

NOAA Coral Reef Conservation Program
Final Report

I. Project Information

- A. NOAA Grant Number: NA11NOS4820006
- B. Project Title: Implementation of the South Kohala Conservation Action Plan
- C. PI and Staff: Darren Lerner and Sierra Tobiason, University of Hawai'i Sea Grant College Program
- D. Award Period: July 1, 2013 – September 30, 2014.
- E. Award Amount: \$80,000

II. Executive Summary

The coral reef ecosystems of the South Kohala region have been identified as a high priority management site for the Hawai'i Coral Reef Working Group. The once diverse and productive coastal ecosystems in South Kohala face increasing threats from nonpoint sources of pollution, from changes in land use, and alterations to the hydrology (including water quality) resulting from increase population growth in the region. Nutrients in storm water runoff from agriculture, animal waste, and leaching from cesspools eventually reach coastal habitats. These excessive nutrients and sediments were identified as a major threat to coastal and reef ecosystems in and around the South Kohala region. These threats and related conservation strategies have been identified by stakeholders and experts in the region and have contributed to the development of a South Kohala Conservation Action Plan. High ranked threats to this area include land-based sources of pollution, invasive species, and unsustainable fishing practices as well as lack of community capacity to manage the coastal and marine ecosystems in the region.

Through a partnership established between the Hawai'i Division of Aquatic Resources (DAR) and the University of Hawai'i Sea Grant College Program (UH Sea Grant), an extension agent position was established to serve as the project coordinator. Ms. Sierra Tobiason was hired on July 1, 2013 and was responsible for coordinating activities associated with the implementation of the South Kohala Conservation Action Plan (SKCAP). Through this project the agent/coordinator successfully brought together representatives from county, state and federal agencies, as well as nongovernmental organizations to engage in a South Kohala Coastal Partnership. The agent helped to leverage new funds and collaborative projects that were designed to reduce the impacts from land-based sources of pollution, invasive species and unsustainable fishing practices. The agent engaged the South Kohala coastal communities of Kawaihae, Puakō, Mauna Lani, Waimea, Waikoloa and Kīholo, as well as two other communities in the West Hawai'i area through workshops conducted by the Coastal Community Management Network and provided up-to-date information on ecosystem-based stewardships activities, coral reef monitoring, sustainable fishing practices, invasive species management, and sediment reduction methods to South Kohala stakeholders.

To initiate the implementation of the first phase of the South Kohala Conservation Action Plan the agent provided technical assistance to stakeholders and monitored five projects in the South Kohala region. The agent also secured grant funding for two additional projects in the region. To date, the agent engaged over 3,392 residents and visitors in meetings and events and through the

dissemination of information from a website and from educational materials passed out at stakeholder engagement activities. In summary, the goals and objectives of this project were met with significant progress made towards achieving the South Kohala Conservation Action Plan objectives.

III. Purpose

- A. Management problem addressed: The once diverse and productive coastal ecosystems in South Kohala face increasing threats from and land-based sources of pollution, invasive species, and unsustainable fishing practices as well as lack of community capacity to manage the coastal and marine conservation targets. The changes in land use and alterations to the hydrology (including water quality), spread of invasive species, and increase in population growth in the region have accelerated the coastal and marine impacts. Nutrients in storm water runoff from agriculture, animal waste, and leaching from cesspools eventually reach coastal habitats. These excessive nutrients and sediments are identified as a major threat to coastal and reef ecosystems in and around the South Kohala area.
- B. Overarching goal(s) and objective(s) of the project: The overarching goal of this project was to reduce anthropogenic impacts at the priority site and to implement strategies in the South Kohala Conservation Action Plan in an effort to achieve the South Kohala Coastal Partnership vision: A restored, healthy, abundant, resilient South Kohala coastal system, cared for and cherished by an island community guided by the values and traditions of South Kohala. The four main objectives of this project that were associated with Phase 1 of the SKCAP implementation included: 1) Coordinating and staffing a local based working group, 2) Organizing and leading local stakeholder engagement related to Phase 1 implementation of South Kohala projects, 3) Reviewing and synthesizing reports, research materials, and study findings to communicate information, and 4) Assisting with project oversight.

IV. Approach

Through a partnership established between DAR and UH Sea Grant, an extension agent position was established to serve as the project coordinator. Ms. Sierra Tobiason was hired on July 1, 2013 and was responsible for coordinating activities associated with the implementation of the South Kohala Conservation Action Plan (SKCAP). The implementation of the SKCAP included six conservation strategies to reduce three threats (land-based sources of pollution, invasive species and unsustainable fishing practices) while incorporating community kinship and stewardship in the implementation of these strategies.

To achieve the goal and four objectives of this project the agent carried out the following 16 activities:

Objective 1: Coordinate and staff a locally based working group.

Activity 1: Establish a South Kohala Working Group, starting with the SKCAP team.

The agent reconvened the Core Team of SKCAP as the working group for the South Kohala Coastal Partnership in a meeting on July 31, 2013. The South Kohala Working Group met bi-monthly and communicated regularly over the phone or via email. Activities associated with these

meetings included reviewing grant proposals, participating in meetings with local stakeholders to discuss grant proposals, and conducting mapping meetings that led to the production of an online GIS map of the current and past projects in and around the priority site. This working group is composed of representatives from The Nature Conservancy (TNC), UH Sea Grant, United States Department of Agriculture - Natural Resource Conservation Service (NRCS), National Oceanographic and Atmospheric Administration (NOAA), Hawaiian Island Humpback Whale National Marine Sanctuary, National Park Service, Ala Kahakai National Historic Trail, Mauna Kea Soil and Water Conservation Services, Hawai'i Department of Land and Natural Resources, and DAR.

The larger group of stakeholders associated with the South Kohala Coastal Partnership who participated in planning and the development of the SKCAP (advisory and planning teams) were included in South Kohala Coastal Partnership announcement emails and encouraged to participate in site visits and meetings throughout this project.

The Coastal Community Management Network is a small group of local representatives from Coastal Communities in West Hawai'i. The agent partnered with TNC to establish this group. The agent facilitated meetings for this group on September 20-21, 2013 at the Kawaihae Canoe Club and in Kohala on January 21, 2014 (Figures 1a and b). Activities associated with these meetings included the involvement of eight coastal communities from Ho'okena, Ka'ūpūlehu, Kailapa, Puakō, Mauna Lani, Milolii, North Kohala and Kīholo in sharing information via an email list serve, website (<http://kaikuleana.net/>) and a shared calendar developed by Mel Malinowski of the Mauna Lani community. Each participant was provided with a log on to access the shared documents and calendar. The group continues to share information on coastal and marine ecosystem monitoring and management goals of their communities.



Figure 1a and b. Coastal Community Management Network members.

Outcomes: The agent reconvened the South Kohala Coastal Partnership Working Group. Its 12 representatives acted as a planning team for the Coral Reef Working Group. The agent collaborated with TNC to establish a new Coastal Community Management Network consisting of eight community representatives from the region to discuss coastal and marine management issues and management strategies.

Activity 2: Plan and facilitate Working Group meetings in coordination with the DAR planner. Assist with the development of meeting agendas and minutes.

The South Kohala Working Group formally met seven times over the course of this project on July 31, 2013, September 5, 2013, November 6, 2013, January 8, 2014, March 7, 2014 (field day), May 19, 2014, and July 25, 2014 to discuss priority projects for the South Kohala area and plan partner recognition events and meetings. The agent worked with DAR planner Emma Anders to arrange the working group meeting agendas and conference call lines, and NRCS to host the meeting locations as well as provided minutes for those meetings.



Figure 2. The South Kohala Coastal Partnership Working Group and project grantees.

The agent participated in a Facilitative Skills for Collaborative Leaders training workshop offered by Dr. Donna Ching of the College for Tropical Agriculture and Human Resources on September 19-20, 2013 at the University of Hawai'i at Mānoa in an effort to enhance her community engagement skills. UH Sea Grant supported this professional training development opportunity.

For the November meeting the South Kohala Working Group provided input on the Wai'ula'ula restoration projects and was involved with contributing project information for the NOAA Habitat Blueprint focus area crosswalk document. For the January meeting they provided technical assistance with projects and participated in the development of a map that highlighted projects in and around the priority site. The community work day in March provided the group with an additional opportunity to provide technical support to the Kailapa Community on fencing installation and planning for vegetative planting. During the May meeting presentations and updates were shared from grantees with the group (Figure 2). In July and August the group reviewed LOIs, discussed and ranked projects, and determined which projects to submit for the NOAA Coral Reef Conservation Program (CRCP) grant funding request.

Outcomes: The agent conducted seven meetings with the South Kohala Working Group to coordinate project actions and to inform and engage stakeholders during the project period.

Activity 3: Work with state and the working group to draft grant proposals to implement actions in the three major planning documents.

The agent participated in a NOAA Grants Writing Workshop in Kona, Hawai'i on August 30, 2013 at the West Hawai'i Civic Center and utilized that training to apply for and obtain two grants to support project activities in the region. These grants will assist with implementation efforts in 2014-2016.

The agent hosted three Hawai'i Department of Health (DOH) Clean Water Branch representatives from O'ahu on site visits and meetings with SKCP partners from NRCS, Mauna Kea Soil and Water Conservation District, and Kohala Watershed Partnership to discuss and develop project ideas for the DOH Request for Proposals (Figures 3a and b). The agent submitted a proposal entitled "Implementation of Best Management Practices to reduce non-point source pollution and storm water runoff in Wai'ula'ula Watershed" to DOH on February 6, 2014. The agent received a request to participate in a meeting with DOH in Honolulu to discuss questions from DOH staff for a Best and Final Offer (BAFO) proposal. The BAFO proposal was delivered to DOH on March 11, 2014 and notification of the \$427,218 award was made on March 21, 2014. This DOH project will implement best management practices suggested by a stream corridor assessment report from project grantee Andy Hood of SRGII to reduce runoff at five sites along the Waikoloa Stream. The project involves a large group of partners including the Queen Emma Lands, Mauna Kea Soil and Water Conservation District, Hawai'i Wildfire Management Organization, Parker School, PADTI inc., Waimea Outdoor Circle, and Waimea Trails and Greenways. These collaborators will provide opportunities for the community and schools to participate in watershed restoration and hands-on training with stream stabilization, installing rain gardens, and monitoring water quality. The benefits of these practices will help reduce storm water runoff and improve water quality to coastal and reef ecosystems in the region.



Figures 3a and b. Partners from NRCS, Mauna Kea Soil and Water Conservation District describe the watershed restoration needs to Hawai'i Department of Health Clean Water Branch representatives.

A second grant in the amount of \$15,000 was awarded from the NOAA Pacific Island Regional Office's Marine Education and Training Program. This Coastal Water Monitoring – Tool Kit (C-Water Kit) project includes funding to purchase supplies and materials for two coastal water monitoring tool kits that will be loaned out to various community groups and schools interested in monitoring water quality. The kit would also include training information on how to use various monitoring equipment.

Additionally, five projects for FY11-12 and FY13-14 (Table 1) were solicited and successfully funded through the existing DAR cooperative agreement with the NOAA CRCP. The agent worked with the state and the South Kohala Coastal Partnership Working Group to identify priority strategies that will be addressed from the South Kohala Conservation Action Plan, Wai'ula'ula Watershed Management Plan, and Pelekane Bay Watershed Plan.

On May 12, 2014 the agent assisted the Kona DAR office with developing a proposal entitled "Supplemental monitoring for Kona Coast" to support additional divers and associated training for monitoring coral reef ecosystems along West Hawai'i. The \$5,646 three- month project was funded for July-September 2014.

The agent facilitated a South Kohala Coastal Partnership Working Group meeting in July 2014 that ranked new project ideas and LOIs for the Coral Reef Working Group. Five projects were selected and forwarded to the Coral Reef Working Group to review and rank for submission in the NOAA CRCP FY2015 and FY2016 request for funds. The agent and partners from TNC and NOAA also developed an LOI for implementation of Pono Fishing practices in West Hawai'i for internal NOAA FY2015 and FY2016 funds.

The agent shared email announcements on grant opportunities with the SKCP email list to encourage partners to apply for project support in the priority area and SKCAP strategies. Several proposals were developed and funded. Eva Schemmel of the moon fishing calendar project received a West Marine Conservation Grant to help encourage fishermen participation in collecting samples for the pono fishing project. UH Hilo faculty Tracy Wiegner received NOAA CRCP funding for water quality work in Puakō.

Table 1. Current projects funded from the NOAA Coral Reef Conservation Program through awards made to the Hawai'i Division of Aquatic Resources.

Project title	Contractor	Location	Strategies of SKCAP	Identified outcomes
Stream Corridor Assessment	Sustainable Resource Group Intn'l Inc.	Wai'ula'ula watershed	Sediment Reduction	1. Inventory and Assessment-map 2. Erosion monitoring - plan 3. Riparian zone overlays - GIS maps 4. Report - photo document, erosion plan, prioritize action
Ungulate exclusion and sediment reduction	Kailapa Community Association	Kailapa, Kawaihae	Sediment Reduction	1. Reduce feral goat population 2. Decrease erosion and coastal sedimentation 3. Install and monitor Erosion pins 4. Establish native dry forest seed bank 5. Outreach and publications
Understanding the impacts of land based nutrients on coral reef health	The Nature Conservancy	Puako area	Fisheries Management	1. Water quality sampling 2. Biological surveys of coral health 3. Spatial patterns of coral disease and nutrients
Assessment of coral settlement distributions and environmental conditions	UH, Hawaii Institute of Marine Biology	South Kohala Priority site	Fisheries Management	1. Evaluation of past, present and future condition of the reef in Pelekane Bay 2. Document changes in the watershed using sedimentation data, historical data and water quality data 3. continue monitoring and quantify coral settlement 4. Fish and benthic transects 5. quantify water quality 6. Comprehensive report
Integrating Local Ecological Knowledge with a novel scientific tool to refine traditional community based Moon Calendars	UH Manoa Fisheries Ecology Research Lab	Kiholo Bay	Fisheries Management	1. Identify local pono fishing practices, 2. life history and histological data, 3. Spatial and temporal variation in reproductive characteristics, 4. training and technical support to communities

Outcomes: The agent worked with stakeholders to develop over sixteen new projects LOIs and helped secure funding for 11 projects with the assistance of the South Kohala Coastal Partnership. The goal was to have at least four proposals submitted received for the first round of grant funding.

Objective 2: Organize and lead local stakeholder engagement related to Phase I implementation of South Kohala projects.

Activity 4: Identify and engage stakeholders from the region, including agency staff, businesses, landowners, fishers and recreators.

The agent individually met and contacted all of the participants and supporters that contributed to SKCAP including the planning and advisory team participants to establish a larger South Kohala Coastal Partnership group. These participants were engaged in a discussion on strategies to move forward with the implementation of SKCAP and to share information on past, present and future monitoring and management projects in the South Kohala region (Figures 4a and b).



Figures 4a and b. Individual meetings with stakeholders included site visits with Tim Cooke (pictured left) of the Waikoloa Resort Association who met with the agent to provide cultural and biological information associated with work to restore and maintain anchialine pools and fishponds along the coast. Melora Purrell (pictured right) of Kohala Watershed Partnership met with the agent to share watershed restoration techniques and successful tools to restore native vegetation, manage feral ungulates, and reduce sediment in the Pelekane Bay Watershed.

The agent identified additional relevant stakeholder groups as well as researchers, contractors and organizations involved with the monitoring and collection of data in the South Kohala region. The agent met with the Mauna Kea Soil and Water Conservation District Board, South Kohala Reef Alliance, Hui Aloha Kīhōlo, Coral Reef Alliance, Hawai'i Conservation Alliance, Mālama Kai, Kohala Coast Resort Association, Sustainable Resources Group Intn'l Inc., Hawai'i Wildfire Management Organization, Freddy Rice Ranching, Queen Emma Land, Parker School, Hawai'i Preparatory Academy, Dolphin Quest, Waimea Trails and Greenways, University of Hawai'i at Hilo Marine Science Department, Ryan Perroy of University of Hawai'i Geography Department, Puakō

Community Association, Jupiter Foundation, Liquid Robotics, Puakō Reef Teach volunteers, Puakō Makai Watch, Drew Harvell and her students from Cornell, Kailapa Community Association, Kukui Planning, and Ka'ūpūlehu Marine Life Advisory Council members.

The agent reviewed and discussed the preliminary results and draft survey of the South Kohala Knowledge, Attitudes and Perceptions (KAP) study that surveyed ocean users including fishers and recreators in the area that the SKCAP and watershed plans would be implemented. This survey will provide guidance to promote engagement with user groups. The agent connected the presenters (Leila Sievanen and Cindy Grace-McCaskey from the Pacific Island Fisheries Science Center in Honolulu) with Reef Teach organizer Pelika Bertlemann. They gave a Reef Teach presentation that covered the KAP results on November 1, 2013. Emails were sent out to the South Kohala Coastal Partnership group to attend. There was a large turnout of 40 participants.

The agent was invited to provide presentations at the following meetings:

- Reef Talk: meet and greet: August 22, 2013.
- Waimea Community Association meeting: October 3, 2013.
- Big Island Water Resources meeting: March 24, 2014 in Hilo.
- West Hawai'i Fisheries Council: April 15, 2014
- University of Hawai'i at Hilo GIS class: April 22, 2014 at UHH with partners from NRCS
- Kohala Watershed Partnership meeting: June 10, 2014 in Waimea.
- South Kohala Community Development Action Team: June 23, 2014 in Waimea with partners from NPS.
- Waikoloa Seniors: Waikoloa Village Association, Invited by Pete Hoffman September 15, 2014.

The agent was invited to participate in seven outreach events during the reporting period where she set up an information booth and provided interactive activities and outreach materials to attendees. These events included the Mango and Manta Festival on July 20, 2013; Wiliwili Festival on September 14, 2013; Roi Round Up and Ocean Safety Day on October 5, 2013; Earth and Ocean Festival on April 12, 2014; Kona Marine Ecosystems Symposium on September 4, 2014; Coral Reef Task Force Meeting: Return to Abundance event on September 10, 2014; and the Wiliwili Festival on September 27, 2014.

The agent arranged meetings and participated in site visits at project sites in Waimea, Puakō and Kawaihae with SKCP that included representatives from DOH, NOAA, UH Sea Grant, Kohala Watershed Partnership, TNC, CORAL Reef Alliance, UH Hilo and UH Mānoa. On December 2, 2013 DAR and TNC staff met with 2014 UH Sea Grant Knauss Fellow Maya Walton during a site visit to Hawai'i Island. Maya is serving her fellowship at the NOAA Office of National Marine Sanctuaries in Washington D.C. UH Sea Grant Knauss Fellow Tammy Newcomber Johnson was hosted on April 21, 2014; she is serving her fellowship with the National Sea Grant College Program. The agent also arranged for NOAA CRCP Hawai'i management liaison Paulo Maurin to visit project sites and meet with project grantees and local stakeholders on August 26, 2014.

The agent facilitated introductions for the Puakō community to scientists from the UH Hilo Marine Science Department to discuss the issue of leaching from cesspools in the Puako area. The agent facilitated a meeting with this group to develop a grant proposal to support continued monitoring of

nutrients and coral health. The UH Hilo Marine Science Department, TNC, CORAL, and the South Kohala Coastal Partnership are now collaborating on the new Clean Water for Reefs Program in Puakō to provide technical support during the upcoming project to upgrade of cesspools in Puakō and promote a healthier and sustainable coastal environment.

Outcomes: Through engagement activities of the agent, participation by SKCP stakeholders increased during the implementation of the project. The agent's support resulted in outputs associated with the Coastal Community Management Network workshops, collaborations on the new Clean Water for Reefs Program in Puakō and reporting from the grantees on current projects (which will be available through web-based online materials in the next six months).

Activity 5: Develop and implement strategic communication strategies regarding SKCAP projects.

The agent developed a communication plan and outlined a project matrix to organize different activities being done in the region and identified strategies that will be used to communicate with various groups and organizations. This plan will be used to facilitate communication among stakeholder groups associated with the South Kohala Coastal Partnership. The communication plan involves strategic communication strategies such as regular phone meetings, email updates, presentations, website and social media updates, and participation at meetings and outreach events/activities.

The agent established a Mail Chimp account for future email marketing efforts and communication. Over 250 stakeholders are on the SKCP email lists and include SKCP, community associations and organizations, and members of the public that have signed up for more information on how to get involved and to be notified of upcoming activities. Additionally, a contact list of South Kohala Coastal Partnership was made available in an Excel spreadsheet.

Outcomes: The agent developed a communication plan the outlines strategies on how to collaborate and communicate with various partner and stakeholders in the region. Educational materials developed by the agent for communicating information included PowerPoint presentations, brochures, and summaries (see attachments).

Activity 6: Host annual meetings of community groups engaged in coastal or marine stewardship activities.

The agent invited stakeholder groups in South Kohala to participate in three major marine-related meetings ranging from local community to agency-organized meetings. The South Kohala Coastal Partnership meeting on May 19, 2014 highlighted the South Kohala Coastal Partnership projects through PowerPoint presentations and updates (18 participants). The Coastal Community Management Network meetings on September 20-21, 2013 and January 21, 2014 brought together over 30 coastal community representatives who were actively participating in coastal and marine activities. The West Hawai'i Marine Ecosystems Symposium on September 4-5, 2014 in Kona provided an opportunity for over 200 partners and participants to attend and share updates on monitoring, research, and management of the coastal and marine ecosystems.

Outcomes: The agent hosted meetings of relevant stakeholder groups and encouraged South Kohala Coastal Partnership participation in events and activities that engaged over 3,392 residents and visitors about SKCAP projects as well as coastal and marine management efforts.

Activity 7: Communicate with the West Maui watershed coordinator to gather lessons learned from their effort.

The agent initiated contact with West Maui Watershed Coordinator Tova Callender on July 5, 2013 over the phone. The agent has been in contact with the West Maui Watershed Coordinator and West Maui Kumuwai partners regarding feedback on planning, projects, and monitoring. The agent received and shared project information, project spreadsheets, and the public involvement plan and communication plan goals with the West Maui coordinator.

The DAR held a working meeting for the two coordinators on October 1, 2013 on O'ahu to discuss planning, monitoring and tracking of projects, as well as sharing information on coordination efforts. Bi-monthly meetings were held based on scheduling availability with Emma Anders and the two coordinators to provide updates, shared project tracking and monitoring lessons learned, and planned for future projects and activities. The agent also shared updates on projects during the DAR meeting on December 3-5, 2013 in Honolulu and the Coral Reef Working Group (CRWG) meetings on February 27, 2014 and September 22, 2014 in Honolulu.

Several site visits took place during the Coral Reef Task Force meeting in Ka'anapali, Maui, on September 2014. As a result the agent met with researchers and project managers such as Curt Storlazzi of USGS who provided technical guidance for projects in South Kohala. The agent visited the rain garden project site and talked with volunteers and project managers about the design and success of that project.

The agent met with Liz Foote from CORAL/West Maui Kumuwai on Hawai'i Island on October 16, 2013 to discuss potential projects in South Kohala that would mimic work they have done in West Maui (e.g., water reuse, sustainable voluntary standards and educational training for the accommodations sector). The agent also facilitated a meeting with Liz Foote and Erica Perez from CORAL and community partners from the Kohala Coast Resort Association (Sharon Sakai) and Puakō Community Association (George "Robby" Robertson) to discuss potential projects and needs within South Kohala. As a result the group will help facilitate collaborations for two projects, the Clean Water for Reefs Program in Puakō and the Hotel Stewardship Guide and Hotel Stewardship Guide Launch workshop on November 12, 2014.

Outcomes: The agent engaged the West Maui Coordinator to share project and activity development, monitoring and tracking techniques, and communication strategies between the two sites.. Selected best management practices and communication strategies used by partners on Maui were adopted for implementation in South Kohala for related projects and activities (e.g., installation of rain gardens and reef friendly landscaping training which will take place over the next six months).

Objective 3: Review and synthesize reports, research materials and study findings to

communicate information.

Activity 8: Conduct related background research and literature review and consult with and engage scientists, resource managers, and community partners as needed to facilitate the development of conservation and restoration actions.

The agent researched/reviewed available literature and consulted with experts in watershed management, fire management, water quality, coral health monitoring, and natural resource managers to collect scientific articles, watershed plans and literature as well as available tools, maps and materials. The agent and partners held several mapping meetings to consult with stakeholders, scientists and researchers on current projects, proposals and to share ideas for future projects in South Kohala. This information was shared with SKCP, project grantees and NOAA Habitat Blueprint FAST team. The agent worked with Ms. Jessica Lillquist to compile information for a “Past, Current, and Future efforts in Hawai’i Blueprint Focus Area” document for the NOAA Habitat Blueprint team. The document included information on past and current research, management and conservation plans, projects, and community conservation activities on the South Kohala region. This information together with the NOAA map are a new tool for resource managers, agencies and community groups interested in tracking projects and identifying additional areas of opportunity (Figure 5).



Figure 5. Participants of the mapping workshop with staff from the National Oceanic and Administrative Administration, Hawai’i Wildlife Management Organization, The Nature Conservancy, and the South Kohala Coastal Partnership.

To encourage community engagement and participation in conservation and restoration activities email announcements, the agent shared social media and website updates with the SKCP email list. With the help of Megan Lamson from Kona DAR the agent updated a list of regular local volunteer opportunities that was made available on the SKCP website. In June 2014 the agent worked with Liz Foote and Erica Perez from the Coral Reef Alliance to provide local information for

the Hawai'i Hotel Stewardship Guide. The guide has been printed and will be launched with the Coral Reef Alliance and other SKCP partners in November 2014.

The agent attended over 10 training workshops, meetings and webinars in an effort to obtain the most-up-to-date information and gain new skills. These activities included:

- UH Sea Grant Academy Extension Training, Mike Spranger and Karen Blyler, August 6-7, 2013.
- Rainwater harvesting workshop, Billy Kniffen American Rainwater Catchment Systems Association, August 19-20, 2013.
- Reef sediment modeling webinar, West Maui ridge to reef, August 28, 2013, Athline Clark.
- Hawai'i Coral Reef Initiative and DAR Mid-day Science series, presentation by John Rooney, on the NOAA CRED benthic habitat mapping project, October 30, 2013, invited by Risa Minato of the Hawai'i Coral Reef initiative.
- National Stormwater Calculator webcast and training by the EPA on October 23, 2013, invited by Hudson Slay of US EPA.
- U.S. Coral Reef Task Force Watershed workshop webinar, November 13, 2013, invited by Emma Anders of DAR.
- Ascent: Building a secure and sustainable water and energy future for Hawai'i, April 15, 2014, invited by Darren Okimoto of UH Sea Grant.
- Ocean Tipping points webinar, June 5, 2014, invited by Elia Herman of DAR.
- U.S. Coral Reef Task Force Construction Stormwater Impacts: A mini training, September 9, 2014, invited by Hudson Slay of US EPA.
- Strategic Communications Learning Exchange, September 9-13, 2014, invited by the TNC Reef Resilience program.

The agent provided technical assistance at eight restoration projects and training opportunities in the South Kohala region and one on Maui (Figures 7a –e). They were the:

- Kīholo Community Work Day: removal of invasive plant species, October 15, 2013, organized by TNC.
- Kahalu'u Fishing Derby: removal of invasive fish species, October 26, 2013, organized by The Kohala Center and Kahalu'u Bay education center.
- Waimea Outdoor Circle Community work day: planted native plants, January 11, 2014.
- Puakō Reef Teach training for Parker School: water quality and reef health lesson February 7, 2014 (Figures 6a and b).
- Kohala Watershed Partnership: "Great dam day" helped build one large sediment dam in upper Pelekane Bay Watershed, February 22, 2014.
- Puakō Community Snorkel day: helped identify species and supervise snorkelers, March 13, 2014, organized by Puakō Makai Watch and Reef Teach Program.
- Puakō boat ramp: in water and along boat ramp coastal clean-up, April 26, 2014, organized by Keep Puakō Beautiful.
- Roi event: helped measure and weigh roi with researcher Jonatha Giddens, July 19, 2014 organized by Top Shape Spearfishing.
- Honokowai Valley (Maui) stream riparian corridor nonnative vegetation removal with Ekuolu Lindsey of Maui Cultural Lands and the Strategic Communications Reef Resilience workshop group, September 8, 2014.



Figures 6a and b. The agent and Reef Teachers Rebecca Cope and Matt Connelly shared information with Parker School students about reef health, water quality and reef etiquette.



Figures 7a – e. The agent volunteered at multiple education and outreach events in the South Kohala region.

Outcomes: The agent conducted research and connected with scientists and other relevant stakeholders to provide the most-up-to-date information for conservation and restoration efforts in

the South Kohala region. The agent contributed to a report that provided information on South Kohala for the NOAA Habitat Blueprint process which resulted in South Kohala being selected as a site. In total the agent engaged and informed 3,392 residents and visitors about SKCAP projects and coastal and marine management efforts in the region during the project period.

Activity 9: Review relevant DAR policy and rules by DAR staff and the community.

The agent established regular communications through meetings and emails with the Kona DAR staff, Hawai'i Island Education Specialist John Kahiapo as well as O'ahu DAR staff (Anne Rosinski, Elia Herman, Erin Zanre, Emma Anders) to get up-to-date information. The agent attended: a presentation by Dr. William Walsh entitled "South Kohala Reefs in Dire Straits" on July 3, 2013; the West Hawai'i Fisheries Council meeting on July 18, 2013; and the Governor's cabinet in your community meeting on August 15, 2013 with community discussions and or break out sessions relevant to the West Hawai'i biological monitoring data and the West Hawai'i Regional Fisheries Management area rules package. The new rules package was passed on December 14, 2013.

Related activities included obtaining outreach handouts from DAR - Kona office "Making a difference, an action guide to Marine Conservation in Hawai'i, what to do and who to call concerning ocean issues", white list identification sheet, fish rulers and fishing regulation to disperse at education and outreach events.

The agent participated in a Makai Watch meeting on September 28, 2013 with Makai Watch representatives and discussed the progress of the Puakō Makai Watch program. The agent also met with those interested in the application to other areas and programs. Various participants included the Makai watch coordinator, Ranger, volunteers, Hawai'i Division of Conservation and Resources Enforcement officers, community members, resort staff, Hawai'i Division of Aquatic Resources staff and Community Fisheries Enforcement Unit employees.

Outcomes: The agent reviewed, discussed and shared information on the current DAR policy and rules through communications with DAR staff on O'ahu and Hawai'i Island, Hawai'i Division of Conservation and Resources Enforcement officers, West Hawai'i Fisheries Council, Makai Watch Rangers, volunteers, and South Kohala community members.

Activity 10: Track, manage and summarize monitoring data, and formulate products for public use.

The agent developed Excel spreadsheets for each project funded by the NOAA CRCP to track projects that address the strategies of the SKCAP and Watershed Management plans. The agent also tracked plans using the attached SKCAP Miradi plans and graphs (see the appendix). The final results and reports of the current NOAA CRCP projects will be made available online and through the development of outreach documents once the agent receives the final reports on October 31, 2014. Additionally, the agent monitored and tracked projects with photo documentation (Figures 8a-d) and visual assessments of progress or changes at project sites and coastal areas. These photos were shared with SKCP working group, project grantees and were posted on the website.



Figures 8a -d: Photo documentation of sedimentation along cost and erosion pins along Waikoloa stream.

Outcomes: The agent utilized Excel and the Miradi plans to track projects and monitoring efforts in the South Kohala region. This information was shared relevant stakeholders and posted on the website.

Activity 11: Develop text for brochures, summary reports, web-based materials and other education and outreach products. Layout will be done by the HCRS contractor.

The agent developed a website (www.southkohalacoastalpartnership.com) that highlighted current SKCAP projects and volunteer opportunities for the community. The agent developed outreach templates for each project grantee and designed brochures, handouts, and a newsletter (see attached documents) for education and outreach activities. The agent will post all final products including final reports online.

The agent co-conducted a series of mapping meetings that will lead to the production of an interactive GIS map that will be hosted online through NOAA of the current and past projects in and around the South Kohala priority site. These maps, once produced, will be used as a tool for resource managers, for outreach, and planning meetings to discuss areas of focus and identify additional project areas.

Two short videos were also produced by the agent: one with interviews of South Kohala Coastal Partnership stakeholders in support of the NOAA habitat blueprint and the other of a sediment check dam that was built during the Kailapa Community Association community work day.

Outcomes: The agent developed a variety of outreach materials containing up-to-date information on projects and ways that the community can get involved in South Kohala project activities. These materials included a brochure, one/two page outreach documents, summary sheets, PowerPoint presentations, short videos, a website, a Facebook page, and web-based educational information.

Activity 12: Respond to inquiries from the public and media.

The agent responded to inquiries from the public at education and outreach events as well as through email, Facebook, and phone calls. Inquires included requests for providing project information and technical review of the Hawaiian Islands Humpback Whale National Marine Sanctuary draft internal state review and information requested for NOAA habitat blueprint FAST team on the projects in the West Hawai'i focus area. Additionally, the agent and South Kohala Coastal Partnership participants provided site specific information during site visits with the NOAA Habitat Blueprint team and partners to help increase awareness of threats, watershed projects and conservation management needs for the focus area (Figures 9a and b).

Three media inquiries were made during this project: one in relation to the fisheries strategies in the SKCAP and contacts that could contribute to an article written by Melora Purell for the North Hawai'i News "Where have all the fish gone?" The article highlighted the SKCAP and quoted some of the South Kohala Coastal Partnership members. The second, by the Coral Reef Alliance, asked the agent to write a short article on the SKCAP for the first edition of the (Spring edition) e-news West Hawai'i Watershed News. The third opportunity was from UH Sea Grant Communications who interviewed the agent for the extension view column in the Summer issue of Ka Pili Kai vol. 36 no. 2.

During the project period the agent was invited to serve as a technical advisor on the Coral Reef Working Group, Hawai'i Wildfire Management Organization Advisory Committee, Clean Water for Reefs Advisory Committee, and West Hawai'i Community College – Marine Science Advisory Board Task Force.



Figures 9a and b. The agent participated in site visits with NOAA staff in South Kohala.

Outcomes: The agent responded to inquiries from the media and the public through a variety of different ways. One documented impact was associated with the NOAA Habitat Blueprint process where the agent contributed information on local partners, projects and needs in the region in support of West Hawai'i as a new Habitat Blueprint focus area. Outputs included working with the Habitat Blueprint team to develop the Past, Current and Future effort in the Habitat Blueprint Focus area document and online mapping tool. Three articles related to the SKCAP were also published during this project period.

Activity 13 Update DAR staff and Coral Reef Working Group on status of projects and coordinated efforts in the South Kohala priority area.

The agent shared regular updates and submitted progress reports to DAR planner Emma Anders. The agent developed and presented several PowerPoint presentations on projects for the South Kohala Coastal Partnership. The agent arranged for site visits with the DAR planner and the Kailapa Community to monitor and document progress of the ungulate fencing and sediment reduction project in April 2014 (Figures 10a and b). The agent also gave presentations to DAR at the Hawai'i Coral Reef Strategy Fall Sharing Session on September 30, 2013 at the Hawai'i Department of Land and Natural Resources Kalanimoku Building in Honolulu and to staff at the DAR Strategic Planning meeting on December 3-5, 2013 in Honolulu. The agent also provided updates to the Coral Reef Working Group through PowerPoint presentations, feedback and updates at meetings on February 27, April 14, May 13, July 11, August 27, and September 22 in 2014.



Figures 10a and b. Emma Anders, Hawai'i Division of Aquatic Resources Planner, participated in a site visit to view the Kailapa fencing project on April 2014.

Outcomes: The agent informed DAR staff and the Coral Reef Working Group on the status of projects in the South Kohala region through a series of meetings. Outputs includes several PowerPoint presentations given by the agent at the Hawai'i Coral Reef Strategy "Sharing Session" and Coral Reef Working Group meetings. The agent produced/shared bi-annual progress reports, one/two page outreach materials, photo documentation, and updated project tracking information through newsletters, emails, and the website.

Objective 4: Assist with project oversight.

Activity 14: Conduct site visits for projects that are underway to monitor progress and report back to the Working Group and Coral Reef Working Group.

The agent met with Coral Reef Working Group five times over the course of this project to present updates and discuss South Kohala projects during Coral Reef Working Group meetings. To monitor and report progress the agent met with all grantees, as well as additional partners and researchers throughout the course of this project to discuss the best methods for monitoring existing projects. Projects were tracked in Excel (Table 2) and will be entered into Miradi once the data and reports from grantees are finalized. For the stream corridor assessment project, eight monitoring sites were identified by the grantee and will continued to be monitored by the agent based on the monitoring protocol in the Stream Corridor Assessment Report. Additional plans are also being discussed to monitor coastal water quality with technical guidance from Liquid Robotics and data hosting by PacIOOS as well as with USGS and DAR on the design and installation of sediment traps along mouths of streams, gulches and areas with known terrestrial run off following the methods from Storlazzi.

Table 2. Timeline of projects being tracked by agent.

Projects currently tracked and/or managed by Ms. Tobiason																					
Location	2012			2013			2014												2015		2016
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec			
South Kohala Priority Area																					
	All	Implementation of South Kohala Conservation Action Plan												South Kohala Coastal Partnership							
	All													SKCP Comm. Plan							
	All													W. HI Divers							
	Puako	Puako Makai Watch																			
	Puako				Coral health and nutrient																
	Kawaihae				Ungulate exclusion and sediment reduction																
	Multiple																C-Water tool kit				
	Multiple				Hawaiian fishing moon calendar																
Pelekane Bay Watershed																					
	Multiple				Coral settlement and environmental conditions																
Waiulaula Watershed																					
	Multiple				Stream corridor assessment																
	Multiple																Waiulaula Watershed				

Outcomes: The agent conducted site visits in the South Kohala region and reported progress made to the working group and Coral Reef Working Group. An output developed by the agent was a monitoring/evaluation plan to evaluate the progress of project implementation.

Activity 15: Help connect grantees with technical assistance when needed.

The agent initially went out in the field with grantees to identify sites and assisted with data collection. The agent also connected grantees with local contacts who shared technical information

and site history. The agent contacted contractors on a regular basis to monitor project progress and participated in field days to help collect data. This included working with TNC once-a-month to collect water samples, conducting stream corridor assessment (SCA) monitoring of erosion pins, and participating in a community work day with the ungulate exclusion and sediment reduction project in Kailapa. The agent and partners from NRCS produced a GIS map of the Kailapa fencing project for sharing through the NOAA online map and to determine the numbers of acres fenced (Figure 11).



Figure 11: Map of the Kailapa fencing project.

The agent participated in the following field day activities to help collect data and assess project progress:

- January 12, 2014 and February 12, 2014. Puakō water quality sampling with TNC for The Coral Health and Land Based Sources of Pollution project.
- January 16, 2014. Stream Corridor Assessment field day with Andy Hood. The agent visited potential sites and installed erosion pins at some sites. Additional documentation and monitoring took place by the agent after heavy rain events in January and March (Figures 12a, b and c).
- March 7, 2014. Kailapa Community work day.
- March 14, 2014. The agent mapped the Kailapa fenced line and produced a map.

- June 6, 2014. Malama ‘Aina day. The agent helped build a sediment check dam inside fenced area at Kailapa (Figure 13).
- September 6, 2014. Native planting at Kailapa.
- September 20, 2014. Kīholo fishing moon calendar project outreach.



Figures 12a, b and c. The agent walked along the watershed with Andy Hood of SRGII for the stream corridor assessment monitoring project.



Figure 13: Sediment check dam built inside the Kailapa ungulate exclusion area.

Outcomes: The agent provided technical field assistance to grantees for water quality collection, sediment check dam construction, planting of native plants as well as facilitated meetings with local stakeholders, watershed planners, managers, and landowners. The Kailapa community benefited by partnering with The Kohala Watershed Partnership and the Waikoloa Dry Forest Initiative (both part of the South Kohala Coastal Partnership) to provide community training for the installation of the sediment check dam, irrigation and native plant restoration techniques.

Activity 16: Coordinate partner recognition and participation in project events and media.

The agent encouraged members of the working group and South Kohala Coastal Partnership to participate in local meetings and events. Several partners and grantees participated in meetings and provide updates via PowerPoint presentations or shared outreach booths as a result of these invitations. Moon Calendar project manager Eva Schemmel met with communities in West Hawai'i, gave presentation at the Big Island Water Resource meeting at UH Hilo, shared information at the SKCP booth at the West Hawai'i Marine Ecosystems meeting, and spoke at the West Hawai'i Fisheries Council meeting. The agent partnered with Hannah Conely from the Mauna Kea Soil and Water Conservation District (Figure 14) on the Wiliwili event and shared ridge to reef watershed activities and materials on conservation programs and upcoming partnership projects.



Figure 14. Hannah Conely of the Mauna Kea Soil and Water Conservation District engaged a young child at the Wiliwili festival.

The working group had the opportunity to contribute comments and feedback on the various projects in and around the South Kohala priority site. The working group also provided supporting information on South Kohala to interested parties when requested (e.g., the NOAA Habitat Blueprint FAST team). The agent encouraged stakeholder participation at public meetings, events and activities through email, personal communication and phone calls of upcoming opportunities.

To date, the agent and partners from the South Kohala Coastal Partnership participated in over 20 major events and meetings related to the SKCAP. They included:

- Coral Reef Working Group meetings at the Hawai'i Department of Land and Natural

Resources office in Honolulu.

- Hukilau I Kahawai on August 3, 2013 that integrated traditional fishing methods with modern scientific data collection.
- Governor Neil Abercrombie cabinet in your community meeting on August 15, 2013.
- DAR Strategic Planning meeting on December 3-5, 2013 in Honolulu.
- UH Sea Grant Staff meetings at UH Mānoa.
- Mauna Kea Soil and Water Conservation District Board meetings at NRCS in Waimea.
- Piliina Hawai'i Island Conservation Forum on November 12, 2013 in Waimea.
- Ascent: Building a secure and sustainable water and energy future for Hawai'i conference session at UH Mānoa on April 15, 2014.
- Ascent Panel: Bringing about change, creating the condition for moving forward conference session on April 15, 2014 at UH Mānoa.
- NOAA Ocean uses mapping meeting on June 2, 2014 at the West Hawai'i Civic Center.
- Kona Marine Ecosystems Symposium on September 4-5, 2014 at the Kona IEA.
- Barbless hooks and pono fishing workshop on September 18, 2014, Earl Miyamoto at the Ke Kai Ola Monk Seal Facility.
- Monthly meetings for the West Hawai'i Fisheries Council, Waimea Community Association meetings, Reef Talks, Puakō Makai Watch Reef Information, South Kohala Community Development Action Team meetings, and UH Sea Grant Coastal Hazard meetings.

The South Kohala Coastal Partnership website (www.southkohalacoastalpartnership.com) experienced a steady monthly increase in activity and over 165 unique views on the page. The website is also linked to partner's pages, the HCRS website and Maui ridge to reef initiative. A Facebook page (www.facebook.com/SouthKohalaCoastalPartnership) was established on August 12, 2013 and has 140 likes and has been a successful tool to recognize partnerships, events and media.

Outcomes: The agent utilized a variety of communication modes to encourage partner participation in local meetings and community events.

B. Project management: The University of Hawai'i Sea Grant College Program was responsible for managing all aspects of this project and included project management support from Principal investigator Darren Lerner and Extension Leader Darren Okimoto. Extension Agent Sierra Tobiason served as the project coordinator. Bruce Hamakawa, Diane Sakamoto, Joan Yamada handle all fiscal matters related to the project. Cindy Knapman and Heather Dudock from UH Communications handled the production of education resource materials.

V. Results

The agent successfully brought together representatives from county, state, federal, and NGO organizations to engage in the partnership as the working group and larger South Kohala Coastal Partnership participant group. The agent obtained extramural funding to leverage existing NOAA Coral Reef Conservation Program funds as well as leveraged partnership projects that will help reduce the impacts from land based sources of pollution, invasive species and unsustainable fishing practices in the South Kohala region. The agent engaged six South Kohala coastal

communities (Kawaihae, Puakō, Mauna Lani, Waimea, Waikoloa and Kīholo) as well as two other communities in the West Hawai'i area in Coastal Community Management Network meetings. The agent also provided information services and up-to-date information on ecosystem-based stewardships activities, coral reef monitoring, sustainable fishing practices, invasive species management, and sediment reduction, and other related projects to project partners and stakeholders.

The agent tracked and monitored the implementation of five projects designed to reduce anthropogenic impacts in the South Kohala region which demonstrates progress made in the Phase 1 implementation of the SKCAP. The data from the projects ending in September will be incorporated into new updated web based materials in the next six months. This includes a fencing project of 13 acres of dry land forest to exclude invasive ungulates (goats), building one sediment check dam and planting over 1,200 native dry forest species with the Kailapa community of Kawaihae to reduce sediment runoff, as well as conducting a stream corridor assessment with Sustainable Resources Group Intn'l Inc. to inventory 10 erosion hot spots and identify appropriate best management practices. Additional activities by the agent included data collection with UH researchers to identifying local sustainable fishing practices, integrating Local Ecological Knowledge to refine fishing moon calendars, and monitoring coral recruitment. The agent also recruited volunteers to assist with field sampling for The Nature Conservancy coral health and nutrient project that monitored 12 sites in Puakō, and for the community work days in Kailapa building the sediment check dam and planting.

The preliminary results from the stream corridor assessment and monitoring identified eight sites along the Wai'ula'ula Watershed that would benefit from corrective action and implementation of best management practices. Five of those sites were selected for the DOH funded Wai'ula'ula Watershed project.

The agent secured funding for two additional projects in the region: A \$15,000 NOAA Pacific Islands Regional Office Fisheries Marine Education and Training grant for the development of a Coastal Community Monitoring Tool Kit (C-Water Kit) that will allow stakeholders to develop monitoring and educational programs for both coastal communities and students and a \$427,218 grant from the Hawai'i Department of Health Clean Water Branch for the "Implementation of Best Management Practices to reduce non-point source pollution and storm water runoff in Wai'ula'ula Watershed."

To date, over 3,392 residents and visitors were engaged and informed about SKCAP projects as well as coastal and marine management efforts through the agent's participation in meetings, education and outreach events.

VI. Applications

The agent established several new partnerships that were not previously a part of the original SKCAP set of participants. The agent helped facilitate the development of new partnership projects and collaborations that included:

- The Hawai'i Wildfire Management Organization, Queen Emma Land, Waimea Trails and Greenways, PADTI Inc., Waimea Outdoor Circle, Parker School, Waimea Community

Association and Waikoloa Community Association have all agreed to participate in the South Kohala Coastal Partnership Wai'ula'ula Watershed projects.

- Liquid Robotics launched a wave glider in the priority area and has provided free water quality data for SKCP to track and monitor projects. PacIOOS has offered to help host water quality data on the voyager website for the Coastal water monitoring tool kit (C-Water tool kit) project.
- The NOAA Habitat Blueprint Mapping workshop resulted in a new partnership between the NOAA Habitat Blueprint Team, SKCP coordinator, NRCS, TNC, Hawai'i Wildfire Management Organization, National Park Service, and Ala Kahakai National Historic Trail Association to share information and develop interactive online maps. An output of this collaboration was a new online mapping tool that resource managers can use for ecosystem-based management.
- Workshops conducted by the Coastal Community Management Network brought together local representatives from coastal communities in West Hawai'i. The agent conducted these meetings on September 20-21, 2013 at the Kawaihae Canoe Club and in Kohala on January 21, 2014.

The technical assistance and information services provided to grantees by the agent and members of the South Kohala Coastal Partnership provided communities with the tools and information needed for ecosystem-based management and stewardship activities. The Kailapa Community Association partnered with Kohala Watershed Partnership, Liquid Robotics, Waikoloa Dry Forest Initiative and UH Hilo to install fencing and erosion pins for monitoring, built a sediment check dam, surveyed lands, managed and monitored ungulates, conducted water quality sampling, and assisted with native out planting in Kailapa. TNC collaborated with the Puakō Community Association, CORAL, UH Sea Grant and UH Hilo Marine Science Department on addressing methods to monitor and manage nutrients and coral health in Puakō. SRGII collaborated with local watershed experts and landowners to prioritize critical areas that required restoration in the Wai'ula'ula Watershed and reported the appropriate best management practices.

The agent worked with project grantees to draft new proposals, seek additional resources and encourage partnership participation in community work days, site visits and volunteer activities. One outcome to highlight revolved around the agent introducing the Puakō community to scientists from the UH Hilo Marine Science Department to discuss the issue of leaching from cesspools in the Puakō area. The agent facilitated a meeting with the group to develop a grant proposal to support continued monitoring of nutrients and coral health. The UH Hilo Marine Science department, TNC, CORAL, and the South Kohala Coastal Partnership are now collaborating on a new Clean Water for Reefs Program in Puakō to provide technical support during the upcoming project to upgrade of cesspools in Puakō and promote a healthier and sustainable coastal environment.

The agent shared South Kohala Coastal Partnership communication plan and project information with partners from CORAL, which were incorporated in the development of the Hawai'i Hotel Reef Stewardship Guide. The agent was asked to help facilitate the upcoming Hawai'i Hotel Reef Stewardship Guide launch workshop on November 12, 2014. The workshop will bring together partners from SKCP, CORAL and The Nature Conservancy to present the guide to resort managers, landscapers and condominium owners.

The West Hawai'i Fisheries Management Area Rules passed in December 2013 and the associated DAR educational materials have been updated and made available by the agent to stakeholders. These new rules apply to the South Kohala priority area and include additional protection, regulation of species that will help with achieving the conservation strategies in the SKCAP. The user knowledge on this topic has increased through sharing information at meetings, presentations, and outreach events and with the support from the South Kohala Coastal Partnership.

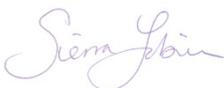
VII. Evaluation

The agent made good progress towards accomplishing the goals and objectives of this project through the implementation of strategies associated with the SKCAP. This project demonstrated the ability of the agent to track and assist with NOAA CRCP projects, facilitate new collaborative South Kohala Coastal Partnership projects, engage and promote opportunities for stakeholders participation, and leverage additional funding.

The working group will continue to meet bi-monthly and refine some of the SKCAP strategies for more detailed project development and project prioritization. The final results and reports from the NOAA CRCP projects completed in September of 2014 will be shared through outreach documents, the SKCP website, and updated materials over the next six months, and will help guide future management actions in the South Kohala region. The established monitoring sites will continue to be monitored when possible with visual surveys and photo documentation by the agent.

The recent designations of West Hawai'i by NOAA as a focus area for habitat blueprint and sentinel sites together with the designation by the state and NOAA's Coral Reef Conservation Program as a priority site highlight the need to continue the collaborative partnership between DAR and UH Sea Grant in South Kohala.

Final Report Prepared by: ____Sierra Tobiason____ Date submitted: ____10/24/2014____

Signature of Point of Contact:  _____

Attachments:

Participants, technical experts and supporters of the SKCAP contacted

PowerPoints

Newsletter

Outreach handouts

South Kohala Conservation Action Plan: Strategies for Action and Measures of success - Miradi plans

Participants, technical experts and supporters of the SKCAP contacted *

Name	Organization
Amalia Mueller	Hawai'i National Marine Sanctuary Foundation
Anne Rosinski	Hawai'i Division of Aquatic Resources
Aric Arakaki	Ala Kahakai National Historical Trail Association, National Park Service
Austin Shelton	HCRI
Bill Walsh	Hawai'i Division of Aquatic Resources
Cameron Dabney	Dolphin Quest
Carl Sturges	Parker School
Carol Hendrix	Waimea Outdoor Circle
Carolyn Stewart	Mālama Kai
Chad Wiggins	The Nature Conservancy
Cindi Punihaole	The Kohala Center
Clem Lam	Waimea Trails and Greenways
Coastal Hazards team	University of Hawai'i Sea Grant College Program
Coral Reef Working Group	Multi – agency
Courtney Couch	Hawai'i Institute of Marine Biology, The Nature Conservancy
Cynthia Grace-McCaskey	National Oceanic and Atmospheric Administration
Cynthia Ho	Keep Puakō Beautiful
Curt Storlazzi	USGS
Dana Okano	NOAA Coral Pacific team lead
Danny Akaka	Mauna Lani Resort
Darren Lerner	University of Hawai'i Sea Grant College Program
Darren Okimoto	University of Hawai'i Sea Grant College Program
David Chai	Hualalai Resort
Deanne Bugado	County of Hawai'i, SKCDP AT
Diane Kanealii	Kailapa Community President
Doug Harper	NOAA NOS/Sentinel
Bill Walsh	Hawai'i Division of Aquatic Resources
Earl Miyamoto	Marine Wildlife Program
Elia Herman	Hawai'i Department of Land and Natural Resources - Hawai'ian Island Humpback Whale National Marine Sanctuary
Elizabeth Maynard	University of Hawai'i Sea Grant College Program
Elizabeth Pickett	Hawai'i Wildfire Management Organization
Emma Anders	Hawai'i Division of Aquatic Resources
Eric Conklin	The Nature Conservancy
Erin Zanre	Hawai'i Division of Aquatic Resources
Francis Ruddle	Mauna Lani Resort

Frazier McGilvray	Hawai'i Division of Aquatic Resources
George Fry	Puakō Community Association
George "Robby" Robertson	Puakō Community Association/Brian Schatz office
Glenn Higashi	Hawai'i Division of Aquatic Resources
Glennon Gingo	West Hawai'i Fisheries Council
Greg Takeshima	Hawai'i Department of Health – Polluted Runoff Control Program
Hannah Connelly	Mauna Kea Soil and Water Conservation District
Hudson Slay	Environmental Protection Agency
Jen Lawson	Waikoloa Dry Forest Initiative
John Hoover	South Kohala Community Development Plan Action Team
John Kahiapo	Hawai'i Division of Conservation and Resources Enforcement
Julia Stewart*	Coral Reef Alliance
Justin Viezbicke*	Hawaiian Island Humpback Whale National Marine Sanctuary
Ka'au Abraham	NOAA Hawaiian Island Humpback Whale National Marine Sanctuary
Kainani Frazier	NOAA Hawaiian Island Humpback Whale National Marine Sanctuary
Kalisi Mausio	NOAA Coral Reef Conservation Program
Kara Miller	National Oceanic and Atmospheric Administration
Kara Osada D'Avella	Hawai'i Division of Aquatic Resources
Karen Hazzard	Puakō Reef Teach and Makai watch
Kathy Chaston	National Oceanic and Atmospheric Administration Coral Reef Conservation Program
Kathy Fraser	Waikoloa Village Association
Kawika Auld	Fisherman
Keith Olson	Natural Energy Laboratory of Hawai'i Authority – Water Quality Lab
Kekaulike Tomich	Ka'ūpūlehu Marine Life Advisory Council
Keolohilani Lopes	The Nature Conservancy
Kim Hum	The Nature Conservancy
Kristen Maize	The Nature Conservancy
Lala laau	Da Fish House – Kawaihae fish market
Lani Watson	NOAA Habitat Blueprint
Lani Yamasaki	Liquid Robotics
Laura Bodell	Kohala Divers
Lauren Roth	Roth ecological
Leila Sievanen	National Oceanic and Atmospheric Administration
Linda Preskitt	Eyes of the Reef

Lisa Marrack	University of California at Berkeley
Liz Foote	CORAL reef alliance and West Maui Kumuwai
Luna Kekoa	Hawai'i Division of Aquatic Resources
Malia Chow	Hawaiian Island Humpback Whale National Marine Sanctuary
Margaret Fowler*	Mauna Kea Soil and Water Conservation District
Marni Herkes	West Hawai'i Fisheries Council
Matt Connelly	The Kohala Center
Matthew Ramsey	National Oceanic and Atmospheric Administration
Matthew Wung	US Department of Agriculture – Natural Resource Conservation Service
Megan Lamson	Hawai'i Division of Aquatic Resources
Mel Malinowski	South Kohala Reef Alliance
Melora Purell	Kohala Watershed Partnership
Michael Burke	Hawai'i Department of Health – Polluted Runoff Control Program
Michaela Meredith*	Waimea Middle Public Charter School
Mike Donoho	Kukui Planning Company
Monty Richards Jr.	Kahua Ranch
Morgan Mamizuka	University of Hawai'i Sea Grant College Program
Nahaku Kalei	Ala Kahakai National Historical Trail Association, National Park Service
Ocean Sports staff	Ocean Sports
Orlando Smith	Hawai'i Wildfire Management Organization
Pat Cunningham	Kona Community Cultural and Education Foundation
Patti Cook	Waimea Middle Public Charter School
Paulo Maurin	NOAA Coral Reef Conservation Program
Pelika Bertlemann	University of Hawai'i Sea Grant College Program
Peter Hackstedde	Puakō Community Association
Phil Hayward	Puakō Science Committee
Pii Laeha	Mauna Lani Resort
Rae Okawa	Hawai'i Wildlife Center
Randy Clarke	Puakō Makai Watch
Rebecca Cope	Puakō Reef Teach
Rebecca Most	The Nature Conservancy
Representative Cindy Evans	Hawai'i State Legislature, House of Representatives
Rick Gmirken	Ala Kahakai National Historical Trail Association, National Park Service
Ross Martin	Hawai'i Division of Aquatic Resources
Sharon Sakai*	Kohala Coast Resort Association
Sherman Warner*	Waimea Community Association President
South Kohala Community Development Plan	SKCDP AT

Action Team	
Steve Cotton	Hawai'i Division of Aquatic Resources
Stuart Lau	Queen Emma Land
Tara Holitzki	University of Hawai'i at Hilo Analytical Lab
Tom Loomis	Hawai'i Wildfire Management Organization
Tova Callender	West Maui Watershed Coordinator
Tracy Wiegner	University of Hawai'i at Hilo
University of Hawai'i Sea Grant Extension Agents and Staff	University of Hawai'i Sea Grant College Program
Vas Podorean	Liquid Robotics
Verl Nakama	Division of Conservation and Resources Enforcement
Waikoloa Community	Waikoloa Community Association
Waimea Community	Waimea Community Association
Wendy Wiltse	Environmental Protection Agency
West Hawai'i Community College Marine Science Advisory Board	WHCC
West Hawai'i Fisheries Council board	WHFC
William Tam	DLNR Commission on Water Resource Management

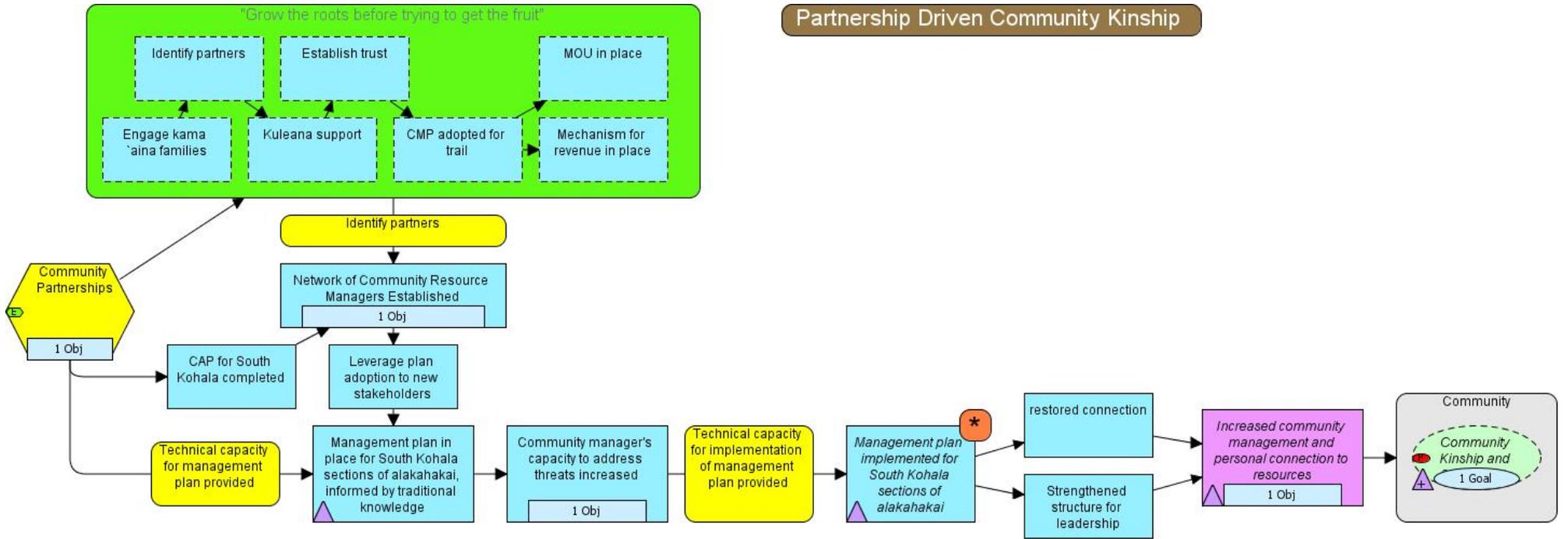
*contact changed jobs during this project timeline, new staff may be in this position

South Kohala Conservation Action Plan: Strategies for Action and Measures of success

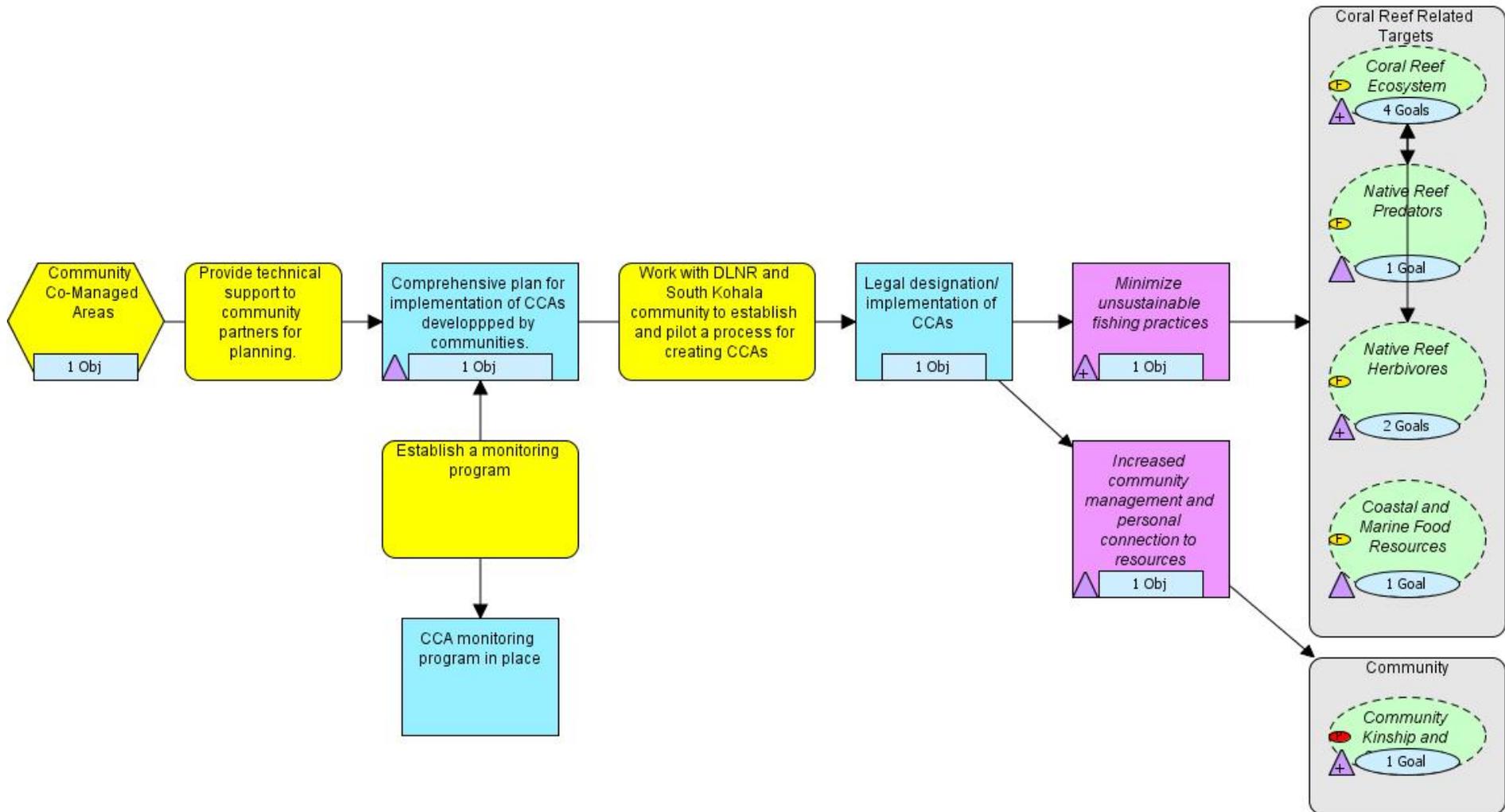
Legend Table	
	Project
	Conceptual Model
	Results Chain
	Target
	Direct Threat
	Contributing Factor
	Intermediate Result
	Threat Reduction Result
	Strategy
	Goal
	Objective
	Indicator

Legend Table	
	Stress
	Text Box
	Group Box
	Task
	Method
	Activity
	Measurement

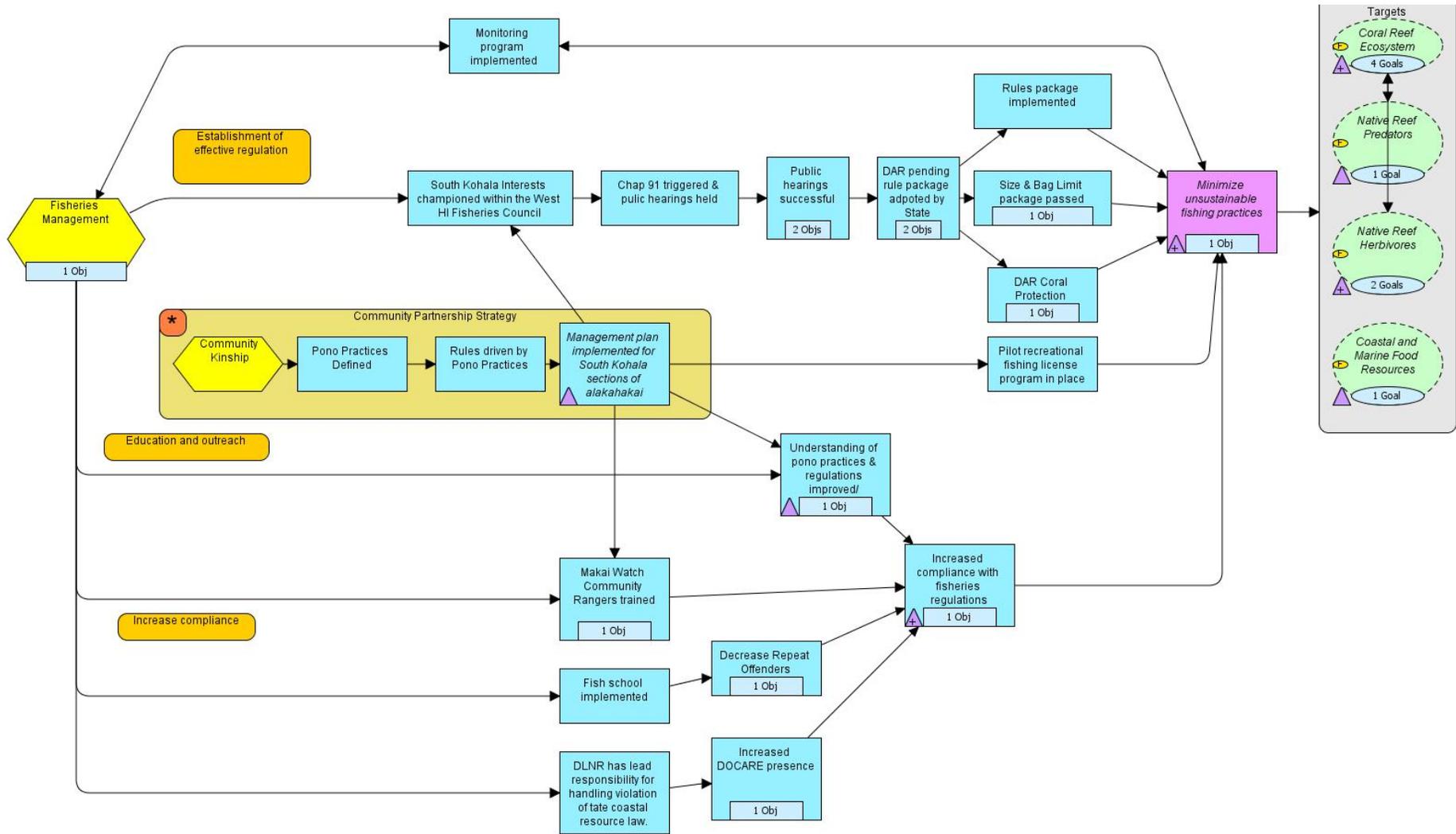
Community Partnerships



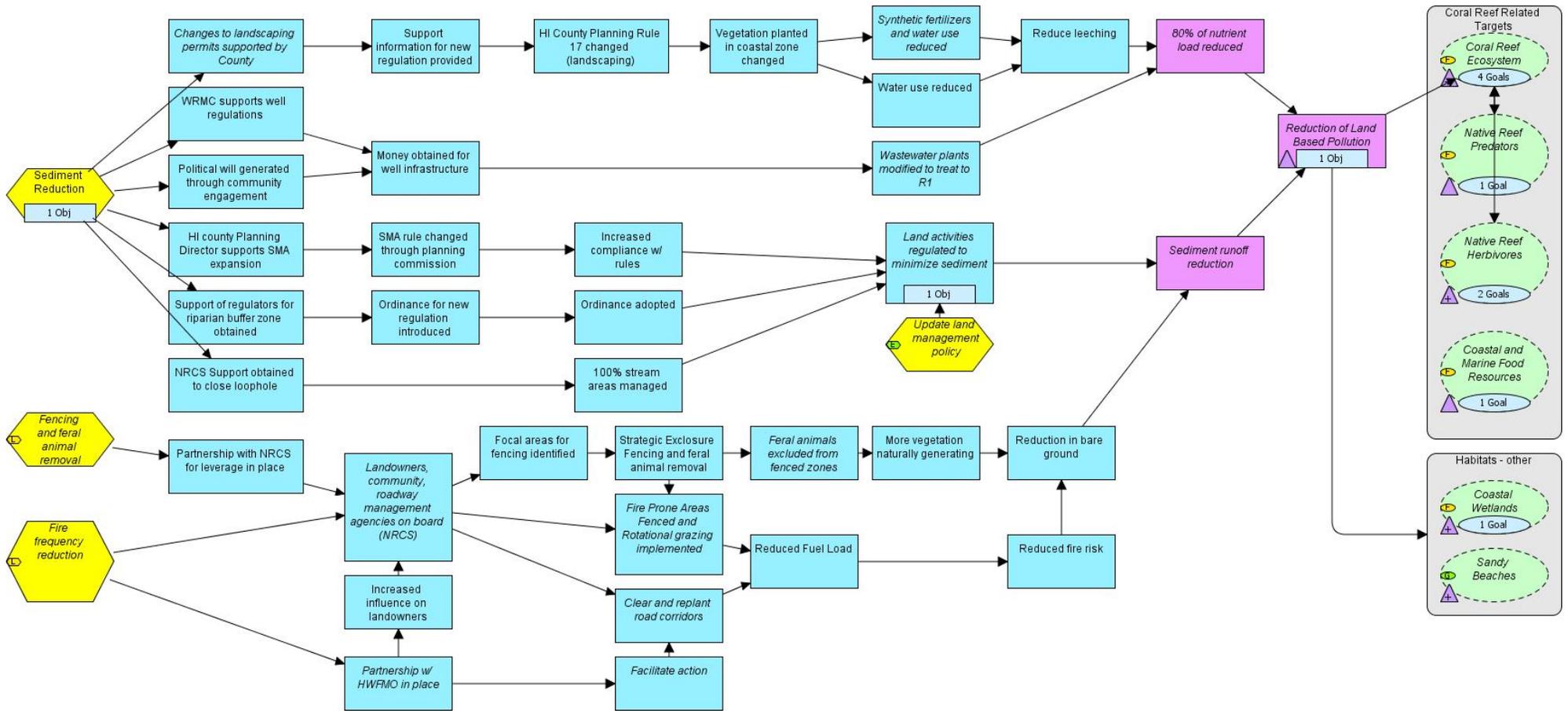
Community co-managed areas



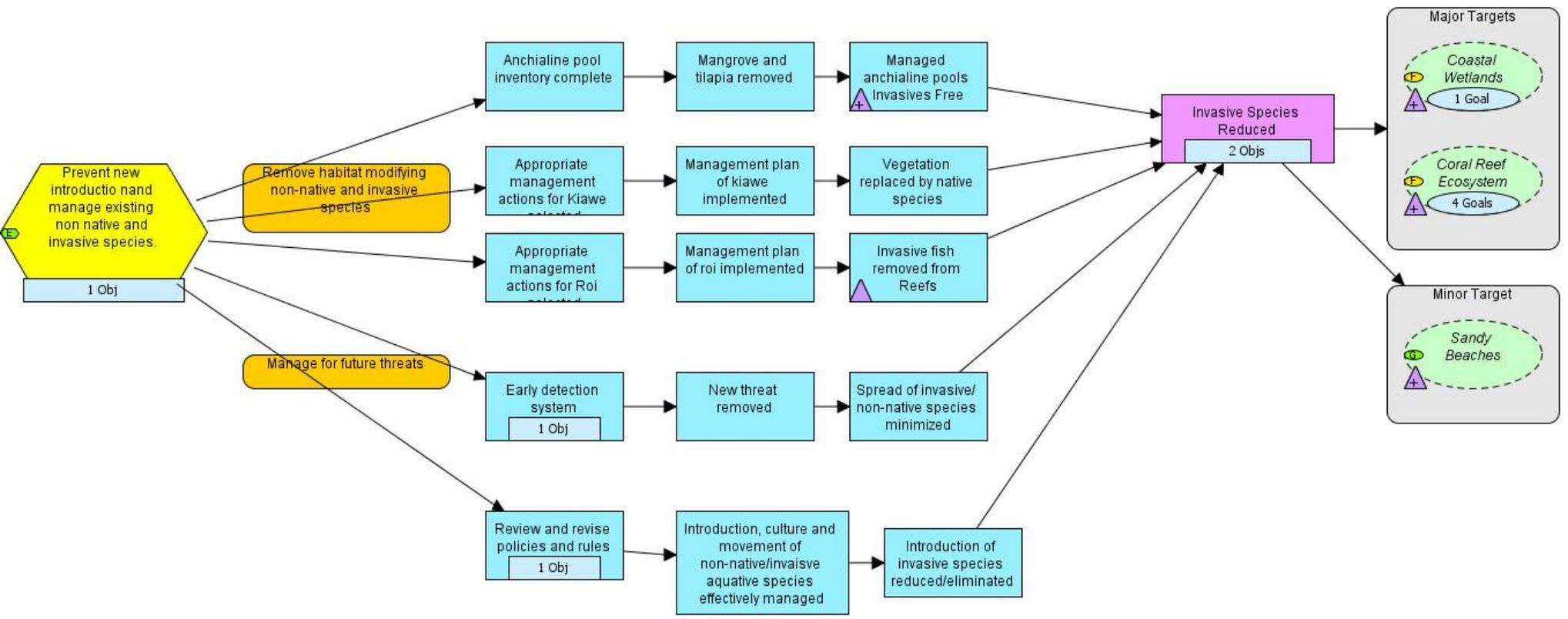
Fisheries management



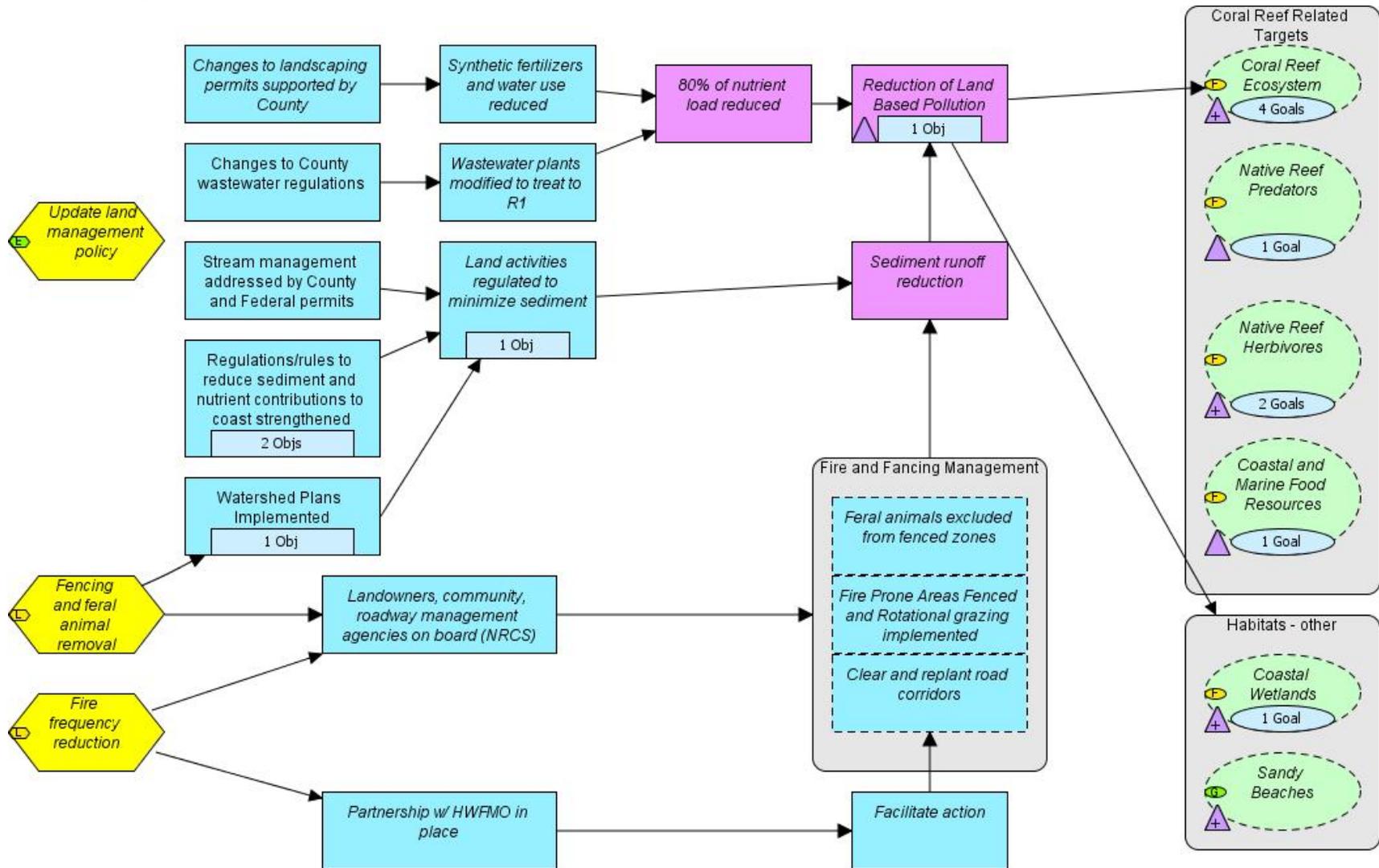
Sediment Reduction



Invasive Species



Land-based pollution



South Kohala Coastal Partnership



Sierra Tobiason

South Kohala Coastal Partnership Coordinator

Coral Reef Working Group meeting

July 2014



HAWAII
~coral reef~
STRATEGY

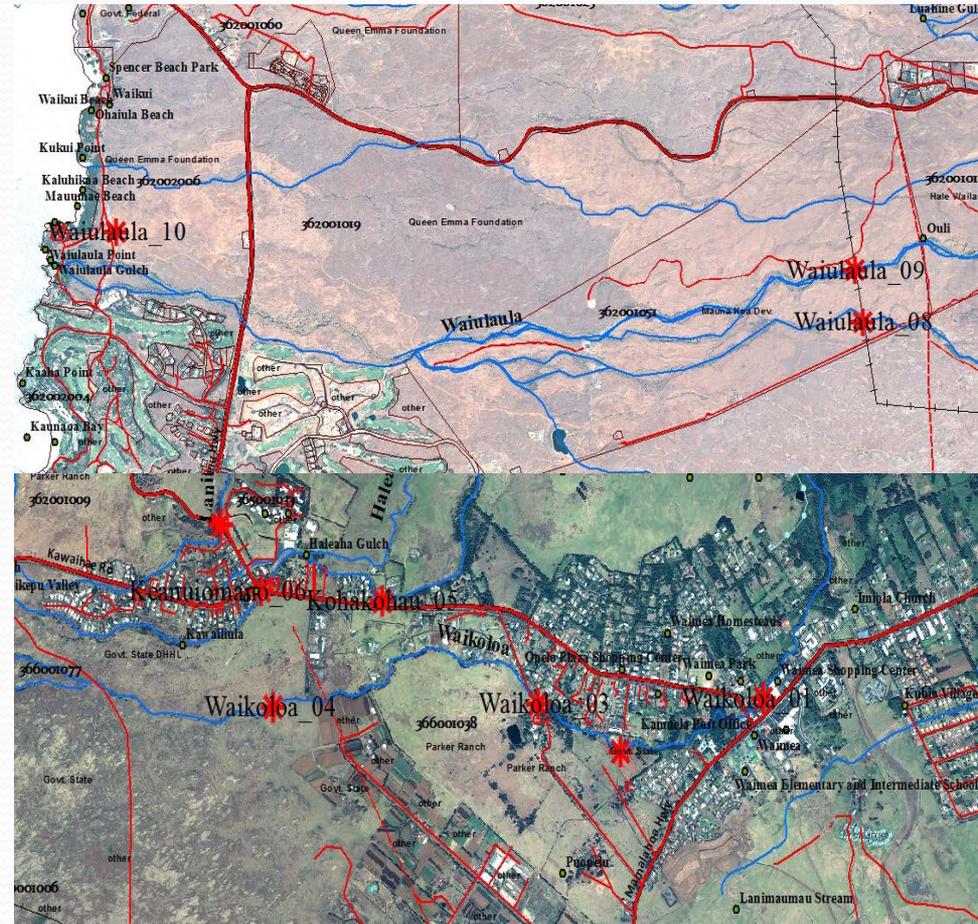
Overview

- Updates on current projects
 - Preliminary results
 - Timeline
 - Deliverables
- Upcoming projects
 - Timeline
 - Deliverables
- Potential projects
- Discussion



Stream Corridor Assessment

- Sustainable Resources Group Intrnl Inc. (SRGII)
- \$45,200
- Wai'ula'ula watershed
- Project timeline: Ending Sept. 2014
- Preliminary results:
 - Monitoring 10 sites
 - Photo documentation, Erosion pin installation
- Outcomes:
 - Recommendation for stream corridor setbacks and remedial actions.
 - 5 sites selected for Department of Health Clean Water Branch Grant funding





Ungulate Exclusion and Sediment Reduction

- Kailapa Community Association
- \$93,995
- North of Kawaihae and Honokoa Gulch
- Project timeline: Ending Sept. 2014
- Preliminary results:
 - 13 acre fenced area to exclude goats
 - Re-vegetating with native plants (some natural)
 - Built a sediment check dam to reduce and monitor runoff
- Outcomes:
 - Engaged community involved with watershed management
 - Reduction of LBSP



Partners: Kohala Watershed Partnership, Waikoloa Dry Forest Initiative, Ala Kahakai Trail Association



November 2013



January 2014



April 2014



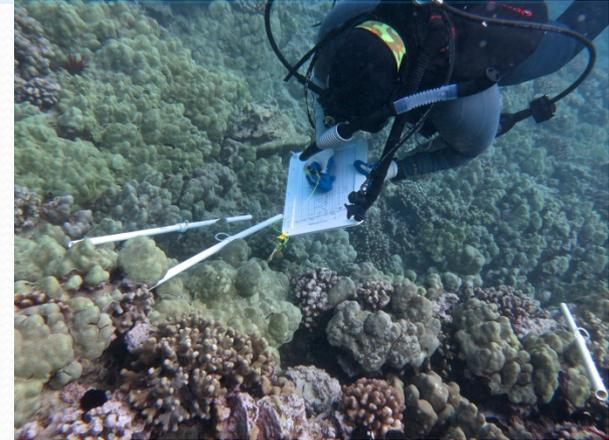


Sediment check dam
community work day –
June 6, 2014
With help from Kohala
Watershed Partnership
crew, and Kailapa
community volunteers.

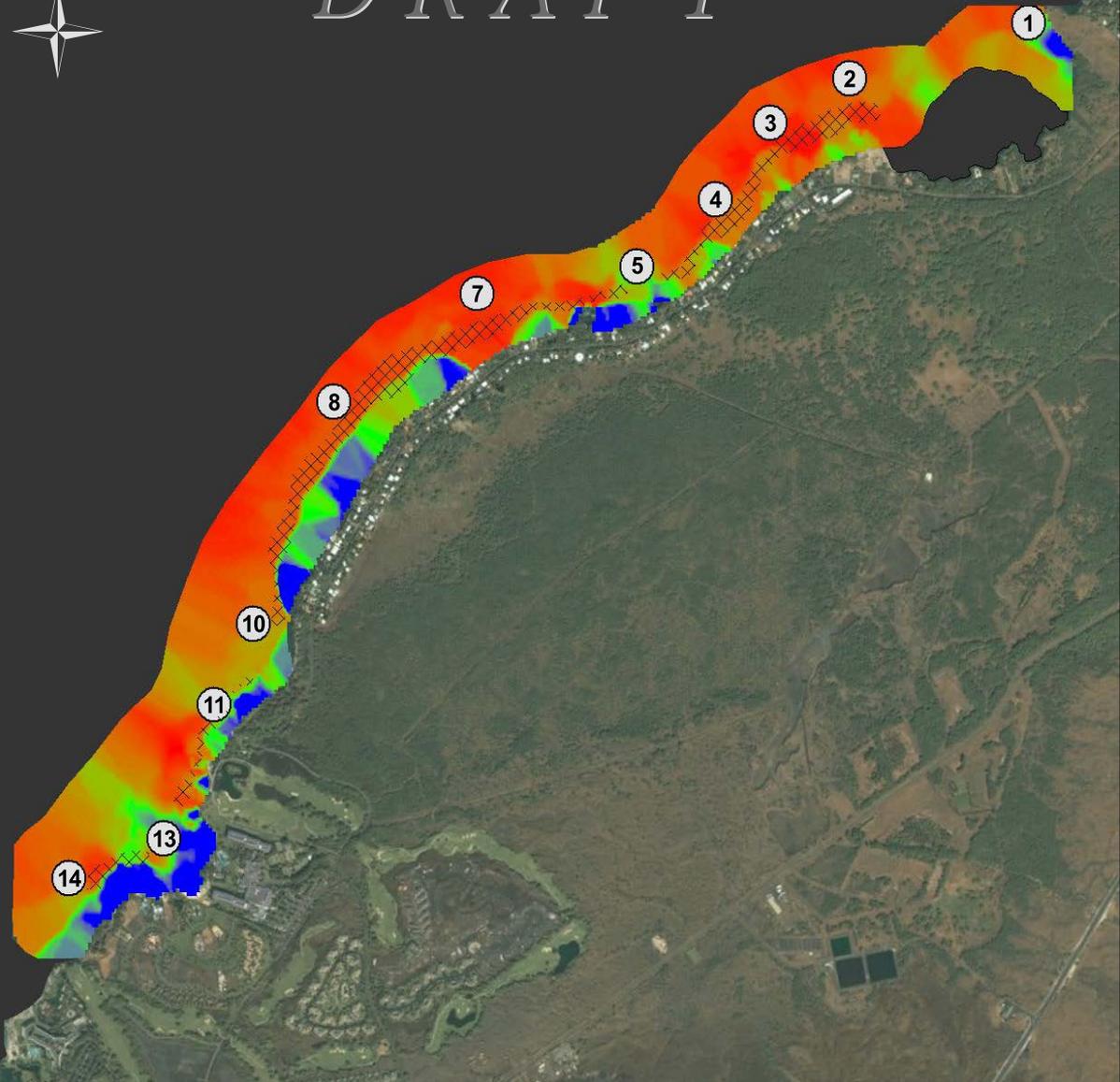


Coral Health and Land Based Sources of Pollution

- The Nature Conservancy
 - Puako and Mauna Lani area
 - \$36,933
 - Project timeline: Ending Sept. 2014
 - Preliminary results:
 - Monitoring 12 sites
 - Water quality
 - Coral health
 - Outcomes:
 - Evaluate impacts of LBSP on coral reefs in the area
 - Map of coral reef health
 - Describe patterns
 - Prioritize corrective action
- Partners: University of Hawaii at Hilo,
Puako Community Association



DRAFT



ion
and low coral cover.

Hawaiian Moon Fishing Calendar

- UH Manoa, Fisheries Ecology Research Lab
- Multiple locations
- Project timeline: Sept. 2014 +
- \$29, 885
- Preliminary results:
 - Spawning seasons are highly variable for Manini.
 - Size at maturity was significantly different between locations but above the 5" legal size limit at all locations.
 - Over 450 fishermen have participated.
 - Over 1,960 fish from 39 species analyzed.
 - Received West Marine Conservation Grant to help motivate fishermen.
- Outcomes:
 - Pono fishing practices identified by each community.
 - Community fish spawning moon calendars developed.
 - Comparison of spawning seasons at multiple sites.



Coral Settlement and Environmental Conditions

- University of Hawaii, HIMB
- \$59,929
- Project timeline: January 2014 - January 2015
- Preliminary results:
 - 38 monitoring sites
 - Recruitment arrays deployed in April/May
 - Water quality data
- Outcomes:
 - Reports and publications:
 - Determine efficacy of land restoration
 - Understand the potential for marine ecosystems to recover
 - Assess the threat of mud deposits on coral reef ecosystems



Ongoing projects, education & outreach

- Developing and implementing communication plan
- Sharing updates at conferences, meetings and online
- Monitoring projects and providing assistance
- Facilitating site visits with partners and project development
- Helping with Malama Aina work days –
 - Beach clean ups, native planting, watershed restoration



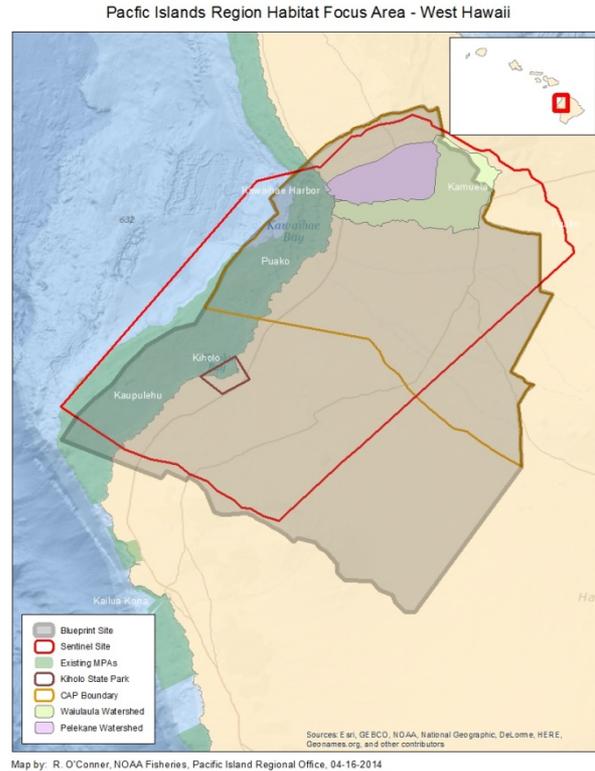
S.Kohala projects & activities – NOAA habitat blueprint

Site visits & local stakeholder meetings

- Habitat blueprint team
- NOAA fisheries
- Pacific Services Center



South Kohala Mapping Project



- NOAA Habitat Blueprint Focus area
- Collaborative data sharing
- Online Tool for resource managers and community
- NOAA, Ala Kahakai National Historic Trail Association, The Nature Conservancy, Natural Resources Conservation Services, Hawaii Wildfire Management Organization, UH Sea Grant, Division of Aquatic Resources, Hawaii County
- Available – September 2014



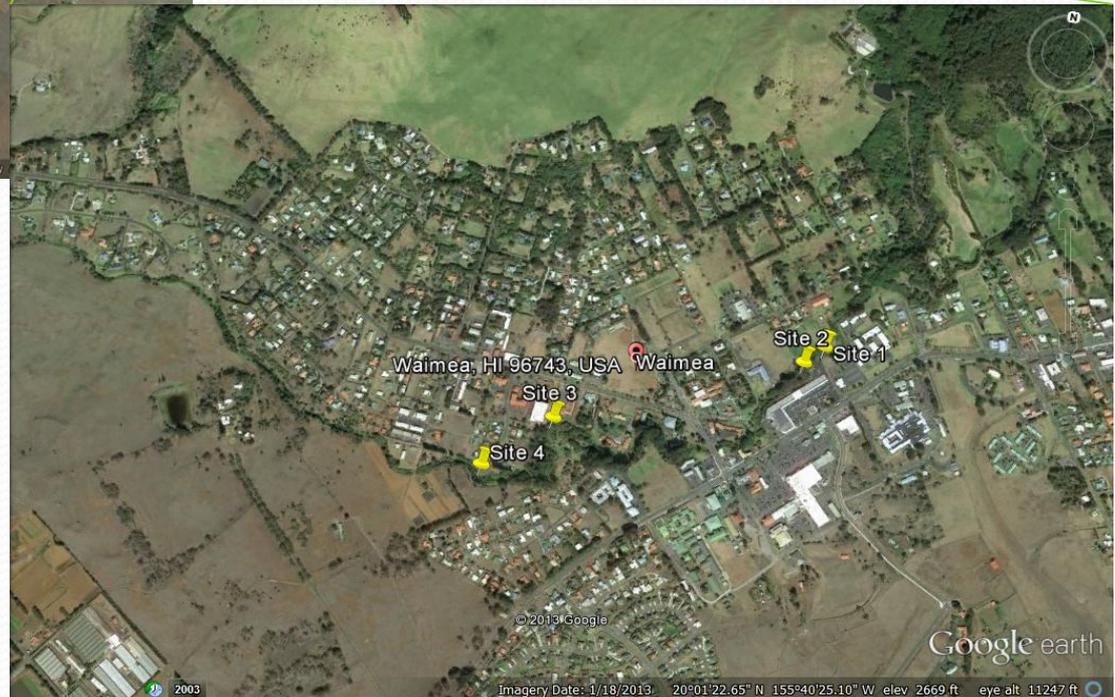
Upcoming projects



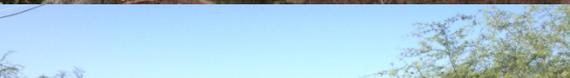
Implement Best Management Practices Wai'ula'ula Watershed



- Department of Health Clean Water Branch Watershed Implementation Grant
- \$427k
- September 2014 - 2016
- UH Sea Grant



Objective: Reduce storm water run off and non point pollution at 5 sites by implementing best management practices along 11,100 feet of the stream riparian corridor.



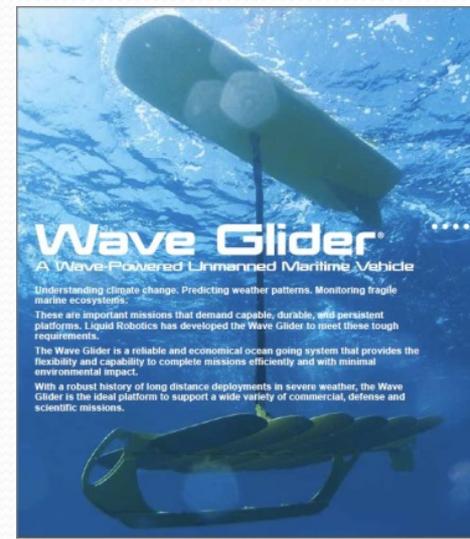
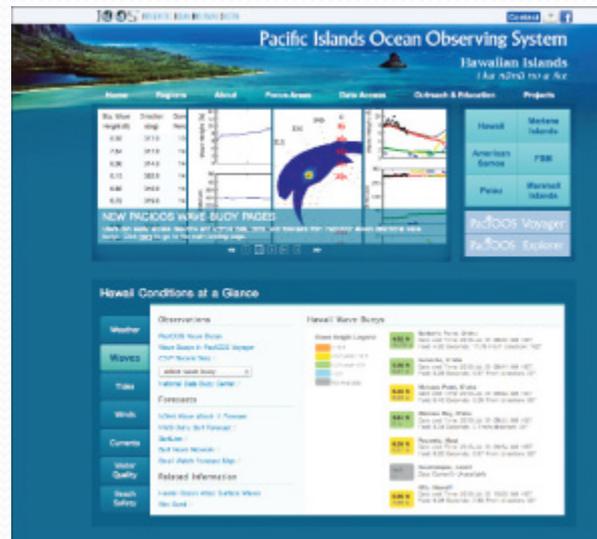
Google Earth



Watershed Implementation Grant

Coastal Monitoring Tool Kit (C-WATER KIT)

- NOAA Marine Education and Training Grant
- \$15,000
- Estimated to start: July 2014 – Sept. 2015
- UH Sea Grant
- Two tool kits : GPS, Camera, Nutrient test kits, YSI, multi-parameter meters, EOR info.
- Community awareness and Citizen Science training
- Online data portal
 - PACIOOS
- Additional data collection
 - Liquid Robotics



Spatial distribution and effects of sewage on Puako's coral reefs

- Drs. Tracy Wiegner, Jim Beets, Steven Colbert, and Jason Adolf & Puako Community Association
- July 2014-Sept. 2015
- Water quality and nutrient studies, dye tracers
- Provide supporting data for cesspool replacement efforts



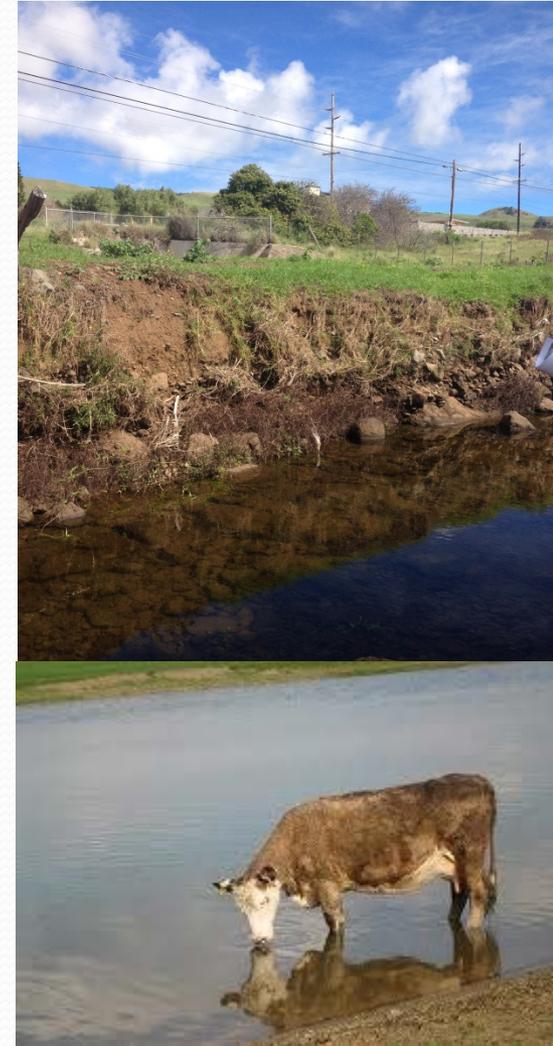


Potential projects FY13 & FY14



Stream Stabilization – FY13

- Estimated cost: \$60K
- Sites: (2 potential sites) ‘Ouli park area and State land
- Problem: Stream channel erosion
- Solution:
 - Fence off perennial pools from cattle
 - Re-vegetate areas with native plants
 - Repair and secure damaged streambanks
- Partners: SRGII, Mike Donoho, Ka ‘Ahahui O Ka Nahelehele, NRCS, Mauna Kea Soil and Water Conservation District

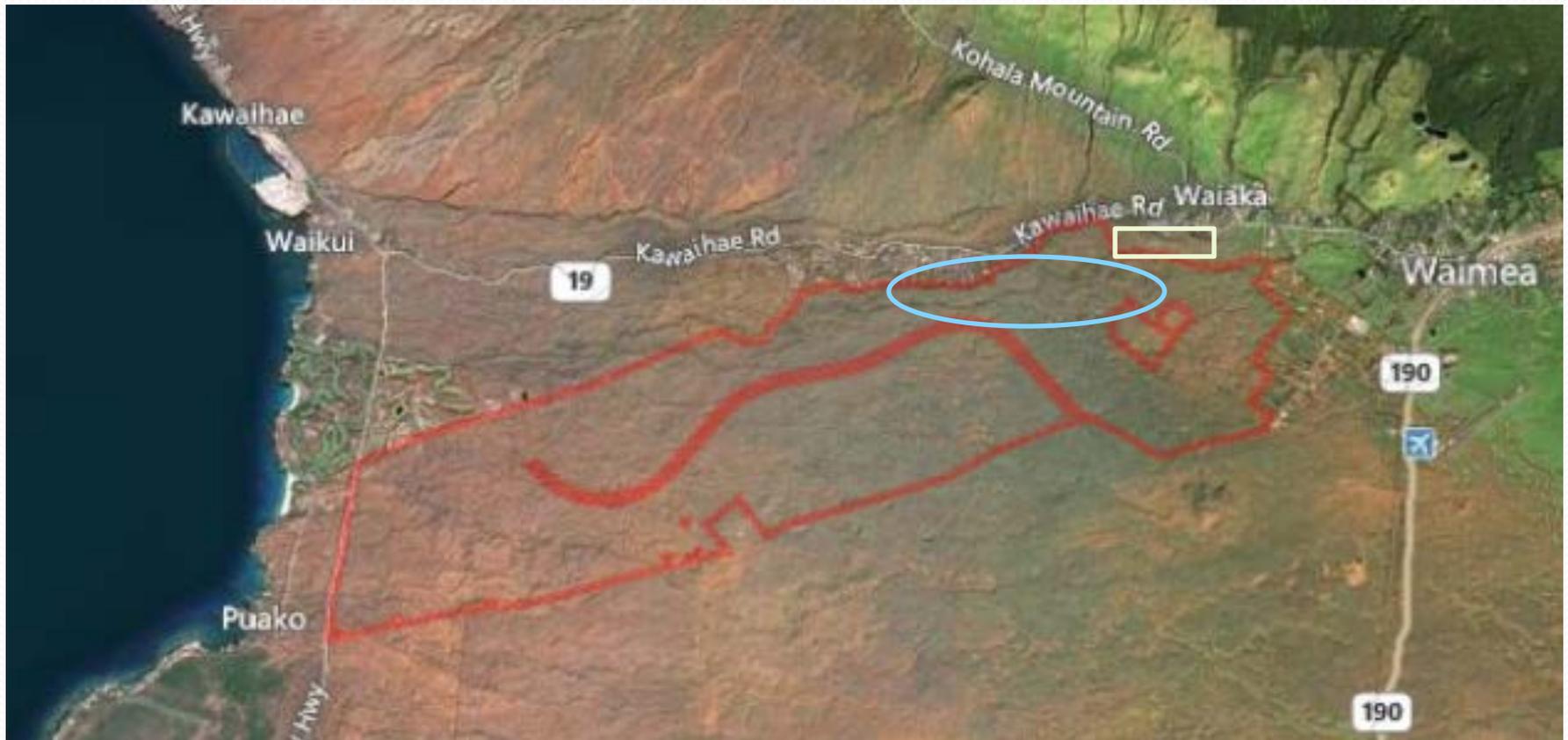


Proposed 'Ouli Park site



Hawaii county - formal agreement with 'Ouli Park for 2,900 linear feet of Keanuiomano stream corridor

State land with perennial pools



LBSP FY14

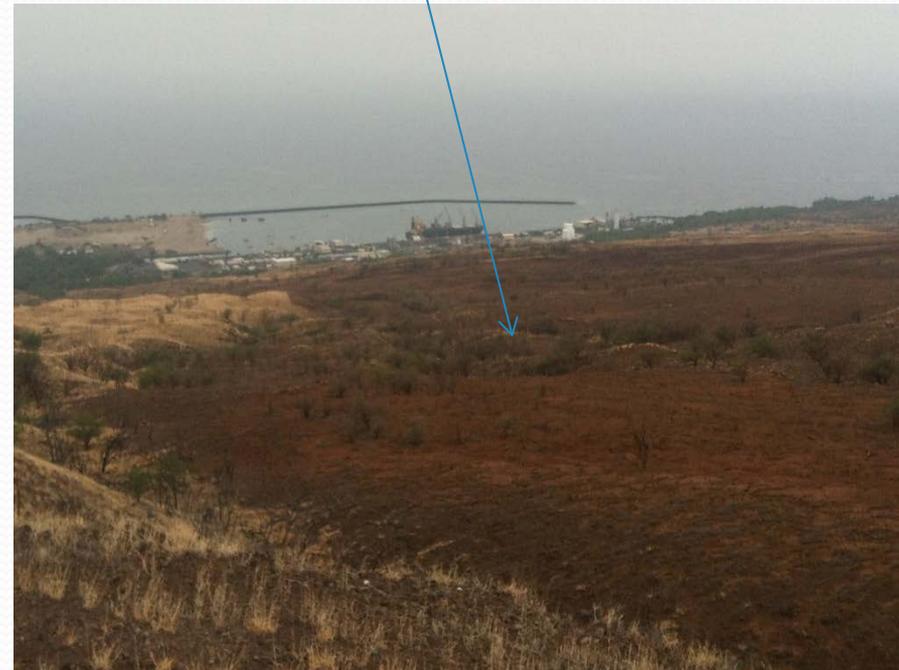


LBSP FY14



Department of Hawaiian Homelands

Paddock 4a Parker ranch





LBSP- Sediment retention projects

- Estimated cost: \$50K
- Site: Paddock 4a
- Problem: Bare ground, loose fine soil, dry, 4wd
- Solution/tasks: Develop "kipukas" (patches of vegetation) using various materials (hay bales) to:
 - capture sediment
 - Potentially capture moisture to promote re-vegetation.
- Partners: KWP, NRCS, HWMO, MKSWCD



LBSP FY14– Fountain grass control

Estimated cost: \$50K

Potential site(s): Waikoloa Highlands

Problem: Fire and invasive species

Solution/Tasks: Control fountain grass

Outcomes: Reduce fuel load, plant native plants, reduce erosion.

Partners: Waikoloa Dry Forest Initiative,
Hawaii Wildfire Management Organization,
Kohala Watershed Partnership





Waikoloa Village Association Land
Fire prevention, fuels management and native re-vegetation

S.K. CAP - FY14?

South Kohala Stewardship Awards & Training

- Estimated cost: \$40K
- Site: South Kohala Communities
 - 4- 5 subawards
- Problem: Communities need additional support for materials and implementation of small scale projects in their areas.
- Solution/tasks:
 - Hotel Stewardship Guide
 - Reef friendly landscaping
 - LBSP reductions
 - Community capacity building
 - Demonstration projects
- Partners: CORAL, Kohala Coast Resort Association, NRCS, TNC, TKC, Kawaihae, Puako, Waikoloa, Waimea Communities.



Mahalo from the South Kohala Coastal Partnership



tobiason@hawaii.edu

www.southkohalacoastalpartnership.com

www.facebook.com/southkohalacoastalpartnership

Strategies & Objectives

1. Community Partnerships

Active communities engaged in managing all six target coastal resources throughout S. Kohala incorporating kinship into their approach by 2015.

2. Community Co-Managed Areas

Work with communities to establish at least one Community Co-management Area (CCA) in S. Kohala by 2015 and initiate at least two additional areas by 2020.

3. Fisheries Management

Implement fisheries management actions that ensure healthy coastal resources through supporting pono (sustainable and appropriate) fishing practices, and increase compliance by 50% by 2020.

Strategies & Objectives

4. Sediment Reduction

Implement priority projects to reduce sediment and measurably improve the condition of priority coastal targets in at least one priority coastal area by 2015.

5. Invasive Species

Prevent new introductions and manage existing non-native and invasive species to restore/maintain ecosystem function for 50% of managed priority anchialine pools, fishponds, and reefs by 2020.

6. Additional threat analysis

Understand and quantify effects of specific additional threats on CAP targets by 2020.

Table 18: Priority Levels for Projects in the Wai'ula'ula Watershed Management Plan

Priority Level 1 Projects (1-5 years)	Priority Level 2 Projects (6 to 10 years)	Priority Level 3 Projects (11-15 years)
NUTR-2: Fence riparian areas to exclude cattle	NUTR-1, SED-1: Assist Farmers in Lālāmilo Farm Lots with Conservation Plans	SED-7: Identify and revegetate bare land in watershed
NUTR-3: OSDS education and outreach	NUTR-4: Incorporate point-of-sale inspections of OSDS	STORM-4: Upgrade existing runoff control structures
SED-2: Extend Waimea Irrigation System to lower watershed	SED-6: Remove goats below Queen K	STORM-5: Develop operation and maintenance guidelines for County roads
SED-3: Divide large paddocks in grazing areas	FIRE-2: Fence large grass-dominated area below Queen K to manage fine fuels	EDU-1: Develop/ adapt educational materials
SED-4: Assess streambank erosion	FIRE-5: Construct and maintain fuel breaks	EDU-2: Provide on-the-ground service learning opportunities
SED-5: Remove goats between rock wall and Queen K	STORM-2: Dry well insert installation and maintenance program	ADMIN-1: Wai'ula'ula Watershed Coordinator
FIRE-1: Fence large grass-dominated area above Queen K to manage fine fuels with cattle grazing	STREAM-1: Convert marginal grazing lands into native vegetation via CREP	MONIT-1: Implement monitoring program
FIRE-3: Update fire resources maps	STREAM-3: Restore riparian areas within the watershed	
FIRE-4: Develop agreements for access and water use	STREAM-4: Policy language for overlay district that protects wetlands and riparian areas	
FIRE-6: Develop post-fire restoration manual	AQU-1: Remove illegal diversions	
STORM-1: Survey and line catch basins within the watershed	AQU-2: Evaluate need for specific instream flow standards	
STORM-3: Stormwater educ and outreach program	AQU-3: Determine the effects of dams on 'o'opu habitat	
STORM-6: Develop & implement LID outreach program	AQU-5: Protect priority instream perennial pools	
STREAM-2: Educational events/projects to educate about riparian buffers	EDU-1: Develop/ adapt educational materials	
AQU-4: Invasive aquatic species control	EDU-2: Provide on-the-ground service learning opportunities	
EDU-1: Develop/ adapt educational materials	ADMIN-1: Wai'ula'ula Watershed Coordinator	
EDU-2: Provide on-the-ground svc learning opportunities	MONIT-1: Implement monitoring program	
ADMIN-1: Wai'ula'ula Watershed Coordinator		
MONIT-1: Implement monitoring program		

South Kohala Coastal Partnership

Sierra Tobiason
South Kohala Coastal Partnership Coordinator
University of Hawaii Sea Grant College Program
Hawaii Island Extension Agent



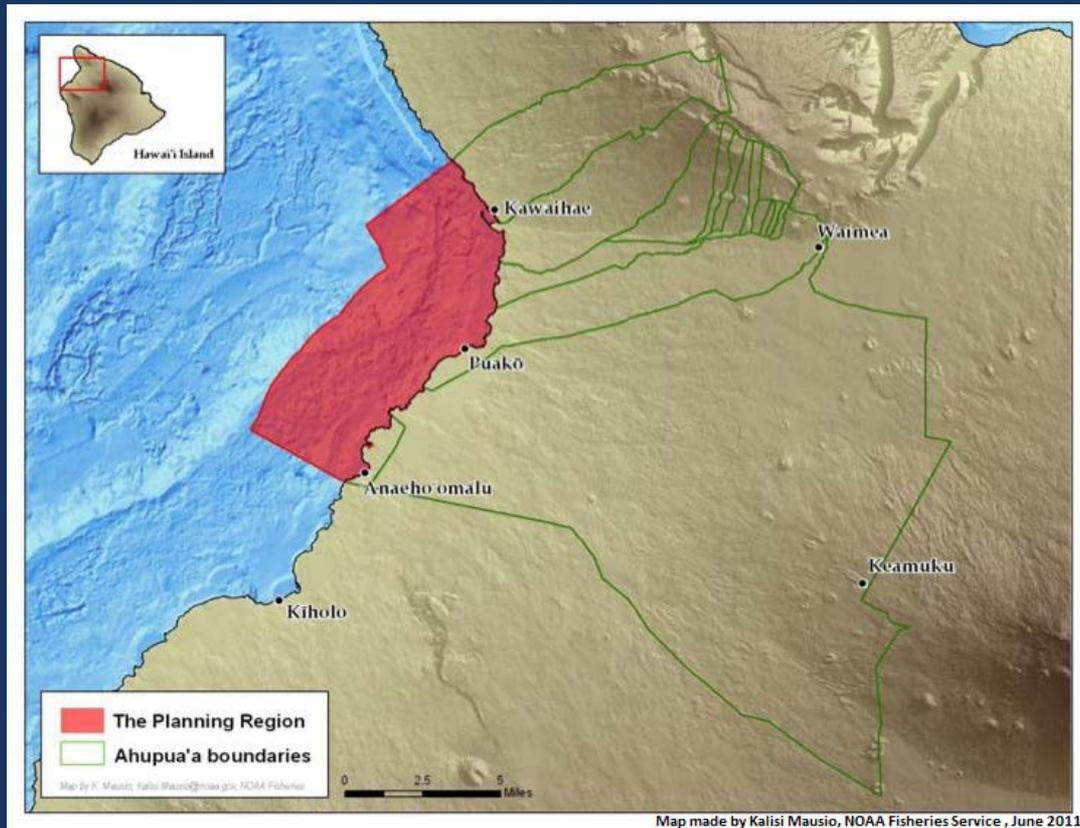
HAWAII
~coral reef~
STRATEGY



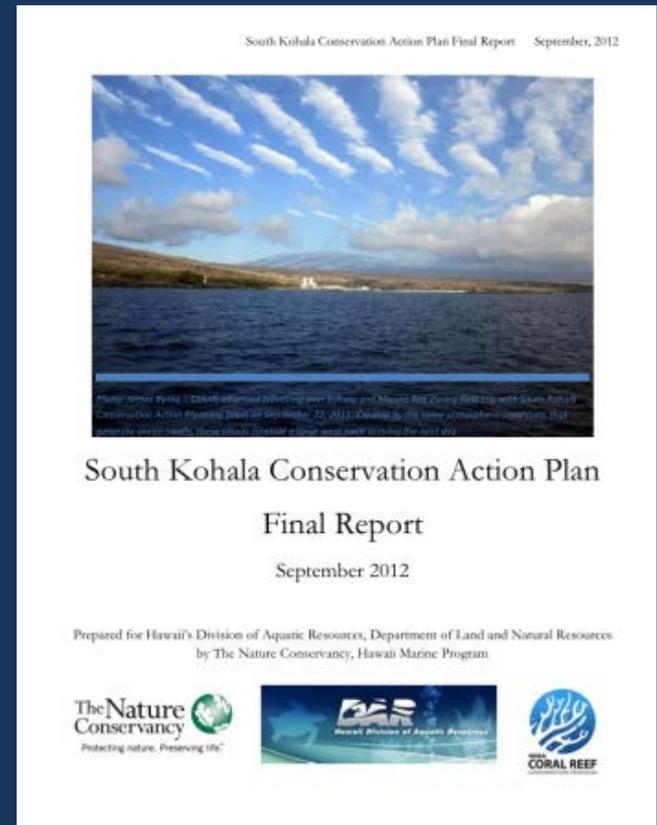
Overview

- Priority Site Activities
 - South Kohala Conservation Action Plan
 - South Kohala Coastal Partnership
 - Watershed management plans
- Short term outcomes
 - Impacts & conservation targets identified
 - Projects
- Long term outcomes
 - Measureable reduction of threats
 - Partnerships strengthened
- Next steps

South Kohala Priority Site



- Kawaihae to Anaeho'omalu
 - 24 miles of coast line
- Planning documents - Ridge to Reef strategies
 - South Kohala Conservation Action Plan (SKCAP)
 - Two Watershed Management Plans
 - Community Wildfire Protection Plan



SOUTH KOHALA COASTAL PARTNERSHIP

- Mauna Lani Resort Loko i`a
- Nā Kālai Wa`a
- Kanu O Ka `Aina New Century Charter School
- West Hawaii Fisheries Council
- Puakō Community Association
- Community Stakeholder
- University of Hawai`i at Hilo
- Division of Conservation and Resources Enforcement (DOCARE)
- DOCARE Supervisory Agent
- Hawai`i County Planning Dept.
- Community Stakeholders
- Ka`ūpūlehu Marine Life Advisory Committee
- Kamehameha Schools Kapili `Oihana Program
- Ainalea Developments
- Kohala Coast Resort Association
- Kohala Watershed Partnership

- Office of Hawaiian Affairs
- Mauna Lani Homeowners Association
- Hualalai Resorts
- Division of Aquatic Resources
- CORAL Reef Alliance
- South Kohala Community Development Plan Action Committee
- Waikoloa Land Company
- Hualalai Resorts
- Kawaihae Homesteads Community Association
- Community Stakeholder
- Mauna Lani Sea Adventures
- University of Hawai`i SeaGrant
- Hawai`i Preparatory Academy
- Environmental Protection Agency
- United States Geological Survey
- Ala Kahakai National Historic Trail
- The Nature Conservancy
- University of Hawai`i

South Kohala Core Team working group:

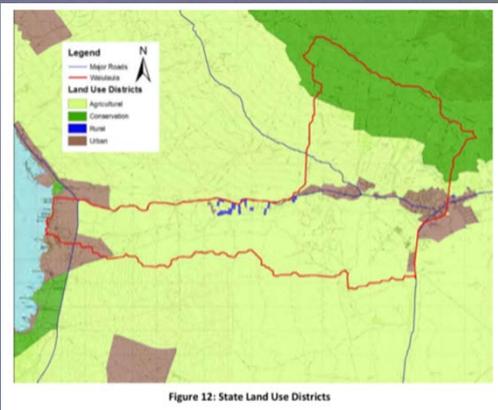


South Kohala Watersheds

Pelekane Watershed



Wai'ula'ula Watershed



South Kohala Watersheds

Pelekane Watershed

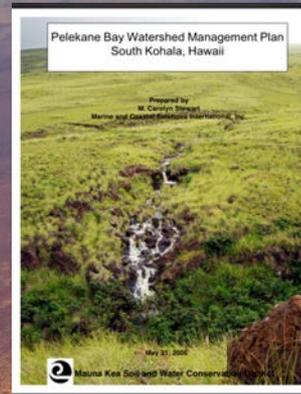


Figure 9: Coastal Water Quality Monitoring Sites
Pelekane Bay Watershed Management Plan - 2005

Wai'ula'ula Watershed

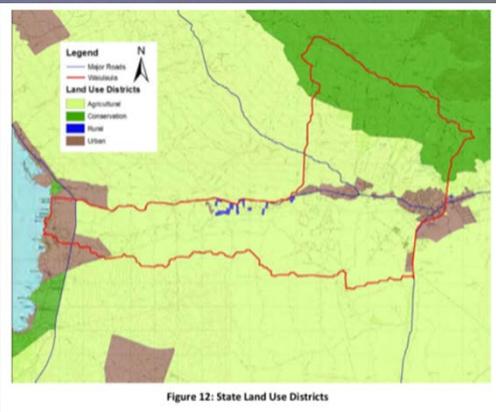


Figure 12: State Land Use Districts

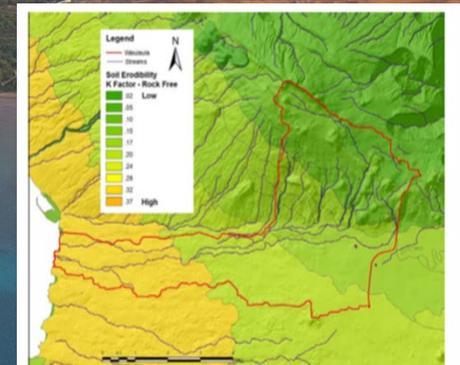
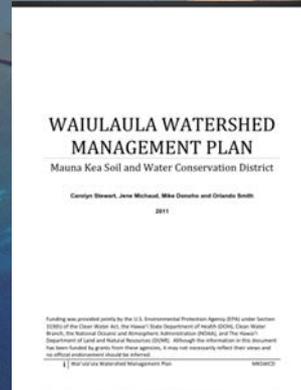


Figure 10: Soil Erodibility

Habitat Blueprint

West Hawaii Habitat Focus Area



NOAA HABITAT BLUEPRINT
A framework to improve habitat for fisheries, marine life, and coastal communities

Home
About the Habitat Blueprint
Fact Sheets
Habitat Focus Areas
Grant Letters
Public Reports
Resource Base
Healthy Habitat Objectives
Regional Habitat Initiatives
Frequently Asked Questions
Habitat Blueprint Incentive (NOAA only)
Habitat IQ (NOAA/USFWS)

Tweets

NOAA Habitat @NOAAHabitat
Very cool RT @NOAAHabitat: While scientists studied [Pinnacled Inlet](#) in Alaska, artists painted a map of the island's coastline.

NOAA Habitat @NOAAHabitat
RT @shawn_sing: Young salmon don't reach the sea. Adult salmon can't reach spawning areas. [Habitat](#) [NOAA](#) [USFWS](#)

NOAA Habitat @NOAAHabitat
Tweed to @NOAAHabitat

NOAA Habitat @NOAAHabitat
NOAA has chosen two sites in the Pacific Islands—Guam and West Hawaii—as the next Habitat Focus Areas under NOAA's Habitat Blueprint

Mano-o-Guam, Guam
Located at the southern tip of Guam, the Mano-o-Guam watershed contains extensive seagrass beds and coral reefs that support the local abalone, a highly valued species. The seagrass beds and pattern reefs in Carlos Lagoon also provide important forage and nesting habitat for sea turtles.

Threats
Poor water quality linked to erosion on the steep hillsides and infrastructure impacting the coral reefs. Habitat loss, land animals, and off-roading vehicles have accelerated erosion. Submergence can have serious impacts to coral health by increasing susceptibility to disease, decreasing growth rates, and affecting coral settlement.

Invasive species, such as crown-of-thorns starfish, overabundance of species, such as parrotfish.

Projects Underway
NOAA is currently working with partners and the local community to develop and test watershed restoration techniques such as:

- streambank stabilization
- bamboo removal
- planting riparian buffers

Work on the Mano-o-Guam Focus Area

West Hawaii
The west side of the Big Island is known for white sandy beaches and coral reefs that make it a popular tourist destination. The region is home to several threatened and endangered species as well as species of concern that are important to Hawaii's economy, culture, and environment.

Threats

- Drought
- Fire
- Invasive species
- Human impacts such as development

The South Kula district is one of the fastest growing areas on the Big Island, and development on the site, land-use change, tree-felling, residential, and commercial sites to meet stress and very popular beaches. There are a variety of historical sites including archeological sites, traditional fishing areas, gathering sites, and Hawaiian fish ponds.

Projects Underway
NOAA has partnered with communities and organizations to host regular coastal marine debris clean-ups, invasive species removal efforts, and projects that fall within the strategy of the state's Conservation Action and Watershed Management Plans.

Work on the West Hawaii Focus Area



Conservation Targets

- Coastal and Marine Food Resources
- Coral Reef Ecosystems
- Native Reef Predators
- Native Reef Herbivores
- Coastal Wetlands
- Community Kinship & Stewardship



Priority Threats



Land Based Sources of Pollution

Sediment, nutrients, contaminants



Invasive Species

Removal and prevention



Unsustainable Fishing Practices

Harvest beyond sustainable yield

Strategies

- Community Partnerships
 - Active communities engaged in managing all six target coastal resources
- Community Co-Managed Areas
 - Work with communities to establish at least one Community Co-management Area (CCA)
- Fisheries Management
 - Implement fisheries management actions that ensure healthy coastal resources through supporting pono (sustainable and appropriate) fishing practices, and increase compliance.

Strategies

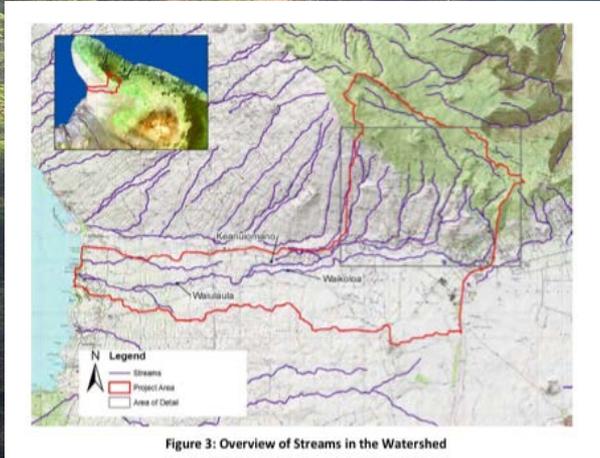
- Sediment Reduction
 - Implement priority projects to reduce sediment and measurably improve the condition of priority coastal target areas.
- Invasive Species
 - Prevent new introductions and manage existing non-native and invasive species to restore/maintain ecosystem function for managed priority anchialine pools, fishponds, and reefs.
- Additional threat analysis
 - Understand and quantify effects of specific additional threats on CAP targets

Coral Settlement and Environmental Conditions

- Paul Jokiel, Ku'ulei Rodgers, Yuko Stender
- 34 Sites
- Determine efficacy of land restoration and reef recovery
- Understand the potential for marine ecosystems to recover
- Assess the threat of mud deposits on coral reef ecosystems



Stream Corridor Assessment



- Sustainable Resources Group International Inc.
- Rapid assessment
- Photo documentation
- Erosion pin installation
- Monitoring plan
- Identified Best Management Practices



Coral Health and Land Based Sources of Pollution



- The Nature Conservancy
- Evaluate impacts of LBSP on the coral reefs of South Kohala
- Map coral health in relation to LBSP
- Characterize water quality
- Describe patterns in compromised coral health and link likely sources
- Guidance document prioritize management actions of LBSP on coral reefs in South Kohala

Puakō Coral Health Assessment

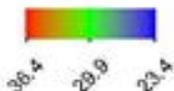
Water Quality Monitoring
Puakō-Mauna Lani
December 16-19th, 2013

 Wave Mixing Zone

 Area Not Surveyed

 Water Quality Sites

Surface Salinity



0 0.25 0.5

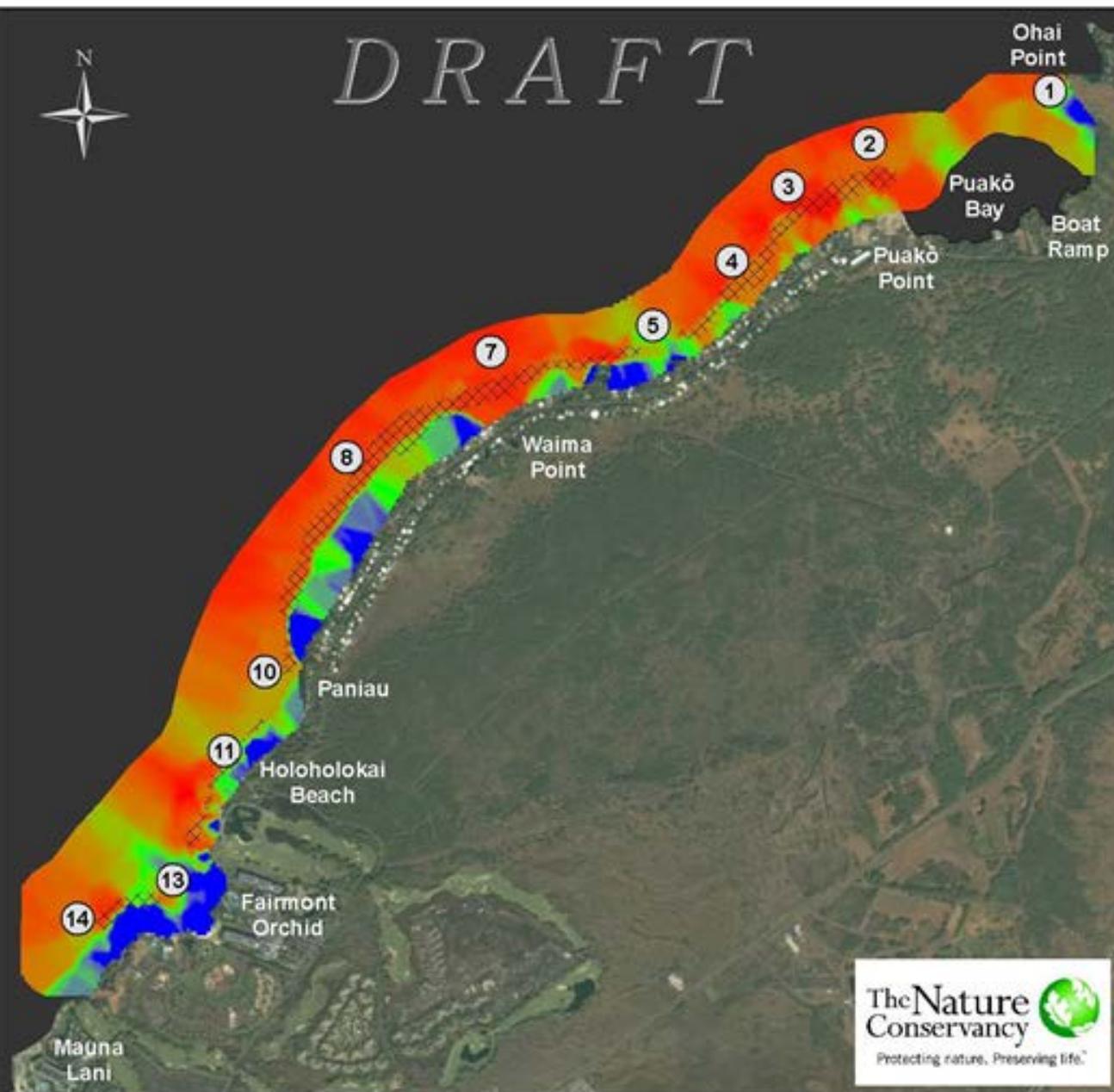
Miles

0 0.25 0.5

Kilometers

Surface salinity is a composite map of instantaneous measurements made between 8:45 a.m. and 12:30 p.m. HST on Dec. 16, 2013 and between 8:00 a.m. and 12:50 p.m. HST on Dec. 17, 2013. Surf height 1-3 ft during surveys.

Surface salinity map was created by interpolating 5753 survey points (Kriging method, ARCMAP) using a YSI 6920V2 sonde towed by kayak and shoreline measurements. Water quality site numbers are not sequential due to swell prohibiting sampling at all sites. Boat ramp area was excluded due to sedimentation and low coral cover.



Ungulate Exclusion and Sediment Reduction

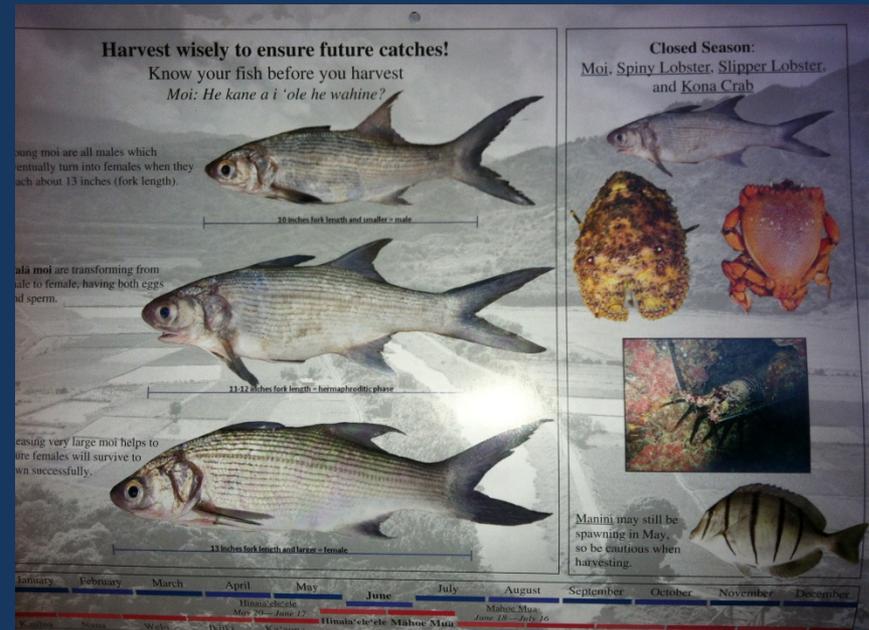
- Design, installation and maintenance of ungulate exclusion area
- Ungulate exclusion for recovery of native vegetation to stabilize sediment
- Planting of native flora and monitoring of re-vegetation
- Installation of soil retention with straw wattle and erosion pins
- Engage and educate community about watershed management and land use practices to minimize sediment run off



(Area to be fenced in)

Integrating Local Ecological Knowledge to Refine Traditional Fishing Moon Calendar

- Eva Schemmel and Alan Friedlander
- Both priority sites
- Reproductive characteristics and spawning seasons of Manini, Kala and Kole
- Community led moon calendars
- Pono practices

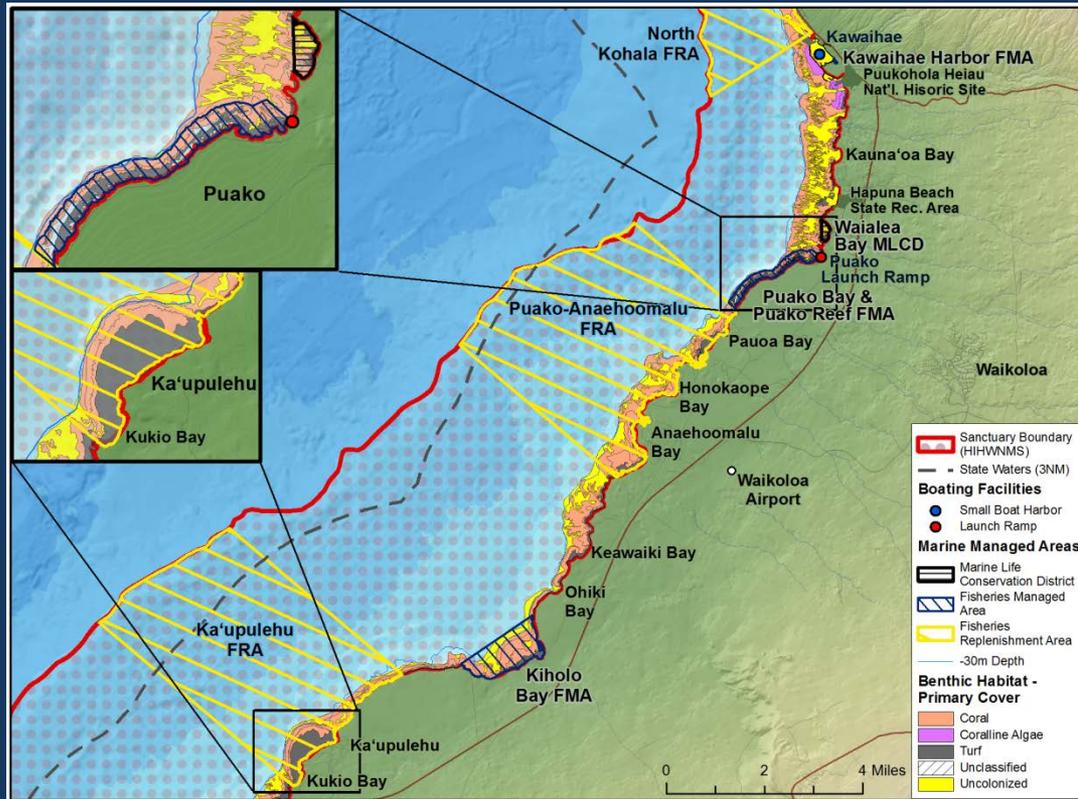


Puakō Makai Watch

- Puakō Community Association
- Randy the Ranger and the Puakō volunteer group driven to increase community knowledge of coral reefs, encourage compliance, and support responsible practice.
- Reef Teach volunteer training
- Coastal Community Management meetings



West Hawaii Regional Fishery Management Area



December 14, 2013 Gov. Neil Abercrombie signs the West Hawaii Regional Fishery Management Area Rules



Long term outcomes

- Stakeholders actively engaged in activities reducing threats to conservation targets
 - South Kohala Coastal Partnership
 - Puako Makai Watch
 - Roi Round ups & Ocean Safety Awareness events
 - Fire management planning – Fire break in Puako
 - Coastal Community Management Hui
 - Watershed restoration – sediment check dams, ungulate removal and native planting
- Management actions directed to address threats
 - Scientific monitoring & collection of baseline data
 - Habitat Blueprint Focus Area Designation

Next steps

- Tracking, monitoring and adapting projects
- Grant proposals submitted:
 - DOH watershed implementation projects,
 - NOAA water quality tool kits and online database, assessment of implementation projects
- Sharing information at meetings, conferences, events, and through web based materials
- Address remaining outcomes
 - Map of project area – South Kohala Mapping group (NRCS, NPS, TNC)
- Continue to prioritize projects and management actions

Mahalo



South Kohala Coastal Partnership

www.southkohalacoastalpartnership.com

South Kohala Coastal Partnership Facebook:

www.facebook.com/SouthKohalaCoastalPartnership

Sierra Tobiason

tobiason@hawaii.edu 808-313-2653

South Kohala Coastal Partnership

The Vision: A restored, healthy, abundant, resilient South Kohala coastal system, cared for and cherished by an island community guided by the values and traditions of Kohala.

Updates from South Kohala

I am excited to announce that several projects are moving forward in the implementation phase of the South Kohala Conservation Action Plan (CAP). I hope to use this newsletter to share updates and progress on the innovative projects we have developed with the guidance of the South Kohala Coastal Partnership. The projects highlighted in this first newsletter were funded by the National Oceanographic and Atmospheric Administration (NOAA) Coral Reef Conservation Program (CRCP) awards to the Division of Aquatic Resources, as well as a new award from the Hawaii Department of Health Clean Water Branch.

This year we will continue to prioritize and seek support for projects that will help reduce one or more of the CAP threats of 1) unsustainable fishing practices 2) land based sources of pollution 3) invasive species, and to address methods to better manage our coastal and marine conservation targets.

As the coordinator of the South Kohala Coastal Partnership it is a pleasure to connect with those of you involved in, or interested in these projects. It is inspiring to participate in these projects and to see such great passion and drive within our community. I appreciate the commitment and shared expertise that has made these projects possible and for the continued opportunities to strengthen our projects through community partnerships.

To learn more about the South Kohala Coastal Partnership and how you can get involved please contact me or check out the new website for updates: www.southkohalacoastalpartnership.com

Mahalo,

Sierra Tobiason



Photo by: Chad Wiggins

Volume 1, Issue 1
Spring 2014

Special points of interest:

- Five projects have been funded through NOAA CRCP funds and are moving forward smoothly
- The South Kohala Coastal Partnership Website is now online: www.southkohalacoastalpartnership.com
- NOAA selected South Kohala as a Focus Area for the Habitat Blueprint
- The Earth and Ocean Festival is on April 12 in Kona at the Old Airport from 10 am to 5 pm.
- UH Sea Grant awarded Department of Health Clean Water Branch Watershed Implementation Grant

South Kohala in the News

The National Oceanographic and Atmospheric Administration (NOAA) recently selected the South Kohala region of West Hawaii as a new Habitat Blueprint Focus Area. The objectives for this focus area align closely with the existing CAP and Watershed Plans for the area and include goals such as reducing sediment, preventing invasive species and improving fisheries. For more information check out:

<http://www.habitat.noaa.gov/habitatblueprint/>



Inside this issue:

Project updates	2-3
Upcoming Events & Activities	4

CURRENT PROJECTS

Coral Health and Land Based Sources of Pollution

Have you ever wondered what healthy coral looks like? Or how you can tell if a coral is unhealthy? Most ocean users are able to tell the difference between live coral and dead coral, but it takes a trained eye to determine if a coral is stressed, sick or unhealthy.

There are multiple threats to coral health including anthropogenic (human caused) impacts such as physical damage or land based sources of pollution like sediment and nutrients. Severe damage can occur when coral reef ecosystems experience excessive and prolonged exposure of these threats that can smother the coral and alter the water quality.

Coral are sensitive to disturbances and slight changes in water quality (temperature, salinity, etc.) with a defined range of living conditions. Since corals can't move we need to minimize the exposure of these threats and monitor changes over time to prevent damage to coral health.

To provide a closer look at these additional threats a project started in November 2013 led by The Nature Conservancy is collecting data by monitoring land based sources of pollution and conducting coral health assessments in the Puako and Mauna Lani area. This project will contribute data to better understand the environmental conditions and possible links to coral health.



Researchers use SCUBA gear to conduct coral health surveys in Puako.

Stream Corridor Assessment

The Wai'ula'ula Watershed includes over 18,000 acres with the Waikoloa and Keanu'i'omano tributary streams that intermittently flow from the headwaters in the Kohala Mountains to form Wai'ula'ula before entering the ocean by Mauna Kea Beach Resort.

This project started in October 2013 by the Sustainable Resources Group Intern'l Inc. will

assess locations along the stream corridors that are considered erosion hot spots or vulnerable to degradation and impacting water quality.

Through monitoring of these areas we will be able to prioritize restoration work and install best management practices to improve the water quality and health of the watershed and reduce impacts to the coastal and marine conservation targets.



The Wai'ula'ula Stream after heavy rain in January 2014.

Ungulate Exclusion and Sediment Reduction

Feral ungulates such as feral goats are a major threat to restoring the vegetation and managing erosion in watersheds of Hawaii. The first task to restoration projects in goat infested area is to put up a goat proof fence and exclude them from the restoration site.

The Kailapa Community Association near Kawaihae is installing a goat proof fence around 12 acres near Honokoa Gulch and plans to restore the areas of bare ground

with native vegetation.

A series of volunteer work days are being planned to engage the community on watershed restoration techniques and monitoring of the erosion sites. The first work day was held on March 7, with participants from the Kailapa Homestead, Waikoloa community and the University of Hawaii at Hilo Ku'ula: Integrated Science class lending a hand to prepare the fence line for installation of materials.



Run off entered the ocean after storm event in December 2013 (above). The fence installation began in February 2014 (right).



Coral Settlement and Environmental Conditions

Researchers from the University of Hawaii - Hawaii Institute of Marine Biology have been working with partners in South Kohala for many years to assess and survey the condition of reefs in Pelekane Bay.

The circulation around Pelekane Bay was impacted by the construction of the neighboring Kawaihae Harbor in the 1950's and due to land based sources of pollution such as sediment from the upper portion of Pelekane Bay watershed entering the bay, the water quality has been impaired.

This coral settlement project will provide a detailed evaluation of the past, present and projected condition of Pelekane bay. The team will collect data on the coral settlement in and around Pelekane Bay and as a framework to evaluate the success of

upland restoration efforts on reef recovery.

A remarkable amount of effort has been made to help reduce sediment within the Pelekane Bay watershed by the Kohala Watershed Partnership. Multiple strategies have been used to reduce sediment by the constructed sediment check dams, and fencing off 18 miles of the watershed which allows their team to reduce and manage the feral ungulate population and to plant native vegetation. Their continued efforts have inspired and engaged numerous stakeholders in the community to participate in restoration efforts and to increase awareness of the issues in the Pelekane Bay Watershed.



Pelekane Watershed
Mauka to makai photo taken by Paul Jokiel

Community Based Fishing Moon Calendar

Researchers from the University of Hawaii at Manoa (UHM) Fisheries Ecology Research Lab have been working with communities on Hawaii, Maui, Oahu and Kauai to collect information to develop community based fishing moon calendars.

On the Island of Hawaii UHM scientists have been working with the Kiholo community and fishermen to collect samples from fish such as manini, kole and kala and to share pono fishing practices.

The information collected will combine local

knowledge obtained through surveys and informal interviews with scientific monitoring of spawning seasons to develop local fishing Moon Calendars for Kiholo Bay.

Check out the website and Facebook page for more information:

<http://spawningseasons.org/fish-spawning-guides/>

www.facebook.com/spawningseasons



Have you seen people sporting one of these cool manini hats? These hats are given to those that participate in this project and help provide gonad (reproductive) samples to collect data on fish spawning seasons.

Implementation of Best Management Practices to reduce nonpoint pollution and storm water runoff in the Wai'ula'ula Watershed

The Hawaii Department of Health Clean Water Branch recently announced they will award the University of Hawaii Sea Grant College Program a grant to reduce non point pollution and storm water runoff in the Wai'ula'ula Watershed through the implementation of Best Management Practices (BMPS). This project will take a proactive approach in improving and maintaining a healthy mauka to makai connection at 5 sites. Restoration activities

will include a variety of volunteer opportunities to help increase native plant cover, install a rain garden, manage post fire rehabilitation, remove invasive plant species, and participate in training workshops, water quality monitoring and stream and coastal clean ups.

For more information on how to get involved please contact: Sierra Tobiason, tobiason@hawaii.edu

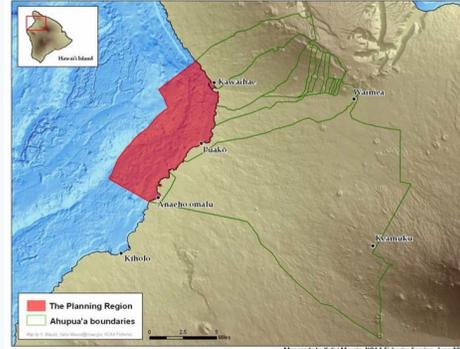


There are several restoration sites located in Waimea along the Waikoloa Stream.

South Kohala Coastal Partnership

For more information please contact the
South Kohala Coastal Partnership Coordinator:

Sierra Tobiason
University of Hawaii Sea Grant College Program
Phone: [808-313-2653](tel:808-313-2653)
E-mail: tobiason@hawaii.edu



The South Kohala priority site spans 24 miles of coastline from the northern Kawaihae ahupua'a to Anaeho'omalu Bay.

[Like us on facebook:](#)

www.facebook.com/SouthKohalaCoastalPartnership

[South Kohala Coastal Partnership website:](#)

www.southkhalacoastalpartnership.com

[Hawaii Coral Reef Strategy link:](#)

www.hawaiicoralreefstrategy.com

Upcoming Events & Activities

- Earth and Ocean Festival: April 12, 10 am—5 pm
Kailua—Kona, Old Airport. Free Public Event. Organized by the Kona Kohala Chamber of Commerce.
- Mauna Lani Bay Hotel and Bungalows hosts monthly series
“Twilight at Kalahuipua’a”. Saturday’s following the full moon, 5:30 –8:30 at the Eva Parker Woods Cottage. Free and open to the public.
- 15th Annual Waimea Healthy Keiki Fest: April 26, 9 am—1:00 pm
Waimea, Parker Ranch Center

Do you have upcoming events or activities that you would like to share in this newsletter or online?

Please email me the information and I will try to include them in the upcoming newsletters.

South Kohala Coastal Partnership

The vision:

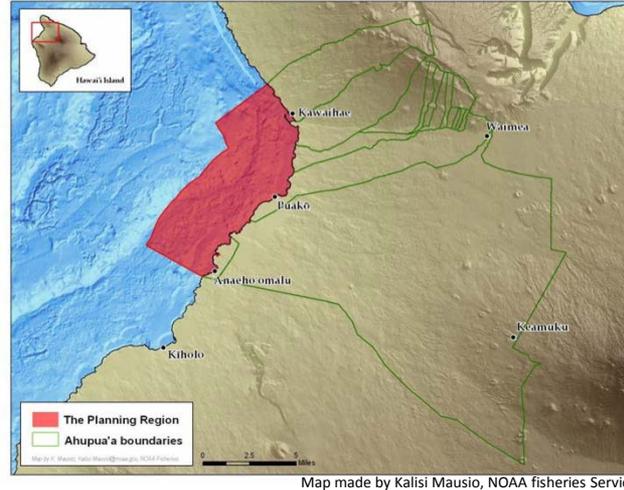
A restored, healthy, abundant, and resilient South Kohala coastal ecosystem cared for and cherished by an island community guided by the values and traditions of South Kohala.

Project area:

South Kohala District, Island of Hawaii

The State's Hawaii Coral Reef Strategy identified coral reef ecosystems along the South Kohala District coastline as a priority management site.

The area of focus includes the marine and coastal habitats along 24 - miles from the north boundary of Kawaihae ahupua'a to the south end of 'Anaeho'omalu Bay.



Map made by Kalisi Mausio, NOAA fisheries Service

Conservation targets:

- Coastal and Marine Food Resources
- Coastal Wetlands
- Community Kinship and Stewardship
- Coral Reef Ecosystems
- Native Reef Herbivores
- Native Reef Predators

Conservation Strategies:

- Community Partnerships
- Community Co-managed Areas
- Fisheries Management
- Sediment Reduction
- Invasive Species Removal & Prevention
- Additional threat analysis

Contact:

Sierra Tobiason

tobiason@hawaii.edu

www.southkohalacoastalpartnership.com

www.hawaiicoralreefstrategy.com

www.facebook.com/SouthKohalaCoastalPartnership

Progress & planning:

Since 2010 over 70 participants comprised of stakeholders and local experts from over 30 agencies and organizations contributed to the development of the South Kohala - Conservation Action Plan (CAP). The planning process includes ridge-to-reef management strategies, recognizing that the lands in the 15 ahupua'a located upland of the site are ecologically and culturally connected to the coastal waters, and in turn, that the coral reef protects the shoreline. The priority conservation targets and strategies have been identified and the implementation stage is the next phase of the process.



Current South Kohala Projects funded with NOAAs Coral Reef Conservation Program under awards to Division of Aquatic Resources Nov 2013-Sept. 2014*

Project title	Organization	Project Contacts	Location	Strategies of SKCAP	Identified outcomes
Stream Corridor Assessment	Sustainable Resource Group International	Kristin Duin, Andy Hood	Wai'ula'ula watershed	Sediment Reduction	1. Inventory and Assessment-map 2. Erosion monitoring - plan 3. Riparian zone overlays - GIS maps 4. Report - photo document, erosion plan, prioritize action
Ungulate exclusion and sediment reduction	Kailapa Community Association	Diane Kanealii	Kailapa, Kawaihae	Sediment Reduction	1. Reduce feral goat population 2. Decrease erosion and coastal sedimentation 3. Install and monitor Erosion pins 4. Establish native dry forest seed bank 5. Outreach and publications
Understanding the impacts of land based nutrients on coral reef health	The Nature Conservancy	Eric Conklin, Courtney Couch	Puako and Mauna Lani area	Fisheries Management	1. Identify sites for targeted management along the Puako- Mauna Lani reef system 2. Test the relationship between coral health and exposure to terrestrial input), generate high resolution (spatial and temporal) temperature and salinity maps of submarine groundwater discharge (SGD) plumes to better track terrestrial input and inform future studies.
Assessment of coral settlement distributions and environmental conditions	UHM HIMB	Drs. Paul Jokiel, Ku'ulei Rodgers, Yuko Stender	South Kohala Priority site	Fisheries Management	1. Evaluation of past, present and future condition of the reef in Pelekane Bay 2. Document changes in the watershed using sedimentation data, historical data, water quality data 3. Continue monitoring and quantify coral settlement 4. Fish and benthic transects 5. Quantify water quality
Integrating Local Ecological Knowledge with a novel scientific tool to refine traditional community based Moon Calendars	UHM	Dr. Friedlander, Eva Schemmel	Kiholo Bay, and Priority Site	Fisheries Management	1. Identify local pono fishing practices, 2. life history and histological data, 3. Spatial and temporal variation in reproductive characteristics, 4. training and technical support to communities
Implementation of South Kohala Conservation Action Plan	UH Sea Grant	Darren Lerner, Sierra Tobiason	South Kohala Priority site	All	Coordinate and staff a locally based working group, 2. Organize and lead local stakeholder engagement related to Phase I implementation of South Kohala Projects, 3. Review and synthesize reports, research materials and study findings to communicate information, 4. Assist with project oversight.

For more information visit www.southkohalacoastalpartnership.com or www.hawaiicoralreefstrategy.com Contact Sierra Tobiason – tobiason@hawaii.edu UH Sea Grant, South Kohala Coastal Partnerships Coordinator Updated 6/24/2014

South Kohala Coastal Partnership Vision:

A restored, healthy, abundant, resilient South Kohala coastal system, cared for and cherished by an island community guided by the values and traditions of Kohala.

The partnership includes representatives from over 30 organizations, agencies, schools, resorts and community groups that are committed to achieving this vision.

Funding and coordination of these projects was made possible by the following partnerships:



FOR MORE INFORMATION ON
OUR PROJECTS AND
ACTIVITIES:

CONTACT:

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808-313-2653

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[www.facebook.com/
SouthKohalaCoastalPartnership](http://www.facebook.com/SouthKohalaCoastalPartnership)

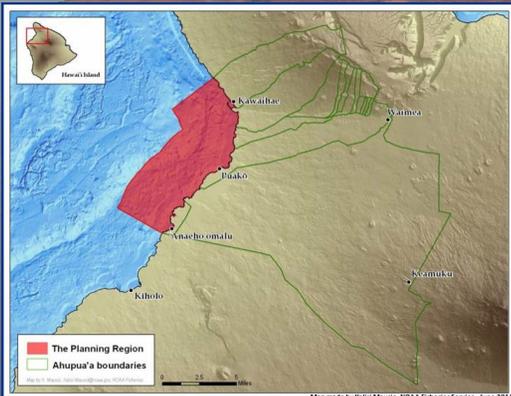
www.hawaiicoralreefstrategy.com

South Kohala District Island of Hawai'i

South Kohala Conservation Action Plan

Current Projects

The State's Hawaii Coral Reef Strategy identifies coral reef ecosystems along the South Kohala district coastline as a priority management site. The South Kohala Conservation Action Plan (CAP) identifies the priority threats, conservation targets and strategies. The CAP is the guiding document for the partnership.



The area of focus includes the marine and coastal habitats along 24 - miles from the north boundary of Kawaihae ahupua'a to the south end of Anae'ohomalu Bay.

Projects include mauka (mountain) to makai (ocean) management strategies to help reduce the priority threats.

Conservation targets:

- Coastal and Marine Food Resources
- Coastal Wetlands
- Community Kinship and Stewardship
- Coral Reef Ecosystems
- Native Reef Herbivores
- Native Reef Predators



Priority threats:

- Unsustainable Fishing Practices
- Land Based Sources of Pollution
- Invasive Species



Conservation Strategies:

- Community Partnerships
- Community Co-managed Areas
- Fisheries Management
- Sediment Reduction
- Invasive Species Removal & Prevention
- Additional threat analysis



Coral Health and Land Based Sources of Pollution

The Nature Conservancy

Coral Settlement and Environmental Conditions

University of Hawaii
Hawaii Institute of Marine
Biology



Paul Jokiel



Paul Jokiel

Stream Corridor Assessment

Sustainable Resources Group
Intn'l Inc.



Ungulate Exclusion and Sediment Reduction

Kailapa Community
Association



Franc Kanczaj



Community Based Fishing Moon Calendar

University of Hawaii—Manoa

