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Endangered Plant Blossoms in Niu Valley

O'ahu Plant Extinction Prevention Program Now Houses C. grimesiana subsp. grimesiana

By Hina Kneubuhl, 8/3/2007 8:41:39 AM

On the leeward slopes of the southern Ko'olau mountains, some of O'ahu's rarest plants are finding a home. Through funding from the U.S. Fish and Wildlife Service and State Division of Forestry and Wildlife and the gracious cooperation of landowner, Tiana Partners, permission was granted to the O'ahu Plant Extinction Prevention Program (O-PEP) to build a small enclosure on land in Niu valley to house now rare species known from that area.

One of these species is the endangered *Cyanea grimesiana subsp. grimesiana*. In light of recent propagation and outplanting efforts, O-PEP employees and other O'ahu conservationists are hopeful that this species may be making its way back from the brink of total extinction.

The last *C. grimesiana subsp. grimesiana* known from Pia valley in the southern Ko'olau mountains died in January 2005, effectively rendering this species extinct in the wild. Luckily, genetic material from several wild plants had been collected making ex situ propagation possible. At one time, the Pahole State Nursery had nine individuals that descended from different Kulu'i valley founders. Propagation of the species at that particular site was plagued with setbacks, however. The plants did not flower or fruit and slowly died off one by one.

Despite rodent control at the site, mice ate the apical meristems of the last four individuals, a fatal blow to the last adult plants in cultivation. Seeing the severity of the situation, Doug Okamoto (Propagator of the Pahole Mid-elevation Rare Plant Nursery) and Nellie Sugii (Lyon Arboretum Micropropagation Lab) managed to successfully make a single clone of the last individual in the greenhouse before it perished. Lyon Arboretum, another large repository for O'ahu's rare plant species, now keeps this clone and individuals from Pia and Kulu'i valley seed stock in vitro at their micropropagation lab in Manoa valley. In the fall of 2005, they took some of these plants out of test tubes and prepared for them for outplanting. Survival and growth of individuals at the Lyon Arboretum greenhouse show that the site is much better suited for propagation of this species.

On February 6th of this year, the O-PEP field team outplanted three strong and healthy *C. grimesiana subsp. grimesiana* individuals into the Niu valley enclosure. Some of the better habitat in the area, this enclosure contains remnant mesic forest with *Diospyros* overstory and several common native species. Thus far, the site appears to be perfect for reintroduction as all three individuals are healthy and growing. Recently, the Lyon team moved nine more plants from test tubes to pots and are carefully nurturing them for future outplanting. If all goes well, the next outplanting season will find them in the Niu valley enclosure with the others.

The Plant Extinction Prevention program works to protect rare Hawaiian plants with wild populations of 50 individuals or less. The goal is to complete a network of multi-island plant propagation sites and storage facilities, and conduct emergency monitoring and genetic sampling of the 186 species.

Hina Kneubuhl is an O'ahu Plant Extinction Prevention Program Technician. This article was published in the most recent edition of Na Leo O Ka Aina, bi-annual newsletter of the Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife. See more at <http://www.state.hi.us/dlnr/dofaw/newsletter/index.htm>