

# Resource Kona

RESOURCE KONA

Fall/Winter 2018

KONA SOIL AND WATER CONSERVATION DISTRICT

## ***Kamehameha Schools Wins the State Conservation Awareness Contest...on to Nationals!***

Each fall the 16 Soil and Water Conservation Districts (SWCDs) across the state work together organizing County Conservation Awareness Contests. One district from each county (Hawaii County has 6) hosts the contest and the other districts help out. After the county level contests come the state level event followed by a national competition in Oklahoma.

This year the Kona SWCD hosted the state level contest and welcomed Molokai High School, St. Anthony's High School, Maui, and Kamehameha School Hawaii from Hawaii as the competitors. The competition was held at Home O Kahalu'u Farm, Kamehameha land leased to Richard and Roswitha Fowler. It is managed by their daughter Angelica and her husband Steven and was awarded the 2014 Cooperator of the Year in Agroforestry. It has a wide variety of plants, both native and non-native plants and unique soils.

Three sites on the farm were chosen for soil pit sites. One site represented a home site, the other two represented agriculture. All the sites provided a diversity of soil from shallow to moderately deep, and different categories of soil texture, slope and erosion. All the students had the opportunity to apply their knowledge to judge the soil and the land based on the conservation awareness contest guide.



From the left: Coach Lorinda Forster; with the 3rd place high score, Alexis Hata; Kauila Thomas who had the 2nd place high score; D-Jay Gangano and then Luke Kaniho on the far right.



Individual High Scorer, from St. Anthony's High School on Maui, Daniel Tongson.

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

- Kona SWCD meetings take place the Third Thursday of the month from 8am-10am and you are invited.
- This newsletter is produced with funding from the Hawaii County Department of Research and Development

### ***Chicken Tractors, why you want one***

There are so many good reasons to have and maintain a chicken tractor. A chicken tractor can provide you food, fertilizer and a way to manage many pest species on your farm. How many other things can do all that?

Things all chicken tractors need to have:

Chicken run Roosting area Egg laying area Frame Water Wheels/Runners

The chicken run is where the birds will spend the day. The run is bottomless, so the chickens get to pick at your weeds and insects keeping a variety of pests controlled.

The roosting area is where they will sleep at night. Remember, chickens like to sleep in trees so you have to mimic that.

The egg laying area can be a simply plastic storage container like you would find at many stores like Target, Walmart or even Ace Hardware. Cut a hole in the side put a some grass clippings in and you have an egg laying box.

The frame holds the whole thing together. In this model of chicken tractor part of the frame is covered with chicken wire and part with tarps. The tarps ensure the birds have shade no matter where on the farm the tractor is located.

Water, the birds need water to be available throughout the day.

Instead of wheels, Earthly Delights Farm has determined that “runners” are better and if they could get real sled runners (flexible flyer snow sled type runners) it would be even better than the PVC pipe runners they now use.

Earthly Delights Farm has five chicken tractors they move around throughout the day. In return for a safe place to live with plenty of food and water the chicken lay eggs and do pest control.



All the chicken tractors at Earthly Delights Farm look like the one on the left. This is a 4<sup>th</sup> generation design for Earthly Delights and they think they have come a long way since their first one. In the photo, below left, we can see the egg laying box (1), the feed trough (2) which is a piece of roof gutter, and the roosting poles (3), of the three roosting poles two are PVC pipes and the third is the wooden handle that sticks out on each end. The handle sticks out on each end so that you can move it in both directions. All of the parts to build this can be found at a Lowes, Home Depot or Ace Hardware. Four to five chickens will make this tractor home. If your land is such that you can run a mower over it



White paint bucket

The nipple the birds drink from.

## Rapid Ohia Death Updates

There is a ROD newsletter available for the community if you want to stay up to date on the latest findings. Contact [ambyr@hawaii.edu](mailto:ambyr@hawaii.edu) and ask to be added to the distribution list. All of the information (except the photos) on this page came from that newsletter.

Covering downed ohia trees known to have the fungus is one method of managing the spread of the disease. Some ohia logs, cut down and covered four years ago, tested positive for the fungus. If you want to safely move ohia logs they will need to be dried. Researchers are experimenting with lumber kilns to dry ohia posts and hope to have recommendations soon.

Enter the Ohia Challenge and win \$70,000. Anyone can submit a project that provides solutions that identify infected trees early, minimize the spread, and eliminate the pathogens, with the goal of saving Hawai'i's iconic 'ōhi'a tree. According to Cindy Orlando, Superintendent for Hawai'i Volcanoes National Park: "If 'ōhi'a is lost, the countless native species that grow in the shade of the 'ōhi'a will never be, the native birds that rest in the boughs of the 'ōhi'a and koa trees will have no roost, and rain that falls in Hawai'i's old growth forests will merely rush away, taking delicate island soils with it. Even the cycle of creation after a lava flow would be disrupted when there is no 'ōhi'a to help bring life back to the land.

Two related fungus cause ROD, one is more aggressive than the other. The least aggressive of the two have been identified on Kauai. Also this year, ROD was found in Kalōpā State Park a short distance from Honoka`a but this one is the more aggressive fungus.

The 2019 ROD Symposium has been scheduled:

ROD Symposium -East Hawai'i Island  
 March 3, 2019, 9AM-12PM  
 University of Hawai'i at Hilo, Hilo, HI

ROD Symposium -West Hawai'i Island  
 March 30, 2019, 9AM-12PM  
 West Hawai'i Civic Center, Kailua-Kona, HI

Help prevent spreading Rapid 'Ōhi'a Death by practicing these five things:

1. **Avoid injuring 'ōhi'a.**
2. **Don't move 'ōhi'a wood or 'ōhi'a parts.**
3. **Don't transport 'ōhi'a inter-island.**
4. **Clean gear and tools, including shoes and clothes, before and after entering forests.**
5. **Wash the tires and undercarriage of your vehicle to remove all soil or mud.**



Lehua blossoms: Credit Kona SWCD for photo on left and NPS for center and right photos.

## ***Good Agricultural Practices (GAP) Audit - Obtain one with Federal Financial Assistance***

The U.S. Department of Agriculture announced it will provide \$3.7 million of assistance to fruit and vegetable growers through the Good Agricultural Practices Assistance Program.

The Good Agricultural Practices or GAP are, “voluntary audits that verify fruits and vegetables are produced, packaged, handled and stored as safely as possible to minimize risks of microbial food safety hazards,” according to the USDA.

The program will begin in January and will cover up to 100% of the cost of GAP audit and GAP Plus+ audits for farmers, according to a news release. These two audits are the most comprehensive the USDA offers and they are aligned with the regulations on the Food and Drug Administration’s Food Safety Modernization Act.

The millions in assistance to growers in 16 states will improve market access by helping to cover the costs of undergoing voluntary USDA Harmonized Good Agricultural Practices audits.

In order to qualify for this assistance program, producers must be located in an AMA-eligible states (as determined by Congress): Connecticut, Delaware, Hawaii, Maine, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Utah, Vermont, West Virginia and Wyoming. If any of these states are already utilizing a Specialty Crop Block Grant those funds may need to be re-allocated to other eligible expenditures.

The program allows growers to produce safe food and for suppliers helps ensure their produce meets the standards set by the FDA and USDA.

This article was copied from [www.packer.com](http://www.packer.com), the fresh fruit and vegetable industry's leading source for news, information and analysis.

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For more information on GAP and Good Handling Practices (GHP) as well as the audits check out this link: <https://www.ams.usda.gov/services/auditing/gap-ghp>

## ***Soil Temperatures, Why It Is Important?***

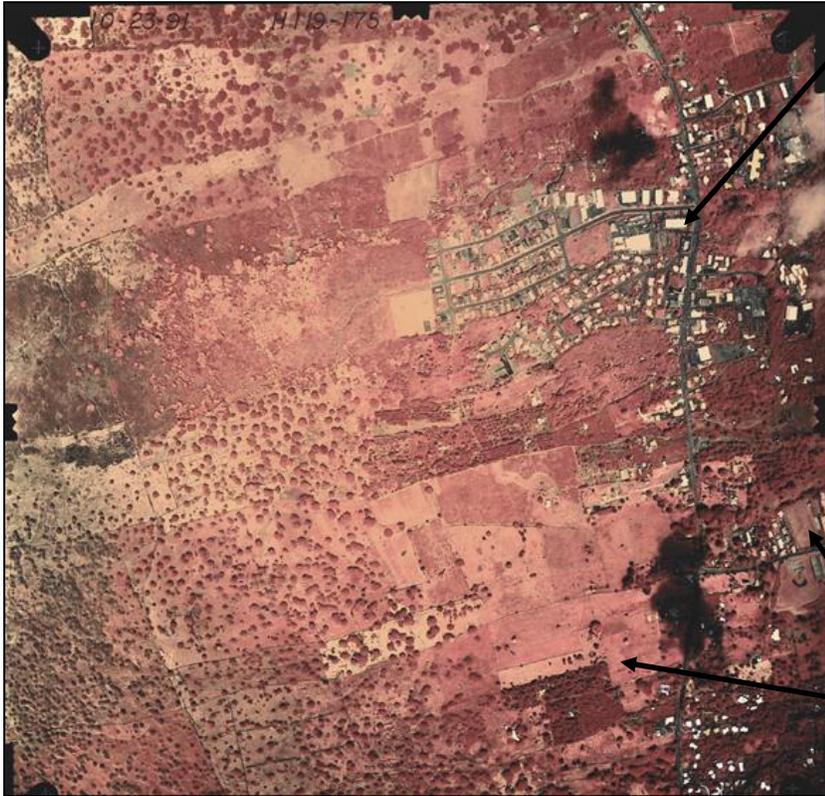
Soil temperature impacts seed germination, the growth of plants, nutrient uptake, many of nature’s cycles as well as the formation of soil itself.

Some plants prefer cooler climates. Cooler climates naturally have cooler temperature soils. Some plants that do well in the tropics will not survive outdoors where the soil is frozen for part of the year. Also, some plants need a “chill” time. They need to have a period of cold or frozen soil. Even in the tropics you can get tulips to grow, you “force” them. Forcing tulips, or any bulb plant, means putting it in the freezer for some length of time to mimic the freezing of the plant bulb in its natural outdoor setting.

Soil that gets too warm can have a very negative impact on moisture content. Soil directly exposed to the sun’s rays can dry out causing vegetation to be wilted and look tired earlier in the day. It is a stress on the vegetation and causes it to be susceptible to disease and pests.

You can moderate soil temperature and moisture fluctuations with mulch and conservation cover, like To a lesser degree, the shade of plants can also be a moderating influence on soil temperatures and moisture loss.

**History's Corner**



US Post Office, Kealakekua

Here in the USDA office we have some older aerial photographs of the area. It can be interesting to see the changes in the last 27 years of development. The photos on this page are of the area around the USDA office in Kealakekua. The older photo was taken on October 23, 1991. The other was clipped from Google on 1/10/2019. There have been lots of changes...the Konawaena High School track is not in the older photo, though the area for it appears to have been cleared.

Area for high school track

This is where the elementary school will go.



US Post Office, Kealakekua

The high school track

Konawaena Elementary School did not exist in 1991

**Soil Facts...What is New in Soil** (Michael Kolman and Jacky Vega)

Soil Scientists in the Kealahou USDA Field Office have been working on the National Ecological Observatory Network (NEON) project. The NEON project is sponsored by the National Science Foundation in collaboration with the USDA.

The objective of the NEON project is to understand and predict the impacts of climate change, land use, impacts of invasive species on ecology, and to provide infrastructure and consistent methodologies to support research and education. It is a large-scale, multifaceted, long-term research project that encompasses a network of terrestrial and aquatic field sites across the United States including Alaska, Hawaii, and Puerto Rico. The soil data collected during initial sampling is crucial for interpreting ecosystem responses to disturbances such as fires, floods, species invasions/ losses, and long-term environmental change. The data will provide baseline information about the soil environment that will improve our understanding of soil biodiversity, nutrient cycling, and carbon stocks in the near-term and long-term.

The site for the soil sampling associated with the NEON project is on the eastern slope of Mauna Loa, it is located at approximately 5,500 feet in elevation and within the Puu Makaala Natural Area Reserve (PUUM). PUUM is managed by the Department of Land and Natural Resources through the Division of Forestry and Wildlife. This natural area was established in 1981 to protect unique native rainforest, geologic features, and cultural resources for current and future generations. The rainforest of this reserve is important habitat for some of Hawaii’s rarest birds and several rare plants.



Soil sampling crew at the PUUM site included L to R: Ed Tallyn, NRCS- Region 2 SDQS.

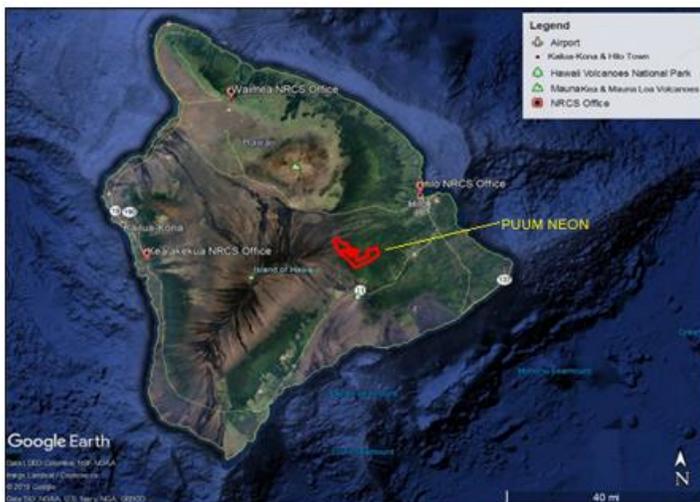
Top row: Jacqueline Vega, NRCS soil scientist; Francisco Calderon, ARS soil scientist; Omar, NEON.

Bottom row: Jacqueline Vega; Shane Vehana, NEON; Nanea Babila, NRCS- Pathways student.

Michael Kolman, NRCS MLRA SSO leader is missing from the photos.

Below left, view of the native rainforest and mega pit at the PUUM sampling site.

Below right, a map depicting the location of the PUUM site..





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 shares a phone line with Rural Development (RD). Both are in Hilo and can be reached at 933-8381, FSA is ext 2.

### ***USDA Market Facilitation Program***

USDA launched the trade mitigation package aimed at assisting farmers suffering from damage due to unjustified trade retaliation by foreign nations. Producers of certain commodities can now sign up for the Market Facilitation Program (MFP).

USDA's Farm Service Agency (FSA) will administer MFP to provide payments to corn, cotton, dairy, hog, sorghum, soybean, wheat, shelled almond, and fresh sweet cherry producers. An announcement about further payments will be made in the coming months, if warranted.

The sign-up period for MFP runs through Jan. 15, 2019, with information and instructions provided at [www.farmers.gov/mfp](http://www.farmers.gov/mfp). MFP provides payments to producers of eligible commodities who have been significantly impacted by actions of foreign governments resulting in the loss of traditional exports. Eligible producers should apply after harvest is complete, as payments will only be issued once production is reported.

A payment will be issued on 50 percent of the producer's total production, multiplied by the MFP rate for a specific commodity. A second payment period, if warranted, will be determined by the USDA.

For a list of initial MFP payments rates, view the MFP Fact Sheet.

MFP payments are capped per person or legal entity as follows:

- A combined \$125,000 for eligible crop commodities
- A combined \$125,000 for dairy production and hogs
- A combined \$125,000 for fresh sweet cherries and almonds

Applicants must also have an average adjusted gross income for tax years 2014, 2015, and 2016 of less than \$900,000. Applicants must also comply with the provisions of the Highly Erodible Land and Wetland Conservation regulations.

Expanded Hog Timeline :

USDA has expanded the timeline for producers with whom the Aug. 1, 2018, date does not accurately represent the number of head of live hogs they own. Producers may now choose any date between July 15 to Aug. 15, 2018 that correctly reflects their actual operation.

MFP applications are available online at [www.farmers.gov/mfp](http://www.farmers.gov/mfp). Applications can be completed at a local FSA office or submitted electronically either by scanning, emailing, or faxing. To locate or contact your local FSA office, visit [www.farmers.gov](http://www.farmers.gov).

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Monthly meetings are held on the 3rd Thursday 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](http://www.kswcd.org)**

### ***Additional Views of a Chicken Tractor***



Above, you see the elbow piece of PVC piping? This is the end of the sled runner and makes it easier to move the tractor around the farm. Wheels were on the first model of chicken tractor Earthly Delights Farm developed but they easily get stuck behind rocks and in small depressions in the ground.



Above, a close up of the egg box. This egg box is just a plastic storage box with a hole cut out of it to give chickens access to the inside of it. You can see there are some grass clippings in there. That is to make the chickens more comfortable and feeling at home.



To the left: another view of the "sled runner". According to Earthly Delights Farm, using the sled runner method is far superior to wheels.



To the left, happy chickens at Earthly Delights Farm. Build yourself a chicken tractor and receive all the benefits like pest management and eggs for you and your family.