

House District _____
Senate District _____

THE TWENTY-EIGHTH LEGISLATURE
APPLICATION FOR GRANTS
CHAPTER 42F, HAWAII REVISED STATUTES

Log No: _____
For Legislature's Use Only

Type of Grant Request:

GRANT REQUEST – OPERATING

GRANT REQUEST – CAPITAL

"Grant" means an award of state funds by the legislature, by an appropriation to a specified recipient, to support the activities of the recipient and permit the community to benefit from those activities.

"Recipient" means any organization or person receiving a grant.

STATE DEPARTMENT OR AGENCY RELATED TO THIS REQUEST (LEAVE BLANK IF UNKNOWN):

STATE PROGRAM I.D. NO. (LEAVE BLANK IF UNKNOWN): _____

1. APPLICANT INFORMATION:

Legal Name of Requesting Organization: Olohana, Inc.
Dba: The Olohana Foundation
Street Address: 43-432 Hale Hookipa Place, Paauilo, HI 96776
Mailing Address: PO Box 37, Paauilo, HI 96776-9998

2. contact person for matters involving this application:

Name M. KALANI SOUZA
Title Executive director
Phone 808-987-0705, 808-776-1077
Fax n/a
E-mail mkalani@olohana.org, kalia@olohana.org

3. TYPE OF BUSINESS ENTITY:

- NON PROFIT CORPORATION INCORPORATED IN HAWAII
 FOR PROFIT CORPORATION INCORPORATED IN HAWAII
 LIMITED LIABILITY COMPANY
 OTHER
 SOLE PROPRIETORSHIP/INDIVIDUAL

6. DESCRIPTIVE TITLE OF APPLICANT'S REQUEST:

This application is to support the Olohana Foundation and its partners in (3) focus areas: 1. Create two (2) working models of Sustainable Breadfruit Agroforestry, including market research and development, 2. Using these model farms as "campuses," develop and deliver educational training and workshops, and 3. Coordinate the First Annual Hawaii International Breadfruit Conference in 2016 all in an effort to develop and support the emerging breadfruit industry in Hawaii with a focus on economic development, disaster preparedness and building community capacity.

4. FEDERAL TAX ID #: 26-2989826
5. STATE TAX ID #: W53850582-01

7. amount of state funds requested:

FISCAL YEAR 2016: \$ 1,737,500

8. STATUS OF SERVICE DESCRIBED IN THIS REQUEST:

- NEW SERVICE (PRESENTLY DOES NOT EXIST)
 EXISTING SERVICE (PRESENTLY IN OPERATION)

SPECIFY THE AMOUNT BY SOURCES OF FUNDS AVAILABLE
AT THE TIME OF THIS REQUEST:

STATE \$0
FEDERAL \$0
COUNTY \$0
PRIVATE/OTHER \$10,994

TYPE, NAME & TITLE OF AUTHORIZED REPRESENTATIVE

M. KALANI SOUZA, EXECUTIVE DIRECTOR
NAME & TITLE

JANUARY 29, 2015
DATE SIGNED



RECEIVED

1/29/2015
D. Souza

Application for Grants and Subsidies

I. Background and Summary

1. A brief description of the applicant's background

The Olohana Foundation is a 501(c)3 non-profit organization that helps communities build resilience and adapt to climate change by strengthening relationships between the generations, between cultures, and with the natural environment. Together we help set up local food, energy, water, and knowledge systems. Olohana means “**all hands working together.**” It is through our focus on working relationship and community values that we bring together diverse skill sets and knowledge to cultivate community resilience in natural and long-lasting ways.

Contact Information for Principals:

M. Kalani Souza (Principle Investigator) Director, Olohana Foundation, Community Outreach Specialist UH National Disaster Preparedness Training Center
mkalani@olohana.org

Craig Elevitch (Principle Investigator) Director, Agroforestry Net, Inc., Pres. Permanent Agricultural Resources, cre@agroforestry.org

Dr. Failautusi Avegalio, Director, Pacific Business Center Program, University of Hawaii Shidler Business College, fa@hawaii.edu

Alvin Huang Consulting, Proprieter, Food Expert, Scientist, SME Subject Matter Expert.
ahuang1525@gmail.com

Additional SME Subject Matter Experts

Kalia Lydgate (Project Coordinator) co-founder P.O.W.E.R. (People Organizing for Wealth and Ecological Restoration), a program that developed innovative, whole-systems solutions for environmental, economic and social justice challenges.

Professor Diane Ragone—Breadfruit tree breeding and propagation research expert. Dr. Ragone is the Director of the Breadfruit Institute of the National Tropical Botanical Garden in Kauai, and leading expert on breadfruit varieties.

Professor Susan Murch—Breadfruit tree breeding and propagation, chemistry researcher and analysis.

Professor Jeff Gwartz—Kansas State University Milling/Processing/Product Development/Commercialization, Food Sciences and International grains associate professor.

Professor Fadi Aramouni—Kansas State University-Food Scientist/Technologist Engineer/Product Development and lead food scientist to develop gluten free flour from sorghum.

Robert Gough—Native American attorney and the first Director of the Rosebud Sioux Tribe Utility Commission, and presently serves as a consulting attorney to the PA ULU Partnership.



2. The goals and objectives related to the request

Building on work from 2013 and 2014 National Oceanic and Atmospheric Administration (NOAA) CRest (Coastal Resilience Network) Grants, this application is to support the Olohana Foundation and its partners in (3) focus areas: 1. Create two (2) working models of Sustainable Breadfruit Agroforestry, one in the rural town of Hauula, Oahu, a public/private partnership with community and faith-based organizations, and the second in the rural community of South Kona, Hawaii, a private lease-hold rehabilitated macadamia and coffee farm. These models will serve as part of a comprehensive adaptation strategy for increasingly frequent extreme weather events and long-term climate variation by establishing food security, disaster preparedness, increased community capacity and economic development. Through these model farms and in collaboration with industry partners, Olohana will research and develop techniques for improved production efficiency, handling, processing and productivity of breadfruit production in order to meet a growing demand for gluten-free products nationally and internationally. Olohana and its partners will complete extensive market and supply chain research in preparation for launching a second phase of breadfruit industry development. 2. The model Agroforestry farms will function as “campuses” where training for “PA Ulu: The Pacific American Breadfruit Initiative” can be delivered in partnership with breadfruit efforts statewide. Training and workshops will be provided to farmers, industry and community residents. 3. Olohana will coordinate the “1st Annual Hawaii International Breadfruit Conference in 2016,” with participants from Africa, Europe, Asia, Oceania, and America, including a trade show featuring “Chefs of Pan-Pacific Cuisine.” The first two areas address community capacity and agricultural economic development. The conference establishes Hawaii’s position as the leader in the emerging breadfruit industry and identifies Hawaii’s cultural and spiritual connection to the “Ulu.”

3. The public purpose and need to be served

This is a multi-faceted program that simultaneously addresses economic development, environmental preservation, disaster preparedness, community capacity building, food security, climate adaptation, cultural preservation, community development, and the rising demand for gluten-free products.

Threatened food security in the Pacific Islands

The Handbook of Climate Change and Agro-ecosystems (2013) (jointly published by American Society of Agronomy, Crop Science Society of America, and the Soil Science Society of America) predicts that there will be 10–40% decline in rice production by 2100, unless agriculture adapts. Around 90% of rice produced globally is consumed in the country in which it is grown (FAOSTAT online database). This would put severe upward pressure on the price of imported rice. Grain crops require high amounts of purchased inputs. A major constraint to maintaining global grain production is the increasing cost of fertilizer and fuel for mechanization. So the real price of rice imports can be expected to trend upwards. This will severely threaten food security for Pacific Islands, which have become increasingly dependent on imported foods. Estimates are that Hawaii currently imports 85–90% of its food. Grains are just one example of the potential food security crises that the Hawaiian Islands will face.

PA Ulu: Pacific American Breadfruit Initiative

A New Agricultural Base for Hawaii and the Pacific: Production rooted in sustainable agricultural, cultural, and economic traditions

"I ka wa mamua, ka wa mahope." Ōlelo Noeau

"The future is in the past." Hawaiian Proverb

Perhaps the future of sustained agricultural productivity and long-term profitability lies in the practices of the Ka Poe Kahiko, the people of the past, our ancestors.

The Breadfruit Food Forest of ancient Kona—the *kaluulu*—has been estimated to have once produced up to 80 million pounds of fruit per annum. This is only one of many huge breadfruit food forests present in Hawaii prior to Western contact and the advent of plantation agriculture.

Breadfruit is an abundant, low-input food tree that has been cultivated by Pacific farmers for centuries. Its gluten-free nutritious fruits continue to be an important part of Pacific Island diets, and are being recognized as a delicious starchy staple that can replace imported starches such as white rice, potatoes, and wheat flour. Breadfruit cultivation in food forests can provide a positive carbon footprint and the capacity to contribute significantly to rural and community livelihoods.

Export markets for breadfruit currently exist primarily among Pacific Islanders who have migrated to Australia, New Zealand and America. As the greater population from different cultures begins to appreciate the gluten-free and nutritious qualities of breadfruit, the volume and reliability of supply by the Pacific Islands will be insufficient to meet market demand. We intend to use allocated funds to begin reinforcing Hawaii Island supply of "Ulu" (breadfruit) trees, particularly in the Kona region. Current supplies can also contribute greatly to jump-starting entry into larger commodity markets, while developing value-added products. There is significant potential to tap into and benefit from these existing markets once the industry develops a consistent and reliable supply of breadfruit and processes are developed locally to create, package, and distribute unique products for desirable markets.

Planting breadfruit food forests as a food security strategy in the face of climate change

Rice and other staple crops depend on high inputs derived from fossil fuels. In contrast, Pacific island staple crops are less demanding on the soil and require lower inputs. Breadfruit's lower resource demands give it an advantage over high-input grain crops, especially as the cost of fossil fuels increases (McGregor et al. 2014).

Generations of Pacific farmers have demonstrated that growing breadfruit together with other crops such as banana, coconut, sweet-potato, sugarcane, etc., in multistory, forest-like systems can sustainably produce abundant quantities of food without outside inputs of artificial fertilizer and other chemicals. These cropping systems can contribute greatly to regional food security. Combined with sensitive, modern design and a wide range of other food trees and shrubs, breadfruit food forests can also supply an export industry. Such exports may consist of high quality gluten free flour and numerous other shelf-stable, easily transported products.

In planting food forests, it is also recognized that the breadfruit tree and its other woody crop associates absorb carbon from the atmosphere. Thus the establishment of breadfruit food forests also plays an important role in climate change mitigation.

Reports from The Breadfruit Institute's Spring 2013 newsletter highlight the dissemination of breadfruit planting material around the world through tissue culture. The Breadfruit Institute is a part of the National Tropical Botanical Garden (NTBG) and has been at the forefront of breadfruit research and development for the past twenty years under the leadership of Dr. Diane Ragone, a partner on this grant application. Through the development of micropropagation protocols and partnership with commercial tissue labs, high quality planting material is now available in large quantities to be shipped around the world.

The Breadfruit Institute reports that their Trees of Life Project (a project funded by the Ceres Trust) distributed more than 8,000 Maafala breadfruit trees in Hawaii in 2013–14. The project partnered with myriad community organizations, schools, churches, and other groups to provide Hawaiian and other Pacific Islander communities with breadfruit trees to plant in their yards and communities. Hawaii's Department of Land and Natural Resources Kaulunani Community & Urban Forestry Grant Program has provided additional funds for outreach materials.

Quadruple Bottom Line

Of primary importance is the concurrent development of new economic strategies that include fair compensation for all participating in production, from the farmers to the distribution network to manufacturers of value added products to marketing at a community level. We are committed to develop this project as a grassroots, family farm, community-owned economic development, including all sizes and scales of breadfruit production. Attention also will be given to food and sustainability indexes for these local communities, including, but not limited to, the numerous associate crops of breadfruit food forests such as taro, banana, sweetpotato, shade-grown coffee and many others.

Present models by NGO's, local government agencies, and federal institutions state a commitment to the "triple bottom line," environmental, social, and economic values. New thinking suggests a more refined perspective of the bottom line, the "quadruple bottom line." The four components are: 1) Environment, 2) Health, 3) Economy and 4) Culture. None of these components is sustainable without supporting the others. In some circles item 4 is also referred to as the Religious, Faith Based, Intangible, and Spiritual.

Balance and the need for operating in a *pono* way are fundamental to Hawaiians and all Pacific Islanders. The indigenous peoples of this region practice the "Cultural" or "Relational" way of life in real time, in real ways, producing real results. With Breadfruit, there is an opportunity to respect these traditional values while simultaneously building a profitable market.

Two Pathways: Traditional Science vs. Traditional Ecological Knowledge

Uncovering and reinvesting in traditional systems of food production provides significant opportunity to create more sustainable food systems that can meet growing demand and adapt to changing climactic conditions. We are presently working with NOAA, National Park Service

(NPS), National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), University of Hawaii National Disaster Preparedness Training Center (NDPTC) as well as Haskell Indian Nations University of Lawrence Kansas in the investigation of Indigenous Knowledge of the Environment (IKE) or Traditional Ecological Knowledge (TEK).

Commercialization of Ulu at an industrial scale for export has not occurred anywhere in the world, yet. With the discovery that Ulu is gluten free, the opportunity to develop and refine existing practices will provide major economic development, food security and sustainability benefits wherever it can be supported. Breadfruit is now needed for the gluten-free market however it has never been commercialized on a significant scale because the breadfruit tree, unlike the coconut tree, has proven difficult to mass-produce with a growing time from planting to harvest conventionally of seven plus years. Our partners' newly developed tissue propagation method has provided a solution to this challenge.

Hawaii: A Pacific Hub for Breadfruit Flour Manufacturing and Export

Several American-Affiliated Pacific Islands are strategically located to serve as sub regional hubs receiving dried breadfruit shipped from Micronesia, Polynesian and Melanesia. Hawaii can become the main Pacific regional manufacturing and export hub with key US Territories as transshipment spokes for breadfruit grown and dried from Micronesia, Polynesia and Melanesia. Likewise, production and transshipment infrastructure constructed in the Marianas will be the link to Japan and Asian markets. CH Robinson, a leading national and international food distributor estimates that 150,000 to 200,000 tons of regular (gluten) flour is moved every week. To meet market demand for gluten free flour, a reliable production flow of a minimum in the hundreds of tons per week will be essential. Engaging collaboratively with Oceania as a production source assures production supply no single pacific entity can meet on its own.

Hawaii, and other Pacific Islands, have land that could be turned into breadfruit agroforestry orchards that can support a gluten free flour industry and numerous other value-added products. These breadfruit trees could also provide food security in the case of natural disaster. Pacific Islands are aware of the rapidly growing demand for gluten-free products in the U.S., even so far as to include their endorsement of the proposed development at the recent Micronesia Chief Executives Summit on Saipan (December 4-6, 2013).

The Two Samoas Breadfruit Summit which was held on December 5, 2012, brought together all of the pieces that are essential to developing a breadfruit flour industry – market demand; distribution networks; manufacturing expertise; export infrastructure; agricultural technology; agricultural land base – with the realization that a collaborative regional initiative can harness the collective potential and begin to create the partnerships essential for establishing a regional Pacific breadfruit flour industry. The ramifications for employment opportunities for local residents, familiar with the tree and its cultivation are significant.

4. The target population to be served

Hawaiian residents and farmers in Hawaii, Hawaiian businesses and industry, gluten-free consumers/people with Celiac disease, house-less/homeless, Pacific Island climate refugees, military veterans.

Sharing the Benefits with Individual Families, Communities

As a compelling form of Community Based Economic Development, families can earn as much as they want depending on market value and cost per lb. of dried breadfruit to meet the spiraling demand for gluten free food product – a family could sell the excess breadfruit harvest from the trees on their land for extra income. The significance of traditional food forest agroforestry cross cropping and multi-tiered planting vs. monocropping has been validated by agroforestry experts and research. It maximizes land use and environmental balance while minimizing disturbance to traditional island farming and culturally based life. Community based economic development also assures benefits are shared broadly amongst the village and community residents along coastal and inland areas.

5. The geographic coverage

In the immediate, the communities of Northeast Oahu and South Kona, Hawaii Island where the model agroforestry farms will be located would be most directly affected. Successful development of the breadfruit industry would impact the state of Hawaii as well as other Pacific Islands, and mainland and Asian markets. Like spokes on a wheel, Pacific Islands are positioned to jointly create this industry, all linked to the processing, manufacturing, shipping and distribution hub in Hawaii for export to national and international markets. An important focus of this application is to position Hawaii to be a major hub for the industry.

II. Service Summary and Outcomes

1. Scope of work, tasks and responsibilities

There are (3) focus areas of this application; 1) to establish model agroforestry breadfruit farms as a model for economic development, food security capacity and disaster preparedness for rural locations – this includes business planning and economic development and market research; 2) the development of interdisciplinary educational and training programs for farmers, industry and community, and 3) facilitating the First Annual Hawaiian Breadfruit Conference to be held in Honolulu in 2016.

PA Ulu: The Pacific American Breadfruit Initiative has selected two sites for the model breadfruit agroforestry farms: 1) Island of Oahu, rural town of Hauula, public/private partnership with community association and faith-based organizations and 2) Island of Hawaii, rural community South Kona, private leasehold rehabilitated macadamia and coffee farm.

Scope of Work:

1. Secure funding from State of Hawaii to develop a learning “campuses” on model farms that will eventually be developed into a learning institute for training future farmers in agroforestry, sustainable perennial food forests with multiple commercial crops.
2. Determine the current breadfruit supply in Hawaii and identify farmers interested in producing breadfruit flour for export. (Additional funding is being sought from the

National Science Foundation to do similar breadfruit supply surveys in the other American-Affiliated Pacific Islands. (See Appendix B)

3. Prepare a detailed nutritional analysis (and other related analyses as needed) of breadfruit flour and various breadfruit flour products;
4. Determine the market demand (both with respect to volume and price) in the U.S. for breadfruit flour and products made from breadfruit flour and develop appropriate sales/distribution strategy and partnerships;
5. Design and prepare a cost estimate for first stage processing facility for producing breadfruit flour located in the participating AAPIs, Pacific Islands and State of Hawaii;
6. Prepare a feasibility analysis and business plan for creating a breadfruit flour industry;
7. Secure agreements from community partners and private landowners (including lease operated family farms) for learning institute locations;
8. Design curricula for workshops;
9. Deliver 10 workshops to residents, farmers and industry;
10. Begin curricula design for training for future participants in supply development;
11. Secure agreements for and engage contractors for service delivery of Conference Event
12. Design Conference theming, operations, marketing, agency interface, vendor services, etc.;
13. Deliver Conference Event.
14. Report and audit.

2. Timeline

First Quarter

- Memoranda of Understanding (MOUs) established
- All contracts solidified
- Farm plans established
- Location of conference confirmed
- Design workshop curriculum
- All research components begun
- Facilitate bi-weekly calls between partners

Second Quarter

- Educational and training materials developed
- 3 workshops delivered
- Outreach for conference begun
- Conference website created
- Facilitate bi-weekly calls between partners

Third Quarter

- 5 workshops delivered
- Initial market research completed
- Initial nutritional analysis complete
- Ongoing outreach for conference
- Conference program confirmed

- Facilitate bi-weekly calls between partners
- Fourth Quarter
- 2 workshops delivered
 - Conference completed
 - Market and other research completed, reports written
 - Facilitate bi-weekly calls between partners

3. Evaluation Plan

As a means of monitoring our progression over the next year, quarterly inspections of our learning facilities and farm grounds will be synthesized into a report to a POC Point of Contact from the State Agency supplying the Grant.

Growth of planted supply flora will be monitored monthly for growth, health and robustness of breadfruit trees. Farms, learning facilities and contractors will be monitored monthly for their updated progress and their compliance with program, project and event directives.

In addition to internal Olohana organization record keeping of the Grant expenditures, additional the grant will be monitored weekly by a third party bookkeeping firm, who at years end will coordinate with an independent certified accounting firm (CPA) for Financial Finals and a report out with final year end audit to be submitted to the POC Point of Contact from the State Agency supplying the Grant.

4. Measures of Effectiveness

- Focus Area 1 – model farm and market research
 - Signed MOUs and LOAs with farms selected as model breadfruit agroforestry sites
 - Scope of training provided to selected farms
 - Number of breadfruit trees planted and growth/health of existing trees
 - Market Analysis Report
 - Nutritional Analysis Report
 - Map of breadfruit supply in Hawaii and estimates from other Pacific Islands
 - Analysis of potential products – nutrition and demand
 - Proposal for next steps in market development
- Focus Area 2 – educational and training programs
 - Workshop Curriculum Developed
 - Completion of 10 workshops – number of attendees and skills/information transferred
 - Creation of educational materials
- Focus Area 3 – Breadfruit Conference
 - Number of conference attendees
 - Number of conference presenters

III. Financial**Budget**

Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total Grant
20%	40%	25%	15%	100%
\$347,540	\$695,000	\$434,375	\$260,625	\$1,737,500


- The applicant shall provide a listing of all other sources of funding that they are seeking for fiscal year 2015.
Not applicable—None Presently, in the process of identifying possible funding streams.
- The applicant shall provide a listing of all state and federal tax credits it has been granted within the prior three years. Additionally, the applicant shall provide a listing of all state and federal tax credits they have applied for or anticipate applying for pertaining to any capital project, if applicable.
Not applicable
- The applicant shall provide the balance of its unrestricted current assets as of December 31, 2013.

Olohana Inc
Balance Sheet
As of December 31, 2014

	<u>Dec 31, 14</u>
ASSETS	
Current Assets	
Checking/Savings	
Olohana Chkg BOH	1,610.40
Olohana Savings BOH	6,000.54
Paypal	29.60
Patty Cash	70.17
Total Checking/Savings	<u>7,710.71</u>
Total Current Assets	7,710.71
Fixed Assets	
Computer Hardware	2,754.05
Total Fixed Assets	<u>2,754.05</u>
Other Assets	
Organizational Costs	
Accumulated Amortization	-405.00
Accumulated Depreciation	-282.81
Organizational Costs - Other	1,217.00
Total Organizational Costs	<u>529.19</u>
Total Other Assets	<u>529.19</u>
TOTAL ASSETS	<u><u>10,993.95</u></u>
LIABILITIES & EQUITY	
Equity	
Opening Balance Equity	17,437.21
Retained Earnings	-6,731.82
Net Income	288.56
Total Equity	<u>10,993.95</u>
TOTAL LIABILITIES & EQUITY	<u><u>10,993.95</u></u>

BUDGET REQUEST BY SOURCE OF FUNDS
(Period: July 1, 2015 to June 30, 2016)

Applicant: The Olohana Foundation

BUDGET CATEGORIES	Total State Funds Requested (a)	In Kind Contribution (b)	(c)	(d)
A. PERSONNEL COST				
1. Salaries	365,000			
2. Payroll Taxes & Assessments				
3. Fringe Benefits	109,500			
TOTAL PERSONNEL COST	474,500			
B. OTHER CURRENT EXPENSES				
1. Travel & Accommodation	58,000			
2. Insurance	100,000			
3. Lease/Rental of Equipment	0			
4. Lease/Rental of Space	30,000	32,000		
5. Staff Training	10,000	30,000		
6. Supplies	25,000			
7. Telecommunication	0	5,000		
8. Utilities	0	10,000		
9. Workshops	100,000	50,000		
10. Contractors (SMEs, Industry & Agroforestry)	280,000			
11. Industry Research	220,000			
12. Printing	15,000			
13. Conference Facilities	100,000			
14. Conference Contractors	135,000			
15. Conference Costs	190,000			
16				
17				
18				
19				
20				
TOTAL OTHER CURRENT EXPENSES	1,263,000	127,000		
C. EQUIPMENT PURCHASES				
D. MOTOR VEHICLE PURCHASES				
E. CAPITAL				
TOTAL (A+B+C+D+E)	1,737,500	127,000		
SOURCES OF FUNDING		Budget Prepared By:		
(a) Total State Funds Requested	1,737,500	M. Kalani Souza	808-987-0705	
(b) In Kind Contribution	127,000	Name (Please type or print)	Phone	
(c)			January 29 2015	
(d)		Signature of Authorized Official	Date	
TOTAL BUDGET	1,864,500	M. Kalani Souza	Executive Director	
		Name and Title (Please type or print)		

BUDGET JUSTIFICATION PERSONNEL - SALARIES AND WAGES

Applicant: The Olohana Foundation

Period: July 1, 2015 to June 30, 2016

POSITION TITLE	FULL TIME EQUIVALENT	ANNUAL SALARY A	% OF TIME ALLOCATED TO GRANT REQUEST B	TOTAL STATE FUNDS REQUESTED (A x B)
Program Director	0.5	\$60,000.00	50.00%	\$ 30,000.00
Program Coordinator	1	\$40,000.00	100.00%	\$ 40,000.00
Project Director	0.5	\$60,000.00	50.00%	\$ 30,000.00
Project Coordinator	1	\$40,000.00	100.00%	\$ 40,000.00
Project Assistant	1	\$30,000.00	100.00%	\$ 30,000.00
Project Administrator	0.5	\$110,000.00	50.00%	\$ 55,000.00
Administrative Assistant	0.5	\$40,000.00	50.00%	\$ 20,000.00
Event Director	1	\$50,000.00	100.00%	\$ 50,000.00
Production Assistant	0.5	\$40,000.00	50.00%	\$ 20,000.00
Production Assistant	0.5	\$40,000.00	50.00%	\$ 20,000.00
Technical Director	0.5	\$60,000.00	50.00%	\$ 30,000.00
				\$ -
TOTAL:				365,000.00
JUSTIFICATION/COMMENTS:				

**BUDGET JUSTIFICATION
CAPITAL PROJECT DETAILS**

Applicant: The Olohana Foundation

Period: July 1, 2015 to June 30, 2016

FUNDING AMOUNT REQUESTED						
TOTAL PROJECT COST	ALL SOURCES OF FUNDS RECEIVED IN PRIOR YEARS		STATE FUNDS REQUESTED	OTHER SOURCES OF FUNDS REQUESTED	FUNDING REQUIRED IN SUCCEEDING YEARS	
	FY: 2013-2014	FY: 2014-2015	FY:2015-2016	FY:2015-2016	FY:2016-2017	FY:2017-2018
PLANS	109,050	100452	1737500			
LAND ACQUISITION						
DESIGN		60000				
CONSTRUCTION						
EQUIPMENT		6000				
TOTAL:	109,050	166,452	1,737,500			
JUSTIFICATION/COMMENTS:						

IV. Experience and Capability

A. Necessary Skills and Experience

Olohana Inc; dba The Olohana Foundation - Olohana Foundation is a 501(c)3 non-profit organization that helps communities build resilience and adapt to climate change by strengthening relationships between the generations, between cultures, and with the natural environment. Together we help set up local food, energy, water, and knowledge systems. Olohana means all hands working together. It is through our focus on working relationship and community values that we bring together diverse skillsets and knowledge to cultivate community resilience in natural and long-lasting ways. Olohana is part of a team assembled to investigate, support and actualize breadfruit economic development on a global scale that addresses food security and community resilience as adaptation strategy for increase dynamic weather and environmental disruptions and other impacts of climate change.

2014 Olohana Impacts

Olohana helps to bring the voice of local and ingenious communities to the national conversation around climate change. In July 2014, under the direction and through the network established by Executive Director M. Kalani Souza; Olohana traveled to the Rising Voices II workshop (Adaptation to Climate Change and Variability: Bringing Together Science and Indigenous Ways of Knowing to Create Positive Solutions) workshop in Colorado. Participating in this workshop allowed Olohana to not only nurture our relationship with the science community, but also share our adaptation strategies developed from our community capacity building work through our NOAA Coastal Resilience Network (CRest) grant. The workshop focused on the co-production of knowledge for adaptation solutions to climate change and variability and will focus on the following themes related to adaptation to climate change and variability: (1) migration and relocation; (2) food security (subsistence; wild foods, plants and animals; agriculture, ranching); and (3) extreme changes, variability and events (flooding, drought, extreme heat, rising sea levels, melting permafrost). In addition to working with the science community, Olohana helped to share this information with the Obama Administration by inviting members of the Task Force on Climate Preparedness and Resilience to participate in the workshop. Given that the purpose of the task force (which was established in 2013 through President Obama's Executive Order 13563) is to advise the Administration on how the Federal Government can respond to the needs of communities nationwide that are dealing with the impacts of climate change, the Task Force was an ideal vehicle for sharing Olohana's work. The Task Force members include state, local and tribal leaders from across the country who will use their first-hand experiences in building climate preparedness and resilience in their communities to inform their recommendations to the Administration. Three (3) of the five (5) initiatives recommended to the President's Climate Task Force were immediately adopted, two remaining were included after some revisions by the task force. It is this kind of impact that The Olohana Foundation strives to achieve on behalf of the communities we serve.

Kupuna Kalani Souza, Co-Principle Investigator—Hawaii-Grassroots engagement and capacity building. Kalani Souza is a recognized Hawaiian Kupuna; he is the National Outreach coordinator for NDPTC as both a community organizer and trainer; he is a standing member and past steersperson for Pacific Risk management Ohana (PRiMO) IKE Hui (Indigenous

Knowledge of the Environment) Working Group. He serves on several Federal Native American efforts including Indigenous Peoples Climate Change Working Group (IPCCWG), Rising Voices with National Climate Atmospheric Research Center (NCAR) and several regional and local disaster preparedness, food security and response organizations; he is community organizer and executive director of the Olohana Foundation.

Craig Elevitch, Co-Principle Investigator—Educator in Pacific Island agroforestry since 1993. He directs Agroforestry Net, a nonprofit educational organization dedicated to empowering people in agroforestry and ecological resource management. The organization’s internationally recognized publications and workshops have guided thousands in becoming more proficient in ecological food production, agroforestry, and reforestation. He has facilitated numerous agroforestry workshops in the Pacific, with thousands of producers and resource professionals participating since 1993. His online publications have garnered over 10 million downloads since 2000. These include *Agroforestry Guides for Pacific Islands* (2000), *Traditional Trees of Pacific Islands: Their Culture, Environment, and Use* (2006), and *Specialty Crops for Pacific Islands* (2011), all of which promote diverse agricultural systems that are environmentally and ecologically sustainable. He is currently completing a publication about food-producing agroforestry in the Pacific Islands. He is also co-director of Hooulu ka Ulu, a project to restore breadfruit agroforests in Hawaiian landscapes.

Professor Alvin Huang- Technical Director – Professor at the University of Hawaii College of Tropical Agriculture and Human Resources, Department of Human Nutrition, Food and Animal Sciences. Dr. Huang is also the Principal Investigator for the Institute of Tropical Food Research and Development. His academic research is in the area of food chemistry, food product-processing design and food service management. He is the lead inventor in four US patents on taro processing, taro-based food products and has extensive and published research on taro and breadfruit. Dr. Huang is also a certified servsafe course instructor by the national Restaurant Association (NRA) Professor Huang is a recognized expert regionally and internationally on tropical food processing. Professor Huang is a research professor in the College of Tropical Agriculture and Human Resources. He has a patent for making taro flour that has been licensed by Alexander and Baldwin, one the Big Five companies in the State of Hawaii.

Papalii Dr. Failautusi “Tusi” Avegalio—Project Administrator—Director of the Pacific Business Center Program (PBCP) at the Shidler College of Business, University of Hawaii. Under his direction, PBCP received seven national awards for innovation, creativity, and effectiveness. Tusi is also the Executive Director of the Honolulu Minority Enterprise Business Development Center, and was named “Entrepreneur of the Year” for the U.S. Western Region in 2009. Tusi has consulted throughout the Pacific for the ruling chiefs of Micronesia, Melanesia, and Polynesia, and for traditional village councils, community organizations, governments, colleges and universities, multinational corporations, and local businesses. His work seeks to reconcile the perspectives of traditional wisdom and Western knowledge. Tusi is a Polynesian Alii and holds the traditional honorific of Papalii, as he is heir to the Maleatoa line of Samoa. His genealogical link to Hawaii can be traced in King Kalakaua’s publications on Hawaiian Legends and Myths, which map the movement of the Pili of Samoa to Hawaii in 1100 A.D.

Kalia Lydgate co-founded and former Director of P.O.W.E.R. (People Organizing for Wealth and Ecological Restoration), a program based in New Bedford, MA that developed innovative,

whole-systems solutions for environmental, economic and social justice challenges. Kalia served as a Mayoral Fellow in the city of New Bedford from 2010-2012. Previously, Kalia was an event coordinator for Connecting for Change, a Bioneers conference. As Youth Coordinator for the Marion Institute, Kalia developed after school curricula to teach sustainability and environmental justice to urban youth through spoken word and hip hop. Kalia graduated from Wesleyan University in 2007 with a degree in Social Ecology.

Partners, Contractors and Subject Matter Experts

Professor Diane Ragone - Breadfruit tree breeding and propagation research expert. Dr. Ragone is the Director of the Breadfruit Institute of the National Tropical Botanical Garden in Kauai, and leading expert on breadfruit varieties and research in the Pacific. Her collection of breadfruit varieties at the Breadfruit Institute includes in excess of a 190 varieties of breadfruit collected from all over the Pacific.

Professor Susan Murch - Breadfruit tree breeding and propagation, chemistry researcher and analysis. Dr. Murch is responsible for developing the lab protocols for producing breadfruit from breadfruit plant tissue. Professor Murch is also engaged with research regarding insect repellent properties of the breadfruit flower whose potency exceeds that of the leading commercial insecticide on the market. A study is partially funded by the Department of Defense, United States Department of Agriculture (USDA) and the Breadfruit Institute. Dr. Murch is a professor of plant biochemistry at the University of British Columbia Okanagan and holds the Canada Research Chair in Natural Products Chemistry.

Professor Jeff Gwartz - Kansas State University Milling/Processing/Product Development/Commercialization, Food Sciences and International grains associate professor. Expertise is in training, research and problem solving in the grain processing industry. Highly motivated to expand national and international experience with professional goals to work with individuals, companies and organizations seeking new ideas and solutions in grain processing. Specialties are process and product research, troubleshooting and training in grain processing. Recognized as one of the top milling experts nationally and internationally.

Professor Fadi Aramouni - Kansas State University-Food Scientist/Technologist Engineer/Product Development and lead food scientist to develop gluten free flour from sorghum. Professor Aramouni is with the Kansas State University Food Sciences and International grains program. Professor Aramouni will be collaborating with Professor Alvin Huang on the development of breadfruit flour and related by products. Professor Aramouni is also recognized as one of the top experts in gluten free flour development and production nationally and internationally.

Robert Gough - Native American attorney and the first Director of the Rosebud Sioux Tribe Utility Commission, and presently serves as a consulting attorney to that commission. Mr. Gough is co-chair of the Native Peoples/Native Homelands Climate Change Workshop, part of the national assessment on climate change and variability through the United States Global Change Research Program. Bob also works with NDPTC as an instructor for their Coastal Community Resilience training and develops strategies around sustainability and resilience for

Rural, Tribal and Native communities worldwide. Robert Gough received the U.S. DOE Wind Energy Program Outstanding Technology Acceptance Award 2004.

B. Facilities

Agreements with the Two selected sights, East Oahu, West Hawaii are being negotiated. Facilities availability and capacity will be determined by Memoranda of Understanding (MOUs) with model farms. Olohana will secure contracts with available facilities for proposed 2016 Conference, including but not limited to transportation and accommodation needs for conference presenters.

V. Personnel: Project Organization and Staffing

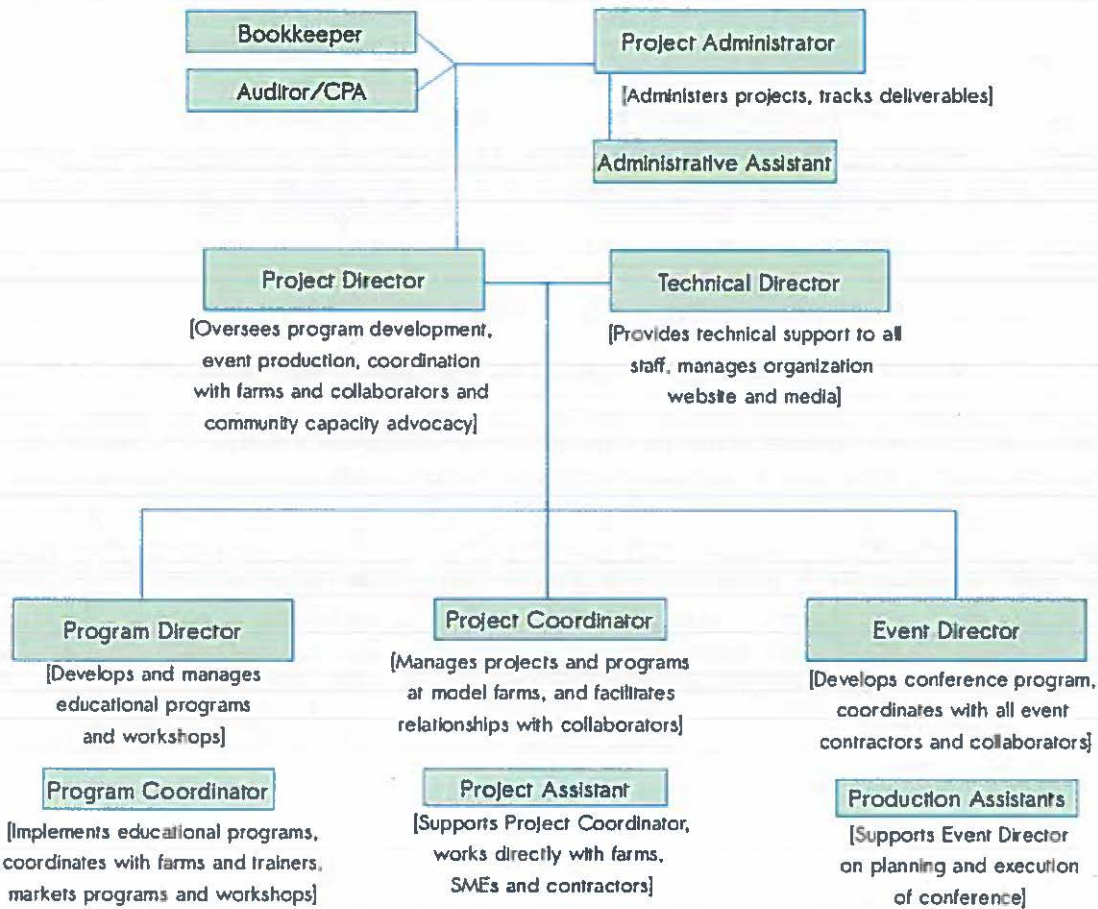
A. Proposed Staffing, Staff Qualifications, Supervision and Training

Olohana's staffing pattern reflects the three main focus areas outlined in this proposal: (1) the creation of model agroforestry farms including business plan development and economic and market development research, (2) the development of cross-sectional educational programming for farmers, industry and community, and (3) event production for the First Annual Hawaiian Breadfruit Conference. Each of the three tracks has at least two dedicated staffers who are managed by the Project Director and supported by the Technical Director as needed. The Project Director answers to the Project Administrator in all focus areas and for reporting purposes. The Program Director, Project Coordinator and Event Director are responsible for managing all contractual relationships within their focus areas. For example, the Program Director will work with educators, facilitators and subject matter experts contracted to deliver trainings and workshops. Likewise, the Project Coordinator establishes and monitors MOUs with the contracted farms and manages the progress of the agroforest installations as well as overseeing relationships and initiatives with industry and business specialists. The Event Director oversees event coordination, conference-related contracts, development of conference materials and the conference program.

Olohana's fourth focus area is advocacy for community capacity development, which falls primarily under the responsibility of the Project Director and is not included in this grant request (see 2014 Olohana Impacts). This work compliments and elevates the three focus areas addressed in this proposal.

Olohana has assembled a team of experienced managers, administrators, economists, researchers, organizers, farmers and scientists with extensive experience and knowledge in their fields. All staff in administrative positions have had experience administering, tracking and reporting on governmental grants and overseeing large scale projects. Olohana's staff specializes in collaboration and partnership facilitation, which uniquely positions Olohana to coordinate the type of interdisciplinary partnerships that are required to catalyze economic development in the breadfruit industry.

B. Organization Chart



C. Compensation

Project Administrator: \$110,000

Project Director: \$60,000

Program Director: \$60,000

VI. Other

A. Litigation

Not applicable.

B. Licensure or Accreditation

Not applicable.

C. Federal and County Grants

Olohana Foundation collected \$45,183.63 from the 2014 NOAA CRest Grant since July 1, 2014.

D. Private Educational Institutions

Not Applicable.

E. Future Sustainability Plan

The applicant shall provide a plan for sustaining after fiscal year 2015-16 the activity funded by the grant if the grant of this application is:

- (1) Received by the applicant for fiscal year 2015-16, but only as an initial year (Year 1) of a three to five year funding plan to establish marketable products, production process and market penetration for proposed breadfruit industry. Additional funds for support will be sought from USDA and Western Sustainable Agriculture Research and Education (SARE), Private Foundation and Donors, et al. Relationships with OIA Office of Insular Affairs, USDA and SARE have already been established and awareness of our projects, needs and present capacity are known. At this present time Olohana as every reason to expect funding from USDA to be favorable.

- (2) Not received by the applicant thereafter.

Not Applicable.

F. Certificate of Good Standing (If the Applicant is an Organization)

See attached

**DECLARATION STATEMENT OF
APPLICANTS FOR GRANTS AND SUBSIDIES PURSUANT TO
CHAPTER 42F, HAWAII REVISIED STATUTES**

The undersigned authorized representative of the applicant certifies the following:

- 1) The applicant meets and will comply with all of the following standards for the award of grants and subsidies pursuant to Section 42F-103, Hawaii'i Revised Statutes:
 - a) Is licensed or accredited, in accordance with federal, state, or county statutes, rules, or ordinances, to conduct the activities or provide the services for which a grant or subsidy is awarded;
 - b) Complies with all applicable federal and state laws prohibiting discrimination against any person on the basis of race, color, national origin, religion, creed, sex, age, sexual orientation, or disability;
 - c) Agrees not to use state funds for entertainment or lobbying activities; and
 - d) Allows the state agency to which funds for the grant or subsidy were appropriated for expenditure, legislative committees and their staff, and the auditor full access to their records, reports, files, and other related documents and information for purposes of monitoring, measuring the effectiveness, and ensuring the proper expenditure of the grant or subsidy.
- 2) The applicant meets the following requirements pursuant to Section 42F-103, Hawaii'i Revised Statutes:
 - a) Is incorporated under the laws of the State; and
 - b) Has bylaws or policies that describe the manner in which the activities or services for which a grant or subsidy is awarded shall be conducted or provided.
- 3) If the applicant is a non-profit organization, it meets the following requirements pursuant to Section 42F-103, Hawaii'i Revised Statutes:
 - a) Is determined and designated to be a non-profit organization by the Internal Revenue Service; and
 - b) Has a governing board whose members have no material conflict of interest and serve without compensation.

Pursuant to Section 42F-103, Hawaii'i Revised Statutes, for grants or subsidies used for the acquisition of land, when the organization discontinues the activities or services on the land acquired for which the grant or subsidy was awarded and disposes of the land in fee simple or by lease, the organization shall negotiate with the expending agency for a lump sum or installment repayment to the State of the amount of the grant or subsidy used for the acquisition of the land.

Further, the undersigned authorized representative certifies that this statement is true and correct to the best of the applicant's knowledge.

The Olohana Foundation
(Typed Name of Individual or Organization)



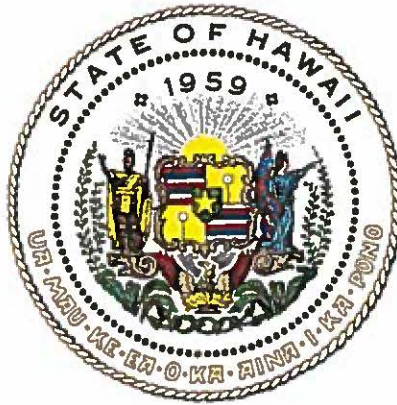
(Signature)

January 29, 2015

(Date)

M. Kalani Souza
(Typed Name)

Executive Director
(Title)



Department of Commerce and Consumer Affairs

CERTIFICATE OF GOOD STANDING

I, the undersigned Director of Commerce and Consumer Affairs of the State of Hawaii, do hereby certify that

OLOHANA, INC.

was incorporated under the laws of Hawaii on 08/12/2008 ; that it is an existing nonprofit corporation; and that, as far as the records of this Department reveal, has complied with all of the provisions of the Hawaii Nonprofit Corporations Act, regulating domestic nonprofit corporations.

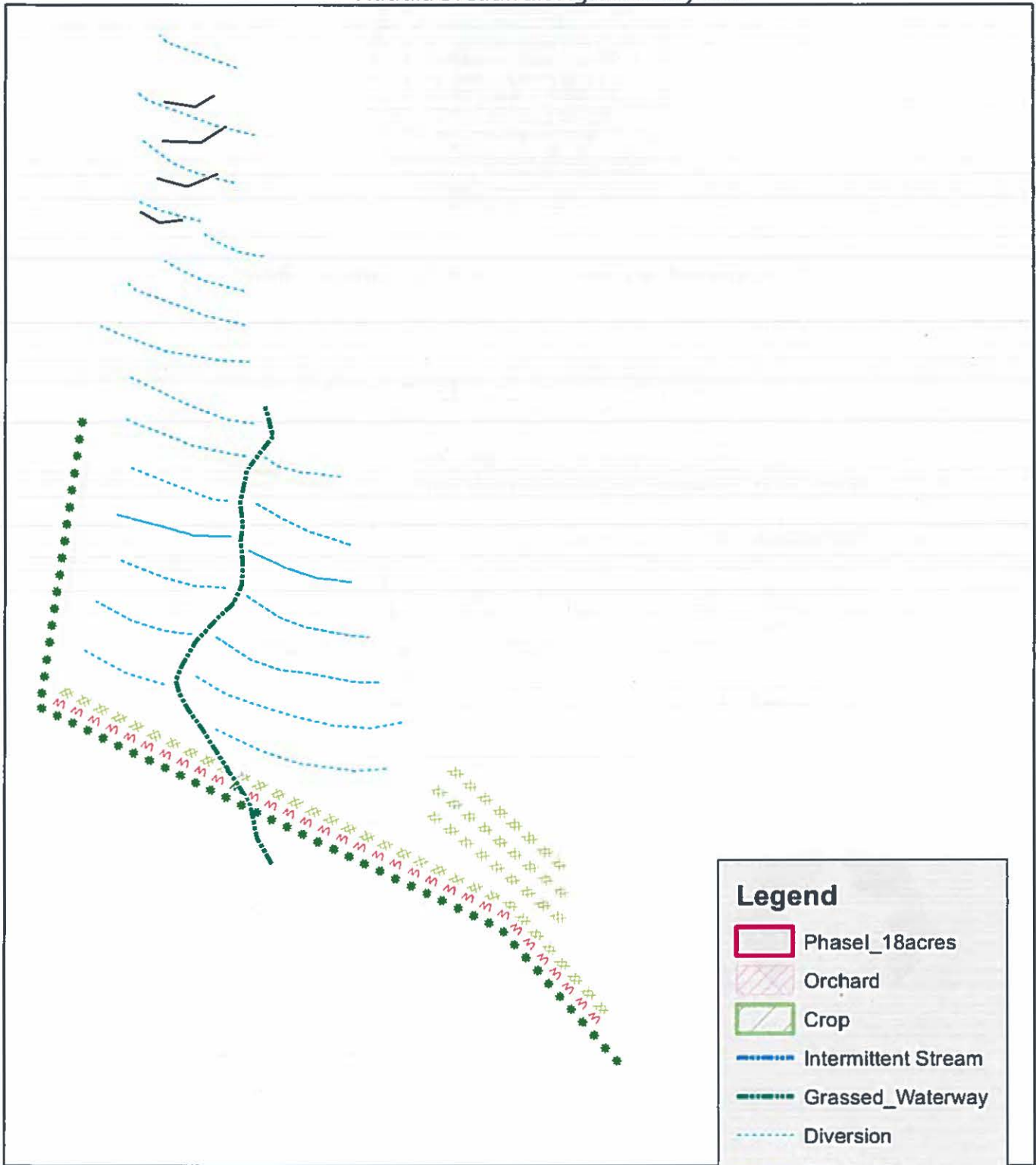


IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Department of Commerce and Consumer Affairs, at Honolulu, Hawaii.

Dated: January 29, 2015

Director of Commerce and Consumer Affairs

PHASE I CONSERVATION PLAN Hauula Breadfruit Agroforestry area



Legend

- Phase1_18acres
- Orchard
- Crop
- Intermittent Stream
- Grassed_Waterway
- Diversion
- Filter_strip
- Vegetative_Barrier
- Access_Road
- Windbreak



0 100 200 400 600 Feet

1 inch = 250 feet

OLOHANA FOUNDATION CREST GRANT FINAL PROGRESS REPORT

Project Title: The Community Resilience Intergenerational Transfer of Knowledge™ (ITK) Initiatory and Training Program

Institution: Olohana FoundationProject

Investigator: India Clark-Heff, Olohana Foundation Program Director

NOAA Award #: NA13NOS4730049

Award period: October 1, 2013 to September 30, 2014

Reporting Period: October 1, 2013 to September 30, 2014

I. PROPOSAL CHANGES and MILESTONE PROGRESS

The milestones set for this grant project have been completed in full by the CRest project team and our partners. As targeted for this grant project, the partnership formed to pilot the ITK process in 2012-2013 with Native Hawaiian charter schools in primary education has been expanded nationally through this grant to include Native American administrators, teachers, and students in higher education. During this grant project, the Olohana Foundation (Olohana) has worked with our partners to apply and refine the ITK process through the establishment of food forest along the National Park Service Ala Kahakai National Historic Trail (NPS Ala Kahakai NHT). Our partners heading indigenous academic and research programs at Haskell Indian Nations University (Haskell University) have observed and participated in preparing the Community Resilience Intergenerational Transfer of Knowledge™ Initiatory and Training Process (ITK Process) for applications beyond Hawai'i and for academic and research programs at higher learning institutes.

Outcomes of this grant project were shared at the 2014 PRiMO conference and the University Corporation for Atmospheric Research (UCAR) Rising Voices Symposium. Olohana helped to bring the role of intergenerational learning to the national climate change conversation by inviting Governor Abercrombie to participate in the Rising Voices Symposium as a representative of President Obama's State, Local, and Tribal Force on Climate Preparedness and Resilience. In addition to these venues, Olohana also shared the outcomes and provided routine updates to key indigenous and climate-related academic and research networks. In sharing the outcomes of this grant project through these forums and networks, the ITK partnership has expanded. Plans are currently underway to use the outcomes to refine the ITK process for various applications beyond the life of this grant project. For example, in Hawaii the ITK process is being integrated into the NPS Ala Kahakai NHT programming and community efforts along the trail which will allow the process to be shared with a large audience while the establishment of permanent food forest sites and nurseries along the trail provides more in-depth and long-lasting stewardship opportunities and apprenticeship relationships between elders and youth. As an outcome of this grant project, Olohana secured working relationships nationally in the northeast and central regions and with the U.S. affiliated Pacific island regions. Olohana is actively working with these partners to identify potential applications for the ITK process within the PREL Pacific Regional Education Laboratory on the PCEP Pacific Climate Education Programs, Dartmouth College Native American Program, the National Center for Atmospheric Research (NCAR) and UCAR, the Indigenous People's Climate Change Working Group (IPCCWG) Native Network, and the Pacific Breadfruit Initiative of the affiliated territories of Polynesia, Micronesia, and Melanesia.

The section below describes the activities conducted to reach the milestones targeted for this grant project.

Milestone: The CRest 2013 workplan was complete by November 1, 2013, meeting the deadline for this initial milestone.

The project managers for the ITK CRest project developed a work plan to assist our partners implement the activities outlined in our CRest grant proposal. The work plan identifies specific tasks to be accomplished; explains the actions needed to accomplish the tasks; identifies the roles of partners and the technical network; and identifies potential obstacles to successful completion of the goals and objectives. The workplan details each of our partners roles for completing activities as follows: Olohana will provide administrative support and training for the ITK partnership; our partners at the NPS Ala Kahakai NHT will participate in the design, delivery and refinement of the ITK Process; our primary and higher education institutes and research centers will learn, receive updates, and contribute feedback towards the design and delivery of the ITK Process.

Milestone: The ‘train the community organizer’ retreat was complete by our target date of December 1, 2013.

As one of the initial activities targeted for the 2013-2014 ITK CRest grant project, the CRest project managers working through Olohana, organized and convened a retreat in November 2013 with our partners to begin refining, expanding, and implementing the ITK Process. The retreat started with Olohana sharing participant feedback from the initial Community Resilience ITK event, initiated and implemented through our 2012-2013 CRest grant project. This retreat served to establish working relationships, clarify roles, and identify opportunities for implementing activities relevant to the co-design and delivery of the 2013-2014 ITK CRest project. The retreat participants included: administrators, educators, and students from Hawaii County public charter schools, Haskell Indian Nations University; indigenous elders and graduate students involved with the National Tribal Environmental Council (NTEC) and National Congress of American Indians (NCAI) networks, in particular the NCAI Youth Congress; climate adaptation specialist and disaster management trainers from the Pacific Risk Management Ohana (PRiMO) network and FEMA’s University of Hawaii National Disaster Preparedness Training Center (NDTPC); climate science and planning experts from NCAR and UCAR; natural resource managers from the NPS Ala Kahakai NHT and community organizations organizing and conducting programs along the trail, such as the Ala Kahakai Trail Association (ATA), the Kalai Wa’a Makali’i Voyaging Society and the Na Pea program; food security experts from Agroforestry.net and Permanent Agroforestry Resources; community development specialist through University of Hawai’i Shidler Business College; the Life Enhancement Institute of the Pacific (LEI); and the Olohana Foundation (Olohana).

Olohana’s CRest project managers conducted the following activities to prepare, convene, and follow-up the retreat:

- Worked with PRiMO and NCAR/UCAR members to help introduce key concepts of natural hazard resilience and climate adaptation to our other partners;

- Facilitated a strategic planning session to clarify the roles and opportunities for using the various types of expertise of each of our partners, including those with expertise in climate science, education, and environmental stewardship programs (both land-based (maha'ai¹) and coastal ('aukai²) programming);
- Introduced the foundational aspects of the ITK Process, followed by a brainstorm session on ways to adapt the program with our partner's existing environmental and educational programs;
- Facilitated a discussion around knowledge gaps and additional learning interests of our partners and ways to use projects our partners are currently working on collaboratively, such as the NCAR Rising Voice Workshop, to provide natural hazard resilience and climate adaptation information to inform the development of the ITK Process.

During this retreat, our partners suggested we focus the subject area of our programming around an issue cross-cutting the climate adaptation, natural hazard management, community resilience, and sustainability fields, which is food security. Food security is also a main interest identified by participants from our 2012 Community Resilience ITK project and a prime concern shared amongst our new partners and the indigenous communities in which they work. In addition to being a topic that is of interest across disciplines and various types of communities, food security, and in particular, food sovereignty, is also an issue that our elders and youth jointly view as a priority focus for building community capacity. Our partners also felt that focusing on food security, rather than topics such as sea-level rise, will help the ITK Process speak to a wider audience and help our partners begin to adapt the ITK Process for communities outside of Hawaii.

¹ Maha'ai is the Hawaiian word for farmer.

² 'Aukai is the Hawaiian word for sailor.



Charter school students on the NPS Ala Kahakai National Historic Trail

Milestone: A schedule for holding the coastal lands and nearshore waters components of the Community Resilience ITK Program was set before January 1, 2014, meeting our target deadline.

Olohana worked with our partners to survey their existing programs and other community-initiated efforts along the corridor of the NPS Ala Kahakai NHT; identified gaps in the capacity of existing programs to teach disaster management and climate adaptation concepts; identified opportunities for integrating natural hazard and climate adaptation activities into existing

programming to address these gaps; identified interests and opportunities for integrating the ITK learning process into existing programs; and clarified the roles of each agency and community group and their commitment to supporting and refining the ITK Process in 2014 and over a multiple-year period.

Focusing on the subject of food security, our partners and elders from ATA and community organizations along the NPS Ala Kahakai NHT expressed an interests in sharing information and traditional practices for growing native subsistence plants, such as ulu (bread fruit) and for maintaining fishing koas (traditional fishing areas). Our partners from communities outside of Hawai'i, were quickly able to observe and identify the foods that are essential to their people.

Through this grant project, land-based and marine-based applications of the ITK program have been refined. Olohana worked with our partners to draft schedules, identify locations, coordinate on messaging and programming, and confirming youth and elder participants. Olohana worked closely with Ala Kahakai Trail Association (ATA) to identify opportunities for integrating the ITK Process into programming associated with the NPS Ala Kahakai NHT since they are the entity tasked with ensuring the trail is well connected to the community, that Hawaiian values and principles are in place and practiced, and to foster partnerships and collaborations.

The CRest project managers also coordinated with our national partners heading indigenous education programs from Haskell University, Dartmouth College, NTEC, and NCAI on their travel and scheduled meetings with those coordinating ITK events in Hawai'i so that they can begin to establish working relationships with each other.

In developing the coastal applications for the ITK Process, Olohana worked with our partners to integrate the ITK Process into the program schedule of two community-initiated projects that use the Ala Kahakai trail corridor as an outdoor laboratory and classroom with intermediate-level students. The Na Pe'a program and the Kalai Wa'a Program with the Makali'i voyaging

canoe, focuses on ocean-related teachings along the “blue trails” or waterways of the Ala Kahakai trail. These programs are designed to help participants gain insights into the delicately balanced rhythm of island weather and environmental systems. Aspects of these programs lend themselves to the ITK Process, particularly the skills, insights, and values that are taught which allowed Hawaiians to maintain a highly developed, self-reliant and resilient society. These programs also teach place based topics of interest to climate adaptation and community resilience, such as stories, songs and place names of the area that relate to weather patterns, wind and ocean current names, ocean lifestyles and connections between the land and water, cultural conservation, food sovereignty, and concepts of sustainability.

In scheduling opportunities to integrate the ITK Process into existing environmental education and stewardship efforts held along the terrestrial portion of the NPS Ala Kahakai NHT, our partners with the Hawai'i public charter schools and ATA expressed an interest in working with the Kailapa community of South Kohala and the Kana'aina United to Protect Aina (KUPA) community organization from the Ho'okena community in South Kona. The goals of these community projects are to promote hands-on application, understanding, and appreciation of conservation values and ethics for students of all ages. The ITK process is scheduled to be included in several of these learning sessions. To support the integration of the ITK Process into these experiential learning classes, cultural practitioners from the school, NPS, and families with multigenerational connections along the trail have been invited to provide interpretation of sites along the trail of cultural, historical, and natural value. A focus of the programming for these ITK events is teaching students about self-reliance and reintroducing ceremony as practice.



Students from our partner's Na Pea Program learning traditional practices along the Ala Kahakai National Historic Trail

As part of the effort to develop a schedule for holding the ITK events, the following objectives for our CRest grant were met, including:

- Assisting members of the ITK partnership to survey their existing programs to identify opportunities for integrating concepts of natural hazard resilience and climate adaptation;
- Enhancing existing programs that routinely serve the community, by increasing the capacity of the ITK partnership to integrate concepts, actions and goals of natural hazard resilience and climate adaptation;
- Increasing the capacity of program providers to work with youth, community leaders, educators, cultural practitioners and elders in Hawaii, to define community resilience and climate adaptation in their own terms;
- Increasing the capacity of government agencies to provide planning and technical support and to revise their policies as needed, so they can work with community-based trail/land management organizations to engage in natural hazard mitigation, response and climate adaptation planning; and

- Providing an example of how federal agencies can work with communities directly to manage and conserve their resources for the overall goal of increasing natural hazard resilience and adaptive capacity to address local climate change impacts.

Milestone: Our partners worked together to set the foundation for developing a “learning framework”, meeting our target deadline of January 1, 2014.

As one of the main activities proposed for refining and expanding the ITK Process, the CRest project managers worked with our partners to develop a learning framework. The framework provides guidance to assist our partners outside of Hawai’i integrate the ITK Process into their institution and community programming. The guidance is intended to enhance their capacity and expertise to teach the processes for intergenerational learning focused on the exchange of knowledge and skills relevant to climate adaptation and community resilience knowledge, skills, an through. To develop this guidance in a way that is sensitive to our partner’s needs, Olohana employed the expertise of the Life Enhancement Institute (LEI) of the Pacific, which specializes in community capacity building with native communities.

In developing the guidance for the ITK Process, the following objectives of the CRest grant program were met:

- Help our partners to: a) define what natural hazard resilience and climate adaptation looks like for their community, b): identify components of community resilience present in their indigenous cultural values, traditional knowledge and practices, and c) to initiate their youth as a capable and creative force for responding to disasters and adapting to a changing climate;
- Increase the capacity of our partners to work with youth, community leaders, educators, cultural practitioners and elders in their community to define community resilience and climate adaptation in there own terms and to identify their indigenous values, knowledge and skills that are relevant to community resilience and climate change adaptation.



Partners and students from Native American academic programs with President Tong of Kiribati

Milestone: Olohana Foundation and our partners presented lessons learned at the PRiMO conference March 2014.

As part of this CRest grant, Olohana organized pre-conference meetings to help our partners prepare to present and participate fully in the 2014 PRiMO Conference, *Building Communities of Practice*. As part of these prep-meetings, the CRest project managers lead discussions with our partners focused on the benefits and potential future applications from the Community Resilience ITK Program from each organization’s perspective. Our partners worked with PRiMO

conference organizers to help design, present, and participate in the Indigenous Knowledge and Environment (IKE) Hui meetings and panels on Indigenous Preparedness Initiatives and Partnerships. In addition, Olohana Foundation was invited to facilitate the Governor Abercrombie's Resilient Hawaii Listening Forum organized by PRiMO. At this event, our partners actively shared the work of Community Resilience ITK Program and some of their ideas for applying concepts in their programming. Our partner with LEI lead the IKE Hui meeting and shared ideas from our Community Resilience ITK Program around food security.

The federal partners we've established through PRiMO and this CRest grant provide an opportunity to share the ITK Process and applications within the federal agencies and to discuss the potential for applying this model for community-level resilience programming nationwide. For example, our partner, NPS is committed to integrating climate change planning in its parks and has actively pursued membership in climate change working groups and networks. Locally, the NPS Pacific Islands Network is involved with the Pacific Islands Climate Change Cooperative (PICCC). By working with ALKA and ATA, Olohana is supporting, coordinating and collaborating with arguably the largest regional community-level natural hazard resilience and climate adaptation efforts.

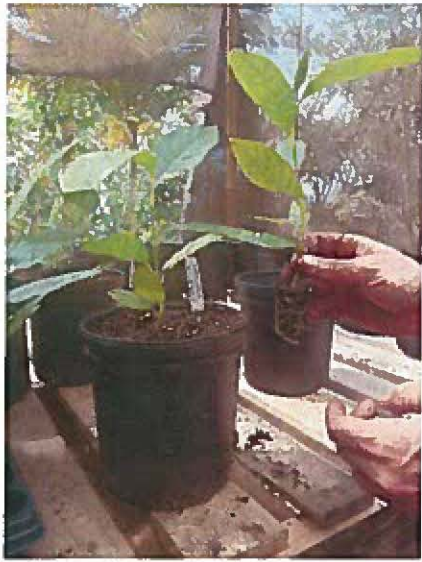
Based on the report out of our efforts along with the input of our partners; recommendations were made to the Presidents Climate Task Force in addition to providing support for the integration of output from NCAR Rising Voices in partnership with USGS, NOAA NIDIS, UH NDPTC, as well as others previously mentioned in this report.

A liaison with the Governor of the State of Hawaii participated in the climate adaptation and response input process along with Olohana Acting Director M. Kalani Souza and other partners including representatives of University of Hawaii and NOAA Pacific Services Center and attended the Rising Voices Conference in Boulder Colorado, spring 2014.

The following letter and recommendations came out of direct engagement of this grant team and the learning afforded through ITK and PCBP programs. The seven recommendations have all been gleaned through work done by Olohana with indigenous communities, educational communities and the work supported by NOAA Pacific Services Center, NPS ALKA National Park Service Ala Kahakai National Historic Trail, ATA Ala Kahakai Trail Association, and the U.H. NDPTC University of Hawaii National Disaster Preparedness Training Center. U.H. Shidler Business College-PBCP Pacific Business Centers Programs and PRiMO Pacific Risk Management Ohana.



Olohana brings faculty and students from Pacific Breadfruit Initiative, Ho'ulu Ka'Ulu, Dartmouth Native American Programs, Haskell Foundation Indigenous Science Research Center, and NPS Ala Kahakai NHT, Hau'ula Resilient Community Initiative.



A nursery maintained by a Native Hawaiian family farm along the Ala Kahakahi National Historic Trail provides for intergenerational learning with traditional practitioners while also serving as a 'seed bank' for installation sites along the NPS Ala Kahakahi NHT

Milestone: Olohana worked with our partners to organize and convene Community Resilience ITK food security events, which began by our target date of June 1, 2014.

Building on our partner's interest to conduct an ITK training event focused on the topic of food security and in an effort to establish permanent ITK learning, training, and stewardship sites along the NPS Ala Kahakai NHT, our partners suggested establishing Ulu (Breadfruit) 'food forest' along the trail. Olohana worked with ATA and supporting programs along the 175 coastal miles of the NPS Ala Kahakai NHT and our partners from Agroforestry.net, Permanent Agroforestry Resources, PRIMO IKE Hui, UH Shidler Business College, and IPCCWG to design and convene the ITK Training event, called the "E Ala O Mahi'ai: The Way of the Farmer". The event was designed to train our partners and other participants how to use the ITK Process to establish mentor relationship between elders and youth to plan and malama ("care for") Ulu food forest nurseries and planting sites along the trail.

The installation and stewardship of the food forest creates a tangible focus for transferring knowledge and skills that have been developed over generations and are critical to the resilience of the local communities in light to the challenges posed by climate change. These are used to create initiatory and ongoing intergenerational learning experiences. The food forest includes a nursery and installation sites along the 175 coastal miles of the Ala Kahakai National Historic Trail (ALKA). The food forest installation sites along the trail will serve as outdoor classrooms and training center for initiatory events and provide opportunities for continued bio-cultural service learning experiences, while the nursery is stewarded by a community farm along the trail.

In addition, the food forest may also serve to reduce local climate change impacts to nearshore coastal habitats and fisheries by buffering the anticipated increase in storm water runoff anticipated under future climate conditions. Facilitating the process for intergenerational conversations and sharing of information and skills around the Ulu food forest reinforces and strengthens Native Hawaiian culture, particularly those aspects that have provided guidance for adapting to challenging weather conditions and other external stressors.

Using the installation of the food forest, Olohana is able to demonstrate and teach how to design environments to facilitate knowledge exchange amongst the generations. Working with our partners, Life Enhancement Institute of the Pacific northeast and Dartmouth College Native

American Program to identify ways to use the ITK Process to teach community engagement in their curriculum. The ITK Process is also being implemented through the Breadfruit Initiative in Guam, Saipan, and Palau with additional events scheduled for spring of 2015 with RMI, Majuro, Truk, Pohnapei, Kosrae, Oahu, Lanai and soon Molokai .

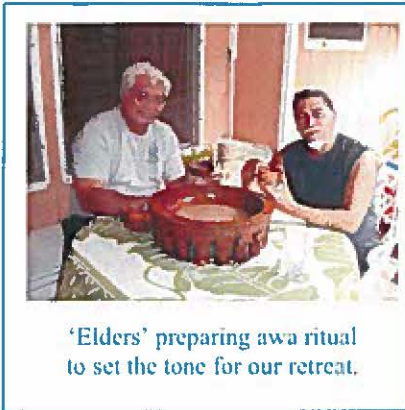
The “E Ala O Mahi’ai: The Way of the Farmer” learning framework teaches the ITK Process in the context of increasing food security locally. It provides a general understanding of the ITK process and guidance for designing and convening an ITK session. By creating the Ulu food forest, we help set up the environment (stage) for hosting intentional conversations between elders and youth.

The Ulu food forest is a strategy to address climate change impacts by strengthening food security and food sovereignty locally. It also provides a context for intergenerational learning through the ITK Process, leveraging the knowledge of Native Hawaiian practitioners and elders from the community, local farmers and agroforestry specialist, NPS resource managers, climate scientist, and students to develop modern models for sustainable breadfruit-based agroforestry systems based on traditional practices. The Ulu food forest will be used to refine the E Ala O Mahi’ai: The Way of the Farmer curricula and to cultivate a younger generation of practitioners equipped with the knowledge and skills to address agroecosystem degradation, climate change, and food security. DSC_0044.JPG

The traditional Pacific Island agroforestry systems are potential models for agricultural and ecological sustainability, providing biodiversity and soil and water conservation, food security, cultural resources, and carbon sequestration. A leading expert, Malézieux, presented findings that compared to monospecific agricultural systems, tropical agroforestry systems can provide higher overall productivity, resistance to pests and diseases, enhanced ecological services, and greater commercial potential. Because agroforestry systems are inherently rich in species and embody multiple pathways for necessary ecosystem functions, they serve as viable strategies for adapting to the impacts of climate change.



Interns using sites along the Ala Kahakai NHT to teach the next generation how to grow food from a seed.



'Elders' preparing awa ritual to set the tone for our retreat.

Milestone: In August 2014, Olohana organized and convened a retreat with our partners to review feedback, reflect on outcomes, and identify opportunities for continuing and expanding the Community Resilience ITK Program beyond the life of this grant.

The purpose of this retreat was to: 1. Celebrate the model for the ITK Process developed and refined to date; 2. Review feedback and identify possible modifications for the ITK Process that were suggested through the co-production process; 3. Identify additional nationally and in the greater

Pacific by surveying our partner's upcoming events and programs (e.g. Pacific Breadfruit Initiative, Ho'ulu Ka'Ulu, Dartmouth Native American Programs, Haskell Foundation Indigenous Science Research Center, Hau'ula Resilient Community Initiative. etc.); 4. Get a sense of people's interest and commitment in continuing the partnership and to solicit additional funding to continue the work over the next five years.

Olohana Foundation's acting executive director and project manager traveled to meet with our partners in Native American communities and higher education institutes to discuss ways to collect feedback and to identify opportunities for expanding the ITK Process nationally. This allowed Olohana to develop relationships with our partners and engage in more strategic discussions for adapting and implementing this programming in ways that will naturally support and benefit universities (Haskell American Indian University, Dartmouth College), climate research networks (e.g. NCAR and UCAR) and native communities outside of Hawaii. Our partners at Haskell University identified an opportunity to house and use information generated through our programming through an indigenous knowledge climate research center and expert advisory council.

To prepare for the retreat, the Olohana CRest grant project managers reviewed and synthesized the feedback from our partners (e.g. including minutes from virtual and face-to-face meetings held at Haskell University, Dartmouth College, Washington DC Smithsonian Museum for American Indians, the PRiMO Conference, Rising Voices Symposium, and the NCAR Geo-Engineering Conference, etc). The CRest project managers presented the feedback and the "E Ala O Mahi'ai: The Way of the Farmer" ITK training guidance at the retreat and collected suggestions to continue refining the guidance through an iterative process with Agroforestry.net, Permanent Agroforest Resources, and Haskell University Foundation.

Feedback was received from the following partners and potential users:

- Haskell
- PRiMO IKE Hui
- Rising Voices (NCAR/UCAR)
- Office of the Governor of Hawaii-President Obama Climate Task Force
- Dartmouth College, Native American Program

- IPCCWG- Smithsonian American Indian Museum/Native Network Learning Group

A common suggestion in the feedback collected from our partners and community leaders, is the importance of identifying a topic that lends itself to a learn-by-doing experience and to set a context for the ITK Process. According to the feedback we received from our ITK training event, E Ala O Mahi'ai: The Way of the Farmer, elders felt more comfortable and confident in sharing what they know about growing food than they did about coming to share knowledge for adapting to climate change. However this does not diminish the impacts of the knowledge and the relevant adaptation strategies and applications that can be harnessed by the community and as eco-service learning. Identifying the 'knowledge holders' for the event is a capacity building exercise in itself as elders learn that much of their current work to teach and practice traditional methods of farming and fishing is also a method for addressing future challenges such as climate change.

The ITK Process is regarded by our partners as a tool for teaching community engagement and cultural competency and for identifying adaptation strategies that are driven by community identified needs and can help innovate present practice to accommodate predicted climate and weather challenges for local communities. Feedback collected from the UCAR/NCAR Rising Voices Symposium identified a number of foreseen benefits from the ITK training, such as providing a pathway for community organizers to interface directly with federal program providers. Participants also expressed that the ITK™ Training Program could potentially be used as a framework to assist our partners and other agencies develop and deliver "whole community" resilience programs that are responsive to the community's interest and needs.

The ITK Process can help community identify and explore adaptation strategies, such as identifying agricultural areas that will be vulnerable under future climate conditions. This work can support efforts like the IAL Important Agricultural Lands assessment, inventory and community engagement around identifying the most important agricultural lands and preserving them for future agricultural needs. Maps and inventories can help make the case that indigenous management of tropical forests makes both environmental and economic sense. With such tools, indigenous, native, tribal, and rural communities can participate in forums to modernize and develop new policy grounded in the understanding that environmental protections and the well being of communities do not need to be sacrificed for effective creation of economic capacity and is critical to the survival of our planet in light of climate change challenges.

At the retreat, our partners discussed opportunities to continue identifying potential applications for the ITK Process and for developing the ITK training curriculum. Our partners identified opportunities to work with Cornell University and suggested reaching out to outdoor educational programs (e.g. Acorn Food Forest, Maple Food Forest, etc). Our partners also suggested formalizing a learning network and our iterative process for sharing and refining the E Ala O Mahi'ai: The Way of the Farmer guidance. Plans are underway to setup systems for collecting, distributing updates routinely, and collecting feedback each time our partners

conduct an “E Ala O Mahi’ai: The Way of the Farmer” event. This will help to organize and use the feedback and refine the guidance and training materials using an indigenous approach which focuses on relationship building and informal methods of information sharing, reciprocal learning, and using the expertise of our partners collectively. Our partners also suggested expanding the focus for the “E Ala O Mahi’ai: The Way of the Farmer” ITK training guidance to include a focus on sustainable energy. Olohana is actively working with our partner, the Intertribal COUP, E Ala O Mahi’ai: The Way of the Farmer ITK training curriculum to include effective, low-tech and culturally appropriate energy hubs for processing products from the Ulu food forest.

The feedback and discussion from our retreat is consistent with the growing awareness worldwide that the inclusion of Indigenous knowledge in climate change discussions has been increasingly recognized at both national and international levels as a way to mitigate climate-related risks, as well as to engage Indigenous communities in adaptation planning. The 2014 Intergovernmental Panel on Climate Change Working Group II report’s Technical Summary concluded, “Indigenous, local, and traditional knowledge systems and practices, including indigenous peoples’ holistic view of community and environment, are a major resource for adapting to climate change.”³ While climate change-related transformations are expected to be unprecedented, Indigenous knowledge and adaptation strategies provide a crucial foundation for community-based adaptation measure.⁴ “Rising Voices II” Boulder Colorado 2014 UCAR/NCAR.



Olohana and partners at the
NCAR Rising Voices
Symposium

II. Other Tasks Completed but not Listed in Milestone Progress Table

The CRest project team and partners performed additional tasks not listed as milestones, yet in response to our partner and stakeholder interest and critical to the successful implementation of this project and to set a foundation for continuing this work next year.

Olohana is currently working to explore ways to create MOA's between University of Hawaii Shidler Business College, Haskell University, PRiMO, NDPTC, and NCAR to support the research center. The research center will help formalize the partnership developed around the Community Resilience ITK Program by providing additional opportunities for collaboration, while creating more continuous cross-learning opportunities between our partners at universities, community organizers, and federal service providers. This will also create a venue for capturing and expanding on lessons learned from the Community Resilience ITK Program and help inform efforts such as President Obama's Task Force of state, local, and tribal leaders to advise the Administration on how the Federal Government can respond to the needs of communities nationwide that are dealing with the impacts of climate change. This would also strengthen and create new learning opportunities between Native Hawaiian and Native American networks around coastal resource management, community natural hazard and climate adaptive capacity; potentially resulting in the identification, strengthening and replication (where possible) of indigenous community methodologies for climate adaptation.

Also during this reporting period, Olohana executive director and our partners at NCAR and UCAR discussed ways to use the ITK Process to develop learning pathways between climate science communities and experts and elders from native communities. In addition, Olohana's executive director worked with NCAR and UCAR climate social scientist to use the programming refined through this grant to increase the capacity of academia and federal agencies to work with community's and help them impart critical skills and knowledge to initiate their youth as key players in addressing natural disaster and climate-related challenges anticipated to increase over the coming generations.

Olohana is working with our partners, the UH NDPTC, NCAR, Haskell Foundation, Intertribal Council On Utility Policy (Intertribal COUP), Kiksapa LLC, and PRiMO's IKE and Education HUI (working groups) to apply the ITK Process in establishing *The Center for Indigenous Sustainability and Resilience*. The research and education facility will focus on the discovery, co-learning, preservation and integration point of Science and TEK, or more accurately Traditional Native Indigenous Knowledge and Traditional Science.

Olohana is engaging in conversations with DOI-NPS partners, Haskell American Indian University in Lawrence Kansas, NDPTC, and Coastal Services Center Charleston South Carolina-NOAA to use components of the ITK Process to develop a Partnership for Adaptive America (PAA). This

will involve a national initiatory rites of passage for America's youth conducted within national parks and trails and using returning veterans as mentors and employed for habitat restoration. As part of this effort, conversations are underway with Department of Defense, the Veterans Administration, and Wounded Warrior to integrate components of the ITK Process into their programs designed to address PTSD screening by employing returning veterans while creating conditions to assist with re-establishing engagement, re-connecting and re-integrating returning warriors to peacetime activities and life-giving programs aimed at serving domestic communities in support of nation building at home. This will develop community capacity and resilience by developing mentors from the pool of returning veterans and emphasizing youth's role and their relationship to their environment and collective society.

The ATA in partnership with Kohala Land Trust plus the State Legacy Land Conservation Program(LLCP)and NPS ALKA are securing as legacy land Kaiholena; a substantial parcel steeped with archeological and cultural history to be a site for the development of a long-term food forest, returning to fertility areas along the 175 mile corridor under the care of community, along with programs such as "E Ala O Mahi'ai". As part of the grant training workshops, knowledge integration, site selection, initial trees and biodiversity were all sourced out for inclusion as part of the installation of a food forest.

Ongoing work with Kohala Community, NPS ALKA, ATA, PRiMO and NOAA as well other Hawaii Island based partners will include development of training sites for community capacity, habitat restoration and creation of food security models using indigenous knowledge and local leadership for eco-service learning and real community participation with a focus on host and native cultures and the role of indigenous knowledge particularly the transfer of the that knowledge as a useful strategy for improving adaptation capacities for said communities.

As part of this grant, Olohana continues to work with Permanent Agroforestry Resources, Life Enhancement Institute of the Pacific on models and curriculum for "E Ala O Mahi'ai: The Way of the Farmer", as well as Haskell Foundation, Intertribal COUP, Kiksapa, IPCCWG and NCAR Rising Voices to help participants identify the types of knowledge and skills that are most relevant to climate adaptation and overall community resilience.

Olohana is working with our partners through the University of Hawaii Pacific Business Center Program's Pacific Region Breadfruit Initiative project: Synthesizing Indigenous Wisdom and Practices with Agricultural Research, Business Product and Market Development to help Pacific and Caribbean island countries cultivate their lands into breadfruit orchards that could support a gluten free breadfruit flour industry and provide food security in the case of natural disaster. The ITK Process is being used to help communities identify long-term food forest that are still in abundance, where indigenous farming and gathering methods are still being practiced, or those practices are being revitalized. Plans are underway to include the ITK Process in the design for the 2015 Breadfruit Conference is tentatively scheduled for October 2015 at Turtle Bay Hotel on the North Shore of Oahu. Experts and practitioners from research science, propagation, planting, farming, manufacturing/processing, marketing and export, etc., will be invited to participate.

III. Changes to Budget and Project Plan:

There have been no plans to the amended budget (424A) and/or project plan, which was approved on November 13, 2012.

IV. Upcoming Activities:

All of the milestones have been met in full. This grant has increased the capacity of our partners and communities to continue the following activities beyond the life of this grant project. Recognizing increased acceptance of climate variable predictors and extreme weather events and desiring new capacities for community preparedness, local and regional recovery and mitigation efforts with a particular focus on Public, Rural, Tribal and Native lands, places and jurisdictions including sovereign entities within U.S. boundaries the UH NDPTC University of Hawaii National Disaster Preparedness Training Center of Honolulu Hawaii will partner with NCAR National Climate and Atmospheric Research Center of Boulder Colorado to support Haskell Foundation, Intertribal COUP Council On Utility Policy, Kiksapa LLC, PRiMO Pacific Risk Management Ohana IKE Indigenous Knowledge and Education HUI (working group) to create The Center for Indigenous Sustainability and Resilience, a research and education facility focused on the discovery, co-learning, preservation and integration point of Science and TEK, or more accurately Traditional Native Indigenous Knowledge and Traditional Science.

V. Status of Financial Reports

Fiscal reports (i.e., cash flow) are up-to-date and finalized.

VI. Itemized List of Equipment

Not applicable. This grant did not and does not plan to employ equipment.

VII. Extension Requirement

There are no foreseeable circumstances that will require filing an extension before the next progress report.

APPENDIX 1:

*Jacqueline Kozak Thiel
Sustainability Coordinator, State of Hawaii
Department of Land and Natural Resources
1151 Punchbowl Street, Room 130
Honolulu, HI 96813*

Dear Mrs. Thiel,

We, the members of the Rising Voices community, are sending you, as the representative for Hawai'i Governor Neil Abercrombie, a list of recommendations for the State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience to consider and implement regarding climate change impacts to Indigenous peoples and lands.

Rising Voices is a community of engaged Indigenous leaders, Indigenous and non-Indigenous environmental experts, students, and scientific professionals across the United States, including representatives from tribal, local, state, and federal resource management agencies, academia, tribal colleges, and research organizations. Participants of Rising Voices convened for a second time at the National Center for Atmospheric Research in Boulder, CO on June 30-July 2, 2014 to discuss the needs of Indigenous peoples in the face of extreme weather and climate change. Several of the participants authored the National Climate Assessment chapter on Indigenous Peoples, as well as the Special Issue of Climatic Change (2013) on Indigenous Peoples, and our discussions were focused on recommendations related to the Key Messages of the recently released Assessment.

We came together from across the nation – including Hawai'i and Pacific Islands, Alaska, Northwest, Southwest, the Plains, Midwest, Gulf states, and Northeast – for a rich and honest discussion regarding the complex climate change challenges facing Indigenous peoples, current adaptation and mitigation strategies, protection of Indigenous knowledge, sustainable Indigenous practices, and political and institutional barriers. Many of the Indigenous communities represented at Rising Voices are already contending with a changing climate, including displacement of Native Alaskan villages and Native Gulf Coast communities due to rising sea levels, loss of sea ice, and/or extreme hurricane activity. Additionally, severe droughts are impacting many tribes, including tribes in the Southwest and the Great Plains, which is resulting in water scarcity for domestic, agricultural, and livestock use. Climate change impacts on Indigenous peoples are particularly significant, disruptive, and deeply felt in that they affect not only the environment but also traditional, cultural, and spiritual livelihoods, practices, and beliefs.

We, Rising Voices, collaboratively developed the following list of priority recommendations for the State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience regarding climate change impacts on Indigenous peoples and lands:

- ***Migration: Convene a Climate Migration Task Force.*** *A Federal Task Force on Climate Migration would address the identified need to establish a legal mechanism, institutional framework, and financial support to directly support marginalized communities*

(Indigenous and non-Indigenous) who are facing displacement due to climate change impacts and who desire to migrate safely and with dignity. Because many Indigenous communities are urgently threatened with displacement, we strongly recommend that this be considered as a near-term action.

- ***National Climate Assessment: Establish a permanent and formalized structure for Indigenous participation in the U.S. National Climate Assessment. Determine a mechanism for continued and expanded Indigenous engagement and support for long-term collaborative partnerships that sustain assessment activities, including respectful science support and data collection in collaboration with, not on or for, Indigenous communities. Important Indigenous led literatures and guidelines documents already exist and can be used for advising the Task Force on this recommendation.***
- ***Water rights: Establish an institutional framework to ensure support for tribes to define and utilize their water rights. Tribes need legal, financial, engineering, and scientific support in water rights adjudication, litigation, and settlement, such as financial support to fund infrastructure and engineering and scientific support to adequately quantify available surface and ground water, water use, water use projections, storage/transport options, and infrastructure development. Tribal governments need to participate in timely water settlement deliberations for all uses. An independent review process should be established to provide information on how settlement discussions are progressing and ensure that the kind of support required to facilitate agreement is provided.***
- ***Collaboration to Address Climate Change Impacts on Water: Establish basin-level regional processes for federal, state, local, and tribal governments to develop and implement cohesive strategies for addressing impacts of climate change on water quality and quantity. Climate change impacts on surface and ground water will profoundly affect human health, public safety, economies, ecological functions, and cultures. Collaboration is needed among a wide variety of tribal, federal, state, regional, and local entities with jurisdiction over water to contend with upstream and downstream impacts of climate change on water.***
- ***Traditional Ecological Knowledge (TEK): Map the TEKs, places, resource uses, and histories of coastal and other (i.e. drought afflicted) Indigenous communities as a resource guide for climate change impact and adaptation efforts, especially cross-community collaborations. Indigenous people have a rich knowledge of their environment that is important for filling in lack of data and for developing adaptation and sustainable strategies.***
- ***Indigenous Perspectives: Support inclusion of Indigenous perspectives, insights, and knowledge in federally-appointed and/or agency-led assemblies concerned with natural resources, environmental management, and policy, such as the National Ocean Council's efforts to improve the health of our oceans, coasts, and Great Lakes. The free, prior, and informed consent (FPIC) of Indigenous peoples should be respected when these assemblies are formed and engage with Indigenous peoples.***

- **Youth and Veterans: Create a Climate Change Corps to enhance capacity building of youth leaders and returning Veterans.** The capacity of our youth needs to be enhanced through mentorships, scholarships, and internships with local federal agency affiliate offices (for example, in the County Extension offices with the USDA; in tribal Housing Authorities with HUD; in the National Renewable Energy Laboratories with the DOE, in restoring National Parks with the DOI, AmeriCorps, Conservation Corps, etc.). The Climate Change Corps, supporting both community youth and returning Veterans, could ensure the persistence and implementation of such capacity to strengthen resilience amongst Indigenous and non-Indigenous communities across the country for the near- and long-term.
- **Education: Support and enhance relations between education institutions and agencies to foster educational needs that address climate change, variability, adaptation, and mitigation in all levels of academic education (i.e. K-12, colleges, and universities), as well as for general public education.** Youth are the future and need to be involved in learning about climate change and addressing impacts and solutions.
- **Collaborative Research: Have Indigenous communities most impacted by a changing climate be co-investigators in climate change research.** This includes helping to set a U.S. research agenda that addresses the unique priorities, contexts, and experiences of Indigenous communities and invites community members' participation as partners. Resources need to be allocated and managed by Indigenous community leaders to enable that participation, including resources to support training, workforce development, data gathering and management, the purchase of appropriate equipment, and the incorporation of research results into community planning.
- **Conference and Partnerships: Establish an annual event for Indigenous communities to come together with researchers working on climate change.** The Rising Voices I and II workshops provide a model that could be applied for such an annual event. These events could be used as "mileposts" to collaborate and report on the recommendations and activities listed above.

We look forward to your response in considering and implementing these recommendations. The Rising Voices family stands ready to assist you to help implement these recommendations, as we represent a broad base of experience and expertise.

Respectfully,
Rising Voices

Participants and Expert Contributors, June 30-July 2, 2014 workshop:

Name	Affiliation
Grace Alvarez Sesma	Cultural Educator, Consultant
Tusi Avegalio	University of Hawaii Pacific Business Center Program
Bull Bennett	Kiksapa Consulting

Robyn Blackburn	National Fish and Wildlife/Environmental Protection Agency
Paulette Blanchard	University of Oklahoma
Robin Bronen	University of Alaska
Cindy Bruyere	National Center for Atmospheric Research
Melissa Burt	Colorado State University
Chris Caldwell	College of Menominee Nation
Sally Carufel Williams	Native American Fish and Wildlife
Karletta Chief	University of Arizona
Ken Cohen	Independent Scholar, Health and Cultural Education
Lisa Colombe	Inter Tribal Buffalo Council
Karen Cozzetto	University of Colorado at Boulder
Theresa Dardar	Pointe-au-Chien Indian Tribe
John Doyle	Little Big Horn College
Marla Emery	US Forest Service
Chris Farley	US Forest Service
Ulrick Francisco	Tohono O'odham Community Xollege
Cody Gibson	Haskell University
Cristina Gonzalez-Maddux	Institute for Tribal Environmental Professionals
Bob Gough	Intertribal Council On Utility Policy
Ava Hamilton	Native American Producers Alliance and Film Festival
Preston Hardison	Tulalip Tribe
Nicole Herman-Mercer	US Geological Survey
Greg Holland	National Center for Atmospheric Research
Lesley Iaukea	University of Hawaii, Manoa
Kristina Kekuewa	National Oceanic and Atmospheric Administration
Terry Ketchum	University of Oklahoma
Marda Kim	EcoArts Connections
Stephen Koester	University of Colorado at Denver
Jacqueline Kozak Thiel	State of Hawaii
Linda Kruger	US Forest Service
Alyx Ladd	Blackfeet Community College
Heather Lazrus	National Center for Atmospheric Research
Rusty Low	University of Nebraska, Lincoln
Georgia Madrid	National Oceanic and Atmospheric Administration
Julie Maldonado	US National Climate Assessment, American University
Carole Mandryk	3c2e, Climate Change Education, Consulting and Evaluation
Elizabeth Marino	Oregon State University
Anna Masayeva	Climate Assessment for the Southwest, University of Arizona
Michael M. Mason	Haskell University
Shannon McNeeley	Colorado State University, Climate Science

	Center
Beth Rose Middleton	University of California at Davis
Janet Mitchell	Kivalina City Council
Jeffrey T. Morisette	US Geological Survey Climate Science Center
Gary Morishima	US Department of Agriculture
Chief Albert Naquin	Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Indians
Rajul Pandya	University Corporation for Atmospheric Research
Kristina Peterson	Lowlander Center, Thriving Earth Exchange – American Geophysical Union Board Member
Rosina Philippe	Grand Bayou Indian Tribe
Noelani Puniwai	University of Hawaii
Bob Rabin	National Oceanic and Atmospheric Administration
Lisa Redsteer	Navajo Technical University
Alyssa Rosemartin	
Marie Schaefer	College of Menominee Nation
Eileen Shea	National Oceanic and Atmospheric Administration
Laurel Smith	University of Oklahoma
M. Kalani Souza	Olohana Foundation UH National Disaster Preparedness Training Center, Pacific Risk Management 'Ohana
Elena Bautista Sparrow	University of Alaska Fairbanks
Colleen Swan	Kivalina City Council
Jean Tanimoto	National Oceanic and Atmospheric Administration
Bill Thomas	National Oceanic and Atmospheric Administration
Allen Tom	National Oceanic and Atmospheric Administration
Zita Toth	National Center for Atmospheric Research
Carl Wassilie	Yupiaq Biologist
Kristin Wegner	University Corporation for Atmospheric Research
Kyle Powys Whyte	Michigan State University
John D. Wiener	University of Colorado at Boulder
Daniel R. Wildcat	Haskell University
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