

# HI Sea Grant Program

## Site Review PIER Information

(Information gathered from the Program's Annual Report Submissions in PIER)

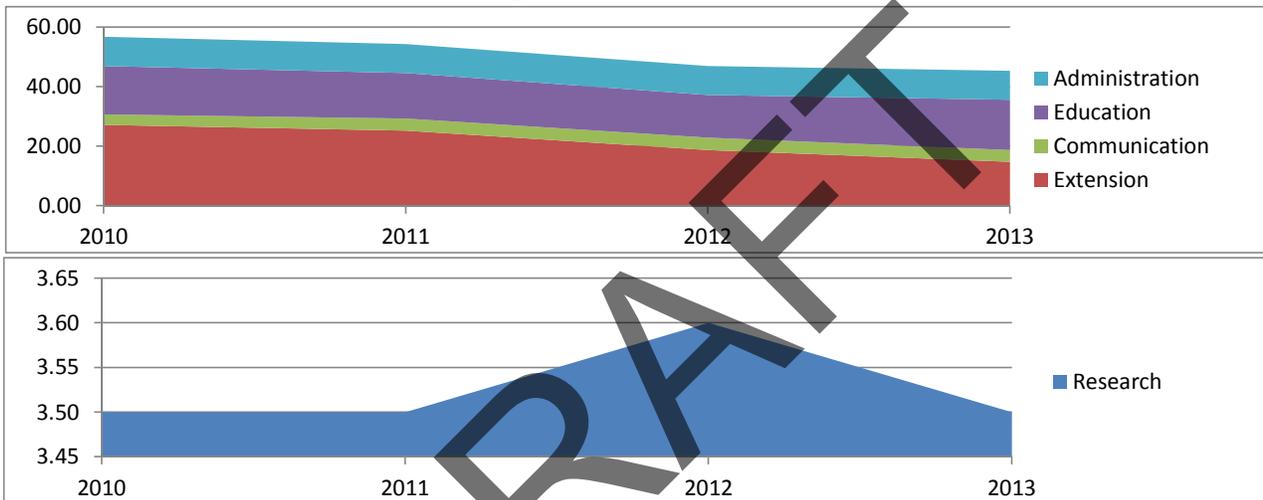
### I. Program Management and Organization (organization, program team approach, support).

#### A. Sea Grant Staffing (2010-2013)

	Range of Annual Number of Individuals	Average Annual Full-Time Equivalents*
<b>Administration</b>	10	9.8
<b>Extension</b>	18-34	21.5
<b>Communication</b>	4	3.9
<b>Education</b>	23-28	15.7
<b>Research</b>	24-28	3.5

\*One FTE is equivalent to 12 months of full time effort, and can be funded with Sea Grant Federal or non-Federal dollars.

**Full Time Equivalents by Year (2010-2013)**

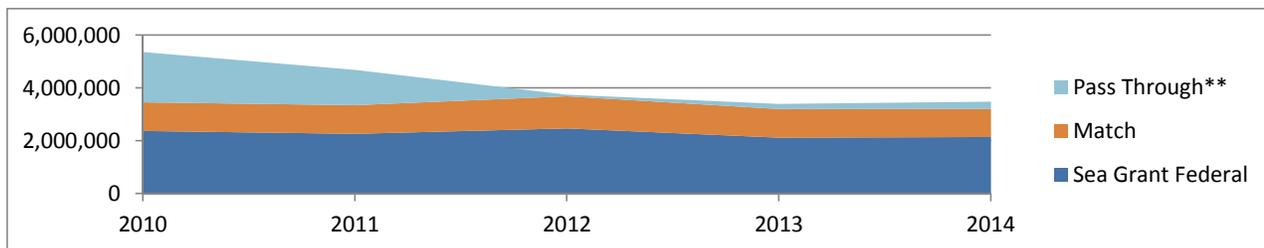


#### B. Total Funding by Source (2010-2014)

	Sea Grant Federal	Match	Pass Through**	Total Funding
<b>2010</b>	2,375,111	1,085,827	1,901,490	5,362,428
<b>2011</b>	2,260,577	1,093,260	1,333,360	4,687,197
<b>2012</b>	2,466,463	1,221,025	54,000	3,741,488
<b>2013</b>	2,117,335	1,090,584	190,000	3,397,919
<b>2014</b>	2,145,044	1,062,255	270,566	3,477,865

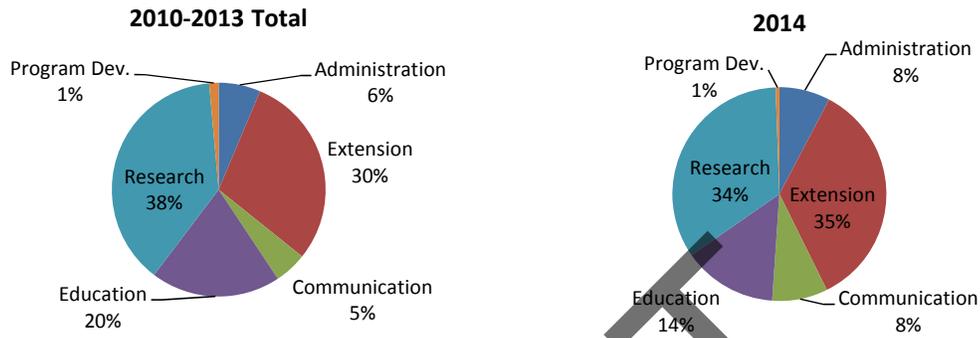
\*\* Pass Through funding refers to federal funds not appropriated to Sea Grant, but administered through the National Sea Grant Office

**Funding by Year (2010-2013)**

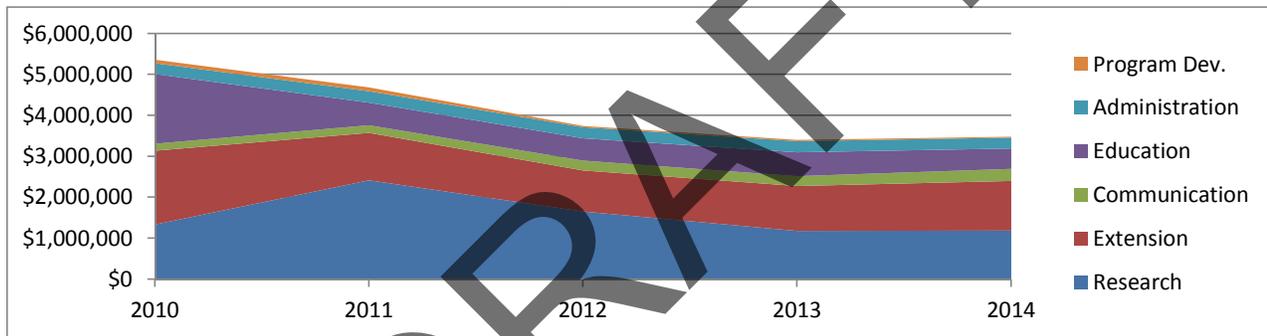


**C. Distribution of Funding by Functional Area (Federal + Match + Pass Through)**

	2010	2011	2012	2013	2014
Administration	263,793	273,573	278,123	271,170	266,777
Extension	1,798,493	1,157,968	1,003,653	1,099,016	1,217,160
Communication	177,083	182,030	243,007	238,147	293,744
Education	1,697,360	557,560	541,797	585,477	495,230
Research	1,335,699	2,416,066	1,648,500	1,177,405	1,184,878
Program Dev.	90,000	100,000	26,408	26,704	20,076



**Trend (2010-2014)**



**D. Total Number of Core Funded Proposals (Not NSIs)**

	2011	2013
Pre-Proposals Submitted	42	70
Full Proposals Submitted	29	43
Proposals Funded	14	17
Institutions with Proposals Funded	2	2
Proposals Funded from Home Institution	13	15

**E. Core-Funded Research Projects****2014**

Coral adaptation and acclimatization to global change: resilience to hotter, more acidic oceans (Robert J. Toonen)

Defining ecosystem-based management boundaries using genetics and fisheries data (Robert J. Toonen)

Disease Outbreak Investigation on the Reefs of Kauai (Greta Aeby)

Evaluation of the economic feasibility and marketing potential of the new Hawai'i oyster industry (Pingsun Leung)

Forecasting climate change impacts on coastal ecosystem services in Hawaii through integration of ecological and social participatory models (Christopher Lepczyk)

Global and regional vulnerability to 21st century climate shifts in current areas of plant growth (Camilo Mora)

Groundwater Inundation: Doubling Community Damage from Sea Level Rise (Charles Fletcher)

Groundwater-derived nutrient uptake in coastal ecosystems as a driver of shifts in the accretion-erosion balance (Florence Thomas)

Groundwater-derived nutrient uptake in coastal ecosystems as a driver of shifts in the accretion-erosion balance (Henrieta Dulaiova)

Groundwater-derived nutrient uptake in coastal ecosystems as driver of reef accretion-erosion balance (Megan Donahue)

Humankind's Biogeochemical Experiment: Ocean Acidification and "Coral Reef" Dissolution (Eric De Carlo)

Leveraging a new observation network to understand management options for a key resource - Onaga (Etelis coruscans) (Anna Neuheimer)

Maintaining healthy coastal ecosystems: understanding disease risk of Hawaii's coral reefs and sources of coral pathogens (Greta Aeby)

Ocean Acidification Monitoring Network, Oahu, Hawaii (Eric Heinen De Carlo)

Project-Related Travel (E. Gordon Grau)

Quantifying transport and differentiation of land-use impacts of groundwater nutrient loadings to the coastal zones of Maui (Craig R. Glenn)

The development of acclimation salinity-based rearing strategies to maximize growth in Mozambique tilapia, *Oreochromis mossambicus* (Andre P. Seale)

The effects of anthropogenic noise on humpback whale mother-calf pairs (Whitlow W.L. Au)

Engineering Feasibility Study of a Water Catchment System for Moku o Lo'e (Coconut Island), Hawai'i Institute of Marine Biology, Kaneohe, HI USA (Oceana Francis)

**2012**

AUV-based High Resolution Benthic Mapping (Geno Pawlak)

Bioeroding Communities and Response to Climate Change (Donahue, Megan)

Coastal Community Climate Adaptation Initiative: Enhancing Sea Grant's Ability to Help Coastal Communities Adapt to Climate Change (Lerner, Darren)

Collaborative Research to Develop Sustainable Ecosystem Management: Analysis of Water Resources and Quality in the Contemporary Ahupua'a (Aikau, Hokulani E.)

Collaborative Research to Develop Sustainable Ecosystem Management: Analysis of Water Resources and Quality in the Contemporary Ahupua'a (Dulaiova, Henrietta)

Collaborative Research to Develop Sustainable Ecosystem Management: Analysis of Water Resources and Quality in the Contemporary Ahupua'a (Thomas, Florence)

Connecting Land-Use to Submarine Groundwater Discharge Loads and Coral Reef Health Within the Coastal Zones of Maui (Glenn, Craig R.)

Coral reef ecosystem health within MLCDs on Oahu (Aeby, Greta)

Coral Resilience in Hotter, More Acidic Oceans (Toonen, Robert J.)

Environmental Control of Pathogenic Vibrios and Its Implications for Sustainable Coastal Development in Waikiki (Steward, Grieg)
Factors Controlling Temporal and Spatial Variability of Air-Sea CO2 Fluxes in a Coral-Dominated Reef Ecosystem: Kaneohe Bay, Hawaii (Ho, David)
Historical Shoreline Change Among the Islands of Micronesia and Polynesia: Long-term Patterns and Response to a Change in Sea-Level Rise (Fletcher, Charles)
Impact of Invasive Mangrove Removal on He'eia Fishpond Biogeochemistry (Ruttenberg Kathleen)
Impact of Land-Ocean Interactions and Ocean Acidification of C-system Parameters and CO2 Exchange on Reefs of Oahu, Hawaii (DeCarlo, Eric H.)
Microbial Pollution Source Tracking and Prediction in Hilo Bay: A Spatial and Temporal Analysis (Wiegner, Tracy)
Modeling of Uncertainties in Flood Hazard Mapping (Cheung, Kwok Fai)
Plankton Food Web Dynamics and Storm Events in Kaneohe Bay (Unreported PI)
Project-Related Travel (E. Gordon Grau)
The Economic Consequences of Coastal Disasters (Noy, Ilan)
<b>2010</b>
Abiotic and Biotic Changes Associated With Changes in Canopy Structure: Impact of Invasive Species (Florence Thomas)
An empirical test of ecosystem-based management: how density and size structure of opihi affect community structure (ROBERT TOONEN)
Copepod recruitment in Kaneohe Bay following storm events (PETRA H. LENZ)
Hanauma Bay Circulation Study (MARK A. MERRIFIELD)
High Resolution Temporal and Spatial Topographic Imaging of Beach and Nearshore Processes (Ben Brooks)
Introduced Fish as a Vector for Invasive Parasites (BRIAN BOWEN)
Mapping erosion hazards on Oahu and Kauai (CHARLES FLETCHER)
Ocean Acidification: Impacts on Calcification and Carbonate Mineral Dissolution on the Barrier Reef of Kaneohe Bay, Hawaii (ERIC H. DECARLO)
Quantifying Fluxes and Dissolved Loads of Submarine Groundwaters to Oahu's Coastal Zone (Craig Glenn)
Skeletal Growth Anomalies in Corals of genus Montipora: Physiological and Ecological Consequences and Correlations with Water Quality (MISAKI TAKABAYASHI)
The role of bottom sediments in nutrient cycling in Heeia Fishpond-II (KATHLEEN C. RUTTEENBERG)
Understanding attitudes, beliefs and preparedness for climate change impacts and other coastal hazards in Hawaii (BRUCE F. HOUGHTON)
Research Related Travel (Unreported PI)
Program Development (Unreported PI)

<b>F. NSI, Pass-through, and enhancement funds</b>
<b>2014</b>
Sea Grant Extension Program (E. Gordon Grau) (SG-Climate)
2014 Knauss Fellow (Maya Walton) (E. Gordon Grau) (NOS)
Engineering Feasibility Study of a Water Catchment System for Moku o Loʻe (Coconut Island), Hawai'i Institute of Marine Biology, Kaneohe, HI USA (Oceana Francis) (SG-Social Science )
Hawaiian Islands Sentinel Site Cooperative Coordinator (Darren Lerner, PhD) (NOS)
Hawaiian Islands Sentinel Site Cooperative Coordinator (Darren Lerner, PhD) (NOS-CSC)
Hawaiian Islands Sentinel Site Cooperative Coordinator (Darren Lerner, PhD) (SG-NSI)
<b>2013</b>
Dean John A. Knauss Marine Policy Fellowship-Fujitani (Unreported PI) (NMFS)
Fiscal Year 2013 National Sea Grant College Program Dean John A. Knauss Marine Policy Fellowship - Coleman (Unreported PI) (NOAA-PPI)
Pacific Islands Coastal Storms Program Education and Outreach Cooperative Agreement (E. Gordon Grau) (NOS)
Regional Extension for Sustainable Coastal Development and Smart Growth for the Pacific (Matthew Gonser) (SG-Regional)
Regional Extension Network Support for the Republic of the Marshall Islands (Darren Lerner) (SG-NSI)
<b>2012</b>
Expanding and Diversifying Near-shore Mariculture in Hawaii and the U.S. Affiliated Pacific Islands Through Resolution of Regulatory, Technical and Biological Impedimen (Maria Haws) (SG-AQTECH)
Pacific Islands Coastal Storms Program Education and Outreach Cooperative Agreement (E. Gordon Grau) (NOS)
Social Science Initiative Supplement (E. Gordon Grau) (SG-Social Science )
Dean John A. Knauss Marine Fellowship 2012 - Pamela Michael (Unreported PI) (OAR)
U.S.-Affiliated Pacific Islands Region Gap Analysis for Hazard Planning Implementation (Unreported PI) (SG-Regional)
<b>2011</b>
Regional Extension Network Support for the Republic of the Marshall Islands (E. GORDON GRAU) (SG-PD)
2011 Dean John A Knauss Marine Policy Fellowship - Jennifer Salerno (Unreported PI) (SG-FEL-KNAUSS)
Laying the Foundation for Integrated, Multi-trophic, Coastal Aquaculture in Hawaii (Unreported PI) (SG-AQTECH)
Management of the Aquaculture Research project (Unreported PI) (SG-PD)
Pacific Islands Coastal Storms Program Education and Outreach Cooperative Agreement (Unreported PI) (NOS-CSC)
<b>2010</b>
Dean John A Knauss Marine Policy Fellowship (DARREN K. OKIMOTO) (SG-FEL-KNAUSS)
Pacific Climate Impacts Resource Guide (DARREN OKIMOTO) (SG-Regional)
A Model for Coastal Community Climate Adaptation Recommendations and Strategies (Unreported PI) (SG-Climate)
Aquaculture Extension Services for New Farmers on the Big Island and Maui (Unreported PI) (SG-AQTECH)
Exploring Our Fluid Earth: NOAA Ocean Science Curriculum, Teacher Professional Development and Public Outreach (Unreported PI) (NOAA-Education)
Pacific Islands Coastal Storms Program Education and Outreach Cooperative Agreement-Amendment 6 (Unreported PI) (NOS-CSC)

II. **Stakeholder Engagement** (relevance, advisory services, and education and training).

A. **Total Number of SG-Sponsored Meetings, Workshops, Conferences, Presentations and Attendees (2010-2013)**

Events	Attendees
563	3,237,587

B. **Total Number of Volunteer Hours (2010-2013)**

51,885
--------

C. **Students Supported (2010-2013)**

	Students		Degrees Awarded
	New	Continuing	
Undergraduate	84	66	21
MS/MA	27	35	10
PhD	48	61	8
Professional Degree	0	2	0

D. **K-12 Students Reached (2010-2013)**

87,861
--------

DRAFT

### III. Collaborative Network Activities (relationships and coordination).

#### A. Program Partners by Scale

##### FEDERAL or NATIONAL

American Rainwater Catchment Systems Association  
Building Industry Association  
Coastal Services Center (US DOC, NOAA, NOS, CSC)  
Coastal Storms Program (US DOC, NOAA, NOS, SCS, CSP)  
Consortium for Ocean Leadership  
Coral Reef Ecosystem Division (US DOC, NOAA, NMFS, PIFSC)  
Fagatele Bay National Marine Sanctuary Program (US DOC, NOAA, NOS, ONMS)  
Hawaiian Islands Humpback Whale National Marine Sanctuary (US DOC, NOAA, NOS, ONMS)  
International Association of Plumbing and Mechanical Officials  
Lawrence Berkeley National Laboratory (US DOE)  
National Association of Counties (NACO)  
National Marine Fisheries Service (US DOC, NOAA, NMFS)  
National Oceanic and Atmospheric Administration (US DOC, NOAA)  
National Park Service (US DOI, NPS)  
National Park Service of American Samoa  
National Science Foundation (NSF)  
National Sea Grant Office (US DOC, NOAA, OAR, NSGO)  
National Weather Service (US DOC, NOAA, NWS)  
Natural Resources Conservation Service (USDA, NRCS)  
NOAA Center for Operational Oceanographic Products and Services  
NOAA Weather Station Office in Majuro  
NOAA/OA program, CROAMP  
NOAA/PMEL  
Office of National Marine Sanctuaries (US DOC, NOAA, NOS, ONMS)  
Pacific Climate Information System (PaCIS)  
Pacific Islands Regional Office (US DOC, NOAA, NMFS, PIRO)  
Pacific Missile Range Facility Barking Sands  
Pacific Services Center (US DOC, NOAA, NOS, PSC)  
Pacific Tsunami Warning Center, NOAA National Weather Service (US DOC, NOAA, NWS)  
Samoa Ministry of Agriculture and Fisheries  
Smart Growth Program (US EPA)  
The Harold Castle Foundation  
U.S. Geological Survey  
US Agency for International Development (USAID)  
US Army Corps of Engineers (DOD, Army, USACE)  
US Department of Education (US ED)  
US Department of Energy (US DOE)  
US Department of Housing and Urban Development (HUD)  
US Department of the Navy (US DOD, NAVY)  
US Economic Development Administration (US DOC, EDA)  
US Environmental Protection Agency (US EPA)  
US Fish and Wildlife Service (US DOI, FWS)  
US Geological Survey (US DOI, USGS)  
Waipa Foundation  
NOAA Integrated Data and Environmental Applications (IDEA) Center

U.S. Senator Brian Schatz - Hawaii

**INTERNATIONAL**

---

Commonwealth of the Northern Mariana Islands Coastal Resources Management Office

Ernest Nishizaki, President of Kyo-ya Hotels and Resorts

Hyatt Regency Waikiki

Interface Engineering

Marine and Environmental Research Institute of Pohnpei

Marshall Islands Marine Resource Authority

Ministry of Education, Republic of the Marshall Islands

Moffatt & Nichol, Inc.

Oceanic Institute

Palau Automated Land and Resource Information System

Secretariat of the Pacific Community

Sierra Club

Starkist

The Nature Conservancy (TNC)

University of New South Wales

The Nature Conservancy of Hawai'i

**LOCAL**

---

Centers for Ocean Sciences Education Excellence, California (COSEE)

City and County of Honolulu, Board of Water Supply

City and County of Honolulu, Office of the Mayor

City and County of Honolulu, Parks and Recreation Department

City and County of Honolulu, Planning Department

Conservation Society of Pohnpei

Duke Purcell

Friends of Hanapepe Public Library

Friends of Hanauma Bay

Friends of North Shore Public Library

Hawaii County

Hawaii County Department of Planning

Hoike Public Television

Janaj Productions

Kailua Urban Design Task Force

Kamehameha Schools

Kauai Community Radio (KKCR)

Kauai County Council

Kauai County Department of Parks and Recreation

Kauai County Department of Public Works

Kauai County Office of the Mayor

Kauai County Planning Department

Kauai Surfrider Foundation

Leonard Yamada, Commercial Fisherman

Maui County

Maui County Department of Public Works and Environmental Management

Maui County Office of Economic Development

Maui County Office of the Mayor

Maui County Planning Department

Maui Digital Bus, Alaka'ina Foundation

DRAFT

Maui Electric  
Maui Nui Marine Resource Council  
Napili Beach and Foundation  
Oahu Workforce Investment Board  
Ohana Real Estate Investors  
Pacific Risk Management Ohana (PRiMO)  
Pacific Tsunami Museum  
Poipu Beach Resort Association  
Richard Gushman  
Samoa Family Sunfish Cooperative  
Sea Engineering, Inc.  
The Edge of Kauai Investigations  
The Nature Conservancy of Hawaii  
University of Hawaii Maui College  
Kako'o 'Oiwi

---

**REGIONAL**

American Samoa Department of Education (AS ED)  
American Samoa Government Coral Reef Advisory Group  
American Shore and Beach Preservation Association  
Center for Tropical and Subtropical Aquaculture  
Coalition of Reef Lovers  
Edwin W. Pauley Foundation  
Gulf Coast Coastal Storms Program  
Pacific Disaster Center  
Pacific Islands Ocean Observing System (PiOOS)  
Pacific Regional Integrated Sciences and Assessments (RISA) Program  
Republic of the Marshall Islands Ace Hardware  
Republic of the Marshall Islands Ailinglaplap Atoll Local Government  
Republic of the Marshall Islands Billfish Club  
Republic of the Marshall Islands Coastal Management Advisory Council  
Republic of the Marshall Islands Djarrot Reimaanlok  
Republic of the Marshall Islands Do-It-Best Hardware  
Republic of the Marshall Islands Environmental Protection Agency  
Republic of the Marshall Islands Ministry of Internal Affairs - Community Development  
Republic of the Marshall Islands Ministry of Internal Affairs - Land Survey Division  
Republic of the Marshall Islands National Disaster Committee  
Republic of the Marshall Islands Office of Environmental Policy and Planning Coordination  
Smart Growth America

---

**STATE**

American Planning Association Hawaii Chapter  
American Samoa Community College  
American Samoa Resource, Conservation and Development Council  
Auburn University (AU)  
Awaiaulu  
Center for a Sustainable Future  
Chieftess Kamakahahei Middle School  
College of the Marshall Islands  
Coral Reef Working Group  
Delaware Sea Grant

Florida Sea Grant  
Forest City Residential Management  
Hawaii Association of Counties  
Hawaii Coastal Zone Management Program (HI CZM)  
Hawaii Commission on Water Resource Management  
Hawaii Department of Business, Economic Development and Tourism (HI DBEDT)  
Hawaii Department of Civil Defense (HI DCD)  
Hawaii Department of Commerce and Consumer Affairs  
Hawaii Department of Health  
Hawaii Department of Land and Natural Resources, Department of Accounting and General Services (HI DLNR)  
Hawaii Division of Aquatic Resources (HI DLNR)  
Hawaii Division of State Parks (HI DLNR)  
Hawaii Energy  
Hawaii Land Division (HI DLNR)  
Hawaii Land Surveyors Association  
Hawaii Lodging and Tourism Association

DRAFT

B. Source and Amount of Leveraged Funds (2010-2013)

Amounts	Year			
Source	2010	2011	2012	2013
<b>Managed</b>	<b>\$5,695,324</b>	<b>\$3,048,617</b>	<b>\$976,605</b>	<b>\$3,062,756</b>
Binational Agriculture Research & Development (BARD)	\$155,000			
Center for a Sustainable Future	\$356,168			
Center for Tropical and Subtropical Aquaculture		\$50,000		
City and County of Honolulu, Parks and Recreation Department	\$455,712	\$448,230	\$442,310	\$474,913
Coastal Services Center (US DOC, NOAA, NOS, CSC)				\$195,746
College of the Marshall Islands	\$70,000			
Consortium for Ocean Leadership		\$20,000		
East-West Center	\$168,119	\$69,120		
Harold KL Castle Foundation	\$19,300			
Hawaii Department of Business, Economic Development and Tourism	\$250,000			
Hawaii Department of Civil Defense		\$50,000		\$50,000
Hawaii Department of Land and Natural Resources, Department of Acc	\$47,468	\$271,706		
Hawaii Department of Land and Natural Resources, Engineering Division (HI DLNR)			\$7,000	
Hawaii Division of Aquatic Resources (HI DLNR)				\$80,000
Hawaii Office of Conservation and Coastal Lands (HI DLNR)				\$297,128
Hawaii Tourism Authority		\$45,000		
Kauai County Planning Department	\$90,283	\$97,000	\$97,000	\$99,318
Maui County	\$10,000			
Maui County Office of Economic Development	\$37,500	\$40,000	\$40,000	\$40,000
Maui County Planning Department	\$43,436	\$78,246	\$78,246	\$78,246
National Association of Counties (NACO)	\$72,050			
National Marine Fisheries Service (US DOC, NOAA, NMFS)	\$486,200	\$14,902	\$60,306	\$35,000
National Sea Grant Office (US DOC, NOAA, OAR, NSGO)		\$1,333,360		
Ohana Real Estate Investors				\$31,203
Pacific Islands Regional Office (US DOC, NOAA, NMFS, PIRO)	\$89,352			
Pacific Marine Life Foundation	\$10,000			
Richard Gushman	\$19,300			
Sidney Frank Foundation			\$15,241	
Sustain Hawaii	\$155,158			
The David and Lucille Packard Foundation (DLPF)	\$200,000			
The Harold Castle Foundation	\$254,259			
The Kresgne Foundation		\$150,000		
The Nature Conservancy (TNC)	\$20,000			
University of Hawaii (UH)	\$83,795	\$26,860	\$17,200	\$1,043,052
University of Hawaii at Hilo, Pacific Aquaculture and Coastal Resources	\$49,940		\$8,430	
University of Hawaii at Manoa Hawaiiinuiakea School of Hawaiian Knowledge (UHM)			\$5,000	
University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources (UHM)			\$5,000	
University of Hawaii at Manoa, Hawaii Institute of Marine Biology (UHM)			\$10,079	
University of Hawaii at Manoa, School of Ocean and Earth Science and	\$16,193	\$16,193	\$10,176	
University of Hawaii Foundation				\$83,039
University of Hawaii, Environmental Center (UH)		\$18,000		
US Department of Commerce (US DOC)	\$2,042,601			
US Department of Education (US ED)	\$493,490			
Waipa Foundation				\$9,999
Windward Ahupua'a Alliance		\$300,000		
Unreported Source		\$20,000	\$180,617	\$545,112