

Mites (and Ticks)

Order Acari

ORDER INCLUDES:

58 Native Families

102 Native Genera

164 Native Species

153 Endemic Species

GENERAL INFORMATION: Mites are the most diverse and abundant arachnid, and except for ticks, mites are barely visible to the naked eye. The order is ubiquitous and is one of the oldest terrestrial animal taxa. Feeding habits of mites vary greatly; some species prey on or are parasites of animals, while others feed on plants, fungus, decaying organic matter, excrement, or carrion. Many mites are considered to be pests, while some are considered useful for biocontrol of other pests. All ticks are external parasites of vertebrates, feeding on blood. Ticks transmit the widest variety of pathogens of any blood-sucking arthropod, including bacteria, rickettsiae, protozoa, and viruses. The order Acari is poorly known in Hawai'i.

DISTRIBUTION: Mites and ticks are known from all the MHI as well as some of 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 order are declining.

LOCATION AND CONDITION OF KEY HABITAT: Mites and ticks inhabit a wide range of terrestrial and aquatic habitats. Key habitats are unknown.

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 mites should include:

- Conduct surveys to determine the distribution and abundance of known mites 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.

References:

- Howarth FG, Mull WP. 1992. Hawaiian insects and their Kin. Honolulu: University of Hawai'i Press.
- Nishida GM editor. 2002. Hawaiian terrestrial arthropod checklist, 4th edition. Honolulu (HI): Biological Survey, Bishop Museum.
- Schuster R, Murphy PW. 1991. The acari: reproduction, development and life-history strategies. New York, (NY): Chapman and Hall. 554 pp.
- Vredevoe, Larisa. Background information on the biology of ticks. Available at:
<http://entomology.ucdavis.edu/faculty/rbkimsey/tickbio.html>.
- Zhang Z-Q. 2003. Mites of greenhouses: identification, biology and control. Cambridge, (MA): CABI Publishing. 256 pp.