

# Resource Kona

RESOURCE KONA

Summer 2015

KONA SOIL AND WATER CONSERVATION DISTRICT

## ***NRCS Supports Agroforestry***

***Laura Nelson, NRCS Soil Conservationist***

Traditional agriculture in the Pacific Islands, which goes back thousands of years, is a complex mixture of trees, crops and animals that are integrated in ways that are mutually beneficial. These “agroforestry systems” differ from conventional monoculture systems in that they are diverse, with many different species growing in close proximity. Agroforestry systems focus on subsistence instead of maximizing profits from a single crop, provide numerous environmental benefits, require fewer inputs, and result in highly diverse production.

Indigenous peoples of the Pacific commonly grow home gardens that contain a mixture of trees and annual crops such as coconut, breadfruit, mango, soursop, starfruit, taro, yams, etc., along with native trees and shrubs that conserve native habitat. The NRCS typically does not provide financial assistance for planting production trees or orchards because of the concern that they are for commercial purposes (and therefore a business expense), rather than addressing resource concerns. In order to support and encourage the continuation of this traditional agriculture, specialists from the NRCS here in the Pacific Islands Area (PIA) developed an agroforestry design that would: provide technically sound forest management specifications; be eligible for financial assistance through NRCS programs, and; could include a limited component of production tree and shrub species for the intent of subsistence use by our cooperators. The result is what we refer to as PIA Forestry/Agroforestry Technical Note 11: Mixed Agroforestry Specification.

A forest home garden in Kona, Yap or American Samoa is a relatively unknown concept when compared to NRCS mainland forest management technology and policy, so Tech Note 11 reads (continued on page 4)



*A mixed agroforest home garden in Kona: coconut, banana and avocado growing with mamaki and koa.*

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### ***Special points of interest:***

- Kona SWCD meetings take place the second Tuesday of the month from 8am-10am and you are invited.
- Would you like a site visit to your farm for GPS and photo documentation purposes, call 322-2484 x100 to set up an appointment.

## ***Forest Restoration, What Does It Take?***



These photos show a restored forest in South Kona. The first step for these landowners was remove the Christmas Berry, next remove the Strawberry guava, then start planting the native species.

So you want to turn your land into a beautiful forest? What is your first step? What do you currently have for forest plants, what do you need, when should you plant whatever it is you need to plant? How much will this cost, how long will it take?

These are all very real questions for folks wanting to restore forest land and the answer to all the questions is "it depends". Big help, huh?

Well, the first thing to do if you have decided to restore a forest is to take an inventory of what you have. What type of forest are you trying to restore, native, yes, but what type of native forest? Rainforest, dryland forest, or maybe something in between? The vegetation your restored forest will need is dependent on its ecology. Does it get a lot of rain or is it mostly dry? With eleven climate zones in Kona it can be very confusing.

The government, both state and federal, have programs that provide technical and financial assistance. The state has the Forest Stewardship Program and the federal government can help through the USDA's Natural Resource Conservation Service (NRCS) and its Environmental Quality Incentives Program (EQIP). Your local soil and water conservation district can also help with technical assistance and direct you toward a program that is likely to help you, but regrettably we do not have the financial resources to provide monetary assistance.

In starting your inventory you need to determine how many acres of forest you want to restore. A word of caution here, restoring a forest is very rewarding but a lot of hard work is required so give the area you want to work in a lot of thought. How large is it? What is the terrain? What is the soil like? Do you even have soil? What is there now for vegetation? What about cultural resources? Do your best to not bite off more than you chew. If this is your first attempt at forest restoration, start small even as little as half an acre. Your goal is attainable with time and consistent effort.

This is a multi-year project you are undertaking so try not to get frustrated at the challenges you will face. Breathe deep, call the NRCS office or your SWCD office for encouragement and direction because what you are doing is an awesome thing and a benefit to the entire community.

## State Historic Preservation Office Role in Conservation Planning

The State Historic Preservation Office (SHPO), which is under the Department of Land and Natural Resources (DLNR) and its State Historic Preservation Division (SHPD), plays an important, though challenging, role in natural resource conservation and conservation planning.

If you would like to clear (grub) your land for any purpose you generally need a permit, or a conservation plan approved by your local soil and water conservation district (SWCD) board. To obtain either a permit or an approved conservation plan you need to have a clearance letter from SHPO stating the work to be done will not harm any significant cultural artifacts. If you are attempting to obtain this letter for the purpose of a conservation plan approval your SWCD staff can assist you.

Generally, the process starts with a site visit by an SWCD staff member. Photos and GPS work will likely be done. From that information a Request for Review is submitted to the Intake Staff at SHPO. They in turn assign it to the Reviewer for your area. The Reviewer then works with the SWCD staff and landowner to schedule a site visit so that the Reviewer can determine if an archeological survey is required prior to issuing a clearance letter.

After the site visit the Reviewer will send out a letter stating that either: the project will not impact cultural resources and the planning and approval process can move forward or, prior to making a determination, SHPO could require an archeological survey be completed and a report sent into SHPO for review. This is when it can become problematic. The Kona SWCD staff generally advises, for budget purposes, that this survey will cost approximately \$2000/acre, so it is be a good idea to obtain a couple of bids. SHPO maintains a list of qualified archeologists for anyone to review. It can be found at <http://dlnr.hawaii.gov/shpd/files/2015/07/2015-Permittee-List-6.pdf>

The law that governs this process is HRS Ch. 6E and considers anything over 50 years old a potentially significant cultural resource. Even those piles of rocks on your land could be considered a cultural resource, significant enough to require an archeological survey. The rock piles were generally created when someone was trying to plant a crop, they came upon rocks in the soil and moved them out of the way. Now they are cultural resources and the state wants to know where these are. Once they are documented as existing the landowner can many times destroy them. There are times when you cannot destroy a cultural resource and it must be preserved. If this is the case you will be required to have a mitigation plan developed by your archeologist, at your (cont. on page 8)



These three photos show historic artifacts, such as the piles of rocks.

When land was cleared for sugar cane in Kona back in the 1920s the rocks that were cleared were frequently simply piled up, as shown in the photos to the left. These are now referred to "agricultural rock piles".

The top right photo shows the remains of a rock structure. It could have been part of a house, or may be a storage facility. These are the types of features that data is collected on.

If the historic artifacts found on your land are considered significant you and your archeologist will have to develop a mitigation plan, submit it to SHPO for their approval. This part of the process can be more costly and time consuming than the survey.

## ***NRCS Supports Agroforestry (cont. from page 1)***

a bit complex. Although the constraints of the specification at first seem to limit the possibilities, there is actually a lot of room for creativity within them. For example, the maximum size of a Mixed Agroforestry unit is 4 acres, and there is a maximum quantity of any specific production trees species allowed, whether the unit is 1 acre or 4 acres. There also has to be a mixture of tall and short species, and the species have to be well-mixed throughout the unit. The total stem count of production trees or shrubs can't be more than 50%. The rest can be either native trees or shrubs, or introduced timber trees such as mahogany or pheasant wood.

Whether you're interested in establishing a shade canopy over your coffee or cacao field, or creating a subsistence forest home garden with many different types of tropical fruit trees, NRCS can help design an agroforest that addresses some of the common resource concerns/problems we face here in PIA, potentially even providing native wildlife or pollinator habitat benefits, through the Environmental Quality Incentives Program (EQIP). We look forward to exploring the possibilities with you.

For a wealth of information on agroforestry in the Pacific, go to <http://www.nrcs.usda.gov/wps/portal/nrcs/main/pia/technical/landuse/forestry/> and <http://www.agroforestry.net/>

For more information on the EQIP program, contact NRCS Soil Conservationist Laura Nelson at 322-2484x105.

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## ***Sign-ups for EQIP 2016 Funding is in Process***

Producers who are interested in applying for Environmental Quality Incentive Program (EQIP) should be making calls to their local Soil and Water Conservation District (SWCD) or Natural Resource Conservation Service (NRCS) office.

NRCS accepts applications year round and has internal "Ranking Deadlines." Any application received prior to a ranking deadline will be addressed. The producer completing the application will have to complete additional eligibility paperwork with the NRCS staff prior to a conservation plan being developed for them. This paperwork generally means completing and signing some federal forms, for instance the Adjusted Gross Income Certification. If your annual income is greater than \$900,000 and some of that is income from a source other than agriculture you are not eligible. NRCS will provide you with the forms and sit with you to ensure they are completed correctly.

The first ranking period deadline to apply for federal funds allocated for fiscal year 2016 (which start October 1<sup>st</sup>) is October 16th. If you are interested in applying for the program or want to learn more about it and how your land can benefit, contact your local NRCS or Soil and Water Conservation District office.

<p><b><i>Waimea Field Office and home of the Mauna Kea SWCD</i></b></p> <p><b><i>District Conservationist:</i></b> Matt Wung, 885-6602 ext. 106</p> <p><b><i>SWCD Staff:</i></b> Hannah Conley, 885-6602 ext. 100</p>	<p><b><i>Hilo Field Office and home of the Puna, Waiakea, Kau and Hamakua SWCDs</i></b></p> <p><b><i>District Conservationist:</i></b> Kori Hisashima, 933-8359</p> <p><b><i>SWCD Admin Assistant:</i></b> Jennifer Reavis, 933-8350</p>	<p><b><i>Kealahou Field Office and home of the Kona SWCD</i></b></p> <p><b><i>District Conservationist:</i></b> Jessica Schmelz, 322-2484 ext. 109</p> <p><b><i>SWCD Staff:</i></b> Mary Robblee 322-2484 ext. 100</p>
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***Kona SWCD sponsoring a Free Soil Health Workshop***

The staff at the USDA’s Kealahou Field Office is putting together a soil workshop to educate farmers on the importance of soil health. You will learn about the characteristics of healthy soil and how to create healthier soil.

The workshop is being held on November 3rd at the CTAHR Extension Services office in Kainaliu and starts at 9am to noon

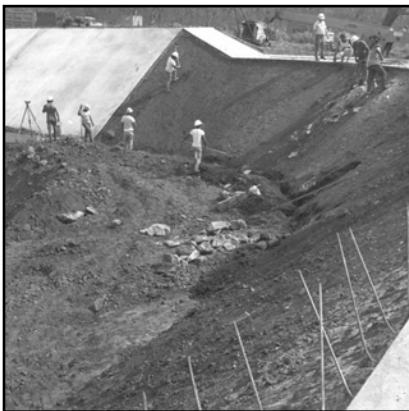
One of the important topics that will be discussed is the need for healthy and abundant microbes in soil and the importance of keeping soil covered with vegetation. Here in Kona, because our soils are organic in nature it is very important that they not be exposed to the atmosphere or they will begin to break down. The vegetation makes soil unavailable to rains and the atmosphere.

We will need to have a fairly accurate head count, to ensure we don’t exceed the seating capacity of the facility and to determine whether a second workshop will be required.

To register for the workshop please contact Mary Robblee, Conservation Assistant for the Kona SWCD. She can be reached at 322-2484 ext. 100.

***History’s Corner***

During the late 1960s and early 1970s a series of flood control structures were built in North and South Kona. In South Kona there was a diversion built at the Sunset Mill Coffee Cooperative. Just before you reach the coffee cooperative on Napoopoo Rd the road becomes an overpass which passes over the flood control structure. For many years the coffee cooperative was getting flooded out and suffered a great deal of damage. Other flood control structures include a series of swales and diversions into lava tubes above Kainaliu.



In Kailua Kona the sediment basin behind the Hualalai Regency was constructed in 1972. The photos on the left show the construction in progress. It was designed to take flow from the Keopu/Hienaloli water-courses. Along with this sediment basin another was constructed at the end of Hiona St. The two of them work together to hold excessive rainfall and prevent flooding of the St. Michael’s Church area.

It is not a case of these two structures failing that caused the heavy street flooding in Kailua Kona during our significant rain events. Each structure was built to accommodate a 25 year storm. A 25 year storm in Kailua Kona would likely produce 6 inches of rain in a 24 hour period.



The panoramic photo below was taken during the Kona SWCD’s annual Flood Control Structure Tour and shows the sediment basin behind the Hualalai Regency as it appeared in 2014. The runoff from this structure flows directly to the ocean at Hale Halawai on Ali’i Drive.



### Soil Facts

Reviewed by Mike Kolman, MLRA Soil Survey Leader, USDA, NRCS Kealahou, Hawaii

Soils in Kona are geologically very young. The implication of that is shallow soils and poorly developed waterways. It takes about 100 years to build an inch of soil. Here, with the use of mulch, we can shorten the length of time to build soil considerably. We cannot generally hasten the development of waterways.

In the past couple of months North and South Kona have been inundated with rain. One Holualoa farmer, who maintains rainfall records, reported 20" of rain fell on his farm in August. In September, as of the 18th, he had received 23" of rain.

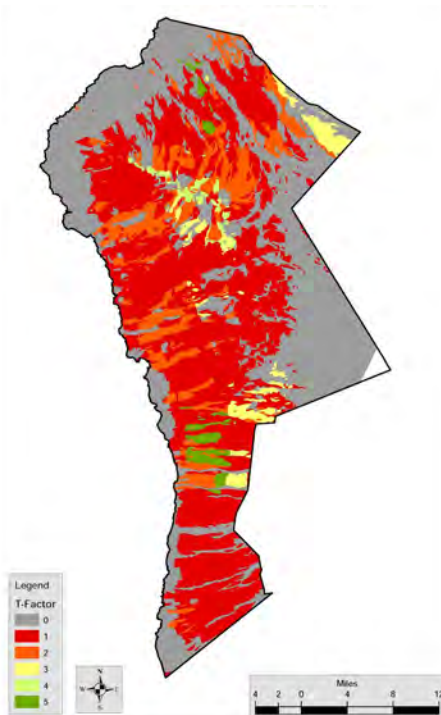
Because our waterways are so young they are not very deep and do not have a lot of carrying capacity. The amount of rain we received in August and September easily exceeded that carrying capacity. When that happens the flow of water "jumps" the stream and could very well create a new little, poorly developed stream bed which could carry the water to an already existing stream bed causing a heavier than expected flow.

The depth of the soil will have a lot do with the "T-Factor" of the soil. A soils T-Factor is a unit of measure in tons/acre/year that will tell you how much soil you can loose through erosion without having an impact on agricultural production. For much of the grain belt in our country, Iowa, Nebraska, Kansas, etc., the T-factor of the soils is generally 4 or 5. Many of those farmers can loose 4-5 tons of soil in a year with no impact on agricultural production. For most of Kona, the T-Factor is 1. There is no T-Factor rating of zero. In short, Kona cannot afford to lose any soil in its agricultural lands. We have so little to start with.

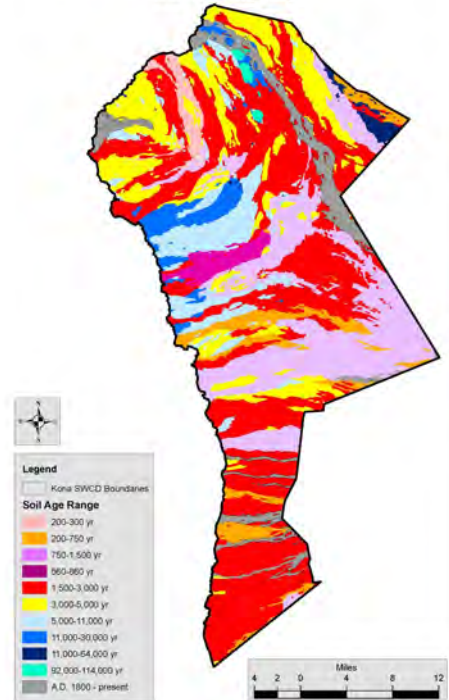
The maps on the right show the distribution of T-Factors and the geologic age of our lands.

We are indeed a young landscape with little, if any, very thin soils.

Kona SWCD Soils' T-Factor Map



Kona SWCD Soil Age Range Map





For more information, or to apply for any USDA Farm Service Agency program, please call your local USDA Service Center. NOTE: Fees, eligibility requirements, income and payment limitations may apply with any of the programs listed below. Please check with the nearest FSA office for specific rules. The FSA office in Hilo can be reached at 933-8381 ext 1.

**FSA Youth Loans**

Farm Service Agency (FSA) makes loans to youth to establish and operate agricultural income-producing projects in connection with 4-H clubs, FFA and other agricultural groups. Projects must be planned and operated with the help of the organization advisor, produce sufficient income to repay the loan and provide the youth with practical business and educational experience. The maximum loan amount is \$5,000.

**NAP Sign-Up Deadline**

December 1, 2015 is the deadline to apply for 2016 Non-Insured Crop Disaster Assistance Program and Buy-Up for fruit and vegetables.

**Deadline for Reimbursement of Transportation Costs Payment Program**

November 2, 2015 is the deadline to submit to the Farm Service Agency County Office documentation for the Reimbursement of Transportation Costs Payment Program.

**Micro-Loans**

The Farm Service Agency (FSA) developed the Microloan (ML) program to better serve the unique financial operating needs of beginning, niche and the smallest of family farm operations by modifying its Operating Loan (OL) application, eligibility and security requirements. The maximum loan amount is \$35,000. Contact Linda Kow at 933-8343 for more information

Interest Rates for September 2015	
Microloans	2.625 %
Farm Operating Loans	2.625 %
Farm Ownership Loans	4.00 %
Farm Ownership Loans Direct Down Payment, Beginning Farmer or Rancher	1.50 %
Emergency Loans	3.625 %

**Flood Damage?**

Did you suffer damage from the torrential rainfalls during August or September? Contact Lester Ueda. If there is something the USDA can do to help you the help will come through Lester. Ask him about the Emergency Conservation Plan (ECP).

81-948 Waena'Oihana Loop  
Kealakekua, HI 96750  
322-2484 ext. 100  
Fax: 322-3735

Board of Directors:  
Chairman: Greg Hendrickson  
Vice Chairman: Jeff Knowles  
Treasurer: Vacant  
Secretary: Keith Unger  
Director: Rick Robinson

Staff: Mary Robblee, Conservation Assistant  
Monthly meetings are held on the 2nd Tuesday of the month from 8am-10am at the USDA Kealakekua Service Center below the post office. All are welcome and the facility is ADA accessible.

Organization: The Kona Soil and Water Conservation District (KSWCD) is a government subdivision of the State of Hawaii organized under Hawaii State Law, HRS Chapter 180

Function: To utilize available technical, financial and educational resources to focus or coordinate them so that they meet the needs of the local land users with regards to conservation of soil, water, and natural resources.

Service: The District serves the communities and land users within North and South Kona

Why: The District is committed to the promotion of wise land use and resource stewardship.

We are on the web at  
[www.kswcd.org](http://www.kswcd.org)

### ***State Historic Preservation Office (cont. from page 3)***

expense, and approved by SHPO. It is not uncommon for SHPO to want additional information from the archeologists prior to approval and again at the landowners expense. Generally, the law requires individual landowners collect data the state wants prior to doing anything on their land.

Currently real estate agents/brokers are not required to disclose that this survey will likely be required prior to a buyer doing anything with their newly acquired land so beware, if you buy land and want to do something with it you are likely going to have additional expenses you may not have known about.

### ***Why You Should Have Conservation Cover in Place***

Every one agrees, we have had a lot of rain in the past few weeks. Honaunau reports a record breaking 10 plus inches for just the month of August. A Holualoa farmer reported 20" of rain in August.

Conservation cover, a permanent vegetative cover, can go a long way toward protecting your farm during these rain events. The root systems of the vegetation on your land not only provide for the plants uptake of water and nutrients, the root systems also hold soil in place. Without something to hold your soil in place your farm could be damaged significantly. Like the farmer who has to deal with this...



...Because of a lack of vegetation this farm has seen extreme soil loss over the past few weeks. This farmer really needs conservation cover.

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