Department of Health Clean Water Branch Polluted Runoff Control Program

Quarterly Status Reporting Form
Clean Water Act 319(h) NPS Implementation Program

Quarterly Status Reports are required per contract terms. If no work was done during the reporting period, the CONTRACTOR must provide an explanation of the circumstances.

This Quarterly Status Report is for the period indicated below **(check only one and insert year)**:

- ☐ January 1 – March 31, _____ (Due April 15th)
- ☐ April 1- June 30, _____ (Due July 15th)
- ☐ July 1 – September 30, _____ (Due October 15th)
- ■ October 1 – December 31, __2019____ (Due January 15th)

Project Title: He'eia Fishpond Mangrove Removal Project
Project Start/Completion Date: _3/14/2017- 3/13/2019_____

Estimated % of Project Completed: ___75____%

Estimated % of Grant Funds Previously Requested: ____%

Quarterly Status Report Number: ___QSR 8_____

Name, telephone number, and e-mail of person to be contacted for questions regarding this report:

Maya Walton, 808-956-6992, waltonm@hawaii.edu

Or for budget related question please contact:

Dana Tamashiro, 808-956-3009, danaat@hawaii.edu

Please provide the following information for this reporting period. Additional sheets may be attached:

1. Progress/tasks started and/or completed as defined in the Contract's Scope of Services during **current** reporting period.

A. Summary of work completed (list all tasks and deliverables)

Task/Deliverable	Due Date	Date Task Completed/ Deliverable Submitted
Project PI, Co-Is, and project partners participated in bi-monthly check in meeting to report on progress and provide updates		10/31/2018 and 11/26/2018
Continued removing mangroves at Mangrove Island. Removed 100% of the invasive mangroves at the island.		10/1/2018-12/31/2018
Continued water quality monitoring of the island during the invasive mangrove removal.		10/1/2018-12/31/2018
Hosted staff from DOH CWB to view progress on project		11/15/2018
Organized and Executed a Community science night and workshop on water quality and options for home owners to improve local water quality		11/29/2018

B. GRTS Load Reductions

Pollutant	Estimated Load Reduction
Nitrogen (lbs/yr)	0
Phosphorous (lbs/yr)	0
Sediment (tons/yr)	0

BMPs (e.g., native plants on egret island) have not been installed so there are no estimates of load reduction.

C. Narrative Progress Report

1. Personnel

Table 1. He‘eia Mangrove Removal Project Team members and contact information

Name	**Organization/ Affiliation**	**Email**	**Involvement**
Maya Walton	Hawaii Sea Grant	waltonm@hawaii.edu	Principal Investigator
Dr. Rosie Alegado	UH Manoa Oceanography and Hawaii Sea Grant	ralegado@hawaii.edu	Co-Investigator
Katy Hintzen	Hawaii Sea Grant	hintzen@hawaii.edu	Sea Grant Project Manager
Charles Aka Beebe	UH Manoa Oceanography	cbeebe@hawaii.edu	Graduate Student
Kelii Kotubetey	Paepae o He‘eia	kelii@paepaeoHe‘eia.org	Fishpond Mangrove Removal Coordinator
Kapaliku Schirman	Hui Ku Maoli Ola	kapaliku@gmail.com	Contractor for Mangrove

			Removal and Native Plant supplier
Paula Moehlenkamp	UH Manoa Oceanography	pmoehlen@hawaii.edu	Graduate Student

2. Description of any major issues/problems encountered and/or resolved that may affect the CONTRACTOR's ability to complete the project as required (i.e., weather, personnel, equipment, etc.). If there is a change in the project timeline or budget, provide an explanation, revised timeline, budget, and completion schedule. (Please note that no-cost extensions must be applied for through the Department, and will only be granted when the CONTRACTOR has demonstrated unforeseeable setbacks.)

   N/A

3. Description of any significant findings, results, or conclusions. If none, please indicate so.

   Community Science Night on Water Quality (11/29/2018)

   We organized a community science night at He'eia fishpond to educate local residents on how homeowners can have a positive impact on local water quality. The science night featured two presentations. One presentation from Dr. Rosie Alegado titled "He aha kō kuleana: What can we do about aquatic pollution" and the second title was from Dr. Shimi Rii, "Nānā nō a 'ike: Current and future water quality monitoring in the He'eia watershed. We had over 50 attendees at science night. We also organized for tables with education materials from the Hawaii Storm Water Quakity Branch, Hui o Koolaupoko, and the He'eia National Eestuarine Research Reserve.


Attendees at Science Night (left) education materials on water quality (right)

Hosted DOH CWB staff for Project Progress Site Visit (11/15/2018)

On 11/15/2018 we hosted staff from the DOH CWB to view project progress for the He'eia Mangrove Removal Project. Dr. Rosie Alegado shared on the up to date water quality data from the project and Keli'I Kotubetey shared on the history of the fishpond and how this DOH supported project helps to improve water quality at the fishpond.

DOH CWB staff on Site Visit 11/15/2018

Continued Water Qaulity Data Collection – Results Published in Peer-Reviewed Journal on 12/29/2018

This quarter, 10/1/2018-12/31/2018 we continued to collect water samples to help us characterize water quality during the mangrove removal. Dr. Rosie Alegado's lab and graduate students are in the process of analyzing these samples. We have results that indicate that the level of egret fecal indicator bacteria is going down. Also, our preliminary results show that there is increased freshwater input into the fishpond and increased flushing post restoration.

These results have been officially published in a peer-reviewed scientific publication which can be found HERE. The authors, which include our Co-I Dr. Rosie Alegado., state "we found a significant decrease in egret fecal bacteria post-restoration, suggesting that increased flushing and decreased residence times had a positive impact on water quality."

Citation for Publication

Möhlenkamp, Paula, Charles Beebe, Margaret McManus, Angela Kawelo, Keli'iahonui Kotubetey, Mirielle Lopez-Guzman, Craig Nelson, and Rosanna Alegado. "Kū Hou Kuapā: Cultural Restoration Improves Water Budget and Water Quality Dynamics in He'eia Fishpond." Sustainability 11, no. 1 (2019): 161.

100% Removal of Mangroves – moving to native plant installation

Our project team has completed the removal of mangroves at Mangrove Island. 100% of the invasive mangroves on the island have been removed to date. Our project team expects to complete planting native plant species on the island by the end of the next quarter. We plan to plant akulikuli (*Sesuvium portulacastrum*) and aeae (*Bacopa monieri*).

Established Photo Points

We have established 5 photo points to monitor changes in vegetation and monitor the progress of restoration activities. Photos below show our progress from October 2017 to October 2018.

Progress of mangrove removal from Oct. 2017 to October 2018

4. Based on the Scope of Services, a description of tasks expected to be completed in the next reporting period.

Phase 3: Replanting "Mangrove Island" with native plants

To minimize the impacts of invasive vegetation clearing, a BMP and erosion control measure of out-planting native and indigenous plant species at the "Mangrove Island" will be performed. Restoration species will include ʻahuʻawa (*Cyperus javanicus*), makaloa (*Cyperus laevigatus*), and ʻakulikuli (*Sesuvium portulacastrum*). Out plantings will be monitored until the plants are large enough to grow without regular maintenance. Replanting with native plants will also assist in the adsorption and removal of total nitrogen, nitrate/nitrite, and phosphorus. Hui Kū Maoli Ola Native Plant Nursery will provide the native plants and Paepae o Heʻeia staff will complete the out-plantings. The plantings will be monitored on a weekly basis to ensure proper weed control and water needs are met. This will continue until the plants are large enough and free to grow without regular maintenance. It is estimated the native out planting and maintenance will take 6-12 months post-clearing.

Summary of expenditures and in-kind contributions previously requested in comparison with the Contract's project budget and remaining funds. The summary must be actual cumulative amounts for each line item (i.e., personnel services, travel, operating expenses, equipment acquisition, construction materials, other, etc.) current as of this quarterly status report. Please see the example on Page 4 if necessary.

Grant Funds

No.	Description	Original Contract Amount	Contract Amounts from Preceding QSR	Expenditures during this Quarterly Reporting Period	Current Contract Amount (Remaining Funds)
A	Personnel Services	$35,757.34	$15,880.56	$0.00	$19,876.78
B.	Travel	$0	$0.00	$0.00	$0.00
C.	Operating Expenses	$0	$0.00	$0.00	$0.00
D.	Equipment	$0	$0.00	$0.00	$0.00
E.	Professional Services	$120,508.78	$61,307.13	$15,420.01	$43,781.64
F.	Construction Materials and Supplies	$7,100.00	$5,674.43	$0.00	$1,425.57
G.	Other Misc. Expenses	$26,138.58	$16,007.73	$3,392.40	$6,738.45
	TOTALS	$189,504.70	$98,870.85	$18,812.41	$71,822.44

In-Kind Contributions (Matching Funds)

No.	Description	Original Contribution Amounts	Contribution Amounts from Preceding QSR	Contributions during this Quarterly Reporting Period	Current Contribution Amount
A	Personnel Services	$36,820.69	$27,718	$3,383	$5,719.69
B.	Travel	$0	$0	$0	$0.00
C.	Operating Expenses	$0	$0	$0	$0.00
D.	Equipment	$1,500	$0	$0	$1,500.00
E.	Professional Services	$9,200	$5,750	$0	$3,450
F.	Construction Materials and Supplies	$0	$0	$0	$0.00
G.	Other Misc. Expenses	$0	$0	$0	$0.00
	TOTALS	$47,520.69	$33,468	$3,383	$10,669.69