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77 Hookele St., Suite 202  
Kahului, HI 96732

## Maui Soil & Water Conservation Districts

2018

### Annual Report



DLNR— Division of Water & Land Management

USDA— Natural Resource Conservation Service

Serving

Olinda— Kula SWCD

Hana SWCD

West Maui SWCD

Central Maui SWCD



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SERVICES OF  
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FCS of Hawaii, ACA is not a Federal Agency of the Federal Government.

Nationwide Mortgage Licensing System ID# 613610

This Annual Report is Dedicated in Memory of  
David “Buddy” Nobriga



David “Buddy” Nobriga  
December 7, 1926 – November 8, 2017  
Businessman—Philanthropist—Rancher

Buddy was one of Hawai‘i’s premier cattlemen, one of Maui’s most respected businessmen and philanthropists, and the patriarch of a family with roots that now reach five generations deep on Maui.

Born on Dec. 7, 1926 into a family of Portuguese immigrants that arrived on Maui in 1886, his family has devoted itself to running and building successful small businesses and to serving the community. His parents were Manuel and Emily Nobriga. For more than half a century the Nobriga family has owned and operated Maui Soda & Ice Works, Ltd., the Coca-Cola® bottler/distributor that has served Maui and Lāna‘i since 1924, and the manufacturer of Roselani® Ice Cream. Maui Soda & Ice Works has been in business on Maui for 133 years.

Buddy’s grandfather Antone established Nobriga Ranch as a family operation in Kahakuloa in 1930. In 1965, Buddy and his father Manuel formed Nobriga’s Ranch, Inc. Buddy was President/Chairman from 1981. The land and the cattle raised there are, literally, parts of him.

Buddy started working part-time for Maui Soda & Ice Works in 1941; he was a freshman at St. Anthony’s School. His high school years were interrupted by World War II. He was drafted in 1944 and, fortunately, on his way to service in the Pacific theater, the war ended. When he returned to Maui, he completed his last few months of high school and went back to work at the family companies. When his father, Manuel, retired from Maui Soda in 1971, Buddy became president and ten years later he was CEO.

In addition to running the family businesses that include the cattle ranch and a feedlot, Buddy for many years advocated for Hawai‘i’s cattlemen at both the State Capitol and in Washington, D.C. He lobbied for and provided language for many pieces of legislation including laws that provided for the promotion of beef products and meat inspection. He helped form the Maui Cattleman’s Association in 1970 and served as its president for ten years and was president of the Hawai‘i Cattleman’s Council for four years. He served on the Board of Water Supply for 20 years, held positions on the State Water Commission and in the Department of Agriculture.

He served on dozens of boards and received more community service awards than the walls and shelves in his office can hold. He was inducted into the Paniolo Hall of Fame in 2001. He was named the Maui County Council Boy Scouts of America’s Distinguished Citizen in 2002. He won the first ever Friend of Agriculture Award presented by The Hawai‘i Agriculture Conference in 2004, Maui Weekly’s first ever Person of the Year Award (2004), the 2008 Mayor’s Small Business Lifetime Achievement Award, and in that same year was named one of the People Who Made a Difference by The Maui News. In 2013, he was inducted into the Hawai‘i Restaurant Association Hall of Fame. And in 2014, came what is arguably his company’s highest honor to date. Maui Soda & Ice Works, Ltd. was named by the U.S. Small Business Administration as the Family-Owned Business of the Year for State of Hawai‘i. Later this month, he will be posthumously awarded the Lifetime Achievement Award by the Hawai‘i Cattleman’s Council.

Besides his family and its businesses, he always said he was most proud of his 54 years of service to the West Maui Soil & Conservation District. For 50 of those years, he served as its chairman. He and his colleagues are responsible for creating the Honolua watershed which protects the Nāpili area from flooding, for cleaning up the ocean in the Kahana area, and for work on the Lahaina watershed project throughout the last two decades. In 2009, Buddy was one of four people in the Pacific Islands recognized as environmental heroes by the U.S. Environmental Protection Agency. This was national acknowledgement for founding the West Maui Soil and Water Conservation District. EPA officials said his years of commitment to the environment provided the needed leadership to advance a system designed to prevent the pollution of West Maui coastal waters. He also organized Maui’s Resource Conservation & Development, the first in the State, in 1970, serving as its chairman for ten years. Although he no longer served officially, he continued to be dedicated to the conservation of Hawai‘i’s natural resources and mentors others in conservation practices.

Buddy served on the Maui County Board of Water Supply for decades including two terms as Chairman of the Board from 1969 to 1973 and again from 1975 to 1980. During those years he traveled extensively, floating bonds so that the the Kīhei/Mākena water lines could be built with assistance from Seibu Hawai‘i.

Buddy also counts his decades of service to the Federal Land Bank Association of Hawai‘i (now known as Farm Credit Services) among his most significant because this organization serves specifically to help the State’s small farmers. He served as member for 36 years, 26 of them as Chairman of the Board. And after his retirement from that post last year, he continued to be available as an advisor whenever called upon.

Buddy Nobriga deeply instilled his core values – family, business, community service – into his children. From the Maui County Fair – Buddy had been involved since 1945 and served as Chairman in 1971 – to the Jaycees Carnival to St. Anthony Schools fundraisers to benefits for virtually every charitable organization and cause on the island regardless of size, Maui Soda is there. Coca-Cola® and Roselani Ice Cream® are always on the menus. It is not just the giving. It is the spirit in which the help is given that sets this patriarch and his family apart.

He is greatly missed by his family and by the community he helped to build.

The Maui Soil and Water Conservation Districts sincerely appreciate and thank the Maui County Council Members for their active support for the SWCD program in Maui County.

The Maui County Council Members are our strongest unifying factor in the soil and water conservation movement. They help our program with financial aid and believe the soil and water conservation district program will preserve our community for future generations.

Mike White  
Council Chair  
Makawao-Haiku-Paia



Don S. Guzman  
Council Vice Chair  
Kahului



Stacy Crivello  
Council Member  
Molokai



Robert Carroll  
Council Member  
East Maui



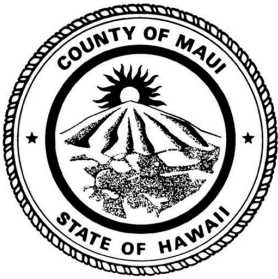
Riki Hokama  
Council Member  
Lanai



Alika Atay  
Council Member  
Wailuku, Waihe'e, Waikapu



Elle Cochran  
Council Member  
West Maui



Yuki Lei Sugimura  
Council Member  
Upcountry



Kelly T. King  
Council Member  
South Maui

We are fortunate to have legislators who believe farming is the backbone of our community, and that the soil and water conservation program will preserve our resources for future generations. They have helped our program with financial aid both locally and statewide

The Maui Soil and Water Conservation Districts and the people of Maui want to express our thanks and appreciation to the following Senators and Representatives for their active support of the SWCDs in Maui County. Due to their efforts, the Maui Soil and Water Conservation Districts have been able to accomplish their objectives.



**Senator  
Rosalyn H. Baker**  
District 6  
South and West Maui



**Senator  
J. Kalani English**  
District 7  
Hana, East and Upcountry Maui,  
Molokai, Lanai,  
Kahoolawe



**Senator  
Gilbert S.C. Keith-Agaran**  
District 5  
Wailuku, Waihee, Kahului



**Representative  
Kyle T. Yamashita**  
District 12  
Sprecklesville, Pukalani,  
Makawao, Kula, Keokea,  
Ulupalakua, Kahului

**Representative  
Lynn DeCoite**  
District 13  
Haiku, Hana, Kaupo,  
Kipahulu, Nahiku, Paia,  
Kahoolawe, Lanai,  
Molokai, Molokini



**Representative  
Angus L.K. McKelvey**  
District 10  
West Maui, Maalaea, North Kihei



**Representative  
Justin Woodson**  
District 9  
Kahului, Puunene, Old Sand Hills,  
Maui Lani



We would also like to recognize Representative Emeritus Joe Souki for many years of support and accomplishments, and welcome Appointed Representative Troy Hashimoto  
District 8 - Kahakuloa, Waihe'e, Waiehu, Puuohala, Wailuku, Kahului



**OFFICE OF THE MAYOR**

County of Maui  
200 South High Street  
Wailuku, Maui, Hawaii 96793

**A MESSAGE FROM MAYOR  
ALAN M. ARAKAWA**

Aloha Kakou,


On behalf of the people of Maui County, I am honored to recognize the Maui Soil and Water Conservation Districts for protecting our islands most precious natural resources.

Our community depends on having clean water and stable, healthy soil. The Maui Soil and Water Conservation Districts have worked for many years to discover, develop, implement and constantly improve productive lands and the environment.

Through educational and outreach programs, members have fostered the science and art of natural resource conservation, which has been especially vital in these challenging times of increased demand and diminished availability.

Please accept my sincere admiration and gratitude for each of the Maui Soil and Water Conservation Districts for their dedication and hard work, and my best wishes for another successful year.

Mahalo Nui Loa,

  
Alan M. Arakawa  
Mayor, County of Maui



Hawaii Association of Conservation Districts  
Message From Island of Maui Vice President, Mike Silva



The individual Soil and Water Conservation Districts (SWCDs) are legally constituted, self-governing units under the Hawaii Soil and Water Conservation Law, Chapter 180, Hawaii Revised Statutes. The Island of Maui is comprised of four Districts: Olinda-Kula, Hana, Central Maui, West Maui. All directors and associate directors that serve on the SWCD Boards are volunteers. Over the last 70 years, the 4 Maui Districts have been protecting our watersheds through soil and water conservation efforts within their respective Districts. In partnership with the USDA Natural Resources Conservation Service (NRCS), the SWCDs are poised to meet the needs of local agricultural producers and the community through conservation planning, and technical assistance with Best Management Practices (BMPs) or conservation practices.

The SWCDs have the responsibility to review permit applications under the County Grading Ordinance (Chapter 20.08.080), as well as provide conservation plans that are required for agricultural land users (Chapter 20.08.030). Conservation plans are also required for state agricultural land leases. The conservation plans for farmers and ranchers are worked on by our conservation specialists to minimize negative impacts of agriculture on natural resources, with training and guidance from USDA-NRCS. In most instances, an agricultural producer with an approved conservation plan may be eligible to receive financial assistance through the USDA-NRCS Farm Bill to implement the conservation practices identified on their conservation plan.

The Maui SWCDs participate in community education and outreach activities, which includes the Maui Fair, Ag Awareness Day at the State Capitol, Maui County Farm Bureau Ag Fest and Ag in the Classroom, and Hana Limu Festival. Each year the SWCDs sponsor the Conservation Awareness Program, a national land judging contest for 8th –12th grade students who are interested in learning about and understanding local soil and water resources.

I would like to sincerely thank retirees JoLoyce Kaia, Hana SWCD Chair; Doug MacCluer, Central Maui SWCD Chair; Ranae Ganske-Cerizo, USDA-NRCS District Conservationist; and Marj Stanphill, East-West Kauai SWCDs Administrative Assistant for their many years of service in the conservation movement.

Our work is truly a collaborative effort of all our partners. The Hawaii Association of Conservation Districts and the Maui SWCDs recognize and appreciate the support and efforts of the Dept. of Land and Natural Resources, USDA-NRCS, U.H Cooperative Extension Service, Mayor Alan Arakawa, Maui County Council, Dept. of Public Works, Office of Economic Development, Dept. of Health, Coastal Zone Management, Maui County Farm Bureau, Hawaii Farm Bureau Federation, and all of our cooperators who are working hard to conserve our island's resources. The SWCDs would also like to thank our Washington DC legislative team, and the Hawaii State Legislators for their continued support.

Aloha,

Mike Silva  
HACD Island of Maui Vice President

### Indigenous Species Protection and Restoration

As a critical number of our native flora and fauna are on endangered species lists, projects in this category help keep these species as viable components within our environments and ecosystems. It is important to understand that we have already lost many of our indigenous species and that we must protect, replenish, and repopulate the remaining native species on all the island of Maui County. These projects also need resources to continue to educate the general public, and visitors to these islands, about the importance of conservation, environmental protection, and natural resource development. Our membership in the Maui Conservation Alliance (MCA) helps us to understand and seek new funding streams, as well as to work with new and emerging environmental and resource conservation projects.

### Others: Social, Community, Cultural, Civic and Economic Development

Maui County is a culturally, socially and ethnically diverse jurisdiction. Our mission was expanded, through a strategic planning process in 2012, and revised in 2015, to include projects that build, nurture and improve quality of life for the people living in our communities. In 2018 we have moved forward with a Fund Development Plan (FDP) through which the Board of Directors has asked that we seek out new grant funding sources. These projects contribute to social, cultural, environmental, health, and political factors important to civic and community life on all the islands of Maui County. These projects become more important as the population of Maui County continues to grow both in numbers and diversity. We work with emerging community organizations that have innovative projects, including events, which need a combination of public and private funding, as well as philanthropic and charitable contributions from the general public, in order to fulfill their goals and objectives. (2017 Functional Expenses: \$649,477.00)

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G4605 Tri-Isle RC&D  
Molokai-Lanai Soil & Water Conservation District  
Top 3 Accomplishments 2017-2018



Conducting the Conservation Awareness Contest with high school students in partnership agencies such as UH College of Tropical Agriculture and Human Resources, Monsanto and USDA NRCS.



Removing abandoned, junk cars from residents on Molokai. To date, we have moved more than 3000 in the last 10 years with 400 in the last year.



Conducting site visits to document County complaints on Molokai such as this issue of flooding on private lands.

---

TIRCD's Project Manager, Nadine Awana Chase, earned her Certified Festival and Event Associate (CFEA) designation, along with CFEA Operations & Risk Mgmt Instructor, Ira Rosen and Janelle Baoy



### Contact Us or Donate to:

**Tri-Isle RC&D**  
**P.O. Box 338, Kahului, HI 96733**  
**244 Papa Place, Suite 101, Kahului, HI 96732**  
**Phone: (808) 871-1010,**  
**Email: [Tri-Isle@Tri-Isle.org](mailto:Tri-Isle@Tri-Isle.org)**





The Tri-isle RC&D Council, Inc. (TIRCD), has served the people of the County of Maui since 1971. It's Mission, revised in 2018, states: *The mission of Tri-isle Resource Conservation & Development Council is to protect, preserve, develop and serve island communities by providing employment and business development opportunities in Maui County, We will do this through the implementation, management and fiscal sponsorship of agricultural, civic, cultural, economic and environmental projects.* Through its sponsored and fiscally managed projects, TIRCD supports and nurtures over 200 jobs throughout Maui County. The following are descriptions of it's major programs, with the amount of functional expenses in each category for the 2017 calendar year:

**Environment and Watershed Protection and Restoration**

Projects in this category are important to watersheds on each island in Maui County. These watersheds, which are in the uplands, are important to the environmental health of the lands below them. It is crucial that these projects continue to protect all lands and ecosystems of our ahupua’a, the traditional mountain-to-the-sea land divisions on each island. All of Maui County’s watersheds are recipients of these projects. It is important to realize that these watershed projects, enjoy public funding support from all governments; federal, state and county and, increasingly, from private foundations as well. It is also important that we become facilitative and collaborative in an inter-active and inter-connected system of watershed protection, restoration and management at all levels of government and with private sector partners. (2017 Functional Expenses: \$521,473.00)

**Invasive Species Eradication, Mitigation and Remediation**

Projects in this category become more important each year, as new invasive species on the islands of Maui County, and throughout Hawai’i, are identified. These species not only upset the ecosystems and habitats of our native species, but also infringe on the quality of life of an increasingly urban population, especially on the island of Maui. It is important that these projects continue as many of our native flora and fauna continue to be on endangered species lists. These projects also need resources to continue to educate the general public, including visitors to these islands, about the importance of conservation, environmental protection, and natural resource development. Of particular concern is the increase of invasive species, especially ungulates, on former sugar cane lands now lying fallow. It is important that we keep in touch with the Maui County Government, as it becomes more pro-active, at the local level, to eradicate, mitigate, and remediate invasive species on all three islands.

**Native Forests, Ecosystems, and Habitat Protection and Restoration**

The indigenous ecosystems of the islands of Maui County continue to be compromised and are in demise, decreasing in size and less able to positively contribute to the environments and climates so important to island life. These projects need to continue, as our native flora and fauna contribute to the nurturing of our climate and weather. These projects also need resources to continue to educate the general public, and visitors to these islands, about the importance of conservation, environmental protection, and natural resource development. Our membership in the Maui Conservation Alliance (MCA) helps us to understand and seek new funding streams, as well as to work with new and emerging environmental and resource conservation projects. In 2017, we have taken on the role of grantsmanship coordination with and for the MCA. (2017 Functional Expenses: \$136,251.00)



Lana'i or "LNY", for its airport destination initials, is a special place which TIRCD has been serving, through various projects, since 1990.



The Teens on Call Project, coordinated by Brian McCafferty, is Maui County's longest, continuously running youth development program.

**NRCS and Maui SWCDs Kahului Field Office Staff**



Ranae Ganske-Cerizo  
District Conservationist  
Retired January 31, 2018



Kahana Stone  
NRCS  
Soil Conservationist



Carl Hashimoto  
NRCS Soil  
Conservation  
Technician



Ryan Woolbright  
NRCS  
Engineer



Jason Hew  
SWCD Conservation  
Specialist



Hannah Lutgen  
SWCD Conservation  
Specialist



Maggie Kramp  
SWCD  
Administrative Assistant



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Education Outreach Marketing	2015-2016			2016 - 2017			2017-2018 up until March 2018		
Conservation Awareness Program	Participants	Staff, Volunteers	Cost	Participants	Staff, Volunteers	Cost	Participants	Staff, Volunteers	Cost
Conduct Training	46	3		76	4		60	4	CES/SWCD employee's time
Maui Contest	30	27	\$ 797.23	52	27	\$ 838.60	40	20	\$ 908.36
State Contest	20	10	\$ 1,144.55	20	10	\$ 1,942.07	15	10	\$ 3,532.08
National Contest				650/33 states	100	\$10,000 travel expenses	900	100	\$10,000 travel expenses
General Public Education	Participants	Staff, Volunteers	Cost	Participants	Staff, Volunteers	Cost	Participants	Staff, Volunteers	Cost
Events: County Fair, Ag Fest, State Capitol Ag Awareness Day, HSAC, NACD, HACD, etc.	difficult to measure	10	\$ 5,649.25	difficult to measure	12	\$ 7,791.31	difficult to measure	12	\$ 7,791.31
SWCD Field Trip				60	10	\$ 5,206.12	60	10	\$ 5,206.12
Ag in the Classroom	700	20	unavailable	958	20	unavailable	1100	30	unavailable
Annual Report	distribution count: 250	6	\$ 990.18	distribution count: 350	3	unavailable	distribution count: 350	3	unavailable
Website Development	Participants	Staff, Volunteers	Cost	Participants	Staff, Volunteers	Cost	Participants	Staff, Volunteers	Cost
Develop Website	712 visits,	2		621 visits, 1170			623 visits, 1192		
Training	1367 page views	3	\$ 192.00	page view	1	\$ 192.00	page views	1	\$ 192.00
Maintain Website									
Minimize Negative Impact on Natural Resources	2015-2016			2016 - 2017			2017-2018		
County Grading and Grubbing Permits	No. of Plans and/or Projects	Affected Acres	Cost	No. of Plans and/or Projects	Affected Acres	Cost	No. of Plans and/or Projects	Affected Acres	Cost
Review Plans and Submit	61	660.547	\$ 21,215.50	59	837.08	\$ 21,348.00	35	180.55	\$ 19,800.00
Conservation Technical Assistance (CTA) and USDA Farm Bill (FB) Plans	No. of Plans and/or Projects	Acres	Cost	No. of Plans and/or Projects	Acres	Cost	No. of Plans and/or Projects	Acres	Cost
FB Applications Received	78	4433.1	\$2,317,929.09	86	3589.5	\$ 1,098,187.09	101	3199.1	\$ 573,295.00
FB Contracts Obligated	24	1526.1	\$1,353,527.31	34	612.5	\$ 1,098,307.20	25	613.9	\$ 1,230,618.92
CTA Plans Signed/Active/Completed	11	81.5	\$ 9,881.73	8	325.6	\$ 199,530.31	13		
CTA Plans Pending Final Approval	33	692.15	\$680,247.14	25	1396.6	\$ 777,311.32	35	32,472.5	\$ 5,770,654.20
Follow-up/Deferred/Canceled Plans	9	149.05	\$116,846.29	5	159.1				
Watersheds	Phases/Description		Cost	Phases/Description		Cost	Phases/Description		Cost
Lahaina Flood Control	Phases 3B, 4-5 on hold/unresolved		\$22,567,000	Due to Federal budget cuts, status is unknown at this time. The SWCDs will continue its lobbying efforts for through various sources for funds needed to complete the Lahaina Flood Control Project.					
Lahaina Temporary Flood Control Project	annual inspection and maintenance		estimated cost \$3900.00	annual inspection and maintenance		\$ 4,400.00	annual inspection and maintenance		\$ 4,400.00
Coral Reef Initiative: West Maui	Ongoing Project		\$ 102,740.00	Ongoing Project		\$ 65,095.15	Ongoing Project		\$ 65,095.15
West Maui Fire Prevention and Fire	new project for this fiscal year			Procurement and Native Seed Hydromulch Trials to Reduce Potential Post Fire					\$ 29,966.49
Southwest Maui Watershed Base Plan				49,688 acre planning area, comprised of the Hapapa, Wailea and Mo'oloa watersheds		\$50000 grant managed by Tri-Isle RC&D	49,688 acre planning area - Hapapa, Wailea and Mo'oloa watersheds		\$23,348 County - WMSWCD grant

## Photos Highlights of the 2017 HACD Annual Conference



## Cultural Resources Training: Hawaii Island

By Jason Hew

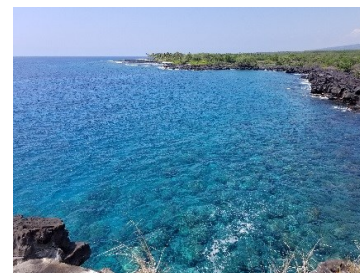


Standing in front of a large rock wall



Land Bridge

combatants could also find refuge here during times of war. Fortunately for us, Ben was a former archeologist at the park and had immense knowledge of each cultural resource. It was a beautiful day, and we enjoyed seeing what we had learned about in the field. A few of my favorite sites were the land bridge on the outskirts of the park, the incredibly large rock wall around the Hale o Keawe heiau, and the coastal views from the park.



Coastal view

I had the pleasure of traveling to Hawaii Island March 27<sup>th</sup> – March 29<sup>th</sup> for a Natural Resources Conservation Service (NRCS) cultural resources training. The training was a combination of two days in the classroom and one day in the field. Benjamin Barnette is the NRCS cultural resources specialist and led the training. Participants included NRCS soil conservationists, SWCD conservation specialists, and a NRCS CREP planner. We first discussed what a cultural resource is and why it is important to consider when developing a conservation plan. There are legal implications that must be adhered to when implementing conservation practices, and we as the planners must be able to convey that to a producer. We talked about the history and archeology of “pre-contact Hawaii” and “post-contact Hawaii”. Some of the most common cultural resources in Hawaii include rock walls, heiaus, burials, structures, artifacts, and military or plantation related objects and buildings. We then learned about the process of surveying, identifying, and documenting cultural resources when in the field. The documentation must be detailed and descriptive for consultation with the State Historic Preservation Office. The third and final day was spent at the Pu‘uhonua O Hōnaunau National Historic Park, also known as the City of Refuge. A lot of the cultural resources that were discussed the first two days were present at the park including petroglyphs, rock walls, heiaus, burials, fish ponds and artifacts. The park is known as the city of refuge because in old Hawaii, if someone had broken kapu and was facing certain death, the only option for survival was to reach Pu‘uhonua where the offender would be absolved by a priest and freed to leave. Defeated warriors and non-



## Southwest Maui Watershed Plan

The CMSWCD received \$29,590 in FY2018 to rewrite the Southwest Maui Watershed Plan (Plan). This Plan was originally developed in 2013 to provide sediment reduction measures for the 49,688 acre planning area extending from the summit of Haleakalā to the coastal areas of Kihei, Wailea, and Makena.

The CMSWCD submitted a draft version of the Plan to the DOH CWB in October of 2017 based on four deficiencies provided to us by our DOH watershed plan reviewer. Since then, our contact at the DOH has left. In March of 2018 we learned that we had been assigned a new reviewer and finally received an evaluation from the DOH on our updated Plan. This evaluation did not focus on the four deficiencies we had been working to address but on the Plan as a whole. We have been tasked with rewriting much of the 2013 Plan and have been provided a concise list of tasks that must be completed.

Currently, the CMSWCD is working closely with the DOH CWB to rewrite the Plan to address these tasks. The Plan will now incorporate nutrient (total nitrogen, nitrate+nitrite, ammonia, and total phosphorus), enterococcus, chlorophyll a, and turbidity reductions measures in addition to the sediment reduction measures already included from the original effort. Once the Plan is officially approved by the DOH and EPA, these reduction measures, known as implementation projects, will serve to provide clean coastal waters free of pathogens, sediment, nutrients, and unwanted algae for the communities of Kihei, Wailea, and Makena. Flooding of roads and property will be reduced. Reefs will benefit from clean coastal waters and in turn, both the fishing and tourism industries will be improved.



Michael Reyes, Watershed Coordinator collecting water samples and data for the Southwest Maui Watershed Plan



Peruse through to learn about the R2R, better understand the health of your watershed from ridge to reef,

and discover ways to get involved so that the West Maui you love will be thriving for your kids & their kids too! Check back often for updated information on projects and community opportunities.

This site is managed by the West Maui Watershed & Coastal Management Coordinator who is contracted through the West Maui Soil and Water Conservation District working in support of the goals of the R2R.



Tova Callender  
Watershed Coordinator  
tova@westmauir2r.com

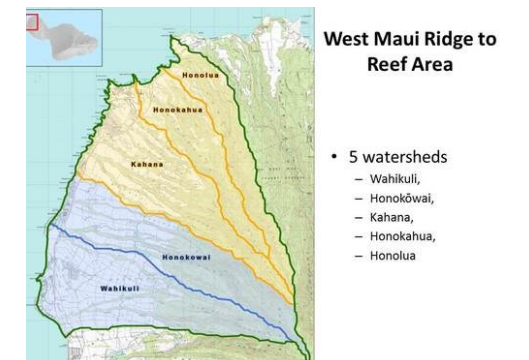
## What is the West Maui Ridge to Reef Initiative?

The West Maui Ridge to Reef (R2R) Initiative is an all- encompassing approach across multiple agencies and organizations to address adverse impacts to coral reefs in West Maui. The State recognized that an integrated and comprehensive approach to reduce land-based sources of pollution is one of the most important steps to help restore coral reef ecosystems. The R2R Initiative builds on already established efforts underway and leverages resources across a number of agencies and community groups to implement actions to reduce one of the key sources of reef decline – land-based sources of pollution.

## R2R Objective

To restore and enhance the health and resiliency of West Maui coral reefs and near-shore waters through the reduction of land-based pollution threats from the summit of Pu‘u Kukui to the outer reef.

These efforts will be guided by the values and traditions of West Maui.



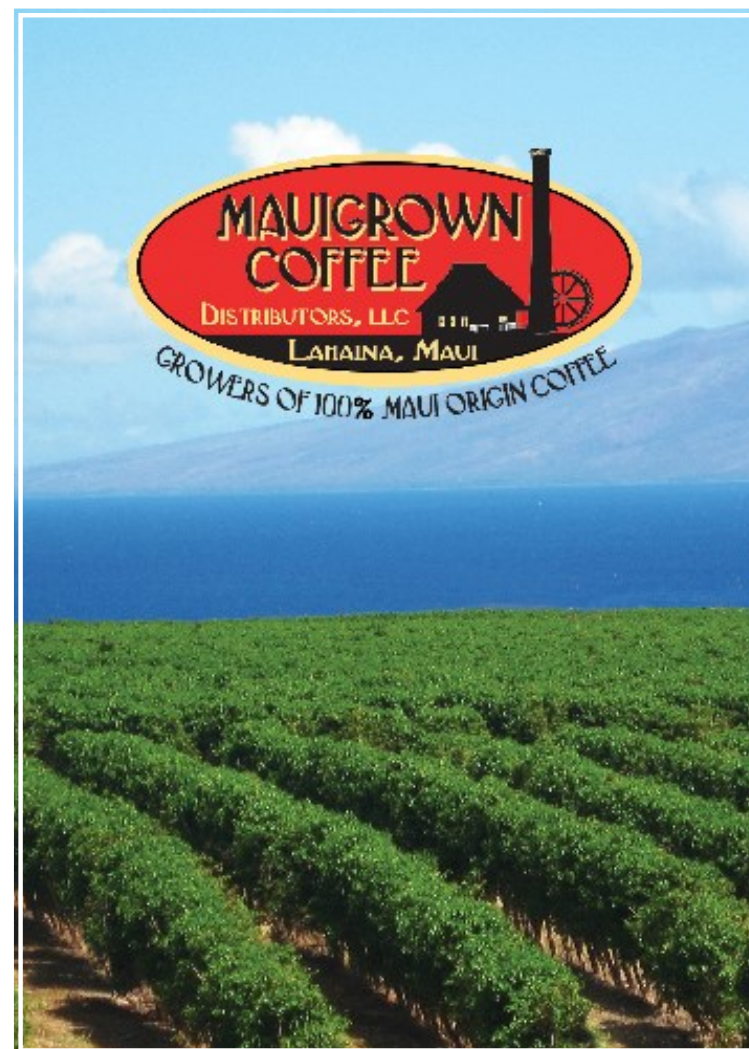
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## Conservation Boot Camp

By: Hannah Lutgen

Thanks to the generous support of the National Association of Conservation Districts (NACD) and Hawaii Association of Conservation Districts (HACD) I was able to attend Conservation Boot Camp in Lincoln Nebraska. Conservation Boot Camp was a three-week intensive training that teaches new employees how to improve their planning skills. This training was extremely beneficial in that I was able to practice tools, ask experts questions, net-work with other planners throughout the state, and learn tips to become a more efficient planner.

Throughout the 3 week training, my teammates and I met with a producer and developed a conservation plan that addressed all resource problems across all land uses: cropland, pasture, range, & forest using the 9 step planning process. Planners consider soil, water, air, plants, animals as natural resources. A resource concern translates to an issue that is negatively affecting a resource such as soil erosion or inadequate livestock water.

The 9 step planning process is relatively simple. First, we identified resource problems in the field to quantify why there is a problem and what needs to be done to address the issue. Then we met with the farmers to determine their objectives and their current management, such as how many times they till, equipment used, or how many animals they graze in the pasture. Next we inventoried resources in the field: we recorded plant species, and took photos and grass clippings in range and pasture. Luckily my plant identification skills came in handy, even in the abnormal late winter weather. Subsequently we analyzed the data in the office using streamlined tools to determine which resources are limited. For instance, we used the Integrated Erosion Tool (IET) to calculate the current erosion rate. If the current erosion is above the tolerable soil loss rate, soil erosion is a resource concern. After identifying resource concerns we formulate alternatives or options containing conservation practices aimed at addressing problems while primarily meeting the landowner's objectives. Next, we present these options to the client, and create a plan based on whichever options and practices the client decides.

It's incredible how much I learned at Conservation Boot Camp. For instance, I learned new methods to calculate how much forage is needed to support a client's herd, how much forage is available in a pasture, and how many animals that pasture can support. I learned how to use the national stream visual assessment tool that evaluates factors, such as water turbidity and algal growth, that may contribute to potential sources of pollution affecting stream health. Conducting closed circuit and cross-section surveys is a brand new concept that I learned at Boot Camp. This type of survey is used to accurately measure the elevation changes of an area, which is needed to design engineering practices such as livestock pipeline and trough. Also I learned useful tips on how to determine row grade or shoot slope in the field using my pace and hand level rod. All of these concepts will improve my efficiency in the field while enabling me to communicate more effectively with producers.

The more training and hands-on experience a planner receives, the more productive they will become at delivering sound service to local farmers. Mahalo nui loa to NACD, HACD, Maui SWCD for their support of this training. I look forward to future learning opportunities in assisting the diverse farmers of Maui.



My conservation boot camp group: diverse group of young planners from TX, HI, MT, MN, AR, CA.



My teammates and I evaluating stream health using Stream Visual Assessment Protocol (SVAP) tool.



Tool used to measure soil pH in cropland field at University of Lincoln, NE farm.



National Soil Survey Center displaying Hilo soil



Forest field inventory day: Hannah using increment borer used to take tree core sample to determine tree age.



Tools used to determine tree age, estimate stand density of forest stands.

## Annual Conservation Awareness Program—Land Judging Contest

The Land Judging Contest, a partnership between the Maui Soil and Water Conservation Districts, USDA-Natural Resources Conservation Service and the University of Hawaii Cooperative Extension Service, is the culmination of the Conservation Awareness Program for high school students. Participating students use their knowledge about the physical features of soil, and factors affecting land use and classification to evaluate 3 sites for the contest. The contest not only provides students with a fun way to learn about local soil and water resources, but it also teaches them how to recognize resource concerns and how to address them with conservation practices.

**Maui Contest Results:** 1st Place Team, King Kekaulike Hawaiian Immersion Students, Makahahele Emmsley, Kale’a Paiva, Kaye Carson, and Mihi Mokiao; 2nd Place Team, Maui Prep Academy, Aiesha Pradhan, Sydney Snyder, Noelle Shoeland, Jorene Samari; 3rd Place Team, Maui High School, Tricha Arquero, Kobe Matillano, Megan King, and Nelly Espadas. Top Individual Scores: 1st Place, Makaanhele Emmsley, King Kekaulike; 2nd Place, Kale’a Paiva, King Kekaulike; 3rd Place, Aiesha Pradhan, Maui Prep Academy; and 4th Place, Sydney Snyder, Maui Prep Academy.

Mahalo to Participants of the  
2017 Conservation Awareness Program—Maui Land Judging Contest



Baldwin High  
School Leo Tomita

King Kekaulike – Ag  
Britney James  
James Ino

King Kekaulike  
Hawaiian Immersion School  
Kumu Kapolei Kiili

Maui High  
David Rostetter

Maui Preparatory Academy  
Charlotte Kelly

### Haliimaile Pineapple Co.

Darren Strand

### Proctors

Hannah Lutgen . Kahana Stone . Norman Nagata  
Patrick Ornellas . Tova Callender . Edgar Cordero

### Score Keepers

Jason Hew . Cindy Reeves . Nancy Ooki  
Dusty Alderks . Ryan Woolbright .  
Pamela Kantarova . Richard Sylva . Carl Hashimoto  
Elmer Obere . Suifaga Kava

### Coordinators

Ranae Ganske-Cerizo . Maggie Kramp

### Food and Beverage

Nobriga Ranch  
Maui Soda & Ice Works . Roselani Ice Cream  
Jay Nobriga

The contest would not have been possible  
without you and we truly appreciate it!



## West Maui SWCD Participates in Hōkūle‘a Mahalo Hawai‘i Sail



Pomaika'i Kaniaupio-Crozier (front left  
in canoe) coming from Hōkūle‘a to the  
shore of Olowalu



Pomaika'i Kaniaupio-Crozier with Maui  
SWCD Employees Maggie Kramp,  
Hannah Lutgen, and Jason Hew in  
Olowalu



Rose Ann Swezey helps to set up the  
Maui SWCD tent at Honolua Bay



Maui News/Matthew Thayer Photo  
Maui SWCD employees Maggie  
Kramp, Jason Hew and Hannah  
Lutgen white canoe at Honolua  
Bay for the arrival of Hōkūle‘a

The Hōkūle‘a celebrated 40 years of its worldwide tour with exclusive Polynesian navigation techniques. The first stop of the Hōkūle‘a's *Mahalo, Hawai‘i* Sail was held at Honolua Bay, Maui, where Hōkūle‘a first departed on her maiden voyage to Tahiti in 1976. The crew began to mahalo and mālama Hawai‘i by participating in the planting of 1,000 koa seedlings as part of a series of community engagement events in West Maui. In partnership with the Maui Land and Pineapple Company, Inc. through the conservation department of the Pu‘u Kukui Watershed Preserve, State of Hawai‘i DLNR, The Nature Conservancy of Hawai‘i and Kamehameha Schools Maui, Hōkūle‘a and Hikianalia crewmembers were engaged with schools and the community in West Maui where they conducted presentations and canoe tours.

Pomaika‘i Kaniaupio-Crozier, Conservation Manager of Pu‘u Kukui Watershed Preserve/West Maui SWCD Vice Chairman spearheaded this extraordinary event.



1200 Kamehameha School  
students and faculty gather  
to welcome Hōkūle‘a



Maui SWCD staff and volunteers  
with Nainoa Thompson Nainoa  
Thompson, Native Hawaiian Naviga-  
tor and President of the Polynesian  
Voyaging Society



‘Ōiwi TV photo of Hōkūle‘a crew  
members Archie Kalepa and Nainoa  
Thompson with Pomaika‘i Kaniaupio-  
Crozier at tree planting ceremony.



ML&P field 52 prepped by Pu‘u Kukui Watershed Preserve staff and  
volunteers for Hōkūle‘a, Kamehameha School, and the public to partic-  
ipate in the planting of koa and other native plants



The five-day event ended with a hike in the upper watershed area of the Pu‘u Kukui Watershed Preserve with Hōkūle‘a crew members and their family, Pu‘u Kukui Watershed, West Maui Mountains Watershed Partnership, Leeward Haleakala Watershed Partnership, Nature Conservancy, State Department of Land & Natural Resources – Division of Forestry and Wildlife Service, and Maui SWCD employees. The group learned about Pu‘u Kukui Watershed protection work and the importance of it.

**Continued Support Needed  
to Complete the  
Lahaina Flood Control Project**

The Lahaina Watershed Project, first proposed by West Maui SWCD, is a USDA-NRCS watershed project authorized under the Watershed Protection and Flood Prevention Act (PL-83-566). The Maui County Department of Public Works and the West Maui Soil and Water Conservation District are sponsoring this project to reduce sediment discharge to the ocean and provide flood protection to residential and commercial areas in the southern part of Lahaina town.



**Problem:**  
1880-1980  
over 25 damaging  
floods



**Timeline:**  
**1980  
Project Initiated**  
**1992  
NRCS Authorized**  
**January 15, 2010  
Project Finally Breaks Ground**  
**Status:**  
**First 3 phases completed.**  
**Funding is needed to complete  
the last 3 phases of the project.**

**Carlsmith Ball** LLP  
A LIMITED LIABILITY LAW PARTNERSHIP

*Thank you to the*  
**Maui Soil & Water Conservation Districts**  
*for their invaluable service to the community.*

**Maui Office Attorneys**

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Craig G. Nakamura  
Catherine L. M. Hall  
Nancy H. Zhao

*One Main Plaza, Suite 400  
2200 Main Street  
Wailuku, Maui, Hawaii 96793-1086  
P 808.242.4535 F 808.244.4974  
**Carlsmith.com***



*State Land Judging Contest  
Host by Maui SWCDs*



Emcee Pomaika'i  
Kaniaupio-Crozier  
1st Place Team: King  
Kekaulike—Kaiapuni; Kale'a  
Paiva, Mihi Mokiao, Ma-  
kanahale Emmsley, and Kaye  
Carson



2nd Place Team: Pahoa; Caeden  
Kadariusman, Jeryll Jordan Ber-  
nardo, and  
Harvey Tagalicud



3rd Place Team: Kauai High  
School - Samuel Gauna, Keenan  
Iwai, Jordan Karimi, and Kyra  
Bukoski



Individual Top Scores: 1st  
place, Makanahale Emmsley;  
2nd place, Caeden Kadariusman;  
3rd place, Mihi Mokiao; and 4th  
place, Jeryll John Bernardo  
Best Team Skit: King  
Kekaulike—Kaiapuni

**Mahalo**  
Monsanto Hawaii - Airfare . Haleakala Ranch . Kaonoulu Ranch  
Maui Soda & Ice Works . Roselani Ice Cream  
Staff and Volunteers: Pomaika'i Kaniaupio-Crozier, Maggie Kramp, Jason  
Hew, Robin Shimabuku, Kahana Stone, James Ino, Patrick Ornellas,  
Norman Nagata, Dusty Alderks, Edgar Cordero, and Yarrow Flower

**67th Annual National Land Judging Contest**



Training session with  
Daryl Yamada and Jason Hew



Oklahoma Bound with



Practice Sites in Oklahoma



Competition Day  
May 3, 2018, El Reno, OK

Jason Hew  
Adult Competition

**Mahalo for Making Our OKC Experience Possible**

Amey Hempel, Ann Emmsley, Brad Kaiwi, Carmen Hulu Lindsey,  
Cynthia Reeves, Daryl Yamada, Haleakala Ranch, Hashimoto  
Persimmon Farm, ISI Hawaii Water Solutions, James Aganos R.E.  
Appraiser LLC, James W. Tavares, Jason Hew, Jean Pierre, Kahanu  
Noa, Kamehameha Schools Community Engagement & Resource  
Group—Maui Region, John Wilson, Joy Kiili, Kathy Shoemaker,  
Kenneth Yamamura, Maui County Farm Bureau, Mae Nakahata,  
Maggie Kramp, Maui Electric Company, Moana L. Anderson, Realtor,  
Pacific Pipe, Puamana Deal, Robin Saportio, Susan Kaili,  
T.J. Gomes Trucking Co., Thomas Duarte, UH Maui College-  
Hikina o Ka La, Wes Nohara, and Walette Pellegrino



**Kaye Carson, Makanahale Emmsley, Mihi Mokiao, Kale'a Paiva  
Na Mo'o 'Aina  
Kula Kaiapuni 'O King Kekaulike**



## Kula School Agriculture Educational Program

By Jason Hew

The Kula School Agriculture Science Program was conceived by Chris Bachaus, Principal of Kula Elementary School. The objective of the program is to provide extended learning opportunities to Kula School students to reinforce the mastery of Science, Technology, Engineering and Math curriculum standards taught in the classroom and practiced in an agricultural setting. Students will be provided a general overview of agricultural fundamentals and applications that are age appropriate for elementary students. The program is also meant to connect the students to their sense of place. By understanding the environment and land use of Kula, they will gain an understanding of the unique challenges and advantages of living in Kula and be better prepared as future decision-makers for the community.

The location of the program is at the old Keokea School that closed in 1964. It has since remained fallow and was overgrown with Black wattle trees and glycine. There has been a great deal of energy put into the site to bring it back to life. Many volunteer hours, labor and donations were made by the community that support the program. There was a blessing ceremony on February 24<sup>th</sup>, 2018, where community members, Keokea School alumni, and program backers gathered to bless the site. Many attendees were students of the school and could be heard reminiscing about the wonderful times they had growing up in Keokea. It is tremendous to see the community support the program and use the land like it was used decades ago.



Dr. Harold Keyser, Warren Watanabe, Jason Hew, Kupuna Alumni and Supporters of the Program, and Chris Bachaus

This program is a much needed curriculum for students to have the opportunity to participate in. Kula is rooted in agriculture and many of today's youth do not appreciate the work it takes to put food on their table. The average age of Hawaii farmers today is 59 years old. There is a need for youth that are interested in agriculture to have the exposure to all aspects of agriculture earlier in their educational career. Agriculture cannot be taught in a responsible manner without also teaching the importance of conservation and natural resource management. Without good management of the land, it will become unproductive and degrade to where future generations cannot benefit from it.



Media Interview



Opening festivities with lion dance, courtesy of the Kula Kwok Hing Society



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## Working Progress Checklist of What the SWCD Looks for When Reviewing County Grading and Grubbing Permit Plans



James Ino  
Technical Assistant

### I. Drainage

#### A. Onsite

##### 1. Construction

###### a. Temporary Basin

- Specify safeguard measures in the event basin exceeds capacity.
- Identify the milestone that determines timing of basin removal.
  - How will stormwater be managed following removal?

##### 2. Post Construction Operations and Maintenance

- Define management practices if basin exceeds capacity.
- Define metrics to determine when water and/or sediment containment will be removed to ensure basin(s) continue to operate at its original planned capacity.
- Identify responsible parties (e.g. individual or company) that will maintain drainage ways and basins.
- Specify maintenance programs on all permanent BMPs, especially after rain events, fires, and loss of vegetation.
- Include routine inspection maintenance procedures.
- Explain procedures for repairs to be performed on deficiencies including timetable for implementation.
- Describe recordkeeping system and responsible parties.
  - Explain transfer of responsibilities from construction to occupancy in the development. Document from Developer/Contractor back to Developer/Community Association or Other (e.g. County).
- When developments include a community association, describe how maintenance plan information will be transmitted during individual property transactions.

#### B. Offsite

##### 1. Construction

- Describe offsite flow from Project Drainage Basin Spillway to Offsite Flow.

##### 2. Post Construction

- Clarify if there are plans in the Community Development Plan to be utilized for Drainage containment or structures in the Community Development Plan (e.g. Lahaina Community Development Plan).
- Identify plans for "known" future developments bordering project site.

### II. Erosion

#### A. Wind

##### 1. Dust Control

- Include on plan detailed application methods, location, and when will be applied.
  - Clearly articulate responsible parties and metric to define periods that require specific measures.
- Must be applied on all sites during grubbing work.

#### B. Storm Water

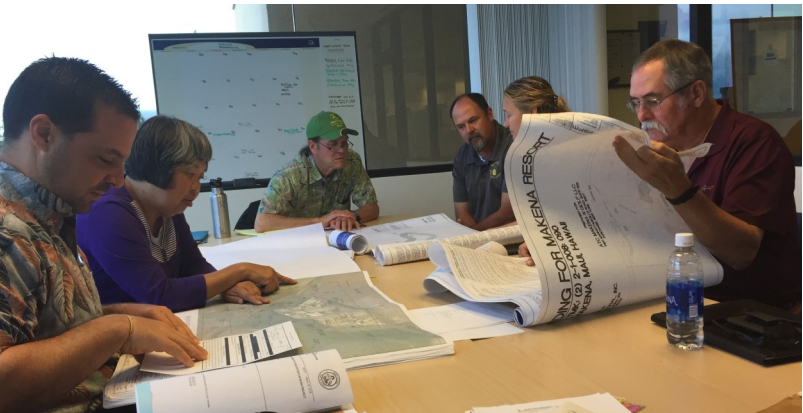
- Methods to manage storm water erosion need to be clearly articulated (i.e. vegetation, barriers, and/or materials).
- Practices such as "diversions - other", require safe and adequate outlets or containment.

### III. Vegetation

- Vegetation selected should be adapted to the area and able to survive if irrigation is removed.
- Drought periods need to be considered including susceptibility to ignition and spread of brush fires.



West Maui SWCD Site Visit at the Lahaina Bypass Project



Central Maui SWCD Board Meeting  
reviewing county grading/grubbing plans with comments from James Ino

**Conservation Plans Help Protect our Watersheds**  
**By: Hannah Lutgen**

Water is essential to all living creatures. Without clean water, plants, animals, and humans would cease to exist. Although we live on a tropical island surrounded by water, fresh water is a limited resource. Watersheds are our home, providing us with clean water for agricultural, cultural, and domestic uses. Excess sediment and nutrients are the leading causes of water quality impairment. To combat these issues, the Maui Soil & Water Conservation Districts (SWCD) are dedicated to improving watershed health by working hand in hand with landowners to help them conserve their natural resources.

Year after year the Maui SWCD staff develops conservation plans and provides technical assistance to farmers throughout Maui. First, we listen carefully to each landowners objectives while identifying resource concerns such as soil erosion or a leaky sprinkler. Then we create plans containing a tailored list of conservation practices suited to meet the client’s goals while reducing impacts to soil and water resources. Having a conservation plan written by SWCD planners has helped the following farmers implement ecologically friendly agricultural practices in the past year.

Devin Lopez of Birds with Arms Farms is the owner of a large fruit orchard in Haiku. His Mangosteen-Peach Palm orchard had been overgrown by an existing windbreak. With the help of a local contractor, he renovated the windbreak by pruning back the nitrogen rich Gliricidia trees and completely removing all invasive trees. Next he converted that plant matter into wood chips and heavily mulched fruit tree rows to conserve soil moisture. Mulch helps anchor soil from becoming suspended in storm water runoff thus reducing rain-drop soil splashing and soil erosion. In addition a thick layer of mulch captures water, slows down overland flow, improves infiltration and increases water holding capacity in the soil. Mulch also suppresses weeds, reducing the need to mechanically cultivate, which exposes bare soil, or to spray herbicides. This potentially leads to excess soil or chemical accumulation in water bodies negatively impacting coral reef and watershed function. This parcel of land is now well managed and able to benefit the community, while also improving the health of the island.

Maui Malama Family Farm, before and after conservation planning.



post-harvest exposed fallow soil



Tropic Sun Hemp planted post-harvest by Winsome and Melani.

Farmers Melani & Winsome of Maui Malama Family Farm sowed cover crops such as sun hemp and buckwheat to reduce soil erosion, conserve soil moisture, and reduce overall irrigation demand and frequency. Seeding a cover crop post-harvest also improves soil health and organic matter content. The healthier the soil the greater the ability of that soil to capture and store excess nutrients to keep them from degrading water quality. Melani is also installing rain water catchment and a drip irrigation system to improve irrigation efficiency which will lessen the burden on the public water supply.

Using the vegetative barrier practice Kula Haven Farms established dense rows of vetiver grass to capture sediment before entering a nearby drainage way during storm events. Vetiver grass is a deep-rooted clumping grass that provides an excellent buffer and is used to filter sediment from runoff.

Through the help of the SWCDs, these farmers were able to advance towards their land-use goals. SWCD strives to hear the concerns of our clients, while furthering our own education in the understanding of all areas of environmental conservation. By addressing these situations, case by case, we are able to empower people to improve the health, ecology, and productivity of their own land through the use of tried and true conservation practices.



Vetiver grass planted on steep edge to capture sediment from eroding into drainage way at Kula Haven Farms.



Hannah Lutgen and NRCS Soil Conservation Technician, Carl Hashimoto, measuring depth of mulching at Birds with Arms



Farmers Devin Lopez and Rebecca O'Day of Birds with Arms Farms at their freshly mulched fruit tree orchard.



**2018 Agriculture in the Classroom**  
**By Jason Hew**

The Maui County Farm Bureau hosted its annual Agriculture in the Classroom, end of year event, at Haleakala Ranch on April 26<sup>th</sup> and 27<sup>th</sup>. The two day event hosted approximately 1,100 2<sup>nd</sup> grade students and exposed them to different aspects of agriculture. There were 6 stations for the participants to visit presented by Monsanto, Maui Electric Company, UH-Maui Master Gardeners/ College of Tropical Agriculture and Human Resources (CTAHR), Haleakala Ranch, Haleakala Ranch—Conservation Partners in Agriculture, and the Maui Soil & Water Conservation Districts (SWCDs). Hands on activities were offered at each station and related to various aspects of agriculture. Monsanto discussed the parts of a plant with students and gave them sweetcorn plants to bring home and grow. Maui Electric Company talked about nutrition and gave the students a pineapple snack. CTHAR/Master Gardeners talked about Hawaiian canoe plants and their importance to Hawaii’s agriculture. Haleakala Ranch staff brought a flock of sheep and their herding dogs and demonstrated how the dogs can help round up sheep. The Haleakala Ranch Conservation Partners talked about watersheds and made native seed balls to be planted in Leeward Haleakala. The Maui SWCDs discussed what soil is made of, how it is formed, and how important it is to sustaining human life. We conversed about the minerals, organic matter, plants, critters and microbes that all make up soil. We also discussed the importance of soils to humans including growing food, capturing water, growing plants that produce oxygen, and how much life is in soil. We then sent the participants down our soil trough that had all of the things we just talked about. Their favorite was finding earthworms in the soil! Then the students traveled through our soils tunnel to mimic what it is like to be underground. We asked them to look for components of soil like rocks, roots, food being grown in the soil and critters that live in the soil. The students had a great time getting dirty, and learning about soil. We are excited to be a part of this wonderful event and look forward to next year!



Participants looking through the soils trough



A student found a live earthworm



Participants about to enter soils tunnel



SWCD Staff (in black shirts) Maggie Kramp, Jason Hew, and Hannah Lutgen with Maui County Farm Bureau Executive Director Warren Watanabe, and HACD Executive Director Michelle Watkins



Haleakala Ranch sheep herding demonstration

Olinda-Kula SWCD, Est. 1948



Clark Hashimoto  
Chairman



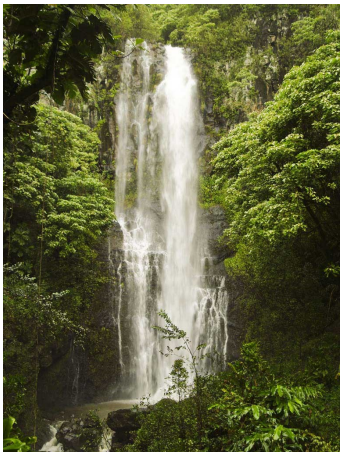
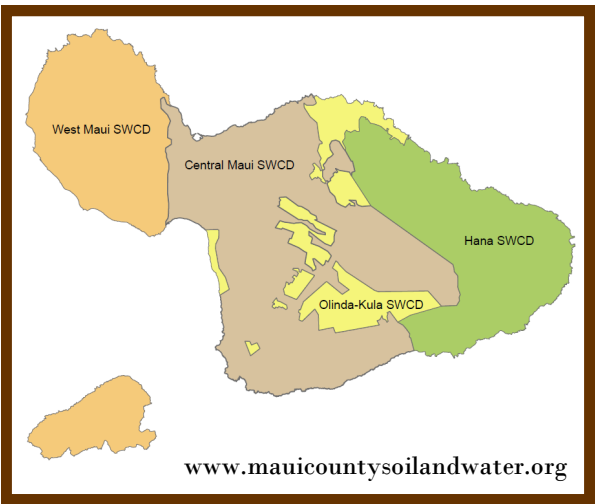
Garret Hew  
Vice Chairman



Neil Nakamura  
Secretary-Treasurer



Alan Nago  
Director



Hana SWCD, Est. 1953



Benjamin Villiarimo  
Chairman



Annette Smith  
Secretary



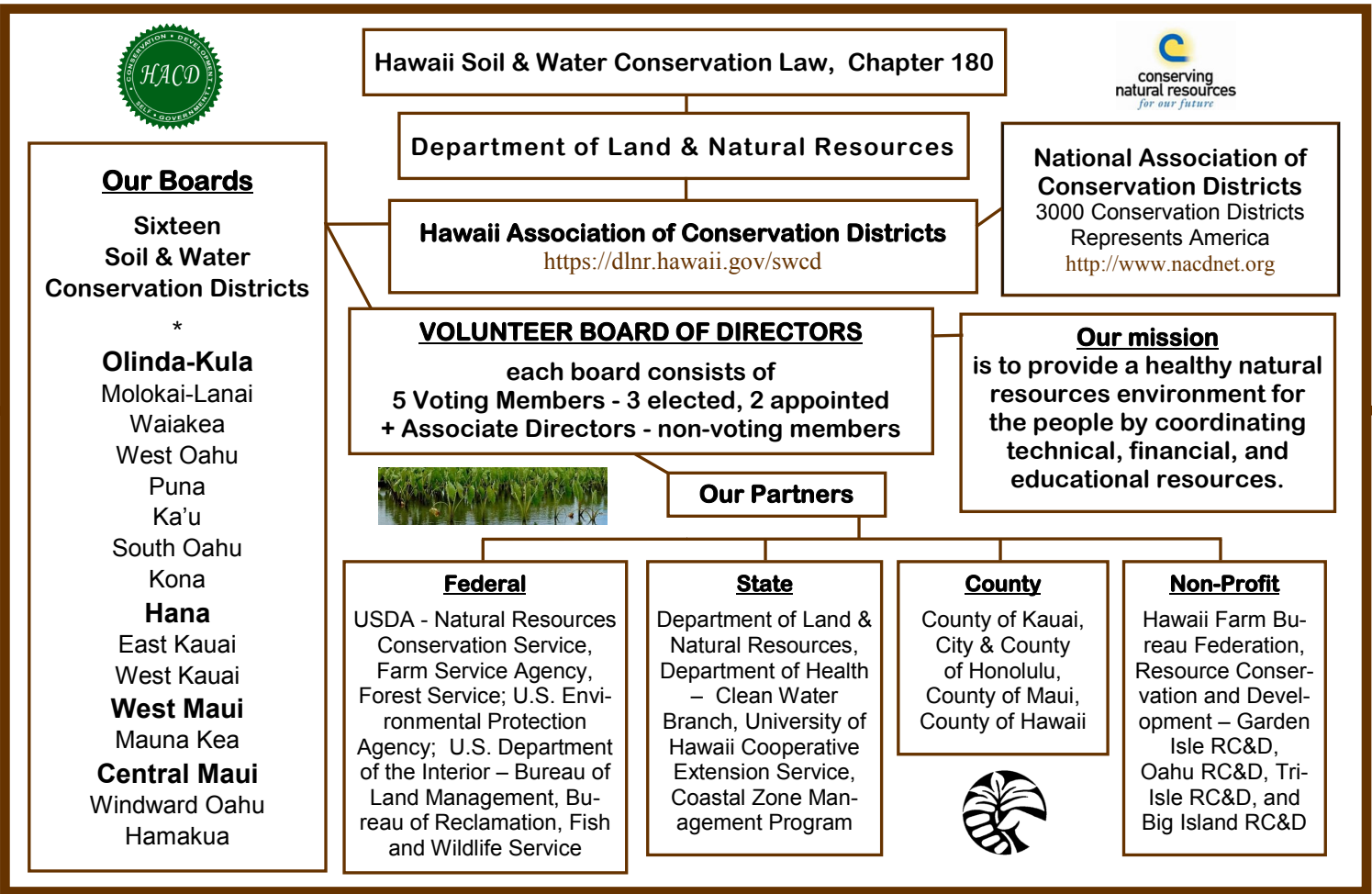
Jacob Tavares  
Director



Koa Chang  
Associate Director



Robin Shimabuku  
Associate Director



Susan Cuffe  
Treasurer



Frank Oliveira  
Director

West Maui SWCD, Est. 1954



James J Nobriga  
Chairman



Daniel Pomaika'i  
Kauniaupio-Crozier  
Vice Chairman



Kimo Falconer  
Treasurer

Central SWCD, Est. 1957



Dan Clegg  
Chairman



Mae Nakahata  
Secretary



Darren Strand  
Vice Chairman



Ian Swezey  
Secretary



Kainoa Casco  
Director



Wes Nohara  
Associate  
Director



Daniel Ornellas  
Associate  
Director



Dave Minami  
Associate  
Director



Richard Sylva  
Associate  
Director



Yarrow Flower  
Associate  
Director



Michael Reyes  
Associate  
Director



Mike Murakami  
Treasurer



Randal Moore  
Associate  
Director



Mike Silva  
Director