



KAHO'OLAWE ISLAND RESERVE FY21 YEAR-IN-REVIEW

July 2020 — June 2021

Kaho'olawe Island Reserve Commission
Kūkulu ke ea a Kanaloa - The life and spirit of Kanaloa



State of Hawai'i



ALOHA



FY21 Commissioners (from left) Chair Josh Kaakua (PKO), Mikiala Pescaia (PKO), 'Ānela Evans (PKO), Saumalu Mataafa (Maui County), Vice Chair Carmen Hulu Lindsey (OHA), Benton Keali'i Pang (NHO), and Suzanne Case (DLNR).

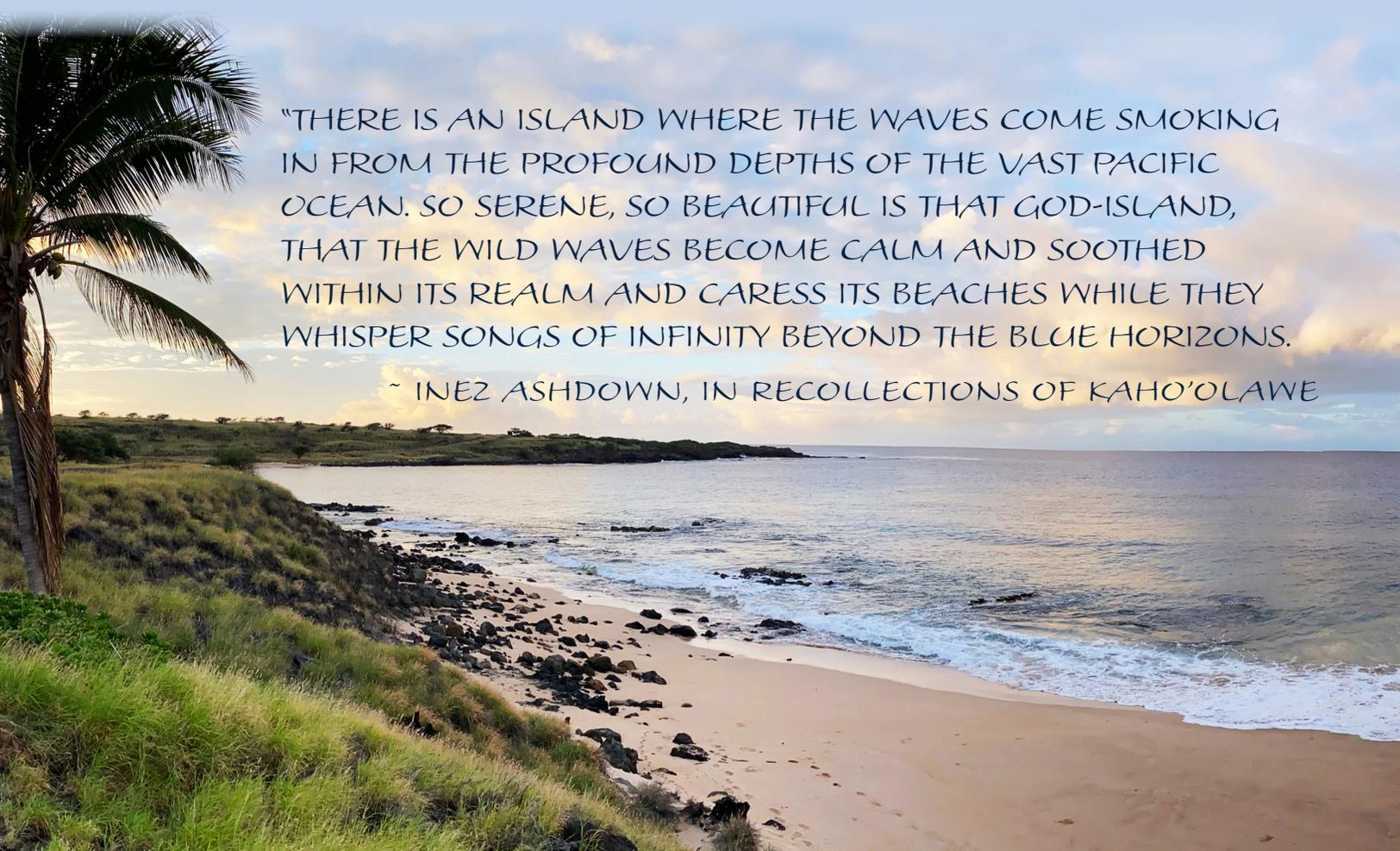
Aloha mai kākou,

It is my privilege to present the Kaho'olawe Island Reserve Commission FY21 Year-In-Review.

Last year, we lost Kaho'olawe leaders and cherished friends and family. We feel their absence and the continuing challenges of the pandemic. It is also clear that much has been accomplished together for the betterment of Kaho'olawe. I invite you, in the pages that follow, to review the key highlights of KIRC's core programs in Ocean, Restoration, Administration, Operations, and Culture, and how volunteers, donors, and partners have answered the call of I Ola Kanaloa! Life to Kanaloa!

In reflecting on last year, I want to give tribute to and recognize the passing of family and leaders in the Kaho'olawe community including Uncle Les Kuloloio of Honua'ula and Hamakuapoko Maui, Uncle Robert "Bobby" Lu'uwai of Pu'unene, Maui, and Cami Kameaaloha Kanoa-Wong of Mānoa and Waimanalo, O'ahu. I am reminded that Kaho'olawe is a symbol for Aloha 'Āina; a symbol for land stewardship and healing; and a symbol for Native Hawaiian self-determination, cultural training, and practice. With the teachings of those that came before us and ancestral knowledge to guide us in the work, we persevere. "Imua nā pua, Lanakila Kaho'olawe!"

— Joshua Kaakua, KIRC Chair



"THERE IS AN ISLAND WHERE THE WAVES COME SMOKING
IN FROM THE PROFOUND DEPTHS OF THE VAST PACIFIC
OCEAN. SO SERENE, SO BEAUTIFUL IS THAT GOD-ISLAND,
THAT THE WILD WAVES BECOME CALM AND SOOTHED
WITHIN ITS REALM AND CARESS ITS BEACHES WHILE THEY
WHISPER SONGS OF INFINITY BEYOND THE BLUE HORIZONS.

~ INEZ ASHDOWN, IN RECOLLECTIONS OF KAHO'OLAWA



Aloha mai kākou,

This past year has been a year of adaptation and innovation as the KIRC, along with everyone else, continues its mission during this struggle with the global COVID pandemic. This has been especially challenging as the KIRC started Fiscal Year 2021 with a complete shutdown of our volunteer work force as the staff struggled with the challenges of COVID-19 and recovery from the island-wide brush fire of February 2020.

The most important factor, in sustaining the long-term restoration of Kaho'olawe, is our ability to bring and support the necessary manpower to do the hard work of native out plantings and removing invasive species on Kaho'olawe. The KIRC was not able to be as productive in our native out planting and restoration efforts with just the limited staff of the KIRC.

Our base camp staff was able to conduct a thorough review of the numerous Center for Disease Control (CDC) guidelines and recommendations covering a wide range of COVID safety issues including food service, work camps, and workplace safety to develop COVID-19 sanitation and social distancing procedures on island that allows a limited number of volunteers back on Kaho'olawe. Initially, these new procedures limited our volunteer numbers to maintain social distancing in dining and housing facilities. As vaccinations increased and more COVID information was published, we were able to slowly increase our numbers safely.

Hopefully the new year will bring about more changes that will allow us to return to full strength. In the meantime, we will be continuing the efforts to restore Kaho'olawe, following the adage of doing more with less which is a very common theme that has driven the KIRC over its many years of existence.

— Michael K. Nāho'opi'i, KIRC Executive Director

▼ *View of the Kealaikahiki Channel from the lānai above Honokanai'a Beach at the KIRC Base Camp facility on Kaho'olawe*

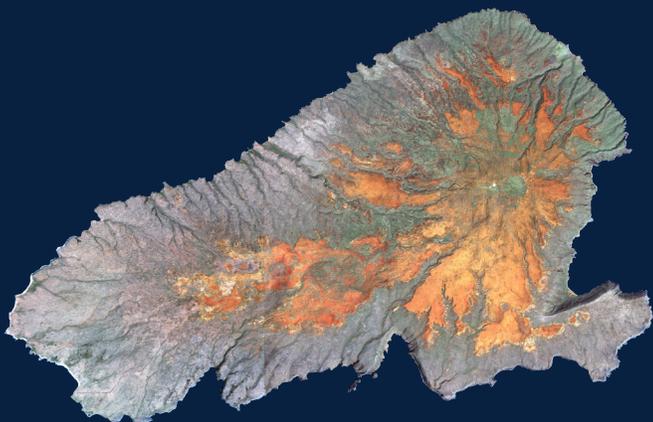


ABOUT

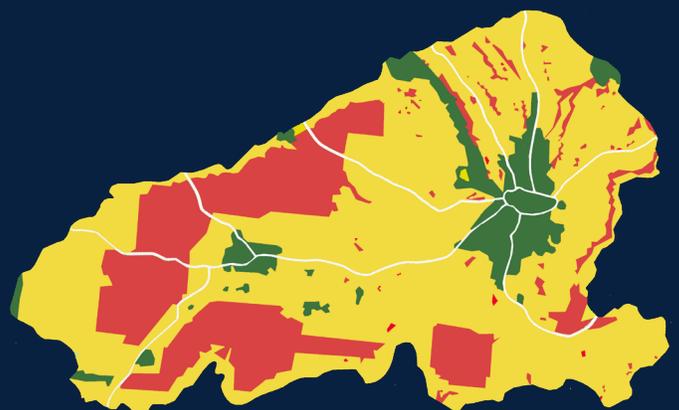
Kaho'olawe is the smallest of the eight main islands in the Hawaiian Archipelago. Eleven miles long, seven miles wide and comprised of 28,800 acres, the island is of volcanic origin with the highest elevation at 1,477 feet. Its slopes are fissured with gulches 50 to 200 feet deep and formidable cliffs dominate the east and south coast. After 200 years of uncontrolled grazing by goats, sheep and cattle, and another 50 years of misuse as a live-fire training range by the U.S. Navy, approximately 30% of the island is barren due to severe erosion and a large proportion of its vegetation is alien invasive species.



KAHO'OLAWE 'ILI AND PLACE NAMES MAP



SATELLITE VEGETATION MAP
 ■ Vegetation ■ Hardpan



UNEXPLODED ORDNANCE CLEARANCE MAP
 ■ Uncleared ■ Tier I ■ Tier II

▼ KIRC staff members Lyman Abbott (left) and Dean Tokishi (right) spotting while aboard the 'Ōhua during a return trip from Kaho'olawe



Kūkulu Ke Ea A Kanaloa

The life & spirit of Kanaloa builds and takes form

The MISSION of the KIRC is to uphold the vision for Kaho'olawe by providing safe, meaningful use of the Reserve for traditional and cultural practices of the Native Hawaiian people, and undertaking the restoration of the island and its waters.

The VISION for Kaho'olawe:

- ▶ The kino (physical manifestation) of Kanaloa is restored. Forests and shrublands of native plants and other biota clothe its slopes and valleys. Pristine ocean waters and healthy reef ecosystems are the foundation that supports and surrounds the island.
- ▶ Nā po'e o Hawai'i (the people of Hawai'i) care for the land in a manner, which recognizes the island and ocean of Kanaloa as a living spiritual entity. Kanaloa is a pu'uhonua and wahi pana (a place of refuge, a sacred place) where native Hawaiian cultural practices flourish.
- ▶ The piko of Kanaloa (the navel, the center) is the crossroads of past and future generations from which the native Hawaiian lifestyle is spread throughout the islands.

A decades-long struggle by the people of Hawai'i, particularly the Protect Kaho'olawe 'Ohana (PKO), succeeded in stopping the bombing of Kaho'olawe and helped to spark the rebirth and spread of Native Hawaiian culture and values. A 1993 act of Congress conveyed Kaho'olawe back to the State of Hawai'i, but allowed the Navy to retain control of the island through 2003 while it conducted a 10-year cleanup of unexploded ordnance (UXO). Those efforts resulted in roughly 75% of the island being surface cleared (yellow areas in the map to the right), and 10% of that area being subsurface cleared to a depth of four feet (green areas), leaving 25% uncleared (red areas). UXO is still present and continues to pose a threat to the safety of anyone accessing the island or its waters.

A treasured resource for all of Hawai'i's people, Kaho'olawe is of tremendous significance to the Native Hawaiian people. In recognition of the special cultural and historic status of Kaho'olawe, the island and the waters within 2 nautical miles of its shores were designated a Reserve by the State of Hawai'i, to allow for the preservation of traditional Native Hawaiian cultural, spiritual and subsistence purposes, rights and practices. In 1994, the Kaho'olawe Island Reserve Commission (KIRC) was established under the Hawai'i Revised Statutes, Chapter 6K, to manage Kaho'olawe, its surrounding waters, and its resources, in trust for the general public and for a future Native Hawaiian sovereign entity.



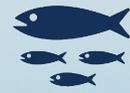
ABOUT KIRC CORE PROGRAMS



The **RESTORATION** Program restores native, land-based habitats and watersheds through innovative strategies addressing erosion control, invasive species removal, revegetation and ground water recharge.



The **ADMINISTRATION** Program supports all KIRC programs while also managing volunteers, GIS mapping, community outreach, archive and collections, fund development, finance and human resources.



The **OCEAN** Program manages marine resources within the Reserve, fostering ancestral knowledge while integrating both ancient and modern resource management techniques.



The **OPERATIONS** Program provides transport, maintenance, manpower and overall safety on Maui and within the Reserve.



The **CULTURAL** program provides for the care and protection of Kaho'olawe's cultural resources, as well as the expansion of meaningful, cultural use of the island.

KIRC volunteer watering native seedlings in the hardpan on Kaho'olawe

18
years managing
restoration

14,703
volunteers escorted &
trained

473,218
native plants
(re) introduced

53
tons of marine
debris removed

KIRC Ocean Staff removing a FAD (fish aggregation device) from Kealaikahiki channel

KIRC STAFF

| | |
|---------------------------------|--------------------|
| Executive Director | Michael Naho'opi'i |
| Administrative Officer | Matthew Hatakeyama |
| Commission Coordinator | Terri Gavagan |
| Administrative Specialist III | Janece Beauchamp |
| GIS / LAN Specialist | Carmela Noneza |
| Public Information Specialist | Margaret Pulver |
| Volunteer Coordinator | Cassie Smith |
| Maintenance & Vessel Specialist | Lopaka White |
| Logistics Specialist | Grant Thompson |
| Natural Resource Specialist V | Paul Higashino |
| Natural Resource Specialist III | Lyman Abbott |
| Natural Resource Specialist III | James Bruch |
| Ocean Resource Specialist III | Dean Tokishi |
| Ocean Resource Specialist II | Courtney Kerr |

Recently planted native seedlings in soil that collected in a natural wadi on Kaho'olawe

"It was driven home that progress in restoration is by increments, things tend to develop over years, not months. So patience and persistence are key."

~ Malama Maui Nui Volunteer

KIRC Ocean Staff conducting a reef survey in Honokanai'a

FUNDING

| SUPPORT & REVENUE | FY19 | FY20 | FY21 |
|------------------------------------|--------------------|--------------------|------------------------|
| General Fund Appropriations | \$1,227,677 | \$1,104,258 | \$1,007,882 |
| Program Grants | \$83,465 | \$81,435 | \$18,000 |
| Charitable Contributions | \$22,015 | \$30,743 | \$13,422 |
| Other Income | \$64,752 | \$800,000* | \$787,300 [¥] |
| Interest on Trust Fund | \$3,958 | \$2,438 | \$3,150 |
| Total Support & Revenue | \$1,401,867 | \$2,018,873 | \$1,055,354 |

| OPERATING EXPENSES | FY19 | FY20 | FY21 |
|---------------------------------|--------------------|--------------------|--------------------|
| Commission | \$57,806 | \$53,756 | \$47,101 |
| Admin & Support Services | \$466,784 | \$526,192 | \$459,974 |
| Reserve Operations | \$401,506 | \$171,211 | \$1,035,832 |
| Ocean Program | \$113,309 | \$128,015 | \$112,974 |
| Restoration Program | \$235,353 | \$205,156 | \$186,501 |
| Cultural Program | \$52,996 | \$0 [§] | \$0 [§] |
| Total Operating Expenses | \$1,327,754 | \$1,084,331 | \$1,510,781 |

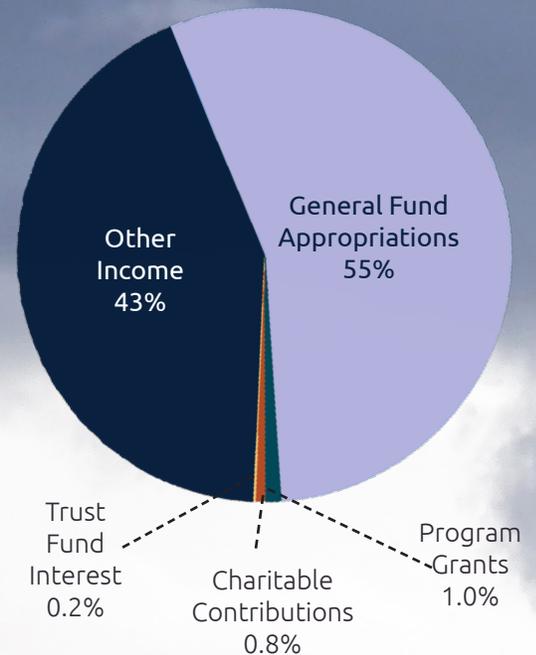
| TRUST FUND BALANCE | FY19 | FY20 | FY21 |
|-----------------------|------------------|--------------------|--------------------|
| Beginning Balance | \$504,212 | \$578,324 | \$1,512,867 |
| Support & Revenue | \$1,401,867 | \$2,018,873 | \$1,829,754 |
| Operating Expenses | \$1,327,754 | \$1,084,331 | \$1,842,382 |
| Ending Balance | \$578,324 | \$1,512,867 | \$1,500,239 |

* In November 2019, the KIRC was one of five state agencies that received an \$800,000 lump sum payment from Bayer as part of the company's settlement agreement after pleading guilty to spraying, transporting and storing a banned pesticide at research facilities on Maui and Moloka'i.

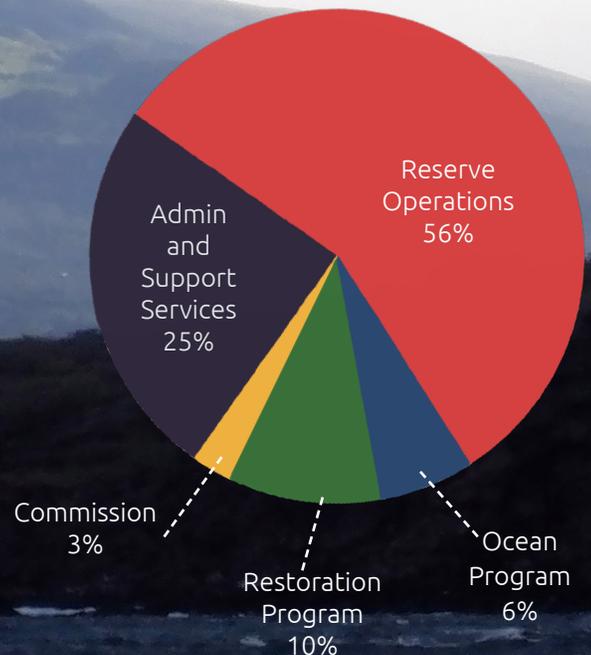
¥ Last year of Dryland Forest CIP funding

§ The KIRC Cultural Resources Project Coordinator position was vacant during FY20 and cut from the General Fund Appropriation as a result of the COVID-19 pandemic.

SUPPORT & REVENUE



OPERATING EXPENSES



"I think it takes such a special/strong/patient/passionate/dedicated person to do this type of work. I am awed, impressed, and inspired by the sheer will, determination and sacrifice of the KIRC staff. I can't thank them enough for their time and energy. It's one thing to volunteer but I don't think many can truly understand the energy and commitment this work truly demands".

~ Ka Ipu Kukui Volunteer, Female, 37

BACKGROUND

In 1993, the Hawai'i State Legislature allocated 11% of the U.S. Navy's \$400M federal unexploded ordnance clean-up budget to the newly established Kaho'olawe Island Reserve Commission. This one time \$44M allowance became the Kaho'olawe Rehabilitation Trust Fund, earmarked to carry out environmental restoration, archaeological and educational activities on Kaho'olawe while the island is held in trust for a future Native Hawaiian sovereign entity. Rules around federal appropriations required the money be spent and not used to establish an endowment for the long-term restoration of the island.

Though the Fund seemed considerable at the time, it was not substantial enough to last in perpetuity. As stated in the Federally-mandated Kaho'olawe Island Conveyance Commission final report to Congress in 1993, "*in the short term, federal funds will provide the bulk of the program support for specific soil conservation projects and related activities. In the longer term, however, State revenues will be needed to continue and enhance those activities initiated with federal funds.*"

With the Trust Fund set to run out in 2015, the KIRC partnered with the Protect Kaho'olawe 'Ōhana and the Office of Hawaiian Affairs to publish *I Ola*

Kanaloa!, a collaborative strategic plan for the Kaho'olawe Island Reserve through 2026. Along with the refined goals and objectives outlined in *I Ola Kanaloa!*, the KIRC presented a *Self-Sufficiency and Sustainability Plan* to the Hawai'i State Legislature in 2016 and were allocated emergency funding from the State at a level that would maintain the current programs and operations at a reduced level.

The State authorized permanent funding for the KIRC in 2018 in the form of 16 staff positions and administrative operating costs and temporary CIP funding to maintain basic field operations for ten consecutive days each month. Even with State funding, the KIRC still required support in the form of grants, Aloha Kaho'olawe memberships and public giving to complete projects on island.

The CIP funding was not renewed in 2020 and the COVID pandemic brought cuts to the KIRC's permanent funding, including two full-time positions and \$100,000 in operating funds. The KIRC continues to rely heavily on volunteer manpower, grant funding, in-kind donations and public giving to maintain and expand operations in the Reserve.

FY21 GRANT SUPPORTED PROJECTS

Hakioawa Watershed Restoration (page 17)

Source: State of Hawai'i Dept. of Health (DOH)

Duration: 1.5 years (FY21 & FY22)

Amount: \$80,665

Marine Science Education and Training from a Hawaiian Perspective on Kaho'olawe (page 21)

Source: NOAA PIRO MET Mini-Grant Program

Duration: 2 years (FY20, FY21)

Amount: \$15,000

Kaho'olawe Living Library Expansion (page 24)

Source: Institute of Museum and Library Services (IMLS)

Duration: 3 years (FY19, FY20, FY21)

Amount: \$75,000

Marine Debris Removal in Kanapou (page 23)

Source: National Fish and Wildlife Foundation (NFWF)

Duration: 27 months (FY19, FY20, FY21)

Amount: \$76,025

Engaging Community through Culture, History and Coastal restoration (page 22)

Source: Cooke Foundation - Maui

Duration: 27 months (FY19, FY20, FY21)

Amount: \$76,025

COVID CONTINUES

The KIRC began FY21 in the midst of COVID-19, navigating through the ever changing landscape of government recommendations and mandates from the Federal, State and County levels. The statewide shutdown of government facilities in the spring of 2020 had set off a chain reaction of adaptation. Essential to the operation and management of the Reserve, the KIRC staff were able to continue their work both in the office and in the field, but all volunteer trips were temporarily suspended. The KIRC used that pause to develop and test safety and sanitation protocols and procedures that would eventually allow the volunteer program to resume in FY21 in compliance with the recommendations from the CDC and Hawai'i State Department of Health.

Even with the updated safety and sanitation protocols and procedures though, compliance with social distancing guidelines meant reducing the total number of volunteers coming to Kaho'olawe each month with the KIRC by 50%, drastically reducing the available manpower, and restricting access to volunteers from Maui, greatly inhibiting public access. In FY21, the KIRC was able to overcome those challenges to fulfilling its mission (pg.4) by expanding access virtually through the Living Library (pg. 24) and a guided tour in Google Maps (pg. 26), and adapting their strategies in the field to ensure success with small groups (pg. 15).

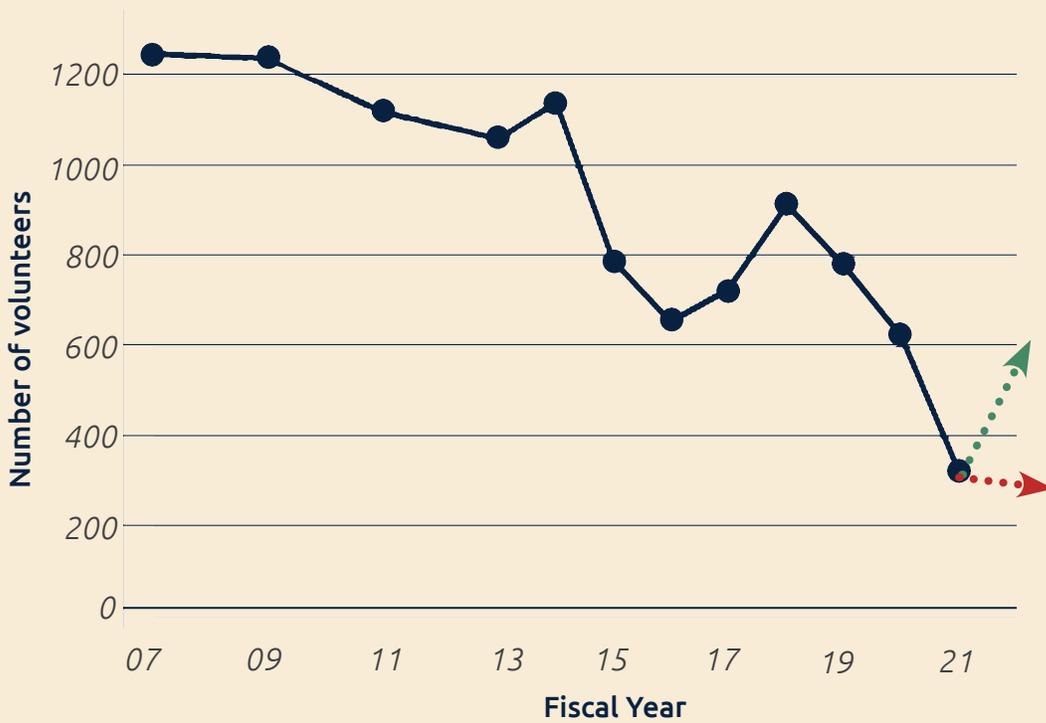
As life with COVID becomes the new norm, the KIRC is hopeful that volunteer numbers will begin to increase in FY22, but not quite to pre-pandemic levels. That type of growth will only be achieved through additional State funding or new grants dedicated to the operation and maintenance of the KIRC Base Camp facility on Kaho'olawe.



- ▲ KIRC volunteer planting native seed in piles of gravel on the hardpan in Kāmohio.
- ▲ KIRC volunteer planting native kāmānomano, 'a'ali'i, ewahinahina and wiliwili seedlings in a mix of gravel and soil in a depression in the hardpan.
- ▲ KIRC Ocean Resource Specialist II, Courtney Kerr planting 'aki'aki in the sand in Honokanai'a.



Trends in KIRC Volunteer Numbers, FY07 - FY21



The KIRC has seen a significant decrease in the number of volunteers coming to Kaho'olawe since the inception of its volunteer program in 2003. The initial drop seen in FY14 coincided with the transition of funding from the Trust Fund (pg 7) to the State General Fund. The more recent drop (FY20 to FY21) is due to the COVID-19 pandemic and the State-mandated health and safety guidelines and protocols placed on State agencies.



▲ Teachers and students from Haleakala Waldorf School completing the COVID screening questionnaire and temperature check prior to entering the KIRC Kihei Boat House Facility;
▼



▲ KIRC volunteer, Tamra Probst, planting native seed in piles of gravel in a hardpan area along Kuamo'o Road.
▼ KIRC Public Information Specialist, Maggie Pulver, and KIRC volunteers checking on past planting projects.



VOLUNTEER WORKFORCE

Restoration of Kaho'olawe is a monumental endeavor that far exceeds the available funding and staffing of the KIRC, requiring thousands of hands over several generations to accomplish. The KIRC relies on the charitable work of dedicated and motivated volunteers to maximize restoration efforts in the Reserve. To date, the KIRC has welcomed, trained and safely engaged more than 15,000 volunteers in the restoration and revitalization of hundreds of acres of Kaho'olawe's wetlands, watersheds and reefs, outplanting nearly half a million native plants.

Through the Volunteer Program, the KIRC is able to fulfill its mission of providing safe and meaningful access to the public. By partnering with community groups, school groups, professional organizations, conservation agencies, foundations and public outlets, the KIRC hopes to foster a culture of stewardship and conservation for Kaho'olawe and for all of Hawai'i's cultural and natural resources.

▼ *Ka Ipu Kukui volunteer collecting pili grass seed below Pu'u 'O Moa'ula Iki.*



▼ *Students from Haleakala Waldorf High School planting in a wadi, or natural oasis, formed where water flows naturally, carrying and leaving sediment that can be used as a planting substrate.*



RESERVE OPERATIONS



The KIRC provides all of the facilities, vehicles, equipment, supplies, utilities, services and manpower needed fulfill its mission (*page 4*) through the Operations Program. Key components of the program include: the KIRC's Kīhei Education and Operations Center; landing craft, 'Ōhua; Honokanai'a Base Camp on Kaho'olawe; Unexploded Ordnance and Industrial Safety.



KIRC staff loading 'Ōhua, the KIRC's landing craft that serves as the conduit between Maui and Kaho'olawe

15,000
pound payload
capacity

1,920
crew hours
worked

656
passengers safely
transported

47
'Alalākeiki Channel
crossings

170,000
gallons of seawater
pumped

34,000
gallons of fresh water
produced

600
gallons of diesel
consumed

360
gallons of gasoline
consumed

The **Honokanai'a Base Camp** (*pictured below*) is a 22-building self-sustaining camp that includes facilities to house and feed the KIRC staff and our volunteer work crews; generate and distributed electrical power; repair equipment and vehicles used to actively manage and restore Kaho'olawe, such as former military trucks, all-terrain vehicles and heavy machinery; store fuel for on-island vehicles and a generator; and maintain a potable water system that uses reverse osmosis to generate fresh water from the ocean. Food and other supplies are stocked monthly based on work projects and participant numbers.



Panoramic aerial view of the KIRC Honokanai'a Base Camp facilities on Kaho'olawe.

KĪHEI HALE ROOF THATCHING

Youth from the Hawaiian Canoe Club Kamali'i Program after thatching the KIRC Kīhei boathouse hale



FY21 saw the reinvigoration of the traditional hale located at the KIRC Kīhei Education and Operations Center, more commonly known as the KIRC Boathouse facility. Originally constructed in 2015 as a site along the Kaho'olawe Walking trail, the hale had begun to fall into disrepair without regular care and maintenance. That problem has been solved by the Hawaiian Canoe Club and members of its Kamali'i (*pictured*) who sought permission from the KIRC to take over as caretakers of the hale. The group spent several weeks sourcing the palm and then several days using it to thatch the hale roof. Next steps include removing the 'oloke'a (scaffolding) and collecting 'ili'ili (small river stones) to install traditional flooring.



Youth from the Hawaiian Canoe Club Kamali'i Program working on the hale at the KIRC Kīhei boathouse.

DRYLAND FOREST RESTORATION



BACKGROUND

In FY18, the KIRC was appropriated CIP funding from the State for the Kaho’olawe Native Dryland Forest Project, which allowed for the

significant expansion of the existing mauka irrigation system, ultimately extending our reach into new hardpan areas in the Kamōhio Watershed, where new dryland forest planting areas could be established. This project has provided a large leap forward in the re-greening of the island - KIRC’S main priority in the collaborative I Ola Kanaloa plan through 2026.



▲ KIRC Restoration Program Manager, Paul Higashino, checking up on an old kīpuka planting site out on the hardpan in Kāmohio.

‘Aki’aki 

Kāwelu 

‘Āweoweo 

Pili 

Pā’u o Hī’iaka 

‘Ewa Hinahina 

Kāmanomano 

‘A’ali’i 

‘Ilima 

Wiliwili 

Pōhuehue   = 50 seedlings

Ma’o 

Kulu’i 

‘Ohe 

Naio 

FY21 PROGRESS

- ☑ (Re)introduced 3,391 native plants in the hardpan in large depressions and naturally occurring wadis
- ☑ Use of reabsorbed water crystals for planting without irrigation
- ☑ Collecting over 30 pounds of native seed from ‘a’ali’i, ‘ohai, ewahinahina, ma’o, kāwelu, wiliwili and naio for dispersal on island
- ☑ Management and removal of invasive weeds along Kuamo’o Road and in the Pōkāneloa area
- ☑ Maintenance of Kuamo’o Road
- ☑ On-going documentation and monitoring of project progress and forest growth to comply with historic preservation and environmental requirements



“Even in the most harsh conditions, life still exists. I saw extremely rapid wind blow over the reddest sand-like dirt, and yet, there was life. There is always opportunity for growth, even if a little help is needed.”

~Waldorf High School Student, Jade Borchers, 18

WHAT'S NEXT?

In FY22, the KIRC Restoration team, with the support of community volunteers, will establish new planting areas in the Kamōhio Watershed area where soil has been caught by erosion control devices and in natural wadis. The KIRC staff will also continue to monitor and document previously established planting sites, tracking plant survival rates in natural rivulets and vegetated kīpuka.



TOP: Bags of gravel filled at the Honokanai'a Base Camp quarry and ready for transport (right); Volunteers from Haleakala Waldorf filling mauka sections of the Kuamo'o Road that washed out in a previous rain event.

MIDDLE: KIRC volunteers separating a'ali'i seed from its husk (left) and (re) introducing native seedlings into a depression in the Kamohio hardpan.

BOTTOM: KIRC staff and volunteers watering newly (re)introduced seedlings

HAKIOAWA WATERSHED RESTORATION



BACKGROUND

Since 2003, the State of Hawai'i Department of Health (DOH), Clean Water Branch has been supporting the KIRC's watershed restoration projects with grant money it receives from Section 319 of the Clean Water Act. Section 319 provides financial support to designated state and tribal agencies to implement management projects in areas with approved watershed-based plans. Two watersheds on Kaho'olawe, Kaulana and Hakioawa, have approved Watershed Plans that meet the EPA's nine minimum requirements. In March of 2021, the KIRC was awarded a fifth grant by the DOH to continue operations and maintenance in the Hakioawa Watershed project sites.

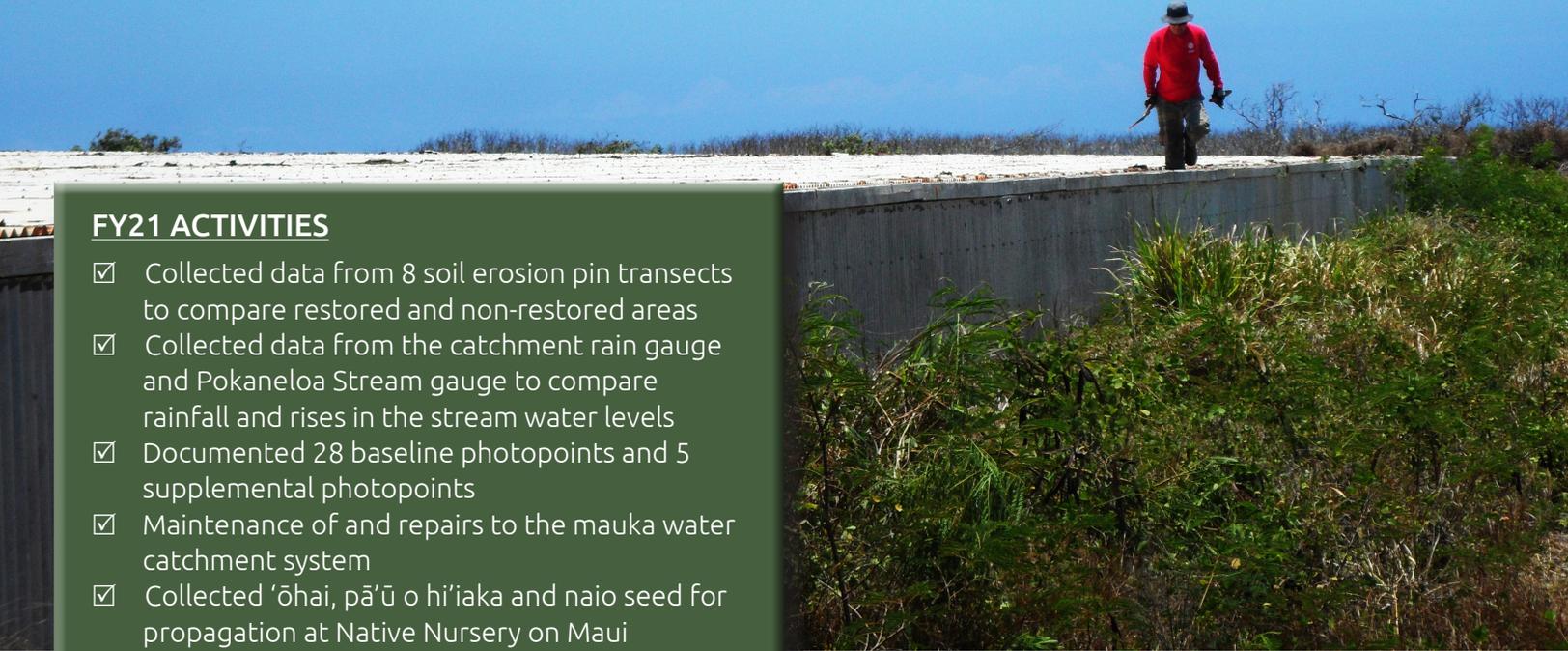
FY21 ACTIVITIES

- ✓ Collected data from 8 soil erosion pin transects to compare restored and non-restored areas
- ✓ Collected data from the catchment rain gauge and Pokaneloa Stream gauge to compare rainfall and rises in the stream water levels
- ✓ Documented 28 baseline photopoints and 5 supplemental photopoints
- ✓ Maintenance of and repairs to the mauka water catchment system
- ✓ Collected 'ōhai, pā'ū o hī'iaka and naio seed for propagation at Native Nursery on Maui
- ✓ Submitted a watershed-based plan for Kamōhio that meets EPA requirements
- ✓ Added native seed to previously constructed soil corridors in Hakioawa

▲ KIRC Natural Resource Specialist, James Bruch, making repairs to the mauka water catchment system

▼ Volunteers laying gravel bags that provide erosion control by slowing and preventing channelization of the overland flow

▼ Pili grass seed collected on Kaho'olawe for propagation at Native Nursery on Maui and future plantings on Kaho'olawe.



▼ *Before (right) and after (left) photos of the mauka water catchment system maintenance and repairs*



The Kaho'olawe Mauka Rain Catchment system, which consists of a 1-acre roof and two holding tanks that have the potential to store up to 600,000 gallons of rain water, provides past, present and future KIRC restoration sites with water both when the plants are first put in the ground and then later during the dry summer months. The catchment system is over 30 years old though and the KIRC Restoration Staff discovered a plethora of clogs and leaks in FY21 that were preventing it from operating at full capacity.

The repairs and maintenance from the past year will help the system to function better in the near future, but a new modernized and more modular system that can better meet the needs and goals for long-term and lasting restoration is needed.



▼ *Volunteers watering previously planted seedlings introduced into a natural wadi in the hardpan*



▼ *Volunteers watering newly planted seedlings*



WHAT'S NEXT?

The KIRC restoration staff will continue with operations and maintenance in the Hakoawa project site in FY22, installing erosion control devices and soil transect pins and introducing 10,000 native plants. There is also a plan to capture aerial drone images of the work done in the project area in 2021 and 2022 to compare to images taken in 2018 and 2019.

Clearing the overgrowth of weeds from the gutters and roof solved the catchment clog problems, but fixing the leaks will require a complete relining or replacement of the roof and holding tanks, a project estimated at over \$2 million. The KIRC will be looking for additional sources of funding for the design and installation of a new modular system that can be repaired and maintained at a lower cost into the foreseeable future.

KEALAIKAHIKI COASTAL RESTORATION



BACKGROUND

Since 2005, the KIRC has been working to restore and enhance the coastal wetland and native sand dune systems in the 'ili of Kealaikahiki. Over the last 15 years, the KIRC Restoration and Ocean teams have outplanted more than 32,000 drought-resistant grasses and shrubs in Honokanai'a, Honokanaenae, Keanakeiki, and Kaukaupapa. Ultimately, the project aims to stabilize the natural sand dunes and enhance the seasonal wetlands, making them more attractive to native animal species and mitigating the future effects of climate change.



▲ *Kapa Sungear volunteers planting 'aki'aki in the dunes in Kealaikahiki*

KIRC Operations and Maintenance Specialist, Lopaka White, planting 'aki'aki along the shoreline in Honokanai'a



FY21 ACTIVITIES

- ☑ Outplanting 7,718 native grasses and shrubs through partnerships, grants and donations
- ☑ Development of a validated tool and standardized protocol to measure and record changes in dune structure over time
- ☑ Use of adaptive planting techniques and strategies to improve survival rates
- ☑ Systematic removal of invasive bufflegass
- ☑ Using physical dune stabilization techniques to mitigate wind erosion
- ☑ Monitoring and documentation of the use of the area by Hawaiian monk seals
- ☑ Monitoring of near shore sedimentation and water quality
- ☑ Monitoring and evaluation of the Honokanai'a coral reef ecosystems



▲ Ocean Program Manager, Dean Tokishi, sending a naio seedling off with aloha before planting it in Honokanai'a



▲ KIRC volunteer spreading native seed gathered from hau, kou and milo trees in the KIRC Honokanai'a Base Camp



▲ Students from Maui High School Marine Science class outplanting 'aki'aki in Honokanai'a

▼ Ocean Resource Specialist, Courtney Kerr, conducting a coral reef survey in Honokanai'a

WHAT'S NEXT?

The KIRC Ocean Program was recently awarded a National Coastal Wetland Conservation grant from the U.S. Fish and Wildlife Service to continue and expand the work in Honokanai'a through FY22 and FY23.



MARINE SCIENCE EDUCATION ON KAHO'OLAWE



BACKGROUND

In 2019, the KIRC Ocean program staff was awarded a NOAA PIRO MET mini-grant to work with marine science teachers from Maui High School (MHS) to develop a curriculum that focused on integrating Native Hawaiian knowledge and traditional practices into science-based approaches of marine resource conservation and management. The team spent much of FY20 with students on campus, conducting workshops, labs and field activities, preparing them for the volunteer access trips to Kaho'olawe that were originally scheduled for the Spring and Summer breaks. Unfortunately, those trips were canceled and rescheduled for the 20-21 school year and NOAA approved an extension that carried the project through FY21.



▲ MHS students conducting reef transect surveys in Honokanai'a.



▼ MHS student conducting a reef transect survey



▲ MHS students and teachers assessing the beach profile in Honokanai'a



▲ MHS students and teachers planting naio and 'aki'aki in Kealaikahiki

▼ Students returning to Maui aboard the 'Ōhua



COOKE FOUNDATION PLANTING AND OUTREACH



- ▲ Volunteer planting 'aki'aki grass in Honokanai'a
- ▼ KIRC Ocean Program staff working with volunteers to take beach slope measurements using the Emery tool



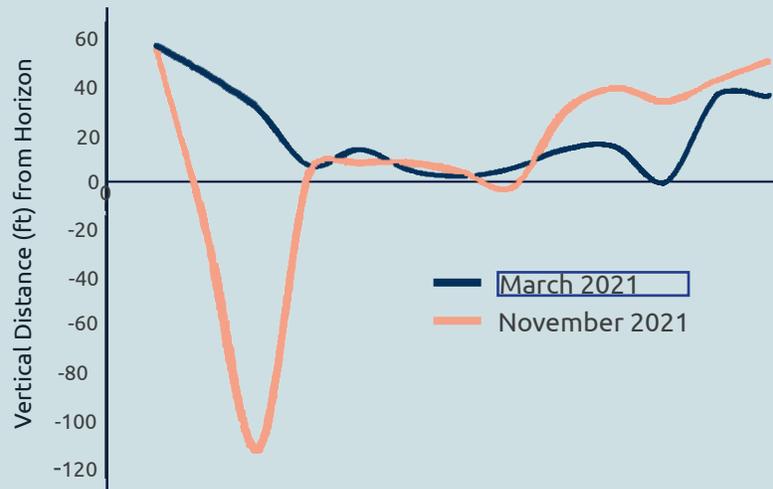
- ▼ Volunteer planting 'aki'aki grass in a beach scarp, a vertically eroded "cliff" like feature on the dune



BACKGROUND

The Cooke Foundation awarded the KIRC Ocean team a one-year grant for \$20,000 to make a significant difference in the betterment and welfare of the people of Hawai'i in line with the Cooke foundation's mission. The grant allowed 53 volunteers from Hawaii to access rare cultural sites on Kaho'olawe and participate in the restoration of this *wahi pana* (sacred place). The grant's reach was extended beyond in-person volunteers through social media posts that highlighted the importance of these beach plantings and the new beach slope measurement protocols and reached an average of 1407 views per post.

The main objectives of the Cooke Foundation project included outplanting 8,000 native plants and implementing the Emery method, a simple, rapid and inexpensive beach slope measurement protocol. The Emery tool consists of two rods marked off in feet and tens of feet with a rope between them which are then used to measure the change in slope between the two rods based on the level of the horizon. The KIRC Ocean staff then uses the data to create the beach profile. Measurements were taken for seven months, and a sample of the data is provided below. The graph shows the change in the beach slope between March and November due to accretion and erosion of the sand dunes. Though these changes are interesting, they do not provide a whole picture as beaches have natural seasonal variations. Future work will continue beach measurements to compare year-to-year slopes to distinguish seasonal variation from unsustainable erosion.



KANAPOU MARINE DEBRIS REMOVAL



BACKGROUND

The KIRC was awarded a grant for \$76,025 through the National Fish and Wildlife Foundation's Fishing For Energy program that will focus on the removal of derelict fishing gear and other marine debris from Kanapou Beach on Kaho'olawe, which is under the constant threat due to prevailing currents and their funneling effect. The rescheduling of volunteer accesses that were canceled in 2020 due to COVID-19 meant having to postpone the Kanapou clean up activities clean-up activities to 2021 and 2022. The KIRC was awarded an extension that will extend the grant through the new timeline.

FY21 ACTIVITIES

- ✓ Scheduling and planning the three on-island clean-up activities
- ✓ Establishment of helicopter contract for removal of collected debris in 2022
- ✓ Purchase of materials and equipment for clean-up activities, including PPE
- ✓ Recruitment of volunteers for the first clean-up scheduled for October 2021

WHAT'S NEXT?

The KIRC Ocean Program staff and volunteers will complete three 4-day work trips in Kanapou in 2021 and 2022. The overall goal of the project is to remove at least 5 tons of derelict fishing gear and other marine debris from the island.

Marine debris on the shores of the beach in Kanapou on Kaho'olawe ►



Frequently Asked Questions

What do you do out there?

In addition to a variety of projects to restore Kaho'olawe's devastated landscape, protect its critical natural and cultural resources, and make vital improvements to the island's infrastructure, we are developing an integrated *mauka to makai* resource management system that balances the technical aspects of modern conservation principles with a traditional cultural perspective.

"Can I fish over there?"

Trolling is permitted on two scheduled weekends each month in waters deeper than 30 fathoms (180 feet). No other fishing, ocean recreation or activities are allowed within the Reserve. (Visit kahoolawe.hawaii.gov/announce to download a Trolling Right of Entry Registration Packet). The rules governing Reserve waters are enforced by the State of Hawai'i, Department of Land and Natural Resources, Division of Conservation and Resources Enforcement (DOCARE), the KIRC and the U.S. Coast Guard. Any person violating these rules is guilty of a petty misdemeanor and shall be fined up to \$1,000 or imprisoned for up to 30 days. The KIRC may also assess administrative fines of up to \$10,000 per offense.

Why don't you take more people?"

The KIRC's work on Kaho'olawe is critically dependent upon its volunteers. We strive to make the most of our limited volunteer opportunities, but we are primarily restricted by available funding, safety and weather conditions. The number of requests we receive to go to Kaho'olawe far exceeds our ability to take everyone, therefore we ask for your patience and understanding.

KAHO'OLAWE LIVING LIBRARY EXPANSION



BACKGROUND

In 1981, a collection of archaeological objects collected on Kaho'olawe from 1977-1980 was placed on permanent loan to the Bailey House/Maui Historical Society by the US Navy through the Hawai'i Department of Land and Natural Resources (DLNR). The collection was transferred to the KIRC in 2015 and includes artifacts spanning from pre-European contact to historic times. In 2018, the KIRC was awarded a grant by the Institute of Museum and Library Services (IMLS) through its Native American/Native Hawaiian Museum Services Program to rehouse a sample (roughly 10%) of this collection. This project, known as the Kaho'olawe Virtual Museum Stage 3: Collaborations & Special Collections, has allowed the KIRC to enhance the KIRC Living Library by providing a more robust database as well as the ability to publish its holdings onto this more dynamic KIRC Living Library website. Staff will continue to expand the records on this website as staffing and resources allow. It is hoped that this new version of the KIRC Living Library will encourage the public to explore and research the KIRC Archive holdings,



▲ *Tiny, fishhook tab fragment made of worked bone with alternate id # handwritten in white ink on one side*

Did you clean up all of the bombs?"

The United States Navy is forever responsible for removing all unexploded ordnance (bombs) from the land and waters of Kaho'olawe — and the liability associated with its presence. The KIRC remains committed to that position and relies on the Federal Government to fulfill their obligation. Upon the 2004 completion of the Navy's cleanup, approximately 75% of the surface of the island was swept of ordnance with only 10% cleared down to the depth of four feet (pg 3). Areas that have not been cleared remain "DANGEROUS TO THE PUBLIC AND ARE NOT SAFE." As formally agreed by the Navy and State, the Navy will return to dispose of any new unexploded ordnance (UXO) found in cleared areas. The KIRC has made regular requests to our congressional delegation for federal funds for the Navy to complete their obligation.

"How can I help?"

Pick your favorite way/s to connect with us (social media, newsletter, email list) to learn about work days and community events at our Kihei Boat House site; join the Kaho'olawe volunteer wait list; invite the KIRC to your space as a (free) speaker; read/ learn about/ share our online library and learning materials; testify at one or more legislative hearings; create a Kaho'olawe-inspired work of art to be shared; become a member; enroll as an intern; or let us know your own idea.

Mahalo

to our FY21 Members and Donors!

Individual donations are critical to our efforts to protect, restore and preserve the ocean and land of this important cultural reserve. If you have been impacted by Kaho'olawe — as a volunteer, friend, teacher, student, researcher or other community or family member, we invite you to join today.

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| | |
|-------------------|--------------------------------------|
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| Robert & Ann Fahl | Ellen Pelissero |
| Patricia Justice | Darryl & Antonia Van Kampen |
| Johnny Mack | Joseph Zalke |
| Juliet McMullin | ATC Makena Management Services Corp. |

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Haleakalā Waldorf High School students planting native seedlings in a natural wadi in Kamohiō on Kaho'olawe

ALOHA KAHO'OLAWE

Aloha Kaho'olawe is a campaign to support Kaho'olawe restoration and access. Through this initiative, we invite participation via membership donations, partnerships and legislative support. By building consensus that there is value in the historical, cultural, ecological and community building resources shared through Kaho'olawe, we aim to share this special place now and for generations to come.

Send this completed form with your donation to:
811 Kolu Street, Suite 201 | Wailuku, HI 96793.

Checks may be made payable to Kaho'olawe Rehabilitation Trust Fund. You can also give online at kahoolawe.hawaii.gov/donations.shtml.

CONTACT INFORMATION:

Name and/ or company

Address

E-mail

Phone

GIFT TYPE:

- PATRON (\$500 & up)
- BENEFACTOR (\$100-\$499)
- SUSTAINER (\$50-\$99 | \$25 with student ID)
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For Benefactors and Patrons, please choose one of the gifts from below, and indicate your preferred size and color (1st come, 1st served):

- Shirt
- M L XL
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Comments:

The Kaho'olawe Island Reserve Commission (KIRC) is a 170(c)1 government nonprofit, authorized per IRS Publication 557, to receive tax-deductible contributions to programs that serve a public purpose. Donors should always consult with their tax advisors before claiming any tax-deductible charitable contributions.



Back Cover: View of the North coast of Kaho'olawe from 'Ōhua.

Front Cover:

Kealaikahiki; Ocean Resource Specialist, Courtney Kerr, conducting a coral reef survey

Honoka'a; KIRC staff and volunteers removing live corals from a large net and FAD found floating in the Reserve Ahupū; KIRC staff and KUPU volunteers descending from Pu' O Moaulanui

Kuheia / Kaulana; 'ōhai sprouted from seed in pohaku kīpuka along the Kuamo'o road on Kaho'olawe

Pāpāka; KIRC volunteers planting native seedlings in the hardpan

Hakioawa; KIRC Public Information Specialist, Maggie Pulver, leading a group of volunteers

Kanapou; Cloud formations above the 'Ōhua in the 'Alalākeiki Channel

Kunaka / Na'alapa; Unexploded ordnance (uxo) found in August 2020 in the hardpan in Kamohiō

Lua Makika; Endangered federally listed ma'o (Gossypium tomentosum) flower in bloom



Kūkulu ke ea a kanaloa - The life and spirit of Kanaloa

Logo and motto of the KIRC, symbolizing the he'e, or octopus form of the god Kanaloa and the kupu o ka 'āina, or re-greening of the island.



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*Download our free mobile app: **Kaho'olawe Island Guide***

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Report design by Maggie Pulver