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DAVID Y. IGE
GOVERNOR OF HAWAII

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BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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LAND
STATE PARKS

STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
POST OFFICE BOX 621
HONOLULU, HAWAI'I 96809

ref:OCCL:MC

File No: Loko I'a: HA-15-06

APR 29 2016

Dena Sedar
DLNR Division of State Parks
PO Box 1839
Kailua Kona, HI 96740

Dear Ms. Sedar,

SUBJECT: **LOKO I'A PERMIT HA-15-06: KEKAHA KAI PONDS**
Kekaha Kai State Park, North Kona, Hawai'i
TMKs (3) 7-2-005:003 and 7-2-004:019

The Office of Conservation and Coastal Lands (OCCL) has reviewed the information you sent regarding proposed restoration work on three anchialine ponds at Kekaha State Park on the above subject parcels. The ponds are in the Resource Subzone of the State Land Use Conservation District.

The largest pond is located just inside of the coastal dune. It was partially lined with rock walls and managed as a fishpond by indigenous Hawaiians, although it lacks some of the 'classic' loko i'a elements such as mākaha and 'auwai. A smaller pond is located 100 feet inland from the first, while a third lies in a different section of the park and is bounded by the sandy coast and a lava flow.

All three ponds were damaged during the 2011 tsunami, which deposited large amounts of sand in the ponds. In addition, the ecosystems have been degraded by invasive plants and predatory fish, as well as algae and bacteria build-up.

The restoration work will involve completing a baseline survey of the ponds by a Division of Aquatic Resources staff, removal of invasive fish from the pond using nets, the introduction of a single pāpio (a younger ulua) into each pond as a predator of the invasive guppies, hand removal of invasive plants from the ponds, and the mechanical removal of sedimentation.

An excavator will be used to remove the large amount of sand that is covering the rock wall on the first pond; after this Park volunteers will remove the sand by hand and by using a trash pump.

Once the restoration work is completed the lands surrounding the ponds will be planted with native plant species. The ponds will be monitored to assess the return of 'ōpae'ula and other anchialine species.

No stocking or harvesting is currently planned.

OCCL sought comments on the proposal and associated best management plan from DLNR's Land Division, Division of Aquatic Resources, Division of Forestry and Wildlife, and Historic Preservation; the Office of Hawaiian Affair; Kua'āina Ulu 'Auamo, the Hawai'i County Planning Department; the U.S. Army Corps of Engineers; NOAA Fisheries Pacific Islands Regional Office; and the State Department of Health, Environmental Planning Office. The application was also posted on OCCL's website.

The comments received, along with the applicant's response, are summarized below:

DLNR Division of Aquatic Resources (DAR)

DAR requests that a further detailed bio-control management plan be included which would elaborate on the use of juvenile carangids (pāpio) as a bio-control method for poecilids (mosquitofish), and fish removal efforts using nets. DAR notes that bio-control is generally used for reducing and controlling populations, but has not been successful at eradicating invasive species.

DAR also notes that planting native plants along the edge of the pond might provide refuge for the invasive fish species it is trying to remove. The applicant might want to consider keeping the edge of the pools free of vegetation. Outplanting native vegetation above the high water mark might improve bank stability and reduce sedimentation.

State Park's response

Based upon the comments received and further consultation with DAR, staff has made some modifications to the application. As pāpio might not be effective in removing invasive guppies, Parks will use a CO2 diffuser. This has been used successfully at other anchialine ponds. In addition, some fish removal activities will be done at night, when the fish are less active and easier to trap.

Native plants will not be planted along the edges of the ponds. However, existing native plants will be retained. New plants will be out-planted above the high water mark to help reduce sedimentation.

DLNR Division of Forestry and Wildlife (DOFAW)

The locations being proposed for this work are not known to be habitat for Federal- or State listed waterbirds; however 'Opae'ulu Pond, less than 2 miles from Kekaha Kai, is listed as a supporting wetland in the Recovery Plan for Hawaiian Waterbirds for 'alae ke'oke'o (Hawaiian coot, *Fulica alai)* and ae'o (Hawaiian stilt, *Himantopus mexicanus knudseni*). Other important wetland habitat for waterbirds is present along the coast south of the proposed sites. The proposed project could attract endangered waterbirds to the property during the project construction and maintenance period, and DOFAW recommends that a qualified person be present who can identify Hawaiian waterbirds, and that work be stopped if birds are in the project area.

DOFAW also recommends against using lights if work is done at night, and not cutting down trees over fifteen feet tall during the nesting season for hoary bats, between June 1 and September 15.

State Park's response

One of the goals of the project is to restore habitat for Hawaiian shore birds. All staff and volunteers will be educated about the native 'alae ke'oke'o and ae'o, The Park's interpretive specialist will check the project area each day for the presence of these two species. If they are spotted, work will be delayed until they have left the area. Park photographs show that ae'o once frequented the ponds before the tsunami deposited sand in them.

No woody plants taller than 15 feet will be removed during the hoary bat pupping season between June 1 and September 15. Volunteers and staff will be educated on the bats prior to work commencing.

No lights will be used other than flashlights and headlamps during the fish removal phase, which the Division of Aquatic Resources has suggested might be more effective at night.

The Preservation Plan being prepared for the project will incorporate DOFAW's concerns.

Bobby Camara, Volcano, HI

Mr. Camara understands that the Ho'āla Loko I'a program applies to ponds that were altered by people, and not by natural forming ponds. He estimates that he has spent hundreds of days at the site since 1972, and offers the following comments:

- Ponds 1 and 2 are in the 'ili of Ka'elehuluhulu in the Mahaiula section of KKSP.
- The flows underlying Ka'elehuluhulu all appear to date from about 1801. It is most likely that Pond 1 formed in a low-lying area of the lava and then filled with sand from tsunami and storms, although it is also possible that it formed in a kipuka of older lava. Coastal subsidence in the area has amounted to 40 to 50 centimeters since 1801.
- The stone wall likely dates from the 1970s.
- In 1928 there was a newspaper reference to Pond 1 being a remnant of Pa'aiea (a large pond covered by the Hu'ehu'e flow of 1801). In 1930 there's a mention of a 'stagnant pond' at that location. Registered maps do not depict a fishpond at Ka'elehuluhulu.
- Based on this, Mr. Camara would classify this pond as a 'wetland.' He has observed kolea foraging at the site, and makaloa (a type of sedge) grows there.
- Pond 2 appears to be either natural inflation pit or a subsidence pit. It is wholly within the 1801 flow and appears to be unaltered by people. There is no indication that it functioned as a fishpond.
- Pond 3 is in the ahupua'a of Maniniowali, on the shore of Kua Bay. State Parks personnel state that they believe that this pond functioned as an 'ōpae'ula pond. One area of the pond was filled by unauthorized bulldozing in 1985, and is now filled with stagnant mud. The other sections of the pond are completely senescent. The dividing walls are covered with dredged sediment, and are now obscured by sedges and other vegetation. Only a small area of open water remains.
- Mr. Camara has observed aeo (Hawaiian stilts) visiting Pond 3.
- Mr. Camara would not consider the existing vegetation to be 'invasive species,' and states that the vegetation in the pond is expanding as part of the ponds natural senescence.
- Mr. Camara notes that Brock wrote a restoration plan for the ponds in 2004, which concluded that alien fish need to be removed if native biota are to return.

State Park's response

Parks appreciates the time Mr. Camara has spent with staff discussing the specifics of the restoration project.

Each of three anchialine ponds were recorded as archaeological sites and are part of the Statewide Inventory of Historic Places. Staff consulted with OCCL to determine if they met sufficient criteria to apply under the Ho'āla Loko I'a program[1].

Parks will provide a Preservation Plan to the State Historic Preservation Division for review and approval. Extra precautions will be taken at Manini'ōwali.

1 Type VI ponds, Kaheka and Hapunapuna, are natural pools and holding ponds which were discussed in the Environmental Assessment and in OCCL's report on CDUP ST-3703 to the Board of Land and Natural Resources.

Removing non-native guppies will be challenging. Based upon consultation with the Division of Aquatic Resources, Parks will attempt to remove the guppies using a CO2 diffuser. Removal using nets at night will also be attempted.

Restoration of the ponds should improve habitat for both 'ōpae'ula and native waterbirds such as the ae'o. In addition, the restoration efforts at Pond 1 at Ka'elehuluhulu involves providing habitat for native sedges and makaloa.

Office of Hawaiian Affairs (OHA)

OHA appreciates the best management practices being proposed by State Parks. Given the pond's coastal setting and proximity to known archaeological complexes and habitation sites, OHA urges the highest level of care to minimize the potential for disturbing sub-surface cultural materials. There is a high likelihood of encountering Hawaiian burial practices in projects like this one, although they understand that the work will only involve removing accumulated sediments. Paths to and from the pond should be clearly delineated to avoid disturbing adjacent cultural features.

State Park's response

State Parks is preparing a Preservation Plan that will be submitted to the State Historic Preservation Division for review and approval. As part of this, a qualified archaeologist will oversee work that can potentially disturb any subsurface cultural materials. The Plan will also address procedures if any burials are encountered. Volunteers and workers will be briefed each workday on the area's cultural and natural resources.

In addition, a three-meter work buffer will be established around each anchialine pond.

Environmental Planning Office (EPO)

EPO routed the plans to the State Clean Water Branch, who will provide comments if necessary.

State Park's response

Staff is reviewing the Hawai'i Environmental Health Portal to insure that all environmental guidelines are followed during the project.

After reviewing the application, OCCL finds that:

1. The proposed work at Ka Loko o Kīholo is consistent with the statewide programmatic general permit for the restoration, repair, maintenance, and operation of loko i'a (Conservation District Use Permit ST-3703: Ho'āla Loko I'a), as approved by the Board of Land and Natural Resources on June 27, 2014;
2. 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 in the Office of Environmental Quality Control's *Environmental Notice* on October 23, 2013;
3. The proposal requires the need for a Tier 2 Loko I'a permit signed by the Chair of the Board of Land and Natural Resources;
4. The State Department of Health water quality certifications are waived pursuant to Hawai'i Revised Statutes (HRS) Chapter 342D WATER POLLUTION, Section 6.5 Hawaiian loko i'a (b) *The department*

shall waive the requirement to obtain water quality certification under this chapter for any person that has received notice of authorization to proceed from the department of land and natural resources office of conservation and coastal lands under the statewide programmatic general permit for the restoration, repair, maintenance, and operation of loko i'a; [2] and

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

Staff notes that State Parks will be preparing a Preservation Plan for review and approval by the State Historic Preservation Division. OCCL will recommend that a condition of the permit be that this no heavy machinery, such as an excavator, be used until this plan has been approved. OCCL has no objections to manual work being conducted in the interim.

After careful review of the proposed project, the Department finds that the proposed work will not negatively impact water quality, and authorizes a Tier 2 Loko I'a permit for the restoration work at the three anchialine ponds at Kekaha Kai State Park, North Kona, Hawai'i, TMKs (3) 7-2-005:003 and 7-2-004:019, 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. All representations relative to mitigation set forth in the application are incorporated as conditions of the permit;
5. The actions outlined in the best management plan submitted with 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;

[2] HRS §342D-6.5 was amended by Act 230 (15), Relating to Hawaiian Fishponds, approved by the Governor of the State of Hawai'i on July 13, 2015. The intent of this Act was to *improve state government efficiency and response time in the administration of water pollution control.* It allowed most applicants for loko i'a restoration and repair permits to submit a single permit application instead of a series of single-agency applications.

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. That a Preservation Plan approved by the State Historic Preservation Division be in place prior to the use of any heavy machinery;
12. Other terms and conditions as prescribed by the chairperson; and
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,

Suzanne D. Case, Chairperson
Board of Land and Natural Resources

Receipt acknowledged:

Permittee's Signature

5/5/16
Date

copy: SHPD, HDLO, State Parks Admin, County Planning, U.S. Army Corps of Engineers

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

ref:OCCL:MC

Loko I'a HA-15-06

MEMORANDUM:

DEC 2 9 2015

TO: DLNR

___ Land Division
___ Division of Aquatic Resources
___ Division of Forestry and Wildlife
___ Historic Preservation

___ Office of Hawaiian Affairs
___ Kua'āina Ulu 'Auamo
___ Hawai'i Planning Department
___ U.S. Army Corps of Engineers
___ NOAA Fisheries, Pacific Islands Regional Office
___ Department of Health, Environmental Planning Office

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

SUBJECT: REQUEST FOR COMMENTS
Pond Restoration

LOCATION: Kekaha Kai State Park, North Kona, Hawai'i

TMK: (3) 7-2-005:003 7-2-004:019

Please find Loko I'a Restoration Application HA-15-06 for proposed restoration work on three anchialine ponds at Kekaha State Park on the above subject parcels.

The largest pond is located just inside of the coastal dune. It was partially lined with rock walls and managed as a fishpond by indigenous Hawaiians, although it lacks some of the 'classic' loko i'a elements such as mākaha and 'auwai. A smaller pond is located 100 feet inland from the first, while a third lies in a different section of the park and is bounded by the sandy coast and a lava flow.

All three ponds were damaged during the 2011 tsunami, which deposited large amounts of sand in the ponds. In addition, the ecosystems have been degraded by invasive plants and predatory fish, as well as algae and bacteria build-up.

The restoration work will involve completing a baseline survey of the ponds by a Division of Aquatic Resources staff, removal of invasive fish from the pond using nets, the introduction of a

single pāpio (a younger ulua) into each pond as a predator of the invasive guppies, hand removal of invasive plants from the ponds, and the mechanical removal of sedimentation.

An excavator will be used to remove the large amount of sand that is covering the rock wall on the first pond; after this Park volunteers will remove the sand by hand and by using a trash pump.

Once the restoration work is completed the lands surrounding the ponds will be planted with native plant species. The ponds will be monitored to assess the return of 'ōpae'ula and other anchialine species.

No stocking or harvesting is currently planned.

We have included the application. We would appreciate any comments your agency or office has on the proposed project and its associated best management practices. The documents can also be found on our website at dlnr.hawaii.gov/occl/hoala-loko-ia.

Please let us know by Thursday January 14 if we should be expecting comments from your agency. Contact Michael Cain at 587-0048, should you have any questions on this matter.

( ) Comments Attached

( ) No Comments

_____
Signature

Attachment: *Loko I'a application HA-15-06*

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

Date: January 4, 2016
DAR # 5222

MEMORANDUM

TO: Bruce S. Anderson, DAR Administrator

DATE: January 14, 2016

FROM: Troy Sakihara, Aquatic Biologist

SUBJECT: Environmental Assessment for the Ho'ala Loko I'a Application, Kekaha Kai Anchialine Pools

Comment	Date Request	Receipt	Referral	Due Date
	December 29, 2015	December 30, 2015	January 4, 2016	January 14, 2016

Requested by: Dena Sedar, Interpretive Program Specialist
Hawaii Division of State Parks, Department of Land and Natural Resources

Summary of Proposed Project:

Title: Ho'ala Loko I'a Application, Kekaha Kai Anchialine Pools

Project by: State Parks Division, DLNR

Location: Kekaha Kai State Park, County of Hawaii

Brief Description: This is an application to conduct concerted restoration work (i.e., invasive species removal, sand/sediment removal and outplanting of native riparian flora) in three anchialine pool habitats located in Kekaha Kai State Park. These pools were damaged by the 2011 Japan Tsunami and are currently degraded by invasive fishes (poeciliids) and non-native vegetation. The intent is to restore natural conditions in these pools to allow the reestablishment of endemic 'ōpae 'ula *Halocaridina rubra* populations.

Comments: We request that a further detailed bio-control management plan is provided within the application, which should include explanations on the use of juvenile carangids (papio) as a bio-control agent for poeciliids (e.g., mosquitofish), and fish removal efforts using nets. In particular, the bio-control management plan should specify:

1) Species and approximate sizes of papio that will be introduced

2) If each pool will receive only one papio despite the notable differences in pool size
3) Approximate duration that papio are to be left in the pools (no. of days/weeks/months or indefinitely)
4) Further detailed procedures for removing poeciliids using nets
5) Monitoring frequency of the pools by State Parks staff after removal/control efforts

Please consider the following when addressing listed inquiries above:

It is important to note that the use of bio-control agents is typically ineffective for eradication efforts, but is rather used for reducing and controlling populations of invasive species. It seems that the proposed application here is for complete removal of invasive fish, which would not make the introduction of a single bio-control agent suitable for this purpose. Introducing a native fish predator may only alter the behavior of poeciliids and minimally reduce its population. However, minimizing invasive fish populations or altering their behavior in these pools may allow ʻōpae ʻula to reestablish, albeit in relatively smaller numbers. ʻŌpae ʻula have also shown to appear at night when invasive fish are inactive in invaded pools. That being said, although eradicating invasive fishes is preferred, minimizing and controlling the invasive fish population may have significant benefits too.

We would also like to stress that the eradication of invasive fishes in anchialine habitats, particularly poeciliids, is extremely difficult under the limitations of approved methods. Physical removal with nets must be a long-term and frequently repeated activity in order for it to be effective, which may take longer than a few months. To maximize the effectiveness of this effort, we suggest planning fish removal with nets at night when these fish are inactive.

Considering that poeciliids may be reintroduced or not completely eradicated, and that State Parks staff plan to monitor these pools for invasive fishes and subsequent removal, the replanting of native plants along the wetted edge of the pools may hinder these efforts and provide more refuge for these fish. Therefore, the applicant may want to consider keeping the wetted edge of the pools free of any vegetation. ʻŌpae ʻula do not require these plants for survival. It is also important to note that many of Hawaiian anchialine pools in geologically young basaltic lava fields are naturally devoid of emergent or riparian vegetation. Keeping these pools free of vegetation could therefore be considered restored conditions. However, outplanting native vegetation above the high water mark may improve bank stability and reduce sedimentation and reestablishment of non-native flora.

Thank you for providing DAR the opportunity to review and comment on the Hoʻala Loko Iʻa Application. If any changes are made to the application, DAR requests the opportunity to review and comment on those changes.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
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DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

January 8, 2016

MEMORANDUM

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

From: Sheri S. Mann, Acting Administrator SSM
DLNR, Division of Forestry and Wildlife (DOFAW)

Subject: Comments on Loko I'a Application HA-15-06 for Anchialine Pool Restoration at Kekaha Kai State Park, TMK (3) 7-2-005:003, 7-2-004:019

Thank you for the memo of December 29 and the opportunity to comment on the proposed anchialine pool restoration. The project is proposed by the DLNR State Parks Division. The restoration work being proposed is for three pools and will involve a baseline survey of the pools, removal of invasive fish using nets and possible other experimental methods such as introduction of a juvenile pāpio, hand removal of invasive plants, and hand and mechanical (including excavator) removal of sediments. All three pools were damaged during the tsunami of 2011 which deposited large amounts of sand in them, and they have been degraded by invasive plants and predatory fish as well as algae and bacteria buildup.

The locations being proposed for this work are not known to be habitat for Federal- or State-listed waterbirds, however 'Ōpae'ulu Pond, less than 2 miles from the pools being proposed for restoration, is listed as a supporting wetland in the Recovery Plan for Hawaiian Waterbirds (2nd Revision, 2011) for Hawaiian coot or `alae ke`oke`o (*Fulica alai*) and Hawaiian stilt or ae`o (*Himantopus mexicanus knudseni*). In addition, other important wetland habitat for waterbirds is present along the coast south of the proposed sites. Therefore, the proposed project could attract endangered waterbirds to the property during the project construction and maintenance period and they may be adversely affected by these activities. Consequently, if water is present in a pool on which work is being conducted, DOFAW recommends that a person capable of positively identifying these waterbird species check the site each day before starting work to ensure no birds are present. If listed birds are present, work should not proceed until the bird(s) have left the project area.

As reported in the Final Environmental Assessment for Kekaha Kai State Park Phase II Improvements (February 2015), beachgoers and park employees often see Hawaiian hoary bats

or ʻŌpeʻapeʻa (*Lasiurus cinereus semotus*), a Federally endangered species. If the species is present at the site, and trees are planned for removal during the bat breeding season, there is a risk of injury or mortality to juvenile bats. To minimize the potential for impacts to this species, DOFAW recommends that removal of woody plants greater than 15 feet in height should not occur between June 1 and September 15, which encompasses the bat birthing and pupping season.

Finally, we note that artificial lighting can adversely impact seabirds that may pass through the area at night causing disorientation which could result in collision with manmade artifacts or grounding of birds. Any lights used during or after project activities should be fully shielded to minimize impacts. If nighttime activity is expected, DOFAW recommends consultation on the use of seabird friendly lighting to ensure it is properly utilized and sufficiently seabird friendly. DOFAW also recommends keeping refuse generated during the project in lidded containers to prevent predators from being attracted to the area.

If you have any questions about these comments, or should the scope of the project change significantly or it becomes apparent that threatened or endangered species may be impacted, please contact Glenn Metzler, Protected Species Habitat Conservation Planning Associate, at (808) 587-4149 or glenn.m.metzler@hawaii.gov.

8 February 2016

FROM: Bobby Camara
PO Box 485, Volcano HI 96785
(808) 967-7787 maniniowali @ gmail.com

TO: Michael Cain, State of Hawaii DLNR, OCCL

RE: Hoala Lokoia Application HA-15-06, Kekaha Kai Anchialine Pools

I retired from Hawaii Volcanoes National Park (HAVO) in 2013, and have expertise in natural sciences and the cultural history of Hawaii. I first visited what is now Kekaha Kai State Park (KKSP) in 1972, and since then have spent hundreds of days at Maniniowali, mostly from 1975 when Queen Kaahumanu Highway opened, to the early 1990's. While working at HAVO I spent thousands of hours observing lava flows in the coastal section of the park, and gained a good understanding of flow dynamics and processes.

I will be commenting on the three ponds in KKSP that are the subject of the Application. It's my understanding that work done under any Hoala Lokoia Permit only applies to ponds altered by people, and not to natural anchialine pools.

Ponds 1 and 2 are in the ili of Kaelehuluhulu in the Mahaiula section of KKSP.

I recently made two field trips to that area. The first was on January 29, 2016 with State Parks staff Dena Sedar, Martha Yent and Tracy Tam Sing, and the second on February 4, 2016 with Sedar and Tam Sing. Among topics discussed, we examined the lava flows and visited the fishponds and anchialine pools in question.

My assessment of the ponds is based on personal knowledge of the history, character, and morphology of lava flows in the region; personal knowledge of, and field work in archeology in the area; consultations with Jim Kauahikaua of USGS Hawaiian Volcano Observatory; information contained in documents such as the 1974 "Aquatic Survey of Kona Coast Ponds, Hawaii Island" by Maciolek and Brock; the 1998 report "Kekaha Wai Ole o na Kona" by Maly [HiKe-10 (030498)]; Appendices A-L of KKSP Park Development Report and DEIS prepared in December 2002; and DAGS State Survey Office Registered Maps.

The flows underlying Kaelehuluhulu all appear to date from 1801. The relative age of the lava underlying Pond 1 can only be determined by excavating the sand and examining the substrate. But it appears that Pond 1 is a low spot in the 1801 flows that has been mostly filled with sand during tsunami or high surf events. It's possible but not likely that Pond 1 is a kipuka of old lava in the midst of the 1801 flow. The mortared stonewall surrounding Pond 1 likely dates from the 1970's. Coastal subsidence in the area since 1801 has amounted to 40-50 centimeters, which could account for all or part of the water in both Ponds 1 and 2.

A statement by Mr Kaelemakule published in an article on June 12, 1928 (Maly p74) is apparently one of the earliest references to Pond 1 being a remnant of Paaiea. Reinecke in 1930, mentions a "stagnant pool" in that location. Registered Maps do not depict a "fishpond" at Kaelehuluhulu, although those maps usually include ponds if they are present.

I would characterize Pond 1 as a wetland. During the field trip, we observed kolea foraging there, and makaloa persists.

Pond 2 appears to be either a natural inflation pit or a subsidence pit. In either case it is wholly in the 1801 flow and appears to be unaltered by people. There is no indication that Pond 2 functioned as a fishpond, and was, because of its slightly higher elevation than Pond 1, likely dry when the pit formed during the 1801 lava flow.

Pond 3 is in the ahupuaa of Maniniowali and is located ma uka of the north end of the beach on the shore of Kua Bay. I visited that fishpond on January 29, 2016 with State Parks staff Dena Sedar, Martha Yent and Tracy Tam Sing. I believe the pond functioned as a traditional fish or opaeula pond. I sketched the fishpond on January 17, 1976. See the last page of these comments. The ma kai portion of Pond 3, a 40'x80' area of stagnant mud was filled by illegal bulldozing in the summer of 1985. The rubble remains, and if this permit request is granted, the rubble should be removed as one phase of the restoration the fishpond. The rest of the fishpond, comprised of three compartments measuring 15'x15', 10'x10', and 20'x40', is today nearly entirely senescent. All dividing walls, covered with dredged sediment in earlier times, have been completely obscured by sedges and other vegetation. There is only a small area, perhaps measuring 5'x5', of open standing water.

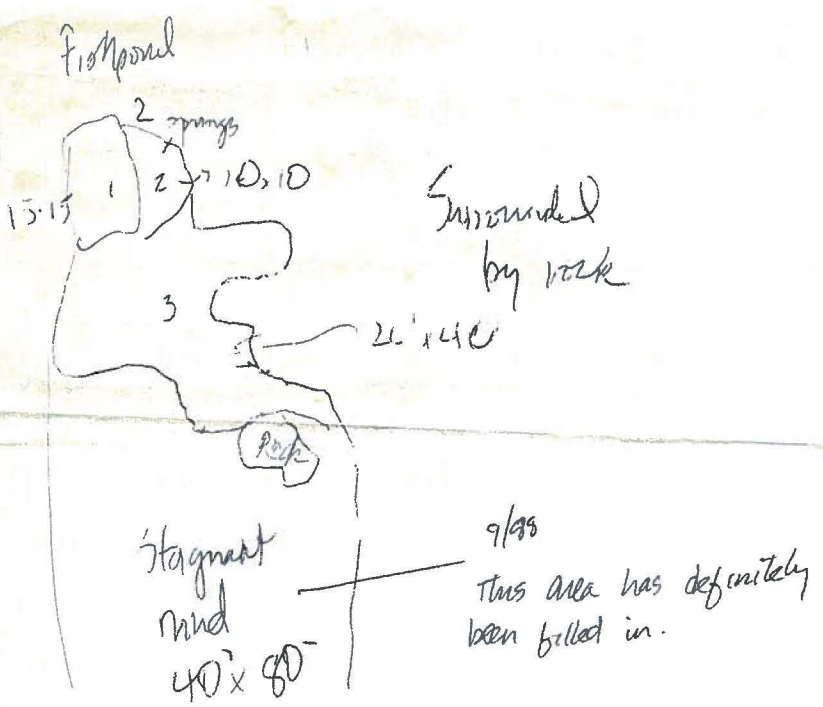
During the period from the 1970s through approximately the 1980s, I regularly observed aeo (Hawaiian stilts) visiting Pond 3, likely stopping on their way to or from ponds at Makalawena or Kukio.

Regarding Mr. Lemmo's "Request for Comments" Memorandum, I would not characterize the sedges and other vegetation in the pond as "invasive species". I would say that the area of vegetation in the pond is expanding as part of the process of pond senescence. In addition, judging from the lack of sand covering any part of the 1985 rubble fill, it doesn't appear that the 2011 tsunami inundated or damaged that pond.

I believe that Pond 3 sediments may contain valuable information, as well as artifacts. If the pond is restored, it must be done with care so as to allow the gathering of potential information in the context of archeology. Pollen cores should first be obtained and analyzed for information regarding vegetation patterns, and any sediment removed should be screened for artifacts.

Note that Brock wrote "Kekaha Kai State Park, North Kona, Hawaii, Anchialine Pool Restoration and Management Plan for the Maniniowali Ahupuaa", EAC Report No. 2004-03, January 2004. In that report, he provides recommendations concerning the process of restoring the pond complex. He is also adamant that alien fish must be successfully removed if the expectation is to have native biota, including opaeula, return to the pond.

I appreciate the opportunity to comment, and would be happy to try to answer any questions you may have.



092398 In: Reinecke Manuscript 1930, Bishop Museum

Site 110 " At the north end of Kua Beach, two pens and a platform. Inland of the beach is a pool and about it on three sides are shelters, small platforms, graves, in the a-a.

There are many graves in this a-a which is distinguished by its tremendous boulders. "

(See site notes on reverse)
9/98
mc

PHONE (808) 594-1888

FAX (808) 594-1938

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAI'I 96817

HRD16/7721

January 14, 2016

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands
P.O. Box 621
Honolulu, HI 96809

Re: Comments on "Request for Comments: Pond Restoration, Kekaha Kai State Park, North Kona, Hawai'i" [Loko I'a HA-15-06]
Kaulana, Manini'ōwali Ahupua'a; Kona Moku; Hawai'i Mokupuni
Tax Map Key (3) 7-2-005:003, (3) 7-2-004:019

Aloha e Mr. Lemmo:

The Office of Hawaiian Affairs (OHA) received your memorandum, dated December 29, 2015, on the above-referenced project, requesting comments on the accompanying Ho'ala Loko I'a Application, HA-15-06. The project entails the restoration of three anchialine ponds located at Kekaha State Park by the Department of Land and Natural Resources, Division of State Parks (State Parks). State Parks proposes to conduct a baseline assessment of the ponds; eradicate non-native plant and fish species from the ponds; remove sediment, largely attributed to the 2011 tsunami; and plant native plant species. State Parks believes that this restoration work will result in the return of native ōpae'ula to the three anchialine ponds.

We appreciate the best management practices already proposed by State Parks for this project. Given the pond's coastal setting and proximity to a known archaeological complex of habitation sites, OHA urges State Parks to exercise the highest level of care to minimize the potential for disturbing sub-surface cultural materials. Traditional Hawaiian burial practices often occurred in inland sand deposits and therefore there is a high likelihood of encountering traditional Hawaiian burials and cultural deposits with projects such as this one. We understand that there will be no expansion of the pools' footprints and that only accumulated sediment will be removed from the pools, but we recommend that careful planning occur so that equipment does not disturb adjacent areas during the sediment removal work or during movement of the

equipment. Paths to and from the ponds should be clearly delineated and construction barriers, which include a buffer area around each site, should be erected around adjacent cultural features to minimize the potential for disturbance.

Mahalo for the opportunity to provide comments. Should you have any questions about this letter, please contact Everett Ohta, OHA Lead Compliance Specialist, at (808) 594-0231 or everetto@oha.org.

'O wau iho nō me ka 'oia 'i'o,

Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:eo

**Please address replies and similar, future correspondence to our agency:*
Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy., Ste. 200
Honolulu, Hawai'i 96817

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:
EPO 16-002

January 4, 2016

To: Samuel J. Lemmo, Adminstrator
Office of Conservation and Coastal Lands

From: Laura McIntyre, AICP
Program Manager, Environmental Planning Office

Subject: Request for Comments (RFC)
Pond Restoration – Kekaha Kai State Park, North Kona, Hawaii
TMK: (3) 7-2-005:003 7-2-004:019

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your RFC to our office on January 4, 2016. Thank you for allowing us to review and comment on the proposed project. The RFC was routed to the District Health Office on Hawaii, and the Clean Water Branch. They will provide specific comments to you if necessary. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.

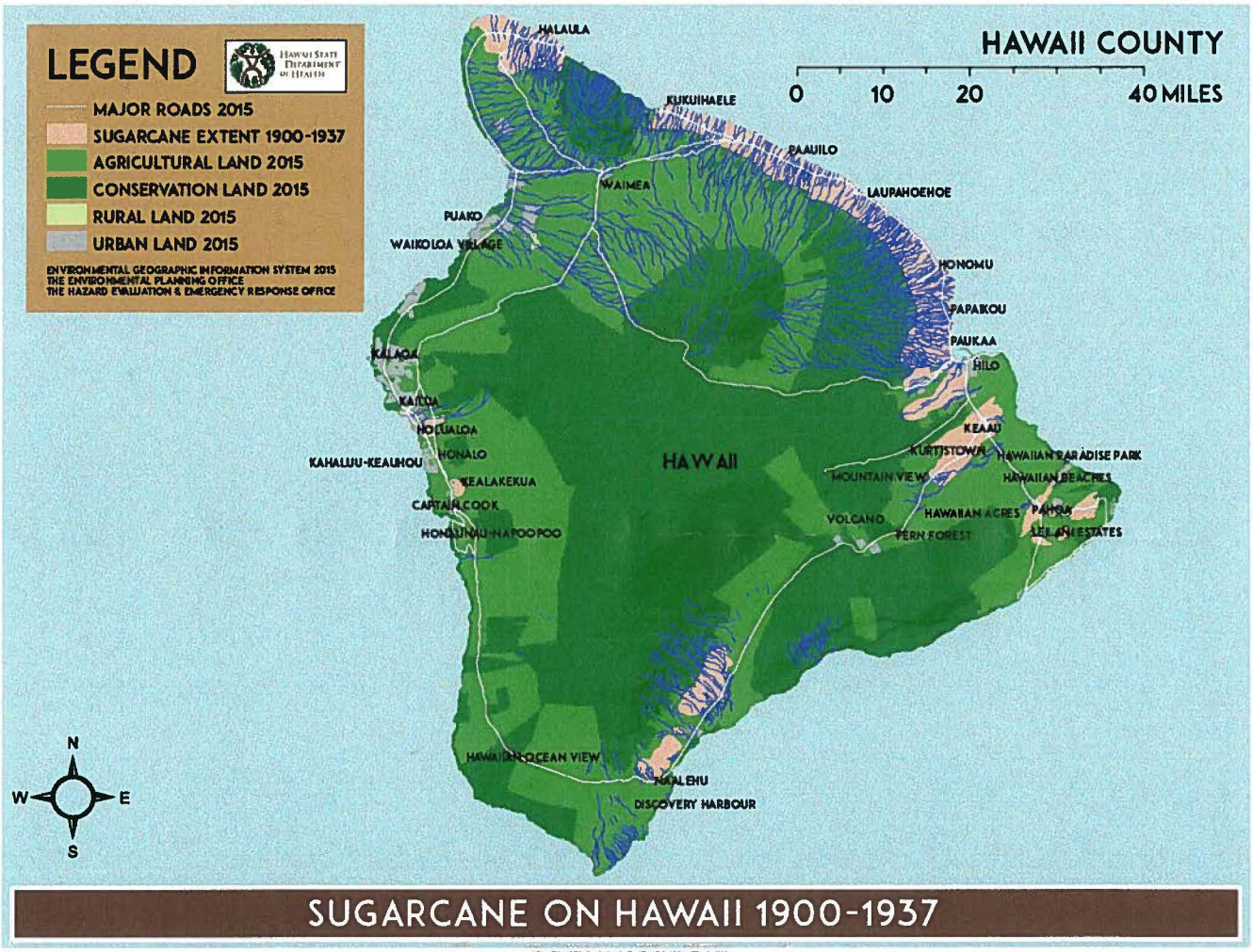
EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: https://eha-cloud.doh.hawaii.gov

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

LM:nn

Attachments: Historic Sugarcane Lands Map Viewer - http://health.hawaii.gov/epo/egis/sugarcane
OEQC viewer - http://eha-web.doh.hawaii.gov/oeqc-viewer

c: DHO Hawaii, CWB {via email only}


LEGEND
HAWAII STATE DEPARTMENT OF HEALTH
MAJOR ROADS 2015
SUGARCANE EXTENT 1900-1937
AGRICULTURAL LAND 2015
CONSERVATION LAND 2015
RURAL LAND 2015
URBAN LAND 2015
ENVIRONMENTAL GEOGRAPHIC INFORMATION SYSTEM 2015
THE ENVIRONMENTAL PLANNING OFFICE
THE HAZARD EVALUATION & EMERGENCY RESPONSE OFFICE
HAWAII COUNTY
0 10 20 40 MILES
HALAULA
KUKUIHAELE
PAAUILO
WAIMEA
LAUPAHOEHOE
PUAKO
WAIKOLOA VILLAGE
HONOMU
PAPAIKOU
PAUKAA
HILO
KALAOA
KAILUA
HOLUALOA
KAHALUU-KEAUHOU
HONALO
KEALAKEKUA
CAPTAIN COOK
HONAUNAU-NAPOOPOO
HAWAII
KEAAU
KURTISTOWN
HAWAIIAN PARADISE PARK
MOUNTAIN VIEW
HAWAIIAN BEACHES
HAWAIIAN ACRES
PAHOA
VOLCANO
FERN FOREST
LEILANI ESTATES
HAWAIIAN OCEAN VIEW
NA'ALEHU
DISCOVERY HARBOUR
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W
E
S
SUGARCANE ON HAWAII 1900-1937
MAP INTENDED FOR ILLUSTRATIVE PURPOSES ONLY.


OEQC Viewer
kekaha state park
1 sites found
Results
Filter
Map Location
Kekaha Kai State Park, Hwy 19, Kailua-Kona, HI 96740, USA
Show sites with no location
KEKAHA KAI STATE PARK CONCEPTUAL PLAN (FEIS)
Environmental Impact Statement (Agency)
Hybrid
Google

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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DEPUTY DIRECTOR - WATER

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 10, 2016

MEMORANDUM:

TO: David Smith, Administrator
Division of Forestry and Wildlife

FROM: Curt Cottrell, State Parks Administrator

SUBJECT: Response to Comments on Loko I'a Application HA-15-006
Anchialine Pool Restoration at Kekaha Kai State Park, North Kona, Hawai'i
TMK: (3) 7-2-05: 03 and 7-2-04: 12

Thank you for your comments on the subject permit application that were submitted to the Office of Conservation and Coastal Lands (OCCL) on January 8, 2016. One of the goals of the project is to restore the ecosystem of the pools so that they can again be a viable foraging area for native Hawaiian shorebirds. All staff and volunteers will be educated about the native 'alae ke'oke'o and ae'o. Dena Sedar, State Parks Interpretive Specialist and project lead, will consult with DOFAW staff on Hawai'i Island prior to the start of the project and will check the project area each day for the presence of these two species. If they are spotted, work will not begin until they have left the area. State Parks photographs indicate that ae'o frequented the large pool in the Mahai'ula section of the park before the pool was altered by the deposition of sand.

Thank you for bringing our attention to the Hawaiian hoary bats or 'ōpe'ape'a that have been observed nesting in the vegetation at the Manini'ōwali section of the park. As instructed, no woody plants taller than 15 feet will be removed from that section of the park from June 1 to September 15. Volunteers and State Parks staff will be educated about the bat and every effort will be made to not to disturb the bats during any time of year.

No lights will be used for this project other than flashlights or headlamps during the fish removal phase of the project. The Division of Aquatics has recommended that some of the fish be removed during night time hours as the fish are less active during this time and it may help expedite the fish removal process. Any refuse generated during the restoration work will be hauled away from the project area after each workday.

The Preservation Plan being prepared for this project will incorporate your concerns for the wildlife, as well as the mitigation measures we have proposed in this memorandum.

Cc: OCCL

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 10, 2016

MEMORANDUM:

TO: Laura McIntyre, Program Manager
Environmental Planning Office
Department of Health

FROM: Curt Cottrell, Administrator
Division of State Parks

SUBJECT: Response to Comments on Loko I'a Application HA-15-006
Anchialine Pool Restoration at Kekaha Kai State Park, North Kona, Hawai'i
TMK: (3) 7-2-05: 03 and 7-2-04: 12

Thank you for your comments on the subject permit application that were submitted to the Office of Conservation and Coastal Lands (OCCL) on January 4, 2016. As recommended, staff is reviewing the Department of Health and Hawaii Environmental Health Portal to insure that all environmental guidelines are followed during this project.

Cc: OCCL

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 10, 2016

Dr. Kamana'opono Crabbe, CEO
Attn: Compliance Enforcement
Office of Hawaiian Affairs
560 N. Nimitz Highway, Suite 200
Honolulu, Hawai'i 96817

Dear Dr. Crabbe:

SUBJECT: Response to Comments on Loko I'a Application HA-15-006
Anchialine Pool Restoration at Kekaha Kai State Park, North Kona, Hawai'i
TMK: (3) 7-2-05: 03 and 7-2-04: 12

Thank you for your comments on the subject permit application that were submitted to the Office of Conservation and Coastal Lands (OCCL) on January 14, 2016. State Parks is preparing a Preservation Plan for the project that will submitted to the State Historic Preservation Division for review and approval. In this plan we will be addressing mitigation measures to protect the archaeological features of the anchialine pools and any cultural resources in the vicinity of the project. A qualified State Parks archaeologist will oversee work that could potentially disturb any subsurface cultural materials. The Preservation Plan will also address the required procedures and protocol if any traditional Hawaiian burials are encountered in the work area.

In addition, a 3-meter work buffer will be established around each anchialine pool so that State Parks staff members and volunteers will be aware of the areas in which work can be performed. Workers will be briefed before each workday to educate the participants about the cultural and natural resources that are in the area.

Thank you again for your suggestions which will be incorporated into the Preservation Plan for these valuable cultural resources in Kekaha wai 'ole na Kona.

Sincerely,

CURT A. COTTRELL
State Parks Administrator

Cc: OCCL

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 10, 2016

Mr. Bobby Camara
P.O. Box 485
Volcano, Hawai'i 96758

Dear Mr. ~~Camara:~~ ALOHA BOBBY!

SUBJECT: Response to Comments on Loko I'a Application HA-15-006
Anchialine Pool Restoration at Kekaha Kai State Park, North Kona, Hawai'i
TMK: (3) 7-2-05: 03 and 7-2-04: 12

Thank you for your comments on the subject permit application that were submitted to the Office of Conservation and Coastal Lands (OCCL) on February 8, 2016. We greatly appreciate your time in meeting with State Parks staff to discuss the anchialine pools at Kekaha Kai and the specifics of the restoration project. Your history with the place and knowledge of the area have been most valuable as we continue to refine and adjust the restoration plan.

The three anchialine pools were encompassed under the Loko I'a application process based on guidance from Michael Cain of OCCL. This application helps to streamline the permitting process for the restoration of both fishponds and anchialine pools. All three of the anchialine pools were recorded as archaeological sites and are part of the Statewide Inventory of Historic Places. Therefore, a Preservation Plan with mitigation measure to protect the archaeological features is being prepared for review and approval by the State Historic Preservation Division. We will take extra precautions when working in the anchialine pool at Manini'ōwali because of the archaeological features and will be considering the potential for a pollen study.

Removing the non-native guppies from the anchialine pools will be challenging under the limitations of approved methods. During the March 4, 2016 consultation between State Parks staff and biologists with the Division of Aquatic Resources, several methods of fish removal were discussed, including the use of a CO2 diffuser. This technology has been used at other anchialine pools with success in removing most of the guppies but we understand that continued monitoring and ongoing removal efforts will be required. The use of nets to collect the fish as night when they are less active is another technique that we will be trying.

The restoration of the anchialine pools seeks to improve the habitat for both the 'ōpae 'ula and native waterbirds, such as the ae'o. The restoration will retain aspects of the wetland in Pool 1 at Ka'elehuluhulu as we also want to promote a habitat for the native sedges and makaloa.

I thank you again for your continued willingness to work with State Parks on this project. Through consultation with agencies and knowledgeable individuals, such as yourself, we are better able to understand both the opportunities and challenges of a project.

Sincerely,

CURT A. COTTRELL
State Parks Administrator

Cc: OCCL

P.S. SEE YOU IN MAUI...
MAHALOS!

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 10, 2016

MEMORANDUM:

TO: Bruce S. Anderson, Administrator
Division of Aquatic Resources

FROM: Curt Cottrell, State Parks Administrator

SUBJECT: Response to Comments on Loko I'a Application HA-15-006
Anchialine Pool Restoration at Kekaha Kai State Park, North Kona, Hawai'i
TMK: (3) 7-2-05: 03 and 7-2-04: 12

Thank you for your comments on the subject permit application that were submitted to the Office of Conservation and Coastal Lands (OCCL) on January 4, 2016. Based on the March 4, 2016 consultation at Kekaha Kai State Park between State Parks staff and Troy Sakihara and Darrell Kuamoo of the Division of Aquatic Resources, some changes have been made to the Loko I'a application. Because of the concerns raised about the ineffectiveness of using papio to remove the guppies from the three anchialine pools, a CO2 diffuser will be used instead. This technology has been used at other anchialine pools with success in removing guppies but we understand that continued monitoring and ongoing removal efforts will be required.

Based on the recommendation made by Troy Sakihara, some fish removal activities will take place during night time hours as the fish will be less active during this time and it may help expedite the fish removal process. We understand the removal of the guppies from the anchialine pools will be a daunting task and appreciate your staff's assistance.

Native plants will not be replanted within or along the edges of the anchialine pools. However, the native sedges already present in the pools, including the makaloa in Pool 1 at Mahai'ula will be retained. Native plants will be outplanted above the high water mark of the pools to reduce sedimentation within the pools and to deter the reestablishment of non-native plants.

The Preservation Plan being prepared for this project will incorporate your recommendations for the restoration of the anchialine pools, as well as the mitigation measures we have proposed in this memorandum.

Attachment: Revised Loko I'a Application HA-15-006

Cc: OCCL

Loko I'a
HA-15-06

HO'ALA LOKO I'A APPLICATION

FISHPOND NAME: **Kekaha Kai Anchialine Pools**

APPLICANT NAME: **DLNR/State Parks**

Pond location: Kekaha Kai State Park - 2 pools in Mahai'ula section; 1 pool in Manini'ōwali section

Nearest Tax Map Key(s): 7-2-05-03; 7-2-04-19

Ahupua`a: Kaulana and Manini'ōwali

District: North Kona

Island: Hawai'i

Commencement Date: February 1, 2016

Completion Date: December 31, 2016

Wall length: N/A

Pond surface area: Combined surface is 1 acre

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: 240 cubic yards (est.)

☐ Vegetation removal using mechanized equipment

Estimated acreage:

☐ Emergency repair

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2015 DEC 23 P 12:42
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

REQUIRED SIGNATURES

Applicant

Name / Hui: DLNR, Division of State Parks
Street Address: 1151 Punchbowl St. #310
Honolulu, HI 96813
Contact Person & Title: Curt Cottrell, State Parks Administrator
Phone: (808) 587-0300
Email: curt.a.cottrell@hawaii.gov
Interest in Property: Landowner

Signature: [signature] **Date:** 12.22.15
Signed by an authorized officer if for a Corporation, Partnership, Agency or Organization

---

Landowner (if different than the applicant)

Name:
Title; Agency: DLNR
Mailing Address:

Phone:
Email:

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

Agent

Agency: See above
Contact Person & Title: Dena Sedar, Interpretive Program Specialist
Mailing Address: P.O. Box 1839
Kailua Kona, HI 96740
Phone: (808) 209-0977
Email: dena.m.sedar@hawaii.gov

Signature: Dena M Sedar **Date:** 12/16/2015

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.

Sediment, vegetation, and non-native fish have impacted the quality of three anchialine pools located within Kekaha Kai State Park, resulting in the degradation of the ecosystem and the absence of the native 'ōpae'ula from the pools. For reference in this project description, the pools are identified as Pool 1, 2, and 3. Pool 1 is the largest anchialine pool to be restored at 15,544 sq. feet. It is located just inland of the coastal dune and next to the parking area in the Mahai'ula section of the park (at Ka'elehuluhulu Beach). The pool was converted into a fishpond by the Hawaiians at some time in the past but it lacks any of the traditional fishpond features such as rock walls and makaha. Pool 2 is a small anchialine pool (529 sq. feet) in the lava about 100 feet inland of Pool 1 in the Mahai'ula section of the park. Pool 3 is located near Kua Bay in the Manini'ōwali section of the park and is 3,900 sq. feet in size. It is situated at the contact between the lava flow and the sand beach. All three anchialine pools are dominated by invasive species, including mosquito fish and non-native vegetation. Please see attached plan view maps and photographs of each anchialine pool.

The deposition of sediment in the pools is a major concern for the 'ōpae'ula. As sediment builds-up, it disturbs the natural cycle within the ecosystem because the sediment fills the cracks and crevices that allow both water and 'ōpae'ula to enter and exit the pools. The introduction of non-native plants and fish into the pools has also altered the ecosystem, as introduced fish prey on the 'ōpae'ula, forcing them into the cracks and crevices of the pool. When the 'ōpae'ula are not able to freely swim in the anchialine pools, algae and bacteria can build-up in the pools resulting in a reduction in water quality. The restoration of three anchialine pools located within the park will restore the native ecosystem of the pools, which could result in the return of native anchialine pool species.

There are no known protected species that currently frequent the pond.

Current conditions of the pond are:

- Pool 1 was negatively impacted by the 2011 tsunami, which deposited a large amount of sand into the pool. The water level in the pool is low because of the amount of sediment build-up and sand. Much of the pool water surface is covered by an algae species that is not conducive to a healthy anchialine pool ecosystem. A portion of the rock wall that was built in the 1960s or 1970s to delineate the pool was covered by sand during the 2011 tsunami. Makaloa, a native sedge, is present in the northern portion of the pool. Efforts will be made to increase the distribution of makaloa in Pool 1 during the restoration project. Guppies are present in the pool and no 'ōpae'ula have been observed.

- Pool 2 has the least amount of sediment build-up of the three pools. The sediment build-up is caused by plant debris from the kiawe trees that are adjacent to the pool. There is no vegetation present in the pool at this time; however, there are a number of guppies present in the pool. No 'ōpae'ula have been observed in the pool.

- Pool 3 has the highest degree of sedimentation. It is estimated that the sediment is at least 20 inches thick. The pool is overgrown with vegetation and several vegetation covered berms are located within the pool. Guppies are present in the pool and no 'ōpae'ula have been observed.

HISTORY OF THE LOKO I'A

Anchialine pools are a natural resource that is also a cultural resource. Anchialine pools were a vital source of water for the people who lived in Kekaha wai ole na Kona (waterless Kekaha of the Kona district). Fishermen would gather 'ōpae'ula from the pools and pack them in mud to use as bait while canoe fishing. Anchialine Pool 1 (Mahai'ula section of the park, Kaulana ahupua'a) was converted into a fish pond by the Hawaiians at an unknown time. It is believed to be a remnant of the Great Fishpond Pa'aiea, which was said to have been three miles long and a mile wide. The Pa'aiea fishpond belonged to Kamehameha the Great before it was destroyed by the 1801 eruption of Hualālai. According to legend, the eruption occurred after Pele was denied fish from the pond's konohiki (manager). A stone wall was built around the pool in the 1960s or 1970s.

Modifications were made to Anchialine Pool 2 (Mahai'ula section of the park, Kaulana ahupua'a) in the form of stacked stones around the interior sides of the pool. It is unknown when this modification was made, although it is presumed to have been done in pre-contact times. There are no historical or oral history accounts connected to this anchialine pool, but most likely it was utilized as a source of fresh water and the collection of 'ōpae'ula for bait.

Modifications were made to Anchialine Pool 3 (Manini'ōwali section of the park and ahupua'a) in the form of rock alignments in the northeast portion of the pool. It is unknown when this modification was made, although it is presumed to have been done in pre-contact times. A 1986 field inspection report indicates that Anchialine Pool 3 had been recorded as site 50-10-18-10235. The anchialine pool was impacted by unapproved grading work in the 1980s when it was partially filled-in and features around the pool were disturbed. The anchialine pool is located within an archaeological site complex (50-10-18-23356) in which there is nine habitation clusters, indicating this area near Kua Bay was most likely an occupation area. There are no historical or oral history accounts related to this pool, but most likely it as a source of water and 'ōpae'ula for the inhabitants of the village.

PROPOSED WORK PLAN

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

The first step of the project will be a baseline survey of the 3 anchialine pools by the Division of Aquatic Resources (DAR) biologist. The assessment survey of the pools will enable Hawaii State Parks staff to restore the anchialine pools based on recommendations and suggestions from the DAR biologist. The survey will assess the current physical description of the pool (water quality, sediment depth, etc.) and the biological conditions (what flora and fauna species are currently present in the pool). Once the conditions are evaluated, a specific course of action can be determined for each of the three pools.

The second step in the restoration project will be the eradication of the non-native fish and plant species at the 3 pools. This step will be done by hand removal of plants and the collection of fish using nets. The restoration project could provide an opportunity to try experimental fish removal methods, as there are removal methods that have been successful in other pool and fishpond restoration projects, including the introduction of a single papio (Trevally fish) into the pool to eat the smaller fish present in the pool.

It is estimated that the removal of the non-native fish and plant species will take place over the

course of several months, from February to May 2016. After this step is completed, the third step will be to remove sand and sediment from the pools. Past restoration efforts were conducted at Pool 1, but those efforts were negated when the 2011 tsunami deposited large amounts of sand into the pool. This project calls for the removal of the sand using both machinery and hand methods. An excavator will be used to remove a large portion of the sand deposit that is currently covering a portion of the modern stone wall. Hand removal of the sand will begin after the stone wall has been uncovered. State Parks staff and volunteers will then begin the removal of sediment within the pool using the trash pump, which works well in sediment-filled ponds. A trash water pump will be sufficient to remove the sediment and sand from Pools 2 and 3.

Following the removal of the non-native species and the sediment from the pools, State Parks staff will plant native species around the pools in an effort to reduce the regrowth of non-native species. The type of native species to be planted will be based on recommendations from anchialine pool experts. The pools will be monitored to assess the return of the ʻōpaeʻula after the restoration project.

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.

The purpose of the Kekaha Kai Anchialine Pool Restoration Project is to restore the anchialine pools as a habitat for the native ʻōpaeʻula. No fish species will be stocked, raised, or harvested from the anchialine pools. The project will be considered a success if the ʻōpaeʻula return to the pools on their own. State Parks staff will monitor the pools to determine if any non-native species are introduced into the pond that could disrupt the restored anchialine pool habitat, such as mosquito fish.

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.**

State Parks is seeking a tier two permit for the removal of non-native plant species by hand, the removal of non-native fish species by hand, and the removal of sediment using a trash water pump and hand methods. Mechanized and hand removal methods will be employed to remove the sand that was deposited into Pool 1 by the 2011 tsunami. There will be no expansion of the pools' footprints.

According to CDUP ST-3703, second tier activities include dredging using mechanized equipment, major wall restoration, and moderate change in the dimensions of the original structure. A second tier permit is necessary because of the proposed use of an excavator for sand removal from Pool 1 and the use of a trash water pump; however, most of the actions proposed in the restoration project fall under first tier or maintenance activities. These activities include invasive species removal and most manual restoration efforts. Maintenance activities to be undertaken with this project consist of landscaping with native species once the non-native plant and fish species have been removed from the pools.

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).

Some BMP's that will be followed are:

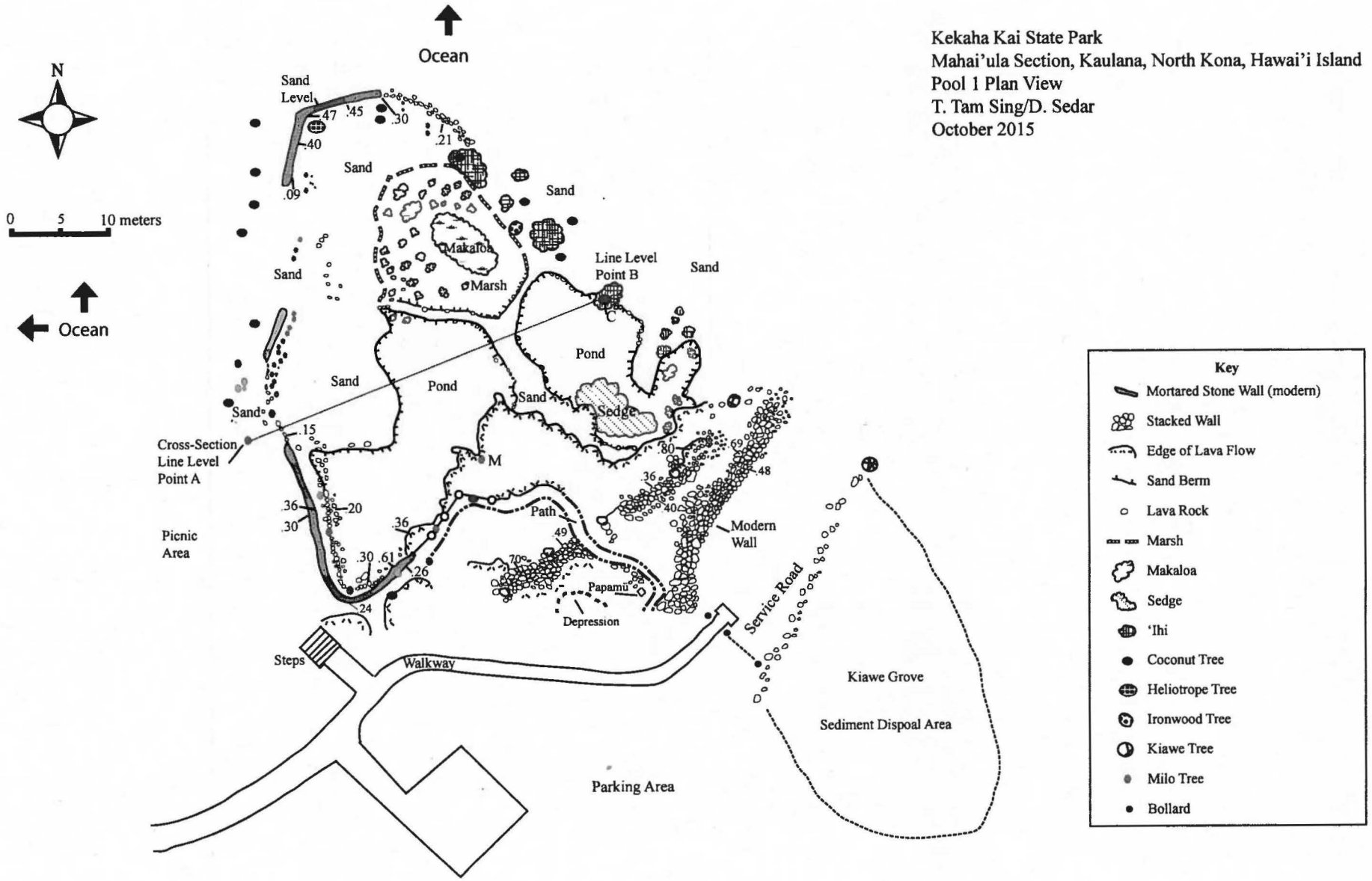
1. Sediment removed from the pools will be pumped into sediment collection (dewatering) bags in order to protect the cultural resources in the areas adjacent to the pools. These collection bags will be removed from the shoreline area to a distance that will prevent any entry back into the pools or the ocean.

2. Observational monitoring will take place during the pool restoration work in order to protect the cultural resources in the areas surrounding the pools.

3. Staging and work areas will be limited to areas that have already been disturbed in order to limit any damage to cultural or natural resources within the vicinity of the pools.

4. The work supervisor and approved State Parks staff will be responsible for monitoring the work of community volunteers and students during community work events.

5. Restoration efforts will take place according to the restoration plan created by the Department of Land and Natural Resources, Division of Aquatics biologist based on an assessment of each pool.


Kekaha Kai State Park
Mahai'ula Section, Kaulana, North Kona, Hawai'i Island
Pool 1 Plan View
T. Tam Sing/D. Sedar
October 2015
N
0 5 10 meters
Ocean
Ocean
Sand Level
Sand
Makaloa
Marsh
Line Level Point B
Pond
Sedge
Cross-Section Line Level Point A
Picnic Area
Path
Modern Wall
Papamū
Depression
Service Road
Steps
Walkway
Kiawe Grove
Sediment Dispoal Area
Parking Area
Key
Mortared Stone Wall (modern)
Stacked Wall
Edge of Lava Flow
Sand Berm
Lava Rock
Marsh
Makaloa
Sedge
'Ihi
Coconut Tree
Heliotrope Tree
Ironwood Tree
Kiawe Tree
Milo Tree
Bollard

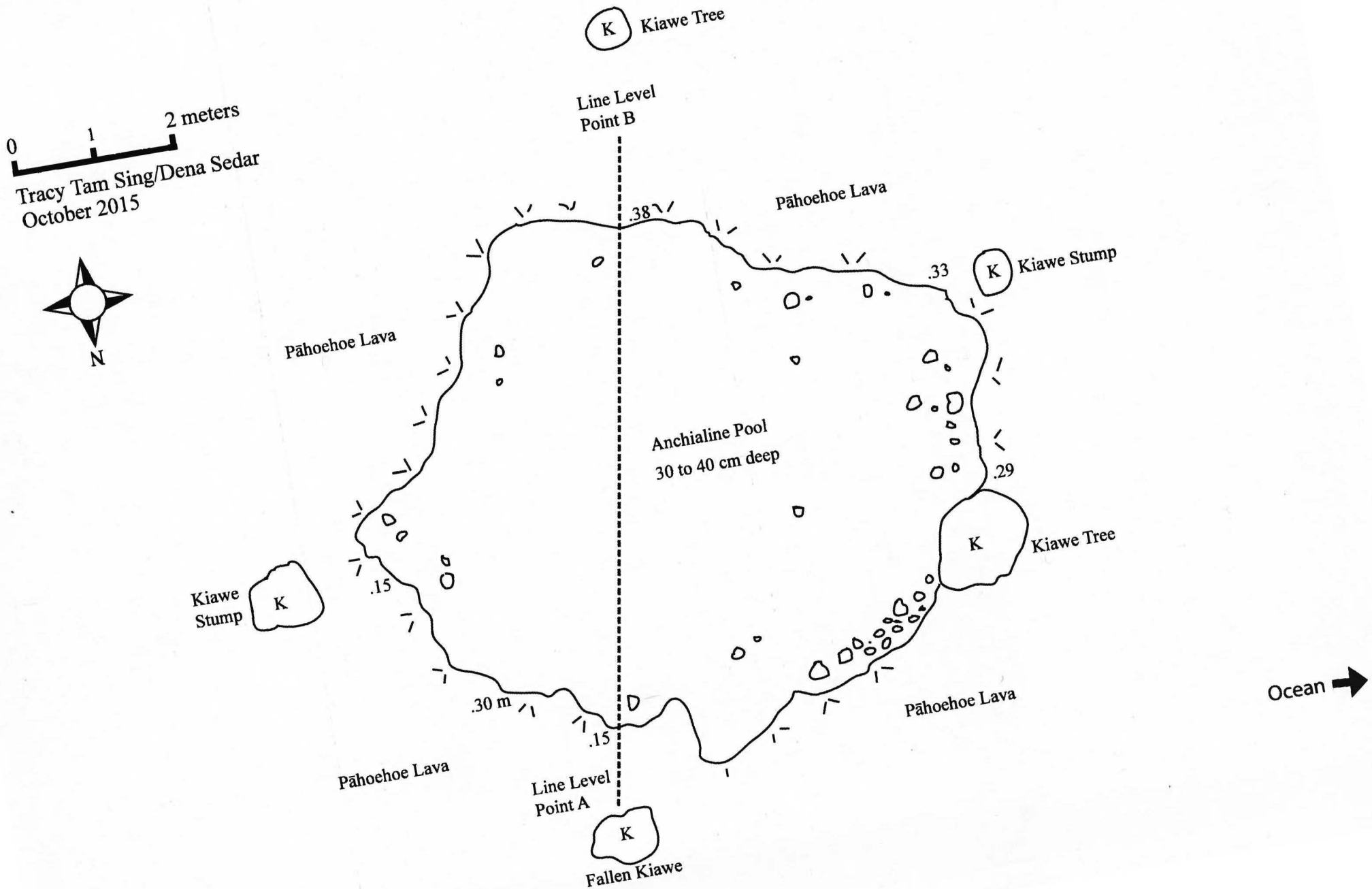
Kekaha Kai State Park Anchialine Pool Restoration Project

Anchialine Pool 1

Photograph 1. Anchialine Pool 1 facing north.

Photograph 2. Anchialine Pool 1 facing west.

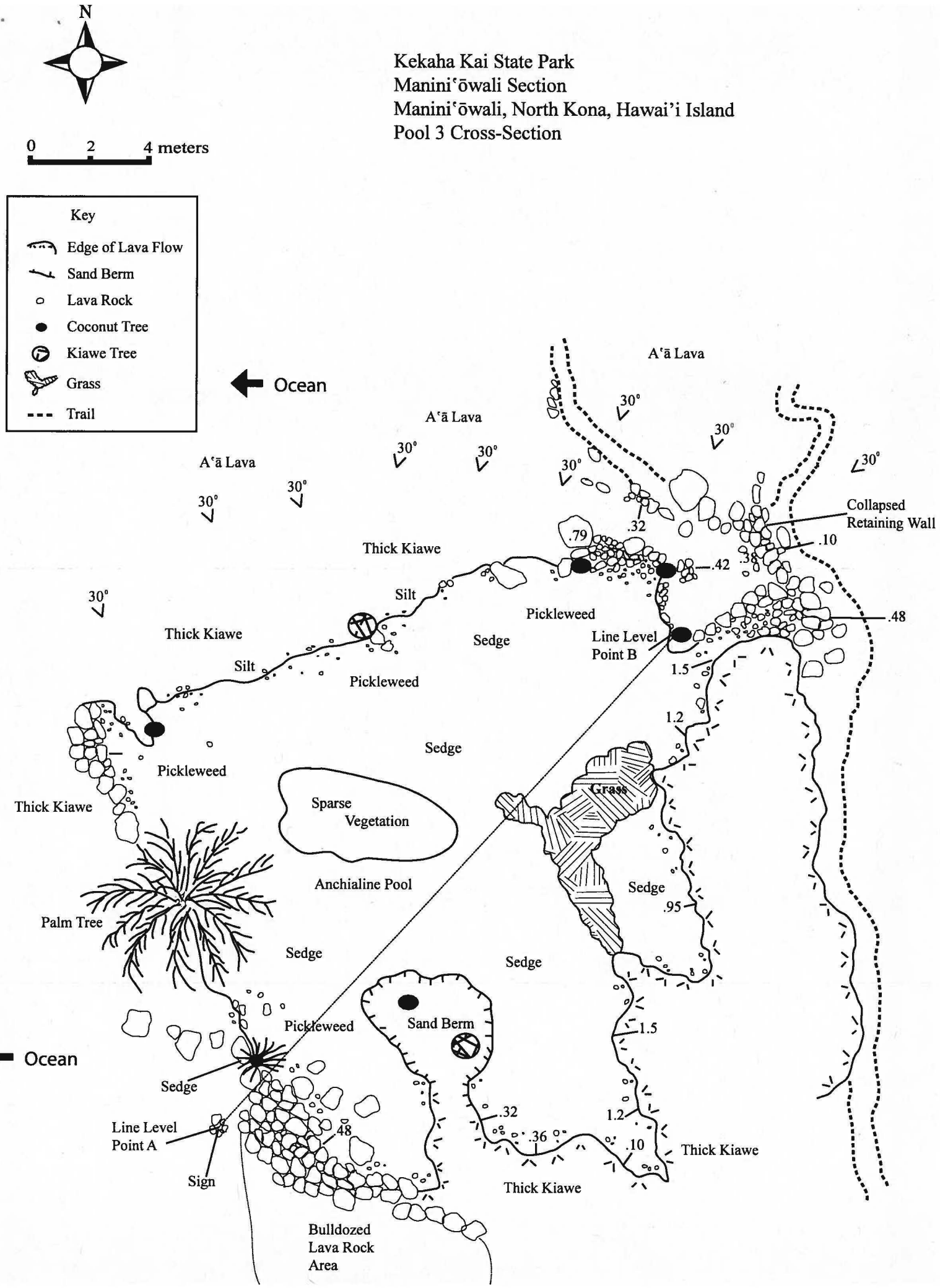
Kekaha Kai State Park
Mahai'ula Section, Kaulana, North Kona, Hawai'i Island
Pool 2 Plan View



Anchialine Pool 2

Photograph 3. Anchialine Pool 2 facing north.

Photograph 4. Anchialine Pool 2 facing east.


N
0 2 4 meters
Kekaha Kai State Park
Manini'ōwali Section
Manini'ōwali, North Kona, Hawai'i Island
Pool 3 Cross-Section
Key
Edge of Lava Flow
Sand Berm
Lava Rock
Coconut Tree
Kiawe Tree
Grass
Trail
Ocean
A'ā Lava
30°
Collapsed Retaining Wall
.79
.32
.10
.38
.42
.48
Thick Kiawe
Silt
Pickleweed
Sedge
Line Level Point B
1.5
1.2
Grass
Sparse Vegetation
Anchialine Pool
Palm Tree
.95
Sand Berm
Line Level Point A
Sign
.36
Bulldozed Lava Rock Area

Anchialine Pool 3

Photograph 5. Anchialine Pool 3 facing southwest.

Photograph 6. Anchialine Pool 3 facing northeast.

CERTIFICATION

I hereby certify that I have read this completed application and that, to the best of my knowledge, the information in this application and all attachments and exhibits is complete and correct. I understand that the failure to provide any requested information or misstatements submitted in support of the application shall be grounds for either refusing to accept this application, for denying the permit, or for suspending or revoking a permit issued on the basis of such misrepresentations, or for seeking of such further relief as may seem proper to the Land Board.

I hereby authorize representatives of the Department of Land and Natural Resources to conduct site inspections on my property. Unless arranged otherwise, these site inspections shall take place between the hours of 8:00 a.m. and 4:30 p.m.

Dena M Sedar

Signature of authorized agent(s) or if no agent, signature of applicant

AUTHORIZATION OF AGENT

I hereby authorize Dena Sedar to act as my representative and to bind me in all matters concerning this application.

Signature of applicant(s)

DEPARTMENT OF THE ARMY
HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

February 26, 2016

SUBJECT: Preliminary Jurisdictional Determination for Anchialine Pond Maintenance at Kekaha Kai State Park, North Kona, Island of Hawaii, Hawaii Department of the Army File No. POH-2016-00020

State of Hawaii
Department of Land and Natural Resources, Division of State Parks
Attention: Curt Cottrell
1151 Punchbowl Street, Suite 310
Honolulu, Hawaii 96813

Dear Mr. Cottrell:

The Honolulu District, U.S. Army Corps of Engineers (Corps), is in receipt of the State of Hawaii Department of Land and Natural Resources' (DLNR) Office of Conservation and Coastal Land (OCCL) Hoala Loko Ia Application dated December 29, 2016 for the proposed Maintenance of Three (3) Anchialine Ponds located at the Kekaha Kai State Park in North Kona, Island of Hawaii, Hawaii by the DLNR Division of State Parks. Your project has been assigned Department of the Army (DA) file number **POH-2016-00020**. Please reference this number in all future correspondence concerning this determination. The project area reviewed by the Corps and addressed in this letter and accompanying documentation is shown in the enclosed jurisdictional determination (JD).

We have completed review of your submittal pursuant to Section 404 of the Clean Water Act (Section 404) and Section 10 of the Rivers and Harbors Act of 1899 (Section 10). Section 404 requires authorization prior to the discharge and/or placement of dredged or fill material into waters of the U.S., including adjacent wetlands. Section 10 requires authorization prior to installing structures or conducting work in, over, under, and affecting navigable waters.

Based on our review of your submittal, we have preliminarily determined that the three (3) tidal anchialine ponds identified as "Pool 1", "Pool 2" and "Pool 3" located at the Kekaha Kai State Park may be waters of the U.S. under the regulatory jurisdiction of the Corps. In addition, all other tidal anchialine ponds within the review area may be waters of the U.S. In accordance with Section 404, a Department of the Army (DA) permit will be required for any activity resulting in the discharge and/or placement of dredged of fill material into anchialine ponds. The lateral limit of Corps jurisdiction within the anchialine ponds extends to the High Tide Line under Section 404. The exact elevation of the High Tide Line for each pond is not known at this time.

We understand from your DLNR-OCCL Hoala Loko Ia Application that you are proposing to remove invasive flora and fauna from all three ponds by hand and with hand tools and also remove accumulated sand and sediment from Pool 2 and Pool 3 using a trash pump. The Corps has determined the activities described above and in your application would not result in the discharge of fill material into a water of the U.S. as regulated under Section 404. Be advised that the return of dewatered effluent to waters of the U.S. constitutes a discharge of fill material and will require a DA permit in accordance with Section 404.

This letter contains a preliminary JD, which is a written indication that wetlands and waterways within your project area may be waters of the U.S. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. If you concur with the findings of the preliminary JD, please sign it and return it to the following address within two weeks. If you believe the preliminary JD is inaccurate, you may request an approved JD, which is an official determination regarding the presence or absence of waters of the United States.

Honolulu District
U.S. Army Corps of Engineers
Regulatory Office, Building 230
Fort Shafter, Hawaii 96858-5440

Thank you for your cooperation with the Honolulu District Regulatory Program. Should you have any questions related to this determination, please contact Ms. Jessie Paahana of my staff at 808-835-4107 or via e-mail at jessie.k.paahana@usace.army.mil. You are encouraged to provide comments on your experience with the Honolulu District Regulatory Office by accessing our web-based customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Sincerely,

Michelle R. Lynch
Chief, Regulatory Office

Enclosure

cc:
DLNR-OCCL (Sam Lemmo)