Resource Kona

RESOURCE KONA **Spring 2016**

KONA SOIL AND WATER CONSERVATION DISTRICT

Does fencing help prevent soil erosion losses? Absolutely!

During the flash flood events of August and September 2015 many farms experienced extensive soil erosion. For a lot of them it was because a watercourse runs through their land or because they do not have conservation cover throughout their orchards. For many the conservation cover they do have is constantly disturbed by feral pigs leaving the soil it is supposed to hold in place available for erosion.

Some farms had limited soil erosion because of fencing. Fencing keeps the feral pigs from gaining access to the land. In the photo below you will see a farm with beautiful conservation--cover except for in front of the gate where the pigs had access. Feral pigs root around in the soil looking for worms, grubs and other insects destroying conservation cover.

During the flash floods the soil protected with both conservation cover and a fence were virtually free from erosion. The area affected by soil loss, however, is approximately 10'x12' with 4 inches of soil, approximately 1.5 cubic yards, disappeared!

We determined that 1.2 acres of this land had had been damaged by water that flowed over it during the flash floods. If the entire 1.2 acres had been available to feral pigs, more than 600 cubic yards of soil would have been lost exceeding soil loss tolerances for many years to come. Fortunately the fence prevented this from happening.

many cubic yards of soil have been lost due to flash flooding, which has been particularly difficult for land owners trying to improve the health of their soil. Pigs like healthy soil too! Our hearts go out to those folks be-

The photo to the right shows land, and its soil, protected by fencing and some not protected. During the flash floods August/September 2015 flash floods this farm had a sheet flow that came across the area seen here with conservation cover and through the fence to the area in front of the fence. Without conservation cover, the area pigs had access to, there were soil losses, 1.5 cubic yards disappeared!

Inside this issue:

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.

Forestry Tips from the Dryland Forest Symposium

The annual Dryland Forest Symposium met recently, featuring superb tips regarding reforestation efforts. For those who could not attend here are some of the advise they provided.

- Reforestation work is a long process and a lot of hard physical work. Develop objectives and strategies to produce a framework for your restoration efforts. Example: your goal is remove invasive species and plant natives. Do you remove all invasives at once? A bulldozer and other heavy equipment can help--but then what? This strategy could work as a short term solution but is not a good long term solution. Too many new weeds can take root and the weeds you removed could become re-established. A better strategy might be to remove one species of invasive plants in one area then remove another species from the same area. When enough sunlight is available you plant your keiki trees, possibly putting surrounding them with cardboard to prevent new weeds. Next, move onto another area of your land and follow that same procedure.
- Weedy grasses can be naturally eliminated by getting an over-story developed. Shaded grasses generally do not do well.
- Using existing non-native species can sometimes help establish natives. If you remove all the non-natives at once the site might receive too much sun and prevent the soil from retaining moisture--making it difficult for new plantings to survive. Also, our soils are organic in nature and will begin volatizing (breaking down) as soon as they are exposed to the atmosphere.
- Fences are critical for success but post-fencing management is even more important! What is the strategy once the fence is installed? Putting up a fence and walking away is not effective. Successful projects require a plan for post fencing Once the fence is installed, you remove feral ungulates (wild pigs and cattle) then start removing invasive species and planting the natives suitable for your forest. For best results, multiple treatments may be necessary to prevent regrowth of the undesirable plant.
- Taking an “all or nothing” approach will not work well and cost a lot of money. You can remove all the invasives with heavy equipment or do nothing or develop a plan that bites off one small piece of the problem at a time. The most successful plan involves weighing out several alternatives.
- Reforestation plans are not cast in concrete. Too many variables on the land, with the people doing the work, with the weather, with financial resources to implement the plan, can all affect the implementation of a plan. Maybe trees that were supposed to be available for planting at a certain time are delayed. An area is prepared for them but they aren’t ready. What do you do? You don’t want the prep work to be wasted by allowing vegetation to become reestablished so maybe the plan will call for sheet mulch (cardboard on the ground) for the additional and unexpected time it may take to receive the trees.
- When developing a reforestation plan ask yourself “What if?” and focus on developing solutions. What if we enter a drought? What if there is fire nearby that threatens the work being done? What if there are flash floods? What if you can’t obtain the plant material you want?
- The Soil and Water Conservation Districts around the island, along with the USDA’s Natural Resource Conservation Service (NRCS), can help answer those questions and enable you to develop a reforestation plan. We can also introduce you to land owners who were successful executing reforestation projects and they can share tips from their experiences. Why not learn from others? There really is no reason to re-invent the wheel.

9th Annual Kona Coffee Expo

The Kona SWCD is proud to say we have been a vendor at all 9 Coffee Expos. This year's Expo was as exciting as the first. We were able to meet with lots of local coffee growers and other agricultural producers who were eager to learn more.

The Kona SWCD has always had information that would benefit all producers and this year was no different. We provided a folder of soil health information with information on soil pH and the importance of keeping your soil covered with mulch, or preferably, with vegetation, If getting a grass cover established in your orchards is challenging you can ***Embrace the Weed!*** Grassy weeds are not the worst thing for a coffee farm, but bare soil can be.

If you were not able to attend and would like a copy of our soil health folder give us a call. We will be happy to provide you with one. Below are photos of the event with more photos on next page .

To the left, the Kona SWCD table. Seated on the left is Carl Rossetti, he stopped by to say hello, and on the right is NRCS Soil Scientist Jacky Vega, the Kona SWCD's Technical Expert. Standing is Mary Robblee, she is on the Kona SWCD Staff.

Below left is Andrea Kawabata from the UH Extension Services Office in Kainaliu. If you have natural resource concerns contact the Kona SWCD or NRCS. If you have specific crop questions you contact Andrea. We are all happy to help because we know a strong agricultural community and economy directly relate to our quality of life here in West Hawaii.

Below center are NRCS staff members from left to right, Carl Rossetti, Bernard Vermeulen, Jacky Vega and Laura Nelson

Below right is the Master Gardner vendor table. They were busy all day answer questions pertaining to what to grow, and how to get rid of _____ (go ahead, you fill in the blank).

Other vendors attending were fertilizer companies like Nutriplant Hawaii (far left) and other government agencies, (near left) like the USDA's Agricultural Research Service (ARS), just to name a few.

If you weren't able to attend this year check out the event next year. For the Kona SWCD It has always been a pleasure attending this event.

Kona Coffee Expo, Where People Go for Info

Upon entering the Kona Coffee Expo you could see lots of vendors.

And as you wandered around talking to the vendors you saw lots of farmers wanting to find solutions to their challenges.

One of the vendors, Farm Works, is a business that will help with business plans, planting plans and recommendations, land use recommendations, your land could be better suited for livestock than crop.

There were also real estate professionals to help you find the best piece of land you can farm. It is hoped they would also tell you about needing State Historic Preservation Office (SHPO) requirement around preserving cultural resources. Preserving or recording the data pertaining to cultural resources is an important issue.

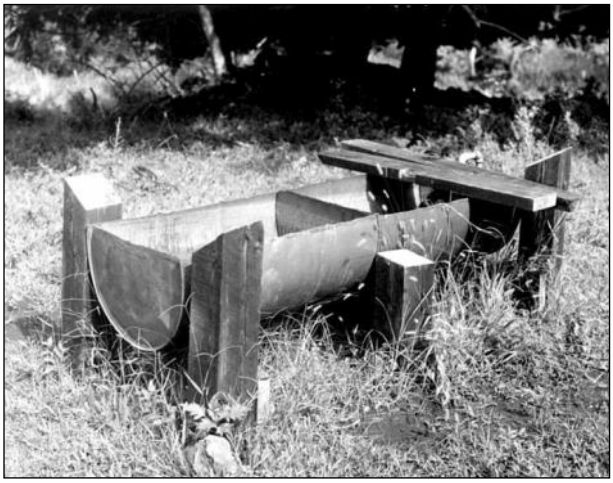
Fencing prevents soil erosion (cont. from page 1)

cause without their hard work community wide soil losses would be even greater.

So, does fencing prevent soil erosion? Absolutely, when fencing is used as part of a conservation system that promotes soil health and erosion control our soil losses can be reduced significantly. The immediate benefit of this conservation system when we have heavy intense rains is of course the land owner. The other beneficiaries of reducing soil erosion are the makai neighbors (less sediment to deal with and lower clean up costs), the county road crews (less debris in the roads), the ocean (reduced non-point source pollutants and less turbidity) the reefs (they do not get blanketed with a layer of sediment), even the county, state and federal budgets will benefit from using fencing as part of a conservation system to prevent soil erosion.

History's Corner

Ranching history in Hawaii goes back to the 1800s. There have been many changes to the land and to ranching and the cattle industry over those years. Some of the historic ranching names include, of course, Parker Ranch established in the mid 1800's, and Huehue Ranch established in 1886, and in 1893, Puuwa`awa`a Ranch. Wall Ranch and Mahealani Ranch were also developed in the 1800s.



Some things about ranching that will never change, animals will always need water. The photo to the left shows one ingenious way to provide stockwater, take a 55 gallon drum, cut it in half and weld it together end to end to make a 110 gallon water trough. (The date of this photo is 10/10/70)

The photo to the right is a 10,000 gallon redwood tank with a rain shed structure. Most storage tanks today are fabricated out of steel. (The date of the photo is 9/26/57)

In the photo to the left, paniolo are working over wild cattle. Bulls are separated from the cows and the cows will be spayed, ear-marked and turned out again to raise their calves. Some later round-up will bring these cows out for fattening for market. The bulls of the round-up went Makai to the fattening pad. (The date of this photo graph is 8/30/1956)

Soil Facts, Why Fencing is Critical in Preventing Soil Erosion

Kona Soils are very young with most of our landscape being less than 5,000 years old. Because they are so young they are very thin, it takes time to build soil. Ten inches of soil is deep soil for a lot of our farmers. Our landscapes are regularly being covered with lava and the soil formation process starts anew. Kona International Airport is on a landscape that is less than 200 years old, and there is little soil on it. So, where we do have soil it is generally very young and very thin.

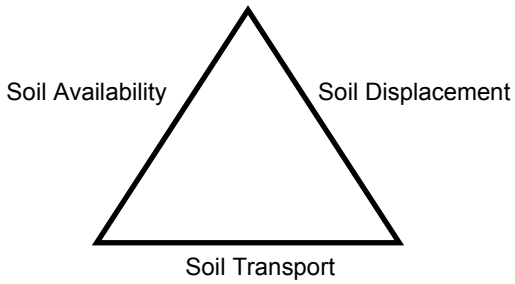
Aside from the young age of our soils, our soils sit on rather steep slopes generally ranging from 10-20%. If there are no roots in the soil to hold it in place, it is easily washed away with our tropical downpours. Another factor having to do with soils and their vulnerability to erosion is called a soil's "T-Factor" or Tolerance Factor. It is the amount of soil land can loose through erosion without a detrimental affect on agricultural production.

The T-Factor of many of our soils is 1. That means they can afford to loose 1 ton of soil per year per acre without impacting crop production. A T-Factor of 1 generally means you really cannot afford to lose any soil. We have land that is so young with so little soil that it doesn't even merit a T-Factor. One example is the lava field at the airport.

Even the best most conscientious land stewards are suffering from extreme soil losses because of feral swine and the only way to keep the feral swine off of your land is with access control and the best access control is a fence. Fencing is very expensive to purchase and install. There are a variety of reasons the cost is high, getting the material to the island increases costs. Thin, shallow soil means fence posts are generally installed after a rock drill has created the hole, post hole diggers do not work here. Our slopes can increase the cost of fencing because it makes the installation more difficult therefore more costly.

The Natural Resource Conservation Service (NRCS) does have some scenarios where a fence can be part of the conservation plan, but it requires the land owner create wildlife habitat for a particular species, or create pollinator habitat, or create an agroforestry situation with a variety of native species being planted and crop trees being planted.

The Kona SWCD supports the use of fencing in these scenarios and would like to see more of our cooperators receiving financial assistance for putting up fencing to prevent feral swine from damaging our soils. Without the fence our soils are extremely vulnerable to erosion because we cannot break the "Erosion Triangle".



Three things are required for soil erosion to take place. One, soil must be available for erosion. Two, it must be displaced and three it must be transported. To stop soil erosion one of the legs of the triangle must be broken. Breaking the "availability leg is the easiest, plant vegetation, but if pigs are constantly coming on to your land tearing up your vegetation your soil is, sadly, still available for erosion and nothing short of keeping the pigs off your land will change that.

FARM SERVICE AGENCY

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.

A message from the FSA Director

Greetings Everyone,

An atypically strong El Nino has been driving drought conditions throughout Hawaii and the Pacific Basin, with the exception of American Samoa. In somewhat measured good news from the National Oceanic and Atmospheric Administration (NOAA) and associated partner entities it is postulated that El Nino has peaked and in 2016 there will be "…a sow decline towards neutral conditions…" However, NOAA goes on to note that "… many islands will continue to feel the effects of El Nino throughout much of 2016."

What can you do if your operation is impacted by drought? First, routinely and fully document any changes in production and any additional expenses such as the purchase of water or animal feed. Next stay tuned to Farm Service Agency's (FSA) monthly e-newsletter and bulletins for any announcements regarding disaster relief as program triggers are reached. Finally make an appointment with your local FSA County Office Farm Programs or Farm Loan Program staff to discuss your options to best manage your business' risks.

Diane L. Ley, State Executive Director
USDA Farm Service Agency Hawaii & Pacific Basin

Update Your Records

Farm Service Agency (FSA) is cleaning up producer record databases. If you have any unreported changes of address or an incorrect name or business name on file they need to be reported to your FSA County Office. Changes in your farm operation, like the addition of a farm by lease or purchase, need to be reported as well. Producers participating in FSA and Natural Resource Conservation Service programs are required to timely report changes in their farming operation to the County Committee in writing and update theirCCC-02 Farm Operating Plan.

Loan Interest Rates for March 2016	
Farm Operating Loans	2.625%
Microloans	2.625 %
Farm Ownership Loans	3.750 %
Farm Ownership Loans Direct Down Payment, Beginning Farmer or Rancher	1.50 %
Emergency Loans	3.625 %

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Director: Rick Robinson, Pepe Miranda

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

Wildlife Wonders

In a previous issue of Resource Kona we highlighted the native bird the Kolea. Here's another look at it with photos that were recently taken at Old Airport Beach Park.

One of the amazing things about the Kolea, they are migratory birds which fly the 3000 mile distance between their winter home here in Hawaii and their summer home on the Artic tundra. They make this flight twice a year and once they start traveling they do not rest, they do not even glide, flapping their wings the entire way, until they reach their destination and they do it at about 20,000 feet. How do they do this? When the young make their first trip to Hawaii it is generally without adult supervision, how do they figure it out? They have never been here, but somehow they seem to find their way.

When you are out and about, if you see these amazing, ponder their flying strength and navigation skills.

Such a cool bird and fairly easy to spot if you know what to look for. This one is likely to be an adult male changing into it "breeding" plumage

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All articles were written by the Kona SWCD Staff