

Resource Kona

RESOURCE KONA

Spring 2015

KONA SOIL AND WATER CONSERVATION DISTRICT

Cooperator of the Year



L to R: Richard Fowler, Angelica Stevens, Roswitha Fowler, Richard Stevens



Kaipo Sheen



Pam Parker

The Kona SWCD represents an incredibly diverse group of land users with equally diverse visions for their land. This year we honor three of those land users. The differences in their operations coupled with their common desire to improve their natural resources are what led to the district wanting to honor all three of them.

Makapueo Farms, owned and managed by Kaipo Sheen, grows coffee on about 200 acres of land on many different parcels. Kaipo became a cooperator in 2007 and started his coffee business on an 8 acre parcel. His land had virtually no soil, not an unfamiliar sight in Kona, having what we generally refer to as “rock farms”. Kaipo, with assistance from NRCS, applied mulch by the truckload to this parcel and 8 years later has established 4-5 inches of soil. There are still rocks that are visible but the land is a world away from where it started. Over the years Makapueo Farms has grown from that one parcel. Today they manage acres of coffee for other land users as well as managing additional leasehold land they control and with all this coffee they have opened two coffee shops: one at the King Kamehameha Hotel and one in South Kona.

Richard Fowler along with his wife Roswitha, his daughter Angelica, and her husband Richard, have created HOME O KAHALU`U FARM on almost 9 acres. They became cooperators in 2010 and have incorporated agro-forestry practices to develop a seed farm for native species. Their premier crop is pili grass seed. Pili grass is a native species traditionally used for thatched roofing. It is a bunch grass that generally grows to 18-24” and is used in native restoration projects, as a conservation cover to prevent erosion, as a buffer zone plant between parcels, and is an excellent choice for landscaping. Other (cont. on page 4)

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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.

Sheep & Goats, options for Brush and Herbaceous Weed Control

Sheep and goats are small *ruminant* animals and have been part of the Big Island's landscape for over 200 years. *Ruminants* are animals with multiple compartments in their stomach instead of a stomach with one compartment like people. Because they have hooves, they are also recognized as ungulates.

The compartment known as the *rumen* is the largest of the stomach compartments. Ruminant animals do not chew their food, grasses and other coarse vegetation, completely the first time. The partially chewed food enters the rumen where small enough pieces pass through, but bigger pieces are held until they are later regurgitated and chewed again ("chewing the cud"). In the rumen, forages are also exposed to billions of microorganisms that aid in digestion. Once the forages are broken down enough to pass through the rumen, it goes through



Sheep are good at herbaceous weed control. They are known as *grazers*. They eat grasses and forbs.

Photo credit: Hawaii Sheep and Goat Association

the other three compartments: the reticulum, the omasum and the abomasum, the true stomach, before passing to the small intestine.

Proper and knowledgeable management of sheep and goats can do a terrific job at weed and brush management. Sheep are considered grazers because they eat predominately grasses and forbs. Forbs are herbaceous flowering plants that are not a grass, sedge or rush. Sunflowers are an example of a forb.

Grazers clip vegetation at or near ground level, because of this they can create erosion problems if they are forced to graze the same land continuously. Goats are considered browsers because they eat predominately leaves, bark and the stems of plants.

One of the challenges to goat and sheep herding is maintaining the health of your animals. There are diseases and parasites that can bring harm. To combat these problems vaccinations for the diseases and sound herd and pasture management for parasites is necessary. Sound pasture management involves resting the pasture so that regrowth of the vegetation can take place. Each species are also susceptible to parasitic worms that can generally be managed with proper herd health practices.

Nutritional needs for sheep and goats also vary. Copper is an essential element for sustaining life. Too much copper, especially in sheep, can cause illness and death of the animal. If you are considering including sheep and goats in your agricultural operation this is something you will need to be aware of. *(cont. on page 8).*



A work crew of goats heading off to clear some land.

Photo credit: Hawaii Sheep and Goat Association



The kids do like to play.

Photo credit: Hawaii Sheep and Goat Association

Mulch Availability

The County of Hawaii has recently hired a contractor to help distribute the composting mulch located at Waikoloa's green waste facility to West Hawaii farmers. Hawaiian Earth Products employee David Hare and employees from the County of Hawaii recently met with representatives from the Kona Soil and Water Conservation District to help coordinate the distribution of the composting mulch.

While the chipping and distribution of green waste on the Hilo side does not keep up with demand, the composting mulch on the West side is stacking up and covers nearly 8 acres of land. In 2005, the County of Hawaii moved the storage area of the composting mulch from Kealakehe to its facility in Waikoloa. The County of Hawaii indicated the facilities at Kealakehe were insufficient to handle the volume of green waste and liability was a concern that prompted the transfer to the Waikoloa location. However, the extra distance hauling the composting mulch increased the trucking costs that made the distribution unfeasible for many farmers. In addition, many farmers have a concern about introducing invasive insects onto their property.

It is believed that the facilities at Waikoloa are not conducive to the spread of invasive species such as the little fire ant and the coffee berry borer. Temperatures in excess of 140 degrees are reached in the processing and storing of the green waste that is chipped and stacked. In addition the hot, dry climate at Waikoloa does not create the type of environment that supports breeding grounds for these insects. Farmers who are concerned with bringing in undesirable insects are encouraged to confine trucked-in mulch piles and monitor any insect activity prior to applying it to their fields.

At a recent local work group meeting sponsored by the Kona SWCD, soil quality was once again identified as the number one resource concern for West Hawaii farmers. The primarily organic soils within the Kona coffee belt and other farmlands have suffered from severe organic matter depletion as a result of decades of chemical application within orchards. The organic soils within Kona have a tendency to erode and volatilize without the continual addition of organic matter. In many cases the soils within our farmlands have eroded to the point where only rocks remain on the surface. This severe degradation can be overcome with the addition of organic matter and planting of low growing grasses such as; narrow and wide leaved Carpet grass, Saint Augustine's grass, Paspalam, Bermuda grass, Zoysia and other low growing grasses. The Kona SWCD and NRCS office strongly encourage farmers to address this resource concern. The composting mulch may be one solution to address this issue.



Both of these photos show farms in the process of developing soil with the use of mulch. The photo on the left is of a diversified farm that produces coffee, lilikoi, bananas, Surinam cherries, citrus fruit, pumpkins and squash. The photo on the right is a recently planted avocado orchard. The avocado orchard was planted in what was a lava field. With the right resources, mulch, and the right equipment to punch holes in the lava, a sustainable orchard is possible.



Cooperator of the Year (continued from page 1)

crops include coffee, lilikoi, pumpkins, pineapple, turmeric, papaya, breadfruit, and avocados.

Waiono Native Forest Preserve was the vision of Pam Parker, which she started to make a reality in 2010. She wanted a forest her grandchildren could romp around in. After planting well over 3,000 native tree and shrub species on 16 acres she is well on her way to providing it. Like many land users who have raw land Pam first had to get through the Christmas Berry and Guava that was infesting her land which is a project all unto itself. With that completed planting could begin. Grasses continue to be a maintenance challenge but as the trees continue to grow, expanding their canopy and increasing their numbers, the grasses will become less and less of a problem.



Makapueo Farms before mulching, and below.



Native plantings at HOME O KAHALU'U FARM and below



Young Koa trees across the landscape at the Waiono Native Forest Preserve



After years of applying mulch there is soil.



Using goats for weed control

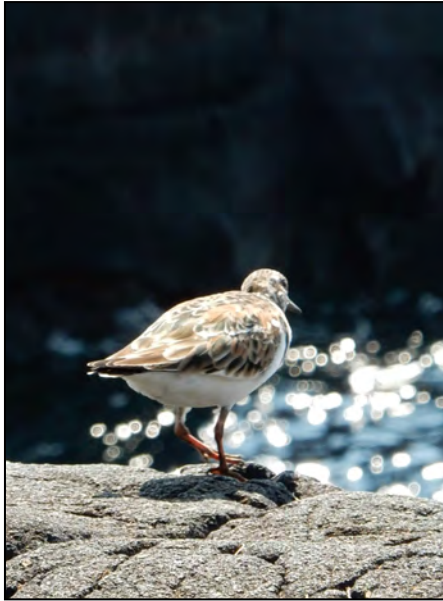


At Waiono Native Forest Preserve young Koa trees along side older Ohia trees.



The photo on the left shows pili grass used in landscaping at the entrance to a local business. Other native species in this photo include ilima and uki uki.

Wildlife Wonders



This bird, a Pacific golden plover, known as a Kolea, was photographed along the shores of Kealahou Bay.

This is a migratory bird with many of its species calling tropical Pacific locations, including Hawaii, their winter home. For many, their summer home is Alaska or Siberia where they have their young.



It is thought the early Polynesian explorers who first came to the Hawaiian Islands headed toward the island chain following the Kolea migratory patterns. Maybe the explorers just wondered where they went every spring and decided to find out.

History's Corner, Flash Flooding April 1969



April 1969, nearly 3 inches of rain fell in 90 minutes. The results of such a rainfall are shown on the left. The upper left photo shows a view looking north

through Kainaliu Town, and the source of the runoff on the right side of the photo.

The upper right photo shows the southern end of Kainaliu Town and you can even see the Oshima's store front sign. The southern end of the road is where the low spot of the road is located. At the height of this storm the low spot had 18 inches of rain that had to drain away.



The picture on the lower left shows how the shopkeepers would simply have to wait for the waters to recede, then they could assess the damage and make decisions.

Soil Facts

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

This past spring the Soil Survey Team from the Kealahou MLRA Soil Survey Office and the staff at the Kona Soil and Water Conservation District provided the 5th and 6th grade students at the Innovations Elementary School with a lesson on soil and water. They were the students of Mrs. Withrow and Mrs. Hawkins.

Days before the lesson, we went to the school and obtained soil samples. We gave a brief talk about what we did for work, how we got to where we are today and about soil sampling since that was our task for the day. Some of the students assisted us in collecting our samples and were very helpful. They recommended the garden since that was where they grew things. We were happy to have students involved with as much of the process as possible and their recommendation was correct, that is where we wanted to collect the sample. After collecting the samples we went back to the office to prepare soil testing kits for the students.

The presentation spanned two days. The first day the students learned about soils and on the second they learned about the water cycle and capillary action. During the soils presentation the students learned about soil horizons, parent material, and what makes our soils unique: lava and organic matter. Then the students had to determine the pH of the samples collected previously. The Soil Scientist displayed the testing protocol on the board. The protocol called for putting the sample in a small plastic cup, adding water, covering the cup, shaking it, removing the cover and swishing pH paper in it. Then the students had to decide, by the color of the pH paper and a color guide, what the pH was. All the groups of students were successful and they learned why soil pH matters. It affects a plant's ability to take up the nutrients in the soil. The students also learned that soil scientists all over the world are using this method today to make the same determination. There are other soil tests that require expensive equipment but determining pH is often done the way the students did it.

The next day was the demonstration of the water cycle using the Kona SWCD water model.. This model teaches students the importance of ground water and of protecting it and keeping it clean. They learned you do not need to pollute lakes, streams and oceans directly. All you need to do is pollute the groundwater.



The photo on the left shows Mike Kolman and Jacky Vega leading a discussion on careers in soil science. In the photo on the right Jacky is assisting students with their soil sample and adhering to the testing protocol. We think protocol was a new word for them.



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.

Upcoming 2015 County Commission Elections

“Through the county committees, farmers and ranchers have a voice. Their opinions and ideas get to be heard on federal farm programs,” said Agriculture Secretary Tom Vilsack. “It is important for county committees to reflect America’s diversity, so I encourage all eligible farmers and ranchers, including beginning farmers, to get involved in this year’s elections. We’ve seen an increase in the number of nominations for qualified candidates, especially among women and minorities, and I hope that trend continues.”

To be eligible to serve on a FSA county committee, a person must participate or cooperate in an agency administered program, be eligible to vote in a county committee election and reside in the local administrative area where they are nominated.

Farmers and ranchers may nominate themselves or others. Organizations representing minorities and women also may nominate candidates. To become a candidate, an eligible individual must sign an FSA-669A nomination form. The form and other information about FSA county committee elections are available at www.fsa.usda.gov/elections. Nomination forms for the 2015 election must be postmarked or received in the local USDA Service Center by close of business on Aug. 3, 2015.

FSA will mail election ballots to eligible voters beginning Nov. 9, 2015. Ballots will be due back to the local county office either via mail or in person by Dec. 7, 2015. Newly elected committee members and alternates will take office on Jan. 1, 2016.

While FSA county committees do not approve or deny farm ownership or operating loans, they make decisions on disaster and conservation programs, emergency programs, commodity price support loan programs and other agricultural issues. Members serve three-year terms. Nationwide, there are about 7,800 farmers and ranchers serving on FSA county committees. Committees consist of three to 11 members that are elected by eligible producers.

The FSA staff requests that you save time and call ahead to make an appointment when you need to see them. They will take you as a walk-in person with questions but you could potentially waste a lot of your valuable time that way. Call ahead, make an appointment, it is easy. 933-9381 ext 1. They are happy to assist you.

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Fax: N/A

Board of Directors:
Chairman: Greg Hendrickson
Vice Chairman: Jeff Knowles
Treasurer: David Fischer
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 Kealahou 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

Using Cardboard for Mulch

Using cardboard for weed control is implementing the practice of sheet mulch and it is really quite easy but there are some things to remember. The most important thing to remember, cardboard is high in carbon. Your soil's microbes will break the cardboard down but need nitrogen to do it. If you do not account for this nitrogen use, and you use cardboard around your coffee trees, you will likely notice a yellowing of the trees. This is due to the soil's microbes using the nitrogen to break down the carbon based cardboard and affects the carbon/nitrogen ratio. Easy fix, sprinkle some chicken manure under the cardboard before you lay it down and put your grass clippings and prunings on top. You may have to play with the amount of nitrogen to get it right for your land but cardboard as sheet mulch can be a very successful method of weed control and allow you to plant more suitable species that can then outcompete the undesirable weeds.

Sheep & Goats, options for Brush and Herbaceous Weed Control

Cont. from page 2

Another health issue for both species is a disease called Scrapie. It is a disease caused by Transmissible spongiform encephalopathies (TSEs). It is related to bovine spongiform encephalopathy (BSE) or "mad cow disease". Scrapie is an incurable disease that affects the nervous systems of these animals. Though it is not common it can be a devastating illness in a flock of sheep or herd of goats. Scrapie is a contagious disease between the animals but is not transmittable to people. The State Dept. of Agriculture participates in the National Scrapie Program that provides for monitoring, management and eradication of the disease.

Goats and sheep are a great way to include livestock in many agricultural operations. They can help with herbaceous weed control and brush management. They can provide food, milk and fiber for us to use. Sometimes they can even be a family pet.

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