



Pacific Islands Area  
Lawrence Yamamoto,  
Director  
Honolulu, Hawaii

2007 NRCS PIA GI A 5FM FOR THE PACIFIC ISLANDS AREA

USDA Natural Resources Conservation Service

## Chief Arlen Lancaster Visits

NRCS Chief Arlen Lancaster and Doug McKalip, Director of the Legislative and Public Affairs Division, arrived in Hawaii for the 75th Annual Western Snow Conference that was held in Kona.

As part of their first visit to Hawaii, a variety of field offices led conservation tours around the state to showcase our success with customers and partners.

On the Big Island, the group visited an Ag Development project by the Big Island RC&D, a coffee farm with a weather station, local field offices, and the Lower Hamakua Ditch.

On Oahu, they toured the state office, parts of the University of Hawaii campus, and the Manoa Watershed project.

On Molokai, the stops included the Plant Materials Center, the Hoolehua field office, and the PIA's first Farm and Ranch Land Protection Program recipient. They also went to Kahoolawe and helped with the revegetation effort by hauling pili grass and aalii seeds.

On Maui, the group saw a pineapple field, the Honolua Watershed, and the Lahaina Watershed Flood Control project. Thanks to everyone involved in making this a memorable event!



Richard Stevens, Doug McKalip, Chief Arlen Lancaster, and Larry Yamamoto at a tree dedication for Earth Day.



Chief Arlen Lancaster and Doug McKalip on a project tour with the West Maui Soil and Water Conservation District.

## First NEDC Course Held on Guam

The National Employment Development Center's "Working Effectively in the Pacific Islands" training course was held on Guam, October 30—November 2, 2006. This session was recorded to provide a foundation of information, via video and print, for federal employees considering or having accepted a position in the Pacific Islands Area. The group learned about culture, heritage, history, and values that help new employees adapt to the challenges and opportunities.

Our success in supporting national, regional, and local objectives with the delivery of programs and services in the islands requires that we work with partners and each other effectively. There is a great diversity in the islands combined with a complexity of land use, culture, language, and history that make the islands a unique and special place to work. Thank you to everyone who made this valuable training session possible!



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# Message from the Director of the Pacific Islands Area

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*Lawrence Yamamoto,  
Director*

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This summary for the NRCS Pacific Islands Area highlights some of our accomplishment in fiscal year 2007. It describes the programs and activities that help us move towards our agency's mission goals of:

- ◆ High Quality, Productive Soils
- ◆ Clean and Abundant Water
- ◆ Healthy Plant and Animal Communities
- ◆ Clean Air
- ◆ An Adequate Energy Supply
- ◆ Working Farm and Ranch Lands

The month of September 2007 saw me on temporary detail in our national office as the Acting Associate Deputy Chief for Programs. It was a tremendous experience for me and really helped me appreciate the great work we do as an agency. I found it especially interesting to represent Deputy Chief Tom Christensen at opening of the Conservation Security Program training in Indianapolis, Indiana. There I was asked to welcome about 400 NRCS employees to the training session and to do so wearing a suit was no less a unique experience.

The most interesting part of the work was being part of the decision making process that goes on every day in our headquarters. Much like making sausage, the process takes many kinds of raw materials and produces something totally different. The sum of the parts always looked very different from what we started with. Also, being so close to the US Congress and the Secretary of Agriculture meant that events occurred quickly and often. For example, I was there when Secretary Johanns resigned and Acting Secretary Chuck Conner was named as his replacement. Taken as a whole, it was definitely exciting and taught me a lot about our agency in the big picture and how we benefit our nation.

A handwritten signature in black ink that reads "E. T. Yamamoto". The signature is stylized and cursive.

LAWRENCE  
Director

E. T. YAMAMOTO,  
Director of the Pacific Islands Area

# Conservation Technical Assistance in the Pacific Islands Area

The Conservation Technical Assistance (CTA) Program is the foundation for providing conservation technical assistance to private landowners, conservation districts, and other organizations to address our natural resource concerns. It is a program through which NRCS provides technical assistance supported by science-based technology and tools to help landowners voluntarily conserve, maintain, and improve our natural resources.

NRCS technical assistance is based on the voluntary development of conservation plans and implementation of conservation practices/systems. A successful conservation plan helps clients achieve their objectives while addressing natural resource concerns. NRCS conservationists work one-on-one with private landowners to develop site-specific solutions and implement conservation practices to achieve a sustainable system that contributes to productive lands as well as healthy ecosystems and watersheds.

In fiscal year 2007, NRCS conservationists in the Pacific Islands Area assisted in the development of:

- ◆ Cropland: 161 conservation plans on 20,851 acres
- ◆ Grazing land: 75 conservation plans on 18,784 acres

In addition, farmers and ranchers voluntarily installed conservation practices (without Farm Bill financial assistance) which resulted in the treatment of:

- ◆ Cropland on 55,675 acres
- ◆ Grazing Land on 11,721 acres

Typical conservation practices implemented in the Pacific Islands Area during fiscal year 2007 include:

- ◆ Brush Management: 643 acres
- ◆ Cover Crop: 3,863 acres
- ◆ Fence: 393,743 feet
- ◆ Pest Management: 55,883 acres
- ◆ Pipeline: 10,604 feet
- ◆ Prescribed Grazing: 5,405 acres
- ◆ Upland Wildlife Habitat Management: 49,135 acres
- ◆ Windbreak Establishment: 10,510 feet

Our conservation planning process, locally adapted conservation practices/systems, and technical knowledge is at the core of the effective CTA Program delivery system. NRCS field offices are located throughout the Pacific Islands Area in the following locations:

- ◆ Aiea, Oahu
- ◆ Lihue, Kauai
- ◆ Wailuku, Maui
- ◆ Hoolehua, Molokai
- ◆ Hilo, Hawaii
- ◆ Waimea, Hawaii
- ◆ Kealahou, Hawaii
- ◆ Pago Pago, Territory of American Samoa
- ◆ Barrigada, Territory of Guam
- ◆ Saipan, Commonwealth of the Northern Mariana Islands
- ◆ Pohnpei, Federated States of Micronesia
- ◆ Palau (Koror), Republic of Palau



*Windbreaks in Hawaii.*



*Residue management in American Samoa.*



*Energy conservation and pest management (rat control) in Saipan.*

## Outreach to Native American Indians



*Fine beadwork, brilliant color and traditional regalia draped tribal dancers and participants at the 2nd Annual Hilo Intertribal Powwow.*

The Memorial Day weekend provided a glorious clear blue sky for all three days of the 2<sup>nd</sup> Annual Hilo Inter-tribal Powwow. Opening ceremonies included a cultural exchange and welcoming chants and ceremonies between Native Hawaiian hosts and visiting tribal members.

For a short time Hilo's Wailoa Park was transformed, into a Native American village as teepees were erected and the sound of tribal song and dance and smell of sweet grass smoke filled the clear Hawaiian air.

Practitioners, dancers, drummers, tribal elders and crafts people attended from mainland tribal organizations and many local Native Americans participated, as well from on and off the Big Island.

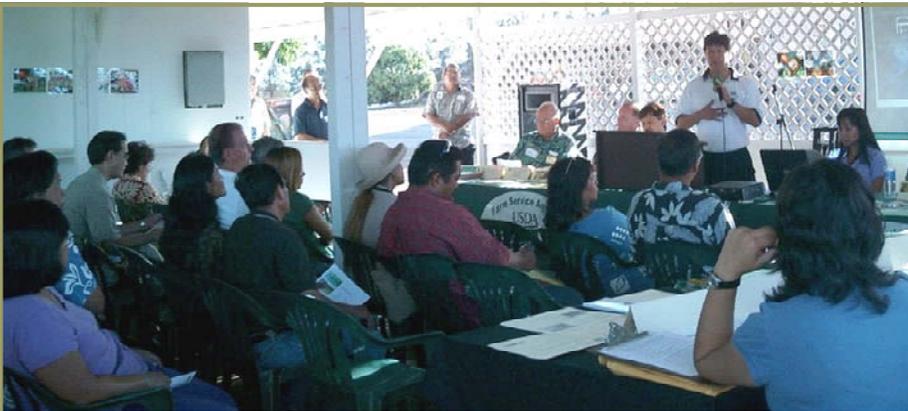
The Big Island RC&D Council sponsored event was also a time for the coming together of Native Hawaiian and Native American cultures. Ceremonies honoring the old ways and cultural traditions of both groups were jointly conducted.

Tribal elders, Native American Youth groups and were all present for the final Honoring Ceremony performed by Master of Ceremonies and Head Woman, Oliver and Anne Shouting.

This solemn and rarely performed Sundance Song was directed at the sponsors and supporters of the event and was followed by a final procession around the dancing arena. This moving song and ceremony ended what can only be described as a truly magical three day celebration of Native American Culture.

*"It must be said that the 2nd Annual Hilo Intertribal Powwow was a grand celebration of Native American culture, dance, and art that will be long remembered!"*

## Outreach to South East Asians



NRCS partnered with other agencies to hold an informational meeting for South East Asian farmers on Oahu. A translator relayed the messages from NRCS, the Oahu RC&D, the Oahu Soil and Water Conservation District, Farm Service Agency, Rural Development, Hawaii Farm Bureau Federation, Cooperative Extension Service, Economic Development, State Department of Agriculture, Plant and Environmental Protection, Animal and Plant Health Inspection Service, National Ag Statistics Service, and the Laotian Farmers Association of Hawaii.

## Outreach to Volunteers



*MOVER Earth Team award from Saipan.*

Movement (MOVER), Inc. from the Commonwealth of the Northern Mariana Islands, Saipan was selected as one the national Earth Team Volunteer Award Recipients. This group actively involves the community to increase coral reef awareness, revegetate degraded grassland areas, obtain storm water sampling, and encourage beach clean ups.

As a result of the partnership with NRCS, the RC&D, and Beautify CNMI, volunteers gathered as a coalition of government agencies, private groups, and concerned citizens who are interest in making the CNMI a better place to live.

Through countless volunteer hours, they planted over 17,000 native trees covering seven acres in Saipan. They also removed 6,000 pounds of litter from streams and beaches.

# Programs in the Pacific Islands Area

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**Farm Bill Programs:** The 2002 Farm Bill continues to offer America's farmers and ranchers more incentives than ever before to voluntarily conserve natural resources on privately owned land. Its conservation provisions help reduce erosion, guard streams and rivers, restore and establish fish and wildlife habitat, and improve air quality. The summary below pertains to the financial assistance through Farm Bill Programs in the Pacific Islands Area.

**Environmental Quality Incentives Program (EQIP):** Addresses significant natural resource concerns that are locally identified. In 2006, we utilized \$5,237,092 for conservation planning, design and installation. These dollars assisted cropland, grazing land, and animal feeding operations. Projects include noxious weed control, brush management, pasture hayland planting, terraces, mulching, and groundcover. In fiscal year 2007, \$6,002,312 was used for EQIP.

**Ground and Surface Water Conservation (GSWC):** Supports the installation of irrigation related conservation practices on agricultural lands. In 2006, we utilized \$380,831 for this program. Practices included more efficient irrigation systems like sprinkler and micro-irrigation and irrigation water management to save critical water supplies. In fiscal year 2007, \$220,991 was used for GSWC.

**Grassland Reserve Program (GRP):** Helps landowners and operators restore and protect grassland, including rangeland and pastureland, and certain other lands, while maintaining the areas as grazing lands. In 2005, \$1,282,682 was used on rental payments and restoration. In fiscal year 2006 and 2007 no GRP projects were funded.

**Wildlife Habitat Incentives Program (WHIP):** This program is used to develop or improve fish and wildlife habitat on private land. In 2006, we utilized \$1,203,725 to treat wetland, riparian, and upland areas. In fiscal year 2007, \$2,398,945 was used for WHIP.

**Wetlands Reserve Program (WRP):** This program is used towards wetland restoration, enhancement, or creation on private land. In 2006, we utilized \$644,924 for permanent easement of critical wetland and riparian areas. In fiscal year 2007, \$284,700 was used for WRP.

**Farm and Ranchland Protection Program (FRPP):** This program is used to help state, tribal, or local government entities to purchase the development rights to keep productive farm and ranchland in agricultural use. In 2006, we utilized \$1,839,412 for the purchase of development rights to keep land in agricultural use. In fiscal year 2007, \$1,090,028 was used for FRPP.

**Conservation Security Program (CSP):** The newest opportunity through the Farm Bill Program is to reward agricultural producers for their continued commitment to be good stewards of the land. In 2006, Hawaii producers received \$179,354 for their conservation efforts on watersheds on Kauai, Maui, and Honolulu. In fiscal year 2007, \$268,594 was used for CSP.

## Other Programs

**Agricultural Development Program (ADP):** The Resource Conservation and Development Councils administered grants for community driven projects that promoted agricultural development. In 2006, Hawaii received \$891,000 distributed to the Islands of Hawaii, Molokai, Maui, and Kauai. In fiscal year 2007, no funds were available for this program.

**Conservation Innovation Grants (CIG):** Under EQIP, grants were made available to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection, in conjunction with agricultural production. In fiscal year 2007, six grants were approved totaling \$346,875.

**Cooperative Ecosystem Studies Unit (CESU):** Provide opportunities for interdisciplinary and multi-agency research, technical assistance, and education. In fiscal year 2007, two agreements were approved, totaling \$39,209. One was to address grazing practices and the other was to address land-based pollution threats to coral reefs.

**Cooperative Conservation Partnership Initiative (CCPI):** This voluntary program was established to foster conservation partnerships that focus technical and financial resources on conservation priorities in watersheds and airsheds of special significance. In 2006 we granted \$100,000 to facilitate restoration of aquatic wildlife, control invasive species, address nutrient management, and carbon sequestration on a large Maui watershed. In fiscal year 2007, an additional \$50,000 was used for this program.

## Technical Service Providers

Technical service providers are individuals, entities, or public agencies certified by NRCS and placed on the approved list to provide technical services to program participants or the Department. In fiscal year 2007, \$429,300 was used for TSP's.

# Resource Technology

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## Field Office Technical Guide (FOTG)

Updated and merged Hawaii and Pacific Basin contents into one unified eFOTG. This was done on a Section by Section basis, and is now complete. This is a critical component of full integration as part of the merger transition process. 38 ecological sciences conservation practices were revised and posted to the eFOTG. In addition, 15 specifications, 20 Jobsheets, 35 Statements of Work, one Worksheet, and three Example Jobsheets were developed and posted to the eFOTG for field use. Seven Technical Notes were developed by Resource Technology Team (RTT) discipline staff, along with 16 worksheets for field use.

## Practice Payment Schedules

The Resource Technology Team worked with engineering and PIA-West staff to develop cost-related data products used for the purpose of carrying out NRCS conservation planning activities and financial assistance program contracting and contract payment activities. Cost data was developed for 197 implementation alternatives on 66 conservation practices.

## Cultural Resources

A State Level Agreement with the State of Hawaii was negotiated for conservation assistance relative to cultural resources and Section 6 compliance under the NHPA. Training was provided to field staff on the new procedures. 116 cultural resources undertakings were reviewed, with 15 sites identified.

## Water Quality

A new version of the Phosphorus Runoff Risk Evaluator (PRRE v 2.0) was developed for the PIA. This update includes an expanded soil and climate data base, and user friendly input screens and will be released soon. An improvement to remove barriers for implementing nutrient management in American Samoa and PIA West was completed by revising the nutrient management standard and receiving a variance to the annual manure testing requirement for CNMPs. The new standard also allows the use of fertilizer recommendations from non-U.S. research institutions in cases where the U.S. Land Grant University does not have recommendations for a specific crop.

## Conservation Planning

The Planning Policy for the PIA with an amendment to GM 180, Part 409 was completely revised. This amendment sets the new PIA policy and criteria for Planner and Specialist certification and re-certification. It also includes a new section on establishing Job Approval Authorities for non-engineering practices.

## Quality Assurance

Emphasis was placed on quality assurance reviews of conservation plans and installed conservation practices. Approximately 100 conservation practices were reviewed between the technical staffs in the East and West Areas.

## Biology Assistance

The first phase of basin construction was completed at the Kawaihau WRP on Kauai. The basins were grubbed and graded to create ponds for endangered Hawaiian water birds. This site will be an important breeding site for several rare Hawaiian water birds. A rare species database was acquired for the Marianas Islands. The US Fish and Wildlife Service, in cooperation with NRCS, developed a GIS layer of rare plants and animals similar to the Hawaii Biodiversity Mapping Project database available for Hawaii. This new tool will allow better planning for wildlife practices in Guam and the CNMI, as well as better able us to comply with NEPA and Endangered Species Act requirements such as section 7. The GIS layer has species polygons for Guam, Rota, Tinian, Saipan, and Aguigan. A protocol is being developed to allow NRCS to collect data points and share them with the USFWS to keep the database current.

## National Resources Inventory (NRI) – Range Data Study on Big Island

A rangeland inventory was conducted at five locations in response to the on-going NRI. This is the first year that Hawaii participated in the NRI study, so no trends were determined. Inventory data was collected from August through October, all within the Waimea service area. The data is used to report to Congress trends in rangeland health and ownership changes, resource concerns, and conservation practice needs for Farm Bill funding plus general technical assistance.

## Hawaii Grazing Land Conservation Initiative Coalition

Several workshops and planning sessions have been conducted such as the Mealani Forage Field Day, Taste of the Hawaiian Range, Managing for Risk Seminars, and Grazing Management Workshops held on the Big Island, Maui and Kauai.

## Grazing Management Workshop Planning Sessions in Guam and CNMI

State Range Specialist and West NTSC representatives visited with producers and partners in Guam and CNMI. They learned much about the resource issues, current grazing strategies, and potential for change. They'll return in FY08 to offer grazing management workshops and pasture health walks to producers.

## Mazie Hirono Visits Hoolehua Plant Materials Center

On August 24th, staff on Molokai met with Congresswoman Mazie Hirono at the PMC. Since this was Representative Hirono's first visit to a PMC a quick overview, objectives and activities were highlighted with special interest focusing on the past NRCS/Kahoolawe Island Reserve Commission (KIRC) re-vegetation efforts. The visit concluded with a tour of the facility and poster presentation by PMC staff.

## Hoolehua Plant Materials Center Plant Release

The PMC and the College of Tropical Agriculture and Human Resources, University of Hawaii'i at Manoa, announce the release of a source identified ecotype of aweoweo *Chenopodium oahuense* [(Meyen) Aellen] for the Maui Nui group of Hawaiian Islands. The Maui Nui group is comprised of the islands of Kaho'olawe, Lana'i, Maui, and Moloka'i. Anticipated Conservation Use: The potential use of Makakupa'ia Germplasm 'Aweoweo include erosion control, ecosystem restoration, enhancing cultural sites, increasing plant diversity in native dryland communities and wildlife cover and food. It is an extremely hardy and drought tolerant native dryland shrub.

# Soils in the Pacific Islands Area

## Soil Survey

- ◆ Soil survey of the Big Island is 84% complete. About half of the island is scheduled to be SSURGO certified with the updated data. Information is available upon request.
- ◆ Mapping has been completed for the Kona, Kau and Hawaii Volcanoes National Park area.
- ◆ Mapping is currently occurring in Waiakea and North Kohala areas.
- ◆ Ecological site descriptions (ESD's) have been developed and assigned to all Big Island soil map units including both new update map units and the old soil map units.
- ◆ Assisted in creating a new information display table specially for conveying Hawaii ecological site information to soil survey users.
- ◆ Soil survey staff took the lead in maintaining 8 SCAN weather stations. Info is available to public and agency staff at <http://www.wcc.nrcs.usda.gov/scan/Hawaii/hawaii.html>
- ◆ The soil survey of Palau is being updated. Field work is complete and the database is to be completed this fiscal year.



*Soil Scientist Mike Kolman mapping soils on the Island of Hawaii.*

## Technical Soil Services

- ◆ PIA East staff provided WRP soil assistance for proposed projects on Kahoolawe and Molokai.
- ◆ PIA West staff sampled soils on Yap in the Federated States of Micronesia to investigate how changes in vegetation affect edaphic properties and on Majuro in the Republic of the Marshall Islands to look at the effects of management on soil fertility parameters.
- ◆ PIA West staff assisted the PIA Range Management Specialist and Range Scientists from the West Region Tech Center with soil properties related to grazing in CNMI and Guam.
- ◆ PIA East staff developed updated soils information for the Hanalei Valley on Kauai that is now being used in community watershed modeling efforts.



*Soil Scientist Amy Saunders advises students at the State Conservation Awareness Contest on Molokai.*

## Public Outreach

- ◆ PIA East and West staff provided information and training on soils-related issues to local government staff and agency partners in Hawaii, Guam, CNMI, the Republic of the Marshall Islands, and to resource management professionals from throughout the Pacific at the USFS “Land Degradation” training in Hilo, HI.
- ◆ PIA East staff supported youth education through serving as judges at the Hawaii State Science Fair and at the Hawaii State Conservation Awareness Contest.



*Resource Soil Scientist Bob Gavenda samples soils on Majuro, RMI.*

# Watershed Operations Program

*Lower Hamakua Ditch*



The Natural Resources Conservation Service (NRCS) uses the Watershed Program, authorized by the Watershed Protection and Flood Prevention Act (Public Law 83-566), to help Pacific Island communities address agricultural water management and flooding issues. No Appropriated Funds were available for this program in 2007.

*Paauiilo Reservoir*



**Lower Hamakua Ditch Watershed:** This project provides agricultural water supply to farmers and ranchers in the northern Hamakua area of the Big Island through repair and restoration of the sugar-era Lower Hamakua Ditch. Completed improvements include: water tunnel repair and Hakalaoa Falls restoration, repair of 33 flume structures, two historic flume reproductions, repair and construction of major reservoirs, construction of lateral systems, and repair of intakes. Ongoing and future improvements include: improvements to lateral systems, implementation of a monitoring and control system, ditch lining repairs, and land treatment assistance to individual producers. The October 15, 2006 earthquake damaged portions of the Lower Hamakua Ditch. \$4.5 million was provided through the **Emergency Watershed Protection** program to repair earthquake damage to the Lower Hamakua Ditch and Waimea Irrigation System.

*New Wooden Flume*



**Upcountry Maui Watershed:** This project will provide agricultural water to farmers in the Upper Kula area of Maui, through installation of an agricultural water system which bypasses the County water treatment facility. Completed improvements include: three phases of main distribution pipeline from Olinda Water Treatment Plant to Pulehuiki, Kimo Road Lateral, and ongoing installation of Pulehuiki Lateral. Ongoing and future improvements include continuation of the main distribution to Keokea and additional lateral systems to farming communities. In fiscal year 2007 NRCS Hawaii provided \$500,000 in construction funds towards this project.

*Upcountry Maui Pipeline*



**Lahaina Watershed:** This project will provide flood protection to residential and commercial areas in the southern portion of Lahaina town on the Island of Maui. A diversion waterway between Lahainaluna Road and Kauaula stream and a system of sediment basins provide both flood protection and coastal water quality improvement. The contract for the first phase of construction, including the second ocean outlet, highway culvert, sediment basin, and diversion waterway, was executed in June 2005 and is awaiting land acquisition. Future improvements include: diversion waterway with a culvert for the Kauaula subdivision road, debris basin/control structure on Kauaula Stream, and the waterway/sediment basin system extending to Lahainaluna Road.

*Kagman*



**Wailuku-Alenaio Watershed:** This project, which was authorized in 1976, has installed improvements to provide flood protection to homes and properties in the upper Kaumana and Ainako areas of Hilo, Hawaii. Currently, NRCS is revising the watershed plan to account for development changes in the area during the past 30 years. The present revision includes an alternative to control the floodwater that threatens 40 properties along Kaumana Drive, between Wilder Road and Chong's Road. A Supplemental Watershed Plan EA/EIS will be prepared followed by design and construction of the Kaumana Drive improvements.

**Kagman Watershed:** This project provides agricultural water supply and flood protection to farms on the Kagman peninsula in Saipan, CNMI. On February 27, 2007 a final inspection and turnover event was held on Saipan to formally mark the completion of the construction of the major waterway structures. This phase consisted of several large multi-cell reinforced concrete box culverts and flood control channels. The centerpiece of the project is a large reinforced concrete rectangular water control structure with weir wall and manually operated stainless steel slide gate. This phase was federally contracted at \$1.05 million.

# Watershed Planning Program

The Watershed Surveys and Planning Program has been used in the Pacific Islands to assess and evaluate natural resource problems and opportunities. Many of the planning projects move into implementation with the preparation of a Watershed Plan and EA or EIS. For Fiscal Year 2008, the PIA East received \$197,000 for Watershed Planning projects in Lower Kula and South Kona. PIA West received \$110,000 for Garapan Watershed.

**Lower Kula Watershed:** This planning project will analyze agricultural water need and water supply system alternatives for the future formulation of a Watershed Plan for the Lower Kula area of Maui. Sponsors for this project are the State of Hawaii Department of Agriculture, Maui Department of Water Supply, and the Olinda-Kula and Central Maui Soil and Water Conservation Districts. The Lower Kula Watershed is being planned by R. M. Towill Corporation with direction from NRCS and Hawaii Department of Agriculture. Special funding through the Army Corps of Engineers is available for the Lower Kula Watershed.

**South Kona Watershed:** This planning project will result in a Watershed Plan and Final Environmental Impact Statement to implement an irrigation water supply and distribution system in the Honomalino area of the Big Island. An alternative being evaluated includes three wells and an agricultural water distribution system. Sponsors are the State of Hawaii Department of Agriculture, Kona Soil and Water Conservation District, and the Honomalino Irrigation Cooperative. Planning is being conducted under contract by Belt Collins Hawaii with direction by NRCS and the Hawaii Department of Agriculture. A Watershed Plan/EIS is expected to be completed in 2008.

**Sasa Atantano Watershed:** NRCS entered into a federal interagency service agreement in October 2005 with the U.S. Navy to prepare a resource assessment for the Sasa and Atantano watersheds which drain to Apra Harbor in Guam. The Resource Assessment included physical and biological resources, sediment yield from various sources, sediment transport and deposition in the watershed and Apra Harbor, and proposals for specific conservation practices to reduce erosion and sedimentation. The draft Resource Assessment report was transmitted to the Navy in September 2007.

**Northern Guam Watershed.** This planning project reviewed and updated alternatives to improve agricultural water supply to farmers in the Tract 1021 area in Northern Guam. The report also included updated information about landuse and development trends in Northern Guam, the Guam Waterworks Authority water system improvement plans, and water quality and sustainable yield of the Northern Guam aquifer. The report can be used as a basis for future development of a Plan and EIS. The draft Northern Guam Watershed report was completed in October 2007 and presented to the Northern Guam SWCD for review.

**Rapid Watershed Assessments:** NRCS undertook an effort in 2006 to provide \$100,000 through six Rapid Watershed Assessments (RWAs) in the Pacific Islands Area. The RWAs will provide an overview of existing resource conditions and conservation efforts in the watershed, as well as quantitative estimates of the size, scope and value of future conservation needs. Watershed program staff, are working with District Conservationists, Farm Bill program leaders, and resource specialists to reflect local concerns for each of four watersheds in Hawaii (Hilo Bay, Honolua Bay, Maunaloa Bay and Waianae Coast), the Ugum Watershed in Guam, and the Ngerdorch Watershed in the Republic of Palau.

## Manoa Watershed



This project will formulate a Watershed Plan, complete a Final Environmental Impact Statement, and implement measures to provide flood damage protection to homes, businesses, and public facilities in the central part of Manoa Valley, including the University of Hawaii at Manoa.

Potential flood damage reduction measures that will be evaluated include: flood water detention, channel modification, bridge modification, stream debris control, and flood-proofing of structures on the floodplain.

The sponsors of the project are the State of Hawaii DLNR and the City and County of Honolulu. The project also includes significant participation by the U.S. Army Corps of Engineers. The prime planning contractor is Oceanit Hawaii.

*USDA is an equal opportunity employer and provider.*



The Natural Resources Conservation Service partners with Conservation Districts and others to provide technical and some cost-share assistance to private landowners. Our main goal is to protect, enhance, and preserve our soil, water, air, plants, and animals using sound science and expertise. Participation in our programs is voluntary.

The approval of the reorganization of the Hawaii and the Pacific Basin Area operations into the new PACIFIC ISLANDS AREA, was signed January 6, 2006. Our area of coverage includes:

### Pacific Islands Area

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Helping People Help the Land.

#### East Area:

- State of Hawaii
- Territory of American Samoa

#### West Area:

- Territory of Guam
- Commonwealth of the Northern Mariana Islands
- Federated States of Micronesia
- Republic of Palau
- Republic of the Marshall Islands

## Guam Emergency Watershed Protection

Two significant Emergency Watershed Protection Projects were completed on the island of Guam in Fiscal Year 2007. Both sites were landslide control; slope reconstruction projects that would protect six homes from imminent damage from further landslides. These landslides were as a result of devastating typhoons that pummeled the island with violent winds and extremely heavy rainfall. Typhoons are expected to pass directly over Guam once every eight years.

These landslide remediation projects were unusually complex, and help was solicited from the NRCS National Design, Construction and Soil Mechanics Center in Ft. Worth Texas. Geotechnical properties of each site were examined carefully prior to proceeding with the design process and eventually construction. The depth of unstable soil, proximity of subsurface water, and a method to counteract forces created by placement of a suitable backfill material were all considerations that added to the complexity of these projects.

At both sites, gabion walls (rock filled pvc coated wire baskets) were installed to add a sturdy foundation. Both projects called for slide-prone clays and silts to be excavated and hauled off site, to be replaced with crushed coral backfill. These projects took nine months to complete; and being federal contracts, required a NRCS representative on site at all times.

## Nimitz Hill Emergency Watershed Protection



Before



During



After