

***Hylaeus assimulans* (Perkins, 1899)**  
**(Hymenoptera: Colletidae: Hylaeinae)**

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**SUMMARY**

*Hylaeus assimulans* is a coastal and dry forest bee endemic to the islands of Oahu, Maui, Kahoolawe, and probably formerly Molokai in Hawaii. It is distinguished by its large size compared to other coastal species, and large facial marks. It is typically found as scattered individuals, and habitat destruction has caused its range to contract significantly.

**CONSERVATION STATUS**

**Xerces Red List Status: Critically Imperiled**

**Other Rankings:**

Canada – Species at Risk Act:	N/A
Canada – provincial status:	N/A
Mexico:	N/A
USA – Endangered Species Act:	Species of Concern
USA – state status:	HI: Species of Concern
NatureServe:	GNR
IUCN Red List:	N/A

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**SPECIES PROFILE**

**DESCRIPTION**

**Males:** Black, face marks yellow, the clypeus nearly entirely yellow and with dorsally narrowing marks laterally. Process of the eighth sternum narrowly dilated. Hairs of abdominal apex brown, appressed.

**Females:** Entirely black, lacking coloration. Large, but without distinct punctation on the abdomen.

*Hylaeus assimulans* is sister to *H. ombrias* in the *flavipes* species group; males can be told apart by the greater facial markings of *H. assimulans*, but females cannot be reliably distinguished except by distribution. The two species are considerably larger (especially in the females) than any other Hawaiian species except those in the *pubescens* group,

which have the abdomen punctate; however, small specimens (the size of *H. longiceps*) have been taken on Kahoolawe.

#### **TAXONOMIC STATUS**

*Hylaeus assimulans* was described as *Nesoprosopis assimulans* by Perkins (1899). *Nesoprosopis* was reduced to a subgenus of *Hylaeus* by Meade-Waldo (1923). The most recent taxonomic treatment was Daly and Magnacca (2003).

#### **LIFE HISTORY**

*Hylaeus assimulans* inhabits coastal strand and dry forest. It is frequently collected on *Sida fallax* (ilima); its greater size may be an adaptation to handling the large pollen of that plant. In recent collections at least, it appears to be less restricted to the coast and more often found in higher elevation forest than other species of similar habit. Such a tendency may be related to the dense areas of *Sida* that can be sometimes be found in the understory of dry forest. Nesting habits are unknown, but it probably nests in the ground like related species.

#### **DISTRIBUTION**

Historic collections of *H. assimulans* are from Oahu, Maui, and Lanai; more recently it has also been taken on Kahoolawe, and it probably previously inhabited Molokai as well. No recent collections have been made from Oahu, and on the remaining islands it has been found only as few individuals from scattered sites.

#### **THREATS**

The biggest threat to *H. assimulans* is habitat loss. However, collections are so few that it is difficult to determine its precise habitat needs. Dry forest areas have been especially hard hit on the middle islands of Maui Nui and Oahu.

#### **CONSERVATION STATUS**

This species was found widely though not abundantly on Oahu in the early period of Hawaiian insect collecting (1892-1930); it has not been collected there recently and may be extirpated from the island. Elsewhere it is apparently restricted to small, scattered populations.

Originally, U.S. Federal listings of rare and endangered species classed *H. assimulans* as a “Category 2” Candidate Species about which more information was needed before it could be considered for listing. This status was based on recognition that Hawaiian bees in general were becoming rarer and little was known about their conservation status. Data were never gathered to document whether or not this species should be proposed for listing. It is currently considered to be a “Species of Concern” or a “Special Status Species” by the U.S. Fish and Wildlife Service and the Hawaii Division of Forestry and Wildlife.

#### **CONSERVATION NEEDS**

No known populations of *H. assimulans* are on protected land, with the exception of that on Kahoolawe. None are in immediate danger of destruction due to development, but all

sites are highly susceptible to fire. Maintenance of remaining habitat is the highest priority.

#### **RESEARCH NEEDS**

Determine life history requirements, including nest sites and pollen requirements; search for additional populations, especially on Oahu.

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## **RESOURCES**

#### **CONTACTS**

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#### **REFERENCES**

Daly, H. V., and K. N. Magnacca. 2003. *Insects of Hawaii, Vol. 17: Hawaiian Hylaeus (Nesoprosopis) Bees (Hymenoptera: Apoidea)*. University of Hawaii Press, Honolulu. 234 pp.

Meade-Waldo, G. 1923. Hymenoptera, fam. Apidae, subfam. Prosopidae, fasc. 181. Pp. 1-45 in P. Wytsman (ed.), *Genera Insectorum*. L. Desmet-Verteneuil, Brussels.

Perkins, R. C. L. 1899. Hymenoptera, Aculeata. Pp. 1-115 in D. Sharp (ed.), *Fauna Hawaiiensis*, Vol. 1. Cambridge University Press, Cambridge, United Kingdom.

#### **WEBSITES**

Bishop Museum Arthropod Species of Concern checklist

<http://hbs.bishopmuseum.org/endangered/soc-artho.html>

Lists *H. assimulans* as a Species of Concern. Updated February 21, 2000.