through coastal and lowland areas throughout the island and is also a competitor of *Hylaeus anthracinus* due to its similar size and habits. Loss of nesting habitat due to coastal flooding and severe shoreline erosion may increase with sea level rise and climate change.

USFWS CONSERVATION STRATEGIES: Seven species of *Hylaeus* (yellow-faced bee) were federally listed as endangered, effective October 31, 2016, including *Hylaeus anthracinus* and *Hylaeus longiceps*. USFWS has not yet developed a Recovery Plan, and critical habitat has not been designated.

MCBH CONSERVATION MEASURES: Karl Magnacca discovered the YFB during surveys conducted in November 2016 and May 2017 confirmed that significant populations of *Hylaeus anthracinus* occur in coastal strand habitat of MCBH Kaneohe Bay. Abundant populations were found along the Pyramid Rock and North Beach shorelines, while very limited distribution of bees was found along the Fort Hase shoreline. No bees were found at MCTAB. No *Hylaeus longiceps* was documented on MCBH properties.

Conservation measures that benefit yellow-faced bees include:

- **Habitat protection and enhancement.** Protecting nectar plants, such as naupaka, in occupied habitat. Protecting all coastal strand vegetation within a 100-yd band of the shoreline. Promote planting of beach heliotrope, which *Hylaeus* species have an affinity for. This species is on the approved plant material list of non-native plants for MCBH, is naturalized in Hawai'i, and naturally grows on the base's coastal areas. University of Hawai'i continues to test different artificial nesting alternatives to provide the yellow-faced bee with additional nesting sites on MCBH's shorelines. Increasing the diversity of native coastal strand plants would help provide more consistent floral resources throughout the year, as different species, i.e., *Sesuvium*, *Euphorbia*, *Sida*, *Jacquemontia* and *Lycium*, bloom in different seasons. UH's Paul Krushelnycky, Assistant Researcher, UH CTAHR Dept of Plant and Environmental Protection Sciences has been instrumental in researching the YFB on MCBH, providing MCBH with nesting information, YFB locations, and identification of all the ants found on MCBH shorelines. He has been coming out monthly since 2019 to monitor the bees and testing various types of "bee hotels".
- **Limiting disturbance.** Limit the removal of litter below trees and wood debris on the shoreline that may be used as habitat. Avoid driving in coastal vegetation that can destroy potential *Hylaeus* nesting areas. BMPs and conservation measures are employed when a project may have an effect on bees.
- **Predator control.** Yellow crazy ant control is an on-going management requirement as they negatively affect ground nesting birds as well as the Yellow-faced bee.

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- **Monitoring for presence to help direct management activities.** Natural Resources staff survey appropriate habitats, record occurrences and consult with USFWS as needed.
- **Education and outreach.** Development and distribution of informational material, including videos, fact sheets, and briefings for military personnel and civilians on base, including new arrivals, and outreach with volunteers.

REFERENCES

- Magnacca, K. N. 2005. Species Profile: *Hylaeus anthracinus*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). Red List of Pollinator Insects of North America. CD-ROM Version 1. May.
- Magnacca, K. N. 2014. Hawaii's Native Bees - Nalo Meli Maoli. University of Hawai'i Master Gardener Program News, University of Hawai'i at Mānoa. August.
- Starr Environmental. *Hylaeus anthracinus*.
- Starr Environmental. *Hylaeus longiceps*.

For more information: MCBH Integrated Natural Resources Management Plan. 2022 Sections 6 and 7.1.

PHOTOS

1. Female *Hylaeus anthracinus*. Magnacca, K. N. (2013).
2. Male *Hylaeus longiceps*. Magnacca K. N. (2015).