

Fiscal Year 2011

October 1, 2010 – September 30, 2011

Annual Report



**Hawaii State Department of Health
Clean Water Branch
Polluted Runoff Control Program**

Executive Summary

Nonpoint source (NPS) pollution continues to be a major water quality issue in the State of Hawaii and across the nation. NPS pollution problems far outweigh the resources targeted at NPS pollution solutions. Yet the expectation of achieving water quality results through the CWA Section 319(h) funding and the State Department of Health (DOH) Polluted Runoff Control (PRC) Program still exists. With 208 marine and 98 stream segments on the State's 303(d) list of impaired water bodies, many that partially if not completely attribute nonpoint source pollution to be the cause of impairment, the Hawaii DOH PRC Program's resources are insufficient to significantly address NPS pollution. The PRC Program however continues to partner with other agencies and organizations to make strides in priority watersheds where the potential for environmental improvements appears real.

On September 20, 2010, the State was awarded a Clean Water Act (CWA) Section 319(h) grant in the amount of \$1,596,304, to which the State will provide \$1,064,203 in non-federal match. Grant and match funding supports the DOH Clean Water Branch (CWB) PRC Program staff, funds watershed planning and implementation in priority watersheds, supports the development of a Watershed Based Plan for West Maui, supports the distribution and promotion of the Hawaii Watershed Guidance, and management of all ongoing 319 projects and outreach efforts.

The 319 grant funds all five staff positions in the PRC Program. The Public Participation Coordinator (PPC) serves as an unofficial supervisor for all program activities with overseeing the administration of the grants including work plan and budget development, grant amendments, and reports to the Environmental Protection Agency (EPA). The PPC coordinates and conducts outreach and education for the program, participates in interagency meetings, and participates in the review and selection of 319 projects. The Planner drafts the work plan with assistance from other staff and coordinates activities with the Coastal Zone Management Program. The Planner's main task is working toward approval of Hawaii's Coastal Nonpoint Pollution Control Program (CNPCP) and initiating activities to implement the CNPCP and Hawaii's Watershed Guidance. The Grants Management Specialist (GMS) reviews all program grant applications and contracts to grantees and assures compliance with Federal and State requirements. The GMS oversees administrative and financial aspects of contract documentation, requests for proposals, and maintains program appropriation accounts. The Environmental Health Specialist (EHS) provides technical support for the program, contractors and partners on polluted runoff control. The EHS assists in preparing contracts and reviews and responds to project reports, monitoring plans and requests for contract modifications. The EHS also assists with monitoring activities in priority watersheds. The program also has a clerical position. Positions under the CWB and also the DOH Wastewater Branch (WWB) are funded by the State and contribute to the State's non-federal match for the grant. The positions under CWB are in the Monitoring Section and are located on the outer islands. These positions assist the program by being a liaison between the program and the community, and they also provide monitoring support on their island. The WWB Individual Wastewater System (IWS) Engineers review and approve planning and environmental documents, plans and specifications for wastewater systems, final construction inspections, assistance in enforcement activities, and

regulating wastewater systems in accordance with state law. These activities assist the program in implementation of Hawaii's CNPCP.

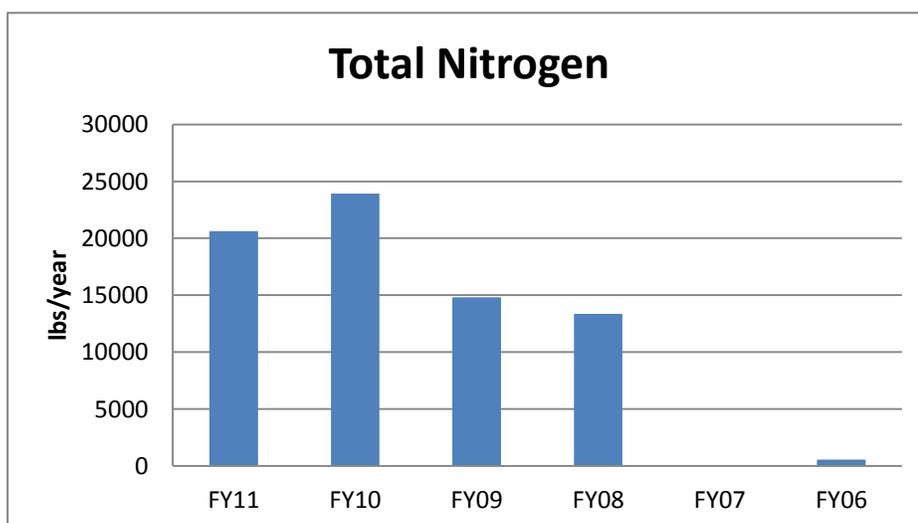
The 319 grant funds the development and implementation of watershed plans. The Hawaii Watershed Guidance was developed to provide the information necessary to assist folks working in watershed management to develop and implement watershed plans that will achieve water quality goals. The Guidance was also intended to help the State meet outstanding Management Measures under the Coastal Nonpoint Program. The Guidance has been distributed both in hard copy and electronically and is downloadable from the Polluted Runoff Control website or the Coastal Zone Management Program website (<http://www.state.hi.us/dbedt/czm/initiative/nonpoint/HI%20Watershed%20Guidance%20Final.pdf>.)

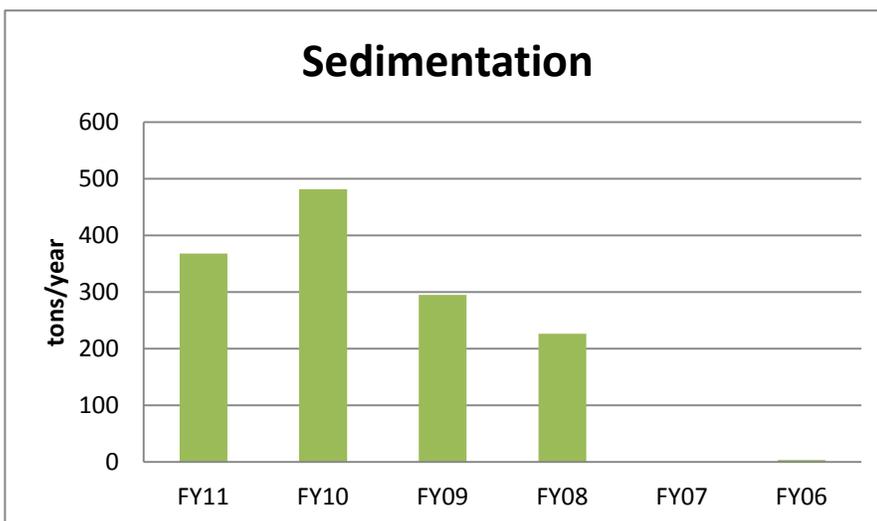
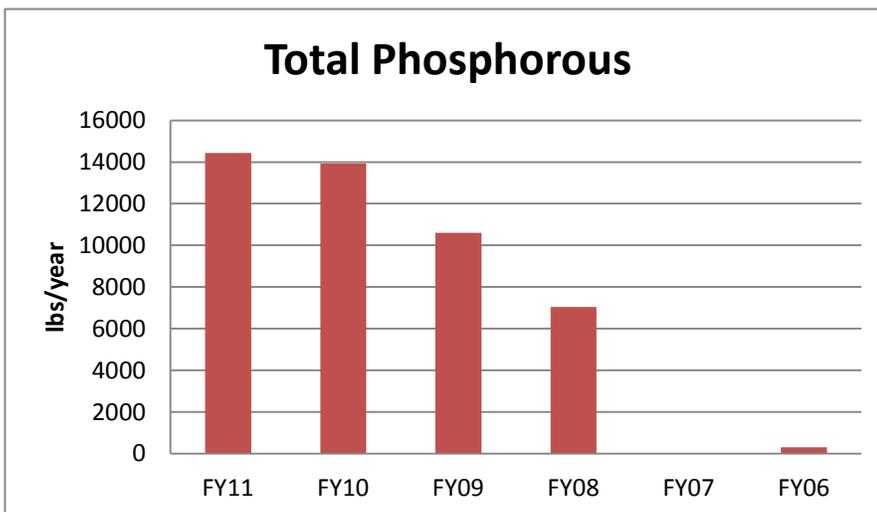
The State DOH and State Department of Land and Natural Resources (DLNR) recently signed the West Maui Watershed Assessment Management Plan (WAMP) for the West Maui Watershed Plan with the U.S. Army Corps of Engineers (ACOE). The WAMP will address the significant threats to coral reefs in West Maui, including nonpoint source pollution, and will develop solutions and identify the government entity best suited to accomplish each activity. This plan will be an umbrella process to coordinate the activities of all the organizations working within West Maui.

The majority of the 319 grant funds polluted runoff projects across the state. Two project proposals were selected this year under the FY11 Request for Proposals. The Hawaii Watershed Experience: A Hands-On Elementary Education Program under the Healthy Hawaii Coalition and the He'eia Stream Riparian Restoration Phase II under Hui O Ko'olaupoko.

Results and descriptions of projects funded by previous year's grants are listed in the 319 funded projects section of this report. Using STEP-L modeling has yielded an approximate load reduction for all projects in FY11 of:

- Total Nitrogen Reduced: 20,636 lbs/yr
- Total Phosphorous Reduced: 14,431 lbs/yr
- Sedimentation Reduced: 368 tons/yr





Comparing FY11 to previous years there is a slight drop in reductions to loading possibly due to more watershed based planning efforts. From 2007-2010 the Kaho'olawe Restoration project was a large contributor to load reductions at a total price of \$1,500,000. Much of the PRC programs work is now focused towards increasing the total number of watershed based plans for further implementation in upcoming years.

The PRC Program decided to continue the Hawaii Association of Conservation Districts' (HACD) Conservation Specialist (CS) Program for another year. The PRC Program believes the technical support the CS provide in the Conservation Districts, and the additional management plans developed and implemented help the State address NPS pollution. The majority of the funding provided to HACD from the PRC Program for the CS program comes from the State Oil Tax fund.

Hawaii's Implementation Plan for Polluted Runoff Control

Hawaii's Implementation Plan for Polluted Runoff Control was printed and distributed in July 2000. The Plan serves as the State's Non-point Source Management Program Plan. When the Implementation Plan was developed in 1998, the State intended to revise the Plan every five years (2003, 2008, and 2013). During the years between 2000 and 2003, the State, EPA and NOAA decided it was more important for the State to focus on gaining full approval of the State's Coastal Nonpoint Pollution Control Program before updating the Implementation Plan. The State continues to work to address Management Measures that have not yet been approved by EPA and NOAA, failure by the State to gain full approval of the CNPCP could result in cuts to the State's 319(h) and Coastal Zone Management budgets. The State has not targeted resources to update the Plan at this time.

The Plan had three Long Term Goals:

#1 Ensure that Hawaii's coastal waters are safe and healthy for people, plants, and animals and protect and restore the quality of Hawaii's streams, wetlands, estuaries, and other inland waters for fish and wildlife, recreation, aesthetic enjoyment and other beneficial uses by 2013.

#2 Identify impaired water bodies and restore their designated uses through a Statewide approach to watershed management within 15 years.

#3 Develop and implement economically achievable management measures, as identified in Section 6217 of the Coastal Zone Act Reauthorization Amendments, which are appropriate to Hawaii's physical, economic, cultural, and social environment by 2013.

Under each Long Term Goal the Plan listed 5 - 7 Short Term Goals, 5 - 7 Action Items/Activities, and 5 - 7 Measures of Success. Over the past 11 years the State has made progress toward reaching these goals. Some of the Action Items/Activities fall directly under the Polluted Runoff Control Program however some do not and require the Program to depend on other agencies to complete or initiate the activities. The following is the Summary of Activities by Year taken from the Plan, with an indication of complete, ongoing or not completed, and in some cases a short explanation if appropriate.

Summary of Activities by Year

2000

- *Complete a schedule to complete Total Maximum Daily Loads for section 303(d) listed waters. **Complete***
- *Implement water quality monitoring objectives, strategies, and methodologies (DOH Strategic Plan).*
- *Conduct a review, by the Attorney General, of the State's enforceable policies and mechanisms for polluted runoff control. **Complete***
- *Prepare a strategy to address gaps in enforceable policies and mechanisms based on the Attorney General's review. **Complete***

2001

- Complete TMDL demonstration project in Waimanalo. **Complete**

2002

- Continue to assist in the implementation of the Clean Water Action Plan and the U.S. All Islands Coral Reef Initiative and assess their impacts on water quality.
- Provide feedback to Federal agencies regarding the effectiveness for the Clean Water Action Plan and the U.S. All Islands Coral Reef Initiative.
- Develop a strategy and appropriate methodologies to address TMDLs for waters listed on the State's section 303(d).

2003

- Receive program approval of the Hawaii Coastal Nonpoint Pollution Control Program from NOAA and EPA. **Not Completed**
- Prioritize management measures and focus implementation efforts following a phased approach. **Ongoing – management measures are implemented statewide**

2004

- Complete revisions to classifications and beneficial uses in the State's Water Quality Standards for inland and marine waters.
- Develop and implement watershed management plans and assessments for Category 1 watershed regions as identified in the State's Unified Watershed Assessment. **Ongoing – State followed EPA's shift toward the development and implementation of Watershed Based Plans, EPA and DOH selected Priority Watersheds (Waimanalo, West Maui, Hanalei) in 2008**
- Develop statewide strategies to restore and maintain protected uses for inland and marine waters through a phased approach and assess the statewide strategy.
- Review the classification and beneficial uses for marine and inland water quality standards.
- Implement Quality Assurance/Quality Control Plan and follow timelines contained in the plan.
- Increase use of best management practices and assess their effectiveness. **Ongoing**
- Establish water quality monitoring programs in Category 1 watersheds.

2008

- Implement watershed restoration action strategies and implementing plans and test the effectiveness of best management practices under different conditions. **Ongoing**
- Prioritize management measures and focus implementation efforts following phased approach.

2012

- Complete TMDLs for section 303(d) listed water bodies. **Not Completed**

2013

- Achieve long-term goals. **Ongoing**

Grant Implementation

At the start of 2011, the Program was actively managing five EPA CWA Section 319(h) grant awards (FY06, FY07, FY08, FY09, & FY10). The Program was awarded a sixth EPA CWA Section 319(h) grant in October (FY11), and closed two grants in December 2011 (FY06 & FY07). Specific challenges and accomplishments regarding grant implementation, as well as expanded outlines of the aforementioned grants, are listed below:

Notable issues persist with awarding and implementing projects, due to high barriers to entry in the form of match requirements. Difficult economic conditions persist in the State of Hawaii, which limits the State's ability to effectively participate in matching the federal grants. As such, the match preconditions are met by passing through these requirements to awarded vendors, in the form of a \$1:\$1 grant/match ratio. Fortunately, the current State administration is cognizant of the attendant problems and is focused on parlaying funding opportunities in other State water programs to potentially reduce the match demands placed on outside community groups. However, until these potential options are fully realized, there will always be a significant hurdle for local watershed groups to meet the match requirement.

The challenging economic headwinds have also impacted the ability of watershed groups to participate in the Program's 319(h) grant program. Regrettably, several local non-profit watershed groups have been forced to shutter, or otherwise severely curtail their operations, due to a lack of funding. The Program directly experienced this issue in FY10, where an awarded project was cancelled due to the inability of a local watershed group to meet its subcontracted requirements after downsizing and turnover at the executive level. With the Program's Base funding levels also being drastically cut as part of broad-based reductions in the EPA, the difficulties in awarding and installing implementation projects increase exponentially.

The Program also continues to be hamstrung by the lack of approved Watershed-Based plans within the State. The inability to use Incremental grant funds for projects that are not derived from such plans has unfortunately disallowed several worthy projects from being funded, particularly as Base funds continue to be cut. To alleviate this issue, the Program has undergone an effort to increase the number of valid Watershed-Based plans. For the first time, in mid-2011, the Program held a separate Invitation for Bids focused solely on procuring a Watershed-Based plan that could then be used for project funding. Unfortunately, the Program did not receive bids that fully met the preconditions for award, however the Program feels that the effort was worthy and intends to continue with the practice to fund additional plans in the near future.

Contracting with public funds is another challenge, as grant awards are required to undergo lengthy and cumbersome procedures throughout the procurement process. The Program has been actively involved in helping to reduce the bureaucratic red-tape, which has proven to successfully reduce the lag time of contracting from as much as twenty-four months to six to eight months. Understandably, as the procurement process involves public funds, there will always be thorough vetting and documentation requirements. That being said, the Program is

proud of its accomplishments in easing the overall process and continues to enjoy a good working relationship with the various State departments needed to facilitate the process from notice of award to notice to proceed.

In conclusion, the Program continues to experience obstacles to implementing 319(h) projects. Despite the overwhelming challenges, the Program continues to maximize the impact of the grant funds awarded, and contributes to measurable load reductions throughout the State.

Individual grant awards are listed below by fiscal year, with notable 319(h)-funded projects highlighted. Outcomes and load reductions for the below-listed 319(h)-funded projects can be found at the respective project-specific pages in this report, or in previous end-of-year reports.

Fiscal Year 2006 (6290-00)

The State's Fiscal Year 2006 grant expired on December 31, 2011. Ten projects were awarded and funded under this grant, with nine completed. The remaining project is partially funded with FY09 funds and is scheduled to conclude in March 2012. The State spent \$1,525,100 in federal funds and provided an additional \$1,016,733 in non-federal match. Approximately \$1,000,000 of the federal funds was spent on project implementation, with the remaining one-third spent on supporting the Program. There are no remaining FY06 funds.

The nine FY06 projects are:

- \$59,000 to draft a Watershed-Based plan for the Waikoloa-Waiulaula Watershed;
- \$144,000 to demonstrate a Watershed Participatory Assessment and Action with the University of Hawaii in the Kaiaka Bay Watershed;
- \$93,000 to install Stream Phytoremediation and Erosion Control measures on degraded stream banks in Waimanalo;
- \$25,000 to draft an updated Livestock Waste Management Guidelines;
- \$300,000 to install Best Management Practices in private agricultural lands in Waimanalo (partially funded, remainder of funding in FY09);
- \$50,000 for an On-Site Disposal System Risk Assessment study by the University of Hawaii;
- \$140,000 to stabilize and revitalize a degraded stream bank in Kalihi;
- \$45,000 to host a Water Quality Conference; and
- \$40,000 to replace cesspools with septic tanks in Hanalei.

Fiscal Year 2007 (7290-00)

The State's Fiscal Year 2007 grant also expired on December 31, 2011. Two projects were awarded and funded under this grant, with grant money originally targeted for additional implementation projects instead being used to fund a Nonpoint Source (NPS) Interagency Personnel Agreement (IPA) and a Total Maximum Daily Loads (TMDL) IPA with the EPA. In addition, an in-kind project with the EPA, and the EPA's vendor Tetra-Tech, was funded by the FY07 grant. The State spent \$1,081,074 in federal funds and provided an additional \$720,716 in non-federal match. Approximately \$520,000 of the federal funds was spent on project implementation and IPA funding, with the remaining \$500,000 spent on supporting the Program. There are no remaining FY07 funds.

The two FY07 projects, and the IPA and in-kind projects are:

- \$43,000 to draft a Watershed-Based plan for the Southwest Maui Watershed (partially funded, remainder of funding in FY08);
- \$40,000 to update the Coastal Nonpoint Source Pollution Control Plan;
- \$117,000 for one year of NPS IPA funding;
- \$247,000 for two years of TMDL IPA funding; and
- \$75,000 for an in-kind Outreach Project with EPA and Tetra-Tech.

Fiscal Year 2008 (8290-00)

The State's Fiscal Year 2008 grant will expire on December 31, 2013. A portion of this grant was used to continue funding the NPS and TMDL IPAs, and an additional in-kind project with the EPA and Tetra-Tech. Nine projects were also awarded for funding under this grant, however one project was cancelled due to non-responsiveness by the awarded vendor. Two projects have already been satisfactorily completed. The State expects to spend \$2,141,867 in federal funds and provide an additional \$1,427,911 in non-federal match by the 2013 expiration date. Approximately \$1,510,000 of federal funds has been spent or encumbered for project implementation and IPA funding, and approximately \$500,000 spent on supporting the Program. There is approximately \$130,000 of remaining FY08 funds that will be used within the next two years to fund projects that require increased cost adjustments or as partial funding for new projects awarded in the program's FY12 Request for Proposals (RFP).

The nine FY08 projects, and the IPA and in-kind projects are:

- \$151,000 to draft a Watershed-Based plan for the Southwest Maui Watershed (partially funded, remainder of funding in FY07);
- \$0 to draft a Watershed-Based plan for the Hanalei Watershed (project cancelled);
- \$83,000 for an on-site stormwater retrofit at Kaelepulu Stream;

- \$22,000 for an education and outreach program targeting elementary school children in priority watersheds;
- \$60,000 to draft a Watershed-Based plan for the Wailupe Stream Watershed;
- \$193,000 for the He`eia Stream riparian and water quality improvement project;
- \$201,000 to fund the Hawaii Youth Conservation Corps;
- \$179,000 to develop a Watershed Monitoring Plan and install ungulate-control fencing in Maui (partially funded, remainder of funding in FY09)
- \$361,000 to fund the State Conservation Specialist Program;
- \$130,000 for one year of NPS IPA funding;
- \$90,000 for half of one year of TMDL IPA funding; and
- \$40,000 for an in-kind Outreach Project with EPA and Tetra-Tech.

Fiscal Year 2009 (9290-00)

The State's Fiscal Year 2009 grant will expire on September 30, 2014. Currently, there are six projects awarded for funding under this grant. The State expects to expend \$1,503,626 in federal funds and provide an additional \$1,002,417 in non-federal match by the 2014 expiration date. Approximately \$889,000 of federal funds has been spent or encumbered for project implementation, and approximately \$440,000 was spent to support the Program. There is approximately \$175,000 of remaining FY09 funds that will be used within the next three years to fund projects that require increased cost adjustments or as partial funding for new projects awarded in the program's FY12 RFP.

The six FY09 projects are:

- \$523,000 to install Best Management Practices on agricultural lands in the Honouliuli Watershed;
- \$71,000 to develop a Watershed Monitoring Plan and install ungulate-control fencing in Maui (partially funded, remainder of funding in FY08);
- \$125,000 to draft a Watershed-Based plan for the Hanalei Watershed;
- \$100,000 to install Best Management Practices in private agricultural lands in Waimanalo (partially funded, remainder of funding in FY06);

- \$20,000 for an for an education and outreach program targeting elementary school children in the Ko`olaupoko Watershed; and
- \$50,000 to extend the State Conservation Specialist Program contract.

Fiscal Year 2010 (9290-10)

The State's Fiscal Year 2010 grant will expire on September 30, 2015. Four projects were originally awarded for funding under this grant; however one project was cancelled due to issues outside of the awarded vendor's control. Two recently-awarded projects shall also use FY10 funding once executed and in place. The State expects to spend \$1,596,304 in federal funds and provide an additional \$1,064,203 in non-federal match by the 2015 expiration date. Approximately \$615,000 of federal funds has been spent or encumbered for project implementation, and approximately \$315,000 spent on supporting the Program. There is approximately \$666,000 of remaining FY10 funds that will be used within the next four years to fund projects that require increased cost adjustments or as partial funding for new projects awarded in the program's FY12 Request for Proposals (RFP).

The four FY10 projects are:

- \$107,000 to draft a Homeowner's Raingarden Installation Booklet, and install raingardens throughout the Ko`olaupoko Watershed;
- \$132,000 to install Best Management Practices in the Wailupe Beach Park to reduce runoff;
- \$0 to install Best Management Practices to reduce upland erosion in the Wailupe Watershed (project cancelled); and
- \$135,000 to install paddock fencing and complete a monitoring study in the Waiulaula Watershed.

The two FY10 projects to be executed:

- \$25,000 for an education and outreach program targeting elementary school children in priority watersheds;
- \$216,000 for the second phase of the He`eia Stream riparian and water quality improvement project;

Fiscal Year 2011 (9290-11)

The PRC was awarded an EPA CWA 319(h) grant for the Fiscal Year 2011 that expires on September 30, 2016. The total federal award is \$1,355,490 with a State in-kind contribution of \$1,144,510. The PRC anticipates that the FY12 and future RFPs will yield projects that shall be funded under the FY11 grant. Approximately \$515,000 of the federal funds will be spent to support the Program.

Non-Federal Match

To meet the match requirements under the EPA CWA 319(h) grant program, the State relies on awarded vendors to provide a \$1:\$1 grant/match. This pass-through provision does reduce the number of vendors that can participate in the State's 319(h) grant program; however it is a necessary measure to allow the State to receive its award. The State also relies on three additional sources to meet its match requirements: general funded salaries for personnel supporting the Program; and two special funds supporting the Conservation Specialist Program.

General funded positions include: Environmental Health Specialist IVs (EHS IVs) on the outer islands, and Individual Wastewater System Engineer IVs (IWS IVs) on Oahu. The EHS IVs are tasked with collecting marine surface water sample collections and investigating complaints related to nonpoint source pollution. Because the Program is so small, these outer island employees effectively act as the Program's eyes and ears and provide a physical presence that the Program cannot provide. The IWS IVs are responsible for review and approval of planning and specifications for wastewater systems, wastewater systems construction inspections, and regulating wastewater systems in the State, under the aegis of the Coastal Zone Act Reauthorization Amendments of 1990 and the EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters.

Through a State-administered Environmental Response Revolving Fund, the Program receives \$150,000.00 per year to use in support of the HACD Conservation Specialists project. Concurrently, the State's Department of Land and Natural Resources contributes \$50,000.00 per year to support the Soil and Water Conservation Districts and the Conservation Specialists project. The combined \$200,000.00 per year of special State funds is used to supplement the State's match requirements.

Monitoring

The State's monitoring strategy for assessing NPS impairments and improvements in recent years has moved toward contractors directly providing monitoring plans and data for each project that is funded. Currently, monitoring of a project (either quantitative or qualitative) with water quality data must have an approved monitoring plan as well as a quality assurance/quality control plan. The PRC program uses the data to determine load reductions via N-SPECT/STEP-L modeling for each project with on the ground BMP implementation. Ultimately the data is used by the Environmental Planning Office in the Integrated Report as well as the Bi-annual Water Quality Monitoring and Assessment Report to determine listings and de-listings of impaired water bodies.

National Coastal Condition Assessment Sampling:

From August 28 through September 2, 2011 the Department of Health Clean Water Branch Monitoring Section assisted the EPA with conducting the National Coastal Condition Assessment on the west coast of the island of Maui. The Environmental Health Specialist for the PRC program was asked to assist the monitoring section during sampling in 2010 and was again asked to participate in the sampling for the 2011 round. Data was collected via In-situ water quality sampling at 50 randomly selected sites along the West Maui Watershed

stretching from the Na Pili Coast to the Mala Boat Ramp ranging in depth from 3 meters to 30 meters. Sampling included the use of Photosynthetically Active Reading (PAR) meters, Quanta Water Quality Data Sondes (temp, salinity, pH), grab samples at surface and mid-depth and secchi disk readings. Currently the data is being organized and assessed by DOH and a report will follow to EPA once completed.

The purpose of the monitoring is to determine if water quality along the West Maui coastline is increasing due to the implementation of BMPs through 319(h) funding as well as other on the ground group-work. Once assessed the data may be used by the Environmental Planning Office to potentially de-list waters from the impaired water bodies list.

Water Quality Monitoring:

In Hawaii, 319(h) projects are generally small in scale when compared to a watershed; this creates issues for smaller capacity contractors with little to no knowledge of water quality monitoring techniques. The data provided by the contractors to the PRC program is reviewed, analyzed, assessed, modeled and then given to the Environmental Planning Office for further review of water quality data for possible use in de-listing water bodies.

During grant negotiations EPA noted that water quality monitoring on a project by project basis may not be the most effective use of 319(h) money due to the highly technical nature of monitoring plans as well as the small scale monitoring plans for highly detailed project areas. The state agrees with this general philosophy and is currently working toward a monitoring plan for watersheds in which the PRC program is working in. The PRC Program was tasked to set up a monitoring plan for itself through coordination with the Monitoring and Analysis Section of the Clean Water Branch. The Environmental Health Specialist has started dialogue between the Monitoring section and planning is under to begin stream sampling on the island of Oahu.

319 Project Monitoring:

Currently all contractors receiving 319 funding are required to do some type of monitoring to indicate project efficacy. While most contractors conduct quantitative monitoring of projects the methods vary from project type to project type. Water quality monitoring is also used to determine effectiveness in projects that have on the ground implementation (Waimanalo Stream Restoration and Community Outreach, He'eia Stream Riparian and Water Quality Improvements and Kalihi Ahupua'a Community Service Project). Other methods are employed in conjunction with water quality sampling including: modeling, surveys, photo-points and pre- and post-tests. Incorporating a multi-faceted approach to monitoring gives the PRC program a greater understanding of results from each project.

Grant Reporting and Tracking System (GRTS) Load Reductions:

Using water quality data as well as modeling, the PRC program has been able to approximate load reductions for each project it funds. Load reductions are the quantitative measuring stick for the 319(h) program and also assist the DOH with determining efficacy of each project. For FY2011 the following are load reductions which have been entered into the GRTS:

Estimated Nitrogen Load Reduction: 20,636lbs.

Estimated Phosphorous Load Reductions: 14,431 lbs.

Estimated Sediment Load Reductions: 368 tons

Load reductions assist with the restoration of watersheds by decreasing targeted non-point source pollution. Progress is being made towards the PRC program's ultimate goal of decreasing NPSP and potentially de-listing impaired water bodies from on the ground project implementation.

319 Funded Projects:

Completed Projects:	Key Outcomes/Results
Kalihi Ahupua'a Community Service Project	Restored ~100 meters of streambank and increased community involvement pertaining to water quality
Hawaii Youth Conservation Corps	48 summer positions filled to produce 11,840 service hours per year (2 year project). Teams assisted watershed groups by invasive clearings, native plant re-vegetation, streambank restoration and ungulate fencing installation.
Ongoing Projects:	
HACD Conservation Specialists	Assist DOH with approval of conservation plans for local agricultural operation. All 4 specialist positions were filled this year. Approximate Load Reductions: Total Nitrogen: 765.4 lbs/yr, Total Phosphorous: 198.6 lbs/yr, Sedimentation: 72.5 tons/yr
Conservation on Agricultural Lands in Honouliuli	Released an RFP for large land owners in Honouliuli to implement large scale BMPs. Held field days for professionals to assist with spreading conservation message. Drafted watershed based plan for upper Honouliuli. Approximate Load Reductions: Total Nitrogen: 14,000 lbs/yr, Total Phosphorous: 10,600 lbs/yr, Sedimentation: 234 tons/yr
Maui Monitoring Implementation and Ungulate Fencing Installation	The monitoring plan for Ungulate Fencing was finalized. Contractor is currently installing fences in upper West Maui Mountain Watersheds and will work towards implementing in East Maui during the next FY.
He'eia Stream Riparian and Water Quality Improvements	The project is nearing completion with nearly 1000 meters of streambank re-vegetation and 8,000 hours of volunteers have been credited to this project. Approximate Load Reductions: Total Nitrogen: 2,800 lbs/yr, Total Phosphorous: 1,420 lbs/yr, Sedimentation: 28 tons/yr
Hawaii Watershed Experience: A Hands-on Elementary Educational Experience	A presentation for students presented over two days to teach students about watershed health and ways to combat NPS pollution. The presentations have been to the 5 major islands and are presenting in priority watersheds.
Kaelepu Stream On-site Stormwater Retrofit	Construction at the site has been delayed due to the process of gifting construction work to the city and county of Honolulu. Drafts and as-builts have been approved by Parks and Recreation Engineers.

Southwest Maui Watershed Based Plan	The plan is currently coming to the PRC program in sections and is being reviewed commented on and finalized in an orderly manner. Implementation will begin once the WBP is completed.
Waimanalo Stream Restoration Community and Outreach	Overall 8 cooperators have implemented conservation plans within Waimanalo. The projects monitoring was inconclusive but revealed high amounts of phosphorous and TSS. Approximate Load Reductions: Total Nitrogen: 2730 lbs/yr, Total Phosphorous: 1,900 lbs/yr, Sedimentation: 41 tons/yr
Watershed Based Plan for Hanalei Bay Watersheds	9 key elements are being implemented on watershed based plan. SRGII is being used as a sub-contractor for technical information.
Demonstrating Management Practices at Wailupe Beach Park	Blueprints have been submitted to DOH and permits for work will begin.
Hawaii Homeowners Raingarden Manual and Implementation	An early draft of the document has been sent to DOH to review and comment on. Site selection for public raingardens has been decided.
Makai Paddock Fencing and Monitoring in Lower Waiulaula	Project has recently been selected. Issues with up-front payments has delayed contracting.

Projects on the island of Oahu:

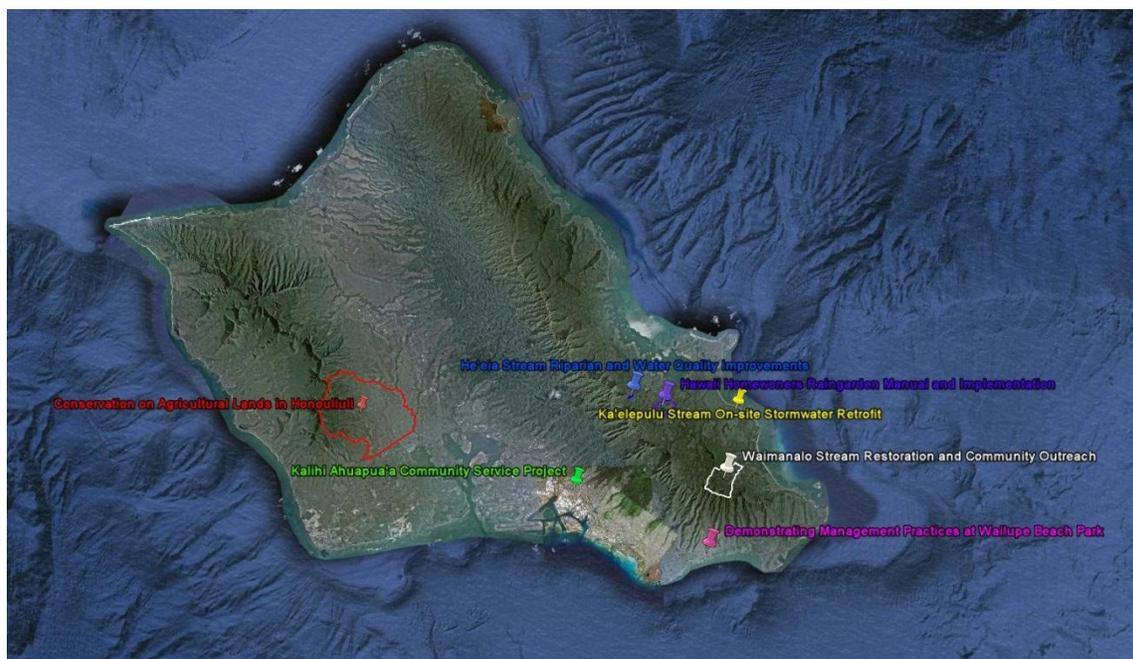


Figure 1: Locations of projects funded through 319(h) funds on the island of Oahu

Total 319 funds allocated to projects on Oahu: \$1,666,625

Total matching funds for 319 projects on Oahu: \$1,852,351

Conservation on Agricultural Lands in Honouliuli:

Contractor: Oahu Resource Conservation and Development Council

Jean Brokish, Executive Director

PO Box 209, Kunia, HI 96759

(P) 808-622-9026

<http://www.oahurcd.org>

319 Funds: \$522,577 Match: \$663,258

Start/End: 5/13/2010 – 5/12/2012

Location: Upper Honouliuli Watershed, O'ahu

Partners: DOH-CWB, US Dept. of Agriculture – Natural Resources Conservation Service, AECOM, Hawaii Association of Conservation Districts, Monsanto, Dow

Pollutants Addressed: Total Nitrogen (TN), Total Phosphorous (TP), Sedimentation

The upper Honouliuli watershed is a combination of large landowner corn-seed producers as well as conservation lands. This project is currently assisting the agricultural landowners with implementing their conservation plans with structural best management practices. In the first quarter of 2011 Oahu RC&D put out a request for proposals for major agricultural producers for cost-sharing conservation practices called out in conservation plans. Three sites were chosen in the first round of implementation and to date more than ~1000 acres of agricultural land has been remediated with recommended BMPs.

Environmental Results: Load reductions were modeled using soil map classifications, grades and select BMPs. Nitrogen estimated reduction was measured at 9,800 lbs., Phosphorous estimated reduction was measured at 7,600 lbs and sediment load reductions were modeled at ~200 tons per year.



Figure 2: Cover crops of oats in Honouliuli watershed covering previously fallow land.



Figure 3: Grassed waterways and cover crops are shown to be containing runoff in agricultural lands in the Honouliuli watershed.

Kalihi Ahupua'a Community Service Project

Contractor: Kalihi Ahupua'a Ulu Pono Ahahui

Barbara Natale, Director

PO Box 17673, Honolulu, HI 96817

(P) 808-282-9449

www.kaupa4kalihi.org

319 Funds: \$228,856 Match: \$228,860

Start/End: 12/1/2006 - 6/30/2011

Location: Kalihi watershed, O'ahu

Partners: DOH-CWB, Kalihi Waena Elementary School, Farrington High School, City and County of Honolulu, Department of Land and Natural Resources - Division of Aquatic Resources (DAR)

Kalihi Stream is listed on Hawaii's 303(d) list for TSS, trash, total phosphorous, and turbidity. The project's goals are to utilize public outreach, education, and participation activities to prevent and reduce pollutant loads to improve the water quality and biological integrity of Kalihi Stream. The project is also working on creating a rock wall to terrace the riparian section of the stream.

Environmental Results: Community volunteers have assisted in stream clean-ups every month resulting in large and small trash items being removed from the stream. Approximate weight and units that volunteers have removed during stream clean-ups:

Litter and trash removed: ~3 tons

Green waste removed: >1500 lbs

Metal removed: ~2 tons, including plumbing, fence posts, rebar and batteries

Miscellaneous items removed: several bicycles, a live cockatoo, 2 mattresses, a children's plastic chair, scraps of wood, mopeds, car parts, and chicken wire

Sighted five native O'opu (Naniha and Akupa) indicator species during several biological stream assessments using the DAR Stream Bio-assessment protocol.



Figure 4: Riparian restoration and use of mulch and natives to replant streamside.



Figure 5: Traditional rock terracing was used to re-vegetate the streamside as well as increase visibility for the project in the neighborhood.

He'eia Stream Riparian and Water Quality Improvements

Contractor: Hui O Ko'olaupoko

Todd Cullison, Director

629 A Kailua Rd. Suite #3, Kailua, HI 96734

(P) 808-277-5611

www.huihawaii.org

319 Funds: \$193,180 Match: \$221,964

Start/End: 6/29/2009 – 6/29/2012

Location: He'eia Watershed, O'ahu

Partners: DOH-CWB, Hui Ku Maoli Ola, Hawaii Pacific University

Pollutants Addressed: TN, TP, Sediment

He'eia Stream is listed on the DOH's 303(d) list for Total Nitrogen, Nitrates + Nitrites, Total Phosphorous, Turbidity, and Total Suspended Solids. The Ko'olaupoko watershed has a current watershed based plan and implementation at He'eia is needed due to stream bank erosion and overgrowth of non-native invasive species. The contractor is stabilizing stream banks and riparian areas along He'eia stream by removing harmful non-native invasive plant species and replacing them with native plants which may have a greater potential to reduce erosion and increase nutrient uptake. The contractor will also educate the community around He'eia stream about non-point source pollution via pamphlets and brochures and public site visits. In the past two years non-native vegetation has been removed and replaced with natives determined by plant experts to help water quality the most as well as stabilize the banks of He'eia stream. Over 8,000 volunteer hours have been used to plant all native riparian shrubs and trees. ~1,000 meters of streambank has been re-vegetated with properly selected native shrubs and trees.

Environmental Results: Ground cover has increased in the riparian areas and plants rooting into the substrate have increased overall water quality by decreasing sediment loads and water movement from the stream banks during rain. Load reduction estimates have been conducted by the contractor on site and sediment loading is estimated to have reduced been reduced by approximately 12 tons per year. Re-vegetation with native plants has also increased diversity in stream bank areas, increasing the possibility for native flora and fauna to return to their natural habitats. Native shrubs and sedges include Ti, Hinahina, Kalo, Hapu'u ferns and Kukui trees.



Figure 6: He'eia stream riparian restoration as of June 2011.

Hawaii Homeowner Raingarden Manual and Implementation

Contractor: Hui O Ko'olaupoko

Todd Cullison, Director

629 A Kailua Rd. Suite #3, Kailua, HI 96734

(P) 808-277-5611

www.huihawaii.org

319 Funds: \$107,064 Match: \$119,687

Start/End: 3/01/2011 - 9/1/2013

Location: Ko'olaupoko Watershed, O'ahu

Partners: DOH-CWB

Pollutants Addressed: TN, TP

Currently there is no manual in the state of Hawaii which homeowners can turn to for researching specific methods for creating raingardens. Hui O Ko'olaupoko is currently developing a manual for homeowners in differing locations on the islands (windward, leeward, mauka, makai, etc). Implementation of several raingardens will be installed to demonstrate these practices to the community. These demonstration raingardens are scheduled to be installed within visible areas in Kailua town and around Kaneohe.

Environmental Results: The project is still early in the development phase of the raingarden manual therefore there are no environmental results currently available from the contractor. One demonstration raingarden has been installed at He'eia State Park.



Figure 7: The demonstration raingarden outside the entrance to the He'eia State park pavilion planted with native vegetation from a local nursery (Hui Ku Ma Oli Ola).

Ka'elepulu Stream On-site Stormwater Retrofit

Contractor: Hui O Ko'olaupoko

Todd Cullison, Director

629-A Kailua Rd., Suite 3, Kailua, HI 96734

(P) 808-277-5611

www.huihawaii.org

319 Funds: \$83,040 Match: \$84,775

Start/End: 6/9/2009 – 12/31/2011

Location: Ka'elepulu Watershed, O'ahu

Partners: DOH-CWB, Hui Ku Maoli Ola, City and County of Honolulu Hughes and Hughes Landscaping Co., Mid Pacific Country Club

Pollutants Addressed: TN, Sedimentation, Vehicular Residue

Ka'elepulu Stream is listed on the DOH's 303(d) list for nutrients and turbidity. Very few areas on the banks of Ka'elepulu stream are publicly accessible; therefore there are limited areas where restoration and BMPs will be able to make a difference. Hui O Ko'olaupoko proposed to retrofit one of these few areas to decrease sediment and nutrient loading from a City and County of Honolulu owned parking lot.

The Contractor has developed and is implementing a landscaping plan with Hughes and Hughes, and Hui Ku Maoli Ola. Parking stalls will be moved approximately three meters from the stream and BMPs (bio-swales and vegetated buffers) will be constructed. The contractor has also acquired funding to implement porous pavement for the parking area. Currently the contractor is going through the process of gifting the project to the city and county of Honolulu which has delayed the retrofit of the parking area due to a lengthy hearing process.



Figure 8: Sediment plume from the parking lot adjacent to Kaelepulu stream. The parking lot will be retrofitted with pushed back parking stalls, porous pavement and grassed swales to filter storm water and decrease potential loads.

Environmental Results: Due to movement of the parking stalls away from the stream, potentially harmful liquids and metals from leaking vehicles may be absorbed and diluted by the implemented

BMPs. The buffer will also increase filtration during storm events and decrease water movement from the parking lot into the adjacent stream.

Waimanalo Stream Restoration and Community Outreach

Contractor: Oahu Resource Conservation and Development Council

Jean Brokish, Watershed Coordinator

99-193 Aiea Heights Drive, Suite 111, Aiea, HI 96701

(P) 808-483-8600 ext. 112

<http://www.oahurcd.org>

319 Funds: \$400,000 Match: \$416,298

Start/End: 1/15/2009 – 12/31/2011

Location: Waimanalo Watershed, O'ahu

Partners: DOH-CWB, Hui O Ko'olaupoko, US Dept. of Agriculture – Natural Resources Conservation Service, AECOM, Hawaii Association of Conservation Districts, Windward O'ahu Soil and Water Conservation District

Pollutant Addressed: TN, TP, Sedimentation

Waimanalo is listed as a priority watershed for the Department of Health.

Implementation of a watershed based plan (Ko'olaupoko Watershed Restoration and Action Strategy) will begin with this project. Agricultural BMPs have been installed for several farmers in areas of concern as laid out in approved conservation plans. The Waimanalo Stream Restoration and Community Outreach Project focuses on 826 acres which are designated for agricultural use. The O'ahu RC&D has characterized the watershed with an initial monitoring plan and

is using the findings to determine priority farms. The BMPs implemented include vegetative barriers and buffers, slope re-vegetation, tree planting, and grassed swales at 5 agricultural lots around the watershed. The project has also received media coverage for several agricultural/professional field days at Frankie's Nursery, Glad's Landscaping, and Green Thumb Nursery and Landscaping.



Figure 10: Next to greenhouses slopes have been vegetated with zoysia grasses.

Environmental Results: Currently the project has contracts with 9 separate land-owners and an additional 2 contracts at or near execution. Thus far, estimated load reductions from the implementation projects are approximately 2,800 lbs. of Nitrogen, 1,900 lbs. of Phosphorous and 41 tons of sediment. These BMPs also increase awareness by demonstrating the potential positive impacts of those BMPs to other farmers in the area during the Public site visits and agriculture/professional field days.



Figure 11: Roadsides on selected agricultural properties were also treated with cover crops (as shown in next figure).



Figure 12: Roadside revegetated to reduce rill erosion during frequent heavy rains in Waimanalo.

Demonstrating Management Practices at Wailupe Beach Park

Contractor: SRGII

Kristin Duin

111 Heliki St. Suite A373, Kailua, HI 96734

(P) 808-356-0552

www.srgii.com

319 Funds: \$131,904 Match: \$133,807

Location: Wailupe watershed, O'ahu

Start: 6/11/11 End: 6/11/13

Partners: DOH-CWB, City and County of Honolulu, Malama Maunaloa, CPK Planning, Project Management Plus LLC, Geotech Solutions Inc.

Pollutants Addressed: TN, Sedimentation, Vehicular Residue

Wailupe Beach Park is one of only a few areas which are easily accessible and publicly visible in the Wailupe watershed, as stated in the draft watershed based plan. With the assistance and approval of the City and County of Honolulu's Parks and Recreation Division, the contractor proposed to design, install and maintain demonstration BMPs at Wailupe Beach Park on the south shore of Oahu. An infiltration swale will be constructed around the existing parking lot. Coir logs will be planted with native salt tolerant plants near the edge of the stream.



Figure 13: Wailupe Beach Park during low tide. The Wailupe stream outlet is directly adjacent to the closer coconut trees.

Expected Environmental Results:

Due to the proximity of Wailupe Beach Park to Kalaniana'ole Highway, the park is a prime candidate for BMPs. The approximately 150 feet of infiltration swale as well as the 400 feet of coir logs will prevent NPSP from entering the ocean as well as Wailupe stream. In addition to direct water quality effects, the plantings in the coir logs near the stream bank will decrease the nutrient load from the perennially flowing Wailupe Stream.

Projects on the island of Kauai:



Figure 14: Locations of projects funded through 319(h) funds on the island of Kauai

Total 319 funds allocated to projects on Kauai: \$124,852

Total matching funds for 319 projects on Kauai: \$127,700

Hanalei Watershed Based Plan:

Contractor: Hanalei Watershed Hui

Makaala Kaaumoana, executive Director

5299C Kuhio Hwy. PO Box 1285, Hanalei, HI 96714

(P) 808-826-1985

www.hanaleiwatershedhui.org

319 Funds: \$124,852

Match: \$127,700

Location: Hanalei watershed, Kaua'i

Start: 6/16/11 End: 9/16/12

Partners: DOH-CWB, SRGII, Sunshine Helicopters, Ho'ike, Hanalei to Ha'ena Community Association

Hanalei watershed is located on the northern coast of the island of Kauai. The Hanalei Bay Watershed includes Hanalei, Waiole, Waipa and Waikoko sub-watersheds. Hanalei Bay is listed on Hawaii's 303(d) list of impaired water bodies for enterococci and turbidity. A watershed based plan will be developed using EPA's 9 key elements. The watershed based plan will include BMP implementation in priority areas to decrease potential loading into Hanalei Bay.

The project is currently in the beginning phases of gathering data and working to get stakeholders involved.

Expected Environmental Results: We expect to receive a WBP that addresses the EPA's 9 key elements, as well as an implementation plan that will clearly state where issues are located, a priority list of NPS issues, cost estimates of potential implementation efforts, and potential load reductions from each project. These documents together should allow groups and organizations to implement water quality BMPs throughout the Hanalei Bay Watershed.

Projects on the island of Maui:

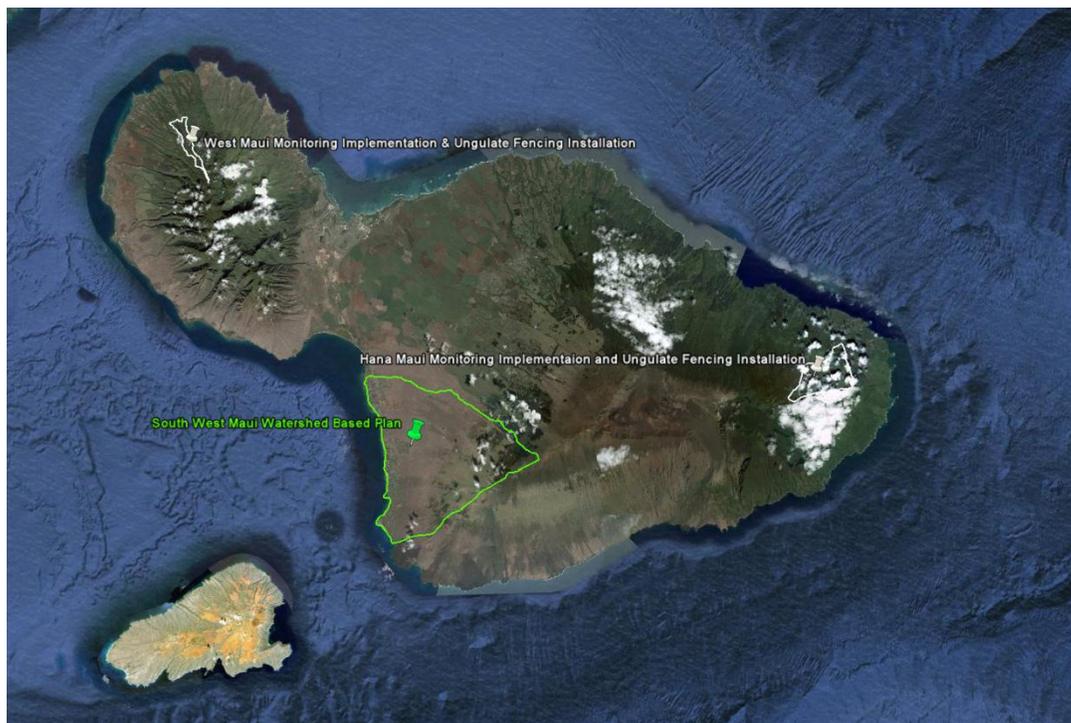


Figure 15: Locations of projects funded through 319(h) funds on the island of Maui

Total 319 funds allocated to projects on Maui: \$444,392

Total matching funds for 319 projects on Maui: \$442,690

Maui Monitoring Implementation and Ungulate Fencing Installation:

Contractor: University of Hawaii/Hawaii Association of Watershed Partnerships

Chris Brosius and Randy Bartlett, Program Managers

1151 Punchbowl St. Room 325, Honolulu, HI 96813

(P) 808-388-9699

www.hawp.org

319 Funds: \$250,000 Match: \$255,452

Start/End: 4/20/2010 – 8/20/2013

Location: Hana Forest Reserve and Honolua Watershed, Maui

Partners: DOH-CWB, University of Hawaii, East Maui and West Maui Mountains Watershed Partnerships, DLNR, Fish and Wildlife Service, National Park Service, US EPA, USGS.

The Hawaii Association of Watershed Partnerships is creating a comprehensive monitoring plan that will be available for other non-point source pollution control projects throughout the state. The contractors will put together chemical, physical and hypothetical (pollution load models) monitoring practices useful for the state of Hawaii to follow and characterize watershed work and NPS pollution implementation. As an implementation piece of the project the HAWP East Maui and West Maui Mountain Watershed Partnerships will install sections of fence and begin feral ungulate removal in those fenced off areas. Using specific methods from their monitoring plan the Watershed partnerships on Maui will begin to assess the efficiency of their fencing projects.

Currently the project aims to implement fencing in both watersheds and should be completing installation within the year. The monitoring plan is being updated and reviewed and should be completed in early 2012.

Environmental Results:
Reduction of feral ungulates (wild pigs, *Sus scrofa*) leading to a reduction of erosion, local monitoring guidelines suited for Hawaii climate and watersheds, two fences erected in Honolulu and Hana upper forest areas to keep non-native invasive destructive animals out of high priority areas.



Figure 16: Looking towards fencing site just outside of Honolulu Bay Watershed.

South West Maui Watershed Based Plan:

Contractor: Central Maui Soil and Water Conservation District

Mr. Richard Sylva

Project Coordinator

Central Maui Soil and Water Conservation District

77 Hookele St. Ste. 202, Kahului, HI 96732

(P) 808-871-5500

www.hacdohawaii.com

319 Funds: \$194,392 Match: \$194,392

Start/End: 10/13/2009 – 4/15/2012

Location: Hapapa, Wailea and Mo'oloa Watersheds, Maui

Partners: DOH-CWB, HACD, County of Maui, University of Hawaii, US Army Corps of Engineers, DLNR, Ulupalakua Ranch, DLNR-DAR, Board of Water Supply, USGS, Kula Community Association, Kihei Community Association, Dept. of Hawaiian Homelands

The three watersheds that are being targeted in this project are Hapapa, Wailea, and Mo'oloa and they are all located on the southern coast of the island of Maui. A watershed based plan will be developed using EPA's 9 key elements. The watershed based plan will include BMP implementation in priority areas to decrease potential loading into South West Maui's waters.

The contractor is delivering the document in sections and has written the watershed characterization, monitoring and implementation sections and causes and sources of pollution sections. DOH has reviewed these sections and have returned comments to the contractor.

Expected Environmental Results: We expect to receive a WBP which addresses EPA's 9 key elements as well as an implementation plan which will clearly state where issues are, a priority list of NPS issues, cost estimates of potential implementation efforts and potential load reductions from each project. Environmental results will be made when the plan is implemented and BMPs put into the ground at priority areas of the watersheds.

Projects on the island of Hawaii:

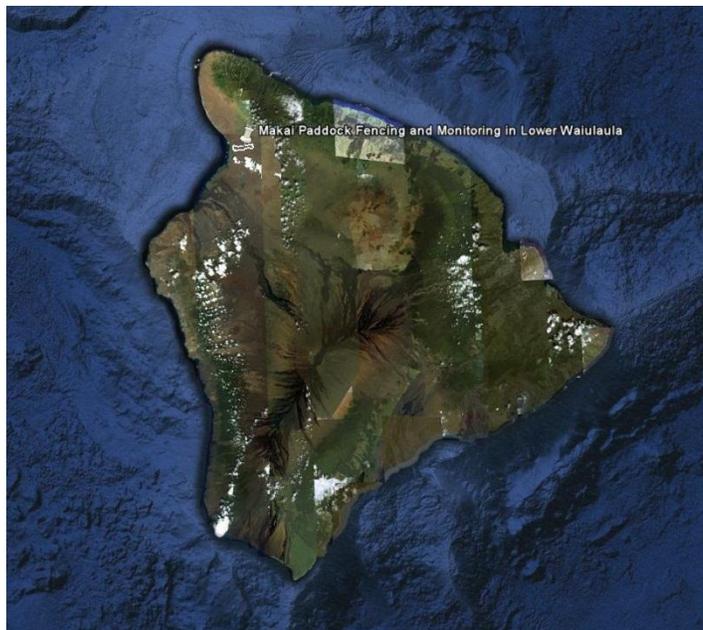


Figure 17: Locations of projects funded through 319(h) funds on the island of Hawaii

Total 319 funds allocated to projects on Hawaii: \$135,124

Total Matching funds for 319 projects on Hawaii: 136,027

Makai Paddock Fencing and Monitoring in Lower Waiulaula:

Contractor: Mauna Kea Soil and Water Conservation District

Mr. James Thain

Executive Director

64-1032 Mamalahoa Hwy, Suite 201

(P) 808-885-6602

www.hacd.hawaii.com

319 Funds: \$135,124 Match: \$136,027

Start/End: N/A (30 months)

Location: Waiulaula

Partners: DOH-CWB, HACD, Marine Coastal Solutions, University of Hawaii at Hilo, NRCS – Waimea Office

Pollutants Addressed: TN, TP, Sedimentation

In the Waiulaula/Waikoloa Watershed Based Plan fire risk management is considered a priority preventive action that can be implemented to decrease sedimentation. In the northwestern section of the island of Hawaii the contractor will create fencing to keep cattle out of riverbeds as well as to control the fuel loads in the fire prone areas of the project. The project will cover over a thousand acres of ranch land. The project will also feature public education through interaction with ranchers and farmers in the affected area.

Dialouge for this project was brought to the attention of the PRC program during early 2011. Comments and suggestions were submitted in the summer of 2011 and the contract was drafted during the summer of 2011 outside of the RFP process. The project is currently going through contract processing due to an initial large invoice and a conflict in policies. These conflicts have been taken up with the deputy director and have been ironed out to produce a working invoicing system for the contractor.

Expected Environmental Results: To assess the load reductions for this project modeling will be employed to determine approximate sedimentation loading pre- and post- fence installation and grazing. The fire loads will be grazed down to a manageable level and grazers will be rotated throughout several paddocks in the grazing area.



Figure 18: Lower Waiulaula streambed with fire prone vegetation near homes.

Statewide Projects:

Hawaii Watershed Experience

Contractor: Healthy Hawaii Coalition

Ms. Ali Riggs

PO Box 75505, Kapolei HI, 96707

(P) 808-778-4243

www.healthyhawaiiicoalition.com

319 Funds: \$21,780 Match: \$22,220

Start 11/6/2009 End: 11/6/2011

Location: Hilo Bay Watersheds, Waiulaula Watershed, Nawiliwili Watersheds, Hanalei Bay Watersheds, Ko'olaupoko Watersheds, Ala Wai Watersheds

Partners: DOH-CWB

The Hawaii Watershed Experience: A Hands-on Elementary Education Program brings the concepts of their watershed/ahupua'a to elementary schools around the state. The Healthy Hawaii Coalition deals with non-point source issues such as storm drain education, erosion control and nutrient management. The program consists of 3 days; on the first day a short play entitled "The Adventures of Waterwoman and Oily Al" is presented to the students. The second day consists of the students taking a field trip to a local, easily accessible area where they are introduced to concepts like erosion, nutrient/fertilizer control and local ecology. The third day consists of reviewing materials from the first two days. The goal of the project is to bring the program to 9 of the state's priority watersheds. The Contractor aims to increase general and base knowledge of watersheds as well as non-point source pollution issues. The program is specifically targeted towards children in grades 4-5. The project is nearing completion with only a few more presentations and a final report to be submitted to DOH for comment and final approval.

The PRC program has been funding this project for approximately 6 years. During those 6 years the contractor has shown that the students retain knowledge gained from the presentation but not over a longer period than a school year. The PRC program gave suggestions to HHC regarding further follow up with children who have been through the program several years prior to gauge the retention of the information gained in the presentations.

Environmental Results: With an education and outreach project such as this, environmental impacts will be difficult, at best, to characterize and quantify. The contractor is, however, trying to change perspectives and outlooks and they are monitoring those processes via surveys 4-6 weeks after the program is completed

Hawaii Youth Conservation Corps

Contractor: Kupu

John Leong, Coordinator

4211 Waiialae Ave. #1020 Honolulu, HI 96816

(P) 808-735-1221

www.hawaiiycc.com

319 Funds: \$201,000 Match: \$201,240

Start/End: 6/9/2009 - 6/9/2011

Locations: O'ahu, Maui, Kauai, Hawaii, Kaho'olawe, Molokai

Partners: DOH-CWB, NRCS, Kaho'olawe Island Reserve Commission, DLNR, Kamehameha Schools, US Fish and Wildlife Services, Americorps

The Youth Conservation Corps is an education and outreach program which targets interested high school and undergraduate students. The project's main goal is to get students interested in conservation and science. The conservation corps offers a strong hands-on curriculum to give its participants knowledge in conservation. All of the participants were surveyed with a conservation quiz before and after they had participated in

the program to determine project effectiveness and awareness of watershed-wide activities, problems and potential solutions.

Environmental Results: Results are difficult to assess due to issues with obtaining proper monitoring plans and multiple project assistance for short periods of time. The PRC program received varying monitoring plans from each project the youth conservation corps attended but each project was disjointed from the other therefore little information regarding water quality was obtained. Data has been reported to DOH but without a prior approved monitoring plan and QAPP the data is useless for the integrated report or any other analysis. Ultimately the PRC program commented on the monitoring plans but little was done to change the scope of the monitoring. On a positive note, the pre- and post- tests of the students showed a marked improvement over the course of the project.

HACD Conservation Specialists

Contractor: Hawaii Association of Conservation Districts

Michelle Watson, Executive Director

99-193 Aiea Heights Drive, Suite 110

Aiea, Hawaii 96701

www.hacdhawaii.org

319 Funds: \$209,266

Start: 4/17/2009 End: 12/31/2011

Location: Maui, Kaua'i, Hawai'i and O'ahu

Partners: DOH-CWB, NRCS, University of Hawaii, Oahu Resource Conservation and Development Council, City and County of Honolulu, County of Maui, County of Kauai, County of Hawaii, Hanalei Watershed Hui

Pollutants Addressed: TN, TP, Sedimentation

The conservation specialists provide assistance in reducing non-point source pollution by aiding in outreach and education, assisting local farmers in creating conservation plans for individual farms, assisting with watershed planning and implementation efforts, monitoring exercises as well as other duties. The four conservation Specialists cover four of the major islands including: Maui (John Astilla), Hawaii (Spencer Nagata), Oahu (Tiffany Hooper), and Kauai (Rachel Martin). All positions are currently filled. The conservation specialists' grant is currently being worked on and work plans as well as an updated Quarterly Status Report for the individual islands have been updated to reflect the different duties at each island.

Environmental Results: The Conservation Specialists are expected to assist in developing and implementing conservation plans which should help improve water quality due to BMP implementation. Conservation specialists are also directed to assist in the development and

implementation of watershed based plans where applicable, also aiding in water quality improvements. Each island has assisted with potential load reductions due to their actions with conservation plans. Each specialist completes and assists cooperators with BMP implementation on their respective farms. Examples of BMP implementations are Cover crops, wind breaks, bio-swales, mulching, etc.

Coastal Nonpoint Pollution Control Program



Seventy (70) Coastal Nonpoint Pollution Control Program (CNPCP) elements were submitted in June 1996 for approval by NOAA and EPA in the Hawaii Coastal Nonpoint Pollution Control Program: Management Plan, including 57 management measures and 13 administrative elements. Initial approvals were given in the Findings for Hawaii's Coastal Nonpoint Pollution Control Program document (June 1998), which also contained conditions for the non-approved elements. Hawaii has worked toward meeting those conditions and gaining full approval for the past eleven years. "Interim decision documents" used by the federal agencies when specific conditions are met, have been received for several elements. The management measures remaining include urban watershed protection, existing development, protection of wetlands and riparian areas, streambank and shoreline erosion, physical and chemical characteristics of surface waters, in stream and riparian habitat restoration, critical coastal areas, monitoring, roads highways and bridges, and onsite disposal systems.

A "Strategy for Addressing Remaining Management measures for Hawaii's Coastal Nonpoint Pollution Control Program" was developed in 2007 by CZM and DOH. The Strategy was submitted to EPA and NOAA as the State's approach for gaining approval of the remaining CNPCP management measures as well as to overall CZARA Program approval. In FY2011 the

State placed a considerable amount of effort toward the implementation of activities outlined in the strategy focused on both dissemination of the Hawaii Watershed Guidance and an innovative solution to the onsite disposal system Management Measure. A major component of the Strategy was the development of a watershed guidance package. It provides direction for watershed planning efforts to State, local, and nongovernmental entities that will include the CNPCP management measures and associated management practices as an implementation menu for watershed plans. While the contract for the Hawaii Watershed Guidance was managed through the Office of Planning, the Polluted Runoff Control Program staff was actively involved in its development via comment on contract, review of draft submittals, and approval of final document.

During the period covered by this report the Hawaii Watershed Guidance has been introduced and discussed at numerous public meetings, to include, but not be limited to, the Hawaii Congress of Planning Officials, the annual Hawaii Association of Conservation Districts meeting, the Ocean Resource Management Plan working group, the Marine and Coastal Zone Advisory Council, the Hawaii Conservation Conference, the Land Based Pollution Local Action Strategy for Coral Reefs Steering Committee, the State Technical Advisory Committee, and the Coastal States Organization 6217 Working Group. In all cases the Polluted Runoff Control Program staff was either the primary presenters or was in attendance to assist and document information as necessary. Subsequent to these presentations the Office of Planning, once again with the active involvement of the Polluted Runoff Control Program, is in the process of issuing a contract for the distribution of the Watershed Guidance information via outer island workshop.



DOH and CZM completed (Summer 2010) an update of the Management Measures, as a refinement to a 2009 contract. Included in this document is a statement of each management measure, its status with NOAA/EPA, applicability to include summary of any differences between the State of Hawaii Management Measure and the Federal guidance specifying management measures for sources of nonpoint pollution in Coastal Waters, responsible agencies, implementation tools, and a reporting tool. This document is part of the Watershed Guidance Package submitted to EPA and NOAA this past fiscal year.

Based upon the updated Management Measures document the State believes that the Management Measure for Planning, Siting, and Developing Roads and Highways, and the Management Measure for Bridges may be approved. DOH continues to work on Roads, Highways, and Bridges maintenance and operation as well as Management measures for Roads, Highways, and Bridges Runoff systems, though the program believes all necessary requirements for approval are in place given discussions with the Coastal States Organization as to approved programs on the mainland. The program expects to use the outer island Watershed Guidance workshops to document this conformance. The expansion of the approved Hawaii Department of Transportation (DOT) Oahu programs to all islands is the preferred approach. The Watershed Guidance is the appropriate implementation tool, along with the use of DOT Oahu programs, for considering operation, maintenance, and runoff systems, integral to the ORMP and Watershed Based Plan process, and therefore an adequate response to the federal requirement.



In FY 2006, an OSDS strategy was developed to highlight the direction of State efforts and activities to address the OSDS management measures and also assist with broader onsite wastewater issues. The strategy outlines a mechanism to require upgrade to denitrifying OSDS (when necessary), information to document the restriction and elimination of new cesspools, and a coordinated approach to address the inspection of operating OSDS.

A contract with the University of Hawaii (UH), Water Resources Research Center included the use and refinement of the GIS wastewater inventory information mapped in FY2008 for Oahu. This includes sewer parcels, those utilizing DOH-permitted Individual Wastewater Systems, and cesspools. It is recognized that the first step in accomplishing an adequate management measure for OSDS is to identify their location. The specific details of progress made on OSDS to date include: UH completed a risk-based analysis of OSDS (Oahu only) and inspection protocols. Draft reports were received in October 2009 on: 1) Identification of geographic areas where OSDS have higher likelihood of impacting coastal water quality; and 2) Identify inspection protocols for different OSDS used in Hawaii. Follow up on this, as of September 2011, includes basic background information gathering taking place to expand the mapping of wastewater inventory information to the islands of Maui, Kauai, and Hawaii, as well as the initiation of inspections via contract services. The inspection strategy at this point is limited to Safe Drinking Water Branch well protection areas, but is intended to be increased to voluntary point of sale assessments once a program for certification of inspectors has been completed.

Outreach & Education

When listing sources of impairments for waterbodies across the state we don't come across a "lack of knowledge" source category. But if 25, 50 or 100 years ago, people knew what we know now about NPS pollution; our waters might look a little different. So the need to continue to provide outreach and education on polluted runoff is crucial. Many residents still need to understand what their role is and can be in NPS pollution control. Many residents still need to be convinced that NPS pollution control is important and its effects on water quality are significant. The PRC Program uses various methods and venues to provide NPS pollution outreach and education.

One of our big annual events is the Mauka to Makai Earth Day Expo at the Waikiki Aquarium. It is an all-day event free to the public and includes entrance to the aquarium and access to all the exhibits. Approximately 25 water resource related organizations set up hands on activities geared toward families to promote an understanding of polluted runoff, the importance of caring for our natural resources and many other water resource related activities. Our sponsorship of this event is done in partnership with the City and County of Honolulu and the Waikiki Aquarium. The Program also partners with the City for World Water Monitoring Day where students learn how the State and City conduct water quality monitoring, and why it is important. We participated in the first Maunalua Bay Heritage Festival, helping to increase the community's awareness and understanding of the Wailupe Watershed Based Plan and the implementation projects we support to address nonpoint source problems in the Maunalua Bay watersheds.

The Program also supports nonpoint source outreach and education through our 319 contractors. The Honolulu Theatre for Youth developed an entire production titled "Where do things go?" dedicated to science with a focus on polluted runoff. 20,000 students, teachers and families attended the play over an extended two month run. A teacher's guide was provided so additional in classroom discussion and activities could take place before or after students experienced the play.



The Apoha coloring book, and Journey Home activity book in both English and Hawaiian continue to be in high demand at elementary schools and programs statewide. These materials are made available free to the public upon request. They provide information on polluted runoff and the types of activities children and their families can do to help prevent nonpoint source pollution.