

**Fiscal Year 2012  
October 1, 2011 – September 30, 2012**

## **Annual Report**



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

[hawaii.gov/doh/pollutedrunoffcontrol](http://hawaii.gov/doh/pollutedrunoffcontrol)

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## Executive Summary

Hawaii's Nonpoint Source Management Program Plan for Polluted Runoff Control (July 2000) has guided the State Department of Health's (DOH) Polluted Runoff Control Program (Program) for the past 12 years. The DOH will be updating this management plan in 2013, as some of the guidelines in the plan are no longer relevant and do not match the Program's actions in its annual workplan. The Program intends to include annual milestones in the management plan update that can also be reflected in the Program's annual workplan, so reporting on the Program's goals and activities becomes more relevant.

The DOH was awarded \$1,209,000 in a Clean Water Act (CWA) Section 319(h) grant from the US Environmental Protection Agency (EPA) for the Program in September 2012. The DOH will provide \$808,000 in non-federal match as required by the grant. Funding will continue to support the Program staff, polluted runoff watershed planning and implementation projects, and nonpoint source outreach and education. The DOH continues to manage four existing open grants along with this recently awarded grant. Efforts to focus grant funds in priority watersheds where environmental and water quality improvements are expected have been made, including reducing the match required by the Program's project contractors.

The Program continues to rely on its contractors to provide monitoring for its 319(h) funded projects. However, the Clean Water Branch (CWB) is taking steps towards conducting water quality monitoring in watersheds where the Program has funded implementation efforts in the past. Contractors will continue monitoring to show project effectiveness, but the DOH will conduct technical and long term monitoring to show water quality improvement.

Three 319(h) funded projects have been completed during this fiscal year. These projects have resulted in reductions in nitrogen, phosphorus, and sediment. Currently there are ten ongoing 319(h) funded projects. Projects range from implementation of large scale best management practices (BMPs) on agricultural lands, to the development of Watershed Based Plans (WBPs), and the construction of bio-swales, pervious pavement, and rain gardens. Specific project descriptions and results are included in this report.

The State's Coastal Nonpoint Pollution Control Program (CNPCP) remains conditionally approved. The Program is working with the DOH Safe Drinking Water Branch and their contractor to determine the next steps in addressing onsite disposal systems.

The Program continues to support nonpoint source education and outreach efforts to affect behavior change at all levels, with a specific focus on children's groups. Quantifying the effectiveness and documenting behavior changes remains a challenge, however the Program strongly believes in its efficacy.

## Hawaii's Nonpoint Source Management Program Plan

The current plan has guided the program for the past 12 years. This should be updated every five years; however staffing turnover and challenges arising from the economic recession have hindered the Program in updating the plan. Some of the goals and activities included in the original plan are no longer relevant or appropriate as anticipated, so the Program intends to overhaul the existing plan to increase effectiveness and meet today's challenges. One such example is to include annual milestones in the new plan that can be incorporated into the Program's annual workplan for more accurate reporting and to better chart the Program's progress. The DOH has enjoyed some success in meeting particular long-term goals outlined in the original plan, and has demonstrated progress towards completing recommended activities, which are outlined in Appendix A, below.

The DOH anticipates that it will finalize an updated Nonpoint Source Management Program Plan by September 2014. This updated Plan will identify the Program's short- and long-term goals, and detail activities and milestones for progress towards those goals. The Program is currently in discussions with the EPA to determine how the DOH will develop the updated Plan to ensure that it meets the Nine Key Elements of an Effective State Nonpoint Source Management Program Plan under the EPA's 2012 Section 319(h) Program Guidance.

### Grant Implementation

At the start of fiscal year 2012, the Program was actively managing six EPA CWA Section 319(h) grant awards (FY06, FY07, FY08, FY09, FY10, & FY11). The Program closed two grants in December 2011 (FY06 & FY07) and was awarded a fifth 319(h) grant in October 2012 (FY12). Specific challenges and accomplishments regarding grant implementation, as well as expanded outlines of the aforementioned grants, are listed below:

In previous award and implementation projects, the Program required applicants to contribute a 1:1 grant/match ratio due to the inability of the State to contribute general funds to meet the 319(h) match requirements. The Program, with the help of the current DOH administration, was able to effectively allocate additional general fund resources to increase the amount of State support and lessen the burden on applicants. For FY12, the Program's 319(h) implementation Request for Proposals (RFP) lowered the match requirement to a 1:0.25 grant/match ratio. Feedback from the community has been positive, as the previous match requirements were onerous for local providers. In particular, one applicant in the FY12 RFP stated that their proposal (which was later awarded by the Program) would not have been possible without the reduced requirements. The Program is confident that the reduced match requirement is viable and shall continue going forward in every implementation RFP.

The Program continues to be challenged by the lack of effective WBPs within the State. There are approximately 600 watersheds in the State, with only about 15 WBPs (albeit most plans include more than one watershed). This curtails the number of watersheds where the Program can allocate funds, due to the existing EPA requirements directing the use of Incremental and Base grant funds (e.g., Incremental grant dollars can only be used for projects arising out of effective WBPs). The inability to use Incremental grant funds for

projects that are not derived from effective WBPs has unfortunately disallowed worthy projects from being funded in the past, most recently with a proposal located in the Kaiaka Watershed on the island of O’ahu (BMP cost-share and installation) and a proposal located in the Honokowai and Wahikuli Watersheds on the island of Maui (ungulate removal and fence maintenance). The Program is hopeful that upcoming EPA revisions to the Base/Incremental 319(h) delineation will help to alleviate this issue.

In the interim, the Program has undergone an effort to increase the number of effective WBPs. For FY12, the Program anticipates receiving WBPs for the Hanalei Bay, Southwest Maui and Honouliuli Watersheds, and has agreed to a cost-share with the City and County of Honolulu (CCH) to begin a Kaiaka Watershed WBP that is anticipated to be completed in FY15. In addition, under the West Maui Ridge to Reef (WMR2R) partnership, NOAA contracted for two WBPs in West Maui, and other partners in WMR2R are expected to fund the development of the remaining three WBPs in that region. The Program also jointly funded the development of the “Hawaii Watershed Guidance,” a useful tool for interested community groups and contractors to develop effective WBPs. Furthermore, the Program undertook a review of all existing WBPs, to determine their effectiveness. WBPs that require updating have been noted, and the Program intends to focus on improving existing WBPs through community outreach and specific, targeted RFPs going forward.

In summary, while the Program is now currently experiencing issues due to the lack of effective WBPs, in the last two years there has been a concentrated effort to increase the number of WBPs throughout the State, with the goal of increasing the installation of implementation projects in the immediate future. Furthermore, the Program is aware of the deficiencies in some of its existing WBPs, and intends to work on improving their effectiveness in a measured, timely fashion to balance having a number of effective plans while avoiding a glut of plans without the means to implement projects.

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 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, funded, and completed under this grant. 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 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. Ten projects were 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 \$1,642,000 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 \$5,000 of remaining FY08 funds that will be used within the next year to partially fund a project awarded in the program's FY12 RFP.

The nine existing 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);
- \$83,000 for an on-site stormwater retrofit at Ka'elepulu 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)
- \$414,000 to fund the State Conservation Specialists Program;
- \$79,000 to fund Phase II of the He`eia Stream riparian and water quality improvement project (partially funded, remainder of funding in FY10);
- \$130,000 for one year of NPS IPA funding;
- \$90,000 for one-half 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, and a memorandum of agreement between the State and the CCH to share funding for the development of a WBP. 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 \$1,074,000 of federal funds has been spent or encumbered for project implementation, and approximately \$440,000 was spent to support the Program. There currently a negative balance of approximately \$13,000 of remaining FY09 funds, however the Waimanalo BMPs project did not use all of its encumbered funds and the balance restored after processing the final invoice will leave a net balance of approximately \$1000. This will be used within the next year to partially fund a project awarded in the program's FY12 RFP.

The seven 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;
- \$25,000 for an education and outreach program targeting elementary school children in priority watersheds; and
- \$210,000 to develop a WBP in the Kaiaka Bay Watershed.

#### Fiscal Year 2010 (9290-10)

The State's Fiscal Year 2010 grant will expire on September 30, 2015. Eight projects were originally funded under this grant; however two projects were cancelled due to issues outside of the awarded vendors' control. \$200,000 has also been set aside to fund implementation projects arising out of the ACE/DLNR West Maui WBPs. 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 \$678,000 of federal funds has been spent or encumbered for project implementation, and approximately \$315,300 spent on supporting the Program. There is approximately \$603,000 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 RFP.

The six existing FY10 projects are:

- \$107,000 to draft a Homeowner’s Raingarden Installation Booklet, and install raingardens throughout the Kōloaupoko Watershed;
- \$132,000 to install Best Management Practices in the Wailupe Beach Park to reduce runoff;
- \$136,000 to fund Phase II of the Heʻeia Stream riparian and water quality improvement project (partially funded, remainder of funding in FY08);
- \$60,000 to extend the State Conservation Specialists Program;
- \$200,000 to fund implementation projects arising out of the West Maui WBPs; and
- \$20,000 to fund a statewide children’s play designed to educate students about nonpoint source pollution.

Fiscal Year 2011 (9290-11)

The Program 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. There is approximately \$840,000 available to spend on projects, and the Program 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 was spent to support the Program.

Fiscal Year 2012 (9290-12)

The Program was awarded an EPA CWA 319(h) grant for the Fiscal Year 2012 that expires on September 30, 2017. The total federal award is \$1,209,000 with a State in-kind contribution of \$808,000. There is approximately \$745,000 available to spend on projects, and the Program anticipates that future RFPs will yield projects that shall be funded under the FY12 grant. Approximately \$391,000 of the federal funds will be spent to support the Program.

Grants Summary					
Fiscal Year	FY08	FY09	FY10	FY11	FY12
Program Personnel & Overhead	\$500,233.00	\$442,418.00	\$315,263.82	\$515,476.63	\$463,834.49
Existing Projects	\$1,634,412.34	\$1,059,984.72	\$1,275,533.62	\$734,895.00	\$0.00
Available Project Funds	\$7,221.66	\$1,223.28	\$5,506.56	\$105,118.37	\$745,165.51
Total EPA Award	\$2,141,867.00	\$1,503,626.00	\$1,596,304.00	\$1,355,490.00	\$1,209,000.00

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 \$1:0.25 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, and a significant reduction from the previously-required \$1:1 match requirement prior to FY11. 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 Specialists Program.

General funded positions include: the Branch Chief of the CWB, a CWB Clerical employee, an IT Specialist, and five Environmental Health Specialist IVs (EHS IVs) on the outer islands, and Individual Wastewater System Engineer IVs (IWS IVs) on O'ahu. 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

While the Program continues to use contractor monitoring for specific projects, the Program will begin water quality sampling in the He'eia Watershed on the island of O'ahu. A sampling and analysis plan has been drafted and is currently being reviewed by the CWB Monitoring Section.

### 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 contractors to the Program is reviewed, analyzed, assessed, modeled, and submitted to the DOH Environmental Planning Office for further review of water quality data for possible use in de-listing water bodies.

During grant negotiations the 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 of monitoring plans for highly detailed project areas. The Program agrees with this general philosophy and is currently working toward developing a monitoring plan that targets the He'eia Watershed on the island of O'ahu. The plan proposes that the Program's Environmental Health Specialist go to two sites (upper and lower) in the watershed, twice a month, to gather in-situ water quality data and collect stream samples for chemical analysis by the DOH Laboratory. The main goal of the water quality monitoring is to determine if He'eia Stream is responding positively to 319(h) implementation projects. The Sampling and Analysis Plan is nearing completion and sampling is scheduled to begin in January 2013.

### 319(h) Project Monitoring

All contractors receiving 319(h) funding are required to do some type of monitoring to indicate project efficacy. While most contractors conduct quantitative project monitoring, the methods vary from project type to project type and contractor to contractor. Water quality monitoring is also used to determine effectiveness in projects that have on-the-ground implementation (He'eia Stream Riparian and Water Quality Improvements, Ka'elepulu Stormwater Retrofit). 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 allows the Program to have a greater understanding of results from each project.

### Grant Reporting and Tracking System (GRTS) Load Reductions

Using water quality data and modeling, the Program has been able to approximate load reductions for each project it funds. Load reductions are the quantitative measuring stick for the Program and assist the DOH in determining efficacy of each project. For FY12, the Program is proud to report the following estimated load reductions:

**Nitrogen Load Reduction: 28,412 lbs.**  
**Phosphorous Load Reduction: 7,165 lbs.**  
**Sediment Load Reduction: 5,085 tons**

Load reductions assist with watershed restoration by decreasing targeted Nonpoint Source Pollution (NPSP). Progress is being made towards the Program's ultimate goal of decreasing NPSP and de-listing impaired water bodies through on-the-ground project implementation.

### **319(h) Funded Projects**

<b>Completed Projects:</b>	<b>Key Outcomes/Results/Updates</b>
Waimanalo Stream Restoration and Community Outreach	9 cooperators have implemented conservation plans within Waimanalo. The project monitoring was inconclusive but revealed high amounts of phosphorous and TSS. <b>Approximate Load Reductions:</b> <b>Total Nitrogen: 5,764 lbs/yr</b> <b>Total Phosphorous: 1,201 lbs/yr</b> <b>Sedimentation: 322 tons/yr</b>
He'eia Stream Riparian and Water Quality Improvements	The project is nearing completion with nearly 1000 meters of stream bank re-vegetation and 8,000 hours of volunteers credited to this project. <b>Approximate Load Reductions:</b> <b>Total Nitrogen: 1,600 lbs/yr</b> <b>Total Phosphorous: 800 lbs/yr</b> <b>Sedimentation: 16 tons/yr</b>
Maui Monitoring Implementation and Ungulate Fencing Installation	The contractor developed a monitoring plan for ungulate fencing and is currently installing fences in the upper West Maui Mountain Watersheds and in the upper Hana Forest area.

### 319(h) Funded Projects (Cont.)

<b>Completed Projects:</b>	<b>Key Outcomes/Results/Updates</b>
Conservation on Agricultural Lands in Honouliuli	<p>Large land owners in Honouliuli were encouraged to implement large scale BMPs through cost-sharing. The contractor also held field days for professionals to assist with spreading conservation message. Drafted WBP for the upper Honouliuli Watershed.</p> <p><b>Approximate Load Reductions:</b>  <b>Total Nitrogen: 14,500 lbs/yr</b>  <b>Total Phosphorous: 4,800 lbs/yr</b>  <b>Sedimentation: 2,800 tons/yr</b></p>
HACD Conservation Specialists	<p>Assist the DOH with the approval of conservation plans for local agricultural operations. All 4 specialist positions were filled this year.</p> <p><b>Approximate Load Reductions:</b>  <b>Total Nitrogen: 6,548.2 lbs/yr</b>  <b>Total Phosphorous: 364 lbs/yr</b>  <b>Sedimentation: 1947.1 tons/yr</b></p>
Ka'elepulu Stream On-site Stormwater Retrofit	<p>Construction at the parking lot has been completed and an open house and blessing took place on October 17, 2012. Bio-swales, pervious pavement, and recessed parking were all completed during construction.</p> <p><b>Approximate Load Reductions:</b>  <b>Total Nitrogen: 250 lbs/yr</b>  <b>Total Phosphorous: 50 lbs/yr</b>  <b>Sedimentation: 1 ton/yr</b></p>
Southwest Maui Watershed Based Plan	<p>The plan is currently being completed in sections and is being reviewed, commented, and finalized in a timely manner by the Program. Potential implementation projects awarded through an RFP can begin once the WBP is completed.</p>
Watershed Based Plan for Hanalei Bay Watersheds	<p>The EPA's 9 key elements of an effective WBP are being used to develop this WBP. The contractor has hired a subcontractor for technical information. The contract is pending a no-cost extension to complete planning work.</p>
Demonstrating Management Practices at Wailupe Beach Park	<p>The original proposal could not be fully implemented due to unforeseen CCH regulatory hurdles. The contract was modified to include similar, allowable practices at an adjacent site (Kuliouou Beach Park).</p>
Hawaii Homeowners Raingarden Manual and Implementation	<p>An early draft of the raingarden manual has been sent to the Program for review and comment. The contractor has begun site selection for public raingardens.</p>
He'eia Stream Riparian Restoration Phase II	<p>The contractor received its NTP in May 2012 and is in the beginning phases of clearing riparian areas.</p>
Hawaii Watershed Experience: A Hands-on Elementary Education Project	<p>A two-day presentation for students to learn about watershed health and ways to combat NPSP. The presentations have been given in priority watersheds on the five major islands.</p>

## Projects on the Island of O’ahu

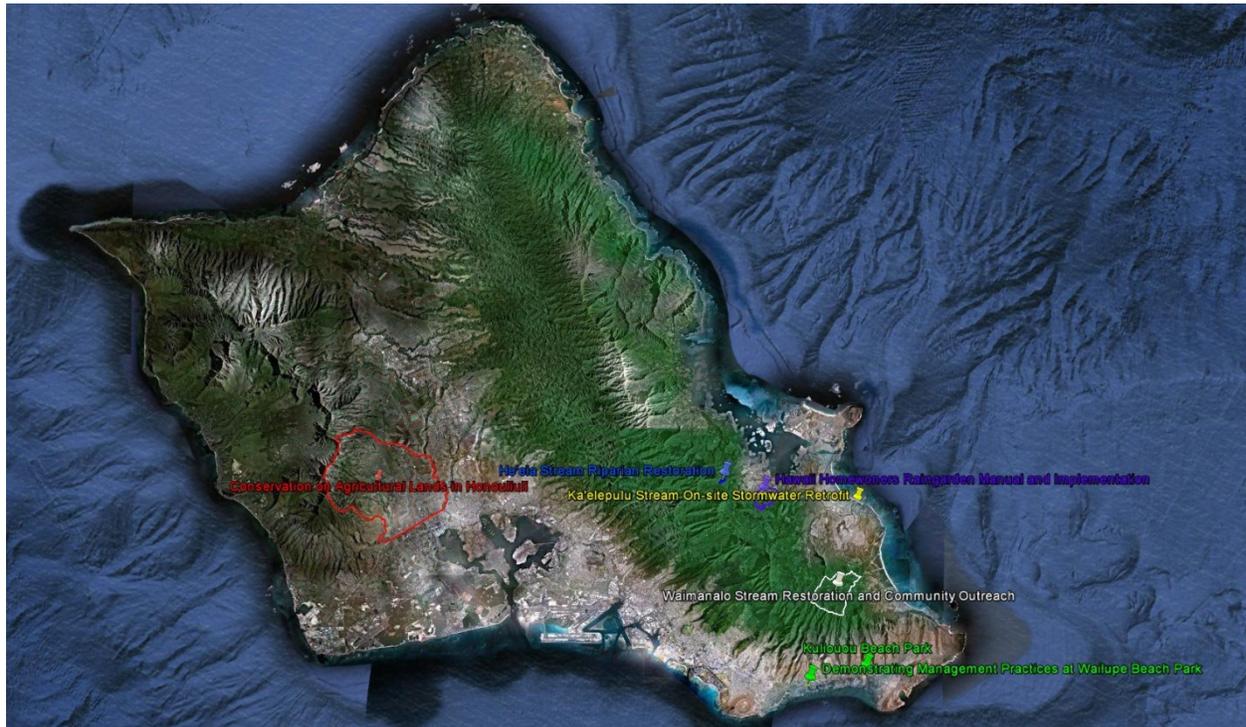


FIGURE 1: LOCATIONS OF PROJECTS FUNDED THROUGH 319(H) FUNDS ON THE ISLAND OF O’AHU.

**Total 319(h) funds allocated to projects on O’ahu: \$1,653,291**  
**Total matching funds for 319(h) projects on O’ahu: \$1,855,729**

### **Conservation on Agricultural Lands in Honolulu**

O’ahu Resource Conservation & Development Council  
 Jean Brokish, Executive Director  
 P.O. Box 209, Kunia, HI 96759  
 (P) 808-622-9026  
<http://www.oahurcd.org>

319(h) Funds: \$522,577  
 Match: \$663,258

Start/End: 5/13/2010 – 5/12/2012

Location: Upper Honolulu Watershed, O’ahu

Partners: CWB, US Department of Agriculture– Natural Resources Conservation Service, AECOM, Hawaii Association of Conservation Districts, Dow, Monsanto

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



FIGURE 2: VETIVER STRIPS ARE USED TO CONTROL THE FLOW OF WATER AS WELL AS WIND BREAKS

The upper Honouliuli Watershed is a combination of large landowner corn-seed producers and State 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 2012 O'ahu RC&D put out a RFP for major agricultural producers to cost-share conservation practices required in conservation plans. Four sites were chosen and nearly 1,500 acres of agricultural land has been remediated with recommended BMPs to date.



**FIGURE 3: GRASSED WATERWAYS AND COVER CROPS CONTAIN RUNOFF IN AGRICULTURAL LANDS IN THE HONOLIULI WATERSHED.**

**Environmental Results:**

Load reductions were modeled using soil map classifications, grades and selected BMPs. Nitrogen estimated reduction was measured at 14,500 lbs., Phosphorous estimated reduction was measured at 4,800 lbs and sediment load reductions were modeled at 2,800 tons per year.



**FIGURE 4: SEDIMENTATION BASIN AND TERRACING AT MONSANTO FARMS.**

**He'eia Stream Riparian and Water Quality Improvements Phases I and II**

Hui O Ko'olaupoko  
Todd Cullison, Director  
1051 Keolu Drive, Kailua, HI 96734  
(P) 808-277-5611  
[www.huihawaii.org](http://www.huihawaii.org)

Phase I 319(h) Funds:	\$193,180	Phase II 319(h) Funds:	\$215,526
Phase I Match:	\$221,964	Phase II Match:	\$232,238

Phase I Start/End: 6/29/2009 – 6/29/2012  
Phase II Start/End: 5/07/2012 – 5/07/2014

Location: He'eia Watershed, O'ahu

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

Pollutants Addressed:  
TN, TP, & Sediment

The He'eia Stream is listed on the DOH's 303(d) list for TN, Nitrates + Nitrites, TP, Turbidity, and Total Suspended Solids. There is a current WBP for the Ko'olaupoko Watershed and implementation at He'eia is necessary 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 shall also educate the nearby community about NPSP via pamphlets and brochures, and public site visits. Over the past two years, non-native vegetation has been removed and replaced with natives, as determined by plant experts, to improve water quality and stabilize the stream banks on the He'eia Stream. Over 8,000 volunteer hours have been used to plant all-native riparian shrubs and trees. Approximately 1,000 meters of stream banks have been re-vegetated with properly-selected native shrubs and trees.



**FIGURE 5: HE'EIA STREAM RIPARIAN RESTORATION AS OF JUNE 2011.**

In Phase II of the project, another 800 meters of stream banks shall be restored with native vegetation. The contractor shall also continue outreach efforts in the community to solicit information and educate nearby homeowners regarding fertilizers and the proper use to reduce nutrient runoff.

**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 been reduced by approximately 16 tons per year. Total nitrogen was estimated to be reduced by 1,600 pounds; Total Phosphorous was also estimated to be reduced by 800 pounds. 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.

**Hawaii Homeowner Raingarden Manual and Implementation**

Hui O Ko'olaupoko  
Todd Cullison, Director  
1051 Keolu Drive, Kailua, HI 96734  
(P) 808-277-5611  
[www.huihawaii.org](http://www.huihawaii.org)

319(h) Funds: \$107,064  
Match: \$119,687

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

Location: Ko'olaupoko Watershed, O'ahu

Partners: CWB, Hui Ku Maoli Ola

Pollutants Addressed:  
TN, TP

Currently, there is no manual or guide in the State that homeowners can reference for raingarden installation. Hui O Ko'olaupoko is developing a manual that specifically addresses an island's Windward, Leeward, Mauka, and Makai locations so homeowners can customize a raingarden to thrive in their specific locale. Two raingardens shall be installed in publicly accessible locations in the watershed to demonstrate the practices to the community. A minimum of ten additional raingardens shall be installed in participating residences in the Pikoiloa neighborhood, with an additional forty installed in homes by cost-share throughout the Ko'olaupoko Watershed. Hui O Ko'olaupoko is nearing completion of the draft Hawaii Homeowners Raingarden Manual and will be delivering the draft to the Program for review and comment.



**FIGURE 6: A DEMONSTRATION RAINGARDEN OUTSIDE OF THE ENTRANCE TO THE HE'EIA STATE PARK PAVILION, PLANTED WITH NATIVE VEGETATION FROM A LOCAL NURSERY (HUI KU MAOLI OLA).**

Environmental Results:

One demonstration raingarden has been installed at He'eia State Park. The final Manual will be distributed to the public state library system and other various public information systems.

**Ka'elepulu Stream On-site Stormwater Retrofit**

Hui O Ko'olaupoko

Todd Cullison, Director

1051 Keolu Drive, Kailua, HI 96734

(P) 808-277-5611

[www.huihawaii.org](http://www.huihawaii.org)

319(h) Funds: \$83,040

Match: \$84,775

Start/End: 6/09/2009 – 6/28/2013

Location: Ka'elepulu Watershed, O'ahu

Partners: CWB, Hui Ku Maoli Ola, CCH, 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 can be installed. Hui O Ko'olaupoko proposed to retrofit one of these areas to decrease sediment and nutrient loading from a CCH owned parking lot.

The Contractor has developed and is implementing a landscaping plan with Hughes and Hughes Landscaping Co. and Hui Ku Maoli Ola. Parking stalls shall be relocated approximately three meters from the stream and BMPs (bio-swaales and vegetated buffers) will be constructed. The contractor has also acquired funding to implement porous pavement for the parking area. The construction was completed in October 2012 and the project is now complete.



**FIGURE 7: SEDIMENT PLUME FROM THE PARKING LOT ADJACENT TO KA'ELEPULU 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.**



**FIGURE 8: KA'ELEPULU STREAM PARKING LOT RETROFIT PRIOR TO CONSTRUCTION COMPLETION. NOTE THE COMPACTED SANDY AREA AND CLOSE PROXIMITY OF CARS TO WATERWAY.**

**Environmental Results:**

Due to relocating 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. Approximately 250 pounds of Nitrogen, 50 pounds of Phosphorous, and 1 ton of sediment will be reduced.



**FIGURE 9: KA'ELEPULU PARKING AREA AFTER CONSTRUCTION COMPLETION. NOTE THE SETBACK AUTOMOBILES, NEWLY-PLANTED NATIVE VEGETATION, POROUS PAVEMENT, AND MINI-SEDIMENTATION BASINS NEAR THE OUTFALLS.**

### **Waimanalo Stream Restoration and Community Outreach**

O'ahu Resource Conservation & Development Council  
Jean Brokish, Executive Director  
P.O. Box 209, Kunia, HI 96759  
(P) 808-622-9026  
<http://www.oahurcd.org>

319(h) Funds: \$400,000  
Match: \$416,298

Start/End: 1/15/2009 – 12/31/2011

Location: Waimanalo Watershed, O'ahu

Partners: 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

Pollutants Addressed:  
TN, TP, Sedimentation



**FIGURE 10: COVER CROPS WERE AN IMPORTANT BMP USED IN CONSERVATION PLANS FOR SEVERAL FARMS. THIS IS PRE-COVER CROP INSTALLATION.**

Waimanalo is listed as a priority watershed for the Department of Health. Implementation of a WBP (Ko'olaupoko Watershed Restoration and Action Strategy) began with this project. Agricultural BMPs have been installed for several farmers in areas of concern as determined by approved conservation plans. These conservation plans reduce sedimentation loads into the Waimanalo Stream. The Waimanalo Stream Restoration and Community Outreach Project focuses on 826 acres 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 will be implemented in these priority farms, and include vegetative barriers and buffers, slope re-vegetation, tree planting, grassed swales, and mulching at nine 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.

#### **Environmental Results:**

The project executed individual contracts with nine separate land-owners. Estimated load reductions from the implementation projects are approximately 5,764 lbs. of Nitrogen, 1,201 lbs. of Phosphorous and 322 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: POST-COVER CROP INSTALLATION, WITH LITTLE BARE GROUND VISIBLE.**

### **Demonstrating Management Practices at Wailupe Beach Park**

SRGII, Inc.

Kristin Duin, Principal

111 Hekili Street, Suite A373, Kailua, HI 96734

(P) 808-356-0552

[www.srgii.com](http://www.srgii.com)

319(h) Funds: \$131,904

Match: \$133,807

Location: Wailupe Watershed, O'ahu

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

Partners: CWB, CCH, Malama Maunalua, CPK Planning, Project Management Plus LLC, Geotech Solutions Inc.

Pollutants Addressed:

TN, Sedimentation, Vehicular Residue



**FIGURE 12: WAILUPE BEACH PARK DURING LOW TIDE. THE WAILUPE STREAM OUTLET IS DIRECTLY ADJACENT TO THE NEAREST COCONUT TREES.**

Wailupe Beach Park is one of only a few publicly accessible locations in the Wailupe watershed, per the finalized Wailupe Watershed Based Plan. With the assistance and approval of the CCH's Parks and Recreation Division, the contractor proposed to design, install, and maintain demonstration BMPs at the Wailupe Beach Park on the south shore of O'ahu. An infiltration swale will be constructed around the existing parking lot. Due to permitting regulations, a proposal to install coir logs at the Wailupe Beach Park will be relocated to the Kuliou'ou Beach Park, which sits in an adjacent watershed. Because Maunalua Bay is the receiving water to both BMP installation sites, the relocation of this portion of the project was deemed permissible by the Program. The project continues to receive support from Malama Maunalua and is currently drafting the landscaping blueprints for DOH review.



**FIGURE 13: KULIOU'OU BEACH PARK DIRECTLY CONNECTS TO MAUNALUA BAY.**

**Environmental Results:**

Due to the proximity of the Wailupe and Kuliou'ou Beach Parks to Kalaniana'ole Highway, they are prime candidates for installing BMPs. Approximately 150 feet of infiltration swale and 400 feet of coir logs will prevent NPSP from entering the Wailupe Stream, Kuliou'ou Stream, and ultimately the ocean.

## Project on the Island of Kaua'i

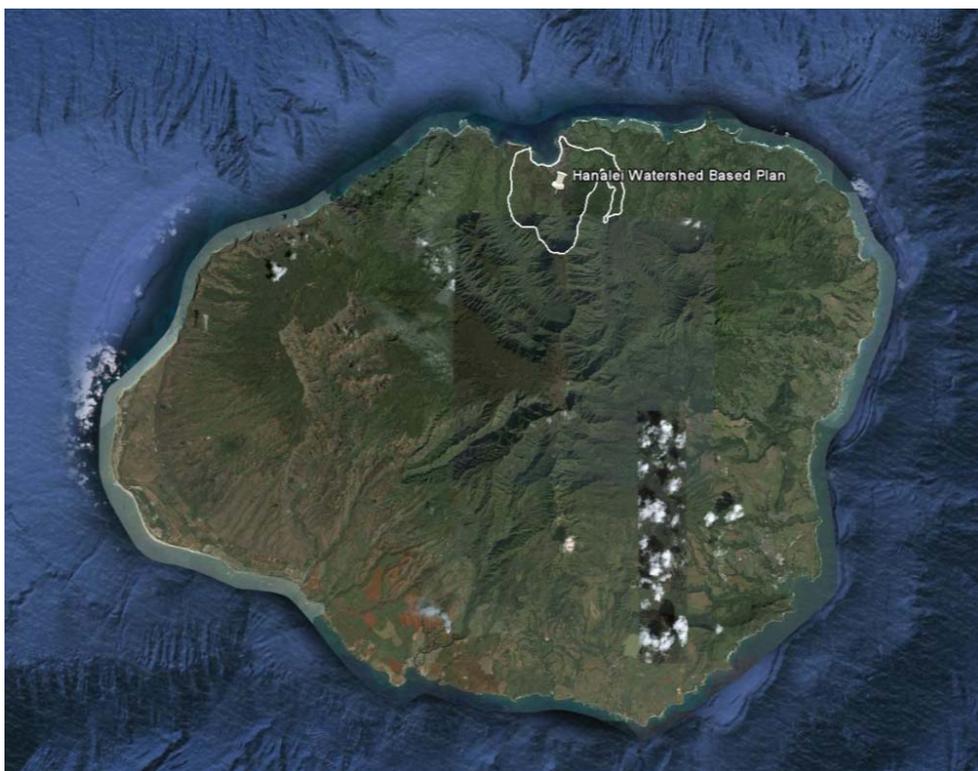


FIGURE 14: LOCATION OF THE PROJECT FUNDED THROUGH 319(h) FUNDS ON THE ISLAND OF KAUA'I

<b>Total 319(h) funds allocated to projects on Kaua'i:</b>	<b>\$124,852</b>
<b>Total matching funds for 319(h) projects on Kaua'i:</b>	<b>\$127,700</b>

### Hanalei Watershed Based Plan

Hanalei Watershed Hui  
Makaala Kaaumoana, Executive Director  
P.O. Box 1285, Hanalei, HI 96714  
(P) 808-826-1985  
[www.hanaleiwatershedhui.org](http://www.hanaleiwatershedhui.org)

319(h) Funds: \$124,852  
Match: \$127,700  
Start/End: 6/16/11 - 12/31/12

Location: Hanalei Watershed, Kaua'i

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

The Hanalei Bay Watershed, on the DOH's 303(d) impaired water bodies list for enterococci and turbidity, is located on the northern coast of the island of Kaua'i and includes the Hanalei, Waiole, Waipa, and Waikoko sub-watersheds. A WBP will be developed using the EPA's 9 key elements and will incorporate information and data from the Hanalei Bay TMDL, and also include a BMP strategies and implementation plan for priority areas, to decrease potential NPSP loading into the Hanalei Bay.

The project is currently on hold due to cooperator and contract issues. Consultations seeking input from several agencies and large stakeholders have proven challenging for the contractor, and as such several deliverables are behind deadline. The Program is working with the contractor to amend the contractual issues

that have arisen due to the tardy deliverables. Overall, the project is nearing completion and the watershed characterization has been completed without incident. The draft strategies and implementation plan was recently submitted to the DOH for review and comment.

The watershed characterization notes that there are several major contributors to water quality issues in the watershed. These include taro farmers possibly over-fertilizing their crops, the numerous residential on-site disposal systems, and feral ungulate input deriving from conservation lands.

#### Environmental Results:

The Program expects to receive a WBP that meets the EPA's 9 key elements, with an implementation plan that clearly states where issues are located, a priority list of NPSP issues and effective BMPs to remediate these issues, BMP cost estimates, and potential load reductions from each proposed BMP. These documents should provide a blueprint for local groups and organizations to install water quality BMPs throughout the Hanalei Bay Watershed.

## Projects on the Island of Maui

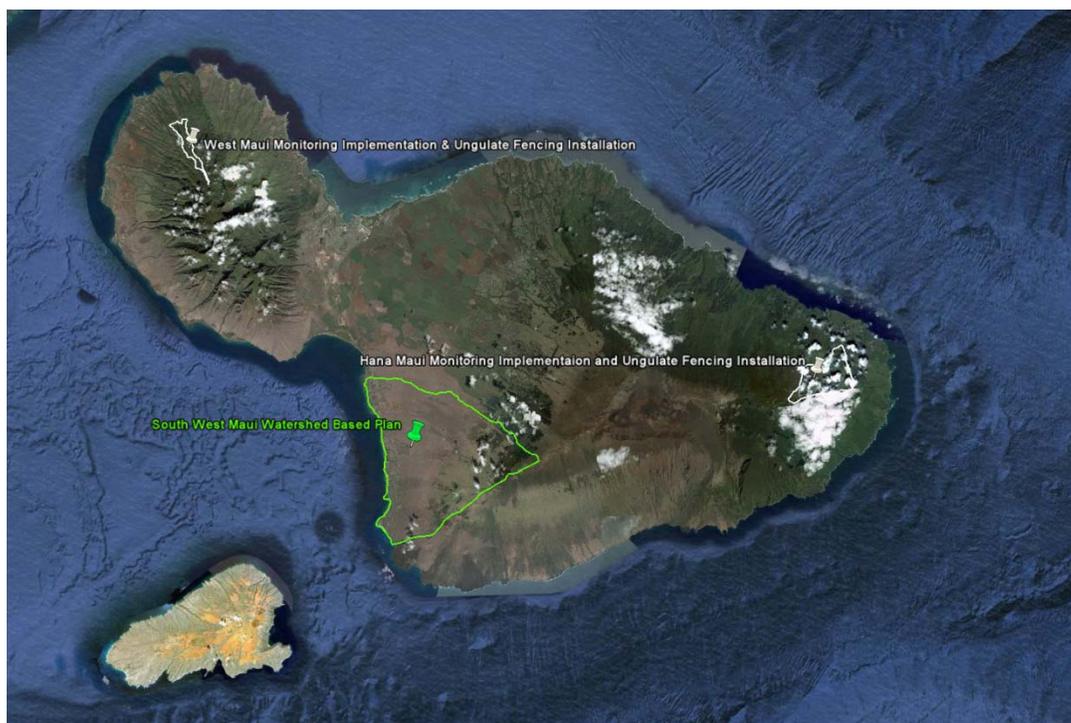


FIGURE 15: LOCATIONS OF THE PROJECTS FUNDED THROUGH 319(h) FUNDS ON THE ISLAND OF MAUI

**Total 319(h) funds allocated to projects on Maui: \$444,392**  
**Total matching funds for 319(h) projects on Maui: \$442,690**

### **Maui Monitoring Implementation and Ungulate Fencing Installation**

University of Hawaii and the Hawaii Association of Watershed Partnerships

Chris Brosius and Randy Bartlett, Program Managers

1151 Punchbowl Street, Room 325, Honolulu, HI 96813

(P) 808-388-9699

[www.hawp.org](http://www.hawp.org)

319(h) Funds: \$250,000  
Match: \$255,452  
Start/End: 4/20/2010 – 8/20/2013

Location: Hana Forest Reserve and Honolua Watershed, Maui

Partners: 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 (HAWP) is developing a comprehensive monitoring plan that will be available for other NPSP control projects throughout the State. The contractors will develop chemical, physical, and hypothetical (pollution load models) monitoring practices for the State and other interested parties to characterize watershed work and NPSP reduction implementation. In addition, the HAWP East Maui and West Maui Mountain Watershed Partnerships will install sections of fence and begin feral ungulate removal in those fenced areas. Using specific methods outlined in the monitoring plan, the Maui watershed partnerships will begin to assess the efficiency of their fencing projects.

Currently the project has completed fencing in the upper West Maui Mountains and is over 50% complete with fencing the upper Hana Watershed. The monitoring plan has been drafted and the DOH comments have been sent to the contractor.

**Environmental Results:**

Reduction of feral ungulates (wild pigs, *Sus scrofa*), leading to a reduction of erosion, the development of local monitoring guidelines customized for the State's climate and watersheds, and two fences erected in the Honolua 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 HONOLUA BAY WATERSHED.**

**South West Maui Watershed Based Plan**

Central Maui Soil and Water Conservation District  
Richard Sylva, Project Coordinator  
77 Hookele Street, Suite 202, Kahului, HI 96732  
(P) 808-871-5500  
[www.hacd.hawaii.com](http://www.hacd.hawaii.com)

319(h) Funds: \$194,392  
Match: \$194,392  
Start/End: 10/13/2009 – 4/15/2013

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

Partners: 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 Hapapa, Wailea, and Mo'oloa Watersheds are all located on the southern coast of the island of Maui, and are the focus of this WBP. A WBP will be developed using the EPA's 9 key elements, and will include proposed BMP implementation in priority areas to decrease potential NPSP 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 the causes and sources of pollution sections. The DOH has reviewed these sections and has returned comments to the contractor. The contractor is nearly complete with the implementation section, including the recommendations and priority listings for implementable projects. Upon receiving these deliverables, the DOH shall provide comments to the contractor. After the contractor addresses these comments, the plan will be finalized.

The Watershed Characterization provides information on NPSP sources, including agricultural practices and the implementation of conservation plans in the upper watershed. The characterization also notes that there are several areas that may be converted into wetlands near urbanized areas.

**Environmental Results:**

The Program expects to receive a WBP that meets the EPA's 9 key elements, with an implementation plan that clearly states where issues are located, a priority list of NPSP issues and effective BMPs to remediate these issues, BMP cost estimates, and potential load reductions from each proposed BMP. These documents should provide a blueprint for local groups and organizations to install water quality BMPs throughout the watersheds.

## Statewide Projects

### **Hawaii Watershed Experience**

Healthy Hawaii Coalition  
Ali Riggs, Project Manager  
P.O. Box 75505, Kapolei, HI 96707  
(P) 808-778-4243  
[www.healthyhawaiicoalition.com](http://www.healthyhawaiicoalition.com)

319(h) Funds: \$25,040  
Match: \$30,470  
Start/End: 5/07/2012 – 5/07/2014

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

Partners: CWB

Pollutants Addressed (Indirectly):  
TN, TP, Sedimentation

The Hawaii Watershed Experience: A Hands-on Elementary Education Program introduces the concepts of the watershed/ahupua'a to elementary school students around the State. The contractor addresses various nonpoint source issues, including storm drain education, erosion control, and nutrient management. The program consists of three days: on the first day a short play titled "The Adventures of Waterwoman and Oily Al" is presented to the students. The second day consists of a field trip to a local, easily accessible area where they are introduced to concepts like erosion, nutrient/fertilizer control, and the local ecology. The third day consists of reviewing materials from the first two days. The goal of the project is to raise awareness in nine of the State's priority watersheds. The contractor aims to increase general and base knowledge of watersheds, and NPSP issues. The program is specifically targeted to children in grades 4-5.

The Program has been funding this project for approximately seven years. During that time the contractor has shown that the students retain much of what was learned from the presentations, but not for longer than a school year. The Program has been working with the contractor to include additional follow-up testing with children who have previously participated in the program to gauge and further detail the retention of the information acquired from the initial presentations.

#### Environmental Results:

This type of education and outreach project is challenging to measure and quantify specific positive environmental impacts. Nonetheless, the Program strongly believes in influencing behavioral changes at a young age, and the contractor is monitoring its influence via surveys to develop efficacy data.

### **HACD Conservation Specialists**

Hawaii Association of Conservation Districts  
Michelle Watson, Executive Director  
P.O. Box 1411, Wailuku, HI 96793  
(P) 808-483-8600 x120  
[www.hacd-hawaii.org](http://www.hacd-hawaii.org)

319(h) Funds: \$470,612  
Match: Not Applicable  
Start/End: 4/17/2009 – 12/31/2013

Location: The Islands of Maui, Kaua'i, Hawaii and O'ahu

Partners: CWB, NRCS, University of Hawaii, O'ahu Resource Conservation and Development Council, CCH, County of Maui, County of Kaua'i, County of Hawaii, Hanalei Watershed Hui

Pollutants Addressed:  
TN, TP, Sedimentation

The Conservation Specialists are tasked with reducing NPSP through outreach and education, assisting local farmers with creating conservation plans for their farms, watershed planning support and implementation efforts, and monitoring exercises. All positions are currently filled.



**FIGURE 17: CONSERVATION SPECIALISTS ASSIST WITH CREATING AND IMPLEMENTING CONSERVATION PLANS FOR COOPERATORS THROUGH THE SOIL AND WATER CONSERVATION DISTRICTS. COVER CROPS AND CRITICAL AREA PLANTINGS ARE AN EXAMPLE OF BMPs PRESCRIBED TO ASSIST FARMERS WITH SOIL RETENTION AND WATER POLLUTION CONTROL.**

#### Environmental Results:

The Conservation Specialists are tasked with assisting cooperators to develop and implement conservation plans in the State, which help improve water quality through prescribed BMP implementation. There are approximately 113 approved conservation plans in the State, with BMPs implemented on over 2,000 acres of farmland. Conservation Specialists are also tasked with developing and implementing WBPs where applicable, which also aids in improving water quality. Each Conservation Specialist also assists cooperators with installing BMPs on their respective farms. Some examples of farm BMPs include cover crops, wind breaks, bio-swales, and mulching. Reductions in NPSP loads attributable to the Conservation Specialists include a Total Nitrogen reduction of 6,458 lbs., Total Phosphorous reductions of 364 lbs., and Sedimentation reduced by 1,947 tons.

## **Coastal Nonpoint Pollution Control Program**

The Coastal Nonpoint Pollution Control Program (CNPCP) in Hawaii continues under conditional approval from the EPA and NOAA. The State continues to implement its strategy for addressing remaining management measures for Hawaii's CNPCP. This includes the use of the Hawaii Watershed Guidance for the development of WBPs and the ongoing contract with the University of Hawaii (UH), Water Resources Research Center to assist the State in addressing the Onsite Disposal System (OSDS) management measure. Upon receipt of the final OSDS management measure report, the Program will fashion a robust strategy using the information provided regarding the potential impacts of OSDS. The DOH intends to put forth a legislative effort, supported by the Governor, which creates a special funding mechanism to collect fees that would support the State's efforts necessary for OSDS management measure approval.

The Program continues to devote efforts to resolve outstanding Roads, Highways, and Bridges management measures issues. The Program is drafting letters, with the assistance from the Deputy Director, addressed to the State's non-MS4 counties and the State Department of Transportation that demonstrate that the standards to meet the management measures are in place. This is expected to be completed in FY13.

The Program has been notified by the EPA that its existing monitoring and tracking techniques to accompany the management measures are insufficient as identified in the State Comprehensive Water Quality Monitoring Strategy, 319(h)-funded projects, water quality monitoring and integrated water quality assessment, and watershed planning/implementation to meet the EPA's criteria. The Program intends to remedy this oversight and will address this issue in FY13.

## **Education and Outreach**

The objectives of the State's outreach this year was to increase awareness of the Program across the State, increase awareness of nonpoint source issues, induce changes in behavior to help prevent or abate polluted runoff, and continue distribution of outreach materials and 319(h) project results.

Through participation in various committees, the Program shares information regarding 319(h) grant funding and current 319(h) projects with other agencies and organizations. The Program participated in the Hawaii Association of Conservation Districts' annual meeting, sharing our goals for soil and water conservation in the agriculture community and expectations for how the Conservation Specialists can help with watershed planning. The Program attended Ocean Resource Management Plan working group meetings with the goal of leveraging various funding sources to address coastal water issues.

The Program distributed the Hawaii Watershed Guidance to all counties via a series of workshops between March and June, 2012. These workshops were developed to engage citizens with watershed planning and re-introduce the CNPCP to the community. The Program attended State Technical Advisory Committee meetings with the NRCS to discuss farm bill issues and look for opportunities to use 319(h) funding when farmers don't qualify

for farm bill programs. The NRCS and the DOH staff often discuss common goals and opportunities to leverage funding in the state. The Program has been working with the new CWB TMDL Coordinator to target the next TMDL and to gain a better understanding of how we can use existing TMDLs in our WBP development.

In order to increase awareness of polluted runoff issues on a broad scale, the Program requires all 319(h) project contractors to draft and release two press releases describing their projects (one is released prior to on-the-ground implementation, and the second released at the project's completion). These press releases not only provide the public with basic polluted runoff information, but often provide an opportunity for members of the community to become involved in watershed work in their area. Many contractors and partners also include information on 319(h) projects or NPSP concerns in their monthly newsletters to help further spread public awareness of these issues and opportunities.

The Apoha coloring book and Journey Home activity book, which is printed in both English and Hawaiian, continue to be in high demand at elementary schools and events statewide. These materials are available free to the public upon request. Approximately 20,000 books have been distributed by the DOH and our partners over the last year. They provide information on polluted runoff, and introduce children and their families to activities they can do to help prevent NPSP.

The Program continues to participate in outreach events to increase awareness across the State. The Program estimates that, through participating in events and school programs, approximately 35,000 students are reached annually. When these students share the information learned with their families, an estimated 100,000 people statewide are introduced to simple NPSP reduction strategies.

Tracking behavior changes due to the Program's outreach efforts is a costly effort that would unnecessarily consume too much of the Program's resources and time. However, through surveys and follow-up communications, our partners are attempting to show evidence of behavior changes as a result of these outreach efforts. Surveys indicate that approximately 95% of participants have learned about watersheds and polluted runoff, and intend to act on their newfound knowledge by picking up trash, picking up their pet's waste, planting over bare soil, or not throwing trash into storm drains. The State intends to continue with its outreach efforts, while at the same time refine measures to track behavior changes, to determine if the Program's outreach is effective.

## Appendix A

The following section details the original long-term goals outlined in the State's Nonpoint Source Management Program Plan, and the DOH's progress towards meeting the recommended goals and activities in the plan.

### Management Program Plan Long-term Goals

#### Goal #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.**

The CWB monitors coastal waters to ensure that its waters are safe. After heavy storm events the CWB may post a "Brown Water Advisory":

"The public should stay out of beaches or streams that are contaminated by storm (brown) water. Storm water can contain harmful micro-organisms (pathogens) and other harmful pollutants from overflowing sewage systems, such as cesspools or septic tanks, and animal feces flowing into storm drains.

Excessive storm water can also contain sewage from overflowing manholes or chemicals from polluted runoff from commercial and industrial facilities.

Standing water from heavy rains can also contain pathogens from cesspools in un-sewered areas, such as the North Shore O'ahu, Kaua'i, Maui and the Big Island.

Questions regarding the safety or cleaning of standing water or "brown water" in the coastal and inland areas of the State should be directed to the Department of Health, Clean Water Branch on O'ahu at (808) 586-4309 during normal business hours."

The CWB uses its National Pollutant Discharge Elimination System (NPDES) permit system with support from the Program to implement BMPs prevents NPSP runoff that causes pollution in the State's coastal waters.

#### Goal #2:

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

The DOH monitors the water quality of both inland and coastal surface waters to determine whether water quality standards are met. Where water quality standards are not met, waters are placed on the State's 303(d) list of impaired water bodies. Currently, this list is a part of the State's Integrated Water Quality Report. The Program uses 319(h) funding to undertake watershed planning and BMP implementation to address polluted runoff control issues that contribute to water quality impairment. Over the past twelve years, the State has been focused on the ultimate goal of de-listing water bodies and is currently taking a concentrated approach to provide funding for BMP implementation and load reduction within a specific watershed.

**Goal #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.**

The updated management measures document describes management measures that the State feels are economically achievable to meet the State's water quality goals. All but four management measures have been approved by the EPA and NOAA.

**Recommended Activities and the DOH's Progress (by Year)**

2000

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

2001

- Complete TMDL demonstration project in Waimanalo.  
**Status: Completed**

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.  
**Status: Ongoing**
- Provide feedback to Federal agencies regarding the effectiveness for the Clean Water Action Plan and the U.S. All Islands Coral Reef Initiative.  
**Status: Ongoing**
- Develop a strategy and appropriate methodologies to address TMDLs for waters listed on the State's Section 303(d).  
**Status: Ongoing**

## 2003

- Receive program approval of the Hawaii Coastal Nonpoint Pollution Control Program from NOAA and EPA.

**Status: Not Completed**

- Prioritize management measures and focus implementation efforts following a phased approach.

**Status: Ongoing**

**The State believes that management measures continue to be carried out as described in the Implementation Plan for Polluted Runoff Control. The State currently does not have a tracking system to report what is specifically being implemented statewide by various agencies and interested parties. However, the State has reviewed all approved WBPs and TMDLs for their potential for implementation and is offering support for implementation where such potential exists. Inclusive of the 319(h) program, but not limited by it, individual property owners, community groups, local agencies, state agencies, and federal agencies are implementing management measures. This includes re-vegetation of disturbed areas and removal of invasive nonnatives in conservation lands, conservation planning for agricultural properties, and the application of management measures in urban areas that oftentimes mimic NPDES regulations. Examples of these projects are detailed in the 319(h) Funded Projects section, above.**

## 2004

- Complete revisions to classifications and beneficial uses in the State's Water Quality Standards for inland and marine waters.

**Status: Ongoing**

- Develop and implement watershed management plans and assessments for Category 1 watershed regions as identified in the State's Unified Watershed Assessment.

**Status: Ongoing**

**The State followed the EPA's shift toward the development and implementation of WBPs, and the EPA and the 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.

**Status: Ongoing**

- Review the classification and beneficial uses for marine and inland water quality standards.

**Status: Ongoing**

- Implement Quality Assurance/Quality Control Plan and follow timelines contained in the plan.  
**Status: Ongoing**
- Increase use of best management practices and assess their effectiveness.  
**Status: Ongoing**
- Establish water quality monitoring programs in Category 1 watersheds.  
**Status: Ongoing**  
**Beginning in 2013 the State will monitor in the He'eia Watershed.**

#### 2008

- Implement watershed restoration action strategies and implementing plans and test the effectiveness of best management practices under different conditions.  
**Status: Ongoing**
- Prioritize management measures and focus implementation efforts following phased approach.  
**Status: Not completed**

#### 2012

- Complete TMDLs for Section 303(d) listed water bodies.  
**Status: Ongoing**  
**Based on the 2008-2010 Integrated Water Quality Report, the State has 204 impaired marine bodies and 91 impaired streams. The State has completed nine TMDLs:**
  - Kaneohe Stream, O'ahu, for Total Suspended Solids (TSS), Nitrogen (N) and Phosphorus (P)
  - Upper Kaukonahua Stream, O'ahu, for the North and South Forks of Kaukonahua
  - Nawiliwili Bay, Kaua'i, 4 streams
  - Hanalei, Kaua'i, Phase 1 – Streams and Estuaries, Phase 2 – Embayment
  - Kapaa Stream, O'ahu, for TSS, N, and P
  - Kawa Stream, O'ahu, for TSS, N, and P
  - Waimanalo Stream, O'ahu
  - Ala Wai Stream/Canal, O'ahu

#### 2013

- Meet long-term goals.  
**Status: Ongoing**  
**The Program's progress is described above. The management plan has not been updated and some of the long term and short term goals are overly broad and without achievable milestones. In the 2013 update to the State's management plan, the State intends to designate goals and milestones that are both specific and achievable to provide a better representation of the Program's achievements.**