

# Resource Kona

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Spring 2017

KONA SOIL AND WATER CONSERVATION DISTRICT

## Cooperator of the Year

Each year our board is called upon to determine which of our many cooperators exemplifies conservation principles and practices on the ground. Our choices this year were between three farms. Joachim Oster is a coffee farmer who is terracing his 2.5 acre coffee farm, Athena Coffee of Hawaii, masterfully. By using conservation cover to keep the soil he was provided from the beginning, which was not very much, he has transformed his coffee farm. When he purchased the lease Joachim referred to the land as a glyphosate desert and it is hardly that now.



Top left: The three award winners, from the left, Michael Corbitt, Brooks and Bill Wakefield and Joachim Oster.

Top Center: Joachim has been able to highlight lava tubes with this terraces.

Top right: In this example of Joachim's rock work we have a trail/path through the farm during the dry season and if there are heavy rains it is watercourse.

Left: Because of the steepness of the slope on this land terracing has made it easier to harvest.

The second farm we toured is a twenty acre avocado farm, Kane Plantation Guest house, owned and operated by David Cox and his partner Michael Corbitt. Five years ago much of this land was solid Christmas berry. Now with that removed and hundreds of native species planted in its place the forest is growing. (continued on page 3)

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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.
- This newsletter is produced with funding from the Hawaii County Department of Research and Development

## Rapid Ohia Death Symposium

On Saturday April 2nd a symposium on Rapid 'Ōhi'a Death (ROD) was held at the West Hawaii Civic Center. Speakers included Kumu No'el Tagab-Cruz, an Education Specialist with Hawaii Community College in the Hawaii Studies Program, who opened the symposium with a chant related to the 'ōhi'a tree.

Other speakers included Dr. JB Friday, an Extension Forester with University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) Cooperative Extension Services. He is involved with Tropical Forestry and Agroforestry Extension. JB Friday spoke about the introduction of ROD and provided recommendations for managing the disease.

Dr. Lisa Keith, a plant pathologist with the USDA's Agricultural Research Service in Hilo, discussed the biology of the fungus. How does this fungus work? How do we detect it and where did it come from?

Dr. Curtis Ewing, an entomologist with the University of Hawaii studies beetles, specifically the ambrosia beetle for its role in the spread of ROD.

Marc Hughes, also from the University of Hawaii, discussed tree and wood treatments.

Steve Bergfeld, head of the DLNR -Division of Forestry and Wildlife Hilo office and James Parker of the Big Island Invasive Species Committee spoke to the management treatments at the forest scale.

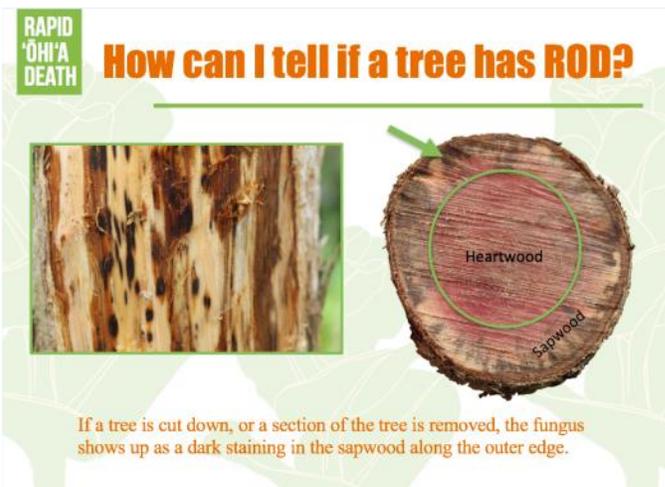
Research has shown that two *Ceratocystis* fungi are killing our 'ōhi'a trees. There are over 100 *Ceratocystis* known fungi in the world and many are plant pathogens. A few of these fungal species have existed here on the island from a long time as pathogens of other plants. Where did the 'ōhi'a-killing species come from? Well, exactly where is not known. There are theories that they came in on a plant carrier, they could have been something else when they came to Hawaii and then mutated over time, or they could have been separate strains that combined to create the species killing the 'ōhi'a. Those questions are part of the ongoing research.

The ROD fungi produce spores, which are like a fungus' version of a seed. There are hard-shelled spores that are long-lived and difficult to kill. In an intact tree, the hard-shelled spores can survive for a long time. These hard-shelled spores can be alive in wood that is transported by people. Another type of spore produced by ROD fungus is sticky. If people cut into infected 'ōhi'a, the sticky spores get stuck on tools.

The ambrosia beetles are attracted to the dead and dying 'ōhi'a and bore into the wood. The beetles produce a fine sawdust as they drill and push it to the outside of the tree. Sometimes ambrosia beetle



Above is what is left of a stand of Ohia trees after Rapid Ohia Death. Almost as far back as you can see there are dead trees. This is a sad reality for forest land owners. Photo credit: the Sierra Club.



***Cooperator of the Year (cont.)***



The photo on the left shows what you can do with land you reclaim from Christmas berry. Right now, the native plantings provide the plantation with the “park” feel. In just a few years the plantation will have a “forest” feel. The photo on the right includes the native plants pohinahina (the one flowering) and ilima. In the photo below left they are in the process of removing two plus acres of Christmas berry. Below right more of what they put in place of the Christmas berry, a’ali’i, pohinahina, kou even a koa sapling.



Our third nominee was Wakefield Organics. They were awarded Organic Farmer of the Year because of their mango ranch. Bill and Brooks Wakefield have a five acre farm with five varieties of mango trees. To maintain the orchard grass, prune the mango trees, prevent immature fruit drop from developing a fruit fly problem and to fertilizer they enlist the aid of up to 20 sheep. The district staff refers to this farm as the mango ranch. The sheep are managed using a five paddock rotational grazing system. They have a mix of Barbados, Saint Croix and Dorper sheep. They are all considered hair sheep because they have very little wool. The hair they do have is similar to dog hair but a lot coarser. Though the Wakefields do not sell any of the meat from their ranch to the public they have told us it is tasty. Turn to page 4 to see photos from the mango ranch.

***Cooperator of the Year (cont.)***

The upper left photo is an overall photo of the ranch, er, orchard. The upper right photo shows the cross fencing (inside the blue circle are two t-posts). The lower left photo shows where the watering trough for the sheep is. The lower center photo is one of the sheep and the lower right photo shows some delicious and juicy mangos. This farm is located at about 200' in elevation, a nice dry climate, perfect for mangos.

Now you understand the problem, we have awesome land stewards who see their imagination's as the limit as to what they can do with their land, a mango ranch, a hand terraced coffee farm or a forest around a B&B, which is the best. It truly is like asking which is the best apples, oranges or bananas? As a result, all three nominees have been named a Cooperator of the Year, Joachim Oster and Athena of Hawaii Coffee are the Farmer of the Year, Wakefield Organics and the mango ranch are Organic Farmer of the Year and David Cox with a new forest, Forestry of the Year. Please join us in congratulating them for recognition of their hard work and thanking them for being stewards of land in our community and the positive benefits we as a community receive.



**Wildlife Wonders**

These photos of the Hawaiian Hawk were taken by a local resident. She stated “the hawk sat on a tree branch just 10 feet away from me!” The district is glad she had her camera handy. These photos are of a young Hawaiian Hawk and it turned out this raptor bird was eyeing some baby chicks, though it is not known if the chicks ever did become a meal.



Note in the third photo the hawk is only standing on one leg which is a custom of most birds. A bird’s legs does not have any feathers and is where a bird can lose a lot of body heat or body energy. By tucking it up under their feathers they stay warm and their energy is conserved.

**History’s Corner**



McCandless Ranch Headquarters and Kealia Ranch offices. The top photo taken in 1978 shows the McCandless Ranch Headquarters. The photo below, taken in 2017 is of the Kealia Ranch office and yes, they are the same building. Between being the McCandless office and the Kealia office it was the Cowboy office. Makes we wonder if they had/have a union. When Kealia Ranch acquired the structure they did do some improvements, the roof is straightened out, might even be a whole new roof and there is a railing on the front porch and the porch looks level.



Kealia Ranch was found in 1915 by LL McCandless. Their land reaches from the ocean to the mauka slopes of Mauna Loa.

This structure and the Kealia Ranch Store where you can purchase local grass fed beef (ono!), dried and fresh fruits, coffee, baked goods and hand crafted items are located a little beyond mile marker 101 on the makai side of the Mamaloeha Hwy.

## Soil Facts: Soil Taxonomy, a Classification System Mike Kolman,

MLRA Soil Survey Leader, USDA, NRCS Kealahou, Hawaii

USDA Soil Taxonomy developed by United States Department of Agriculture and the National Cooperative Soil Survey provides an elaborate classification of soil types according to several parameters (most commonly their properties) and in several levels: Order, Suborder, Great Group, Subgroup, Family, and Series.



**Figure 1.** The Hierarchical Soil Classification System

Classification is based on soil properties observed in the field or inferred from those observations and from laboratory measurements. The categories are defined in the following paragraphs.

**ORDER.** Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol. The orders are described in the next part of this appendix.

**SUBORDER.** Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalfs (*Ud*, meaning humid, plus *alf*, from Alfisol).

**GREAT GROUP.** Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has an udic soil moisture regime).

**SUBGROUP.** Each great group has a typic subgroup. Other subgroups are intergrades or extra grades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extra grades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

**FAMILY.** Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below tillage depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

**SERIES.** The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.



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.

**Organic Producers May Apply for Certification Costs Financial Assistance**

Starting March 20, 2017, organic producers and handlers will be able to visit over 2,100 USDA Farm Service Agency (FSA) offices to apply for federal reimbursement to assist with the cost of receiving and maintaining organic or transitional certification. USDA reimburses organic producers up to 75 percent of the cost of organic certification, but only about half of the nation’s organic operations currently participate in the program. Starting March 20, USDA will provide a uniform, streamlined process for organic producers and handlers to apply for organic cost share assistance either by mail or in person.

USDA is making changes to increase participation in the National Organic Certification Cost Share Program (NOCCSP) and the Agricultural Management Assistance Organic Certification Cost Share Program, and at the same time provide more opportunities for organic producers to access other USDA programs, such as disaster protection and loans for farms, facilities and marketing. Producers can also access information on nonfederal agricultural resources, and get referrals to local experts, including organic agriculture, through USDA’s Bridges to Opportunity service at the local FSA office.

Eligible producers include any certified producers or handlers who have paid organic or transitional certification fees to a USDA-accredited certifying agent. Application fees, inspection costs, fees related to equivalency agreement/ arrangement requirements, travel/per diem for inspectors, user fees, sales assessments and postage are all eligible for a cost share reimbursement from USDA.

Once certified, producers and handlers are eligible to receive reimbursement for up to 75 percent of certification costs each year up to a maximum of \$750 per certification scope—crops, livestock, wild crops and handling. This announcement also adds transitional certification and state organic program fees as additional scopes.

To learn more about organic certification cost share, please visit [www.fsa.usda.gov/organic](http://www.fsa.usda.gov/organic) or contact a local FSA office by visiting <http://offices.usda.gov>

Program	Interest Rates
Farm Operating-Direct	3.000%
Farm Operating - Microloan	3.000%
Farm Ownership - Direct	4.000%
Farm Ownership - Microloan	4.000%
Farm Ownership - Direct, Joint Financing	2.500%
Farm Ownership - Down Payment	1.500%
Emergency Loan - Amount of Actual Loss	3.750%
<b>Effective as of May 1, 2017</b>	

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Board of Directors:  
Chairman: Greg Hendrickson  
Vice Chairman: Jeff Knowles  
Treasurer: Pepe Miranda  
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)**

### ***Rapid Ohia Death Symposium (cont from page 2)***

activity is so high that a pile of sawdust accumulates at the base of a tree. This sawdust is full of spores and can be carried by the wind or fall to the ground and get mixed with soil. Researchers are studying ambrosia beetles and trying to figure out how important they are in spreading the ROD disease.

One of the features of this fungus that has been learned, it can be in the tree for up to a year before the tree shows any symptoms. Once symptoms become apparent (a yellowing then browning of the leaves which even after death remain on the tree) it takes just a few weeks for the tree to die.

The quarantine seems to be working in keeping the fungus off our neighbor islands but it keeps spreading on the Big Island. As of the date of the symposium no ROD has been found on the northern part of the island. Researchers are concerned that once the fungus reaches N. Kohala, the tradewinds may pick up boring beetle sawdust, and it won't be long before it is on Maui and everyone is trying to prevent that.

How does the fungus get into the tree and cause all these problems? Wounds or injuries on a tree are the entry points for ROD. Any action that breaks through the bark of the tree makes the tree vulnerable to infection. Anytime a limb breaks in a wind storm there is a wound. If you cut branches for some reason (pruning) there are wounds where ROD can gain a foot hold. Keep your trees healthy and be careful when mowing or weed whacking near your treasured 'ōhi'a trees.

### ***Become a Volunteer***

The Kona SWCD has an all volunteer Board of Directors. interested in learning about how to become a director please contact Mary at 322-2484 ext. 100. We meet once If you are per month for 2 hours and we have occasional tours, Flood Control Structure Tour and Cooperator of the Year Tour.

We currently have a need for an At-Large-Rep to represent us at the Big Island Resource Conservation and Development Council (Big Island RC&D). If interested, call Mary at 322-2484 ext. 100