



1. RESTORATION SUMMARY

*December
2013*

Restoration Activities:

- During the month of December, a total of 38 volunteers accessed the Kaho'olawe Island Reserve. Volunteers were from Mana Lane Farms of the Big Island, as well as a group of individual volunteers from different affiliations.
- Volunteers from Mana Lane Farms planted 70 koai'a near tank three in the Luamakika area. Watering and maintenance work at the DOH III and HCF/NOAA worksites was also done.
- Inclement weather during the week of December 16th resulted in roads that were too soft and muddy to drive on to work areas. This gave staff and volunteers the opportunity to organize and clean areas of Base Camp.
- The Kaho'olawe Christmas Bird Count was conducted on December 18, 2013. The annual count yielded 258 birds of 16 species. The highlight was a flyby of the endangered Hawaiian petrel or 'ua'u (*Pterodroma sandwichensis*). Other native birds sighted were the 'ā (*Sula leucogaster*), kolea (*Pluvialis fulva*), pueo (*Asio flammeus sandwichensis*) and 'ūlili (*Heteroscelus incanus*). The most numerous non-native bird was the house sparrow (*Passer domesticus*) at 70, followed by the Gambel's quail (*Callipepla gambelii*) at 44. The data has been submitted to the Audubon Society for the national database.

Other News:

- Volunteer Jeff Brink accessed Kaho'olawe during December and brought his "drone" with a camera attached to it. He was able to capture some amazing bird's eye view images with it. This tool has the potential to assist in collecting data and capturing images.



Left: Top and bottom: "drone" photos of volunteers planting in Luamakika.

Right: adult Hawaiian Petrel in flight.



1. RESTORATION SUMMARY

*January-February
2014*

Restoration Activities:

January

- During the month of January, a total of 12 volunteers from Montessori School of Makawao, Maui, visited Kaho'olawe. These volunteers assisted with the removal of alien plants at Kaukaukapapa, and watered new plantings at the DOH III worksite.
- Maintenance and repairs were done to the Hakioawa RAWS weather station and is back on line.
- The photovoltaic system for the volunteer hut in Honokanai'a is running well, and Lyman is conducting monthly checks on the system.
- A watershed plan for the Kanapou and Kamohio watersheds is being written by Lyman. If the plan is accepted by the Department of Health Clean Water Branch, this will designate the watersheds as "priority" watersheds making them more likely to receive future grant funding from the Department of Health.
- The third billings for the DOH III and the HCF/NOAA grants have been submitted.
- KIRC and Island Conservation had a meeting regarding the National Fish and Wildlife Foundation grant. Timetables, deliverables, a steering committee and a project management group are being developed.

February

- A total of 49 volunteers accessed Kaho'olawe during the month of February. Volunteers came from Volcano Charter School, Montessori School of Makawao, Maui, Seabury Hall, UH Maui Hawaiian Studies Class, and Punana Leo o Maui.
- Volunteers planted native plants such as `a`ali`i and maiapilo in rock mulch mounds as well as in the rivulets and ditches. Additional irrigation lines were also laid out at the DOH III worksite.
- During the PKO's Makahiki closing ceremonies, volunteers from UH Maui assisted KIRC staff with providing logistical support for the Makahiki procession in Honokanai'a. Meals were prepared in Honokanai'a for all participants.
- KIRC and PKO volunteers laid out additional rock mounds in the Kanapou area. Existing rock mounds with germinating `a`ali`i seeds were watered as well.
- The watershed plans for the Kamohio and Kanapou watersheds were submitted.

Precipitation:

- Kaho'olawe received a total of 8.45" of rain between Dec. 2013 and Feb. 2014.



Left: rock mound at Kāneloa with germinated `a`ali`i.

Middle: `ohai in a rock mulch mound at the DOH III worksite.

Right: `a`ali`i planted within a rivulet.



RESTORATION SUMMARY

March 2014

Ka palupalu o Kanaloa (*Kanaloa kahoowawensis*) Update

□ During the annual survey in April 2012, *Kanaloa kahoowawensis* was reported to show an early flush of green leaves and healthy vigor. Helicopter services to the KIRC were discontinued in September 2012 and aerial coastal surveys ceased during a dry year on island. Emergency funds were needed to access `Ale`ale in April 2013 for the regular survey. The plant appeared drought stressed and was watered (37 gallons) and again in May 2013 (49 gallons).

• Without a helicopter contract, an emergency measure to access `Ale`ale was coordinated with PCSU Plant Extinction Prevention Program (PEPP) to survey (by air) the last remaining wild *K. kahoowawensis* and assess plant health after substantial winter precipitation. On March 6 2014, PEPP and KIRC staff observed that the plant showed no obvious sign of recovery. It should be noted that even with regular watering from 2000-2002 the only other *Kanaloa* plant did not benefit and was declared dead in August 2002.



Kanaloa kahoowawensis 2013



Kanaloa kahoowawensis 2014

□ The plants in cultivation continued to be managed by the respective nurseries with KIRC assistance and guidance from the *Ka Palupalu o Kanaloa Management Plan*. Powdery mildew is managed on a regular basis. The Maui Nui Botanical Garden individual was repotted in an 8x8x4 redwood box and has responded well. The Ho`olawa farm individual is also in good health under careful management. Pollen is being exchanged and genetic material is extracted on a regular basis and is sent to Lyon Arboretum Micropropagation Lab for tissue culture. Rootstock from the closest known genetic species (*Schleinitzia* spp.) is currently being grown for layering trials.

• Lyon received seeds from the Ho`olawa aborted 2012 seed pods and was able to produce a seedling for propagation and future tissue culture. The two remaining seeds in storage at National Tropical Botanical Garden (NTBG) will be transported to Lyon for the same purposes. Currently there are three plants in propagation; one at Lyon Arboretum (2014), one at Ho`olawa farm (2008) and one at Maui Nui Botanical Garden (2008). Tissue culture has yet to be successful.



Lyon Arboretum Micropropagation Lab Seedling, February 2014