



Photo: W. Haines

Terrestrial Invertebrates

Blackline Hawaiian damselfly

*Megalagrion
nigrohamatum nigrolineatum*

SPECIES STATUS:

Federally Listed as Endangered
State Listed as Endangered

GENERAL INFORMATION: *Megalagrion nigrohamatum nigrolineatum* (Perkins 1899) is a moderate-sized damselfly, immediately distinguishable from all other Hawaiian species by the greenish to blue color of the lower half of the face and eyes. Males and females are sexually dimorphic in color pattern, with males reddish on the side of the thorax and females yellow to light blue. Adults are found along stream corridors in the vicinity of the pools and slow-moving stream sections that serve as breeding sites.

DISTRIBUTION: Endemic to O‘ahu, it formerly occurred on both sides of the island but is now apparently extirpated from the Wai‘anae range. In the Ko‘olau range, it occurs in scattered locations along streams of the central and northern regions, on both the windward and leeward sides. Approximately 20 populations are currently known.

ABUNDANCE: Numbers are drastically reduced due to the highly constrained area of habitat available. The population is estimated to be about 800 to 1,000 individuals in total, with approximately 50 individuals at each site.

LOCATION AND CONDITION OF KEY HABITAT: The naiads live in pools and slow sections of perennial montane streams. Like most native damselflies, this species is impacted by nonnative fish, though it does overlap in range with mosquito fish and smallmouth bass in some streams and appears to be somewhat more resilient to predation than other *Megalagrion* species. Although it historically occurred close to sea level, it is now restricted to upper elevations where barriers such as waterfalls prevent upstream movement of aquatic predators.

THREATS:

- Habitat loss and degradation. Habitat is lost or degraded by erosion, the presence of feral ungulates, stream diversion and alteration, and alien aquatic plants.
- Predation. Non-native predators, including invasive fish, frogs, ants, birds, and reptiles, consume this 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, thereby reducing the risk of extinction. Captive rearing of this species began in 2021 and reintroductions have been attempted to a limited degree, but methods are in need of refinement.

For *Megalagrion nigrohamatum nigrolineatum* specifically, management needs include the following:

- Conduct surveys around known populations to determine threat levels and control needs.
- Conduct studies on life history and essential habitats to better direct conservation measures.
- Develop and refine captive rearing methods.
- Use these results to create a management plan for species recovery.

MONITORING: Periodically census populations in order to assess their stability and trends.

RESEARCH PRIORITIES:

- Survey for additional populations, in both historical and novel sites.
- Conduct studies to determine if reintroduction to additional sites is feasible.

References:

Polhemus DA, and Asquith AA. 1996. Hawaiian Damselflies: A Field Identification Guide. Bishop Museum Press, Honolulu, Hawaii.

U.S. Fish and Wildlife Service. 2012. Endangered and threatened wildlife and plants; endangered status for 23 species on Oahu and designation of critical habitat for 124 species; final rule. Federal Register 77: 57648–57862.