



2015 NRCS SUMMARY FOR THE PACIFIC ISLANDS AREA

JANUARY 2016

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Kupa'a Farms: A Diverse Subtropical Organic Farm

By Ranae Ganske-Cerizo, District Conservationist, Kahului Service Center

Kupa'a Farms is located at 2000 foot elevation on the slopes of Haleakala volcano in the area of Kula, Maui long known for fruit and vegetable production. In 2003 Janet Simpson and Gerry Ross became the operators of this family farm and transitioned from conventional corn and asparagus to a diverse ecosystem farm with over 4 acres and more than 40 crops including award winning coffee, vegetables, and fruit. Kupa'a Farms is on the dry leeward side of Haleakala and normally gets rainfall only in the winter which commonly generates abundant rainfall events associated with cold fronts (called Kona storms). Rainfall in excess of 2 inches in an hour is not unusual. It was during one of these "Konas" that the dramatic potential for erosion became apparent. Deep gullies were carved through the sloping farmland, loss of soil, and bundles of snarled drip irrigation were clearly unacceptable in terms of long term sustainability and short term farm operation. Kupa'a Farms began to research ways to mitigate this problem which led them to cover crops, permaculture design, vetiver grass and NRCS. As a result, Kupa'a Farms received an EQIP grant which helped cover the costs of practices such as cover cropping, mulching, limited tillage, wind breaks and a high tunnel system.



Gerry & Janet picking coffee.

These are essential parts of soil conservation and are in step with organic agriculture that seeks to build and conserve soil. As a result Kupa'a Farms have created a biodiverse farm where soil erosion rates have dropped by over 95%, our use of



Seasonal High Tunnel & A healthy stand of taro with jicama and sweet potatoes in the foreground.

fertilizer has decreased by 75% (due largely to additions from cover crops, compost, mulch and leguminous trees), and contribution to agricultural run-off has disappeared due to the use of proteinaceous fertilizers of limited solubility. The greater community benefits from Kupa'a Farms as shown by their enthusiastic response to their nutritious produce, educational trips and community outreach. Additionally by keeping their soil on the farm they help to preserve the important reefs that are so essential to our island community. Kupa'a Farm operation is unusual in the diversity of crops grown. This allows Kupa'a Farms to have a CSA in which nearly all of the fresh produce that people get comes from their farm; this also lessens dependence on single crops and allows to weather the occasional imbalance in insect pressure or weather-related crop failure. In addition to the CSA, they sell to farmers markets and top notch island restaurants who appreciate the freshness, diversity, quality and taste of organically grown foods.



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BRUCE PETERSEN
NRCS Director

Hafa adai and Aloha,

The Natural Resources Conservation Service (NRCS) provided technical and financial assistance to private land users across the Pacific Islands. In 2015 NRCS celebrated 80 years of being a leader in conservation, working with landowners, local, state, and federal partners, groups and organizations to help address natural resource issues and maintain healthy and productive working land. NRCS in the Pacific Island area has over 60 years of history and a great track record of success with producers and partners.

In the 2015 Pacific Island Area annual summary report you will read of farm bill programs and outreach success, along with highlights from the various divisions within Pacific Islands NRCS that provide technical assistance to help meet customers' needs in a timely and professional manner.

I am proud of our conservation efforts and the NRCS staff that deliver programs and expertise. I hope you enjoy this report and welcome your comments and look forward to another great year partnering with you in helping people help the land.

Bruce Petersen
NRCS Director

Fiscal Year 2015 Program Enrollment - Hawaii (and Pacific Basin by County)

Source: ProTracts 10/9/2015

In fiscal year, 2015 NRCS obligated 151 contracts worth \$6.8 million to address resource concerns on 15,768 agricultural acres in the Pacific Islands Area.

State	Program	County	Contracts	Acres Enrolled	FA Obligated
Hawaii	AMA	HAWAII	11	299	\$198,995
		HONOLULU	3	6	\$14,423
		KAUAI	1	10	\$55,701
	CStP	MAUI	1	722	\$9,781
	EQIP	HAWAII	48	10,568	\$2,771,388
		HONOLULU	12	2,270	\$508,321
		KAUAI	6	72	\$278,155
		MAUI	13	1,338	\$642,853
	RCPP_EQIP	HAWAII	1	102	\$140,799
	Subtotal:			96	15,386
Pacific Basin	EQIP	EASTERN (American Samoa)	7	10	\$317,762
		GUAM	12	38	\$145,430
		MANUA (American Samoa)	1	1	\$44,885
		ROTA (CNMI)	3	63	\$52,556
		SAIPAN (CNMI)	10	112	\$577,419
		TINIAN (CNMI)	1	62	\$57,160
		WESTERN (American Samoa)	21	98	\$1,000,474
		Subtotal:			55
Grand Total:			151	15,768	\$6,816,102

Big Success for a Hamakua Small Scale Ranch

By Jill Ficke-Beaton, Soil Conservationist, Hilo Field Office

My job as soil conservationist is tremendously rewarding. Often times we have the opportunity to work with exceptional individuals who are committed to good stewardship of the land and livestock along with being positive, hardworking, resourceful and capable land managers. Morris Takemoto has all of these qualities including many more such as being humble and modest. Working with Morris is a dream come true for a conservation planner.



Morris owns and manages about 32 acres and 22 head of cattle in Umauma on the Hamakua Coast of the Island of Hawaii. His land is at a low elevation, 400 feet, with deep soil, and high rainfall, about 150 inches a year. These characteristics could spell out a muddy, weedy mess. But under Morris' management, the land and the cattle are pretty much picture perfect. Morris has set a high standard for himself as a land manager and for his cattle, focusing on highly nutritious grasses suited to his environment and on genetics that perform well with the grass and climatic conditions he has.

Morris began working with the Soil Conservation Service in the 80's with then Soil Conservationist Matthew Wung. He and Matt developed an effective rotational system that helped preserve and encourage the key species that they targeted. Morris was able to lease adjoining acreage allowing him to expand his herd and then was able to purchase it, which brought him back to NRCS for technical assistance. Morris seemed to be pleasantly surprised to learn that there were now Farm Bill Programs such as the Environmental Quality Incentives Program that could provide financial assistance to implement practices that would help him protect his resources and improve his efficiency and production while positively impacting the environment that surrounded him.

Morris submitted an application, and as a veteran was given priority status for his military service. Having recently retired from federal service as a postal worker, he had ample time and energy to invest in his project. We planned to cross fence his additional acreage, deliver water to the newly established paddocks and implement prescribed grazing to identify and manage for the target forage species, while reducing undesirable weeds from the excessive competition the grasses would contribute when allowed adequate rest.

Morris went to work immediately after being awarded a contract. He followed the design and specifications and worked well ahead of schedule. His quality of materials installed exceeded the minimum standard and his attention to detail and design resulted in functional and aesthetically pleasing construction. I was so proud of Morris that I nominated him for the Hamakua Soil and Water Cooperator of the Year, even though I knew he would scold me for doing so. It was my pleasure to give Morris the award and to recognize him for his excellence in management and land stewardship.



By Jolene Lau, State Public Affairs Specialist

Kapolei Middle School Garden Club



In May 2015, the Garden Club welcomed Adam Reed to their classroom to talk about soils. Students and teachers were all very excited to see their soil sample under a microscope and count all of the living organisms being magnified. This was a great way to wrap up International Year of Soil and conclude the successful Cooperative Agreement with our new partner, Malama Learning Center!

Tropical Biology & Conservation



Biologists and conservationists from around the world came to Honolulu in July 2015. The Association for Tropical Biology and Conservation held a dynamic event including outdoor field trips, workshops at the University of Hawaii, and poster sessions at the Convention Center. Tony Ingersoll assisted with recruiting for the State Biologist since we've been without an Environmental Compliance Officer for more than one year.

Native Hawaiian Convention



In September 2015, the Council for Native Hawaiian Advancement held their annual conference at the Convention Center. Famed as the largest gathering of Native Hawaiian leaders, cultural practitioners, educators, and community members, this was a timely opportunity to provide information on our latest cultural resource updates. Always important to provide information regarding our programmatic agreement!

The Best Earth Team Volunteers Ever



What do you do when you have free time? A handful of dedicated Earth Team volunteers were interested in spending their Saturday at the zoo in June 2015, to promote Bio Diversity Day using soil samples and a microscope. Warm mahalo to Susan Kubo, Sarah Giardina, Roxane Torres, Tony Rolfes, and Nicola Giardina for your dedication and commitment to outreach and education. You truly are missed by the PIA Family!

Maintaining Genetics: Tropic Sun

By: David "Kawika" Duvauchelle, Acting PMC Manager



When farmers continuously plant a crop year after year using seed that was harvested from the previous year, genetic traits of the original parent plants are eventually lost. This past November, we planted a half acre field of TROPIC SUN crotalaria using original seed that was harvested in 1977. The seed harvested from this planting will be considered breeder-seed. This breeder-seed will be grown-out in the fall of 2016 to produce foundation-seed. The foundation-seed will be made available to commercial producers in the spring of 2017.

One of the many responsibilities of the Hoolehua PMC is to maintain the availability of genetic material of plants it has released for conservation use. Foundation stock is available to growers who are interested in producing plant material for the commercial market. Entities wanting to obtain foundation plant material for commercial production should contact our Plant Materials Liaison, Cynthia Shishido, cynthia.shishido@hi.usda.gov. In exchange we ask that growers provide annual reports of yields and sales produced from the material that was received. If needed, growers are able to obtain additional foundation plant material every [5] years.

Timing Is Everything

By: David "Kawika" Duvauchelle, Acting PMC Manager

Most plants have basically two stages of growth: a vegetative stage, and a seed production stage. A plant in its vegetative stage will develop lots of leaves and roots for producing and storing nutrients. Eventually, there is a period in time when plant growth will shift from leaf and root development to the seed production stage where the majority of its stored nutrients is directed toward flower and fruit development. Essentially, plants begin to use up the food that was stored. Knowing when your cover crop will be in its seed production stage will dictate how long before your cash crop you must plant it.

Although some organic matter is better than no organic matter, to utilize a cover crop to its fullest potential it is important that it is terminated as close to its blooming period as possible. On the other hand, allowing a cover crop to grow long enough to produce seed not only reduces the amount of nutrients available to your cash crop, but the seed produced could become a very bad weed problem as well.

Knowing the blooming period becomes even more important if you want to mix different cover crops together. Ideally, to get the most out of your cover crop mix, you should select plants that have similar blooming periods. This assures that all the plants utilized are able to reach their full potential by the time they are terminated.

The Hoolehua PMC has just initiated a study to gain a better understanding of the blooming periods for PIA recommended cover crops. We are looking at 25 different species and 60 different varieties. We plan to do another planting during the longer days of summer as well.

Molokai Youth Getting Down and Dirty

Contributed by: Debbie Kelly - MLSWCD

The Molokai-Lanai Soil and Water Conservation District held the local Conservation Awareness Soil Judging Contest for our Molokai High School students on October 14, 2015 with the assistance from staff of Hoolehua Plant Material Center (PMC) and the Hoolehua Field Office. It was a first for new science teacher Emilio Macaladad and his students. Among many other things, the students learned that dirt is soil that is out of place. Much mahalo for the staff of Hoolehua PMC providing a location for the contest and sharing with our Molokai students about activities done at the center.



New Cultural Resources Compliance Protocols are on the Horizon for PIA

By Valerie Russell, State Cultural Resources Specialist

In November 2014, the Advisory Council on Historic Preservation (ACHP) designated use of a Prototype Programmatic Agreement (PPA) for the NRCS. The PPA provides NRCS with the ability to comply with National Historic Preservation Act (NHPA) Section 106 requirements by allowing for the development of state agreements that streamline and expedite the Section 106 compliance process. Subsequently, I have collaborated with RTT, AO, and FO staff to develop new PPAs for Hawaii, American Samoa, Guam, and the CNMI, in collaboration with State Historic Preservation Offices (SHPO). We anticipate signature of new agreements in FY16.

Until the new state PPAs are signed, PIA is following the cultural resources compliance protocols outlined in the old State Level Agreements (SLAs). In FY15, a total of 88 Exhibits were submitted to the Cultural Resources Specialist for compliance review in support of EQIP, AMA, RCPP and CREP program applications. Concurrence was granted and determinations of “No Historic Properties Affected” were made for a total of 84 program applications because it was determined that no cultural resources were present in each project’s APE (Area of Potential Effects). However, a total of 4 applications required archaeological inventory survey fieldwork to record site data by the Cultural Resources Specialist with subsequent NHPA Section 106 consultation with the Hawaii State Historic Preservation Division (SHPD) and Native Hawaiian Organizations (NHO). NRCS has proposed “No Adverse Effect” determinations for each of these projects by proposing conservation practice installation methods that avoid the potential to harm these historic properties, which include historic-period cattle ranching rock walls and a cattle enclosure, ahupua’a boundary rock walls, and the Upper Hamakua Ditch.



PIA Stream Visual Assessment Protocol (SVAP)

By Tony Ingersoll, Assistant Director for Technology

For stream resource issues in PIA, the tool of choice was the outdated Hawaii Stream Visual Assessment Protocol (HI-SVAP). The good news, however, is that an update, to be known as the PIA Stream Visual Assessment Planning Tool (PI-SVAP), is nearly complete. This assessment tool allows planners to visually evaluate the condition of wadeable streams and identify resource concerns. With expert help from Timmie Mandish, Fisheries Biologist, and Shaun McKinney, Director, West National Technology Support Center in Portland, we are close to a final product. This effort was accomplished with input from fisheries experts in Hawaii, American Samoa, Guam and Saipan, as well as from the field beta-testing done by field staff in Hilo, Aiea, and Kahului (see photos). We also employed a contingent of planners from Guam and Saipan to beta-test the draft tool’s effectiveness in the West Area in order to fine tune it and make it applicable throughout PIA’s service area. We expect the newly updated tool to be ready for full release to our PIA planners sometime in the second quarter of FY16. Stay tuned.

Aiea FO Staff



Hilo FO Staff



Kahului FO Staff



ECS Team Updates Toolkit Conservation Practice Narratives

By Adam Reed, Water Quality Specialist, State Office



At the request of Field and Area Office Staff the ECS Team reviewed and updated the practice narratives found in Toolkit. It had been several years since an update had occurred and this task was well worth the ECS's time and effort. The new practice narratives were written with the producer in mind as the primary audience. The new narratives have 3 components:

- 1) Practice lifespan;
- 2) A brief definition of what the practice is;
- 3) What is the objective of the practice; and
- 4) Refers produce to the Job Sheet/Implementation Requirement for details about the practice.

Conservation planners will be able to further customize the narratives to better reflect the conservation being applied to the land. The ESC Team is happy that we were able to support the conservation planners by providing customer friendly practice narratives to better reflect the conservation being applied to the land. The ESC Team is happy that we were able to support the conservation planners by providing customer friendly practice narratives.

Preparing for PIA Toolkit 8.0 Rollout

By Cynthia Shishido, State Toolkit Coordinator; and Amy Koch, State Soil Scientist

Customer Service Toolkit 8.0 was successfully released on August 25, 2015 following a series of summer trainings to prepare users for the changes introduced in this new version. Cynthia Shishido, State Toolkit Coordinator, and Amy Koch, State GIS Specialist, along with assistance from the PIA Toolkit Cadre, conducted Toolkit 8 training sessions across the Pacific Islands Area throughout the summer. A total of seven training sessions were held in various field offices (Hilo, Waimea, Guam and American Samoa) as well as the State Office for Aiea, Lihue, Hoolehua, and Kahului staff. A total of 47 participants - including District Conservationists, Soil Conservationists, Soil Conservation Technicians, Engineers, District Planners and Resource Conservationists - underwent an extensive 2 or 3 day hands-on training with Toolkit 8, complete with a final test.



PIA Toolkit 8 Training Cadre

Front (L to R): Jessica Schmelz, Kahana Stone. Middle (L to R): Marie Faatuala, Cynthia Shishido, Amy Koch, Pamela Aguon. Back (L to R): Carolyn Wong, Spencer Nagata, Jessica Ludgate, Morri-Ann Nagata, National Trainer Kristie McKinley (Fort Worth, TX) and National Trainer Travis Rome (Fort Collins, CO). Not pictured: Jenna Dunn.

Hoolehua Plant Materials Center FY2015 Accomplishments

By David “Kawika” Duvauchelle, Natural Resource Specialist

A major objective for the Plant Materials Program of the Pacific Islands Area for many years is address the lack of local commercial seed producers. What we tried to do first was identify who, if any, were the seed producers in Hawaii. We quickly determined that the commercial seed grower market is virtually non-existent. On the other hand there are a number of nurseries that provide seedlings for sale. This allowed us to update our Plant Materials Technical Note #6: Commercial Sources of Plant Materials Native to the PIA.



Additionally, we have been collaborating with Dr. Joseph DeFrank of the University of Hawaii at Manoa who has a project with Hawaii DOT to develop a technique to establish native plants along roadside medians. We worked together to determine appropriate plants to use and located natural stands of native plants for future use. His idea also included utilizing these roadside medians as alternative seed sources for DOT Projects and other agencies that needed native seed. This project will help to address the seed availability concern in the PIA.

We also partnered with the Molokai Land Trust, who manages a preserve of over 1700 acres of land. A large portion of the preserve is denuded land that has been reduced to hard pan. Their hope is to re-vegetate these area with natives. The Molokai Land Trust needs a low cost way to establish plants. We introduced them to a technique that consists of lightly ripping the soil surface, applying a light layer of wood chips and fertilizer, and is totally dependent on natural rainfall alone for moisture. We installed small test plots at the PMC and out at MLT (above). We are very excited about this project and believe it could open a lot of doors for the commercial seed market.



FY2015 Forestry Update

By Michael Constantinides, State Forester

Crossing over ECS disciplines to help due to our State Range Management Specialist position vacancy, I helped finalize major updates to our PIA Fence (382) Specification and Jobsheet. Preston Irwin did a majority of the heavy lifting in drafting the updated documents before he returned to Texas. I took the drafts and various supporting data, and tapped into our in-house expertise for pasture and range management systems. The final content was significantly shaped in this way by input from Carolyn Wong, Matt Wung, Kori Hisashima, Jill Ficke-Beaton, Pam Aguon, Joe Tuquero, Tony Ingersoll, Adam Reed and others. Carl Rossetti took draft sketches for the various fence types and designs, and came up with a fantastic set of CAD drawings in support. Many thanks to you all! My last step was to format the new Specification, ultimately resulting in a > 50% reduction in length, as well as an interactive Jobsheet template following recent ECS Excel-based technology and formatting. We look forward to feedback to improve these tools over time, and hope our colleagues and cooperators find them helpful.

I also was a contributing author to a new book titled “Food-Producing Agroforestry Landscapes of the Pacific” as a co-author for the chapter “Grower’s Guide to Pacific Island Agroforestry Systems: Information Resources, and Public Assistance Programs.” The book’s primary author and editor is internationally renowned agroforestry expert Craig Elevitch, who happens to live in Kona on the Big Island. The chapter summarizes principal Pacific Island agroforestry systems, and details how NRCS Technical Assistance and Financial Assistance can be engaged by interested Cooperators to install and manage such systems. Consider this chapter to be your easy guide to planning and installing agroforestry systems with NRCS. After the transcript was finalized and published, Craig hosted supporting rollout workshops on Molokai, Kauai, Maui, Hawaii and Oahu. Ranae Ganske-Cerizo, Laura Nelson and myself gave presentations regarding NRCS support and services for agroforestry systems at the latter three locations. All workshops were “sold out” and a total of approximately 230 workshop attendees gave us strong positive feedback. Based on subsequent FO contacts, it appears that significant interest was generated in the NRCS PIA Forestry/Agroforestry Tech Note No. 11, our “Mixed Agroforestry Specification.” The Growers Guide can be found at: http://www.agroforestry.net/images/pdfs/Growers_Guide_Pacific_Agroforestry_Elevitch_etal.pdf

International Year of the Soil and Soil Health in PIA

By Amy Koch, Acting Assistant Director for Soil Science and Natural Resource Assessments and PIA Soil Health Team Leader



The United Nations declared 2015 the International Year of Soils, and PIA celebrated by spreading the word throughout our island communities with workshops, outreach events, and public service announcements. More importantly, field offices worked with our producers to get soil health practices like cover crops, mulching, and tillage management on the ground.

Highlights of the outreach activities that took place in 2015:

Public Events

- CTAHR and NRCS Field Days (Waimanalo & Poamoho Research Stations)
- Hawaii State Farm Fair
- Master Gardeners Soil Health Workshop (Pearl City)
- Kona SWCD Soil Health Workshop

Education Outreach

- Waimea Middle School, Malaai School Garden (7th grade)
- National Geographic BioBlitz at Hawaii Volcanoes National Park
- County and State Conservation Awareness Contests (Hawaii)
- Matafao Elementary 3rd grade class (American Samoa)
- Innovations Charter School 5th & 6th grade (Kailua-Kona)
- Kapolei Middle School's Garden Club

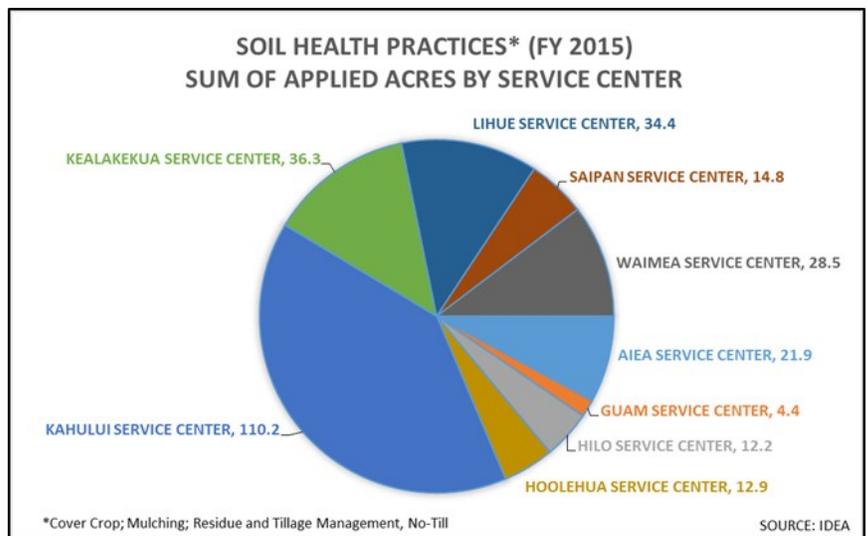


Soil Health Profile for local farmers, Atto Assi and Neena Ramel.

Public Affairs Specialist, Jolene Lau, played a key role in our soil health campaign through PIA News Releases, Twitter, and Public Service Announcements on local TV stations. There are now 14 profiles available on the PIA website featuring cooperators who are actively implementing soil health practices on their farms and ranches.

In FY2015, 275 acres of soil health practices (cover crops; mulching; and tillage management, no-till) were applied across PIA. As more cooperators become aware of the benefits that soil health practices can bring to their operations, we hope to increase and diversify these practices.

Pie chart showing Soil Health Practices (acres applied in FY2015) by PIA Service Center.



GIS Support for Environmental Quality Incentive Program (EQIP)

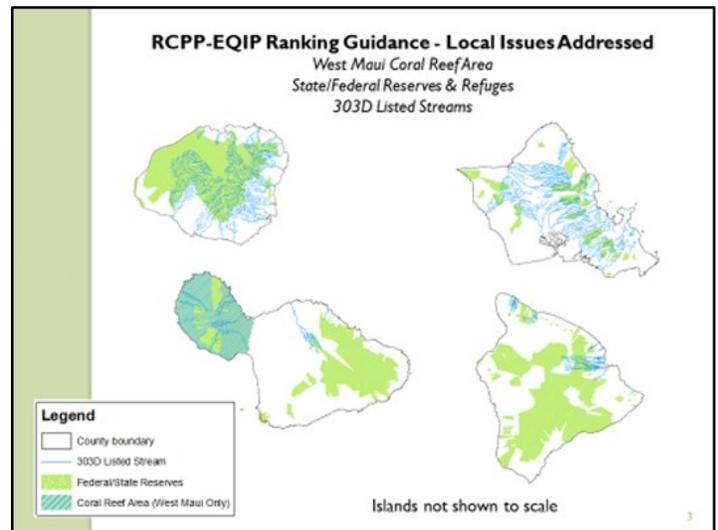
By Amy Koch, GIS Specialist/Resource Soil Scientist

In FY2015, GIS staff members Amy Koch and Reese Libby collaborated with Programs staff to provide support for EQIP Regional Conservation Partnership Program (RCPP) and Feral Swine Management Pilot Program.

Custom maps, shapefiles, metadata, and geodatabases were generated and distributed to individual field offices.

The GIS layers were incorporated into the ranking process for both programs, addressing state and local issues.

Custom layer files provided users with set symbology relevant to the ranking questions.



Example of maps created using custom shapefiles for RCPP-EQIP for Kauai, Maui, Oahu, and Hawaii.

Google Earth Pro now available for NRCS use

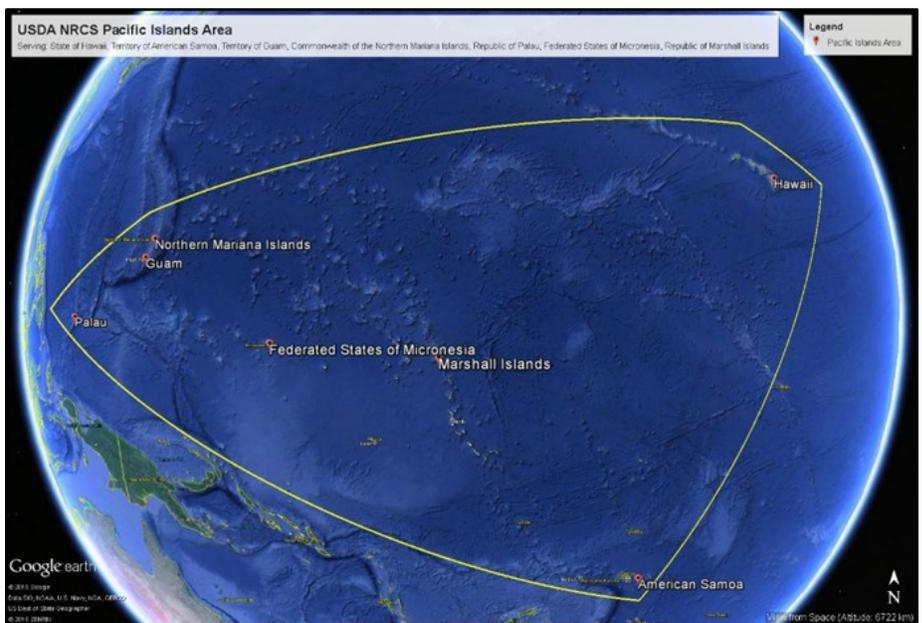
By Amy Koch, GIS Specialist/Resource Soil Scientist

In March 2015, a free version of Google Earth Pro (GEP) was released for NRCS use. This release was applauded by field office staff who had been patiently waiting for its approved use.

In conservation planning, this software is a supplemental tool and does not replace Customer Service Toolkit, NRCS’s primary planning tool. However, many users are already finding GEP valuable in areas where Google imagery quality surpasses that of our existing orthoimagery.

It also provides features like the ability to view historical imagery that can allow users to see the land use history of a site as well as the ability to see the wide expanse of the islands served by NRCS PIA.

Map created using Google Earth Pro showing the large spread of islands across the Pacific Ocean that are served by NRCS PIA.



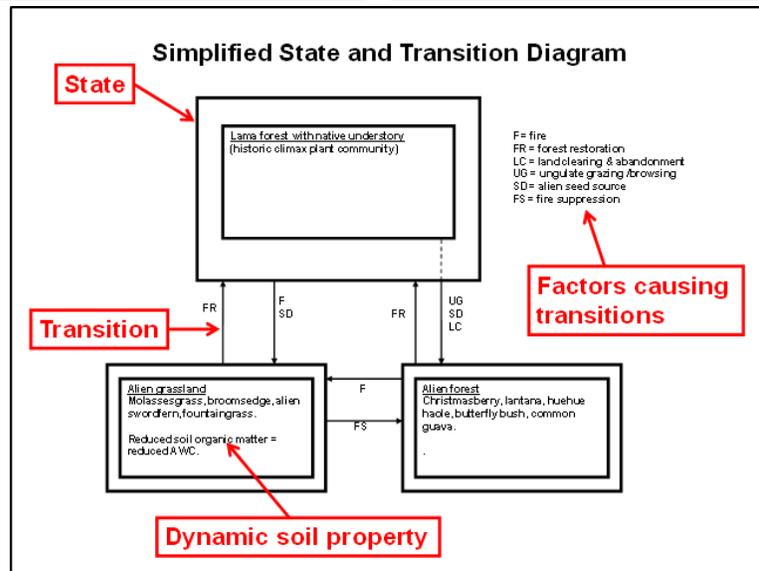
Updating Ecological Site Descriptions for Hawaii Island

By David Clausnitzer, Ph.D., ACES Contractor for Ecological Sites

Ecological site descriptions (ESDs) are documents that provide information about ecological sites (ESs). An ES is a classification unit of land based on soils, climate, physiography, vegetation, animals, and management responses; it is linked directly to the NRCS Soil Survey map and concepts. The information in ESDs provides a basis for making management decisions based on specific characteristics of the site at hand.

The goal for FY2015 was to update 19 Forest and 3 Rangeland ESDs that had previously been developed for the Island of Hawaii to new standards and to post the ESDs to the NRCS Ecological Site Information System (ESIS) website. Work undertaken so far includes: (1) revising all State and Transition models and diagrams; (2) reviewing and revising the correlation of ESs to soils and adapting those correlations to draft updated Major Land Resource Areas for the island; (3) working with Soil Survey staff on ES-to-soil correlations; (4) creating a new ES key and renaming all ESs based on the key; (5) developing project plans and milestones, with Soil Survey staff; (6) reviewing and updating text portions of ESDs to current standards; and (7) entering text, data, and figures into ESIS.

The items above have mostly been completed. The remaining work includes data entry and QC/QA review, which will be completed in FY2016.



By Sherman White, Jeff Wheaton, Tim Brasuell, and Sharon Sawdey

Energy: Energy as a resource concern was brought more into the mainstream of conservation planning in 2015 with the review and acceptance of the first Ag Energy Management Plan for a producer in the PIA this past spring. The work met the requirements of PIA Farmstead Energy Improvement (Code 374) conservation practice standard. The activity, CAP 128, is again on the practice payment schedule and there are Technical Service Providers (TSPs) able to contract with producers to create the planning product. In January of 2015 the PIA engineers received an energy refresher training in anticipation of greater activity. There are plans to provide energy planning orientation to field office staff for implementing the National On-Farm Energy Initiative (NOFEI) as part of the EQIP program. Other practices in the PIA eFOTG which directly support conserving energy in agricultural operations are; Combustion System Improvement (Code 372), Building Envelope Improvement (Code 672), and Lighting System Improvement (Code 670). Increased participation in the EQIP NOFEI will bring reduced production costs and an improved environment by reducing the demand for energy by the PIA agricultural sector.

National Consortia: The PIA State Office engineering staff maintained presence and communication with the other West Region State Conservation Engineers by participating in the Environmental, Irrigation, and Energy consortia. For resource concerns not national in scope but very important to our area, Assistant State Conservation Engineer Jeff Wheaton represents PIA on the Coral Reef Task Force, including the metrics committee, watershed working group, and Tiger Shark Team strategic planning subcommittee. And State Conservation Engineer Sherman White has taken the reigns as the chair of the West Region State Conservation Engineers Consortium.

General Conservation Activity Support: The SCE staff developed the Guide to Access Road Design for use by all field offices & Engineers. This is a design procedure for new or existing access roads in tropical conditions over steep landscapes with high rainfall. Several assessment tools and outside references are provided to address sufficient drainage structures, construction methods and materials, and site selections based on USAID funded work in tropical countries in cooperation with the US Forestry Service. Additionally, PIA State Office engineer's produced new practice scenarios for the 2016 payment schedules based on feedback from field staff, and posted engineering standard details and computational spread sheets on the NRCS PIA technical resources sub-web page, and reviewed and commented on numerous conservation practice standards in the National Handbook of Conservation Practices listing. Work continues on modernizing legacy HI & PB Engineering Field Handbook supplements and producing a new PIA Stockwater Handbook.



Tim Brasuell reviews exercise with the Laotian Green Team in September.

International Work: Civil Engineer Tim Brasuell completed a short-term International Programs Division assignment to Vientiane, Laos, sponsored by the US Army Pacific (USARPAC) on agricultural land flooding and disaster response in support of the annual Lower Mekong Initiative's Disaster Response Exercise and Exchange (LMI/DREE). The LMI/DREE brings together Subject Matter Experts on health, water & environment, transportation, and agriculture for a series of disaster simulation exercises and exchanges. Part of the assignment was to facilitate a team through the exercises and exchanges following several ASEAN, host member, and United Nations protocols. LMI Member nations are the countries that border the Mekong River including Laos, Thailand, Cambodia,

Vietnam, and Myanmar. The Lower Mekong Initiative is a U.S. Government initiative that seeks to facilitate assistance and regional cooperation along five major pillars: agriculture & food security, education, energy security, environment and water, connectivity, and health.

Wailuku-Alenaio Watershed Project: Three of five approved measures for this flood protection project near Hilo were constructed in the 1980s, with the County of Hawai'i Department of Public Works and the Mauna Kea and Waiakea SWCDs serving as the project sponsors. Following significant storm damages in 2000, there was renewed interest in completing the project measures in the Kaumana Drive area. Despite efforts evaluating updated measures to meet current land use conditions, the costs of completing a Supplemental Watershed Plan were determined to be prohibitively expensive, and in 2015 the County of Hawaii decided to terminate the project.

By Sherman White, Jeff Wheaton, Tim Brasuell, and Sharon Sawdey

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. NRCS staff conducted an informal re-consultation with US Fish & Wild-life and subsequently completed a biological survey for the remaining phases of the project. Additionally, engineering staff conducted a subsurface investigation to characterize conditions expected during construction and to determine design parameters in support of transitioning the design assistance from NRCS regional designers to a PIA ‘in-house’ design effort. An estimated \$5.5 million in federal funding is needed for project completion.



Steve Dias, DOA manager of Big Island facilities, showed off a newly lined section of the Lower Hamakua Ditch in August.

Lower Hamakua Ditch Agricultural Water Supply Project: Sponsored by the Hawai`i Department of Agriculture (DOA) and the Hamakua and Mauna Kea SWCDs, this project is improving water supply to small farmers and ranchers developing diversified agriculture on former plantation lands near Waimea. The LHD ditch system fell into disrepair following closure of the local sugarcane plantations in the early 1990s, and the project will return the ditch system to full functionality. During 2015, a majority of the work was completed on a \$2.5 million contract for ditch lining and other repairs along a seven-mile stretch of the ditch. Additionally, progress was made on easements and permits to enclose and floodproof portions of the first five miles of the ditch system. The entire project is approximately 82% complete, with an anticipated total project cost of \$36 million.

Upcountry Maui Agricultural Water Supply Project: This project will reduce agricultural water costs by developing a non-potable water supply system for prime Kula farmland, simultaneously reducing the demand on municipal water treatment facilities. Sponsored by the Hawai`i Department of Agriculture, the Maui County Department of Water Supply, and the Olinda-Kula SWCD, the agricultural system was initially designed to include 9 miles of main pipeline and 20 miles of lateral pipeline when complete. During 2015, as a result of several years of difficulties with easement acquisition and escalating project costs, the sponsors agreed to refocus the project towards completion of the first 5 miles of pipeline and an associated 5 miles of laterals. Accomplishments during 2015 included completion of the Phase 6 design and Kealahou Lateral bid documents; continued progress on the Waiakoa Lateral design; and acquisition of easements that will enable construction activities during 2016 for the Phase 7 pipeline, Pulehuiki lateral, and Kealahou lateral.



State Conservation Engineer Sherman White and Kahului FO District Conservationist Ranae Ganske-Cerizo observe one of the many difficult main pipeline gulch crossings required as part of the Upcountry Maui Watershed Project.

Lahaina Watershed Flood Control Project: This project will ultimately construct two miles of diversion channel, four sediment basins, and a debris basin, thereby providing a 100-year level of flood protection to properties in Lahaina 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 now roughly 45% complete based on a total estimated project cost of \$38 million. During 2015, Maui County made progress with permitting activities required for construction of Phase 3B.