

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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COMMISSION ON WATER RESOURCE MANAGEMENT

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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

ref:OCCL:MC

File No: Loko i'a: HA-20-01

James Akau
Nā Mamo O Kāwā
PO Box 45
Pahala, HI 96777

Dear Mr. Akau,

SUBJECT: LOKO I'A PERMIT HA-20-01: KA'ALĀIKI
Ka'alāiki, Ka'ū, Hawai'i
TMK (3) 9-5-016:006, 030

The Office of Conservation and Coastal Lands (OCCL) has reviewed the information you sent regarding restoration work on the fishpond at Ka'alāiki on the above subject parcels. The pond is on the State-owned parcel 030; while the surrounding areas are on parcel 016. The project area is in the Resource Subzone of the State Land Use Conservation District.

The pond lies in the ahupua'a of Ka'alāiki in Ka'ū, Hawai'i. It is a loko i'a kuapā which is fed by punawai (freshwater springs). A kuapā slows the flow of the freshwater into the ocean, which helps create an environment conducive to phytoplankton blooms. This attracts herbivorous fish such as 'ama'ama (flathead grey mullet, *Mugil cephalus*) and āholehole (strange-tailed flagtail, *Kuhlia xenura*). Many species of 'o'opu and 'ōpae are also found in the pond. As there is no mākaha predators also enter the pond, including kākū (barracuda, *Sphyraena barracuda*), 'omilu (bluefin trevally, *Caranx melampygus*), papio (giant trevally, *Caranx ignobilis*), to'au (blacktail snapper, *Lutjanus fulvus*), and various species of puhi (eel).

Waterfowl that frequent the area include kōlea (*Pluvialis fluva*), 'auku'u (*Nycticorax nycticorax hoactli*), and 'ulili (solitary sandpiper, *Tringa incana*).

The substrate consists of basalt and accumulated silt, commonly covered by algal growth. Some indigenous tree species are found on the edge of the pond, including milo (*Thespeci papulnea*) and makaloa (*Cyperus laevigatus*). Invasive species have encroached on the pond itself due to the high sedimentation rates, including kiawe (*Prosopis pallida*), California grass (*Urochloa mutica*), and seashore paspalum (*Paspalum vaginatum*).

Ka'alāiki was an extensive coastal settlement dating to the 1400s. In 1855 Kimokeo Keawe purchased land grant no. 1503 consisting of 15.70 acres surrounding the pond; however, the pond was reserved for the government. Many families left the area after the 1868 earthquake and tsunami; the last resident left in 1919.

The fishpond is currently non-functional, as much of the kuapā has been damaged by tidal currents, storm surges, and trade swells. Parts of the kuapā are completely missing, although the foundation is still evident. There is no longer a mākāhā to keep predatory fish out.

The proposed restoration work involves manual removal of invasive plants from the pond, manual removal of accumulated sediment, and manual repair of the fishpond walls. Rocks for the kuapā will be gathered from the area surrounding the loko i'a. The mākāhā and 'auwai will be constructed using traditional native plants and rocks from the area.

The work will be overseen by Nā Mamo O Kāwā (NMOK), a community group formed in 2012 to steward the coastline in the area. NMOK-contracted resource managers will carry out the work, assisted by volunteer and community groups on work days.

The target species to be raised are 'ama'ama (*Mugil cephalus*) and aholehole (*Kuhlia xenura*), both of which were traditionally raised in the pond. The stocks would be maintained through natural recruitment. Harvesting will be done using throw nets. Predators will be removed using fishing poles and lures.

Nā Mamo O Kāwā has developed the following Best Management Practices that will be followed:

- Any sediment removal will be done by hand and water quality will be monitored to ensure no negative impacts of sediment plumes.
- Invasive species removal will not affect the health of the surrounding environment and will only be done when a negative effect is observed on the pond.
- Rocks from the wall will be used first to make repairs to damaged sections of the wall. If additional rocks are needed, they will be harvested from the surrounding waters and resemble the original rocks used in wall construction. No mechanized equipment will be used to harvest rock from surrounding waters.
- The improvement of conditions for native species and intentionally-raised species will be the cause for work done on the pond.
- The stocking of intentionally-raised species will rely heavily on natural recruitment. Harvesting will be done when there is an abundance of harvestable sized target species and will be done so with extreme care so as not to impact the natural ecosystem of the loko i'a.

As the pond is on state-owned submerge lands, OCCL consulted with DLNR's Division of Aquatic Resources, Division of Forestry and Wildlife, and Land Division. None offered any objections to the project.

After reviewing the application, the Department finds that

1. The plan to manually repair the rock walls, manually remove sediment, and remove invasive species is consistent with Conservation District Use Permit (CDUP) ST-3703 for the Ho'āla Loko I'a program, as approved by the Board of Land and Natural Resources on June 27, 2014;
2. That the activities described were covered in the Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI) for the Ho'āla Loko I'a program, which was published on October 23, 2013;
3. That the proposal requires the need for a Tier 1 Loko I'a permit signed by OCCL;

4. That the standard conditions found in Hawai'i Administrative Rules (HAR) §13-5-42 apply.

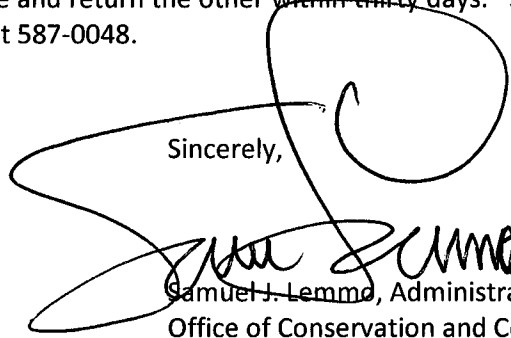
After careful review of the proposed project, the Department authorizes a Tier 1 Loko I'a permit for the work at Ka'alāiki pond, Ka'u, Hawai'i, TMK (3) 9-5-016:006 and 030, subject to the following standard conditions:

1. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
2. The permittee, its successors and assigns, shall indemnify and hold the State of Hawai'i harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;
3. The permittee shall obtain appropriate authorization from the department for the occupancy of state lands, if applicable;
4. The permittee shall comply with all applicable department of health administrative rules;
5. All representations relative to mitigation set forth in the application are incorporated as conditions of the permit;
6. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;
7. In issuing the permit, the department and board have relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;
8. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the permittee shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;
9. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawai'i, and by Hawai'i statutory and case law;
10. Should historic remains such as artifacts, burials or concentration of charcoal be encountered, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact HPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;
11. The permittee will continue to follow the Best Management Practices as described in the current application;
12. Other terms and conditions as prescribed by the chairperson;

13. Failure to comply with any of these conditions shall render a permit void under the chapter, as determined by the chairperson or board.

Please acknowledge receipt of this approval, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other within thirty days. Should you have any questions feel free to contact Michael Cain at 587-0048.

Sincerely,



Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

Receipt acknowledged:

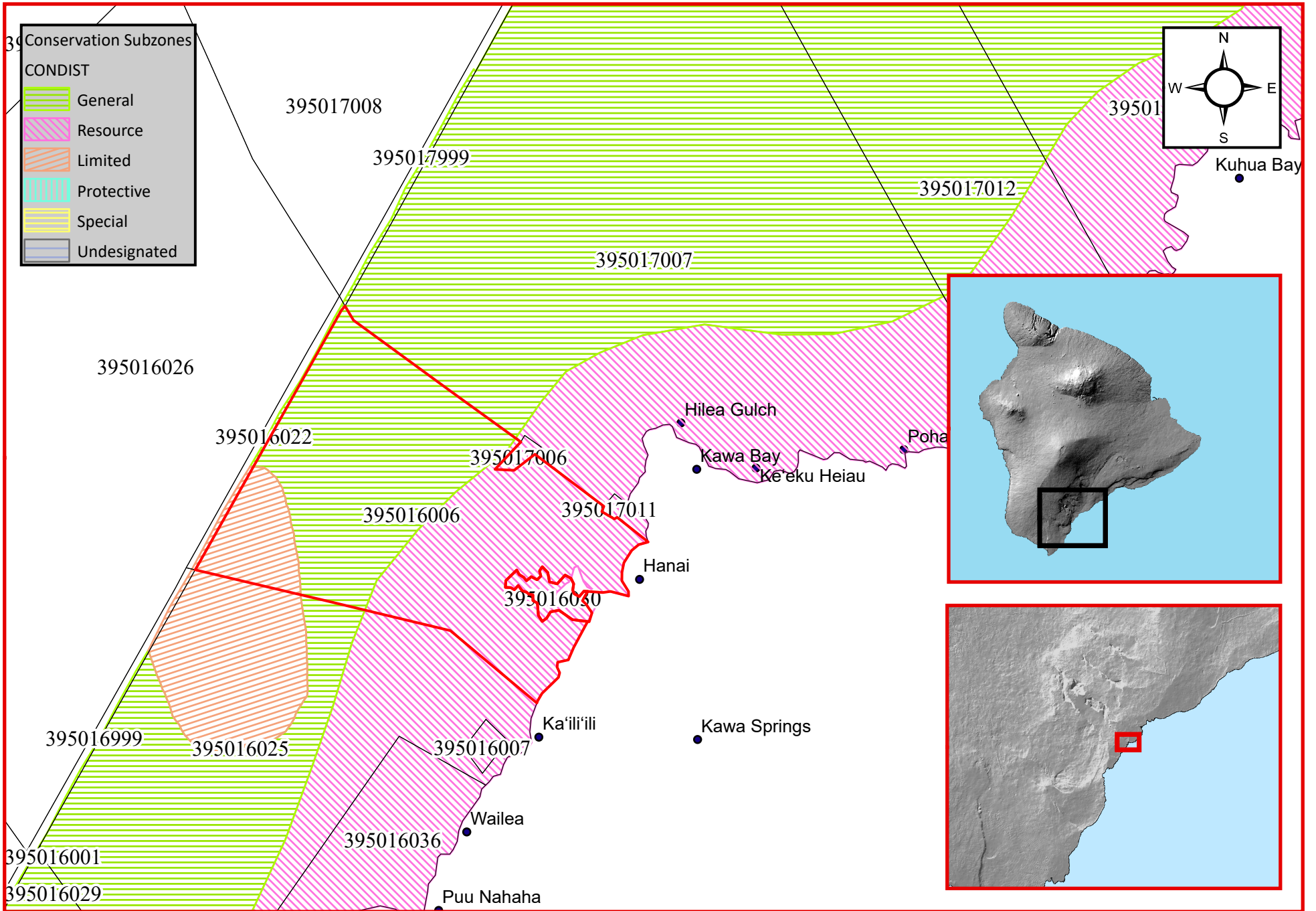
Permittee's Signature

Date

copy: BLNR Chair, Hawai'i Land Division; Hawai'i County Planning

TMT (3) 9-5-016:006, 030 Kaalaiki

0 175 350 700 Meters





HO'ALA LOKO I'A APPLICATION

FISHPOND NAME: ~~Ka'alāiki~~

APPLICANT NAME: Nā Mamo o Kāwā

RECEIVED
DEPT. OF CONSERVATION
AND COASTAL LANDS

2019 JUL -2 P 1:03

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

me

HA-20-01

Pond location: Ka'alāiki, HI

Nearest Tax Map Key(s): 3-9-5-16-006 and 3-9-5-16-030

Ahupua`a: Ka'alāiki

District: Ka'u

Island: Hawai'i

Commencement Date: 08/2019

Completion Date: Ongoing Management

Wall length: 500 ft

Pond surface area: 2 acres

WORK SUMMARY

- Operations only
- Construction of accessory structures
- Minor repair and restoration of pond walls, 'auwai, mākāhā, etc.
- Moderate repair and restoration (10% to 50% damage)
- Major repair and restoration (greater than 50% damage)

Linear feet of wall to be repaired (rocks on site):

Linear feet of wall to be restored (new rock):

Source of new rock:

Amount of "fill" (expansion beyond original footprint):

- Dredging using mechanized equipment
 - Estimated volume of dredging:
- Vegetation removal using mechanized equipment
 - Estimated acreage: 20
- Emergency repair

REQUIRED SIGNATURES

Applicant

Name / Hui: Nā Mamo O Kāwā

Street Address: P.O. Box 45

Pahala, HI 96777

Contact Person & Title: James Akau, Executive Director

Phone: 808-561-9111

Email: info@nmok.org

Interest in Property: Invitee

Signature:  **Date:** 6/18/19
Signed by an authorized officer if for a Corporation, Partnership, Agency or Organization

Landowner (if different than the applicant)

Name: State of Hawai'i

Title; Agency: DLNR

Mailing Address: 1151 Punchbowl St.

Honolulu, HI 96813

Phone: 808-587-0377

Email: dlnr@hawaii.gov

Signature:

Date:

For State-owned ponds, the government entity with management control over the parcel shall sign as landowner.

Agent

Agency:

Contact Person & Title:

Mailing Address:

Phone:

Email:

Signature:

Date:

For DLNR Managed Lands

State of Hawai'i

Chairperson, Board of Land and Natural Resources

Department of Land and Natural Resources

P.O. Box 621

Honolulu, Hawaii 96809-0621

Signature:

Date:

DESCRIPTION OF THE LOKO I'A

Please discuss the current physical and environmental conditions of the loko i'a. Please also note if any endangered or threatened species are found in the pond.

Ka'alāiki loko i'a is a loko i'a kuapā. Ka'alāiki is fed by punawai (fresh water springs) that constantly flow into the pond. The flow of freshwater to the ocean is slowed by the kuapā (wall), creating an ideal environment for phytoplankton blooms. These phytoplankton blooms, mainly diatoms, attract fish from the surrounding waters of Kāwā into the loko i'a (fishpond) and provide an ideal environment for the growth of herbivorous fish such as 'Ama'ama (*Mugil cephalus*) and Āholehole (*Kuhlia xenura*). Many species of 'O'opu and 'Ōpae are found in the pond including 'O'opu Naniha (*Stenogobius hawaiiensis*), 'O'opu 'Akupa (*Eleotris sandwicensis*) and 'Ōpae huna (*Palaemon debilis*). Predatory fish that have made their way into the pond are mainly Kākū (*Sphyraena barracuda*), 'Omilu (*Caranx melampygus*), Papiro (*Caranx ignobilis*), To'au (*Lutjanus fulvus*), and a number of different species of Puhi. There are a variety of gastropod species including flatworms and nudibranchs that are found within the kuapā. There are a many water fowl species that frequent the area like Kōlea (*Pluvialis fluva*), 'Auku'u (*Nycticorax nycticorax hoactli*), and 'Ulili (*Tringa incana*).

The substrate of Ka'alāiki mainly consists of basalt and silt both commonly covered by algal growth. Some native species, such as Milo (*Thespecia papulnea*) and Makaloa (*Cyperus laevigatus*), are found near the edges of the pond, but often encroach on the water and increase sedimentation rates. Invasive plants that also encroach on the pond are Kiawe (*Prosopis pallida*), California grass (*Urochloa mutica*), and seashore paspalum (*Paspalum vaginatum*) in the brackish intertidal zone.

HISTORY OF THE LOKO I'A

Ka'alāiki loko i'a lies within the ahupua'a of Ka'alāiki on the island of Hawai'i in an area known as Ka'ū. The estuarine environment of Ka'alāiki serves as a safe place for many 'ōhua (young fish) to grow with minimal predation.

Ka'alāiki was an extensive coastal settlement that dates back to at least the 1400-1500s. The first western accounts of the Ka'alāiki vicinity document the presence of a substantial settlement around the fishpond. The slopes above the coastal settlement were intensively cultivated with sweet potato, dryland taro, wauke, bananas, arrowroot and plantains.

In 1855 Kimokeo Keawe purchased land grant no. 1503 consisting of 15.70 acres of land surrounding the fishpond, however the fishpond itself was reserved for the government. George Kimokeo built a house just west of the fishpond. After the 1868 earthquake and tsunami event many families left Ka'alāiki. Basil Apiki was the last to leave in 1919. Mr. Apiki lived to the west of the fishpond.

PROPOSED WORK PLAN

Please provide a summary of the work that is being proposed under this permit. Please note any use of mechanized equipment.

Ka'alāiki fishpond is currently non functional and the kuapā (wall) is in need of repair due to the forces of tidal currents, storm surges, and trade swells. There is no makaha (sluice gate) so predator fish can enter freely. Sections of the kuapā are completely missing, although the foundation is evident. The area is exposed to easterly trade swells, which constantly damage the kuapā, that become more damaging during storms and winter swells. Invasive and troublesome plants are also encroaching on the pond causing increased sedimentation rates and lower pH levels through the breakdown of organic matter.

The need for repair and continued maintenance is evident and should be done in a matter that has the least negative impact on the pond and surrounding ecosystems. NMOK-contracted resource managers will carry out the work proposed under this permit. Volunteer groups or community members participating NMOK workdays may assist in the pond restoration project. On workdays, the amount of suspended sediment will be monitored and work will be stopped if adverse effects on the fish are observed. When possible, removal of invasive and troublesome species will be done using hand tools and by hand. Rocks will be gathered for the kuapā in surrounding areas of the loko i'a, most of which were washed off of the pre-existing wall by high surf. Mākāhā and 'auwai will be constructed using traditional native plants and surrounding rocks will be used for this as well.

As we increase efforts to remove invasive plant life (trees, brush) around the pond, we will concurrently plant native coastal plants to control sediment and sand erosion into the pond after the removal of the invasive plants. We will continue to monitor the amount of invasive plants that is cleared, the health of the introduced native plants planted around the pond, and the health and water quality of the pond as a result of the restoration.

Effectiveness of restoration and management will be measured by:

- Length, height, and width of rockwall restored and maintained. (must also monitor effects of rising levels on newly repaired walls)
- Amount of invasive plants removed.
- Amount of native plants planted, native plant health.
- Water quality stability.
- Health of marine life through periodic marine quadrant survey.

PROPOSED OPERATIONS PLAN

Please discuss what species you intend to raise in the pond, and your proposed methods of stocking, raising, and harvesting these species.

As in most traditional loko i'a, the intended species to be raised are 'Ama'ama (*Mugil cephalus*)

and Āholehole (*Kuhlia xenura*). Historically, these fish species were raised in the pond. Stock will mainly be obtained through natural recruitment from the surrounding waters of the Kāwā and Ka'alāiki coastline. Harvesting of full grown target species will take place using throw-nets. Fishing poles and lures will be used to remove predators and minimize their numbers within the pond.

CONSISTENCY WITH HO‘ALA LOKO I‘A PROGRAM

Please discuss how this proposal is consistent with Conservation District Use Permit (CDUP) ST-3703 (available online at dlnr.hawaii.gov/special-projects) and which tier-level the project falls under.

The Nā Mamo O Kāwā is seeking a tier one permit for the the manual repair of the fishpond walls, manual removal of sediment, and invasive species removal. The base of the kuapā is intact and there will be no expansion of the original wall's footprint.

BEST MANAGEMENT PRACTICES

Please discuss the BMPs that will be followed to protect both the environment and the integrity of the pond (users' guide forthcoming).

-Any dredging will be done by hand and water quality will be monitored to ensure no negative impacts of sediment plumes.

-Invasive species removal will not affect the health of the surrounding environment and will only be done when a negative effect is observed on the pond.

-Rocks from the wall will be used first to make repairs to damaged sections of the wall. If additional rocks are needed, they will be harvested from the surrounding waters and resemble the original rocks used in wall construction. No mechanized equipment will be used to harvest rock from surrounding waters.

-The improvement of conditions for native species and intentionally raised species will be the cause for work done on the pond.

-The stocking of intentionally raised species will rely heavily on natural recruitment. Harvesting will be done when there is an abundance of harvestable sized target species and will be done so with extreme care so as not to impact the natural ecosystem of the loko i‘a.
