



Cave Lithobiomorpha (undetermined species).  
Photo: Mike Slay/TNC

## Terrestrial Invertebrates

### Centipedes

Order Geophilomorpha  
Order Lithobiomorpha

#### ORDERS INCLUDE:

5 Native Families  
10 Native Genera  
~9 Native Species  
~8 Endemic Species

**GENERAL INFORMATION:** Centipedes (Class Chilopoda) have elongated and segmented bodies. Worldwide, there are five divergent orders of centipedes; only two occur in Hawai‘i (Geophilomorpha and Lithobiomorpha). Species in the order Geophilomorpha hatch with the full complement of adult legs and segments (i.e., epimorphic growth), females care for eggs and young, and individuals move very slowly. In contrast, species in the order Lithobiomorpha obtain additional segments and legs with each molt (i.e., anamorphic growth), females do not care for eggs or young, and individuals move very rapidly. Both orders are poorly understood in Hawai‘i. While around eight species considered possibly endemic to Hawai‘i, at least four have questionable origins and may be indigenous or possibly even adventive.

**DISTRIBUTION:** Centipedes are known from Kaua‘i, O‘ahu, Moloka‘i, Maui, and the island of Hawai‘i as well as the NWHI.

**ABUNDANCE:** Unknown. A lack of systematic surveys prevents any population estimate. However, the loss of native habitats likely means that species within the orders are declining.

**LOCATION AND CONDITION OF KEY HABITAT:** Unknown. However, centipedes occur in diverse Hawaiian habitats from lava tubes to the summit of Maunakea.

#### THREATS:

- Loss or degradation of habitat.
- Insufficient information for species assessments.

**CONSERVATION ACTIONS:** The goals of conservation actions are not only to protect current populations and key breeding habitats but also to establish additional populations, thereby reducing the risk of extinction. In addition to common statewide and island conservation actions, specific management directed toward centipedes should include:

- Conduct surveys to determine the distribution and abundance of known centipedes and to document and identify new species.
- Preserve, maintain, and restore habitats supporting existing populations.

#### MONITORING:

- Continue monitoring the status of known populations.

**RESEARCH PRIORITIES:**

- Conduct studies to document the biology, habitat requirements, and life history of native species.
- Conduct and support systematic and taxonomic assessments of poorly known and understudied taxa. Review and revise genera in need of taxonomic scrutiny; work to identify and describe new species to science.

**References:**

Bonato L, Foddai D, Minelli JA. 2004. The centipede order Geophilomorpha in the Hawaiian Islands (Chilopoda). Bishop Museum Occasional Papers 78: 13-32.

Howarth FG, Mull WP. 1992. Hawaiian insects and their Kin. Honolulu: University of Hawai'i Press.

Nishida GM editor. 2002. Hawaiian terrestrial arthropod checklist, 4<sup>th</sup> edition. Bishop Museum Technical Report No. 22: iv + 310 pp.

Shelley RM. 1999. Centipedes and millipedes with emphasis on North America fauna. The Kansas School Naturalist 45(3). Available at: <http://www.emporia.edu/ksn/v45n3-march1999/intro.htm>.