



Nā Mamo
O Mū'olea



The Nature
Conservancy

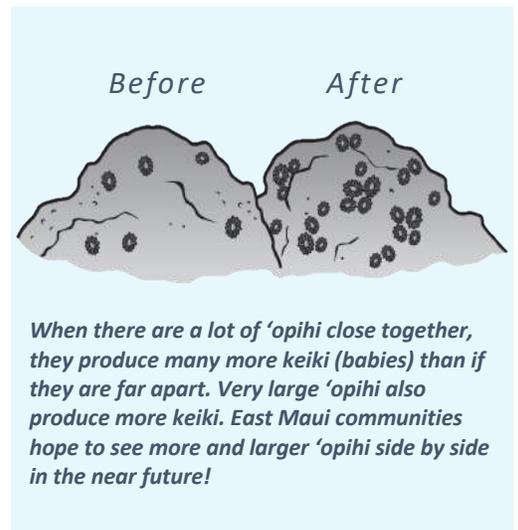


COMMUNITY-BASED MONITORING

'OPIHI REST AREA SURVEYS (2014-2017), East Maui

One of the most important food resources in a traditional Hawaiian diet is 'opihi, a coveted marine limpet that lives suctioned onto rocks where the ocean meets the shoreline. From 2008-2014, community members in East Maui surveyed and measured declines in 'opihi. Because 'opihi reproduce every 6 months and are fast growing, the community knew that, if protected, their populations could grow and replenish successfully.

To test their theory, in September 2014, East Maui community groups Nā Mamo O Mū'olea and Kīpahulu 'Ōhana decided to revive the traditional practice of resting an area from 'opihi harvest so that it will be momona (abundant) again. The concept is simple – allowing one area to rest from harvest means those 'opihi have the chance to grow larger, grow more closely together, and produce more larvae that can be carried by currents to neighboring areas, providing more 'opihi for all. After resting areas for only three years, community members are counting more 'opihi! Check out survey findings on the next page.



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Since 2014, surveyors have conducted rapid 'opihi surveys at least three times each year; gearing up with rulers and clickers to tally the number and size of 'opihi makaiauli (*Cellana exarata*), endemic to Hawai'i. These surveyors collect data that is vital to detecting changes in 'opihi populations within and adjacent to rest areas. The information they compile helps ensure that management activities, including voluntary rest areas, are having the desired effect and are helping to restore abundance to East Maui's shores!

Clockwise from top left: Ruler showing size classes used to measure 'opihi; volunteers surveying 'opihi in East Maui, signage used to identify a rest area.

'Opihi Rest Area Surveys

Methods

Rapid 'opihī monitoring is conducted by surveyors with the ability to identify 'opihī makaiauli (training provided). Surveys occur within rest areas and roughly 100 m and 1000 m outside of and on either side of the rest areas. Survey sites are divided into approximately 2 m transects in which all 'opihī makaiauli are counted and tallied into size classes.

Highlights from 2014-2017 Surveys

- **After only three years, 'opihī rest areas have been successful in increasing the population of 'opihī within rest areas and down-current in areas open for harvest!**

More larger 'opihī are being seen in rest areas and more new recruits are observed down current. For example, 100S, which is down current from the rest area in East Maui 1, has seen the largest increase in 'opihī since the rest area began.

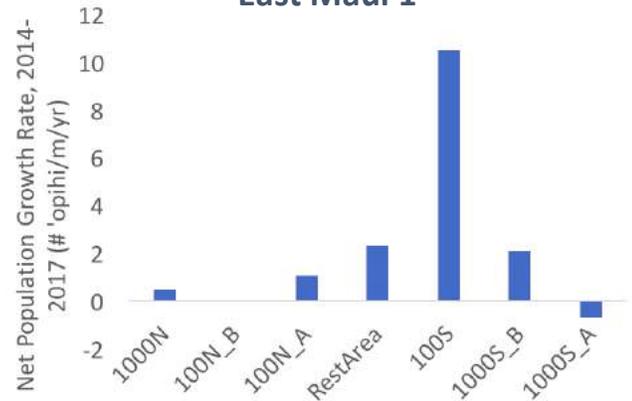
- **This was an extensive community-led, science supported data collecting effort.**

Over 200 volunteers counted and sized 'opihī makaiauli, and collected data from 7,213 transects on 2 km of coastline.

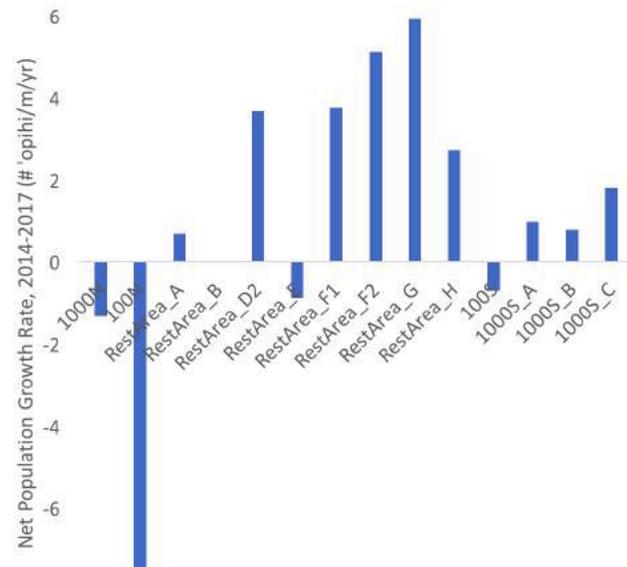
- **Outreach and education have been effective in encouraging most people to voluntarily comply with the request not to harvest 'opihī within rest areas.**

East Maui communities will continue to monitor 'opihī rest areas and seek voluntary compliance from the community through outreach and education. Continual surveying provides valuable information on the health of marine resources and insight into spawning patterns. These findings will help the community manage 'opihī to ensure long-term, sustainable populations and inspire other communities to join the effort!

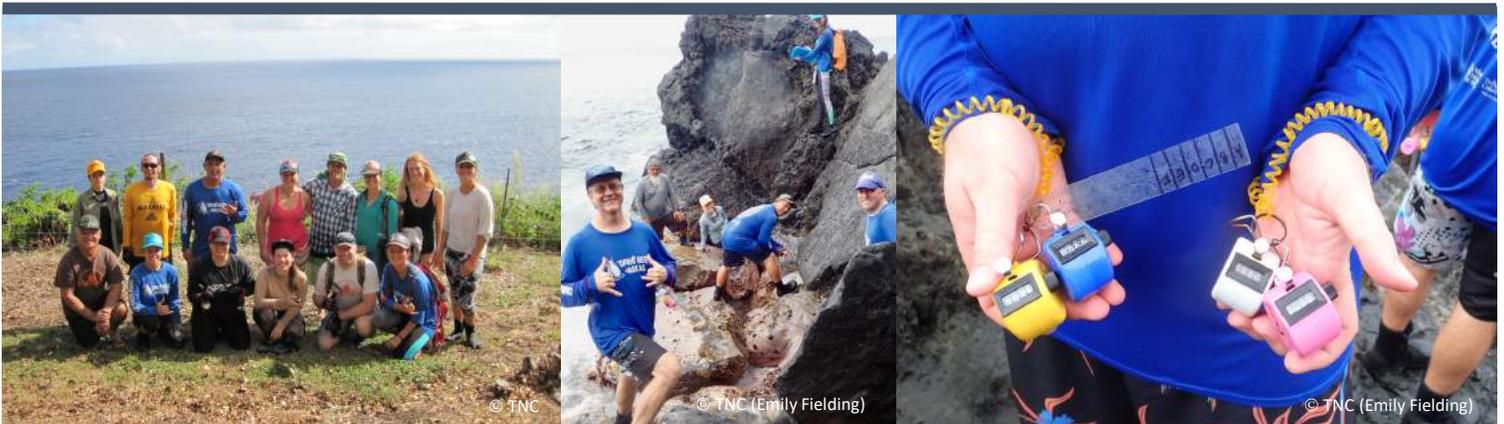
East Maui 1



East Maui 2



The graphs show changes in 'opihī populations in and around two rest areas (East Maui 1 and East Maui 2). The East Maui 2 rest area is surveyed in multiple sections. All sites displayed to the right of the rest areas are down current.



From left to right: Volunteers gather after monitoring; surveyors mid-monitoring in East Maui; clickers used to capture 'opihī number and size classes.

To learn more about 'opihī rest areas and their role in returning 'opihī to East Maui, contact The Nature Conservancy at rsylva@tnc.org, visit kipahulu.org/opihī, or contact opihī@kipahulu.org. This project was made possible with support from The Nature Conservancy, Texas A&M University, Corpus Christi, and National Park Service, in coordination with Department of Land and Natural Resources Division of Aquatic Resources and Division of Conservation and Resource Enforcement, and through the generous efforts of many volunteers.