



REPI

UNITED STATES DEPARTMENT OF DEFENSE
READINESS AND ENVIRONMENTAL
PROTECTION INTEGRATION PROGRAM

FY 2024 REPI CHALLENGE HAWAII



The REPI Program

The Department of Defense's (DOD) Readiness and Environmental Protection Integration (REPI) Program facilitates long-term, collaborative partnerships that improve resilience, preserve essential habitats and natural resources, and promote sustainable land uses near installations and ranges.

REPI Challenge

For the 13th consecutive year, the REPI Program hosted the annual REPI Challenge, a competition with dedicated funding to advance REPI project outcomes through large-scale innovation and conservation. The REPI Challenge aims to:



Cultivate new projects that protect natural and cultural resources using diverse funding avenues.



Protect critical testing and training capabilities while fostering long-term sustainability for communities surrounding installations.



Support DOD's strategic priorities and the REPI Program in meeting its ambitious conservation goals.



Harness the creativity of organizations with shared priorities to access unconventional funding sources and leverage market-based approaches.

FY 2024 REPI Challenge Expands and Enhances Partnerships to Address Natural Resource Challenges in Hawai'i

With seven new projects in Hawai'i, the Fiscal Year (FY) 2024 REPI Challenge cycle has effectively leveraged over \$20 million in new and continuing partner contributions combined with over \$10 million in REPI Program funding. This year's projects prioritize **habitat preservation and enhancement, reforestation, watershed recharge, flood mitigation, managing wildfire threats, food and water security through sustainable agriculture, and promoting compatible land uses for natural and cultural resource management.** The FY 2024 REPI Challenge initiative will bolster installation and community resilience by allocating funds to its partners who are expert stewards of their respective landscapes that they help to manage and maintain, including the **State of Hawai'i Office of Hawaiian Affairs (OHA)** and **the Department of Land and Natural Resources (DLNR), Maui County, Bishop Museum, Hawai'i Land Trust (HILT), Makauwahi Cave Reserve (MCR), and Parker Ranch.** These agencies and organizations have partnered with neighboring installations—**U.S. Army Garrison-Hawai'i (USAG-HI), Pōhakuloa Training Area (PTA), Pacific Missile Range Facility Barking Sands (PMRF), Marine Corps Base Hawai'i (MCBH), and the Maui Space Surveillance Complex (MSSC)**—to execute projects that mutually benefit the community and the military mission in the region.

REPI Challenge Investments in Hawai'i

Since the first REPI Challenge project launch in Hawai'i in 2021, there are 15 funded projects on Kaua'i, O'ahu, Lāna'i, Hawai'i Island, and now Maui that represent:

- **\$40.3M** in REPI Program funds invested in protecting vital natural resources and critical military missions;
- **\$55.5M** in partner contributions, providing a cost-savings ratio over 1:1; and
- **15 locations** with projects restoring critical habitats and native forests, protecting island aquifers, enhancing climate adaptation efforts, and promoting compatible land use.

FY 2024 REPI Challenge Hawai'i Project Locations



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



U.S. Army Garrison–Hawai‘i

in partnership with **Bishop Museum**, O‘ahu

Invasive Species Early Detection, Control, and Eradication-Verification Near Military Installations



BISHOP MUSEUM

- Bishop Museum was founded in 1889 by Charles Reed Bishop in honor of his late wife, Princess Bernice Pauahi Bishop, the last descendant of the Kamehameha family. Serving as the largest museum in the state and fulcrum for natural and historic objects, documents, and photographs throughout the Pacific, the Bishop Museum strives to represent the interests of Native Hawaiians by spearheading research projects, conducting consulting services, and providing public educational programs.
- Invasive species can spread disease, intensify wildfires, degrade landscapes, and pose significant threats to military readiness at U.S. Army Garrison-Hawai‘i (USAG-HI) installations on O‘ahu by forming physical hazards that endanger personnel. The high rate of movement of people and cargo to and from O‘ahu air and seaports and military installations amplifies the risk of introduction and spread of invasive species across the islands. Managing established invasive species is time-consuming and costly, diverting resources from primary military mission objectives and other community priorities. Prevention measures in conjunction with early detection and rapid response can increase success of eradication of incipient populations before they spread and become established and is a more cost-effective approach to invasive species management.
- This project will conduct surveys at 20 sites across O‘ahu in close coordination with local partners to facilitate rapid response that targets species and eradication verification at selected sites. The outcome of the surveys will be enhanced documentation and verified listing by on-site botanists and entomologists to carry out eradication and ongoing control effectively.



Waiawa Watershed, located on the island of O‘ahu.



■ REPI Funds:
\$400K

■ Partner Contributions:
\$400K

Total: \$800K

BENEFITTING INSTALLATIONS

- Joint Base Pearl Harbor-Hickam
- Marine Corps Base Hawai‘i
- Schofield Barracks
- Mākua Military Reservation
- Kahuku Training Area
- Dillingham Military Reservation
- Ka‘ena Point Space Force Tracking Station

PARTICIPATING PARTNERS

- O‘ahu Invasive Species Committee
- Hawai‘i Invasive Species Council
- O‘ahu Army Natural Resource Program

Pacific Missile Range Facility

in partnership with **Makauwahi Cave Reserve**, Kaua‘i

Innovative Enhancement of Endangered Species Populations at Makauwahi Cave Reserve

MAKAUWAHI



CAVE RESERVE

- The Makauwahi Cave Reserve (MCR) on the leeward side of Kaua‘i is a uniquely preserved archaeological site and a living museum. The reserve protects rich fossil-bearing sediments containing plant and animal fossils up to 10,000 years old. These detailed insights from the past have inspired the restoration of the surrounding abandoned farmlands and quarry property, as well as almost 100 species of native plants that include several endangered species, as well as native waterbirds and an underground ecosystem of blind cave invertebrates. The nonprofit MCR is effectively managed and maintained with the support of thousands of volunteers, students, and visitors from the local community and around the world.
- Pacific Missile Range Facility (PMRF) Barking Sands is home to many threatened, endangered, and at-risk seabird species—like the ‘a‘o (Newell’s Shearwater), the ‘akē‘akē (Band-rumped storm-petrel), and the nēnē (Hawaiian Goose)—that can benefit from relocation from the installation when they present mutually dangerous situations for both birds and aircraft. Conservation efforts to protect these species currently occur in parts of the island that are mostly inaccessible except by helicopter, creating logistical challenges and high costs for managing these colonies.
- This project will create a new predator-proof nesting site at MCR for endangered seabirds, creating the first fully protected nesting colony on the south shore of Kaua‘i and drawing birds away from sites that remain vulnerable to military training and climate threats. This project will enhance resilience to climate threats by also creating habitats for coastal plant and animal species. MCR will serve as an easily managed and monitored conservation site, providing strategic benefit to PMRF Barking Sands by ensuring endangered seabirds are effectively protected species in Hawai‘i.



Aerial Mosaic of Makauwahi Cave Reserve.



■ REPI Funds:
\$2.3M

■ Partner Contributions:
\$1.9M

Total: \$4.2M

PARTICIPATING PARTNERS

- U.S. Department of Agriculture, Natural Resources Conservation Service
- Grove Farm Company, Inc.
- Garden Island Resource Conservation and Development, Inc.
- Kaua‘i Albatross Network



Pōhakuloa Training Area
in partnership with **Parker Ranch**
Foundation Trust, Hawai'i Island

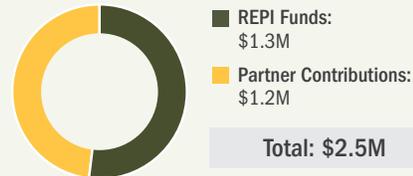


Parker Ranch Mauna Kea Reforestation Project

- With over 175 years of history headquartered in Waimea on Hawai'i Island, Parker Ranch is a multi-generational ranching operation dedicated to preserving the past and promoting the future of sustainable land management in Hawai'i. With a long-standing history of cultivating relationships with cultural and natural resource stewards on Hawai'i Island, the Parker Ranch Foundation Trust has identified forestry and native forest restoration as a strategic priority that supports climate resilience and sustainability goals.
- As an installation that provides critical training and testing to soldiers in the Pacific, Pōhakuloa Training Area (PTA) faces a wide range of threats that also directly impact dwindling native forests and ecosystems, including wildfires, invasive species, and water quality and supply.
- Parker Ranch and PTA will collaborate to restore approximately 3,300 acres of remnant native forest and pasture lands in the upper elevations of Mauna Kea. This project will involve the construction of new conservation fences, implementation of improved cattle grazing practices, expansion of wildfire mitigation resources, reduction of non-native feral ungulates, and the implementation of an accelerated native forest restoration project that will yield long-term environmental and ecological benefits across the leeward Mauna Kea region. This collaborative approach will see the restoration of forest habitat for several species of native forest birds and numerous native plant species back into the historical ranges that they were once found and will also mitigate wildfire and other anticipated climate change impacts that pose threats to Parker Ranch's livestock operations, PTA training capabilities, overall military readiness, and the resiliency of neighboring communities.



Overlooking Mauna Kea from Waimea, Hawai'i.



PARTICIPATING PARTNERS

- State of Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife

U.S. Army Garrison–Hawai'i
in partnership with **Office of Hawaiian Affairs,**
O'ahu

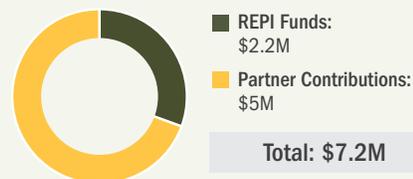


I Ulu mai ka Ulu Lā'au (That The Forest Will Grow)

- The Office of Hawaiian Affairs (OHA) is responsible for improving the well-being of all Native Hawaiians through advocacy, research, community engagement, land management, and funding community programs. Through collaboration with various organizations to strengthen community resources, OHA seeks to impact positive change in education, health, and housing. In relation to this project, OHA acquired 511 acres surrounding the sacred Kūkaniloko Birthstones in Central O'ahu—directly neighboring U.S. Army Garrison-Hawai'i (USAG-HI) installations—to protect and restore this culturally significant site from decades of degradation and proposed development risks.
- Given the proximity of this sacred cultural site to military testing and training, the Kūkaniloko Birthstones and USAG-HI installations both face development risks in an urban environment. These highly degraded lands also suffer from drought, runoff impacting water security and quality, erosion, and wildfire susceptibility. Without steadfast management of these lands, the integrity of Kūkaniloko's lineal and cultural descendants and the neighboring installation's ability to conduct the necessary training and testing to sustain military readiness are directly impacted.
- OHA has joined with its Wahiawā community partners and the USAG-HI to propose landscape-scale restoration of Kūkaniloko. This restoration includes reforesting native trees, remediating soil to provide a foundation for local food production, planting a native seed orchard to address the statewide native seed shortage, managing invasive species, and implementing on-site educational programming to directly engage military orientation groups and the broader community. The shared benefits of this effort include the creation of a sustainable buffer against development through reforestation, community food and water security, climate resilience through native species recovery, and the perpetuation of traditional ecological knowledge and other cultural traditions.



The Kūkaniloko project team assess the project site, including planned native reforestation and wildfire mitigation efforts.



BENEFITING INSTALLATIONS

- Joint Base Pearl Harbor-Hickam
- Marine Corps Base Hawai'i
- Schofield Barracks
- Mākua Military Reservation

PARTICIPATING PARTNERS

- Hawai'i Agriculture Research Center
- University of Hawai'i
- Hui Kū Maoli Ola
- Forest Solutions, Inc.
- Hawaiian Civic Club of Wahiawā
- Ka Hiapo



Air Force Maui Optical & Supercomputing Site and Space Force 15th Space Surveillance Squadron



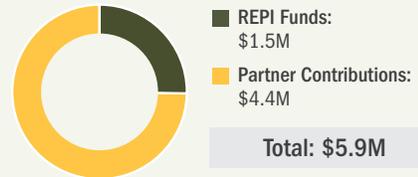
in partnership with **Maui County**, Maui

Maui Mauka-to-Makai (Mountain to Ocean) Stewardship Project

- The Maui County Office of Economic Development works in partnership with the community, business, and government sectors to promote and nurture sustainable economic development within Maui County that is consistent with the needs and priorities of the community. Specific to this project, Maui County identified the Moku 'O Kula—a Native Hawaiian land division of over 103,000 acres extending from the Haleakalā summit to the near-shore reef system off the coast of Kihei in South Maui—as a geographic area of strategic importance for habitat restoration and climate resilience.
- The Air Force and Space Force Maui facilities are located within the Moku 'O Kula. This area is overrun with non-native feral animals, such as deer, which destroy native habitats, destabilize slopes, impair water recharge, reduce agriculture production, and prohibit growth of native plants, resulting in increased erosion. The vulnerable state of the Haleakalā slopes makes this area highly susceptible to drought with a limited capacity to manage high rainfall events. This has historically cost millions in damages to buildings and infrastructure and has put military cyberspace, surveillance, and missile defense capabilities at direct risk.
- In partnership with the Air Force and Space Force, Maui County developed two initiatives to improve the resilience of the Moku 'O Kula: a deer processing facility that supports reducing that harmful population and a flood mitigation planning initiative to support riparian restoration. Deer removal and a meat processing facility will contribute to native habitat recovery, improved resilience of ecosystems and cultural assets, and ethical food security that is culturally cohesive and provides economic resilience. The flood mitigation program will protect downstream communities and facilities by using riparian buffers to reduce destructive stormwater flows, protect crops and ranchlands, aid in restoring native habitats, and benefit near-shore coral reefs and fishponds.



Maui Space Surveillance Complex, located at the 10,023 foot-summit of Haleakalā on the island of Maui, Hawaii.



PARTICIPATING PARTNERS

- Ka'ono'ulu Ranch
- Haleakalā Ranch

Marine Corps Base Hawai'i

in partnership with **Hawai'i Land Trust**, O'ahu

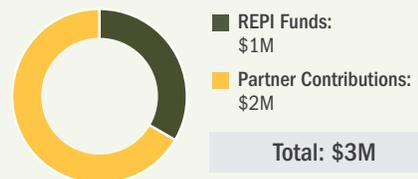
Waikalua Fishponds Complex Perpetual Conservation Easement



- Hawai'i Land Trust (HILT) is a Hawai'i nonprofit and nationally accredited land trust whose mission is to protect and steward the lands that sustain Hawai'i and perpetuate Hawaiian values by connecting people to 'āina. For this project, HILT has recognized its kuleana, or responsibility, to permanently protect the cultural and historical significance and legacy of one of the few remaining intact ancient Hawaiian fishponds on O'ahu, Waikalua Loko I'a.
- Co-located on Kāne'ohe Bay with Marine Corps Base Hawai'i (MCBH), Waikalua Loko I'a shares many of the same development and climate threats with its neighboring installation. The area's current zoning allows for a wide range of urban development, which could directly impact MCBH training activities and operations as well as the health and function of the fishpond. Furthermore, given the installation's and the fishpond's positions on the coast, they are at high risk of rising sea levels and other catastrophic weather events.
- In partnership with MCBH, the county, and community partners, HILT will purchase a perpetual conservation easement over the Waikalua Loko I'a to ensure permanent stewardship, community access, and cultural education. A conservation easement provides several strategic benefits, including preserving culturally significant places and the traditions upheld by these places, community and installation resilience using wetland restoration as a natural climate solution, and forward-based, sustainable, and secure protection of training and operational support at MCBH.



Waikalua Fishpond project site, located in Kāne'ohe Bay on the island of O'ahu.



PARTICIPATING PARTNERS

- City and County of Honolulu
- Pacific American Foundation



Pacific Missile Range Facility Barking Sands, Marine Corps Base Hawai'i, Pōhakuloa Training Area

in partnership with the **State of Hawai'i Department of Land and Natural Resources**, Kaua'i, O'ahu, and Hawai'i Islands



Detection and Management of High-Impact Aquatic and Terrestrial Invasive Species

- As a continuation of the FY 2023 REPI Challenge project, the State of Hawai'i Department of Land and Natural Resources (DLNR) will continue to partner with expert stewards in the community and neighboring installations across the state. This partnership aims to implement a multifaceted approach to address invasive species across nearly 65,000 acres of aquatic and terrestrial ecosystems.
- The project will continue to support climate resilience while safeguarding military installations and operations by implementing the following actions to address invasive species challenges: increasing early detection and rapid response capacity, managing incipient populations in priority watersheds, and implementing landscape-level management and control tools.
- This innovative project requires close partner coordination to achieve the shared benefits of healthy reef conservation, increased climate resilience, and enhanced installation resilience. Through joint efforts with the State of Hawai'i, this project will strengthen the shores of Hawai'i while providing increased water supply and quality, decreased wildfire fuels, enhanced storm resistance, and reduced high-impact invasive species in the vicinity of Pacific Missile Range Facility (PMRF) Barking Sands, Marine Corps Base Hawai'i (MCBH), and Pōhakuloa Training Area (PTA).



The Division of Aquatic Resources Invasive Species team conducts surveys of coral reefs in Kāne'ohe Bay.



■ **REPI Funds:**
\$3.1M in FY23; \$1.5M in FY24

■ **Partner Contributions:**
\$5.6M in FY23; \$5.6M in FY24

Total: \$15.8M

BENEFITING INSTALLATIONS

- PMRF Barking Sands
- MCBH
- PTA

PARTICIPATING PARTNERS

- University of Hawai'i Pacific Cooperative Studies Unit
 - Ko'olau Mountains Watershed Partnership
 - O'ahu Invasive Species Committee
 - Kaua'i Invasive Species Committee
 - Big Island Invasive Species Committee
- Department of Land and Natural Resources, Division of Aquatic Resources
- U.S. Forest Service