

**Kō'ie'ie Fishpond  
2014 Progress And Monitoring Report**

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Revised Conservation District Use Permit (CDUP) MA-3153, <sup>APR 21</sup> 2009. Revitalize Kō'ie'ie Fishpond for Educational, Cultural, Historical and Recreational Purposes.

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

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The following progress and monitoring report is a summary of the findings and ongoing activities at the Kō'ie'ie Fishpond Revitalization Project for the period of January 1 to December 31, 2014.

This report is in fulfillment of revised Condition #12 of the Conservation District Use Permit (CDUP) MA-3153, dated April 21, 2009, "to revitalize Kō'ie'ie Fishpond for educational, cultural, historical and recreational purposes":

That the applicant submits annual reports from the date of the Board of Land and Natural Resources approval to the Chairperson (or the OCCL) on the status of the project. The report shall contain data regarding beach profiles and photo documentation before and during restoration.

## Activities and Outcomes to Date

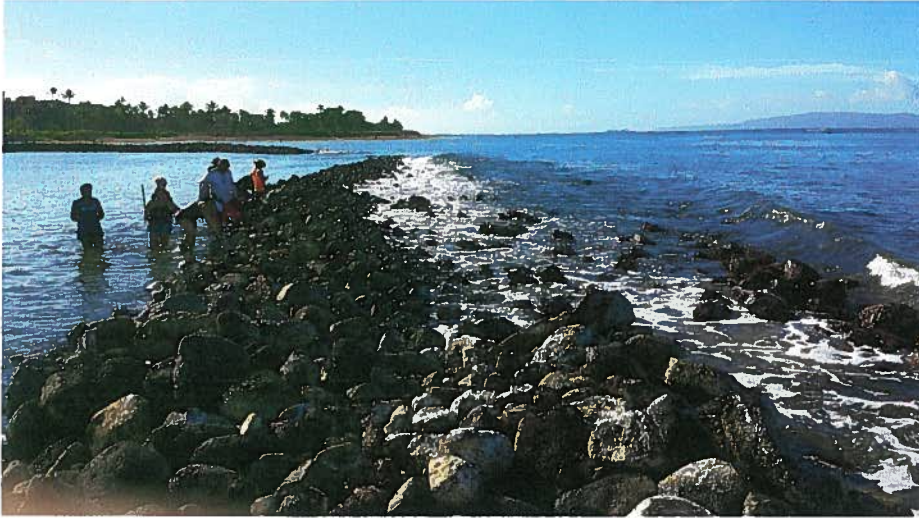
### Restoration and Repair of Fishpond Wall

During the first six months of 2014, a crew of four fishpond stone masons continued to repair the mid-section of the fishpond's wall through a grant from the National Park Service. During this time, the crew erected the wall to a height of about 5 to 6 feet tall from the base. In the second half of the year, after the National Park Service grant was completed, a part-time stone mason continued to perform part-time maintenance on the western and northern sections of the wall.

In addition to the fishpond stone mason crew, volunteers from schools and community organizations helped during community work days and special scheduled work days. Volunteers assisted in maintaining the northern, southern and western sections of the wall with most work concentrated on the western section. Volunteers helped remove fallen sections and assisted stone masons with rebuilding these areas.

In 2014, most activity was concentrated on the western wall section. The main challenges in this area was that it was the deepest section of the entire pond and that there was a very high concentration of sea urchins on the outskirts of this mid-section. Therefore, our crew and volunteers had to be very cautious while working at deeper depths (approx. 4 to 5 ft) to avoid being injured. The sea urchins and high wave energy made it difficult to manipulate rocks on the outskirts of the wall (Figure 1). The high wave energy affected the sediment, currents and water circulation patterns which caused areas near the western wall section to be deeper than other areas of the pond.

By mid-2014, a majority of the western wall was able to be restored by our crew despite these obstacles (Figure 2). Unfortunately, a series of strong southern swells heavily damaged the restoration work on the western wall by the end of the year.



**Figure 1.** December 14, 2013  
Western wall section of wall under  
restoration. This area often received  
direct hits from southern surf.



**Figure 2.** June 7, 2014  
Western section of wall restored.

### Beach Profiles

*Northern-end.* The northern wall section continued to be very shallow. This has been consistent with past years when sediment filled the northern section after floods and tsunami inundations. During low and extremely low tides, the depth averaged 0 to 2 feet deep. Figures 3 through 5 show comparisons of this area over time. The sand dune restoration project occurring along the northern end of the pond continued to be very effective in creating a high sand berm from the northern wall toward Kūlanihāko'i Stream (Figures 6 and 7).



**Figure 3.** June 7, 2014  
Beach exposed during low tide in northern section of fishpond.





**Figure 4.** January 18, 2011  
Sand accretion along northern wall in 2011.



**Figure 5.** June 7, 2014  
Accumulation of sand within northern wall area and northern beach area of Kalepolepo still remains very shallow since at least 2011.



**Figure 6.** June 7, 2014  
Sand dune restoration just north of the  
Hawaiian Islands Humpback Whale  
National Marine Sanctuary building  
and across from the northern wall.



**Figure 7.** June 7, 2014  
Beach profile near Kūlanihāko‘i Stream  
with sand dune restoration project.



*Western section.* Like in previous years, the center area of the pond (away from any walls) continued to be shallow during most tides, averaging around 1 to 3 feet deep (Figure 8). The depth of the pond increased as one moved closer to the western wall section where the depth averaged 4 to 5 feet. In this particular wall section, water circulation, currents, and high impact from waves on the outer side of the wall tended to create a deeper depth near the interior side of the western wall. In addition, the beach from Kalepolepo Park and the area fronting the Whale Sanctuary, continued to have a very large accumulation of sand creating ample recreational space for visitors (Figure 9).



**Figure 8.** June 7, 2014  
The center of the fishpond tended to have a very shallow depth of approximately 1 to 3 feet.



**Figure 9.** April 30, 2014  
A large beach area is utilized by recreational users throughout the year.



*Southern-end.* The southern end of the fishpond continued to be shallow near the fishpond's wall averaging 0.5 to 3 feet deep (Figure 10) and at the opening located between Menehune Shores and the southern wall (Figure 11). This opening is in accordance to the agreement of how restoration would take place for this fishpond. The depth was also very shallow at the Menehune Shores seawall (Figure 12).



**Figure 10.** June 7, 2014  
At the south wall, the depth is very shallow at 0.5 to 3 feet deep.



**Figure 11.** June 7, 2014  
Opening in south wall for beach access.



**Figure 12.** June 7, 2014  
Shallow depth at Menehune Shores  
seawall.

### Marine Life

In 2014, we continued to see marine life in the pond, particularly, green sea turtles. As in 2013, an average of two to four adult green sea turtles were found swimming within the fishpond or basking near the fishpond walls (Figure 13). On several evenings, fishpond volunteers also noted that they saw nine to eleven turtles resting ashore.

The turtles created a spectacle for visitors who often approached within close proximity of the turtles. However, the public was observed by staff and volunteers to be very mindful of not disturbing or touching the turtles. The turtles were also monitored by staff and volunteers of the Hawaiian Islands Humpback Whale National Marine Sanctuary which is located along the shores of Kō'ie'ie Fishpond. The staff and volunteers ensured that the turtles were not being disturbed or threatened.

In addition to the turtles, marine life included fish, seaweeds, invertebrates and shellfish (manini, surgeonfish, butterflyfish, wrasses, eels, octopus, crabs, sea urchins, 'opihi, etc.). They were found near the walls of the fishpond as well as within the pond. Of all marine life exhibited, sea