

# ‘Eke Project

## Protecting and Sustaining Source Waters of Kohala



*The goal of The Kohala Center’s ‘Eke Project is to sustain an important water source for Kohala by protecting the forested summit region surrounding Pu‘u ‘Eke.*

*Water is life.* Here in Kohala, we are near sustainable water yield limits, with water demand projected to increase. The Kohala Aquifer, which relies on captured rainfall and the watershed functions of Kohala Mountain’s forested summit, has a total sustainable yield of 154 million gallons per day. Yet Kohala’s water supply is under threat from the loss of wao akua (sacred forest) to non-native animals and plants.

The security of Kohala’s water supply depends on the health of our upland watershed. A recent study identified Kohala as one of the highest priority areas for cost-effective watershed management due to large recharge benefits. An estimated 378.7 billion gallons of water yield and 193.1 billion gallons of groundwater recharge would be saved from loss over 50 years with the stewardship of our vulnerable forests.

The ahupua‘a of Kawaihae Hikina (2), passed down by Queen Emma and stewarded today by Queen Emma Land Company, contains the highest quality forest remaining on Kohala Mountain, rising from its southwest flanks bordered by pasture land to the summit of Kaumuokaleiho‘ohie at 5,480 feet above sea level.



*What difference can a fence make? Fenced in 2004, Kilohana Stream Unit (left) neighboring ‘Eke has thrived under pig-free conditions. A prolific reproducer, pigs harm native ecosystems by uprooting and devouring plants, disturbing the soil, and spreading non-native species such as mosquitoes, strawberry guava, and banana poka.*



*Himalayan ginger form monotypic stands such as this one in the Pu‘u o ‘Umi Natural Area Reserve adjacent to ‘Eke. An extremely aggressive invader, it can quickly dominate landscapes, forming dense stands that displace natives in lower forest layers and prevent native tree species from regenerating.*



Over the next five years, we plan to engage in the following stewardship practices to guard this sanctuary of native cloud forest from current threats and care for the life-giving phenomena that dwell there. Predicted to degrade to non-native forest in less than 50 years without protection, non-native animals and plants are the primary threats to the watersheds of Kohala Mountain. This project will focus on protecting 'Eke from further degradation caused by feral pigs and Himalayan ginger by:

- Enclosing the 614-acre unit with a pig-proof fence
- Collaboratively developing and implementing a five-year pig removal plan
- Removing 100% of pigs and Himalayan ginger
- Monitoring our impact by practicing kilo (direct observation) and conducting water quality, vegetation, bird, and pig surveys
- Sharing about our work, learning, and journey with the Kohala community, partners, and funders

We invite all who drink the waters of Kohala to share your thoughts with us about this project by phone, email, or mail. We also host small talk-story sessions, both in-person and virtually, to share and receive feedback about this project. Please contact Mia Akau-LaClair, director of Kohala papahana, at 808-887-6411 or [makaulaclair@kohalacenter.org](mailto:makaulaclair@kohalacenter.org) if you are interested in hearing more or participating.



*'Ōhi'a lehua, a keystone species supporting the entire wao akua, are dying from Rapid 'Ōhi'a Death (ROD), a fungal disease that has already killed hundreds of 'ōhi'a trees in Kohala. Feral pigs contribute to the spread of ROD by wounding 'ōhi'a and promoting infection through activities such as rooting, rubbing, and tusking.*

### **Mahalo to Our Partners & Funders:**

The Queen's Health Systems / Queen Emma Land Company

Hawai'i Division of Forestry and Wildlife / Natural Area Reserves System

Parker Ranch

U.S. Forest Service

Hawai'i Department of Health

Hawai'i Department of Hawaiian Homelands

South Kohala Coastal Partnership

Oceanit Laboratories, Inc.



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### **Sources:**

Hawai'i County Water Use and Development Plan Update, "801 Kohala Aquifer Sector Area" ([https://www.hawaiiidws.org/wp-content/uploads/2018/06/HWUDP-Chapter-801\\_Addendum-1.pdf](https://www.hawaiiidws.org/wp-content/uploads/2018/06/HWUDP-Chapter-801_Addendum-1.pdf))

Identifying Areas of Cost-effective Watershed Management for Groundwater Recharge Protection on Hawai'i island (<https://uhero.hawaii.edu/identifying-areas-of-cost-effective-watershed-management-for-groundwater-recharge-protection-on-hawaii-island>)

Kohala Mountain Watershed Management Plan ([http://hawp.org/library/documents/kwp/jankwpmmanagement\\_plan.pdf](http://hawp.org/library/documents/kwp/jankwpmmanagement_plan.pdf))

Natural enemies could tame invasive Himalayan ginger (<https://www.mauinews.com/news/community-news/2018/04/natural-enemies-could-tame-invasive-himalayan-ginger>)

The evolving threat of Rapid 'Ōhi'a Death (ROD) to Hawai'i's native ecosystems and rare plant species (<https://www.sciencedirect.com/science/article/abs/S0378112719301744>)

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