



**United States
Department of
Agriculture**

2014 NRCS SUMMARY FOR THE PACIFIC ISLANDS AREA

MARCH 2015

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Improvement of the Pu'u Wa'awa'a Restoration Area

by Jacqueline Vega, MLRA Soil Scientist (Kealakekua Service Center)



Pu'u Wa'awa'a is the namesake of the greater ahupua'a (traditional land management area) in the North Kona District which encompasses over 35,000 acres on the leeward side of Hawaii Island. The ahupua'a spans eight miles from 6,500 feet elevation to sea level at Kiholo Bay. It is owned by the State of Hawaii Department of Land and Natural Resources. However, there are a few parcels of land that were withdrawn from the lease during the Territorial era and still remain under private ownership today. The remainder of more than 35,000 acres is managed as a State Forest Reserve. In 2002, the Board of Land and Natural Resources directed the establishment of the Pu'u Wa'awa'a Advisory Council to provide guidance to the State regarding the multiple-purpose concept of a modern ahupua'a. In 2003, with the close involvement of the Council and State staff, a Management Plan was developed and approved by the Board to drive the multiple use vision into the future, and serves as the roadmap for short-term as well as long-term activities on the land.

In order to work on the management plan, Elliott Parsons, Conservation Planner at North Kona Game Mammal Habitat Conservation area, requested information from the Kealakekua Soil Survey office to help with the inventory of natural resources. Soil surveys are important to planners, engineers, zoning commissions, tax commissioners, homeowners, developers, as well as agricultural producers. Soil surveys provide the basic information needed to manage functions. They also provide information needed to protect water quality, wetlands, and wildlife habitat. Soil surveys are the basis for predicting the behavior of a soil under alternative uses, its potential erosion hazard, and potential for ground water contamination, suitability and productivity for cultivated crops, trees, and grasses.

With the soil survey information provided, Mr. Parsons was able to determine the suitability of sites for native plant species and trees, of areas to build plant community enclosures, and for fencing materials.



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CRAIG DERICKSON
NRCS Acting Director

Hafa adai and Aloha,

NRCS staff and our conservation partners in the Pacific Islands Area (PIA) have completed another year with many terrific accomplishments. Our staffs have worked hard to deliver the products and services our clients have come to depend on. While 2014 presented many challenges with a new Farm Bill, changes to Program policies, and changes to everyday tools like Customer Service Toolkit, it also was a year of new opportunities and new perspectives. The recent announcement by Chief Jason Weller that Bruce Petersen, State Conservationist in Nevada, will be the new Director for PIA has been met with genuine excitement and a comforting sense of certainty for the future. Bruce is an experienced NRCS State Conservationist and he brings sound leadership experience and common sense savviness for working with SWCD's and other conservation partners. Bruce will enter on to duty in PIA in early March.

PIA is fortunate to have dedicated individuals who serve on local Soil and Water Conservation Districts (SWCD's) and provide essential local leadership and direction for the care of our natural resources. Through the dedication of these local SWCD volunteers and Board members and the work of the National Association of Conservation Districts (NACD), we have grassroots level partnership that is envy of nearly all Federal agencies that want to work on private land. I am not shy about expressing my passion for the NRCS mission of helping people to help the land. I don't believe there is any more worthy calling than to be devoted to conservation of our natural resources and assisting farmers, ranchers, and forest owners with voluntary conservation on agricultural lands.

Over the past three years, NRCS leadership has launched several management initiatives to better position the agency to address emerging issues, including budget cuts and decreases in program funding, new technology and modern field office tools, and the opportunity to expand the NRCS customer base. NRCS leadership across the country has been focusing on 'field first' approaches to managing our budgets and making sure that we have done everything possible to optimize the conservation delivery system at the field office level.

Additionally, NRCS must position PIA to capitalize on the benefits of Conservation Delivery Streamlining Initiative (CDSI) implementation to free up time of our technical personnel and provide a new level of service to our clients. Our clients will benefit from new tools like Document Management System (DMS) that reduce document handling, reduce decision and approval times, and improve access to best-available information and technology. NRCS managers will look for better staffing strategies that are aligned with these new processes and NRCS will benefit from a business model that will enable field technical staff to spend as much as 75% of their time in the field with clients, compared to the 20-40% now often reported.

At the beginning of Fiscal Year 2015, Chief Jason Weller provided State Conservationists and Directors with a set of four priorities to guide our work and the products and services we strive to provide to the Nation as a whole. NRCS leadership teams are working to accomplish the following operational priorities: to deliver excellent and innovative service; to strengthen and modernize conservation delivery; enhance and expand NRCS scientific and technical capabilities; and to expand our outreach, customers, and partners.

I hope you all share my passion for voluntary conservation and teamwork with our partners to deliver the very best conservation technical assistance. We look forward to another year of great teamwork!

Best regards,

CRAIG DERICKSON

Acting Director

By Shirley Nakamura, Assistant Director for Programs

EQIP Successes

Craig Derickson (center), Acting Director with Josh Guth (left), a Hawaiian native with a new EQIP contract and Ranae Ganske-Cerizo (right), Kahului District Conservationist. Through EQIP, Josh is getting help with a prescribed grazing plan, troughs, pipeline, brush management, and weed control at Kahoma Ranch on Maui.



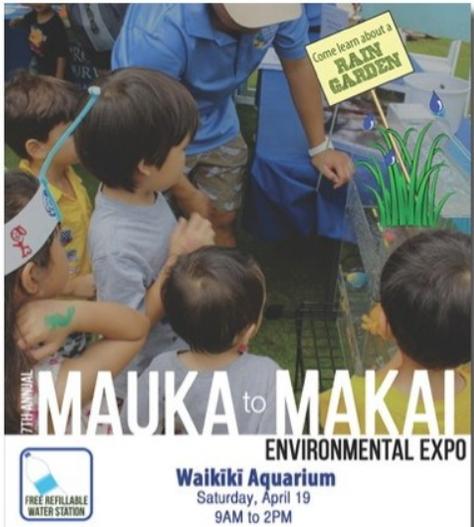
REAP Data: FY14 Quarter 4 - ProTracts, October

Prog	State	County	FIPS	Contract Count	Total Acres	Prog FA Dollars	FIPS	Unfunded Application Count	App Total Acres
AMA	Hawaii	HAWAII	15001	8	16.8	\$44,044			
AMA	Hawaii	HONOLULU	15003	1	54	\$34,203	15003	1	82.2
AMA	Hawaii	KAUAI	15007	2	616	\$63,585			
AMA	Hawaii	MAUI	15009	4	202	\$116,036			
Totals:				15	888.8	\$257,868			
CStP	Hawaii	HAWAII	15001	4	445.6	\$4,678			
EQIP	Hawaii	HAWAII	15001	49	15,370.33	\$4,291,177	15001	26	8944.3
EQIP	Hawaii	HONOLULU	15003	3	15.4	\$45,017	15003	8	208
EQIP	Hawaii	KALAWAO	15005				15005	1	
EQIP	Hawaii	KAUAI	15007	9	38.6	\$165,297	15007	13	752.6
EQIP	Hawaii	MAUI	15009	15	87.6	\$503,213	15009	34	1385.5
Totals:				76	15,511.93	\$5,004,704		82	2138.1
EQIP	American Samoa	EASTERN	60010	20	48.5	\$236,332	60010	9	7.7
EQIP	American Samoa	WESTERN	60050	15	21	\$356,909	60050	27	51.6
EQIP	American Samoa	MANUA	60020				60020	8	
EQIP	CNMI*	ROTA	69100	2	8.5	\$79,557	69100	1	54
EQIP	CNMI*	SAIPAN	69110	14	84.95	\$524,372	69110	2	1.46
EQIP	CNMI*	TINIAN	69120				69120	7	242.85
EQIP	Guam	GUAM	66010	14	81.9	\$139,130	66010	5	21.5
Totals:				65	244.85	\$1,336,300		59	349.91
Grand Total EQIP:				141	15,756.8	\$6,341,004			

*CNMI - Commonwealth of the Northern Mariana Islands

By Jolene Lau, State Public Affairs Specialist

Earth Day at the Aquarium



The Waikiki Aquarium’s annual earth day celebration in April highlights the impact we make on water sources from mountain to ocean. NRCS joined several other agencies in providing educational activities for the family in an effort to preserve and protect our environment.

Farm Fair 2014 at Kualoa Ranch on Oahu



The Hawaii Farm Bureau Federation held their 52nd Hawaii State Farm Fair at Kualoa Ranch on July 12th – July 13th. At the NRCS booth, we had an interactive game on farmland ecosystems to help educate the public and raise awareness about various organisms that live in different ecosystems. All ages enjoyed this activity and learned so much more about farms, ranches, wetlands, and forested areas. Thank you again to Greg Koob for developing this wonderful outreach tool!

Board of Water Supply Xeriscape Garden Event



It was a “green” day for garden enthusiasts to learn more about “unthirsty” plants. We provided copies of the Backyard Conservation booklet that talks about water conservation and using rain barrels to recycle water from rooftops.

Helping customers in Pohnpei with planning



Resource Conservationist, Arlene Rosenkrans and Agriculture Technician Rodasio Samuel from the Pohnpei Field office in the Federated States of Micronesia working with customer on conservation plan.

Developing an Alternative Fuel Source for Hawaii: Napiergrass x Pearl Millet Hybrid Bio-fuel Study

by Glenn Sakamoto, Hoolehua Plant Materials Center Manager

The rising cost of imported fossil fuel to Hawaii has sparked renewed interest in the technical and economic feasibility of producing biofuel from lignocelluloses biomass. In support of this effort, the Hoolehua PMC provided the University of Hawaii, Tropical Plant and Soil Science Department, as well as several private research institutions with 17 accessions of the napiergrass x pearl millet hybrid cross which was developed at the center. The 17 accessions were part of a collection developed at the PMC in the mid-eighties as part of a forage and windbreak study. The cross between *Pennisetum purpureum* x *Pennisetum glaucum* was significant as it produced a sterile seed variety of napiergrass. The sterile attribute plays an important role of not allowing it to become an invasive plant introduction to Hawaii, especially if it's utilized by sugar plantations, seeking an alternative crop for sugarcane replacement. The hybrid napiergrass is a very fast growing, high yielding, palatable perennial grass, which under ideal conditions can attain a height of 15 feet in six months.

Currently, an ongoing study is being conducted at the PMC under the cooperative partnership of Dr. Richard Ogoshi, Associate Biofuel Agronomist at University of Hawaii at Manoa and Dr. Adel Youkhana, Junior Researcher, Department of Natural Resources and Environmental Management (NREM), University of Hawaii at Manoa. Dr. Ogoshi's and Dr. Youkhana will focus on both above and below ground attributes of our hybrid napiergrass, which would include:

- Simulation models that can predict yields of C4 grasses and economic returns in different environment.
- Improve C4 grass varieties.
- Increased understanding of the differences in the chemical composition of C4 grasses.
- Improved pretreatment methods of increased biochemical conversion of lignocellulosic biomass to biofuel.
- Improved information for producing syngas for thermochemical conversion of banagras.
- Improved knowledge of methods to assess soil organic carbon and understanding the role of C4 grasses on carbon sequestration.
- Methodologies to assess the economic, environmental and community impacts of selected bioenergy and alternative energy production systems.

Current 2014 summer biomass yields of the three hybrid napiergrass have averaged 22 tons per acre. This is an impressive yield considering it was a six month regrowth period. In comparison sugarcane has an average yearly yield of about 20 tons per year.



Root biomass data being collected of hybrid napiergrass at 12 months of growth.



Regrowth of hybrid napiergrass after six months 9-9-14.

Critical Area Stabilization: Native Plant Establishment - Direct Seeding Under Natural Rainfall

by Glenn Sakamoto, Hoolehua Plant Materials Center Manager

The Hoolehua Plant Materials Center (PMC) has been working under a Memorandum of Understanding (MOU) with the Molokai Land Trust (MLT) to investigate a protocol to re-vegetate highly erodible barren hardpans at the MLT Mokio Preserve. The area is located on the western most half of the island of Molokai and receives an annual precipitation of less than 12 inches of rain per year. The vegetation at the Mokio test site consists mainly of introduced species of Buffelgrass; (*Cenchrus ciliaris*), Kiawe; (*Prosopis pillida*), Sourgrass; (*Digitaria insularis*) and Lantana; (*Lantana camara*). Very few naturally occurring native plant species are visible at this site.

In 2011, NRCS partnered with MLT to implement a direct seeding study at the Mokio site with native seeds provided by the PMC. Native plant species that were included in this study included: Piligrass; (*Heteropogon contortus*), A'ali'i; (*Dodonaea viscosa*), Achyranthes; (*Achyranthes splendens*), Kawelu; (*Eragrostis variabilis*), Uhaloa; (*Waltheria indica*) and Aweoweo; (*Chenopodium oahuense*).

Several plant establishment techniques were evaluated over a course of two years and it was determined that mulching along with soil amendments and a light soil surface scarification provided the best results for plant establishment. An advanced study was conducted at the same site the following year to verify the results from the previous year. The study included the same protocol with the exception that half of the study plot soil surface was slightly scarified and the other half had no soil surface scarification.

A favorable 2013 and 2014 rainy season at the Mokio site enabled the native seed mixture to germinate and establish. Preliminary observations resulted in an excellent stand of native plants in both planting techniques. However, mulching, fertilizing and slight soil scarification provided more diversity in native plant emergence and establishment as compared to mulching, fertilizing and no soil scarification. Further testing will need to be conducted on a larger scale to fully understand environmental variables and their impact on native plant establishment techniques and native plant seed mixtures when direct seeding.

The results of this study will have far reaching conservation implications for the Mokio Preserve and areas throughout Hawaii and the Pacific Island Area (PIA). Direct native seed planting techniques will not only enable interested stakeholders to apply conservation on highly erodible sites with far less resource input but also install conservation on a much larger scale.



Photo showing mulching, fertilizer, and light soil scarification right half of photo. Left side of photo no soil scarification. Plants are 12 weeks old. 3-8-13.



Photo taken 12 months later of the same plot. 4-4-14.

On Track to Ensure Cultural Resources Compliance

by Valerie Russell, State Cultural Resources Specialist

It has been a busy year in the realm of cultural resources compliance. In FY14, Valerie conducted NHPA Section 106 consultation with the Hawaii State Historic Preservation Division (SHPD) and numerous Native Hawaiian Organizations (NHO) for six EQIP contracts from FY13. In addition, a total of 97 Exhibits were submitted in support of EQIP and AMA program applications for Cultural Resources Specialist review. Concurrence was granted to a total of 90 Exhibits while a total of seven applications require further archaeological inventory survey fieldwork and/or NHPA Section 106 consultation with the Hawaii SHPD and NHOs in FY15.

Since the start of her employment with NRCS, Valerie has looked forward to expanding her knowledge about Mariana Islands archaeology. December 2013 marked the first occurrence that a PIA Cultural Resources Specialist traveled to the West Area. Valerie traveled to Guam, Saipan and Tinian to conduct field tours of cultural resource sites and cooperator farms and to meet with CNMI and the Guam Historic Preservation Office (HPO) staff to lay the groundwork for FY15 State Level Agreement negotiations which will commence following signature of NHQ's new nationwide prototype programmatic agreement.



Valerie at the House of Taga archaeological site in Tinian, CNMI.

Island Windbreak Function Improved by Renovation Efforts

by Michael Constantinides, State Forester

Windbreaks can provide important benefits to mitigate inefficient use of irrigation water by reducing wind-blown water from sprinkler systems, or inefficient moisture management in adjacent crop fields by reducing evapotranspiration from crop plants. Many cooperators in PIA have installed ironwood (*Casuarina equisetifolia*) windbreaks for these and other objectives, however this fast-growing windbreak species can cause undesired or unintended impacts including: Reaching heights that cause competition for light to adjacent crops, sometimes in as little as 10 years, or; root competition with crops for nutrients or water.

NRCS Cooperators in Moloaa and Kilauea, Kauai have begun addressing such resource problems via implementation of the conservation practice Windbreak/Shelterbelt Renovation (650) to top ironwood windbreaks. NRCS recognizes that initial workloads and costs are substantial and has designed practice specifications and cost-share rates to incentivize this major step. Benefits of such management include: Ensuring dense windbreak foliage at the desired height to protect adjacent fields; bringing windbreak tree heights down to levels that enable and facilitate future trimming operations and maintenance work with lower cost requirements, and; reduced competition to adjacent plantings for light, water and nutrients.



Kilauea, Kauai - Untreated 12 year old ironwood windbreak protecting ginger.



Cooperator Louisa and Bob Wooten, Kauai Kunana, Inc. – Moloaa, Kauai – Ironwood windbreak 14 months after being topped at 10 feet – note topped trees were re-pruned a few weeks before this image was taken to encourage desirable “hedging” effect as trees re-sprout, which will fill in fully with additional periodic pruning to protect adjacent rambutan orchards.

Toolkit Updates

by Cynthia Shishido, State Toolkit Coordinator / Plant Materials Liaison

Customer Service Toolkit, or more commonly known as Toolkit, is the primary conservation planning tool used by NRCS and Conservation Districts. Toolkit is integrated with Microsoft Office and ArcGIS software for the development and management of Conservation Plans, using tabular data and spatial data.

As some of you have heard or experienced, Toolkit has been having its “ups and downs.” Lately, more downs than ups, so it may seem. What’s in store for fiscal year 2015, you ask? Lots of enhancements and tools! Here are a few:

- **Multi-Plan enhancement** – The ability to create multiple plans for a single unique PLU.
- **Land Transfer** – Users will be able to transfer ownership or control of existing land units to a new entity.
- **Easement Reconciliation** – Users will be able to correct planning land unit geometries to align with easement boundaries. New easements are imported into NPAD from the NEST data and these will need to be reconciled to ensure consistency and no overlap.
- **Practice Scheduler Enhancement** – Users will be able to interact/schedule their practices in a geospatial context enabling them to more easily schedule practices.
- **Plan Map Symbols** – Users will be able to filter practices to display on the plan map to reduce plan map visual clutter.
- **Upgrade Toolkit for ESRI ArcGIS 10.2** – Users will be able to not only access published state and local GIS imagery over the web but also the associated geospatial attributes.
- **Integrated Erosion Tool** – Users will be able to calculate water and wind erosion, soil tillage intensity rating, soil conditioning index while inside the Toolkit context.

On October 9, 2014, additional fixes and enhancements were deployed making Toolkit 7 a little less painful for our planners.

New Planning Tool Released

by Adam Reed, State Agronomist / Water Quality Specialist

In 2014 the Pacific Island Area released a new planning tool which will allow conservation planners to generate an appropriate list of plants to meet a specific conservation objective. This tool is referred to as the PIA Vegetative Guide. The tool requires planners to enter rainfall, elevation, and a conservation practice to generate a listing of plants. However, optional search criteria allow planners to fine tune their search, examples of these optional search criteria include: Nitrogen Fixing Plants, Native Plants, Pollinator Species, Tolerate to Salt, Sun Exposure, and Wet Soil Conditions. Users of this tool also need to enter the island they are working on as the plant recommendations may be different for different islands. One example is that some plants are native to some island while not to others. At the current time there are more than 250 plant species in the tool with the ability to expand the database.

Not only will this tool generate a list of plant, but it is also linked to the Jobsheets. Because of the linkage planners will only be able to plan plant species which have already been identified as appropriate by the tool. This has reduced the time needed for developing Jobsheets while reducing the likelihood of errors.

We are continuing to make improvements to the Vegetative Guide while adding new species. To view this tool, visit the NRCS PIA Field Office Technical Guide (FOTG).

Pacific Islands Area Vegetative Guide & Job Sheets

Required Search Criteria

Conservation Practice: All Species
 Annual Rain Fall (inches): 0
 Elevation (Feet): 0

Soils Information for Planning Purposes

Soil Map Unit: [Field]
 Soil Map Unit Name: [Field]
 Depth to Restrictive Layer (in): [Field]
 Percent Rocks in Plow Layer: [Field]
 Percent Slope: [Field]
 Water Holding Capacity (in/ft): [Field]
 Frequency of Flooding: [Field]

Optional Search Criteria

Nitrogen Fixer
 Site has Full Sun
 Site has Moderate to Heavy Shade
 Site commonly subject to winds >20 mph
 Plants Tolerant to Salt
 Irrigation is Available
 Native Plants Only
 Introduced Plants Only
 Wet Soil Conditions
 Pollinator Species

Variance Approved Species [Field] Enter Species [Field]

Woody Plant Type Desired (leave blank for all types)

[Dropdown] [Dropdown] [Dropdown]

Back Exit Program View Potential Species

Screen Shot of Main Search Criteria Interface in the PIA Vegetative Guide.

Resource Technology Team Contributes to Improved Management of Grazing Lands

by Preston Irwin, *State Rangeland Management Specialist*

The Hawaii Grazing Lands Coalition (formerly known as the Hawaii Grazing Lands Conservation Initiative) is a grassroots organization built on partnerships among Hawaii's beef, dairy, sheep and goat producers, NRCS, and other conservation agencies that provides guidance and leadership in the pursuit of grazing land conservation throughout the Hawaiian Islands. It is part of a national initiative to assure the sustainability of private grazing lands by focusing on the environmental, cultural, and economic services they provide.

According to the NRCS' National Resource Inventory (2010), approximately 30% of the 4,152,400 acres that comprise Hawaii's land area is used for agriculture. Of these agricultural lands, grazing land accounts for practically 91%.

In keeping with their commitment to promoting the sound management and skillful use of grazing land resources in Hawaii, the HI-GLC is proud to have sponsored several workshops in the spring of 2014 that were well-attended by ranchers, grazing land managers, and natural resources management professionals.

The Hawaii GLC began the fiscal year in November by working with the Hawaii Sheep and Goat Association to sponsor a professional low-stress livestock handling clinic with expert instructors Mark Orchard and Willy Twitchell of Brigham Young University. Twenty-seven attendees, including two NRCS conservationists, learned valuable livestock handling and stockmanship skills.

In January of 2014, the HI-GLC helped sponsor a Hawaii Beef Summit in Honolulu that focused on grass-finishing, which is presently a very hot topic among Hawaii's ranchers. This summit provided a forum and working group for Hawaiian ranchers to identify challenges and opportunities for expanding the grass finished beef market in Hawaii and to develop goals and action plans designed to reach desired outcomes within the next five years.

The Hawaii GLC welcomed Wyoming rancher and grazing management expert Charley Orchard of Land EKG, Inc. to Maui and the Big Island in March of 2014 to for three workshops focused on helping ranchers improve their management of grazing lands. Twenty-one participants, including five NRCS conservationists, learned how to evaluate and track the health of grazing lands during the "Land EKG" workshop held at the Piiholo Ranch on Maui. The following day, 13 participants met at the Seabury School's computer lab and learned how to use the free Google Earth web-based computer program to map their ranch and its use as a tool to improve grazing management. Twenty-three participants joined Charlie the following week for a similar workshop on the Big Island, including four NRCS employees.

The HI-GLC has been instrumental in promoting grazing land conservation through workshops and outreach events. This has helped continue its strong partnership with the NRCS, which has resulted in measurable conservation benefits on Hawaiian grazing lands. Since 2012, HI-GLC workshop participants have been awarded 20 EQIP contracts for a total of \$1,553,478.49 and 4 CSP contracts for a total of \$313,020.00 in obligated funds. So far, these contracts have resulted in the application of conservation practices on 22,310 acres of grazing land.

The Hawaii Grazing Land Coalition is currently planning for a suite of landowner workshops in FY-2015 that focus on promoting grazing land stewardship and sustainability through sound management and skillful use. The first event is in conjunction with the Hawaii Cattlemen's Council's "Cattlemen's College" at their annual convention on November 14. The HI-GLC is helping sponsor Dr. Anibal Pordomingo, National Coordinator for Animal Production in Argentina at the National Institute of Agricultural Technologies. Dr. Pordomingo, a world-renown expert on grass-finished beef, will discuss the challenges, opportunities, and implications of grass-finishing programs and their application to Hawaii grazing lands.

Working in conjunction with ranchers on the Islands of Guam, Saipan, Tinian, and Rota we improved the planning and delivery of NRCS conservation practices on grazing lands in the Marianas Island Chain. One of the foremost accomplishments of note was the addition of the improved *Leucaena* varieties to the list of species approved for Forage and Biomass Planting. This valuable woody forage legume had previously been omitted from the list.

By Jolene Lau, State Public Affairs Specialist

Local rancher leaps ahead with soil health

Founded in 1994, Triple D Ranch is a 505-acre ranch on Hawaii Island. From the beginning, they've been proactive partners in conservation with the Hamakua Soil and Water Conservation District and the Natural Resources Conservation Service (NRCS). The De Luz family uses low-stress animal handling and intensive grazing management to produce healthy, grass-finished cattle on the ranch.

"Put yourself in the animal's position. Do they have clean water? For me, my animals eat and drink before I do," said Antone De Luz, Hawaii Rancher.

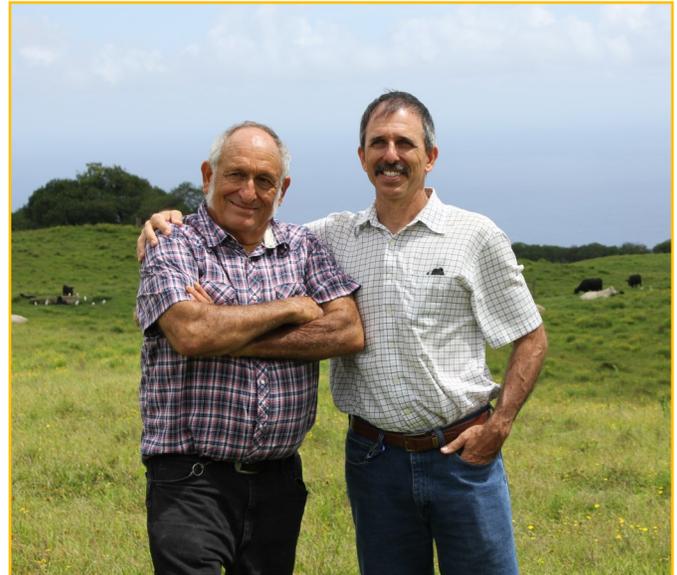
Triple D Ranch is on former sugar cane land. The terrain is steep and the soil health was poor. The area had also been plagued by drought that lasted over six years. With help from the NRCS, the De Luz family started hand-planting a variety of forage species in their pastures to build forage diversity and pasture resilience. Over the years, with help from the Environmental Quality Incentives Program (EQIP), the ranch has controlled invasive weeds; reduced soil erosion; planted improved forages; installed fences, pipelines, troughs, and a water harvesting catchment system; and implemented an intensive grazing management system.

"EQIP is just one of many Farm Bill programs that NRCS administers, offering technical and financial assistance to eligible landowners," stated Craig Derickson, NRCS Acting Director in the Pacific Islands Area.

The goal for Triple D Ranch has always been to finish cattle on grass and keep their livestock on the island. By caring for their resources - their soil, plants, water, and animals - they have developed a resilient system that allows them to do just that. Their cattle have an abundance and diversity of healthy grass, supported by strong, healthy protected soils. The diversity in the pastures help them to continue to be productive even through droughts.

The health of the soil allows the land to absorb and better utilize local rainfall rather than having it run off. Low-stress animal handling techniques keep the cows happy and calm, allowing them to efficiently and productively transform grass into high-quality protein that is consistently labeled as "prime" and "choice." Through the successful cooperation and partnership with the NRCS, Triple D Ranch is an exceptional model for what is possible on tropical grasslands when technical expertise is combined with passion, experience, and hard work.

Meet Antone and Duane De Luz via our YouTube video at: <https://www.youtube.com/watch?v=oFdH6AgiffU>. For more information about the NRCS programs and services in Waimea, please contact Matthew Wung, NRCS District Conservationist at (808) 885-6602 or mathew.wung@hi.usda.gov.



Antone (left) and Duane (right) De Luz of Triple D Ranch, Hawaii.

Soil Health Training in the Commonwealth of the Northern Marina Islands

By Bob Gavenda, Soil Scientist (Guam SC)

NRCS, in cooperation with the three Soil and Water Conservation Districts in the CNMI, conducted trainings on soil health, properties and behavior of CNMI soils, and soil mapping on Saipan, Tinian, and Rota. Soil scientist Bob Gavenda discussed the properties and behavior of the soils on each island, discussed how the soils are distributed, and explained the benefits of managing soils from a soil health perspective. About thirty participants representing farmers, ranchers, and government agencies attended the three training sessions. Soils in the CNMI are mostly shallow over limestone bedrock. The key take-home message was to build or maintain soil organic matter, which will promote beneficial soil organisms and ecosystems. In addition to providing nutrients, soil organic matter provides crucial benefits for these thin, highly weathered soils—it increases the soil's ability to hold on to nutrients and water. Reducing or eliminating tillage and keeping the soil covered with a cover crop helps build soil organic matter, prevent erosion, and create a more favorable environment for soil organisms.



Bob Gavenda (NRCS) discussing soil health with farmers, ranchers, and government agency representatives at the Northern Marianas College on Rota, CNMI.

New Calculated Soil Interpretation Factors in USDA-NRCS National Soils Information System (NASIS) for Hawaii and Pac Basin Soil Survey Areas

By Mike Kolman, Soil Scientist (Kealakekua SC)

A successful collaborative initiative to calculate soil interpretation factors in NASIS for Hawaii and Pac Basin Soil Survey Areas is complete! The Kealakekua Soil Survey office and the Hawaii State Soil Scientist have completed the calculation of six stored interpretations (T-factor, Wind Erodibility Group (WEG), Wind Erodibility Index (WEI), Hydrologic Soil Group (HSG), steel corrosion, and concrete corrosion) for all soil components. The data will be published to the FY2015 Web Soil Survey. All Pacific Basin and Hawaii soil components were analyzed before being calculated. The component interpretive results are now derived, each component based on the same criteria, and using the soil horizon properties assigned to the component. This successful initiative now provides a consistent, uniform, documented, defensible, and interpretive result in the soils database. This has been a huge collaborative effort with a combined effort of many hours for both the Kealakekua Soil Survey office and the Hawaii State Soil Scientist's time.

PIA gets new Garmin Oregon 650T GPS units

By Reese Libby, Geographer (State Office Soil Survey & NRA Staff)

PIA acquired 33 new Garmin Oregon 650T GPS units in 2014. These units have new features that are favorable over those of the older Garmin 76 units. One feature is a touch screen similar to a smart phone. This feature prevents any problems with dust, water, and other factors that affect push button function.

More Features, More Satellite Power

- 3" sunlight-readable touchscreen display with dual orientation
- Preloaded TOPO U.S. 100K maps with shaded relief base map
- 8 MP Autofocus, digital zoom camera with flash/torch
- 3-axis compass with accelerometer and barometric altimeter sensors
- Dual battery – 2 AA batteries or included rechargeable internal NiMH pack

Many thanks to the soils program for funding these units for all to use. Overall everyone has been very satisfied with these new units and their utility to daily tasks.



By Sharon Sawdey, Civil Engineer

PIA was involved with 19 different Watershed Program project phases during 2014, overseeing more than \$7.8 million in federal funding obligations towards Sponsor-led design and construction activities totaling \$22 million. Funding for Watershed Program projects – also called Public Law 83-566 projects – has been extremely limited since 2011, but PIA continues to work on project phases funded by Congressional Earmarks from 2010 and earlier. Highlights of 2014 activities include:

Lahaina Watershed Flood Control Project: Construction of Phase 3A added 550 feet of diversion channel and a 3-bay pre-cast road crossing at Hokiokio Place. Construction plans and specifications for the next phase – Phase 3B – were also completed, as was a water quality monitoring contract. The project will ultimately construct two miles of diversion channel, four sediment basins, and a debris basin, providing a 100-year level of flood protection to properties and reducing sediment loading on near-shore coral reefs. Sponsored by the Maui County Department of Public Works and the West Maui Soil and Water Conservation District, the project is roughly 45% complete based on a total estimated project cost of \$38 million.



This diversion channel excavation is an early stage of the 2014 construction activity at Lahaina Phase 3A.

Lower Hamakua Ditch Agricultural Water Supply Project: Progress was made obtaining easements and permits to enclose portions of the first five miles of the ditch system, and construction began on lining repairs for the subsequent seven-mile stretch beyond Flume 16. Sponsored by the Hawai`i Department of Agriculture (DOA) and the Hamakua and Mauna Kea SWCDs, the project is helping to develop diversified agriculture on lands supplied by the Lower Hamakua Ditch, which had fallen into disrepair following closure of the local sugar plantations in the early 1990s. The entire project is 82% complete, with an anticipated total project cost of \$36 million.



Repairs were made to LHD lining during 2014.

Upcountry Maui Agricultural Water Supply Project: This project is developing a non-potable water supply system to service 12,250 acres of prime farmland, thereby reducing demand on municipal water treatment facilities. Sponsored by the Hawai`i Dept. of Agriculture, the Maui County Dept. of Water Supply, and the Olinda-Kula SWCD, the completed agricultural system will include 9 miles of main pipeline and 20 miles of laterals. During 2014, new contracts were awarded to construct pipeline Phases 6B and 6C; easement acquisition for Phases 6A, 7, and the Pulehuiki Road lateral were nearly completed; and design work on four laterals made considerable progress. The project is nearly 2/3 complete, based on total estimated project costs of \$43 million.

Wailuku-Alenaio Watershed Project: Three of five flood protection measures for this project near Hilo were constructed in the 1980s under the sponsorship of the County of Hawai`i Dept. of Public Works and the Mauna Kea and Waiakea SWCDs. Significant storm damages in the Kaumana Drive area in 2000 renewed interest in completing the project. In 2014, updates to the remaining structural measures were finalized, and an internal review draft of the Supplemental Watershed Plan – Environmental Assessment was completed in accordance with National Watershed Program Manual requirements.

Kagman Watershed Project: Sponsored by the CNMI Dept. of Land and Natural Resources and the Saipan and Northern Islands SWCDs, this project is already providing flood reduction benefits via construction of Waterways A, B and C. Additional benefits will be realized when future project phases complete a reservoir to store waterway discharges for subsequent irrigation use. During 2014, an O&M Inspection and Report was completed to prioritize recommendations for all project phases. Additionally, a determination was made to update the existing EIS through a biological re-consultation with the US Fish & Wildlife Service. An estimated \$5.5 million in federal funding is needed for project completion.

PIA State Biologist Promotion to US Fish & Wildlife Service

By Anthony Ingersoll, Assistant Director for Technology



Dr. Gregory Koob

After having served as State Biologist and Environmental Compliance Officer for PIA for over eight years, Dr. Gregory Koob accepted a promotion with the US Fish and Wildlife Service (FWS). Greg started his new position as Conservation and Restoration Chief in late September, but he's still located at the Federal Building here in Honolulu, one floor down from NRCS.

Greg now supervises a staff of six and, among other duties, is responsible for the FWS Conservation Partnerships Program, which "seeks to implement large-scale conservation efforts for the benefit of native ecosystems by working cooperatively with private landowners, conservation organizations, community groups, and other government agencies" such as NRCS.

Greg said, "I hope to still be able to work with NRCS staff on getting wildlife conservation on the ground. So this isn't 'goodbye' so much as 'see you later.'" We look forward to partnering with FWS, through Greg's shop, to implement more wildlife conservation practices here in the Pacific Islands.

A hearty congratulations to Greg on his new promotion. Although a huge loss for us, a great gain for our FWS partners. We do indeed plan to "see him later" on future collaborative NRCS-FWS conservation projects and thus make our loss a gain.

Director Announced for NRCS Pacific Islands Area

By Jolene Lau, Public Affairs Specialist



Bruce Petersen, NRCS Director of the Pacific Islands Area

Chief Jason Weller of the Natural Resources Conservation Service (NRCS) announced his selection of the Director for the Pacific Islands Area. Bruce Petersen, currently the Nevada State Conservationist, will serve as the NRCS Director in the islands effective March 9, 2015.

Bruce Petersen worked for the Soil Conservation Service, now called the Natural Resources Conservation Service (NRCS) for 28 years, working in Minnesota, Wyoming, and Nevada. He earned a degree in Agriculture Business Management from the University of Minnesota and served in several field and state office positions, most recently as the State Conservationist for Nevada.

Bruce brings a history of success and experience to his new position as the director for the Pacific Islands Area.

"I am grateful for the opportunity to work with the NRCS staff, and excited to help advance agriculture profitability, protect resources, and improve the quality of life for producers and partners in the Pacific Islands Area," said Petersen.

Bruce Petersen served as the Nevada state conservationist since January 2009. He started his career as a soil conservation technician in Minnesota, working his way up to soil conservationist then district conservationist. He also worked for several years as a technician for conservation districts in Minnesota and Wisconsin. He worked for the NRCS in Wyoming for 11 years, serving as assistant state conservationist for operations, programs, and partnership liaison, before coming to Nevada.

As we welcome Bruce and his wife to the islands in March, we would also like to thank Craig Derickson for his hard work and dedication in the Pacific Islands Area while serving as Acting Director. Craig will be returning to Nebraska at the end of February as their state conservationist. Previous acting directors also included Carlos Suarez of California, Christine Clarke of Massachusetts, and Bill Puckett of Alabama.