

# 2018 Hawaii Island Annual Report



# Message from the Mayor



Harry Kim  
Mayor



Wil Okabe  
Managing Director

Barbara J. Kossow  
Deputy Managing Director

*County of Hawai'i*

*Office of the Mayor*

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## MAYOR'S MESSAGE

On behalf of the people of the County of Hawai'i, it is an honor to extend our heartfelt thanks to all the staff and volunteers of the Hawai'i Island Soil and Water Conservation Districts, whose achievements are documented in the 2018 SWCD Annual Report.

Often times unsung heroes, the Hawai'i Island Soil and Water Conservation District volunteers, work tirelessly to preserve and protect Hawai'i's natural resources and our pristine environment.

This dedication provides technical conservation assistance, continuing education and underscores the value of protecting these essential agricultural resources.

Your work truly benefits the people of Hawai'i now and for generations to come.





Aloha,

*Harry Kim*



# Six (6) Soil and Water Conservation Districts



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## Message from...**NRCS PIA DIRECTOR**



Years ago, I worked with a Soil and Water Conservation District (CD) in a small farming community to develop a watershed plan with the purpose of addressing a water quality issue. I was a new District Conservationist eager to jump into a new project and do something great with the community leaders. The CD Board Chairman asked me to attend the next county commission meeting to ask for the county's support; none of the board members were able to make the meeting, so I agreed to take a letter from the CD board and invite the commissioners to get involved.

The watershed happened to be in a community that was experiencing significant development pressure due to its proximity to a large city. I did not know there would be a developer at the county commission meeting arguing his desire to have his development plan approved; he was right before me on the agenda. As I sat waiting for my turn to speak, I nervously listened to the developer get more and more angry with the county leaders. The commissioners returned much of the angst back at him. Eventually his time was up and his plea unsuccessful. I could feel the tension in the room and silently pondered the easiest escape route.



The announcement came that I was next; I cautiously stood up and handed a one-page letter (an invitation to participate from the CD board) to each commissioner and greeted them with a smile. Many of them didn't notice me; they were still brewing over the recent argument they'd just closed. I approached the microphone, only to notice that one commissioner (still upset at the last participant), leaned over to his peer and said (not knowing his mic was still hot), "Who is this guy and what does he want?". I wanted to turn around and leave, fearing the same outcome as the last participant. Much to my surprise, the fellow commissioner picked up my letter and with a brief glance at the letter head, responded, "He's with the Conservation District; it must be important."

I learned an important lesson that day; one that would direct my career goals for many years to come: locally-led conservation is the key to success in everything we do. During the meeting, I learned that one of the commissioners had previously served on the local CD board and recognized the importance of the work done by Conservation Districts. He spoke of the importance of conservation to their community and why each commissioner needed to be involved in the watershed planning effort. I decided that day to never approach a conservation challenge without the Conservation Districts standing by my side. Locally-led conservation is the basis for long-lasting, successful natural resource conservation efforts in our local communities. I'm excited the new Farm Bill strengthens the locally-led conservation effort and look forward to the great work we'll accomplish as a team with our great Conservation Districts!

*Travis*



USDA is an equal opportunity employer and provider

# Hilo Field Office Staff Servicing Hamakua, Waiakea, Puna and Ka'u Districts



The Hilo Field Office (comprised of members of NRCS, Hamakua, Waiakea, Puna and Ka'u Soil and Water Conservation Districts) team focused their 2018 fiscal year on working together to provide excellent customer service and helped our agricultural producers achieve their natural resource and business goals!



(from Left to Right)

*Spencer Nagata, Jennifer Reavis, Meghan Mulley, Kori Hisashima, Mike Malon, Destiny Abilla, Drew Stout, Nanea Babila, Ryan Belcher, Kanoe Malani, Alex Gerken, and Laila Jayyousi*



# Waiakea Soil and Water Conservation District



Leslie Takayama  
Chairman

Susan Litteral  
Vice Chairman

Amy Bugado  
Treasurer

George Mikami  
Secretary

Harry Toki  
Director

## Chairman Takayama speaks on behalf of Waiakea SWCD

The mission of the Waiakea Soil and Water Conservation District (SWCD) is to preserve our land and water resources by assisting in planning and education. The Waiakea Soil and Water Conservation District provides conservation plans for individual agricultural land-owners to help control surface water and reduce sediment runoff. The Waiakea District, being in an urban setting, also assists on flood control projects along with the County Department of Public Works (DPW) and Natural Resource Conservation Service (NRCS) with planning and annual inspection of such projects. Plans are also provided for USDA NRCS Farm Bill cooperators, primarily for Environmental Quality Incentive Program (EQIP) with the District acting as a Technical Service Provider (TSP).

The District would like to thank its partners the County of Hawaii Department of Research & Development, County of Hawaii Department of Public Works, USDA Natural Resources Conservation Service, the University of Hawaii Cooperative Extension Service and the State Department of Land and Natural Resources for all their assistance in our goals. We also would like to thank the cooperators for their earnest efforts towards helping to create and implement the plans.

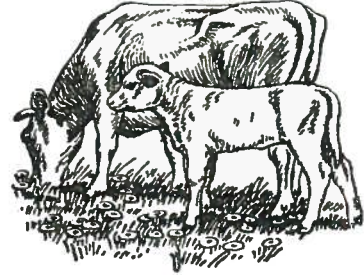
The Waiakea SWCD would also like to thank HACD for all their efforts to secure funding from the State Legislature. We at the Waiakea SWCD would like to join with all District Directors to come up with new ideas for better funding. One idea our District wants to promote is the potential use of lands controlled by the Department of Land and Natural Resources. If part of the income from State land leases can be directed to the Districts, we may have sufficient funding to carry out our mission. Or if given the land we could produce and sell plant material for windbreaks, ground covers, forage, or native species for natural area restoration. The State is land rich. Let's see if we can tap this wealth for the benefit of conservation.

# Waiakea SWCD Outstanding Cooperator of the Year



## “Henry Silva”

Henry Silva has been a cooperator of the Waiakea Soil and Water Conservation District since 2012. Henry worked with District Conservationist Kori Hisashima to develop a conservation plan that would address resource concerns related to poor livestock forage and noxious weeds on his 5.5 acre pasture off Alawaena Road in Waiakea Uka.



Henry has transformed his small ranch from a weed infested Waiawi, African Tulip pasture with mostly Wainaku and Hilo grass to a 7 paddock mixed



species pasture of Signal, California, Guinea, and Desmodium. He achieved this by installing paddock fences with an alleyway, Brush Management by both mechanical and chemical methods, and a lot of grass seed planting. Henry went through several rounds of planting Signal grass seed with poor or very delayed seed germination and periods of heavy rainfall that made his planting less than successful. Henry was patient, and re-seeded and fertilized until he was able to establish a good stand of forage for his sheep and cattle. He has also installed a livestock water system to deliver cleaning drinking water to each

paddock. His grazing rotation moves the animals every 5-14 days depending on the paddock size, and the forage is sufficient to sustain his small herd of 3 steers and 6 goats.

Henry credits the NRCS team for the success he has had with developing his property into a small-scale grazing operation and appreciates all the direction and input he received from Kori as well as other ranchers that have gone through the conservation planning and contracting process with NRCS. Henry is now reaping the benefits of his renovated pasture. His improved forage pasture allows him to raise steers for his own family’s consumption, as well as a small cut and wrap market.



Congratulations Henry Silva for being selected as the 2018 Waiakea Rancher of the Year.

# Puna Soil and Water Conservation District



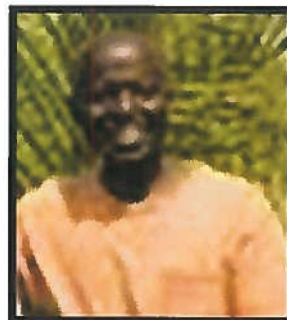
*Oliver English (Chairman)*



*Leanne Okamoto (Treasurer)*



*Aileen Yeh (Vice Chair)*



*Atto Assi (Director)*

## **Puna SWCD Chairman's Message**

The Puna Soil and Water Conservation District (SWCD) have been instrumental in conservation planning and accomplishments throughout the agriculture lands in the Puna District.

The Puna district had a very challenging year with ranches, farms, businesses and homes that were claimed by the volcanic eruption. It was a humble task trying to help relocate these less fortunate. However with the assistance of the SWCD board, district employees, Ryan Belcher, Jennifer Reavis, and HACD employee Meghan Mulley, the Puna District worked to make it happen. All in all the District continues to be one of the fastest growing districts in the State of Hawaii.

Animal waste continues to be a high priority in the district. Invasive species are increasing in this district as more nurseries and potted plant cooperators start to expand. The Coqui frogs are also spreading to higher elevations. Other invasive pests of interest include the Nettle Caterpillar, Fire Ants, and pests such as the Varroa Mites and Small Hive Beetles affecting our bees and their hives.

We would like to thank the many governmental agencies that assist and support the District programs. The State Legislature through DLNR, USDA Natural Resource and Conservation Service (NRCS), the University Extension Service, and Mayor Kim's Office and the County Department of Research and Development for funds to hire our District Employees for implementation of the Hawaii County Grading Code.



# Puna SWCD Outstanding Cooperator of the Year



## “Elizabeth & James Weatherford”



Dr. James Weatherford along with his wife Elizabeth, own and operate a cattle ranch in Pahoā. Within the Puna Soil and Water Conservation District. They have a 55 acre parcel, of which 42 acres are being grazed and the other 13 acres were left as a forested area. They run Dexter cattle, which is a multi-purpose miniature breed for both milk and meat production. Adult cows only average 600 lbs.

James first signed up as a cooperator back in 2008, he started working with then district planner Amelia Drury and completed a Conservation Technical Assistance plan in 2011. He then signed up for Agriculture Management Assistance Program with NRCS in 2014 with planner Spencer Nagata. James crossed fenced into 5 paddocks, built an elevated roof catchment, tanks, and delivered clean drinking water to every paddock. Once James was given the green light to start work, he has always been ahead of schedule, and he completed this entire project within 15 months. He is currently working on a second contract with NRCS, where he has already installed more cross fencing to make 9 paddocks, delivered water to

the newly created paddocks, and herbaceous weed treatment to control mint weed and warabi ferns without chemicals.



I would like to congratulate James and Elizabeth, for their dedication and hard work and for showing everyone a good example of grazing management. With the proper tools and knowledge, and a little bit of luck, this is a perfect example of proper grazing management. It's been a pleasure to be your planner.

Congratulations to the Weatherford's for being awarded the 2018 Puna Soil and Water Conservation District Outstanding Rancher of the Year!

# Puna SWCD Outstanding Cooperator of the Year



## “Shane and Pua Kalaniopio”

Shane Kalaniopio has been a cooperator of the Puna Soil and Water Conservation District since 2014, shortly after he and his wife Pua acquired their 77 acre parcel of North Kulani Road in Mountain View.



Shane has worked throughout the years with District Conservationist Kori Hisashima to develop a conservation plan that would address resource concerns related to poor livestock forage and noxious weeds in manageable phases. Shane has transformed his extremely weedy Waiawi, Gunpowder, Albizia, Melastoma pasture with mostly Wainaku and Hilo grass to a 5 paddock, soon to be 10 paddock

mixed species pasture of Signal, California, Mulato, Mombasa, Barons, and Desmodium. He achieved this by installing paddock fences, extensive Brush Management by both mechanical and chemical methods, and a lot of grass seed planting and praying for less rain. Shane planted seeds several times in his quest to find a mix of suitable forage species for his area that has some areas of poor soils and high rainfall. He experienced great disappointments due to poor or very delayed seed germination, seed loss to birds, and periods of heavy rainfall that made his planting at times seem like a disaster. Shane was counseled to be patient, re-seed where necessary, and again to be patient.

His hard work and patience paid off as the forage establishment started to germinate and the grass filled in as he deferred grazing and allowed the seedlings time to take root and flourish. He has also installed a livestock water system to include some of the most well-built and aesthetically pleasing water harvesting catchment roof sheds and tanks to deliver cleaning drinking water to each paddock for his cattle.



Shane's new rotation will create a higher animal stock density impact per paddock, resulting in uniformed grazing of paddocks, a high plane of animal performance and diet quality, balanced with the health of the grazing resources like the forage, roots, and soil.



Shane says, “My family and I are grateful for all the hard work the NRCS team put in to help small farmers like us make huge improvements to our land. Your dedication inspires us when we're out there pounding fence posts, clearing albizia's, and caring for our animals. Mahalo to you all!”

Congratulations Shane Kalaniopio for being selected as the 2018 Puna Rancher of the Year.

# Puna SWCD Outstanding Cooperator of the Year



## Double N Ranch—Neal Nakamoto

In Pahoehoe, Neal has been a cooperator of the Puna Soil and Water Conservation District since 2008. He acquired leased land from Kamehameha Schools, and when Buddy first started working with Neal he had already installed some paddock fences, a water harvesting catchment, water tanks, and a livestock water distribution system on his own. Neal implemented Brush Management to control a plethora of tenacious invasive species such as Melochia, Alibizia, Clidemia, Waiawi, Melastoma, and Tibouchina and through



planting established a beautiful mixed green salad for the cattle of California, Signal, Barons, and Star Grass along with Desmodium, and Kaimi Clover. One of Neal's main goals here was to suppress the vigorous Hilo grass growth by rotating cows quicker through his 12 paddock grazing system which allows each pasture to sustain a 18 in stubble height. The advantages of intensive grazing for Neal is that he has the maximum forage production and use per acre, weed control through grazing, more even distribution of manure throughout the paddocks, more uniform animal distribution, higher stock densities; Neal went from 25 animal units to 130 animal units on 276 acres with less stress on animals, and more forage options because his pastures are rested

and grazed more efficiently.

Neal is very appreciative of the services and financial assistance that he has received from NRCS. He has gained knowledge of grasses, rotational grazing, and how to set up a good grazing system that is very valuable to him. He says that he would've made it to the point that he is at today eventually, but that NRCS made it 100 times easier for him. Neal credits his wife Cindy, and his kids for sacrificing their time and supporting him through his ranching endeavors.

Congratulations Neal Nakamoto of Double N Ranch for being selected as the 2018 Puna Rancher of the Year.



# Ka'u Soil and Water Conservation District



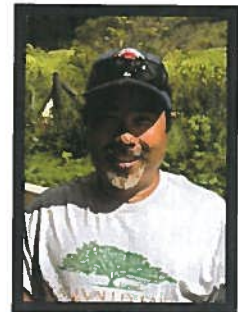
Chairperson  
Brenda Iokepa-Moses



Vice Chairman  
John Cross



Director  
Tyler Johansen



Director  
Lee Segawa

## Ka'u SWCD Chairperson's Message

Ka'u Soil and Water Conservation District (KSWCD) has a board made up of dedicated volunteers that include Brenda Iokepa-Moses, Ka'u Mahi that currently serves as the Chairperson and has been on the Board for twenty plus years; John Cross, Johnny's Garden and John C. Cross Tropical Estate and Land Planning Services that currently serves as Director and has been on the Board(s) for twenty plus years; our newest members; Tyler Johansen, Agriculture Consultant and Lee Segawa, Ka'u Valley farms add perspectives from small farming and ranching communities. Board Members all bring something different to the table and this diversity helps them in their decision making and recommendations. This past year has been one of recovery from the Volcano, to flooding, to windstorms. Our farming community is resilient and have made great strides to mend what has been broken. In times of natural disaster, the Soil and Water Conservation and NRCS staff play an important role in assisting the farmer to repair damages or in some places relocate and start over. We are blessed with a Hilo staff that is not only good at their jobs but also go above and beyond to assist farmers because they truly care. Ryan Belcher and Meghan Mulley are the conservation planners that make things happen in the office along with the unwavering support of Kori Hisashima and the rest of the NRCS staff. Jennifer Lopez-Reavis heading the Field Office in Hilo also handles three districts (Puna, Ka'u and Wai-akea) on top of coordination of special events, budgets and anything else that comes up! With all these talented members of our team and with all the different backgrounds our goal collectively is to do our part to help preserve the land and water resources by assisting in the planning and preparation of the lands as well as facilitating education for the farmers.

With our district being comparable in size to the Island of Oahu it is a challenge just getting to our client. With the drive being an hour or two away from the field office a lot of time is spent on the road getting to these rural area clients. With the help of our partner NRCS they make it work with careful planning.

A special mahalo to Mayor Harry Kim, the County of Hawaii R&D, DPW, Department of Land and Natural Resources, Natural Resources Conservation Service, and other affiliated agencies for their continued support of the agricultural community.

*"Buy Local it Matters"*

# Ka'u SWCD Outstanding Cooperator of the Year

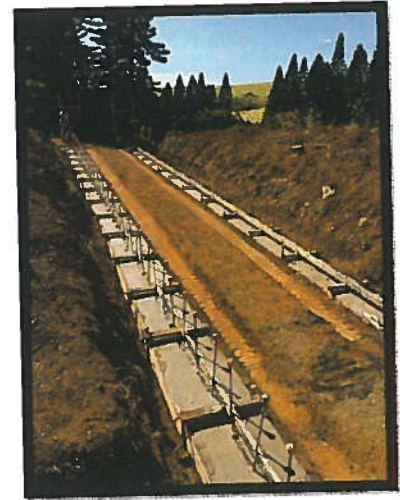


## DANE & TERRY SHIBUYA Masazo's Pig Farm

Mr. Dane Shibuya along with his wife Terry and their family, own and operate Masazo's Piggery. They own 3 acres above Naalehu town, within the Kau Soil and Water Conservation District. The Shibuya's run a Dry Litter Style Piggery that has the capacity to hold over 50 sows. They sell both wean-offs and market size hogs.



Dane started working with NRCS, back in the early 1990's, with then district planner George Mikami. They designed and built a 20 sow dry litter piggery. Dry Litter Piggeries consist of concrete pens built on a slope to allow movement of the litter material, by the natural instinct of the hog digging and rooting. Most common litter material at that time was Macadamia Nut husk. Litter material would be added at the top of the pen, and as the hogs dig thru it, the litter would move down the pen, into a trough located at the bottom, where it is collected and used as compost material. In 2013, the Shibuya's wanted to expand, with help from then



district planner Amelia Drury and NRCS planner Jill Beaton. The Shibuya's were awarded an EQIP contract to build another 30 sow Dry Litter Piggery, which consisted of the pens, a composting and waste storage facility. During construction of the second piggery, the Shibuya's suffered a devastating loss. The Hog herd contracted a disease, and they were ordered to remove all hogs and sanitize the entire facility. This loss took a heavy toll on the Shibuya's, but with help and motivation from family, friends, and the community, the Shibuya's have started raising hogs again!



We would like to congratulate Dane and Terry Shibuya and their family, for their dedication and hard work. It took a lot of blood, sweat, and a whole bunch of tears to get this project completed. Congratulations of being awarded the 2018 Kau Soil and Water Conservation District Outstanding Hog Farmer of the Year!

# Ka'u SWCD Outstanding Cooperator of the Year



## Double N Ranch—Neal Nakamoto

Neal Nakamoto of Double N Ranch has been a cooperator of the Ka'u Soil and Water Conservation District since 1999. Neal manages a 1,288 acre parcel adjacent to Punalu'u that he leases from Kamehameha Schools. Over the years Neal worked with former NRCS

Soil Conservationist Justin "Buddy" Perry and Kori Hisashima to develop a long-term conservation plan that would address resource concerns in manageable amounts, taking into consideration Neal's time and resources. Neal also works full-time as a contractor and manages other ranches in Ka'u, Puna, and Hamakua. Neal has transformed his ranch in Ka'u from an extremely weedy Christmas Berry pasture with sparse Guinea to a 9 paddock rotation of Guinea, Green Panic, Haole Koa and Glycine with 2 additional paddocks that

are reserved for times of drought. He achieved this by installing over 7 miles of fence, extensive Brush Management by both mechanical and chemical methods, and a lot of grass seed planting and praying for rain. He has also installed a livestock water system to each paddock to ensure his cattle has sufficient clean water. The improvements to the land allowed Neal to increase his herd

from 50 animal units to now 120 animal units. He practices year-round breeding and markets his weaned calves.

Neal is very appreciative of the services and financial assistance that he has received from NRCS. He has gained knowledge of grasses, rotational grazing, and how to set up a good grazing system that is very valuable to him. He says that he would've made it to the point that he is at today eventually, but that NRCS made it 100 times easier for him. Neal credits his wife Cindy, and his kids for sacrificing their time and supporting him through his ranching endeavors.

Congratulations Neal Nakamoto of Double N Ranch for being selected as the 2018 Ka'u Rancher of the Year.



# KEALAKEKUA FIELD OFFICE AND THE KONA SWCD DIRECTORS



Left to Right, Front Row: Carl Rosetti; Laura Nelson  
Back Row: Mike Kolman, Mary Robblee, Jayne Leflour (Retired NOAA Staffer)  
Jessica Schmelz, Jacky Vega; Alex Beaton

## Kona SWCD Directors



Rick Robinson-Director



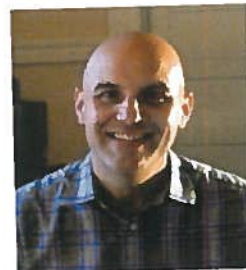
Pepe Miranda-Treasurer



Jeff Knowles-Vice Chair



Tom Greenwell, Secretary



Greg Hendrickson, Chair

# Kona Soil and Water Conservation District



## Message from Chairperson Greg Hendrickson.....

This has been a successful year for us in Kona helping many new people and continuing to assist folks who have been here farming for a while. We are grateful to be part of a thriving agricultural, ranching and productive forestland community and we are seeking to ensure that our producers have the technical advice and financial resources to advance their conservation objectives.

We produced a booklet titled, *Kona's Soil and Water Resource Concerns, Kuleana and Actions, Overcoming Challenges and Keeping Kona Green*. It has been well received by the community and is even used as a text at Palamanui College. Our goal with writing this document was to use it as tool to educate the public at large on issues related to Kona's soil and water resources. We believe most of our primary customers, farmers, ranchers and private forest land owners understand our resource concerns, but those that are new to the island and some residential property owners may not understand them as well. We are hoping to change that and involve all of our community in protecting and enhancing the important resources of Hawaii Island.

The Kona SWCD hosted the State Conservation Awareness Contest in November at the farm of our 2014 Agro-Forester of the Year, Home O Kahalu`u Farm, located in the ahupua`a of Kahalu`u. We had students from Molokai High School, Maui's St. Anthony School and Hawaii Island's Kamehameha School. The Kamehameha School team won the competition. The Molokai students, because of air travel to and from that island, had to spend the night before the competition on Hawaii Island. Director Pepe Miranda came to their rescue. Not only did he provide them lodging, he cooked dinner for them. The students and their coach raved about the meal, and to show their gratitude the students sang to Pepe at the end of the contest.

The ranching folks here in Kona, and by extension our community, have some tough times ahead. There is a new pest the ranchers are fighting, the Two Lined Spittle Bug (TLSB). This pest destroys kikuyu and pangola grass, the most prevalent grasses on our ranches. Areas where this pest has been have lost much, if not all, of their grasses. Those ranches are now dealing with herbaceous weeds and unwanted brush in their pastures. We hope good solutions can be developed before the rest of the island is impacted. We are concerned for our ranchers and appreciate the professionals who are assisting in identifying solutions to this challenge.



# Kona SWCD Forester of the Year



Cheryl Carden, our Forester of the Year, has worked diligently to improve the native species populations on her land by increasing the number of an individual species, there are more ohia, but also increasing the diversity of the native species.

In 2013, with her first NRCS contract, Cheryl started working on her forest. Naturally, the first thing to do was to remove the invasive species. She had a bunch too, Christmas berry, guava, octopus, tree, koster's curse, ginger (kahili and white), macaranga, dogtail, autograph tree and others were removed from the property. The toughest were the guava, Christmas berry and octopus trees. Cheryl used a cut stump treatment with herbicide on the trunk. Some trees required multiple times but now, because of the sandalwood trees added to the forest, herbicide is not used.

With the removal of the invasive plants completed, on to planting. Cheryl planted over 5,500 trees and shrubs and the varieties include alahe`e (*Psydrax odoratum*), a`ali`i (*Dodonaea viscosa*), ohia (*Metrosideros polymorpha*), mamaki (*Pipturus albidus*), Kauila (*Alphitonia ponderosa*), lama (*Diospyros sandwicensis*), iliahi (sandlewood), koaia (*Acacia koaia*), Koa (*Acacia koa*), ulei (*Osteomeles anthyllidifolia*), `ilie`e (*Plumbago zeylanica*), mamane (*Sophora chrysophylla*), olupua (*Nestegis sandwicensis*), kamani (*Calophyllum inophyllum*) among others. Many of these Cheryl grew herself from seed or cuttings. Amazingly, she did all the clearing, growing and planting of her land in only two years, two years ahead of schedule. Now, she is growing out native plants for others.



On the left is Sophie, Cheryl is in the center and Zena is on the right.



The species diversity and the number of plants of an individual species has improved on this land thanks to Cheryl's efforts.

For her hardwood timber trees Cheryl planted pheasant wood, Honduran mahogany, Spanish cedar, as well as others. They are located on her land for easy harvest sometime in the future and not mixed into the native forest.

Cheryl has also been monitoring her wildlife over the years. She sees many more hawks and they have started seeing and hearing owl, Cheryl thought it was a barn owl. The hawks, reportedly, are demonstrating a hunting technique Cheryl had not seen in the past. The mamaki fruit is attracting a lot of smaller birds and the hawks are hunting in the mamaki understory. Bat too, have been seen multiple times on this land. There are new bird songs that Cheryl hears and though she cannot positively identify it, she states it sounds just like the recording of a bird she has heard on line and at Volcanoes National Park.

# Kona SWCD Farmer of the Year



Kona's Earthly Delights Farm was born in 2005 and was immediately set on an organic path. Bonnie and Bacci Perata started their farm with cover crops. They actually did three cycles of sunn hemp, letting the last cycle get 8-10' high, and then mowing it down. Everything they do is for the benefit of the soil.

They grow a very diverse crop. Offerings including coffee, mac nuts, bananas, pineapple, hearts of palm, avocados, citrus, cacao, and it goes on. Many of the products they produce from the land are used in their value-added products. Jams, jellies, baked goods and delicious chocolate bars can be found at their booth on Saturday at the Kona County Farm Bureau's Farmers Market at the Keauhou Shopping Plaza from 8-12.

Since they are a Certified organic farm, and healthy soil is of paramount importance, pest control could have been a challenge but at Kona's Earthly Delights Farm there are five chicken tractors each housing 5-7 chickens. The residents in these tractors do a lot of work that would cost a great deal of money or time, to get done otherwise.

On a farm, chickens can be destructive if left to their own devices. They can cause erosion problems and make seeding a cover crop difficult. Putting them in tractors puts the farmer in charge of the fowl. When you incorporate chickens into your farming operation like this there is much

they will do for you. They will provide you with food, their eggs. Chickens are great at pest control. Though they are fed grain they will get the bugs and grubs under their feet, like Japanese rose beetle. Chickens also provide natural fertilizer with their waste. By being in tractors, the chickens at Kona's Earthly Delights Farm get to enjoy a controlled roam around the land and no part of the farm shows the result of excess chicken activity, like baring the soil making erosion possible. On the farm, they are rock stars!

Stop by the market on Saturday and say hi to the Peratas and their team of interns. You can pick up some lilikoi cheesecake or mac nuts, or dried bananas, or ice cream tree bean pods, or... You won't be disappointed.



*Bacci, Bonnie and Zeena*

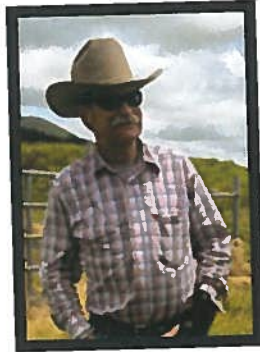


*Bonnie and Bacci at the Keauhou Farmers Market. Bonnie is wearing the sunglasses and a smile. Bacci is wearing the blue T-shirt and a smile.*

# WAIMEA FIELD OFFICE AND THE MAUNA KEA SWCD DIRECTORS



## Mauna Kea SWCD Directors



*Pono von Holt, Chairman*



*Charlie White, Director*



*Brad Lau, Treasurer*



*Willee Rice, Director*

## WAIMEA FIELD OFFICE STAFF



*Waimea Field Office Photo: Left to Right- Reese Libby: NRCS Geographer/ Cartographer, Andrew Stout: NRCS Civil Engineer, Jill Ficke- Beaton: NRCS Rangeland Management Specialist, Alyssa Fujii: MKSWCD Conservation Specialist/ Administrative Assistant, Carolyn Wong: NRCS State Grazing Land Management Specialist, Scott Cook: NRCS Waimea District Conservationist.*

# MAUNA KEA SOIL AND WATER CONSERVATION DISTRICT



## Mauna Kea SWCD Chairman's Message

Greetings from the Mauna Kea District! This past year has been a very busy year as our cooperator numbers keep growing along with the amount of Conservation Plans. Across the 740,000 acres that make up the Mauna Kea Soil and Water Conservation District, there are a multitude of different agricultural and conservation achievements, and innovations happening every day. It is a privilege and an honor for the MKSWCD to assist our producers and land stewards in their work. We understand that being an agricultural producer in Hawai`i is not just a career but a passion, a tradition, and a challenge. The district is proud to support our community through the development of conservation plans, the compliance with the Country Grading and Grubbing Ordinance, participation in community education and outreach activities and technical assistance.

The district board meets every second Wednesday of the month from 4-6pm in the USDA-NRCS Waimea Field Office. This meeting is open to the public and participation is welcome.

The NRCS Waimea Field office has seen some changes throughout this past year. Cinda Mattrocce, Rangeland Management Specialist has taken another opportunity back with the Forest Service in California. We wish her well in her future endeavors. We welcome Scott Cook as the new District Conservationist for Waimea Field Office. Scott comes to us from NRCS in Portland, Oregon where he was a Resource Conservationist focusing on Wetland planning. We look forward to Scott serving as our leader for the Waimea Field Office! We say A Hui Hou to Reese Libby as he takes on the retirement life! His humor and positivity will definitely be missed!

The Mauna Kea District would like to thank the County of Hawai`i, the State Department of Land and Natural Resources, and the University of Hawai`i Cooperative Extension Service, and others for their financial and technical support that allows us to serve our conservation and agricultural community.

We would also like to thank the NRCS Waimea Field Office staff for the continued support throughout the many years of our partnership. Also, the hardworking cooperators of the Mauna Kea District that are such a pleasure to work with! We look forward to another great year of success!

# MAUNA KEA SOIL AND WATER CONSERVATION DISTRICT



## “2018 Rancher of the Year Georgiann Kealoha- Jose”

Georgiann Kealoha- Jose has been selected as the 2018 Rancher of the Year for the Mauna Kea Soil and Water Conservation District.

Georgiann’s father, George started Kealoha Ranch and obtained a homestead lease on Department of Hawaiian Home Lands in Honokaia in 1968. He participated with NRCS and the District in the late 1990’s. In 2009 Georgiann was fortunate enough to inherit the lease from him. She and her husband Harry are proud to continue the ranching legacy of the Kealoha Ohana.

Georgiann started working with the District in 2008 and was later awarded an NRCS contract in 2014. The primary goal was to install infrastructure to create a rotational system and control fireweed. Georgiann and Harry implemented Herbaceous Weed Control on about half of their 300 acres. They have conquered the battle but there is ongoing maintenance to keep it under control.

She has an active contract with NRCS that she was awarded in 2018 to help address their water reliability issue along with replacement of some old deteriorated cross fences that were installed some time ago. This refinement will allow for adequate water to more remote areas of the ranch, and allow for additional cross-fencing to extend rest and recovery time and improve utilization.

She believes her father would be very proud of the many improvements as this is what he dreamed of doing, but could not due to the

**October 2015**



financial limitations. Georgiann and Harry are very grateful to have the opportunity to work with NRCS and the District as it wouldn’t be possible for them to implement their conservation practices on their ranch otherwise. They have learned a lot throughout this journey and take pride in their hard work. Both Georgiann and Harry have been a pleasure to work with and we look forward to the completion of this active contract. They are a great example of being good stewards of the land, especially with the environmental challenges they face in the upper elevations of Honokaia.

**July 2012**



**January 2014**



**December 2015**



# MAUNA KEA SOIL AND WATER CONSERVATION DISTRICT



## Arthur Jensen 2018 Farmer of the Year

Arthur Jensen has been selected as the 2018 Farm of the Year for the Mauna Kea Soil and Water Conservation District.

Arthur has a long history of working with the Soil Conservation Service, now known as Natural Resources Conservation Service and the District. 1979 is the earliest documented note in our files for Mr. Jensen. At this time Mr. Jensen worked with SCS on irrigation and windbreak establishments on his Pu'ukapu farm. In 1991, he came to SCS for assistance with irrigation on his farm on Kohala.

In 2013, Arthur came to NRCS looking for assistance with High Tunnels. He already had in place two High Tunnels but was in need of another one. He was fortunate to receive funds to install an additional High Tunnel bringing his total to three.

As time went on, Mr. Jensen was hard at work utilizing all space accounted for in his existing three High Tunnels. In 2017 he was ready to take on more work! He was awarded another contract for two more High Tunnels, taking his grand total to five! This time he also chose to use Gutters and Downspouts on the structures to prevent erosion on the outside. He installed both of these High Tunnels all by himself!

At Mr. Jensen's 5 acre farm in Kohala he grows palms, coconuts and avocado. His water source comes from the Kohala Ditch which can sometime be an unreliable source. During the day is when the water flow is at its slowest due to everyone's demand for their operations. Arthur was able to receive funds for an Irrigation Reservoir which will allow him to pump water from the Ditch to his tank in the evening when water consumption is low and have good flow to his crops. He will also be improving his Access Road, as it currently impairs his production and maintenance with erosion that occurs.

Along this journey, Arthur has learned a lot through his experiences. He loves what he does and takes pride in his work. He has been a pleasure to work with and an extremely hard worker! He is a great example of success!! His long term relationship with the District and NRCS (SCS) has allowed him to build relationships and utilize the resources available to him.



# HAMAKUA SOIL AND WATER CONSERVATION DISTRICT



*Doug Beaton  
Chairman*

*Troy Keolanui,  
Vice Chairman*

*Virginia Alderson  
Secretary*

*Dylan Shropshire  
Treasurer*

*Marissa Harman  
Associate Director*

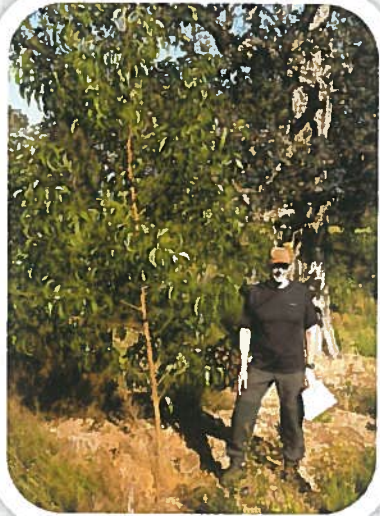
## Hamakua Chair's Message

As 2018 comes to an end, we are obligated to reflect on our challenges and accomplishments so that we can continue to move forward with providing valuable services for our community and producers. The need for those services continues to grow as our district is a very active agricultural area with operations ranging from small subsistence farms to large commercial operations. The demand for conservation planning services to conserve those resources will only increase as our population and population densities continue to rise. The agriculture residential interface will continue to increase as well, creating challenges for both the agricultural communities as well as the public.

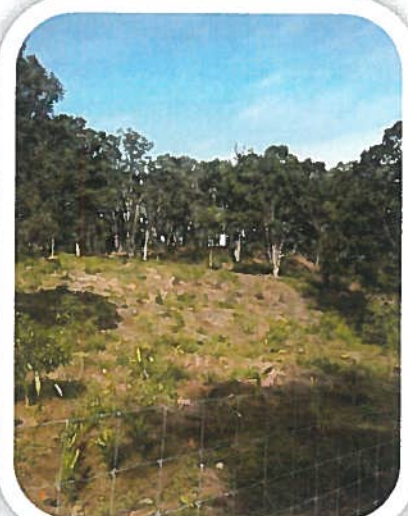
The Hamakua SWCD, in partnership with the USDA Natural Resources Conservation Service, welcomed 14 new cooperators and approved 30 conservation plans in 2018. 300 acres of land have been included in our 2018 plans and will be implementing practices to address the identified resource concerns. The district also took part in several outreach activities including the Kamehameha Schools Middle School Career Day, presenting an educational session at the Hamakua Harvest Farmer's Market, and volunteering at the 2018 County Conservation Awareness Contest hosted by the Puna SWCD and the 2018 State Conservation Awareness Contest hosted by the Kona SWCD. We were also very fortunate this year to have our Soil Conservationist and Administrative Assistant, Kanoe Malani, attend a 3-week NRCS Conservation Boot Camp Training held in Lincoln, Nebraska through funding provided by the National Association of Conservation Districts.

The Hamakua SWCD would like to acknowledge and extend our deepest appreciation to the County of Hawaii, the USDA Natural Resources Conservation Service, and the State Department of Land and Natural Resources for providing the financial and technical support that enables us to provide free conservation planning to our district. The HSWCD Board would like to also thank Kanoe Malani for being their person in the field and the office and commend her for her dedication and commitment to conservation. Most of all, the Board wishes to thank all the farmers, ranchers and foresters for their voluntary cooperation with the district and for willingly implementing conservation on the land they control and for understanding the value and impact it has on the environment and their sustainability.

## HAMAKUA SWCD FORESTER OF THE YEAR



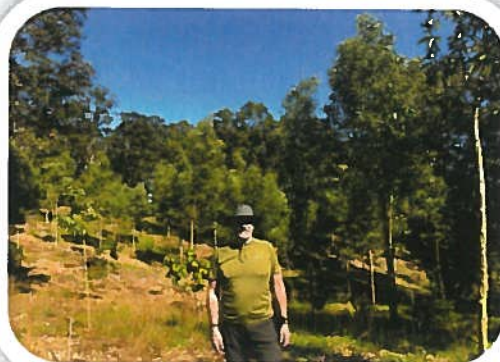
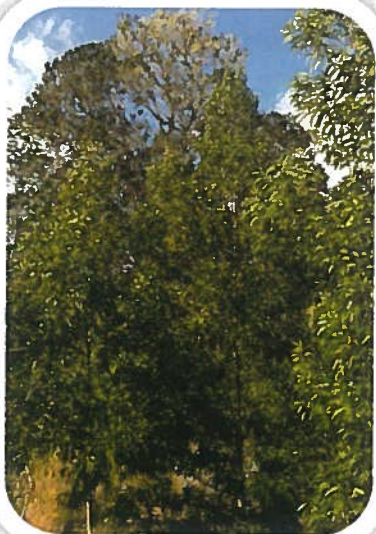
In March of 2011, then Soil Conservationist Kori Hisashima met with Neal Arnold and his Son Wyatt on their 83-acre parcel which was grazed by cattle for over a hundred years by Kukaiau Ranch in Pa'auilo. The site was predominantly an old growth 'ohia and koa overstory with encroaching guava, waiawi, faya, and other noxious weeds with kikuyu grass ground cover. Neal had already begun to clear and plant koa trees on about 13.5 acres and was motivated to transform the land from pasture to native forest. Neal had



heard about some potential NRCS programs that may have helped him achieve this goal and reached out to NRCS for assistance. NRCS worked with Neal and Forest Solutions to develop a forest stewardship plan intertwined with a conservation plan.

First things first. Feral pigs ran rampant throughout the site and caused damage to koa trees that were planted. A very reputable fence contractor was hired to install game proof hog-wire fences along the perimeter of the property, traversing across the undulating terrain, and steep gulches. The hogs were trapped or hunted, then removed from the project area. The first EQIP contract for about 31 acres was sectioned off into three 10.5-acre compartments where we scheduled to do Tree/Shrub Site preparation and woody residue treatment to remove and

mulch invasive species, followed up with Tree/Shrub planting where Koa trees were planting 10 ft. on center for a total of over 13,700 koa trees planted within four years.





# HAMAKUA SWCD FORESTER OF THE YEAR CONTINUED.....



Neal's first EQIP project was a success and he applied for phase two. Phase two contracted about 22 acres which was sectioned off into 4 compartments. The last compartment being a very rugged 2-acre



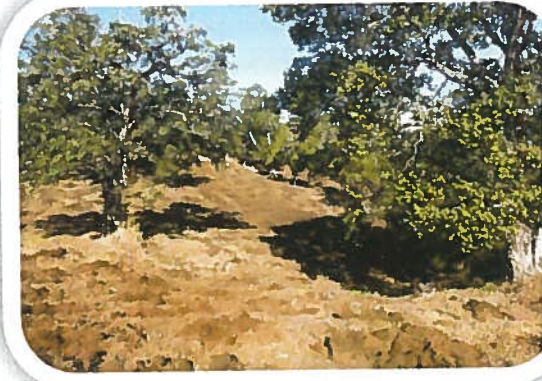
piece along a gulch. Neal hired a gyrotrac contractor to come in and grind down the invasive vegetation and turn the vegetation into mulch with one action. This method proved to be very successful, and areas were again planted



out in koa. Being interested in creating habitat for native insects like the Kamehameha and Koa butterflies, supplemental understory native plantings of 34 different species were incorporated. Some species



include A'ali'i, Iliahi, Ama'u, Mamaki, Naupaka kuahiwi, and Loulu. Neal and Wyatt established 4 permanent transect lines throughout the entire project area which they monitor twice a year and document vegetation counts, DBH of koa and



sightings of native wildlife recording data and photo documentation.

Neal is currently in his second year of a CSP contract where he is managing the forest by pruning and thinning. It amazes me every time I get to visit with Neal and see the growth and health of his native forest, as well the enthusiasm he has for this project. He is an inspiration, and we congratulate Neal Arnold for being selected as the 2018 Hamakua Soil and Water Conservation District forester for the year.





## LAND Division

STATE OF HAWAII, DEPARTMENT OF LAND AND NATURAL RESOURCES



About The Department of Land and Natural Resources (DLNR) Land Division is responsible for managing State-owned lands in ways that will promote the social, environmental and economic well being of Hawaii's people and for ensuring that these lands are used in accordance with the goals, policies and plans of the State. Lands that are not set aside for use by other government agencies come within the direct purview of the division. These lands are made available to the public through fee sales, leases, licenses, grants of easement, rights-of-entry, month-to-month tenancies or kept as open space area.

Besides maintaining an inventory of State-owned lands, the division serves as an office of record and maintains a central repository of all government documents relating to land dating back to the "Great Mahele" of 1848.

On the island of Hawaii, there are approximately 100+ leases and permits issued for agriculture and pasture purposes. These leases and permits encumber over 114,000 acres of land. The DLNR requires all its tenants to apply as cooperators with their respective Soil and Water Conservation District and submit a plan for approval by the Chairperson of the Board of Land and Natural Resources. This requirement insures the land is kept in a productive state while encouraging our tenants to carry out good conservation practices.



## Bio-control of Strawberry Guava (*Psidium cattleianum*) in Hawaii

Hawaii Department of Agriculture  
Plant Pest Control Branch

Strawberry guava (*Psidium cattleianum*) is native to Southeastern Brazil, where it is established in the sandy coastal plains to higher forest elevations up to 4,000 feet. It thrives in tropical to sub-tropical climates and can tolerate repeated winter frost. In Brazil, the typical height for strawberry guava ranges up to 16 feet, fruit may vary in color from red to yellow.

Strawberry guava was introduced to Hawaii by a priest in the 1820's as a table-fruit, however became established in Hawaiian forest ecosystems and currently considered one of the most disruptive alien weeds. Strawberry guava infest thousands of acres of forest on all of the major Hawaiian Islands, it forms dense thickets up to 30 feet in height. A combination of rapid growth rate, heavy fruit drop, lack of natural plant pathogens, and predators make it the perfect forest weed. Many non-native birds, rodents and feral hogs consume the fruit, move to new locations, creating new thickets by defecating seeds. Strawberry guava will overcrowd, compete and displace many rare and endangered native plants. The vast amounts of fruit produced by strawberry guava can also have a negative impact on Hawaii's agricultural fruit crops, by providing an alternate host for the Mediterranean fruit fly. Dense root masses can absorb, block or alter the natural flow of rain from entering fresh water aquifers. It is estimated that there is at least 300,000 acres of strawberry guava on Hawaii Island alone. In Hawaii, strawberry guava is commonly controlled by cutting, bulldozing and/or application of herbicides. However, repeat applications are necessary, which prove to be difficult, time consuming, and expensive. Another alternative is Biological control.



Galls formed by *Tectococcus ovatus*

The Institute of Pacific Islands Forestry of the USDA Forest Service has done research on *Tectococcus ovatus* Hempel for over fifteen years, it has been evaluated carefully both in its native range and under special quarantine in Hawaii to reduce the risk of non-target species.

# STATE DEPARTMENT OF AGRICULTURE

## Continued.....



The US Forest service conducted host test studies with dozens of native, non-native plants related to strawberry guava. In Hawaii, the family *Myrtaceae* is represented by 49 species in 9 genera, including 8 native species. All laboratory test and field observations indicate that *Tectococcus* is highly host specific to strawberry guava. In November 2011, the Hawaii Department of Agriculture, USDA Animal and Plant Health Inspection service, US Fish and Wildlife services, State of Hawaii Board of agriculture and the public reviewed the final environmental assessment (EA) and decided that *Tectococcus* could be utilized as a biological control for strawberry guava.



*Strawberry Guava Plants before being inoculated: Note the monotypic stand of Strawberry Guava December 2015*

The Brazilian scale, *Tectococcus ovatus* Hempel (Hemiptera: Eriococcidae) is a small scale insect that creates galls on young leaves. A single female remains enclosed in the gall throughout her life, producing a several hundred eggs in a matrix of wax filaments, which help the crawlers



*Plants after two years of observations: Note the defoliation of the plant canopy and regrowth of Uluhe Ferns being established in the understory. May 2017*

to float in the wind. Under laboratory conditions, *Tectococcus* reproduces continuously with a generation time of 6 to 10 weeks. Reproduction is facultatively parthenogenetic but there is at least one alternation of generations each year. The crawlers emerge from a small orifice at the tip of each gall, crawls upwards on branches, in search of soft, young leaf tissue. Once a suitable material is identified, it will settle, feed, and a gall will form around the nymph. A single leaf may support dozens of galls. The developing galls change the morphology of leaves, making it difficult for photosynthesis to occur. Sugar and carbohydrate production is altered, and the energy for fruit and seed formation is reduced. Heavy infestations can cause premature leaf drop, in

some instances, the majority of the plant becomes defoliated. When the plant pushes out a new flush of foliage, *Tectococcus* once again infest new leaf tissue. This cycle may take up to two years, stunting the entire plant until it exhausts much of its stored energy reserves. Sometimes other plants (Grasses, ginger, ferns, shrubs, etc.) will out compete and over take it.

*Tectococcus ovatus* will not outright kill strawberry guava, however it can be used as a tool to slow the spread by reducing fruit and seed production, weaken plant vigor which enhances mechanical and chemical control methods.

