MĀLAMA MAUNALUA

2021 ANNUAL REPORT
LETTER FROM THE EXECUTIVE DIRECTOR

Aloha mai kakou,

I hope this finds you healthy and well. Masks, vaccines, and alterations to our daily life seem to have been with us for years. Optimistically, it looks like we are nearing the light at the end of the tunnel. That is exciting on a personal and societal level, but it’s also exciting organizationally.

In spite of COVID, Mālama Maunalua has continued to demonstrate an ability to make measurable achievements in restoring Maunalua Bay. In 2021, we:

- Hosted 1,443 volunteers
- Removed 41,715 lbs of invasive alien algae
- Fragmented 141 coral colonies for planting
- Deployed 6,000 urchins
- And educated 2,462 students in the classroom.

Those successes barely even touch on what we were able to accomplish. Our coral fragmentation was part of the first community-led coral restoration effort in state history. The project, Restore with Resilience, is a robust conservation partnership working to restore the health of Maunalua Bay by planting Bay-sourced coral that is more resilient to climate change. This is important because not only will it restore our current bay ecosystem, it will protect the marine environment for future generations as well. The effort is creating the blueprint that will be followed throughout Hawaii, and potentially the broader Pacific.

The coral work is groundbreaking and garnering national and international attention, but we also drew inspiration here on O‘ahu. In Kaneohe Bay, the removal of invasive algae followed by planting of collector urchins proved an effective means of controlling invasive algae. This solution was not seen as viable in Maunalua Bay because of the type of algae prevalent – leather mudweed.

To address that concern, in 2019 our interns conducted research on urchin survivability in mudweed-dense locations. Their work demonstrated urchins could survive on mudweed, and in 2021, we deployed 6,000 urchins in partnership with the State of Hawaii Division of Aquatic Resources (DAR). We are currently working with DAR to secure more urchins for 2022 and 2023. In conjunction with the tremendous success of our Huki program, the deployment of urchins might prove decisive in reestablishing a self-sustaining native nearshore habitat.

The urchin work demonstrates the benefit of our internship program, which continued in 2021 when we welcomed 15 interns. This was part of our larger effort to train and educate the next generation. Our new Outreach and Education Coordinator, Laura Bailes, was active in the classroom, worked with teachers to create new materials, and led school groups in the field.

I want to take a moment to talk about the bright year ahead of us. We have secured funding to take a hard look at how we can reduce flooding in Maunalua Bay. This helps homeowners, but will also reduce pollution reaching the bay. One of the partners, 3RWater, will conduct free home assessments on what you can do, so please sign up to help with our work at rainwaterhawaii.com. We will be expanding and growing the Huki and coral work, and we are excited to announce we plan on planting oysters for clean-up in 2022.

In short, we have so much to look forward to, and it has all grown out of the support you have shown us. So please, as you read this report and the incredible work the community and Malama Maunalua were able to achieve, realize it’s a result in no small measure from your support.

Mahalo! We look forward to seeing you throughout 2022!

Mahalo nui loa,

Doug Harper
Executive Director
2021 AT A GLANCE

HUKI

65
TOTAL HUKI EVENTS

81
GROUPS HOSTED

1,443
TOTAL VOLUNTEERS
(816 WERE STUDENTS)

41,716 LBS
TOTAL INVASIVE ALGAE REMOVED

3,996
TOTAL VOLUNTEER HOURS

7,800 SQUARE METERS
AREA RESTORED
2021 AT A GLANCE

C O R A L

- 3 TOTAL HANA PŪKO'A EVENTS
- 200 TOTAL VOLUNTEERS
- 400 TOTAL VOLUNTEER HOURS
- 141 CORAL COLONIES FRAGMENTED
- 20 VOLUNTEERS TRAINED TO MONITOR CORAL

E D U C A T I O N

- 90 EDUCATION & OUTREACH EVENTS
- 156 CLASSES TAUGHT
- 2,462 STUDENTS EDUCATED
- 2,965 PEOPLE ENGAGED IN EDUCATION & OUTREACH
Restore With Resilience (RWR) is a cutting-edge project to restore Hawaii’s coral reefs. In this project, we identify coral colonies that have shown a propensity to survive warming waters, fragment the colonies, then replant the fragments to facilitate the establishment of bleach-resistant reefs. The project launched in Maunalua Bay in earnest in 2021, and is the largest community-led coral restoration effort in state history. RWR is led by a core team, including Mālama Maunalua, the Hawaiʻi Institute of Marine Biology, NOAA, the State of Hawaiʻi Department of Land and Natural Resources, and Kuleana Coral Restoration.

In Maunalua Bay, Mālama Maunalua has found many avenues to encourage even more community involvement. The RWR project is supported by over 15 organizations and agencies actively working on land and in the water in the ahupua’ā’s of Maunalua Bay. We are also organizing monthly community events, called Hana Pūko’a, translating “Bringing the Community Together for Coral.” At these events, the community gets hands-on experience with the fragmenting stage of the restoration process. If you have not attended a Hana Pūko’a, please check out our calendar when events resume this summer.

To further support coral restoration in the Bay, we’ve been training volunteers to monitor the health of the reef. The data our volunteers collect helps us identify potential locations for planting the coral fragments. We’ve also partnered with regional dive operators who are serving as the eyes and ears in the water, and are making their clients more aware of the importance of corals and the Restore with Resilience project.
INVASIVE ALGAE CONTROL: URCHIN EDITION

Mālama Maunalua expanded its work to use sea urchins to further reduce the abundance and effects of invasive alien algae on Hawai‘i’s reefs. Native Collector Urchins, Tripneustes gratilla, are spawned and raised in captivity at the State’s Department of Land and Natural Resources Division of Aquatic Resources (DLNR-DAR) ʻĀnuenue Fisheries Research Center. This species of urchin, which is not harmful to humans, is reared as a tool to combat invasive algal regrowth after the seaweed is removed by huki efforts. The herbivorous urchins act similar to cattle, grazing upon invasive regrowth and clearing overgrown reef to allow for native species and coral regeneration.

As of October 2021, Mālama Maunalua and DLNR-DAR put approximately 6,000 juvenile urchins reared at DAR’s ʻĀnuenue Fisheries Research Center’s sea urchin hatchery in Maunalua Bay. This was only possible after Mālama Maunalua demonstrated in a pilot project that urchins could survive in the nearshore areas of Maunalua Bay and would eat leather mudweed. This project will help scale up our fight against invasive algae by targeting areas in Maunalua Bay that are too challenging for huki volunteers to reach.

KEIRA’S KREATIONS

Mālama Maunalua established a partnership with Punahou School to help students build socially responsible entrepreneurial skills. The Mālama Maunalua team helped students think through creating products that would also benefit the environment.

While many students created products that they “brought to market,” one in particular demonstrated an impressive drive and commitment: Keira H. Keira, a 9th grader, started a business called Keira’s Kreations that made keychains filled with plastics she collected from the beach. Included with every keychain was a card educating the purchaser about the impact of plastics in the ocean.

Keira’s business has been extremely successful, and to date she has donated over $2,000 in proceeds from her keychain sales to Mālama Maunalua. Keira provides a good example of the future being in good hands.
IN THE CLASSROOM

Mālama Maunalua has partnered with the Hawai‘i Institute of Marine Biology Coral Resilience Lab to develop watershed and coral reef-focused lesson plans for students in the classroom. Our expertise, combined with HIMB’s, provides students with unique lessons on how watersheds impact coral health, and why coral is important ecologically, culturally and socioeconomically. The lessons align with Next Generation Science Standards. They enhance students’ understanding of key scientific concepts, the environment they inhabit, and how they can minimize their impact on the resource.

Students get to supplement classroom lessons with hands-on experiences. This experience further connects the students to the region and educates them on their home. It also instills a deeper sense of kuleana in how they should care for the resource, which is a critical component to creating long term stewards.

MANAGING LAND TO IMPROVE THE OCEAN

Addressing the runoff impacting the Bay’s water quality has always been a priority for Mālama Maunalua. Water quality studies we conducted in 2019 revealed extensive pollution consisting of everything from herbicides, to sediment. To address Bay health, it’s important to consider mauka contributions. Hawaiians understood this important connection, and addressed it through ahupua‘a management. We have taken that lesson, and are following its principles while utilizing 21st century tools and means.

Mālama Maunalua is working with organizations such as the Ko‘olau Mountains Watershed Partnership (KMWP) and Protect and Preserve Hawai‘i to extend the message about the link between the land and the water. At one of the Restore with Resilience coral events, KMWP had volunteers build seed bombs - balls of dirt packed with native seeds. Volunteers created over 200 of the seed bombs, which were then deployed in a recently cleared portion of the forest in Niu Valley. Today, those seeds have sprouted and are revegetating the forest with native plants, such as a‘ali‘i.

Another exciting development is a planning initiative to identify the best ways to protect native forests, reduce urban runoff, and redesign the streams to minimize pollution for Niu, Wallupe, and Kuli‘ou‘ou watersheds. One of the largest planning efforts in the region, the partnership, established by Mālama Maunalua, will create a clear path forward on how to reduce flooding and pollution in the selected watersheds. By having a clear path, we can pursue grants and establish a public-private partnership to demonstrate how improvement to water quality can take place in an urban environment.
We are excited to announce the hiring of Laura Bailes to be our new Outreach and Education Coordinator. Laura is a University of Hawai‘i graduate, earning a Bachelor of Arts in Marine Ecology and Conservation. She went on to receive a Masters in Conservation Biology from Miami University of Ohio. She has a strong background in outreach and education, having worked for Sustainable Coastlines, Americops VISTA, and the Research Corp University of Hawai‘i. We are extremely excited to have her on board, and look forward to her bringing the critical thought and commitment she has shown throughout her career.

As an avid surfer and hiker, she fits in beautifully with the Mālama Maunalua focus, and staff.

Welcome aboard, Laura!

BEHIND THE SCENES TOUR OF HIMB

In August of 2021, we hosted our first ever virtual behind-the-scenes tour of the Hawaii Institute of Marine Biology with our Restore with Resilience project partners at the Coral Resilience Lab. With COVID putting a halt to our monthly Hana Pūk’a events during the fall, this webinar provided us with the opportunity to virtually share more information on what scientists do at the Coral Resilience Lab. Coral biologists shared their insights on coral ecology, biology, and restoration, and showcased live coral resilience testing from corals that the community helped us fragment. Additionally, we had a Q&A segment following the tour where folks could “ask a coral biologist” anything. Several dozen people joined, the tour was recorded and shared online, and everyone from kupuna to keiki classrooms joined. It was a huge success and gave people a glimpse of what goes on behind the scenes of a working lab.
In 2021, we were able to host 15 talented individuals who tackled issues ranging from how invertebrates are impacted by invasive algae removal, to conducting runoff assessments of private residences.

Interns are given real-world projects that directly affect our restoration of the Bay. They address issues we lack the capacity to undertake at that time. They also bring new skills. In the fall cohort, one intern, Mija, is helping us build and program remote cameras that can be placed in the Bay to monitor coral growth and potentially track fish populations. This is a cutting-edge project using Mija’s background in robotics.

In return for their valuable contributions to restoration, the interns receive 10 weeks of paid work alongside our experienced conservation professionals. Interns learn what goes into creating a project, how to manage their work, and how to educate the public about its importance. It leads to a next generation of workers who are better prepared for the working world, and better capable of tackling the many challenges confronting Hawai‘i.
TOTAL REVENUE
$727,441

REVENUE
- Grants 69%
- Donations 31%

TOTAL EXPENSES
$546,973

EXPENSES
- Payroll 71%
- Contractor/Consultant 21%
- Others 8%
MAHALO NUI LOA
TO OUR SUPPORTERS, CONTRIBUTORS, AND SPONSORS

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($25,000 or more)

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Kohala - Whale
($5,000 - $24,999)

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We are thankful for every supporter, and would like to mahalo these generous donors who have helped make our success possible.

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As always, we are deeply indebted to our willing, professional, and expert volunteers helping us conduct the science. The citizen science effort is led in part, appropriately, by volunteer Ralph Dykes who spends hundreds of hours every year leading our survey work. Mahalo to Ralph, and everyone who helps ensure our work is scientifically valid!

Our Vision
A Maunalua Bay where marine life is abundant, the water is clean and clear, and people take kuleana in caring for the Bay.