

” Indigenous wisdom passed through generations”

From the old stone walls of the Waikalua Loko fishpond to the verdant walls of the magnificent pali (cliffs) the Kāne’ohe ahupua’a (land division) holds clues to a rich cultural and natural heritage. As educators and stewards of this awe-inspiring place, we have opportunities to help students and their families discover and embrace that heritage and carry forward the practices that will help us to live more in harmony with the land and sea today.

In the days of old Hawai’i, this ahupua’a flourished with productive lo’i kalo (taro patches) fed by the waters of Kawa and Kāne’ohe streams. The waters flowed from the streams through ‘auwai (ditches) into the lo’i and into the loko I’a (fishponds). At Waikalua Loko today we discover the ingenuity of Hawaiians who engineered these extensive irrigation and aquaculture systems.

Waikalua Loko Fishpond is a loko kuapā—a type of fishpond that is unique to these Islands. The fishpond we see today is very different from the pond that was constructed by Hawaiians approximately 400 years ago. The original pond received fresh water from both Kāne’ohe and Kawa streams. Grates once controlled the flow of water from these streams into the pond so that pond managers could control the salinity of the water. The original locations of the mākāhā (sluice grates) on the makai (ocean) side and the dimensions of the pond walls are not known, but more research could probably shed light on this information.

- 1650 Waikalua Loko constructed by Hawaiians. (This approximate date is determined from a core sampling of the rock wall of the pond; (Eugene Dashiell et al, 1995)
- 1887 An 1887 map of the area shows extensive lo’i kalo mauka (upland) of the pond. A photograph of the area also shows a small interior pond where mullet fry was probably grown.
- 1900 The pond was in commercial operation with an area of 13.4 acres (today it is approximately 11.6 acres).
- 1926 An aerial photograph of the pond from 1928 (next page) shows a large break in the makai pond wall.
- 1930 The pond walls were reconstructed with the three openings we see today. These mākāhā were constructed of reinforced concrete. The wall, which is 9 to 12 feet wide may have been widened for access by equipment. The original walls had stone faces and were filled with cobbles and coral.
- 1940 Water quality and the marine environment were affected by human activities. More than 11 million cubic yards of coral was dredged in Kāne’ohe Bay and sugar and pineapple cultivation led to extensive soil erosion and siltation of the bay.

1950 A sewage outfall that was constructed near Waikalua Loko had a major impact on water quality.



1928



June 13, 2000

1967 An aerial photo shows a channelized Kawa Stream that flows directly into the bay. Today the mouth of this stream is covered in silt and mangrove. This same photo shows a ditch next to the pond and the sewage treatment plant that appears to connect both streams. Ongoing development in the uplands of the Kāneʻohe ahupuaʻa created serious soil erosion into the bay. Introduced mangrove plants became a major management challenge at the pond. Mr. Koyama, the pond operator in the 1960s, reported a mullet harvest of 100 pounds per month (not a commercially viable yield).

1970 Pond operation stopped. Flood control efforts led to channelization of Kāneʻohe Stream, which was dammed at Hoʻomaluhia Park. Portions of Kawa Stream were lined with concrete and the stream was further channelized. Sewage discharge to Kāneʻohe Bay was stopped and diverted to Mōkapu Point.

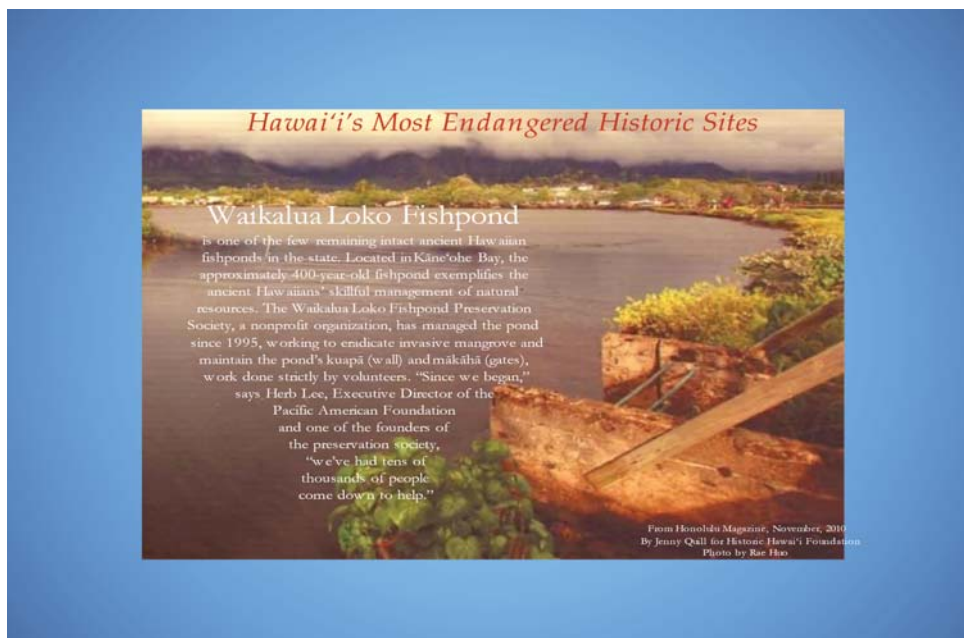
1995 The Waikalua Loko Fishpond Preservation Society (Founder, Herb Lee, Jr.) was formed to help mālama the pond for cultural preservation and use as an educational site.

1998 Castle High School Science Teacher, Sheila Cyboron, brings first group of students (grade 11 and 12) to study science in the context of the fishpond; The transformation in student motivation and learning inspires a new level of culture-based curriculum development.

2000 WLFPS partners with the Pacific American Foundation (PAF), the Hawaii Department of Education and the University of Hawaii Sea Grant program and receives its first

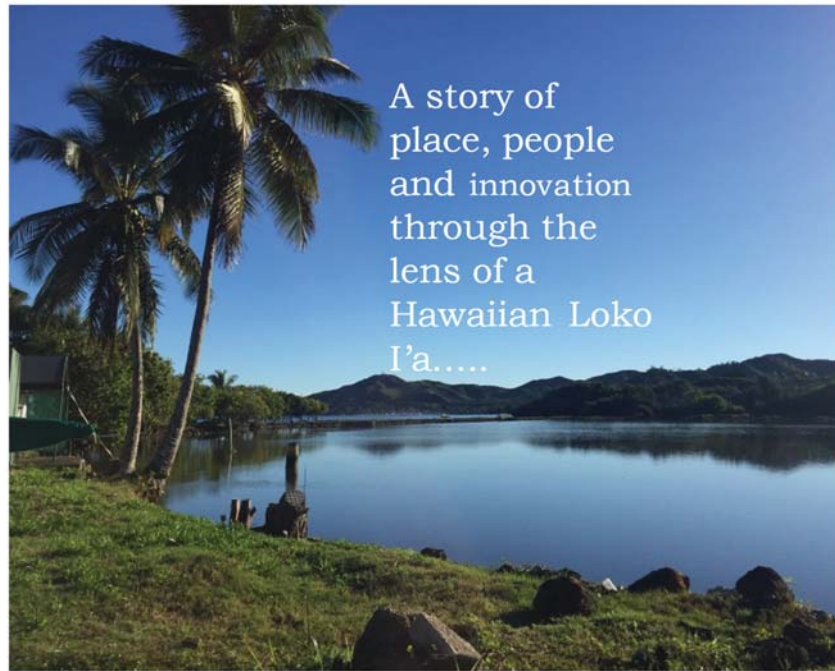
major curriculum development grant award from the U. S. Department of Education entitled “Kāhea Loko, the Call of the pond.”

- 2003 Kāhea Loko program (grades 4-12) is welcomed by teachers; statewide workshops are scheduled and over 330 teachers sign up for training in the standards-based curriculum exceeding grant metrics by over 300%!
- 2004 Pacific American Foundation, the Society, the Hawaii DOE partner again and receive its second major grant award (grades 3-12) called “Aloha ‘Āina.” It focuses on the Kāne’ohe ahupua’a (mountain to the sea).
- 2007 Aloha ‘Āina is also a very welcome addition to schools’ curricula and the project trains nearly 380 teachers; both Kāhea Loko and Aloha ‘Āina receive a “Partners in Education” award from the Hawaii Department of Education.
- 2009 In partnership with the University of Hawaii at Windward and the Hawaii Institute of Marine Biology, the Society and PAF, the U. S. Housing and Urban Development (HUD) awards the group a grant to purchase the Waikalua Loko Fishpond and grant title to PAF.
- 2011 The Historic Hawai’i Foundation selects the Waikalua Loko Fishpond and the Society with its highest honor for exemplary preservation of a cultural resource; Honolulu Magazine determines that *Waikalua Loko one of the most endangered cultural sites in Hawaii.*



- 2013 PAF finally acquires Waikalua Loko (17 plus acres) from current landowner utilizing HUD funds. First ancient Hawaiian fishpond to return to Hawaiian hands since the great mahele in 1848.
- 2014 President Obama and the White House recognizes the work of the community by honoring PAF Executive Director Herb Lee, Jr. as one of 10 in country to be recognized as a Cezar Chavez, “Champion of Change.” PAF invited to partner with the UH Manoa/HIMB and the Smithsonian Institute in the new Marine Global Earth Observatory (GEO) for Kāne’ohe Bay.
- 2015 Hawaii State Legislature awards \$1.5 million to PAF Hawaii Inc. to develop much needed infrastructure to support educational and stewardship of the Waikalua Loko Fishpond. PAF Hawaii Inc. succeeds the WLFPS as the new non-profit entity.
- 2016 PAF receives award from Hawaii Community Foundation for its Kahuliau Native Limu propagation project to pilot the growth and restoration of native limu in the pond and Kāne’ohe bay. July 3, 2016 high tide overtops the wall by 6 inches for the first time in recorded history; invasive garcilaria salicornia (gorilla ogo) virtually vanishes from pond in the summer likely due to temperature rise; 2016 is hottest year in history. PAF begins discussions with the City & County of Honolulu for the acquisition of the decommissioned Kaneohe Sewage Treatment Facility adjacent to the Waikalua Loko to conduct an “adaptive re-use” of the site into Hawaii’s largest fresh water aquaculture facility by 2020.
- 2017 Community participation exceeds the 100,000 mark since restoration began in 1995. Kuapa (wall) reconstruction begins on east end for a period of 4 years.
- 2019 City approves final subdivision approval of pond (now separate from golf course) and final deed is given to PAF Hawaii in July 2019. Hawaii State Legislature approves additional funding of \$500,000 to complete Interpretive/Auxiliary Center at pond site.
- 2020 PAF adjust to the closure of schools and re-develops its website www.thepaf.org and brings the learning and experience of the pond and surrounding areas to include a virtual experience utilizing the latest technology.
- Today Since 2000, over 6,000 teachers have been trained in the various curricula developed by PAF (see Ulukau.org; Search: Hawaiian curriculum materials) Approximately 3 to 5,000 students, families and community members visit the pond every year to learn about this special place. Community members regularly come to care for the pond (Lā Hana) --to remove invasive mangrove, seaweed, pick up marine debris, and repair walls. The work of students, community groups, and the Waikalua Loko Fishpond Preservation Society has breathed new life back into Waikalua Loko. As each stone is put back on the wall and each native plant takes root, we build the foundation for a healthier future that honors the rich cultural and natural heritage of the Kāne’ohe ahupua’a.

Conclusion



In 2021, The Pacific American Foundation has set a new 25-year goal that will focus on developing and propagating aquacultural resources in contributing to the broader community goal of food sustainability. Hawaii currently is nearly 90% dependent on out of state sources of food to sustain itself.

PAF will continue to work with all Hawaii schools to support the transformation of education that builds upon *relationships* between self, each other and community, *relevance* of knowledge and how it is applied, and setting *rigorous* standards of achievement that is celebrated.

Aquaculture in Hawaii is a proven economic model seen on O‘ahu and the neighbor islands that contributes to the long- term economic diversity to our state’s industrial base.

PAF intends to combine its experience as the steward of the Waikalua Loko Fish Pond with the social and economic benefit of a modern aquaculture facility. The enterprise portion of the Aquaculture facility is intended to be economically self-sustaining and will produce commercial quantities of fish, limu and other products for the greater community. Feed production ties in with local farm waste and farms in turn can utilize aquaculture waste as fertilizer to mitigate the operational costs of both facilities.

“ ‘A‘ohe hana nui ke alu ia, No task is too great when all pull together”