

The Bulletin

OF THE NATIONAL TROPICAL BOTANICAL GARDEN

Volume XXV, No. 1

Spring-Summer 2007



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ON THE COVER: Students from Chiefess Kamahalei Middle School on Kaua'i planting *Cordia subcordata* (kou) in a restoration project. Tying community outreach with ecological restoration is one way the Garden combats plant extinction and environmental degradation. (See article on Page 8.)



The Bulletin is a publication for supporters of the National Tropical Botanical Garden, a not-for-profit institution dedicated to tropical plant conservation, scientific research, and education.

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Ecological Restoration through Community Outreach

(and Community Outreach through Ecological Restoration)

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At the National Tropical Botanical Garden, the important goals of community outreach and plant conservation have found a common mission. NTBG is applying energy and innovation to the dual challenges of participating more in the local community and conserving native plants on larger scales. At the community level, the need is clear: make the research, education, and conservation “clout” of NTBG increasingly available to the island populace, among other things fostering opportunities for career development to meet the future employment needs in all phases of plant husbandry.

In order to stem the tide of extinction and environmental degradation, ways must be found to fully engage public support for the needed large-scale measures. The needs of native plant conservation have been much discussed in professional and public venues, and nearly every source agrees that all conservation efforts must operate at large scales to be biologically meaningful, and that no program on behalf of a rare species has much chance of success in the long run without broad-scale public support. Our efforts to prevent the extinction of some of Hawai‘i’s rarest plant species must move forward on several fronts, and at scales large enough to make a difference for the species at risk.

And just what is “at risk?” Hawai‘i has the dubious distinction of being the “Extinction Capital of the United States.” Of 540 documented

plant extinctions in the U.S. historically, roughly half were in the Aloha State. Wagner and his colleagues (Wagner, W.L., M. Bruegmann, D.R. Herbst, and J.Q. Lau. 1999. *Hawaiian vascular plants at risk*: 1999. Bishop Museum Occasional Paper 60: 1-64) determined that of 1,209 native species of plants, fully half are at risk or already extinct.

NTBG has a four-decade history of big thinking and big actions, and is one of the pioneers in large-scale restoration of native plant communities. The organization has done exemplary work on its own properties, notably Limahuli Garden and Preserve on Kaua'i's north shore. Although ecological and cultural restoration is at the center of all its Hawai'i gardens' management strategies, it has become clear recently that NTBG can do a lot more on behalf of native plants by helping others throughout the community to grow native plants.

November 18, 2006 was a day in point: almost 200 Boy Scouts and Girl Scouts from throughout Kaua'i converged on a spectacular site on the flank of Kilohana Crater in eastern Kaua'i. State and County leaders officiated at an opening ceremony, then the Scouts and their leaders, with supervision from NTBG employees, planted nearly 800 native trees and shrubs on two acres of the more than 40,000 belonging to Grove Farm Company.

NTBG's many other community outreach efforts take a variety of forms

Following their weekend "Camporee" on the site, the Scouts have returned on a rotating schedule in which each Scout group tends the restoration site one Saturday every two months.

This site at 'Iliahi has since hosted another event utilizing 300 7th-graders from Chiefess Kamakahalei Middle School, each of whom planted one native tree, and, like the Scouts, participated in a hike up the rim of the crater, as well as cultural activities and educational exercises related to plants.

NTBG’s relationship with public and private landowners has a venerable history. Our dryland forest nature preserve, Ka’upulehu, on the Kona side of the Big Island, is a property leased from Kamehameha Schools. NTBG employees are often “loaned” or “rented” to landowners around the Islands to provide landscaping or conservation advice. Sometimes surplus plants produced in the NTBG’s Conservation and Horticulture Center are donated or made available at cost to projects on private lands.

Developing the Prototype

In some ways, the Makauwahi Cave Reserve has been a kind of prototype for these ideas. Seventeen acres of leased land on Grove Farm property at Māhā’ulepū, a spectacular area of sea cliffs and



▲ NTBG staff instructed Scouts on how to plant and care for native species.

dunes a few miles up the beach from NTBG’s Southshore Visitors Center, have become the focus of community activity related to fossils, archaeology, and cave fauna. In recent years, the authors of this article have worked with volunteers to develop the dramatic sinkhole and cave system into a living museum where people can see ongoing paleobotanical, paleontological, ethnohistorical, and archaeological research and participate in this paleoecological work.

Surrounding the cave site, the landscape has been placed under six different management strategies, each area with its own challenges, limitations, and possibilities. Volunteers assist with controlling erosion and invasive species, outplanting native species, and managing the Reserve. Besides volunteer opportunities, the Cave Reserve offers programs for youth and adult groups, and every Sunday is “Open Cave,” with a trained volunteer guide on duty to greet visitors and show them

around. NTBG's Junior Restoration Teams from the island's high schools visit twice each school year. Other NTBG Education Department programs such as Horticultural Internships, Environmental Journalism Fellowship, and Science Teachers' Enrichment Program groups all use the site annually during these courses.

In a large abandoned agricultural field, volunteers and community members assist with scientific experiments, development of innovative horticultural techniques, and the Community Garden. In the latter, individual volunteers may grow organic vegetables and fruits on a portion of the site, provided they also foster the native trees and shrubs from the NTBG Conservation and Horticulture Center being planted over the entire site.

Local traditional practitioners assist the Makauwahi Cave Reserve project to grow, tend, and harvest native and Polynesian-introduced plants needed for medicines, lei, kapa, and ceremonial purposes. This Practitioners' Garden also features old Hawaiian varieties of sweet potato grown in traditional Ni'ihau style, planted by a program organized with the Hawaiian Immersion Schools.

Programs for volunteers on a large scale are relatively easy at Makauwahi and 'Iliahi, because these places are just wide-open farmland, not the more formal confines of a traditional botanical garden. NTBG's many other community outreach efforts have taken a surprising variety of forms lately, including the advent of a summer camp program, the creation of summer internships in Conservation, and collaborations with State and Federal agencies in large-scale conservation on public lands.

Building community consensus to save endangered biota is a tall order. Whether NTBG succeeds in this will depend largely on how successful the organization is at engaging the entire community in the effort.



▲ The first phase of the project at 'Iliahi was accomplished in late 2006 with the participation of nearly 200 Scouts.

◀ The process begins in NTBG's Conservation and Horticulture Center, where native plants are mass-propagated for outreach projects.

▶▲ An aerial view of the sinkhole in the 17-acre Maukawahi Cave Reserve.

▶ *Pritchardia* palms and other species planted inside the sinkhole. Ecological restoration projects like this and 'Iliahi directly involve adult and student volunteers from the community in saving native plants and their environment.



