

## **C-MORE GEMS Report** **“Mālama Loko Ea Fishpond Project”**

Tisha Louis  
Leilehua High School  
August 2015-May 2016

The goal for the project titled, “Mālama Loko Ea Fishpond Project”, was to integrate place-based and inquiry-based science curriculum in a meaningful way. The project began in the beginning of the school year (August 2015) and is on-going.

The grant allowed students to continue a project that began in August 2014. The initial project was a collaboration between the staff of Mālama Loko Ea and myself to allow my students to learn real world science skills. By creating and using a Mauka-to-Makai Inquiry Based Curriculum, students were able to explore how natural and human influences affect the fragile and unique fishpond ecosystem. The longitudinal data that the students collect will be used to help with the restoration of the approximately 300 year old native Hawaiian fishpond.

The C-MORE GEMS Grant allowed the students of the Natural Resources Environmental Resources Management class to receive water quality equipment and transportation funds to and from Loko Ea. The focus of this year’s project is to look at how the plankton and microbial organisms affect the water quality of the fishpond. Emphasis was placed on monitoring the fluctuations of dissolved oxygen, temperature and pH levels from early morning through mid-day. Students are also monitoring the amount of nitrates and ammonia to see if the surrounding homes, restaurant and agricultural fields affect the water quality of the “Big” Pond. The water quality testing equipment that was received through the grant enabled students to continue to collect and analyze data from the original seven test locations.

Through this project, students are also able to explore different science careers and work with experts in the science field for the day. Anuschka Faucci a biologist with the University of Hawaii i assisted the students in conducting several plankton tows within the pond. Through her guidance, the students learned scientific sampling techniques, observed, identified and compared plankton from within the pond to a sample taken on the ocean side of the auwai using cell scopes. Observations then led to a conversation about the importance of plankton as the producers in the food web. Eva Schemmel with the Fisheries Ecology Research Lab shared her expertise on fish monitoring by using traditional Hawaiian knowledge and scientific techniques to develop community-based marine resources management programs.

This grant has been beneficial to the students in allowing them to learn scientific sampling techniques and work with professionals in the fields of Biology, Fisheries Ecology, Environmental Science and with Native Hawaiian Botanists.