

**Title:** KRCP Watershed Incipients, Final Report

**Organization:** KRCP/Garden Island Resource Conservation & Development Inc.

**Award:** \$20,000; PO #32817

**Introduction:** Garden Island Resource Conservation & Development (GIRC&D), Inc. is a community-based 501(c)3 nonprofit whose mission is to prudently use natural and human resources to improve Kaua'i county's environment, economy and social fabric. Koke'e Resource Conservation Program (KRCP) is a project of GIRC&D and its mission is to involve the public in protecting Kaua'i's diverse forest ecosystems by coordinating volunteers in service learning projects to conduct invasive weed removal in selected areas of northwestern Kaua'i. We also benefit from interagency coordination to function as a rapid response weed control service for the Koke'e region, which is a major public access to the watershed of Kaua'i.

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### ***Achievements in FY13***

**Deliverable 1** is the quantitative summary of weed control activities. During the grant period of March 2013 to March 2014, KRCP staff, volunteers and partners transected a total of 626 acres and treated 4,103 incipient invasive weeds. This included 430 acres that were surveyed for the first time to suppress weeds, and 196 maintenance and monitoring acres. Accomplishing this involved 1,112 staff hours, 374 volunteers putting in 3216.5 volunteer hours, and 520 contributed labor hours from our many partner agencies. This contributes to protecting as many as 20,000 ecosystem acres on the Koke'e and Alakai plateau, including areas near trails and public access to the Alakai and other surrounding forest reserves. Our latest control effort on the new incipient Hawkweed (first island record) showed an 85 % decrease from the first passes.

Summaries for individual taxa are discussed below.

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- ***Ailanthus altissima* – Tree of Heaven:** 4 plants were found and treated on .8 acre
- ***Buddleia asiatica* – Dog Tail Buddleia:** 649 plants were treated on 158 acres
- ***Buddleia madagascarensis* – Butterfly Bush:** 7 plants were treated on .8 acre
- ***Cascabela thevetia* – Be-Still Tree:** 429 plants were treated on 2.6 acres
- ***Leptospermum scoparium* – New Zealand Tea:** 185 plants were treated on 5.9 acres
- ***Ligustrum sinense* – Privet:** 163 plants were treated on 3.09 acres
- ***Neontonia wightii*** – 48 plants were treated on 81 acres.
- ***Picris Hieracioides* – Hawkweed:** 77 plants were treated on 4.8 acres. Our latest control effort on this new incipient (first island record) showed an 85 % decrease from the first passes.
- ***Pueria montana* – Kudzu:** 0 plants found
- ***Riccinus communis* – castor beans:** 359 plants were treated on 34 acres.
- ***Rosa Laevigata* – Cherokee Rose:** 11 plants were treated in about a quarter acre.
- ***Setaria palmifolia* – Palm grass:** 178 plants were treated on 22.4 acres
- ***Sphaeropteris cooperi* – Australian Tree Ferns:** 1,981 plants were treated on 309 acres.
- ***Solandra maxima* – Cup of Gold:** 5 plants were treated on 2.2 acres.

**Deliverable 2** is the number of partner interactions that occurred and public relations. KRCP's work benefitted from 520 hours of contributed labor from partners including National Tropical Botanical Garden (NTBG), The Nature Conservancy(TNC), Plant Extinction Prevention Program(PEPP), Kaua'i Invasive Species Committee (KISC), US Fish & Wildlife Service (USF&WS), Kauai DLNR Natural

Area Reserves System (NARS) and Division of Forestry and Wildlife, Plant Pono, and Kauai Forest Bird Recovery Program.

Regarding Koke'e leaseholder education and outreach, we gave native plants to some leaseholders and received tips on weeds spotted from leaseholders and hunters. The cabin owner where the Tree of Heaven was discovered was doing some clearing of a dense growth of the Texas Rose vine (*Philadelphus karvinskianus*) and discovered 2 more Tree of Heaven plants (*Ailanthus altissima*) which they pulled. Over the last couple years, we have noticed that the deer eat one of our major incipients: privet (*Ligustrum sinense*). It had looked like they may keep it at least under control. However, we have been alerted by a leaseholder that in one area of the park, the deer population had dropped drastically, and that the privet is again taking off. Upon assessing this situation, we found a few larger privets in the area which we treated, but new eating damage showed that deer have returned. More recently deer have been able to keep the privet under control due to KRCP removing 122,400 privet since 1998. We found very few others when we transected the general area, only 13 on 3.5 acres.

We educated and trained 6 summer interns who worked with us 2 months, and 3 fall and winter interns; they all also got experience working with other agencies. We educated and trained 374 volunteers who benefitted greatly from the hands-on experiences in resource management in the forest. Regarding public outreach, our public relations exposure continues to grow at the Banana Poka forest education fair at Kōke'e, with about 1,000 attendees, and the Emalani Festival which attracts over 2,000 people. In partnership with KISC, we had a presence at the Garden Fair, Arbor Day and Kaua'i Farm Bureau Fair, with about 6,500 attendees receiving outreach material from KRCP. We had a booth at NTBG's 50<sup>th</sup> Anniversary Celebration Concert, which was seen by about 160 people, and we also had a presence at the 2013 Hawaii Conservation Conference held this summer on O'ahu, with about 3000 attendees. Through these public events we were able to provide educational outreach on invasive weed species to a total of 14,660 people both on and off island. We've been asked to give advice about weed control by 2 different agencies. Our website and blog provide additional exposure and interaction.

**Deliverable 3** is taking advantage of historical resources for determining risk assessment. We have been conferring with a leaseholder who is knowledgeable in Koke'e's vegetation history to determine the invasiveness of *Camelia sinense* based on its time and places of original plantings in Koke'e and its current spread. It's considered very invasive in some ecosystems in the world. We are undertaking a project to control it by pruning, picking, and selling it as a wild-grown high mountain tea, and thus providing some income to our program. The Cloudwater Tea Farm is working with us to develop this project, dubbed by one volunteer as "nuisance to uses"; they are giving donations for tea that is picked, processing it and creating the product and market.

We have also assessed some of the other potentially invasive plants on our list and have determined that our current priority list is still appropriate and no new ones need to be added. Kudzu can probably be dropped since we have found none for 8 years now. We have prioritized the list of targets in order from most urgent to least as follows: Australian Tree Fern, *Buddleia madagascarensis*, Palm grass, *Buddleia asiatica*, Neontonia, Tree of Heaven, Hawkweed, New Zealand Tea, Cup of Gold, Be-Still tree (in Kalalau), Privet, Cherokee Rose, and *Pyracantha*.

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