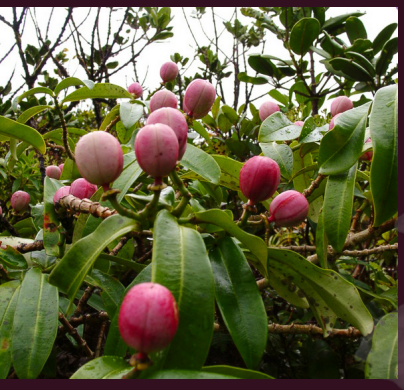


Rare Plant Program

2024 ISLAND HIGHLIGHTS

State of Hawai'i
Department of
Land & Natural Resources
Division of
Forestry & Wildlife

MOLOKA‘I

Cyanea procera & *Cyanea profuga*

Recovery

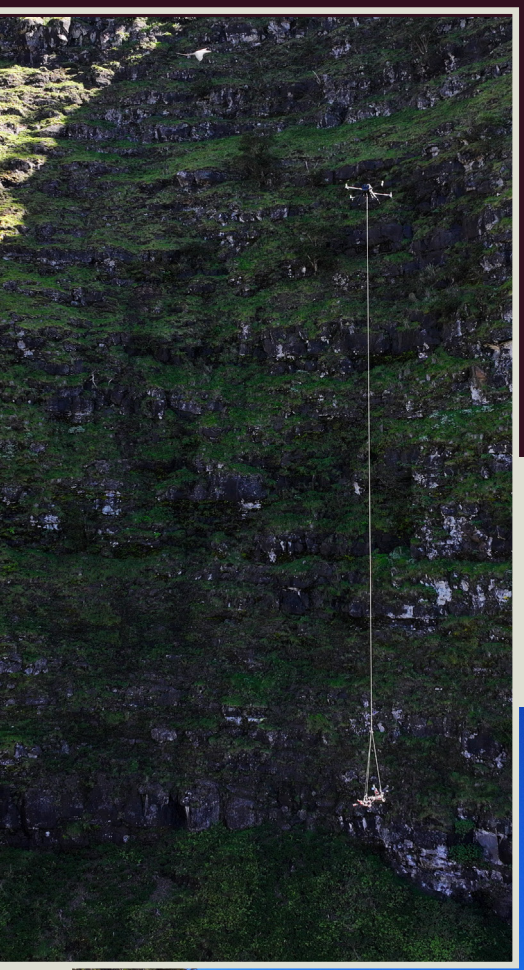
Hāhā are one of Hawai‘i’s famous plants. Their curved flowers match the bills of their bird pollinators, like ‘i‘iwi and ‘apapane. On Moloka‘i, *Cyanea profuga* and *Cyanea procera* have been a target species for the Moloka‘i Plant Extinction Prevention Program (MoPEPP) and their partners at the Hawai‘i Division of Forestry and Wildlife (DOFAW) and The Nature Conservancy of Hawai‘i. After a handful of plants were rediscovered in the 1990s, MoPEPP secured seed collections and thousands of plants have been grown and planted back into protected areas. Today, recovery is happening, and hundreds of plants are now flowering and producing seeds to start the next generation!

MOLOKA‘I

Huperzia mannii
Found in Kumu‘eli

The forests of Moloka‘i form a thick cover over steep valleys that soak up the water and slowly release it into the aquifer and streams. One of the reasons that works so well is the trees are covered in ferns and club mosses like wāwae‘iole, *Phlegmariurus mannii,* that slow down and abosrb the water as it drips down the trees. Plants like these are epiphytes, and grow only along the trucks of koa, ‘ōhi‘a, and other native trees. This extremely rare species was never known to occur on Moloka‘i until a single plant was discovered last year by MoPEPP while exploring a remote forest. While efforts continue to protect the forest where it was found, the search is on to find more individuals needed to build healthy populations of this species across the islands!

KAUA‘I

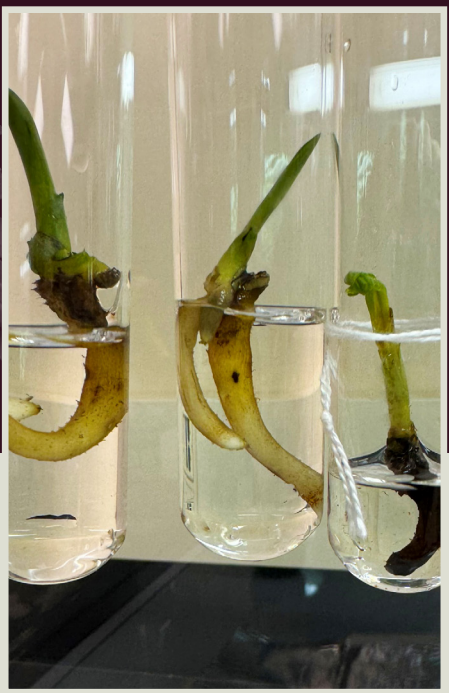


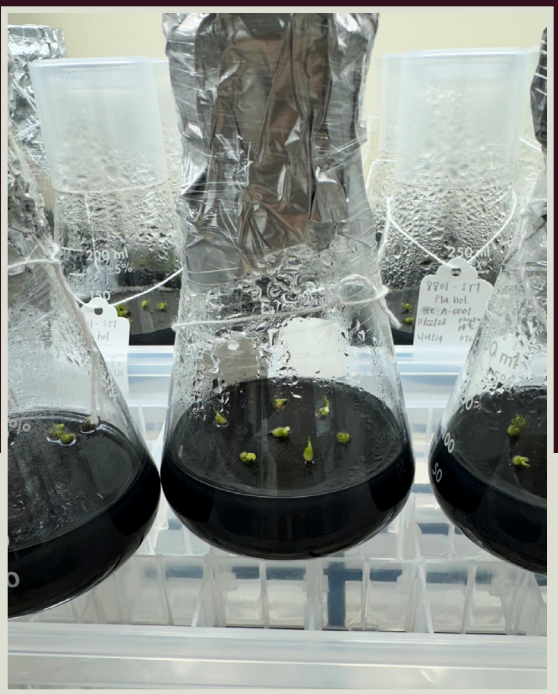
Hibiscadelphus woodii

A team of engineers, botanists, and horticulturists have piloted a remarkable feat along the massive cliffs of Kaua‘i—using a custom-built drone to collect samples of *Hibiscadelphus woodii,* then coaxing roots from the cuttings to bring the species into cultivation. Professionals from Outreach Robotics, the National Tropical Botanical Garden, PEPP, and DOFAW worked together to bring this species into cultivation for the first time. The plants are now being nurtured on O‘ahu and returning home where they can eventually be planted to its role in Kaua‘i’s native forest. The team is still working together to find more plants, collect more cuttings, and prevent more extinctions in the next year!

KAUA‘I

Platanthera holochila





Hawai‘i has three native orchids, all found growing in the understory of upland wet forest and around bogs and nowhere else in the world. One of them, *Platanthera holochila,* is critically rare with fewer than twenty individuals remaining in the wild on Kaua‘i, Maui, and Moloka‘i. They need very specific conditions to survive, so once those areas are disturbed by invasive species, the plants face extinction. This orchid also depends on relationships with soil fungi to thrive, so growing them outside of their natural habitat is complicated and difficult. Over the last few years, collections of seeds were secured from the remaining plants and a breakthrough in propagation techniques at the Lyon Arboretum has enabled them to grow several plants for planting back on Kaua‘i!

HAWAIʻI

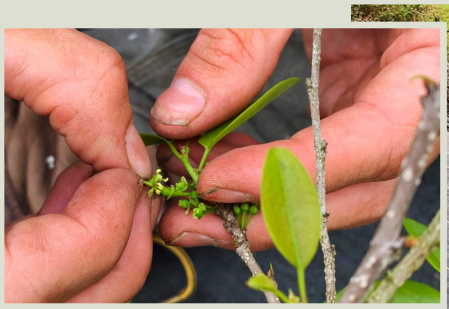
Waiākea Silverswords

On Hawaiʻi Island, ʻāhinahina live near the summit of Mauna Kea, the subalpine slopes of Mauna Loa in Kaʻu, and amongst bogs in the forests of Waiākea. Finding a niche in these extreme and varied environments, they evolved into unique forms adapted to thrive from the wet bogs to the dry alpine summits. The Waiākea ʻāhinahina, a form of the Mauna Loa silversword, are similar to the low-growing silver-leaved plants that grow in the montane regions of Mauna Loa, but have a unique appearance and occur in a remarkably different kind of habitat. Over the last year, teams from DOFAW, PEPP, Hawaiʻi Volcanoes National Park, Hawaiʻi Silversword Foundation, and the Volcano Rare Plant Facility have replaced the fencing that protects the wild population, hand-pollinated flowers, collected seeds, planted new seedlings at reintroduction sites, and found new seedlings! This wholistic approach to protection and recovery will help it continue to find places to thrive into the future.

HAWAIʻI

Flueggea neowawraea

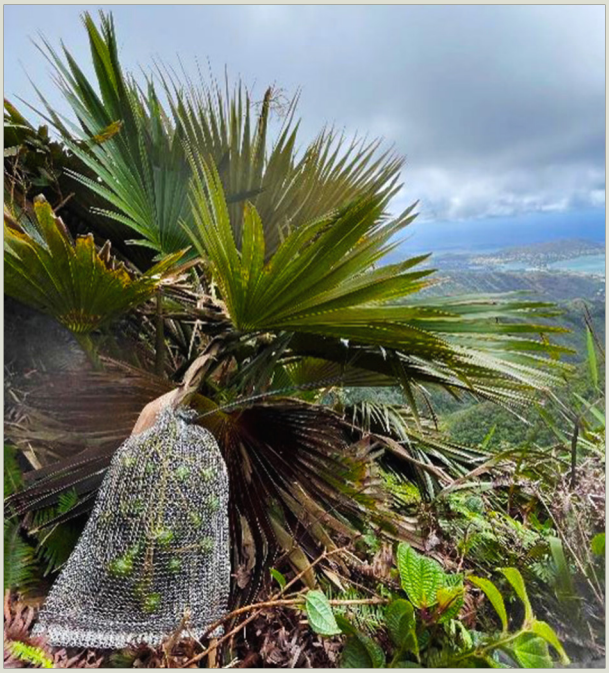
Seed Production



Mēhamehame is one of the rarest trees in the world. Only 80 aging trees are left in the dry forests and steep canyons of Kauaʻi, Oʻahu, Maui, and Hawaiʻi Island. Once one of the largest native trees in Hawaiʻi, most of them are now just shattered trunks with only small side shoots that still produce the bright red liko that distinguishes this unique Hawaiian tree. Each tree produces only male or female flowers, meaning two trees are needed to reproduce. Over time, deforestation, wildfire, and other threats have left remaining trees isolated, too far from one another to cross-pollinate. In response, the Hawaiʻi Island team collected cuttings from wild trees, staff at the Volcano Rare Plant Facility carefully coaxed into rooting, and they were planted at a protected site at Puʻu Waʻawaʻa. This year, for the first time, they produced flowers. The team carefully transferred pollen between flowers and later collected fruit! The tiny seedlings are now emerging and will ultimately be returned to protected native forest.

O‘AHU

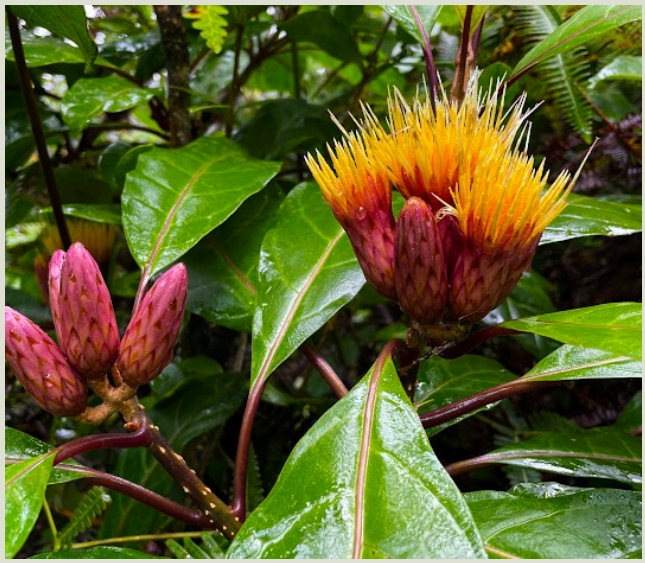
Pritchardia spp. & Coconut Rhinoceros Beetle

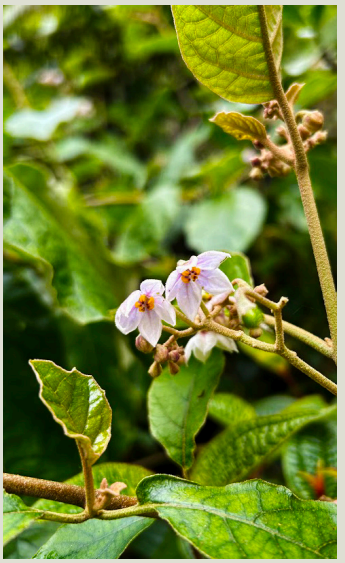


The impacts of the Coconut Rhinoceros Beetle (CRB) invading O‘ahu are becoming obvious as numerous niu are damaged and removed. O‘ahu’s native palm trees, loulu, are also being killed in the Wai‘anae and Ko‘olau Mountains. Part of the strategy to save these species is to collect and grow seeds that can be kept safe in plant nurseries and botanical gardens. There are five different species of loulu on O‘ahu, four of which are found nowhere else in the world. Collections from the remaining wild populations will be held in protected living collections, while we work with partners to protect the wild trees from CRB. If populations succumb to this invasive beetle, these living collections will give us a chance to replant and restore populations once the beetle is no longer a threat.

O‘AHU

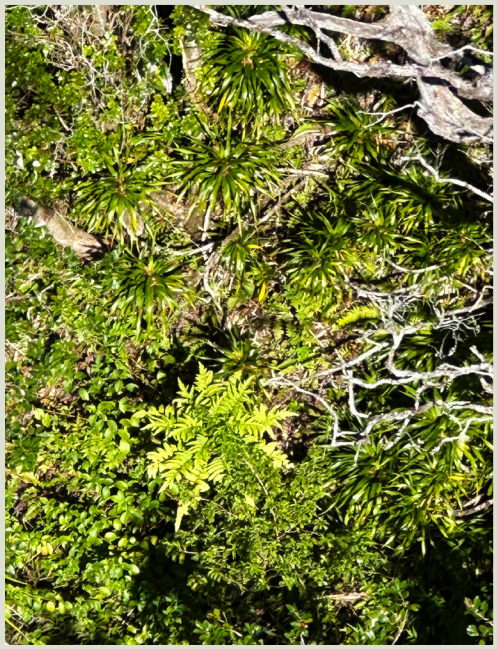
Propagule collections





Protecting habitat and creating new populations are two important things we can do to help rare plants. To create new populations, botanists at the O‘ahu Plant Extinction Prevention Program and the Hawai‘i Division of Forestry and Wildlife have been collecting seeds and cuttings from wild plants to grow and replant. Over the last year, the team made 278 collections from 49 species! The efforts to hike, climb, and carefully collect these seeds will result in thousands of new plants for restoration in the next few years. Some of these species were brought into cultivation for the first time, marking a critical step in their recovery.

MAUI

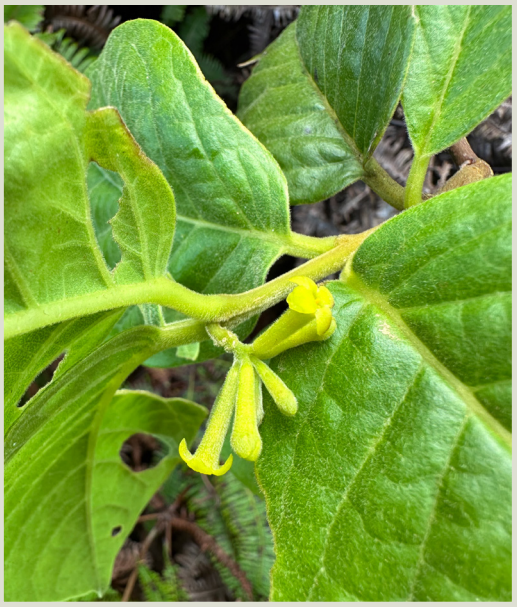


Cyanea magnicalyx

Looking up at Mauna Kahālāwai on West Maui, one sees a lush, green expanse—so dense that it's nearly impossible to pick out individual species among the hundreds living in its forests. Among them is *Cyanea magnicalyx,* a plant found nowhere else in the world. Once teetering on the edge of extinction, its population plummeted from six individuals in 2009 to three in 2018, and by 2022, none remained. But hope remains. Over the past year, DOFAW-PEPP botanists found three previously unknown *Cyanea magnicalyx* plants! The first was spotted from the air, and two more were found while trying to access the initial plant on foot. Though still critically endangered, these newly found plants offer a lifeline. Seeds collected from them will be used to restore the species, ensuring its legacy continues in the forests of Mauna Kahālāwai.

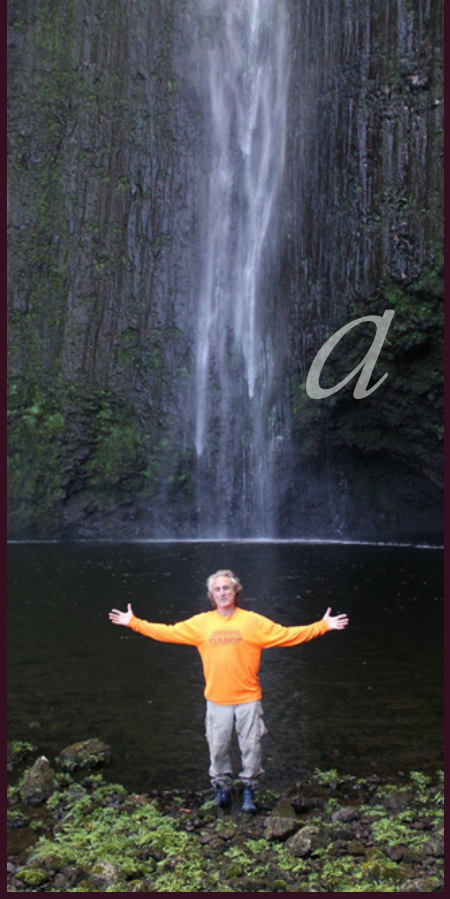
MAUI

Wikstroemia villosa

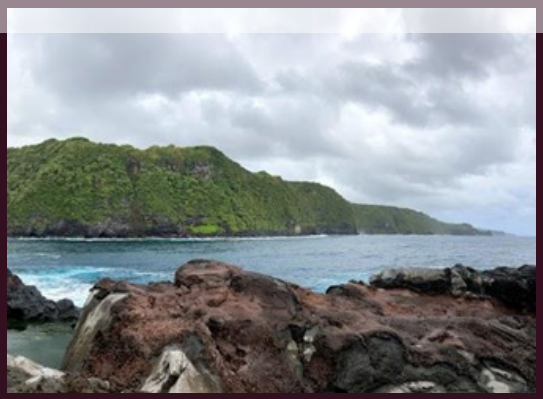


To prevent plant extinctions, botanists trek through dense, remote jungles in search of rare species like ʻākia *(Wikstroemia villosa),* working to halt their decline. This particular ʻākia, native to Maui's wet forests, is distinguished by its soft yellow hairs covering its leaves and branches and its striking bright orange fruits. First collected in the early 1800s, it then vanished for decades and was presumed extinct—until botanist Hank Oppenheimer rediscovered it in 2007. By the time it was listed as an Endangered species in 2013, only two individuals were known. Since then, targeted surveys have led to the discovery of additional plants on Mauna Kahalawai and Haleakalā. In the past year, even more individuals were found in a remote valley, offering renewed hope. With continued management, these fragile populations have a much better chance of survival, reducing the species' risk of extinction.

a hui hou

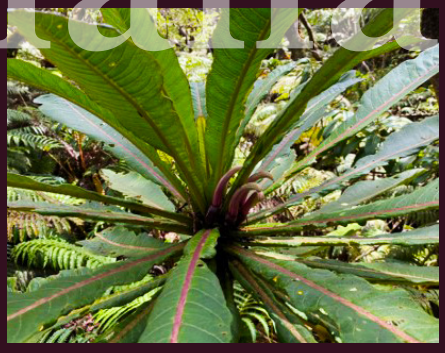


We want to send a special *mahalo* to Hank Oppenheimer, who retired as the Maui Nui Plant Extinction Prevention Program Coordinator in 2024. Hank is a mentor, leader, and hero to local botanists. During his time working on Maui Nui, he discovered new species, secured collections of species before they went extinct and inspired a generation of botanists to keep searching.



Hank Oppenheimer

mahalo



The Nature Conservancy
Hawai'i

Hawai'i Plant Specialist Group

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to all our conservation partners

credits

Cover
Ane Bakutis, Scotty Heintzman, Army Natural Resources Program O'ahu, Hank Oppenheimer

Cyanea procera and *Cyanea profuga*
Ane Bakutis, Kristen Coelho

Phlegmariurus mannii
Ane Bakutis, Matt Keir, Kristen Coelho

Hibiscadelphus woodii
Ken Wood, Ben Nyberg, Matt Keir, Outreach Robotics

Platanthera holochila
Devon Gordon, Matt Keir, Scott Heintzman

Waiākea Silverswords
Josh VanDeMark, Dutchess Rapoza

Flueggea neowawraea
Josh VanDeMark, Chelsea Ranan, Dutchess Rapoza

Pritchardia and Coconut Rhinoceros Beetle
Susan Ching, James Harmon, Josh Serrano, Miles Thomas

Propagule collections
Susan Ching, Kobey Togikawa

Cyanea magnicalyx
Zach Pezzillo, Hank Oppenheimer

Wikstroemia villosa
Zach Pezzillo

Hank Oppenheimer
Keahi Bustamente, Zach Pezzillo, DOFAW, Kanoa Severson

Mahalo
Susan Ching, Zach Pezzillo, Josh VanDeMark, Ane Bakutis

This page
Susan Deans

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