

USAG-HI Oahu Army Natural Resource Team

Natural Resource Conservation, Team

Introduction and Background

With over 200,000 acres, US Army Garrison Hawaii (USAG-HI), is an essential power projection platform for the Pacific theater due to its ability to quickly deploy units to the west. As the endangered species capital of the world, Hawaii has over 300 listed species, over 100 of which occur on USAG-HI lands, the most of any DOD installation nationwide. These species are endemic to Hawaii and found nowhere else in the world. The Natural Resource Program/Team (NRT) has already saved two plant species from extinction.

The NRT employs 57 biologists responsible for balancing the military mission with the natural resource management requirements. Recognized in this nomination are the following USAG-HI civilians: Michelle Mansker, Natural Resources Program Manager (NRPM); and Kapua Kawelo, Oahu Biologist. A cooperative agreement with the University of Hawaii (UH) provides the following team members: Cliff Smith, Project Manager; Jobriath Rohrer and Dan Sailer, Senior Coordinators; Jane Beachy, Invasive Species Specialist; Krista Winger, GIS Specialist; Matthew Burt, Fencing and Hunting Specialist; Lalasia Bialic-Murphy, Monitoring Specialist; Kim Welch, Outreach Specialist; Matthew Keir, Rare Plant Specialist; Phil Taylor, Avian Specialist; Vincent Costello, Snail Specialist; and Kaleo Wong, William Weaver, Mike Walker, Julia Lee, Daniel Adamski and Kahale Pali, Coordinators.

Major Duties and Responsibilities

As NRPM, Ms. Mansker is responsible for overall administration, management and leadership of the Oahu and Pohakuloa Training Area NRT's \$11M program and budget. Ms. Kawelo's main responsibility is to ensure the support staff perform quality work while ensuring efficient management of the natural resources, helping with budget execution and planning, preparation of natural resource planning documents, outreach and providing technical assistance to the contract staff and the NRPM. The duty of the entire support staff is to implement NRT management actions that protect and preserve the threatened and endangered species (T&E) on USAG-HI lands on Oahu.

The Oahu Natural Resource Team has helped to ensure survival of this endemic palm tree, Pritchardia kaalae, by removing the threat of one of its predators, increasing the palm populations from 165 to 1,100 individuals.

JUDGING CRITERIA



Program Management



Technical Merit



Orientation Mission



Transferability



Stakeholder Interaction

WORKING TODAY FOR A BETTER TOMORROW

Awards and Services

Ms. Kawelo was featured in the U.S. Center for Plant Conservation’s 2011 international publication "Evaluating Reintroductions as a Plant Conservation Strategy: Two Decades of Evidence." Previous awards include: the 2006 and 2009 US Fish and Wildlife Service (USFWS) Military Conservation Partnership Award; and 2008 Hawaii Conservation Alliance’s Conservation Innovation Award.

Accomplishments

Overall Natural Resources Conservation Management

In order to streamline natural resource management and better estimate budget requirements, the team developed a one-of-a-kind comprehensive tracking database linked to T&E mapping data. This innovative database tracks more than 11,000 individual actions identified in biological opinions and the Integrated Natural Resources Management Plan (INRMP). The NRT’s quarterly/annual goal is to accomplish 100% of the planned actions. The database provides a solid management system to ensure early identification of gaps that enable solutions to be developed before construction and training projects are impacted. The database also provides a platform for precise budget development rather than utilizing assumptions and modeling as was done in the past. The database allows the team to identify and correct inefficiencies and generate realistic and meaningful milestones. Finally, it is used as the primary reporting mechanism to the U.S. Fish and Wildlife Service (USFWS) annually, saving the NRT months in report generation that equates to over \$100,000 saved. This database has also been adopted by the State Forestry Office (SFO).



The NRPM took on a leadership roll during development of the USAG-HI Strategic Plan, collaborating with Master Planning; Real Property; Utilities; Engineering; Public Affairs; Training Area Management; Range Division; and other USAG-HI staff. The Strategic Plan is a blueprint for USAG-HI to balance the training mission with environmental protection, resulting in increased military readiness, lower life-cycle costs, and improved quality of life for Soldiers and their Families. The NRPM also works closely with



“Through this active participation with partners, Schofield Barracks staff has developed creative tools that benefit threatened and endangered species, the military, and the state of Hawai’i as they tackle tough issues to protect unique ecosystems for future generations.”

-Rowan Gould, Acting Director, USFWS

fund managers for the USAG-HI to ensure that the NRT budget requirements are correctly programmed, efficiently executed and shortfalls are identified early in the fiscal year.



COL Howard Killian, former USAG-HI Commander, speaks at the Moanalua Valley dedication. Moanalua Valley is one of four successful Army Compatible Use Buffer projects in Hawaii. The valley provides off-site habitat for the Oahu Elepaio, an endangered Hawaiian forest bird, reducing encroachment on the mission.

The NRPM partnered with the Real Property Manager to identify land on a regional/ecosystem level for Army Compatible Use Buffer (ACUB) funding and was successful in leveraging \$18.5M to protect four separate parcels of land to reduce encroachment on Oahu’s only live fire training area. By managing T&E off-site, NRT is reducing pressure and restrictions on Oahu’s only live-fire training areas. The NRPM also partners with the Real Property Manager to ensure land use has the least impact on Hawaii’s resources and gets the most out of the USAG-HI’s very limited lands on Oahu.



The goal of the team’s INRMP is to support military mission and recreation opportunities while managing natural resources and ensuring compliance with related environmental laws and regulations. In 2010, NRT completed a five-year revision of the INRMP to incorporate new requirements. The INRMP contains four major goals for the next five years: breaking the grass/fire cycle; providing recreation; restoring native ecosystem functioning; and using regional approaches to implement ecosystem management. The NRT has invested considerable resources into each of these program areas over the award period and is currently in alignment with the milestones set forth for each area in the INRMP. The INRMP was developed with the help of the SFO, USFWS, USAG-HI Wildland Fire Program, Range Control, Family and Morale, Welfare and Recreation, and various Directorate of Pubic Works divisions (DPW).



The NRT has partnered with the new Pacific Island Climate Change Cooperative (PICCC), headed by the USFWS, to incorporate consideration of climate change into its management strategy. The NRT has been collecting monitoring data since the mid-90s that can now be used by PICCC to evaluate the impact of climate change on Hawaii’s ecosystems. The data will also be used to help PICCC refine local climate change models the NRT can use to adapt its management.

Mission Enhancement

USAG-HI’s live-fire ranges support operational readiness training for Hawaii’s 20,000 Soldiers, as well as Hawaii’s Marines, National Guard, Navy, Air Force and police. The limited distribution, huge number, and rarity of Hawaii’s T&E have the ability to cripple training. To counter this potential, the NRT worked with the Federal Fire Department, Colorado State University, and the USAG-HI Wildland Fire Program to develop a color coded burn index (BI) system. The BI governs which weapons can be used under which weather conditions, ensuring the most fire-causing are used under the most benign conditions. This greatly reduces the chance that a military-caused fire will impact T&E, thereby reducing the potential negative impacts to training from fire, as well. It is a perfect balance of the mission and the T&E requirements.



All of

Combat Aviation Brigade personnel work as a team to provide the Oahu NRT assistance in delivering equipment and materials to remote areas. This saved \$75,000 in contract support costs while gaining valuable helicopter operations training.

Hawaii’s Soldiers are actively engaged either in combat or training to return to combat. One of the most important skills required for Afghanistan missions are helicopter ops. In 2011, the NRT coordinated with the Combat Aviation Brigade (CAB) to obtain their assistance with sling-loading materials and a shipping container into remote areas using CH-47 Chinook helicopters. The container is used to house staff while they conduct management actions in remote areas. The CAB gained three invaluable training opportunities and saved the NRT \$75,000, which is the normal cost for contracting a helicopter. By working as a team, both the NRT and the CAB gained from the experience.



The team’s INRMP has been used as a model by the USFWS for other DOD installations. In 2011, the INMRP precluded USAG-HI from designation of plant critical habitat on its land for 23 newly listed species, saving millions (\$2.5M annually/\$75.9M over 30 years) in potential mitigation costs and ensuring no additional restrictions on military training.



Land Use Management

The NRT collaborated with the Clean Water Program on an Eagle Scout project to develop a water-/energy-saving demonstration project involving sustainable irrigation for the NRT baseyard. The system includes a solar-powered well pump used to deliver stored rainwater (collected from the building's roof) from a nearby repurposed underground storage tank to irrigate the neighboring native plant



demonstration garden and supply water for boot washing, which helps reduce the spread of invasive species.

The NRT facilitated numerous range projects during the award period. Most notable was the team’s development of a seed mix that includes native plants for new construction projects. One of the NRT’s most costly and time-consuming management action is control of invasive species. Over the past two years, the NRT worked with the Engineering and Range divisions to develop a “safe” and xeric seed mix to reduce erosion in new construction projects. The plants approved for use were tested for their potential invasiveness, and those selected were the most benign. Development of this mix assists future construction timelines, saves the NRT staff time and money by reducing the introduction of new invasive plant species onto the installation, reduces erosion on new construction sites, and reduces the associated maintenance costs by using plants that require less watering.



The NRT has also been working with Master Planning, landscapers, and the Garrison Commander on a requirement to use at least 90 percent native species in all new landscaping projects. The NRT developed a list of which plant species are best in which environments and who locally carries these plants. This policy will reduce long-term maintenance requirements as native plants require less watering and weeding compared to other species. Please note, USAG-HI does not manage agricultural lands in Hawaii.

Forest Management

The NRT’s reforestation program provides habitat for its T&E within unique forested ecosystems as identified in the INRMP. Similar to the timber industry/forestry programs in the continental U.S., NRT cooperates with the local Forest Service (FS) and SFO to manage Hawaii’s unique forests for rare species habitat. Reforestation is a new science and the NRT is leading the charge with the largest reforestation program in Hawaii. The team plants rare and common native species (over 8,500 plants in two years) to restore ecosystem health to unique forest areas. The NRT also actively manages all large-scale, ecosystem-altering invasive plant species populations



found on the installations. The team has perfected control of guava on Army lands by flying a chipper into remote mountain areas to clear cut guava stands and replant native species. This has proved to be the only effective means for restoring areas previously completely dominated by non-native guava forests. These efforts have been shown to increase native insect diversity, thereby providing more quality habitat for native insectivorous forest birds on Oahu.



Pictured is one of three greenhouses utilized by the NRT to grow common and endangered plants for reintroduction and reforestation efforts. In the past two years the team has planted more than 8,500 plants.

The NRT, in cooperation with the USAG-HI Wildland Fire Program, uses prescribed burning as a tool for reducing fuel loading on the ranges. This has been so successful that no fires impacted sensitive habitat, during the award period. The burns ensure that the invasive grasses are burned to bare ground before the dry season so that fires started by training do not carry into sensitive forested areas that contain T&E, thereby reducing potential negative impacts to summer training operations.



Fish and Wildlife

During the award period, NRT outplanted 24 plant species in 114 locations; collected from 5,800 T&E plants for genetic storage; controlled invasive plants on 500 acres of remote mountain wilderness; and started fencing the largest protected ecosystem on the island of Oahu, consisting of 1,400 acres. The NRT’s main goal is control of the myriad threats to Hawaii’s resources. By managing T&E off site, NRT reduces restrictions and encroachment on training lands, resulting in more training opportunities.



Some of the actions taken by NRT include: operating three endangered plant propagation facilities that pioneer techniques for endangered plant propagation; maintaining a genetic storage program to safeguard against losses of snails and plants at unmanaged sites and unanticipated disturbances in managed areas; developing novel techniques for control of currently uncontrollable threats to T&E such as a new rat control gridline adapted from those used in New Zealand; contributing to interagency fencing and animal removal efforts; extensive off-site management of T&E; and responding with skilled fire staff and fire suppression aircraft when wildland fire threatens natural areas to minimize native forest loss. These are just a few of the accomplishments that are transferrable to other installations and organizations.



The Oahu NRT banded 70 Oahu Elepaio in 2011. Efforts to control predators around 75 nests of this endangered bird, helped increase the population by 31% in two years including 97 fledglings in 2011.



Matthew Keir, Rare Plant Specialist, rappels down a cliff face to collect seeds from an endangered plant. Desperate measures are often required to save Hawaii's rarest species. Without the Army's efforts, these plants would be extinct.

The NRT funds the only rare snail propagation facility in the islands. The snail facility is located at the University of Hawaii and contains snail species extinct in the wild. This facility is a vital component of the overall management strategy of the snails in Hawaii and is also used by the State Forestry Program and the USFWS. Without it, the snails would be lost forever.



During the 2011 field season, the avian specialist for the NRT exceeded all previous banding records for the endangered Oahu Elepaio by banding 70 birds or 16 percent of the Elepaio population on the island of Oahu, a feat unheard of for a single biologist. His work with controlling predators during the nesting season resulted in 136 new fledglings in two years, a 31 percent increase in the population size. The NRT is the primary agency managing this species and without their work, the species would be vulnerable to extinction. By increasing the numbers of birds on- and off-site, the NRT is reducing the pressure on training at the primary live-fire areas on Oahu.



USAG-HI is unique from other installations in that it does not have native game animals and thus has a hunting program that centers on ungulate eradication. USAG-HI also has limited fishing opportunities due to the lack of freshwater bodies but does allow fishing in a few areas. The NRT actively restores forested ecosystems for non-game native plant and animals, including birds on the Migratory Bird list.

Other Natural Resources

Due to the fragile nature of USAG-HI forested areas and the presence of unexploded ordnance, USAG-HI only allows off-road vehicle use in one area and does not allow camping. USAG-HI provides an area to the SFO for a motor cross track, the only track on the island. The NRT facilitates hiking on the installations by working with the Real Property Office on permitting and with the SFO, managers of the trails in Hawaii, to provide access to previously inaccessible trail systems. The NRT also partners with the local hiking clubs to ensure natural resource management activities, such as fencing, adjacent to trails do not impact public access. Due to the mountainous terrain of the USAG-HI installations, providing access for disabled visitors is not feasible.



The NRT is an active proponent of research to better understand how the unique forested areas can best be managed. Several projects have improved the understanding of native pollinators and methods to better conserve them.

During the award period, the NRT successfully garnered funding through the Legacy Program for the SFO to observe the status of native Hawaiian bees. The NRT also actively manages and monitors native picture wing flies. NRT collaborated with a UH researcher to quantify the health of NRT restored forests by looking at insect populations. The restored forest contained more diversity of insects for the endangered Elepaio bird. The NRT also collaborates with UH on management of invasive Jackson's Chameleons and characterization of their impacts on endangered tree snails; genetics of endangered plant species; and the control of invasive cannibal snails. Finally, the NRT is working with Colorado State University, UH, and FS on breaking the wildfire/invasive grass cycle (INRMP goal) to protect native forest from fire and reduce restrictions on live-fire training.



Invasive Species Control and Pest Management

During 2011, the NRT identified a new noxious plant species from Guam that could take over many lowland areas on Oahu and cripple Army training. This species is deadly to cattle and causes respiratory issues and rashes in humans. This plant also forms impenetrable monotypic stands. The NRT organized a weed task force consisting of the NRT, SFO, Hawaii Department of Agriculture, and the Oahu Invasive Species Committee to eradicate this plant. The NRT spent 2,850 manhours over the past six months surveying. The NRT is also working with the state to install a wash rack that would control movement of this and other harmful species when motor cross track users leave the area. The team developed a handout to assist with identification of the weed and explain the importance of eradication efforts. Also of note, the team is working with a local researcher to develop a method of more accurately deploying herbicide to invasive plant species via a "bullet" (Herbicide Ballistic Technology) to reduce the usage of chemicals in the natural environment.



Conservation Education

Prior to 2011, the USAG-HI did not have environmental enforcement officers on its installation and had been found deficient in this area on multiple external audits. The NRPM worked with the USAG-HI Police to cross-train two of their officers to fill this void. The NRPM also

partnered with the Marines, who have an active enforcement program, to provide an avenue for the new officers to reach out to those already in the field.

In the past two years, the NRT organized more than 100 volunteer trips (>11,000 manhours), providing opportunities for the community to assist with T&E management actions. In addition to saving approximately \$250,000 in management costs, the NRT educated the public, enhanced USAG-HI's reputation, and garnered public support for Army operations in Hawaii. The NRT hired 11 interns to work for the program and helped with four different Eagle Scout projects. This was an invaluable opportunity to educate potential future workforce applicants while gaining the benefit of low-cost support. The NRT also reached out to Soldiers and developed a curriculum for the monthly Environmental Compliance Officers course which explains the Army's environmental requirements. The course includes DPW employees, as well as participants from other USAG-HI directorates, and helps institutionalize an environmental ethic within USAG-HI. More than 600 people completed this course during the award period. During 2011, the NRT established a website for its program that showcases the Oahu NRT efforts, providing internal and external stakeholders a one-stop shop to learn about the program. The site also provides downloadable copies of all relevant regulatory and planning level documents.



Kim Welch, Outreach Specialist, demonstrates "how an island forms" to a group of visiting local children.

Community Relations

Over the past two years, the NRT participated in 40 events reaching out to 7,000 members of the public, Soldiers and their Families, including Earth Day, classroom presentations, Agriculture Awareness Day, National Public Lands Day (funded by DOD three years in a row), and career fairs held at local high schools.

During 2010, the NRT wrote and published 27 articles in a variety of local and national publications (Honolulu Star-Advertiser, Hawaii Army Weekly, Natural Selections, Kui Ka Lono, Central Oahu Islander, Public Works Digest). The NRT has also presented at various peer-supported conferences such as the annual Hawaii Conservation Conference (HCC). The HCC is a chance for the NRT to transfer its knowledge to a national and international audience. The NRT also publishes a quarterly newsletter that is provided to over 600 local stakeholders. The NRT are active members of Hawaii's conservation coordinating groups to include the Hawaii Coordinating Group for Alien Pest Species, Hawaii Rare Plant Restoration Group, Koolau Mountains Watershed Partnership, Waianae Mountains Watershed Partnership (WMWP) and Hawaii Conservation Alliance (HCA). The NRPM is the current chair for both the WMWP and the HCA.



Environmental Enhancement

The NRT is credited with saving at least two plant species from extinction. The *Cyanea superba*, was known to exist from a single valley on Oahu, where 10 plants remained until 2002, when it went extinct in the wild. Fortunately, NRT had collected seed from the plants and has reintroduced over 500 individual plants back into three populations. Recently, NRT found seedlings that had been produced naturally by these individuals. Natural regeneration is the goal of any successful restoration effort and a testament to the effort NRT put into saving this species.



Natural Resources Compliance Program

The NRT used a collaborative ecosystem-based regional planning process with the assistance of a cross-functional team of expert biologists from numerous conservation management agencies (SFO, City and County, USFWS, Nature Conservancy, Watershed Partnerships, etc.) and private landowners to develop its 30-year T&E Species Management Plans. The NRT was the first to use this collaborative regional planning method in Hawaii and due to its success, other agencies now use it as a benchmark for developing cooperative planning partnerships. The NRT receipt of the coveted USFWS Military Conservation Partnership Award twice in five years is a testament to the standard the NRT is setting for collaborative planning in the U.S.

The NRT has completed all required biological opinions (BO) and has no open court actions. The NRT has a very positive relationship with USFWS and worked collaboratively with them to assess impacts to T&E from training and to develop mitigation measures that have become the baseline for NRT's T&E Management Plans. The NRPM has successfully budgeted for these actions and received the funding (\$6M per year) required to complete at least 90 percent of the 11,000 actions required each year, maintaining compliance with the BOs.



*The Oahu NRT recently discovered numerous *Cyanea superba* seedlings, once extinct in the wild. Because of NRT efforts, more than 500 plants of this endangered species now exist in three populations on the island.*

Conclusion

The NRT realized early on that successfully balancing the training mission with the substantial number of T&E required collaboration on all levels. The NRT has taken a leadership role and engaged numerous internal and external stakeholders in the planning and implementation of the program. The regional scale planning and off-site management efforts have successfully reduced encroachment on the training mission, allowing accommodation of the Army's changing training requirements and rapid redeployments over the past two years without negatively impacting a single military or natural resource project. The NRT is the only one of its kind in the Hawaiian Islands doing this scale of management and is setting the standard for conservationists throughout the state. The team is truly committed to balancing its dual missions and has proven to be a leader in natural resource management that is recognized both locally and nationally to provide technical expertise to others within and outside of DOD.