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The Mauna Kea Wēkiu Bug Success Story

Hilo, Hawai'i— A bug no larger than a grain of rice that lives atop Mauna Kea was first recognized as a new species in 1979. This Wēkiu (or summit in Hawaiian) bug (*Nysius wekiuicola*) is now the best studied invertebrate on the summit of Mauna Kea. Residing amongst the cinders at the mountain's summit, Wēkiu bugs use their straw-like beaks to draw nourishment from dead and dying insects in the aeolian drift.

University of Hawai'i Mānoa PhD graduate, and current Assistant Professor at UH Hilo, Jesse Eiben, has spent the past six years studying the Wēkiu bug's life cycle and habitat requirements. Eiben's research has led to a better understanding of the Wēkiu bug's habitat requirements, including a physiological and population growth model showing a reason for the bug's continual persistence on cinder cone habitats.

Now considered the foremost expert on the Wēkiu bug, Eiben's specific interest is in the bug's evolution, its adaptation to Mauna Kea's extreme environment, and how this type of basic scientific information can be applied to conservation actions.

The Wēkiu bug, once listed for Federal protection, is a success story that underscores the importance of conservation management plans. The US Fish & Wildlife Service (USFWS) has removed the Wēkiu bug as a candidate listing for Federal protection under the Endangered Species Act.

The Federal report stated, "The removal of the Wēkiu bug is based on the successful management of the summit of Mauna Kea on the island of Hawai'i. Survey work resulted in more than doubling the number of sites where the species is found. The protection and monitoring of the Wēkiu bug provided through the management plans for Mauna Kea has precluded the need to list this species."

Throughout its decade of management, the Office of Mauna Kea Management (OMKM) has worked collaboratively with State and Federal agencies to ensure proper management and protection of various flora and fauna species on Mauna Kea including the Wēkiu bug. The Mauna Kea Comprehensive Management Plan is the roadmap that guides the Office of Mauna Kea Management.

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Wēkiu Bug

Through the active involvement of many cooperating agencies including the University of Hawai'i Mānoa, University of Hawai'i Hilo, Bishop Museum, Hawai'i State Department of Land and Natural Resources and the US Fish and Wildlife Service, a cohesive group of specialists have guided survey methods and data collection that directly addressed previous data gaps on Mauna Kea – including studying the Wēkiu bug called for in the Mauna Kea Comprehensive Management Plan, Natural Resources Management Plan and Public Access Plan.

OMKM funded studies to learn more about the Wēkiu bug and the results of this research developed better methods for protecting this unique species.

“Even though the Wēkiu bug is no longer a candidate for Federal protection, the Office of Mauna Kea Management is still making its conservation management decisions based on the Wēkiu bug and that really does help with the conservation issues up on Mauna Kea,” said Jesse Eiben.

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About the Wēkiu Bug

The Wēkiu (Hawaiian for "top" or "summit") bug (*Nysius wekiuicola*) is the best studied invertebrate on the summit of Mauna Kea. It was first recognized as a new species in 1979 and described in 1983 by Ashlock and Gagné.

Extensive information on the Wēkiu bug is available through Jesse Eiben's research paper in the Journal of Insect Conservation, entitled, “*Life history and captive rearing of the Wēkiu bug (Nysius wekiuicola, Lygaeidae), an alpine carnivore endemic to the Mauna Kea volcano of Hawaii*” (Eiben and Rubinoff, 2010), his 2012 PhD dissertation and an upcoming publication currently in review in *Conservation Biology*. There is also a general overview of Eiben's research available online from the 2012 Hawaii Conservation Conference (<http://vimeo.com/57490005>).

About Office of Mauna Kea Management

The Office of Mauna Kea Management is charged with day-to-day management of Mauna Kea Science Reserve as prescribed in the Master Plan. The adoption of the Mauna Kea Science Reserve Master Plan by the University of Hawai'i Board of Regents in June 2000 marked a critical milestone in the management of Mauna Kea.

Meetings and public hearings spanning a period of nearly two years went into the formulation of the Master Plan, which established management guidelines for the next 20 years. The Master Plan reflected the community's deeply rooted concerns over the use of Mauna Kea, including respect for Hawaiian cultural beliefs, protection of environmentally sensitive habitat, recreational use of the mountain, and astronomy research.

It places the focus of responsibility with the University of Hawaii at Hilo (UHH). The UH-Hilo Chancellor established the Office of Mauna Kea Management and the Board of Regents established the Mauna Kea Management Board in the fall of 2000. The Mauna Kea Management Board in turn formed Kahu Ku Mauna, a council comprised of Hawaiian cultural resource persons to serve as advisors.

The mission of the Office of Mauna Kea Management is to achieve harmony, balance and trust in the sustainable management and stewardship of Mauna Kea Science Reserve through community involvement and programs that protect, preserve and enhance the natural, cultural and recreational resources of Mauna Kea while providing a world-class center dedicated to education, research and astronomy.

Note to editors: If you are interested in high-res images to accompany this media release or for additional assistance including subject interviews, contact Laura Aquino at 808-326-7820 or via email at laura@current-events.com