Holomua
Marine Initiative

Holomua Marine Initiative

A guide to DAR's new approach for navigating nearshore resource management in Hawai'i

Honokōhau, Hawai'i Island

Photo: Jeff Milisen

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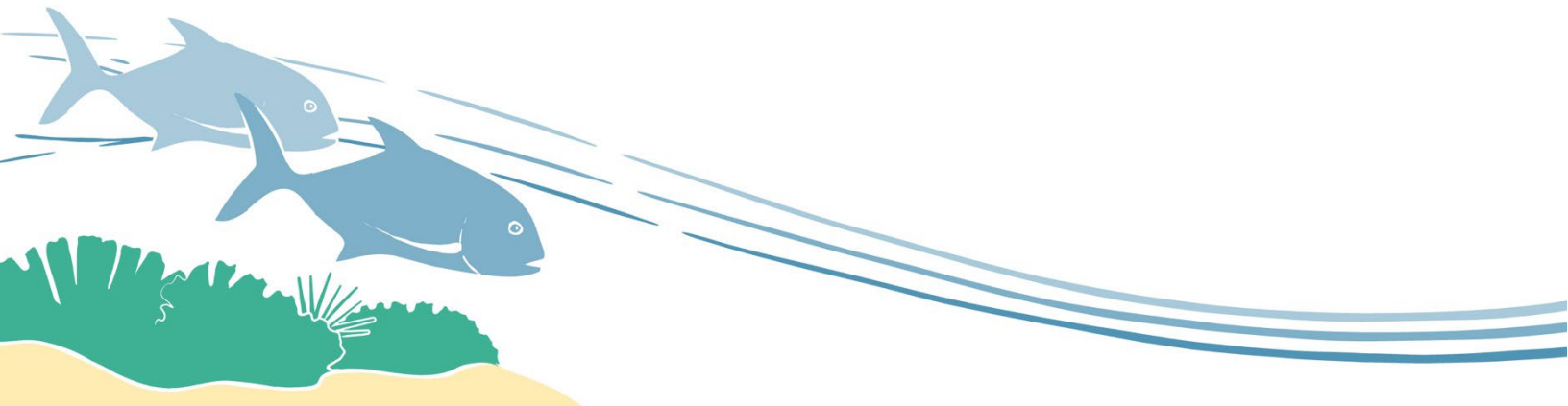
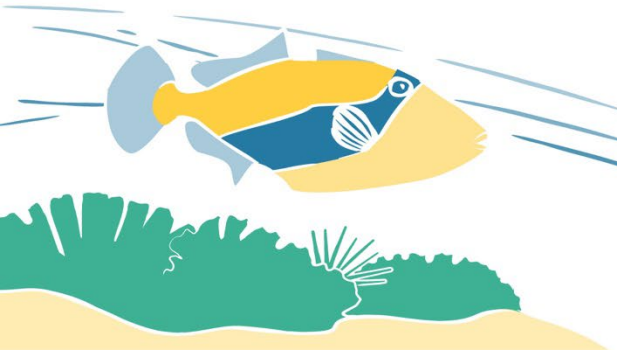


List of Abbreviations

BLNR	Board of Land and Natural Resources
CBSFA	Community-Based Subsistence Fishing Area
CI	Conservation International
DAR	Division of Aquatic Resources
DLNR	Department of Land and Natural Resources
DOCARE	Division of Conservation and Resources Enforcement
FMA	Fisheries Management Area
HARPS	Hawai'i Administrative Rule Processing System
HIMARC	Hawai'i Monitoring and Reporting Collaborative
HMRFS	Hawai'i Marine Recreational Fishing Survey
MLCD	Marine Life Conservation District
MMA	Marine Management Area
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
SBRRB	Small Business Regulatory Review Board
TNC	The Nature Conservancy
IUCN	International Union for Conservation of Nature



Message from the Department of Land and Natural Resources

In recent years, both local and global impacts have affected the health and resilience of nearshore marine ecosystems in Hawai'i. Climate change is leading to ocean acidification and increasing the frequency and intensity of warming ocean events, linked to widescale coral bleaching and mortality. It is also changing weather and rainfall patterns, increasing threats like wildfires, floods, and drought. On top of this, the human population is increasing, and there are long-lasting stressors to nearshore environments, including run-off from development and urbanization, effluent from wastewater, sedimentation covering reefs, and unsustainable fishing practices depleting resources. With these compounding concerns, many communities have voiced interest in wanting to co-manage and take an active role in developing and adapting management strategies for many nearshore areas. The mission of the Department of Land and Natural Resources is to "enhance, protect, conserve and manage Hawai'i's unique and limited natural, cultural and historic resources held in public trust for current and future generations of the people of Hawai'i nei, and its visitors, in partnership with others from the public and private sectors." Working together, informed by local knowledge and the best readily available science, we can respond to climate change threats, restore our fisheries, and promote the health of nearshore ecosystems and all they provide.

The Holomua Marine Initiative was established in response to these needs and the momentum of communities who wish to engage in nearshore management. The aim is to implement a place-based, community-led process for developing a comprehensive island-wide strategy to effectively manage nearshore marine resources around each main Hawaiian island. Through this process, communities, in partnership with DAR, will develop management frameworks that place an emphasis on community participation, cultural relevance, and improving processes and outcomes at all stages of management. The Department of Land and Natural Resources has been invigorated through this initiative to establish new strategic directions in the way we manage our oceans to address local and global impacts on our nearshore resources.

We have set the course to ensuring the sustainability of our nearshore waters through the Holomua Marine Initiative. This initiative will focus on a broad range of both regulatory and non-regulatory marine management measures to sustain, conserve, and enhance our marine resources so that our communities can continue to benefit from abundant nearshore waters now and in the future.

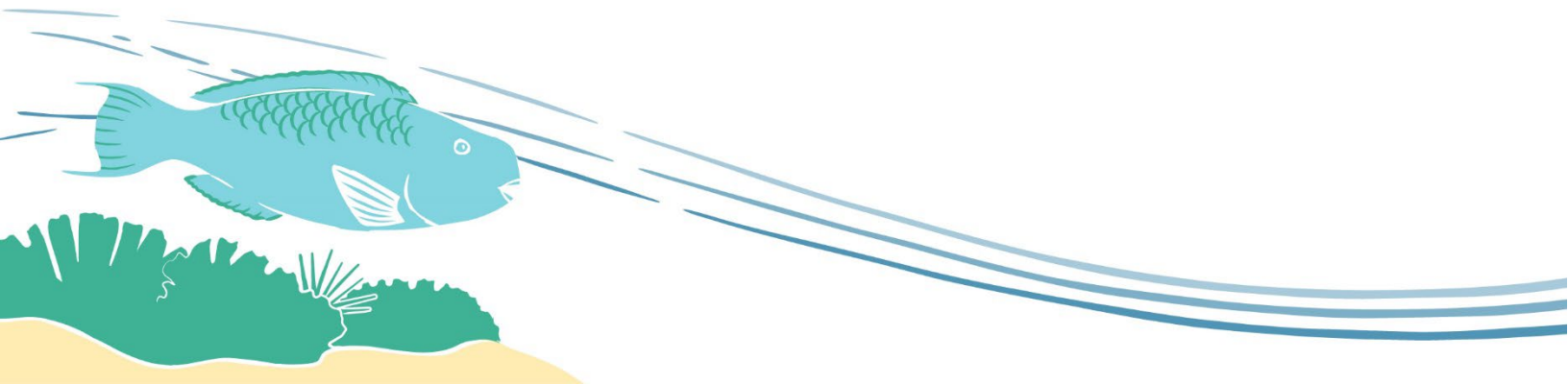
The Department of Land and Natural Resources Division of Aquatic Resources plans to take a multi-faceted approach, which includes efforts to:

- Convene stakeholders to develop cohesive, holistic place-based management strategies at local, regional, and island scales.
- Expand outreach and enforcement capacity to improve compliance and increase our ability to serve the people of Hawai'i and our marine resources.
- Expand monitoring practices and identify indicators to track marine metrics over time to inform adaptive management actions.
- Build on existing strategies to prevent further damage to fragile nearshore ecosystems and expand efforts to restore and enhance areas in need.

Ultimately, achieving this goal will be a collaborative journey and require a balanced approach, recognizing the ecological, cultural, social, and economic roles of our shared ocean resources. The issues facing our nearshore waters are too great for the Division of Aquatic Resources to tackle alone. The success of this Initiative will require inter-jurisdictional governance across multiple divisions and agencies and strong partnerships with communities and organizations across the islands. The outcome is up to Hawai'i residents, ocean users, and resource stewards. Collectively, we share the kuleana to care for the ocean and its inhabitants in a sustainable way. Effective management of nearshore waters will allow the people of Hawai'i and our visitors the ability to enjoy the ocean and its resources, support our livelihoods, and feed our families for years to come.

Sincerely,

Dawn N.S. Chang, Chair
Department of Land and Natural Resources



Akule swimming across the reefscape
Photo: Jeff Milisen

I ola nā kai o Hawai‘i I ka nui i‘a

So the waters of Hawai‘i thrive with abundance

Executive Summary

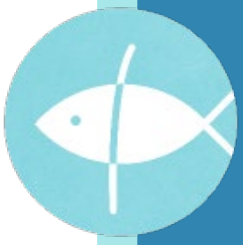
Life in Hawai'i has always been deeply linked with the ocean, which is central to our livelihoods, culture, health, and island lifestyle. For centuries, Native Hawaiian management practices ensured continued abundance for Hawai'i's people. However, in recent years, it has become apparent that both local and global impacts are affecting the health and resilience of nearshore marine ecosystems. The **Holomua Marine Initiative**, coordinated by the Department of Land and Natural Resources (DLNR), Division of Aquatic Resources (DAR), is a response to the increase in local and global threats to the nearshore ecosystem, decline in nearshore resources and desire for collaborative and adaptive management by many communities.

Holomua Four Pillars

Building on the rich and effective traditional management practices and knowledge of Hawai'i, along with guidance from fishers, cultural and scientific experts and community leaders, DAR has outlined a path built on four pillars:

Place-Based Planning aims to Identify and develop management strategies for improved marine management in partnership with communities and stakeholders at local to regional scales.

Pono Practices encourages responsible behavior guided by Hawaiian values and perspectives through education and outreach, statewide rules, strengthened enforcement, and local partnerships to encourage sustainable behaviors and practices in nearshore waters.



Monitoring measures and documents current conditions, tracks progress following implementation of new management approaches, and uses data to identify areas where management actions need to be further adapted.

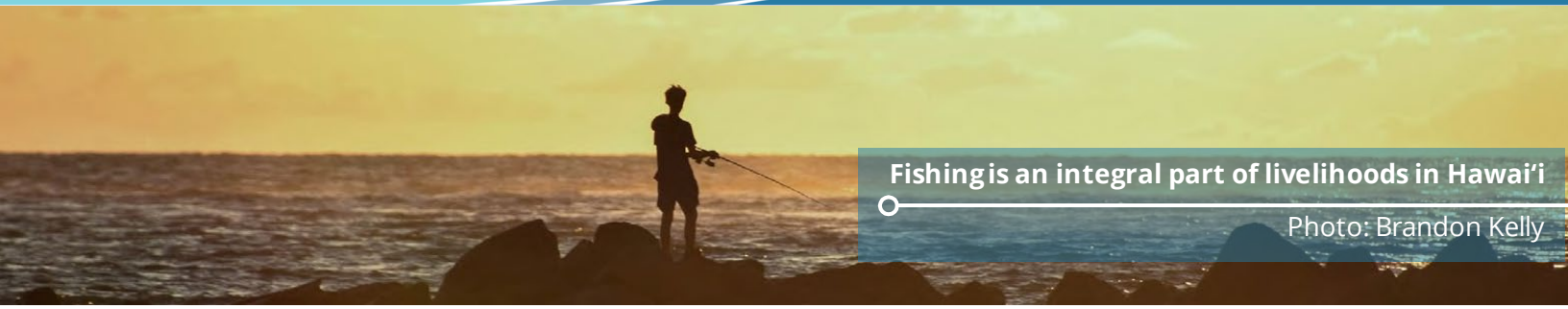
Restoration builds on existing strategies to prevent damage to fragile nearshore ecosystems from invasive species, disease, and environmental damage events and expands efforts to restore and enhance impacted areas.

Box 1. The four pillars of Holomua

As the State agency tasked with managing, conserving, and restoring Hawai'i's aquatic resources and ecosystems for present and future generations, DLNR DAR is leading this marine initiative as part of a comprehensive strategy focused on our nearshore waters. Effective management will be assessed by measuring progress towards ecological and socio-cultural objectives. Ultimate success, however, relies on the involvement of individuals and communities across the state.

The goal of the Holomua Marine Initiative (Holomua) is *to effectively manage nearshore marine resources by implementing a comprehensive management strategy and by developing and carrying out management frameworks that place an emphasis on community participation, cultural relevance, and improving processes and outcomes in all stages of management.*

Holomua outlines how DAR plans to partner with communities to operationalize its four pillars (*Box 1*) and achieve shared nearshore management goals. This creates an opportunity for Hawai'i residents to work with DAR and its partners to achieve our collective vision of *healthy nearshore ecosystems with abundant resources*, which allows the people of Hawai'i to enjoy our coastal waters, support our local livelihoods, and feed our families.



Fishing is an integral part of livelihoods in Hawai'i

Photo: Brandon Kelly

Introduction

Hawai'i's nearshore marine habitats are home to thousands of species of fish, algae, coral, and invertebrates, many of which are found nowhere else in the world. To properly steward these resources so that they can be used and enjoyed by future generations, the Holomua Marine Initiative seeks to build collaborations to manage for sustainability, bringing together island communities and resource stewards to develop and implement strategies that are tailored to the individualized concerns and needs of each place. The success of the initiative will rely on people coming together to face today's resource challenges and finding solutions that will help support healthy nearshore ecosystems and abundant resources and provide guidance toward more informed and sustainable interactions with the nearshore environment.

Why are our nearshore marine resources important?

Nearshore refers to the marine area including most of the accessible reefs and the resources, including fish, corals and other marine life, that live there. The people of Hawai'i depend on the nearshore environment to support their livelihoods and put locally sourced food on the table. From the Hawaiian worldview, the ocean is the source of all life, and its ancestral nature is represented in many oli (chants) and mele (songs).[1] Within the nearshore environment, our commercial and non-commercial fisheries are valued between $10 million and $16 million on an annual basis. Subsistence and "recreational" (or non-commercial) fishers share much of the fish they catch among families and communities, providing over 7 million local meals each year.[2] Our coral reefs are a local and international treasure, providing cultural, economic, and recreational opportunities to residents and 10 million visitors annually.[3] They drive both our local and tourism economies, generating more than $360 million each year,[4] and providing $835 million in coastal flood protection annually.[5] The people of Hawai'i have vital ties to the ocean.

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[1] Beckwith, Martha Warren. [1951] 1972. The Kumulipo. University of Hawai'i Press.

[2] Grafeld, S., Oleson, K., Teneva, L., & Kittinger, J. N. (2017). Follow that fish: Uncovering the hidden blue economy in coral reef fisheries. PloS one, 12(8), e0182104. https://doi.org/10.1371/journal.pone.0182104.

[3] Hawai'i Tourism Authority, "2017 Annual Visitor Research Report," 2017 Annual Visitor Research Report, 2017, http://files.hawaii.gov/dbedt/visitor/visitor-research/2017-annual-visitor.pdf.

[4] Cesar, H.S.J.S.J., & Beukering, P. (2004). Economic Valuation of the Coral Reefs of Hawai'i. Pacific Science 58(2), 231-242. doi:10.1353/psc.2004.0014.

[5] Storlazzi, C.D., Reguero, B.G., Cole, A.D., Lowe, E., Shope, J.B., Gibbs, A.E., Nickel, B.A., McCall, R.T., van Dongeren, A.R., and Beck, M.W., 2019, Rigorously valuing the role of U.S. coral reefs in coastal hazard risk reduction: U.S. Geological Survey Open-File Report 2019–1027, 42 p., https://doi.org/10.3133/ofr20191027.

Holomua Marine Initiative Beginnings

In 2016, following Governor David Ige's announcement at the International Union for Conservation of Nature (IUCN) World Conservation Congress held in Hawai'i, the state launched the Sustainable Hawai'i Initiative to increase the sustainability of our natural resources and Hawai'i's self-sufficiency.

As part of the Sustainable Hawai'i Initiative, the Division of Aquatic Resources (DAR) began a community engagement process to guide the Holomua Marine Initiative to improve the health and abundance of our nearshore waters for the benefit of the people of Hawai'i. The Initiative was also recognized as one of the targets for Hawai'i's local sustainable development goals, the Aloha+ Challenge. The Aloha+ Challenge Dashboard tracks progress towards Hawai'i 2030 sustainability goals to promote transparency and accountability. Another one of the sustainability targets for this challenge is to at least double local food production, including seafood. With the nearshore fishery providing more than 7 million meals a year, abundant nearshore fisheries are an important component to increase local food production.

When announced by then-Governor David Ige at the 2016 International Union for Conservation of Nature World Conservation Congress, Holomua Marine Initiative was originally labeled as Marine 30x30, with the goal to effectively manage Hawai'i's nearshore waters, with at least 30% established as marine management areas (MMAs) by 2030. This was a response to an international call for global sustainability and sparked a statewide effort to improve Hawai'i's sustainability, self-sufficiency and resilience.

After a few years of planning for the implementation of the initiative, Marine 30x30 became Holomua: Marine 30x30. Holomua means to move forward, but can also mean to progress or improve. The initiative needed to move forward and improve with both management and engagement processes. The name was in recognition that DAR can improve how they engage with resource users and incorporate community input. Improving and building relationships with communities and resource users is key to reaching the vision of healthy marine ecosystems and abundant nearshore resources.

Holomua has evolved over the years with considerations of the best way to effectively manage our marine resources. The initiative recognizes that effective management should be planned at

an island level and be proposed by local resource users – those who know their nearshore waters best. Not all regulations will work for all places, so rather than having a target of a minimum percentage of managed areas, the goal shifted to convene resource users in a pilot process to develop comprehensive island-scale or regional-scale management plans, not just planning for areas encompassing 30% of the nearshore. In 2023, the initiative officially dropped the 30x30 target and changed the name to Holomua Marine Initiative. By dropping the 30% target, resource users can utilize the full suite of management tools available to find solutions that fit their island, with communities leading the process.

Holomua is being led by the State of Hawai'i's Department of Land and Natural Resources (DLNR) Division of Aquatic Resources (DAR) whose mission is to "work with the people of Hawai'i to manage, conserve and restore the state's unique aquatic resources and ecosystems for present and future generations."

DAR currently works to improve conditions in the state's aquatic environments by using tools including fisheries management, permits, licenses, marine managed areas, education, environmental response, invasive species control, and restoration.

DAR has identified four pillars to effectively manage marine resources and ecosystems in Hawai'i: 1) Place-based planning, 2) Pono practices, 3) Monitoring, and 4) Restoration. DAR is working throughout the state to strengthen the four pillars and continue to develop partnerships with communities.

Together with community members, local, state and federal government agencies, and other stakeholders we strive to usher in a new era of participatory and place- based adaptive management that is scientifically and culturally informed.

Holomua Goal

Effectively manage Hawai'i's marine resources by:

- **Implementing** comprehensive regional **management strategies**
- **Carrying out management frameworks** that place an emphasis:
  - Community participation
  - Cultural relevance
  - Improved process and outcomes at all stages of management.

Place-based Planning

What is Place-based Planning?

Place-based planning describes a process that brings together the values, users, experiences, activities, and science associated with a specific geographic location. Location may be defined at various scales, from ahupua'a to archipelagic, depending on the scope and applicability of management actions. Place-based planning aims to balance the needs of a local community with the health and long-term sustainability of the nearshore ocean environment.

Kahe Point, O'ahu

Bert Weeks

Each of the main Hawaiian Islands is home to unique marine species and habitats. These differences influence how communities interact with and use marine resources, as well as the desired management goals for each place. Successful place-based planning in Hawai'i must take into consideration both the obvious and nuanced differences in each place by engaging with community members who live, work, and play in these areas.

Global and local science, as well as traditional Hawaiian management approaches value the effectiveness of area-based management (place-based planning). Holomua will use place-based planning to evaluate each marine management area (MMA) and collect public input as to the condition of the resources and concerns regarding status and use of these nearshore resources. Each MMA will have an adaptive management plan developed in consultation with local communities. This plan will chart the goals and objectives for the area, which reflect the unique aspects, ecology, and stories of that place, and be re-evaluated at set intervals to ensure actions are effectively progressing towards the objectives.

School of manini, an important herbivore species

Photo: Jeff Milisen

What is a Marine Management Area?

A marine management area (MMA) is a designated area of ocean and shoreline with specific rules that define how people can use it. MMAs are important tools that benefit and replenish nearshore ecosystems and, in some cases, such as in areas that greatly restrict extractive uses, provide spillover of adult individuals to adjacent areas, provide connectivity at local, regional, and island scales by seeding larvae and create a refuge for the largest reproductively mature individuals, which disproportionately contribute to the next generation. Each MMA has its own set of rules which may include fishing regulations, such as restrictions on gear type, size and catch limits, or take of particular species. Rules may also limit or prohibit other activities, such as ocean-based tours, anchoring, vessel transit, and other recreational, commercial, or extractive activities. MMAs may include any type of habitat (e.g., coral reefs, estuaries, anchialine ponds, etc.), as well as any type of marine life (e.g., mammals, fishes, invertebrates, algae, etc.). Proposals for new MMAs may arise from the Holomua process, as identified by the Navigation teams and communities, as part of the suite of management tools for nearshore resources.

Two of the main types of MMAs[6] in the nearshore area of the main Hawaiian Islands that DAR manages include Marine Life Conservation Districts (MLCD) and Fisheries Management Areas (FMA). MLCDs were designed to conserve and replenish marine resources by limiting fishing and other consumptive uses. FMAs include regulations for specific extractive uses and are typically defined by these uses. One type of FMA is the Community-Based Subsistence Fishing Area (CBSFA). CBSFAs promote place-based traditional Hawaiian fishing practices for subsistence consumption, community sharing, and restoring fisheries for future generations to continue living off the resources.

[6] Other MMAs include Fish Replenishment Areas (FRA), Netting Restricted Areas (NRA), Limu Management Areas (LMA), Harbors, Canals, Natural Area Reserves and Wildlife Sanctuaries managed by the Division of Forestry and Wildlife, and Kahoʻolawe Island managed by the Kahoʻolawe Island Reserve Commission.

FMAs may also regulate certain extractive uses, such as the Kahekili Herbivore FMA, which prohibits take of specific herbivore species such as rudderfishes (nenue), parrotfishes (uhu), surgeonfishes, and sea urchins to promote reef resilience and control the growth of algae that can smother reefs and limit their ability to regrow.

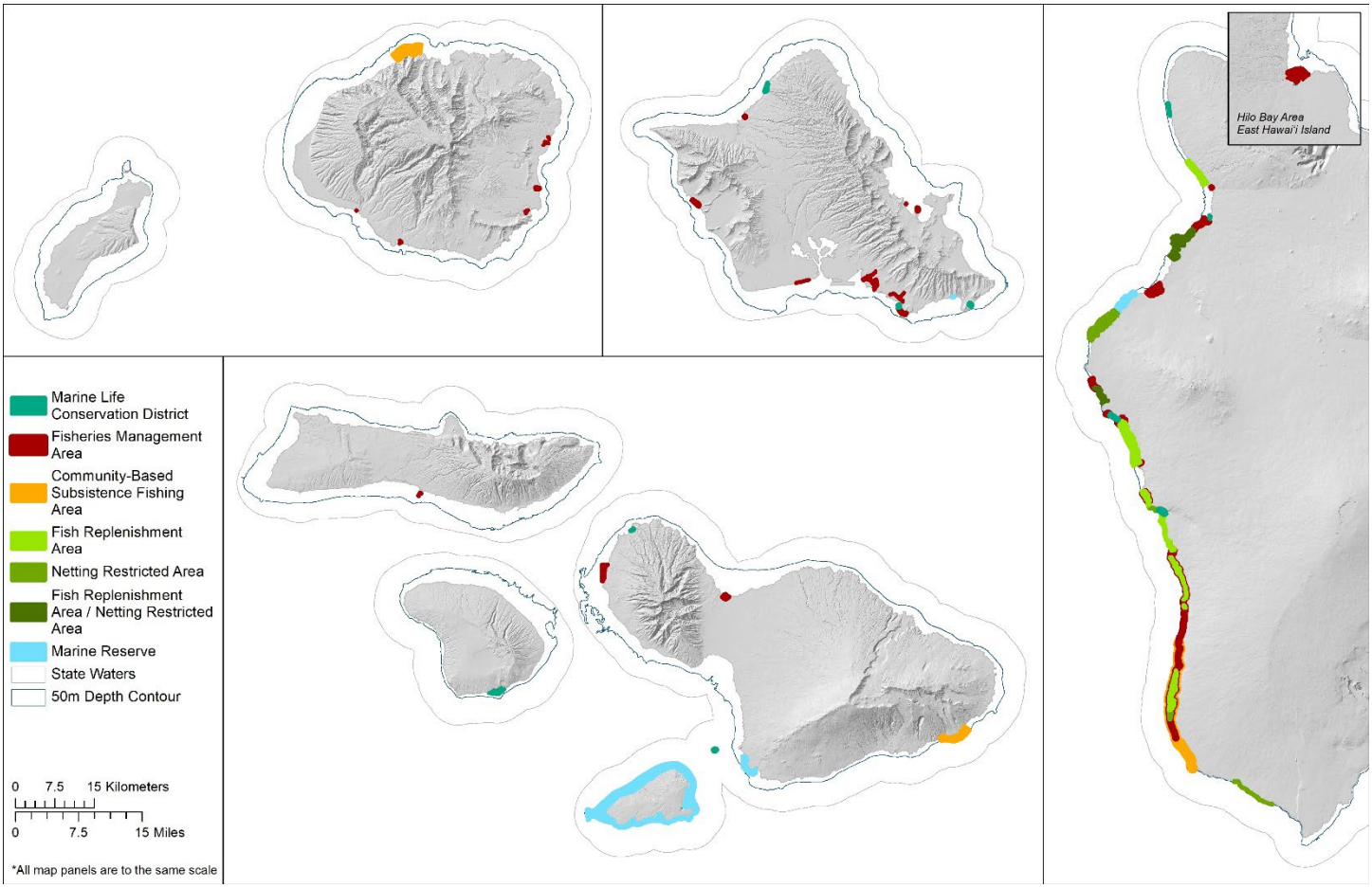


Figure 1: Existing marine management areas in the main Hawaiian Islands nearshore waters. Within the rule-making authority of the Division of Aquatic Resources, there are two main types of marine management areas: Marine Life Conservation Districts (MLCDs) and Fisheries Management Areas (FMAs). MLCDs are designed to conserve and replenish marine resources to the greatest extent possible by providing fish and other aquatic life with a protected area in which to grow and reproduce. The taking of any type of living material (fishes, eggs, shells, corals, algae, etc.) and non-living habitat material (sand, rocks, coral skeletons, etc.) is generally highly restricted, if permitted at all. Fisheries Management Areas are designed to address a variety of management concerns, including, in some cases, to address conflicts between different user groups. Within FMAs, there are several sub-categories of areas. Netting restricted areas and Fish Replenishment Areas are found within the West Hawai'i Regional Fishery Management Area (WHRFMA). Netting restricted areas prohibit the use of lay netting but allow all other types of fishing, including fishing methods using nets. Fish Replenishment Areas currently prohibit aquarium collection to replenish targeted species in other areas within the WHRFMA. Community-based Subsistence Fishing Areas (CBSFAs) are a sub-category of FMA and are designed to protect and reaffirm fishing practices customarily and traditionally exercised for purposes of native Hawaiian subsistence, culture, and religion, where the communities that have proposed CBSFA designation become co-managers of the area and adaptively manage the area with DAR. A marine reserve is an area where all fishing is prohibited. There are several marine reserves statewide including the Ka'ūpūlehu Marine Reserve within the WHRFMA, 'Āhihi-Kīna'u Natural Area Reserve on Maui managed by the Division of Forestry and Wildlife and the Kaho'olawe Island Reserve.

Additional place-based planning management tools

There are several management tools used in the Place-based Planning pillar. Part of management planning for each place includes considerations of the multi-faceted concerns or threats to the nearshore environment.

EDUCATION/OUTREACH: Education and outreach programs teach people about best practices based on the unique geography, oceanography, marine life, and traditions of each place. This helps visitors and locals to have a better understanding and perspective for each place and how to best respect the area and its natural resources.

SIGNAGE: Proper regulatory and informational signs keep people informed. With various MMAs and different regulations in place across the state, signs help to let people know what applies in a specific place. Proper signs alert people of best practices and potential hazards of the area so that they can engage with the area safely and responsibly.

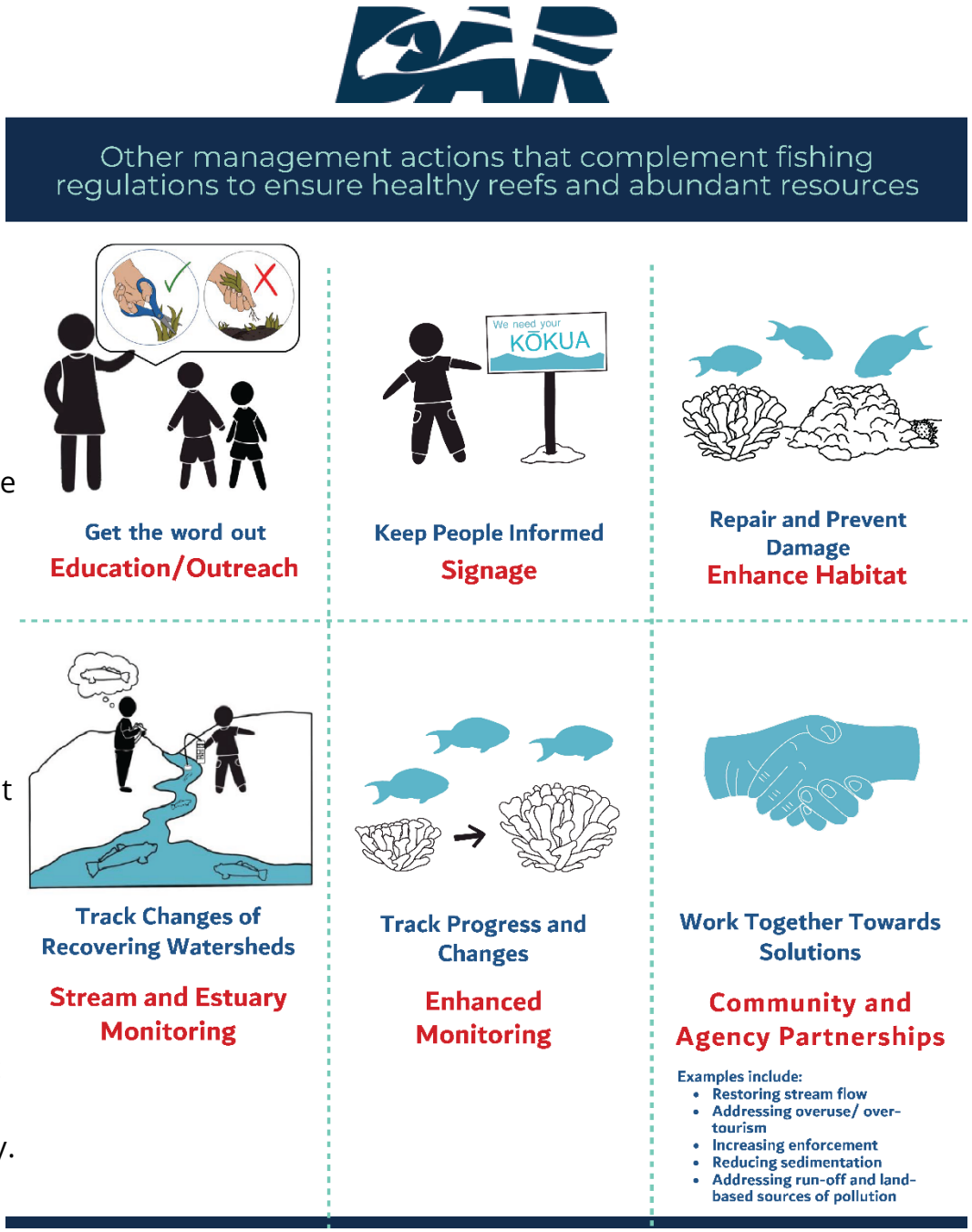


Figure 2: Non-regulatory management tools that support the four pillars of Holomua: place-based planning, pono practices, monitoring and restoration to promote healthy reefs and abundant resources.

COMMUNITY AND AGENCY PARTNERSHIP:

Effective management requires more than just one government agency – it requires a team. Different organizations and agencies have different goals and jurisdictions, making coordination and collaboration essential to ensuring that management is holistic, effective and complementary.

Some areas are being actively stewarded and managed by community, organizational and agency partners. These places may not have additional regulations within a given boundary but focus on many other management tools, such as education, monitoring, and restoration. An example of one such area is the He'eia National Estuarine Research Reserve. Located in Ko'olaupoko, O'ahu, including stream, estuary, coastal and marine habitats of Kāne'ohe Bay, this reserve focuses on active restoration throughout the ahupua'a, and works with the community to engage in biocultural education and research of the various habitats and resources found within its boundaries. These management tools and stewardship help to promote sustainability for future generations and support the connections, culture and traditions of the area. Effective nearshore management will include application of different management tools and collaborations to account for unique place-based needs.

Community Talk Story Event on Maui

Photo: DAR

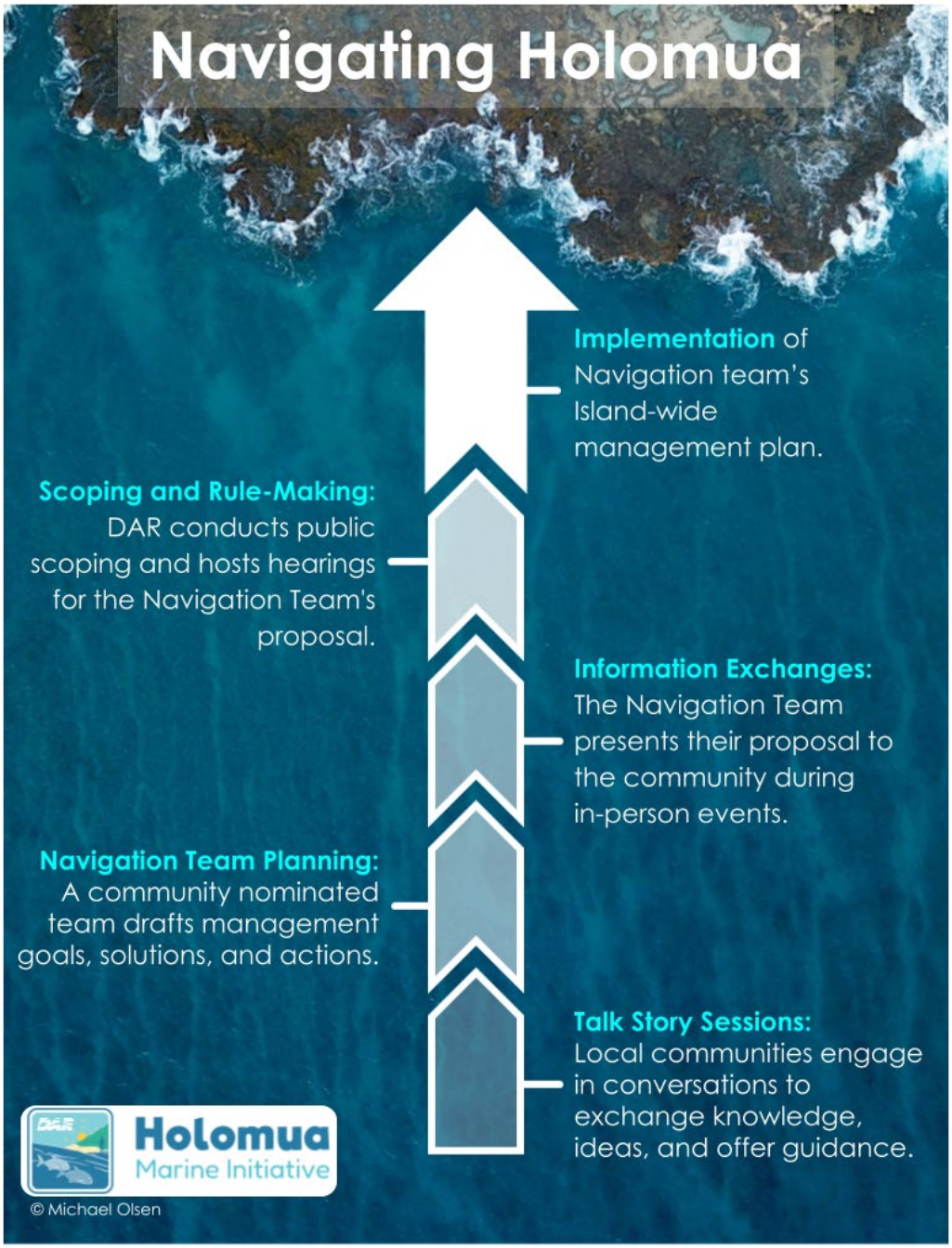
What are the next steps?

DAR invites partners and resource users across the state to help assess and improve the existing MMAs around each of the main Hawaiian Islands, and to work with us to identify and prioritize other areas in need of better management.

DAR will seek input to create a transparent and inclusive public process to move the initiative forward. This community engagement process will shape how DAR works with communities, fishers, cultural experts, scientists and other stakeholders to discuss the current state of the nearshore environment; the effectiveness of existing management strategies; and how to best co-create a cohesive management plan for each island.

Community Engagement Process

The community engagement process is designed to support willing communities through a framework to more effectively manage nearshore marine resources in collaboration with DAR and other partners. Part of this process is to empower voices across moku for each island to identify management concerns and develop prioritized solutions. Effective nearshore marine planning requires a comprehensive approach, and DAR recognizes that there are many issues that impact nearshore resources that originate on land and may not be within DAR's jurisdiction as an agency. However, by engaging with other government, non-government and community partners, we can work together towards holistic, science-informed, community-led solutions.



The community engagement framework is designed as a five-step process and is being tested as a pilot on Maui. DAR will continue to adapt the process as necessary to promote better engagement and participation, reflecting the diverse and unique

Place-Based Planning Key Objectives

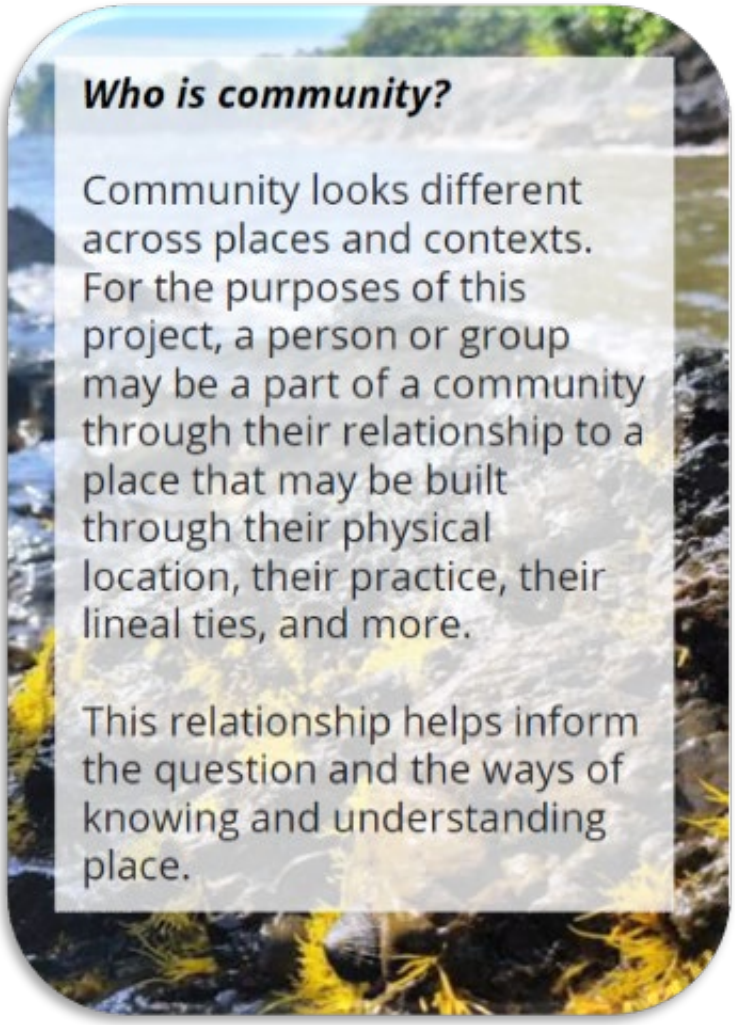
- Continue to expand community engagement opportunities to broaden participation and build relationships with communities across Hawai'i to strengthen collaboration in marine management.
- Develop and implement local, regional and island-scale management strategies where resource users are willing and interested to collaborate with DAR.

needs of different communities on different islands, as the Initiative progresses. DAR convened Maui Talk Story events to gather feedback from Maui residents, as the first phase of the process. The Maui Navigation Team will then come together in a series of meetings to draft a proposed list of management strategies. Once this proposal is reviewed by the Holomua Advisory Network, a hui of interdisciplinary experts, the Maui Navigation Team will present it back to the broader Maui community for input during Information Exchange sessions. From there, the Maui Navigation Team will incorporate this feedback and further refine the proposal before preparing it for DAR to bring forward for public scoping at both the island- and state-wide level. This process was designed to ensure that DAR receives feedback on the proposal at various stages of development. The final proposal will be shared for feedback at different scales from local Maui communities to resource users statewide, prior to being proposed for the Chapter 91 rulemaking process, with multiple opportunities for participation along the way.

Building the Navigation Team

The Navigation Team is a team of Maui residents representing various fisher and ocean user groups across the island, that are tasked with identifying and creating a management proposal of priorities and actions. For the Maui navigation team, actions focused on both regulatory (enhanced fishing rules) and non-regulatory (watershed restoration), monitoring, education, and outreach. During the Maui Talk Story sessions, local residents identified desired qualifications and ideal guidelines for composition and representation of Navigation Team members to ensure fair

representation to reflect the diverse communities of Maui. The Holomua Team requested that attendees nominated individuals that fit these qualities and would be up to the task. Nominees were then contacted to submit a letter of interest and assess eligibility. To promote transparency and limit bias, this refined list was given to an independent, three-person selection committee, whom made the difficult and final decision on the original 20-member Island Navigation Team. All of the information and submitted responses were carefully reviewed by the selection committee to ensure that the composition of the Maui Navigation Team matched the recommendations by the Maui community during the Talk Story events, which included ensuring that each moku, various ocean users, and different types of fishers were represented as part of the team. This team was then provided scientifically informed materials on the status and management of nearshore resources in Hawai'i to reference, along with their personal expertise to collaboratively identify management priorities within each of the four pillars and carefully consider the best tools in the toolbox to address these issues. This approach can be tailored to other regions as the community engagement process advances.



The Maui Pilot Process is just the beginning for the Holomua Marine Initiative. Once completed, DAR will review the lessons learned from the process and adapt it for communities and regions on other islands willing and interested in collaborating with DAR. Many communities across Hawai'i have expressed interest in engaging with Holomua and are eager to start the process.

Efforts within the Place-Based Planning pillar for the Holomua Marine Initiative focus on community engagement through process, participation and implementation. Building relationships and trust among resource users across the islands is a priority and a necessary first step in developing a transparent, holistic and constructive process. As relationships and trust strengthen, so too will the process and in turn, the process will become more effective and inclusive.

Pono Practices

What are Pono Practices?

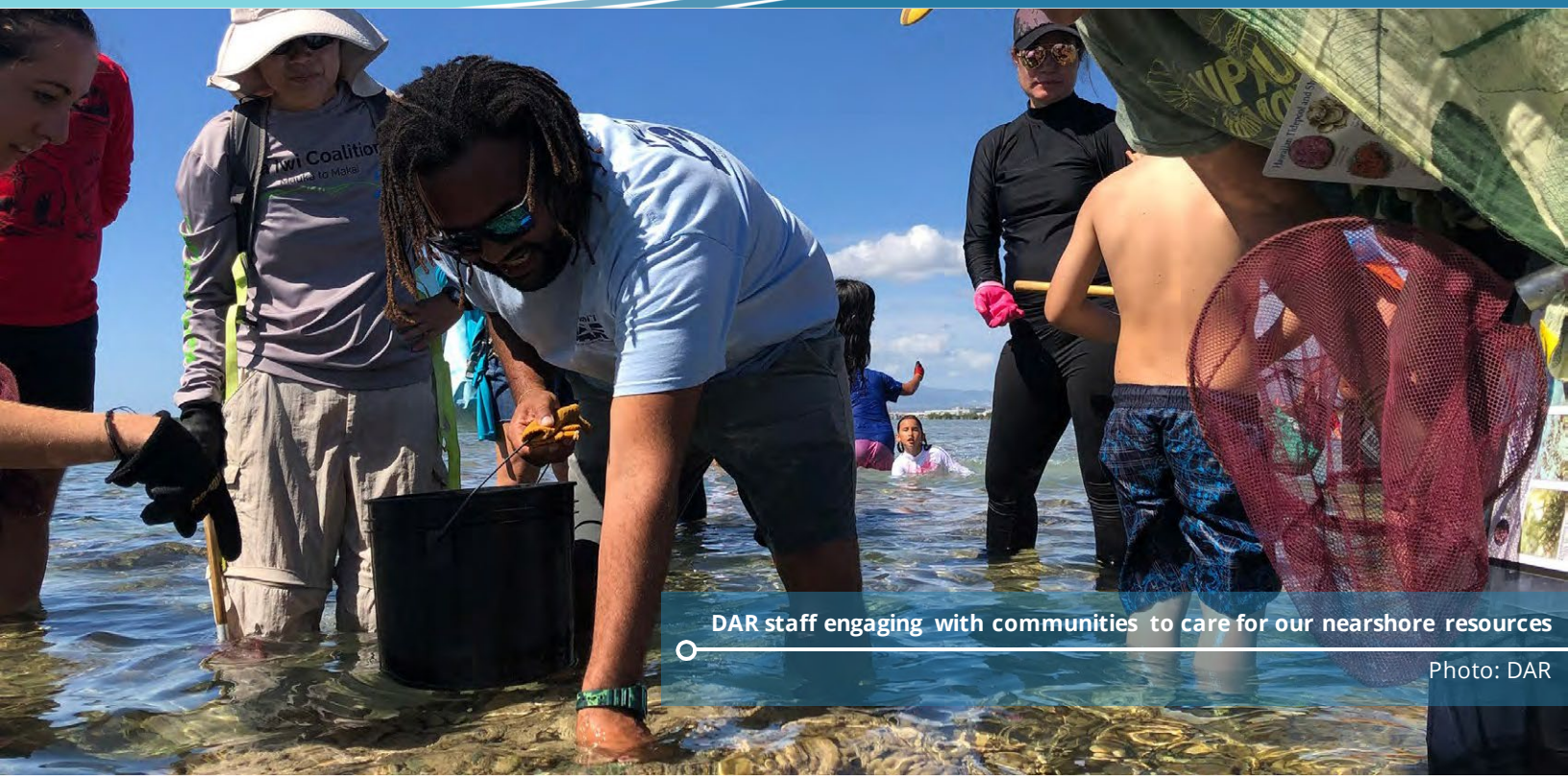
Pono Practices refer to the set of tools used to manage human activities in ways that ensure abundance for present and future generations. In ʻŌlelo Hawaiʻi, one of the meanings of pono is "righteousness." Pono practices call upon people to do what they feel is proper and morally correct regarding marine resource use. Pono also means "balance" and refers to finding the balance in our relationships with other things, places, and people to promote sustainable use and stewardship for future generations.

Throw-net fisher

Photo: DAR

Many of our kūpuna (elders) tell stories of pono fishing practices from generations ago. Rules based on traditional ecological knowledge were codified in kapu (prohibitions) and kānāwai (laws and regulations) through social institutions in Hawaiʻi for almost a millennia. Profound knowledge gained from lifetimes of observation was passed through families, creating the notion of kuleana (responsibility), to take only what is needed in order to ensure that people could rely on these resources for generations to come. This sense of kuleana and knowledge inspired fishers to follow customary rules that were shared from one generation to the next. As our islands' populations have grown and changed, resource use and governance guided by traditional knowledge was overrun by an influx of detrimental impacts (both social and ecological in nature) causing nearshore resources to noticeably decline. Too many of us are simply unaware of how our actions negatively impact the nearshore environment.

All people in Hawaiʻi, regardless of how often we interact with the ocean, have a role to play in protecting our marine resources. Holomua encourages the public to understand we all have an impact on nearshore waters and accept it is our responsibility to minimize these impacts. We need to be pono about how we use our marine resources, only then can we continue to enjoy them for years to come.



DAR staff engaging with communities to care for our nearshore resources

Photo: DAR

Why are Pono Practices important?

Pono Practices pillar aims to increase responsible behavior to minimize the impact of human activities in our nearshore waters through a mix of education and outreach, strengthened enforcement, and improved regulations.

EDUCATION AND OUTREACH: Education and outreach programs encourage people to make responsible decisions by improving awareness of our unique resources and how best to interact with and care for them.

FISHING REGULATIONS: Rules aimed at mitigating the impacts of human activities provide clear standards and instructions concerning what can and cannot be done in marine spaces to address the threats and challenges facing our nearshore waters today and promote sustainable harvest.

ENFORCEMENT: Promoting compliance and upholding conservation rules are essential to increase management effectiveness and improve the overall health of nearshore environments. The Division of Conservation and Resources Enforcement (DOCARE) is the law enforcement agency of DLNR. DOCARE's mission is to promote the safe and responsible use of Hawai'i's natural resources. As such, DOCARE is responsible for enforcing regulations that serve to protect, conserve, and manage Hawai'i's unique and limited natural, cultural, and historical resources.

Where are we now?

EDUCATION AND OUTREACH: DOCARE staff, along with DAR education specialists, and partner organizations work across the state to promote awareness of fishing rules and management programs. Their work supports management efforts, builds and strengthens relationships with communities, and increases compliance with rules to protect Hawai'i's resources.

Programs like DOCARE's Makai Watch offer a collaborative opportunity for residents and community-based organizations to be involved with marine resource management by promoting rule compliance through education and careful observations. Makai Watch volunteers are specially trained to identify and report natural resource rule violations to DOCARE. There are currently eight Makai Watch programs statewide. DAR encourages participation in this program as a key component of implementing current and future management plans.

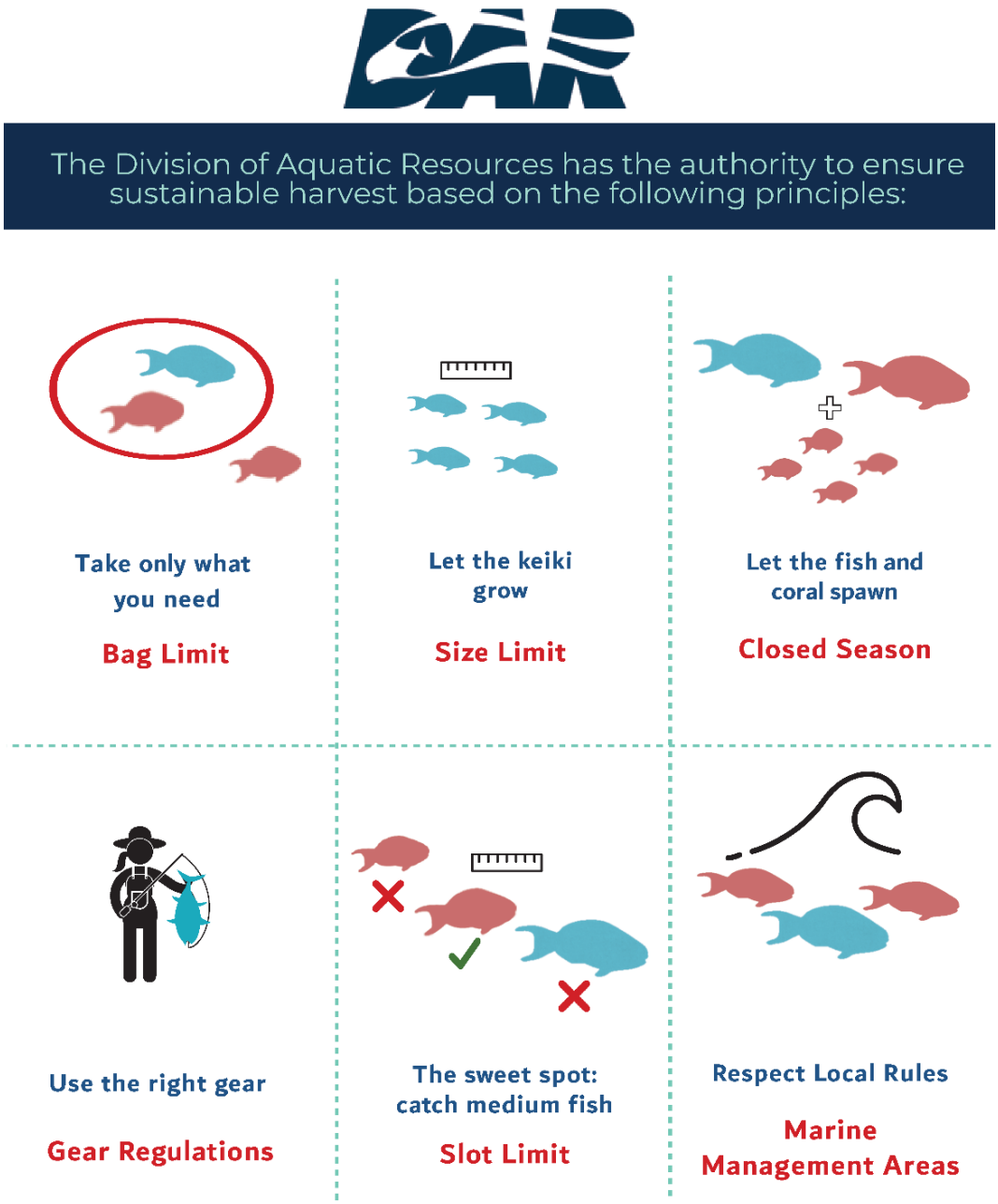
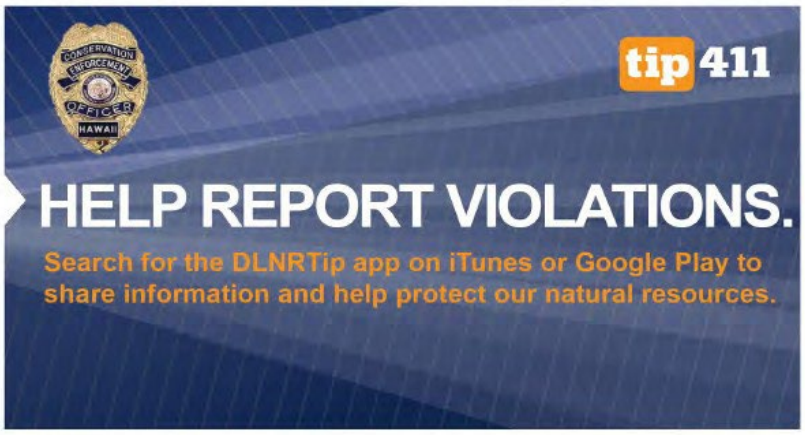


Figure 3: Examples of fishing regulations

FISHING REGULATIONS: Existing statutes and administrative rules regulate the take of nearly 40 species of nearshore fishes and

invertebrates, including corals, in different places throughout the state. These rules include size limits, closed seasons, bag limits, seasonal restrictions, gear restrictions, and permits. For a full list of current fishing regulations, see http://dlnr.hawaii.gov/dar/ fishing/fishing-regulations. These rules were developed to ensure that highly valued marine species can survive and reproduce, replenishing the population. Some rules are informed by traditional Hawaiian management practices. Just like in a fisher's tacklebox, there are a variety of "lures" that fisheries managers can deploy to fulfill a specific purpose (Figure 3). It's important that managers, in collaboration with stakeholders and community members, select the right tool for the job and adapt accordingly if it's not fulfilling its intended purpose.

ENFORCEMENT: DOCARE officers patrol state lands and waters, providing information about natural resource regulations, issuing warnings and citations for violations, and pursuing appropriate penalties in cooperation with prosecutors. Officers patrol up to three nautical miles offshore and, given the number of Hawai'i residents and visitors that use nearshore waters, allocate most of their time to enforcing rules for nearshore waters.



DOCARE also responds to 'DLNR Tip App' reports from the public, where people can report perceived rule violations from their smartphones. The app can be found in both the Google Play Store and the Apple App Store by searching DLNRTip. The tip app has been updated to streamline the reporting process. Working together with DLNR, communities can increase protection of their natural resources.

DOCARE is working to increase its enforcement capacity by filling officer vacancies through its Academy and Field Training Program. It is also providing updated training on marine rules, and ensuring it has enough vessels, vehicles, and equipment to carry out enforcement responsibilities. The DOCARE training academy graduated its first class of six officers in 2018, 12 officers in 2020, 41 in 2022. DOCARE currently has 25 cadets enlisted in the 2024/2025 DOCARE Academy 2024, 12 of which will be dedicated to marine patrol units. These officers' primary duties will include vessel-borne marine enforcement performed aboard existing DOCARE vessels.

What are the next steps?

EDUCATION AND OUTREACH: DAR will improve our education and outreach efforts through the Holomua Marine Initiative. DAR aims to share the latest scientific knowledge about our oceans and what we can do together to ensure their sustainability. Specifically, we will expand engagement with fishers by using innovative approaches to promote participation. This will involve seeking feedback throughout the rulemaking process, increasing our presence on social media, and working on collaborative fisheries monitoring projects.

FISHING REGULATIONS: Hawai'i's rules for fishing and other nearshore activities must be updated to address today's resource uses and environmental conditions, including:

- **Support for island-wide, regional or place-based regulations:** In the latest statewide fisheries rules making process, many resource users highlighted the unique conditions and harvesting practices on different islands and regions. The Island Navigation Team process will allow community members to propose regulations for marine resources (like fish, corals, 'opihi, and limu) specific to each island, taking into account the specific management priorities of each area.
- **Need for increased enforcement:** Certain rules, such as size restrictions, bag limits, and seasonal closures, can be challenging to enforce and prosecute if violations occur. DOCARE requires high-quality data and up-to-date technology to identify locations and times where violations are more likely to happen, so they can deploy officers and resources effectively. Significant support for various actions to expand authority, provide new tools, and increased officer capacity is crucial for successful enforcement near the shore.
- **Addressing Environmental threats:** Hawai'i faces increasing threats and challenges (e.g., climate change, coral bleaching, land-based sources of pollution, increased demand from a growing population and tourism industry) that are impacting our nearshore waters. Existing rules must be re-evaluated to address these intensifying threats.

DOCARE officers in patrol

Photo: Dan Dennison

ENFORCEMENT: DOCARE aims to expand its capacity by hiring more officers and setting up Marine Enforcement Units. These units will receive specialized training and equipment for conducting marine patrols. Additionally, DOCARE intends to extend the Makai Watch program to involve more communities across the state. Furthermore, the organization plans to enhance the analysis of enforcement data to better allocate enforcement resources strategically. This data will assist in directing the efforts of new recruits as they join DOCARE.

COLLABORATIVE MANAGEMENT: Fishing regulations alone will not ensure healthy reefs and abundant resources. The latest research shows that effective management of wastewater inputs and sedimentation are essential to maintaining healthy coral reefs in the future. DAR is committed to work with partners and resource stewards to address these other human impacts along with fisheries management strategies to promote sustainability and abundance of our nearshore resources.

Pono Practices Key Objectives

- Update communications plan to provide better outreach to fishers about upcoming and amended regulations and community engagement processes (how to get involved and provide feedback)
- Continue to enhance compliance by expanding the Makai Watch program each year to include more communities and add capacity through additional program coordinators, with one per district.
- Continue to increase marine enforcement capacity each year through supporting the DOCARE Academy training program with a focus on Marine Patrols and providing information on marine science concepts, regulations, licenses, permits, and gear.
- Continue to support DOCARE through securing additional funding sources to promote the growth and expansion of the DOCARE Academy and enforcement

Throughout the Holomua Marine Initiative, communities will be invited to provide local knowledge and share priorities to help create fishing regulations and other management actions for nearshore ocean uses and impacts that will benefit their nearshore resources.

Monitoring

What is Monitoring?

Monitoring refers to the observation and collection of information and measurements to detect changes and progress of something over time. Many types of monitoring are needed to understand ecosystems and the impacts of changing conditions on those ecosystems. Specific measurements or observations that reflect the components and conditions of an ecosystem are called indicators. A broad range of indicators are used by DAR to track and measure the status of nearshore resources.

Coral bleaching event in 2015, Molokini Crater

Photo: Darla White

There are many different methods used for monitoring the nearshore environment. Some methods are designed to observe and record long-term information and trends such as underwater visual surveys, while other methods help to capture the impacts of a distinct event, such as coral bleaching or unintentional vessel grounding.

Even with the range of existing monitoring strategies, there is a need for increased monitoring to make informed management decisions. Holomua aims to expand DAR's current monitoring efforts and partnerships. A comprehensive monitoring program that includes biological and social indicators collected by DAR and a range of partners will measure how management actions meet ecological objectives, as well socio-cultural objectives, those that contribute to the well-being of the people using marine resources. Holomua will utilize a comprehensive approach to data collection by integrating kilo (traditional observation practices), community-based monitoring, and fisher-dependent surveys into DAR's existing monitoring program.

Why is monitoring important?

Routine monitoring allows managers to see how the health of a nearshore ecosystem or resource changes over time. Many of our marine ecosystems and resources have been on the decline due to human-induced impacts such as unsustainable fishing practices, introduction of invasive species, land-based pollution, and habitat degradation. Long-term monitoring projects allow us to track reef health and fish populations, and see how these change over years, and even decades, to inform management actions. Monitoring also helps to evaluate the effectiveness of rules and management efforts around the state. All of this information is important to be able to make informed management decisions.

For example, monitoring in Kahekili, Maui identified a long-term decline in coral cover, changes in reef complexity (habitat), fewer herbivorous fish and overgrowth of invasive algae. To address these concerns, the Kahekili Herbivore Fisheries Management Area was created in 2009. The rules for this area prohibit feeding fish and the killing or removing of important herbivore species, including parrotfishes, surgeonfishes, chubs and sea urchins, although fishing for other species is still allowed. Herbivores play a critical role in marine ecosystems by feeding on algae, thus providing conditions for coral to thrive. It was the first time in Hawai'i where fisheries management was used as a tool to control invasive algae and improve overall reef resilience and recovery.

Male uhu, a key herbivore for Hawai'i's reefs

Photo: Jeff Milisen

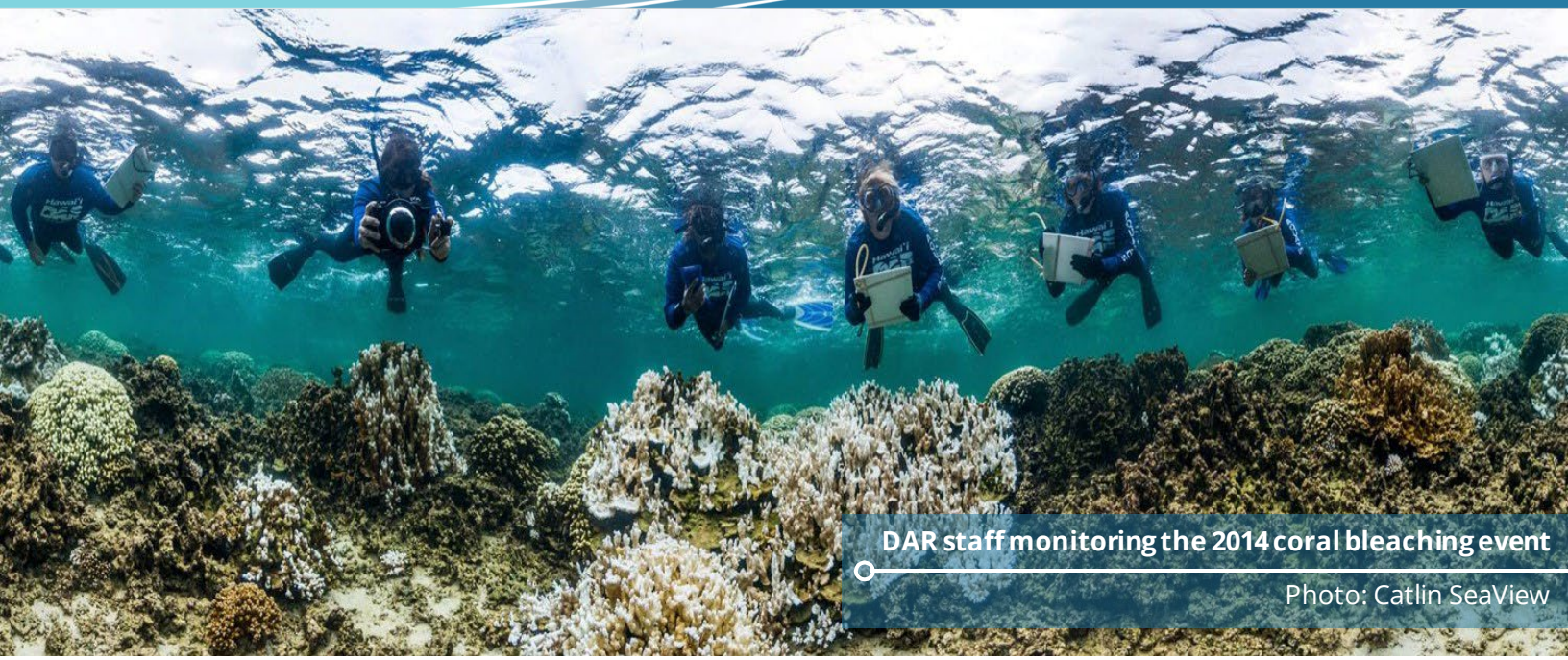
Seven years after the FMA was established, monitoring showed significant increases in biomass (more and larger fish) for parrotfishes and surgeonfishes in the Kahekili FMA. Parrotfish biomass increased by 331% and surgeonfish biomass by 71%. Despite the initial increase in parrotfishes and surgeonfishes, there were significant declines in parrotfish and surgeonfish biomass, coral

cover and crustose coralline algae between 2018 and 2021.[7] The driver of these changes is unknown, but given the rapid and significant response to herbivore populations and the reef after the rules were initially implemented in 2009, and that the Beach Park habitat closest to shore with the easiest access showed the greatest recent declines, this trend may be due to poaching or represent various levels of compliance. It is clear that continued compliance is critical to maintain the high levels of herbivores and positive trends in reef condition overtime. Long term monitoring at this site is helping DAR to assess the effectiveness of the 2009 rules on an ongoing basis.

Holomua acknowledges that relevant information necessary for effective management goes beyond scientific data and seeks to incorporate multiple sources of ecological knowledge into the decision-making process. For example, combined long-term observations and traditional knowledge by kūpuna (elders) and monitoring efforts by community members and partner organizations documented a decline in once-abundant marine resources in Hā'ena, Kaua'i due to overharvesting, recreational overuse, and changes in land-use. In response to this decline, the community and various resource users established a CBSFA, merging the best readily available science with Hawaiian traditional practices, to restore the nearshore environment. The rules in place prioritize subsistence harvesting and cultural fishing practices. Ongoing monitoring of this place will inform a long-term management to ensure that the area can provide fish for the community for future generations.

Ecological monitoring is important to better understanding the current status of our marine resources. However, many monitoring assessments focused on the ecological components of nearshore ecosystems fail to consider the impacts of nearshore management on local and indigenous communities, or their connection to place and their environment. The creation of management actions, including regulations, often results in greater inequality towards indigenous and local communities who fish for subsistence or practice small-scale fishing and harvesting. To create a more holistic approach, frameworks for coastal resource management need to include social, cultural, and ecological factors in the planning, monitoring and evaluation of management to balance the needs of communities with the sustainability of the resources. The Holomua Marine Initiative recognizes the importance of socio- cultural principles, which will allow us to identify how changes in management or the environment affect local communities who depend on those ecosystem services. Including these socio-cultural principles and indicators in DAR's future monitoring efforts will help to produce a more comprehensive perspective on the effectiveness of nearshore management.

[7] NOAA Pacific Islands Fisheries Science Center. Kahekili Herbivore Fisheries Management Area: 2022 Results. (2023).



DAR staff monitoring the 2014 coral bleaching event

Photo: Catlin SeaView

Where are we now?

DAR's current monitoring programs include:

- Status of reef fish populations (e.g., are there more and bigger fish or fewer and smaller fish?)
- Fishery catch and effort information through commercial marine license fishing reports
- Recreational fishery catch and effort data through shoreline Hawai'i Marine Recreational Fishing Surveys and creel surveys
- Status of mobile invertebrates (such as urchins and sea cucumbers)
- Health of corals (health, impacts of bleaching events and unintentional ship groundings, reef habitat/structure mapping)
- Status of aquatic invasive species (AIS) (how can we prevent, detect, rapidly respond and manage these threats to our aquatic resources)
- Status of management's effect on communities' connections to nearshore places through socio-cultural monitoring of existing MMAs.

DAR maintains partnerships with agencies and organizations such as the National Oceanic and Atmospheric Administration (NOAA), the National Park Service (NPS), The Nature Conservancy (TNC), Conservation International (CI), and the University of Hawai'i. To fully harness the collective understanding of data from across these organizations, the Hawai'i Monitoring and Reporting Collaborative (HIMARC) was formed in 2016.

DAR and other HIMARC partners work together to maintain a common database of underwater data that is used to examine the condition and trends of ecological indicators. The combined data provides a comprehensive view of the current condition of Hawai'i's nearshore ecosystems and what reefs should look like that can be used to evaluate the health of the nearshore environment and inform management decisions. Additionally, the combined data can be used to inform future monitoring, and to evaluate conditions as they change due to natural drivers, human impacts, and management actions.

Bleaching occurs when corals are stressed, often from extreme heat waves that last for several weeks or even months. Hawai'i has experienced multiple bleaching events over the last ten years, which has resulted in widespread coral mortality throughout the state. During and after these events, DAR closely monitors the condition of the reefs to determine the extent of the impact. DAR created a coral bleaching recovery plan to address the increasing frequency of these events.

DAR participates in the Hawai'i Marine Recreational Fishing Survey (HMRFS), a program implemented by NOAA fisheries to gather non-commercial fishing data from fishers. Most non-commercial fishing in Hawai'i occurs recreationally or for subsistence. The total number of non-commercial fishers largely outweigh the number of licensed commercial fishers and HMRFS provides an opportunity to capture this important data source. HMRFS informs estimates of total catch and effort by species, fishing mode, and fishing area.

The largest and oldest dataset in DLNR-DAR's fisheries data collection is the commercial fishing report. These reports have been collected, processed, and archived continuously since 1948. Fishery managers rely on the data to make recommendations and render decisions to maintain sustainable fisheries. Fishers who complete and submit accurate commercial fishing reports on a timely basis are critical partners in fisheries management with the collective purpose of making sure that we have fish for future generations.

In addition, DAR relies on a growing number of community-based monitoring programs that provide valuable information about water quality, reef health, and resource status. DAR looks to community members who document their observations and catch, including spawning events and seasons, moon phases, tidal changes, movement patterns, and migrations of marine species. DAR works with fishers who participate in biosampling with scientists to provide information on age, size, growth, and sexual maturity of their catch. DAR staff liaise with community representatives to learn about monitoring interests and priorities, assist and advise when needed, and offer guidance about how to ensure data are captured in ways most useful to state managers. Holomua will support the co-creation of place-based, community-driven

monitoring efforts in new and existing MMAs, including responding to emerging monitoring needs. Holomua is adaptive and works with academic and research organizations to support additional specialized research and monitoring projects, as identified through these community-driven efforts.

Starting in 2022, DAR began monitoring socio-cultural indicators that were identified and developed by community leaders from across Hawai'i in a series of collaborative workshops. These indicators encompass four categories: Place-based Knowledge and Education; Physical, Mental and Spiritual Well-being; Community Relationships, Engagement and Commitment; and Efficacy and Equitable Governance. DAR is currently monitoring these indicators in existing MMAs on O'ahu and plan to expand effort to other islands soon. Since this is a new monitoring program and method for DAR, efforts will be refined and adjusted as needed.

Monitoring Key Objectives

- Develop monitoring plans to assess management objectives at the island scale, including both fisheries independent and dependent data collection.
- Develop implementation and monitoring plans for each island to evaluate management effectiveness of proposals that are developed through the community engagement and Navigation Team process.
- Continue to expand the socio-cultural monitoring program, by establishing teams and monitoring plans to examine management effects on the connections communities have with nearshore places.
- Improve communication and sharing of monitoring data and results through reports, infographics and outreach opportunities to promote a collective understanding around how monitoring informs management decisions.

What are the next steps?

Through Holomua, DAR plans to increase monitoring capacity, as well as grow and strengthen community monitoring partnerships. Increased capacity will help to:

- Set clear and meaningful reef health indicators
- Increase monitoring coverage in areas currently lacking data, especially in areas most affected by human impacts.
- Continue to fill data gaps for data-limited species by supporting collaborative monitoring and research and increase ability to track the status at the species level for those prioritized for management
- Collaborate with fishers to conduct research and help collect catch and life history information

- Ensure that data is available to evaluate existing and new management actions at regular intervals
- Integrate socio-cultural indicators and priorities of local communities into monitoring
- Incorporate multiple strands of knowledge, including kilo, community-based monitoring findings and traditional knowledge, for the most holistic understanding of our resources
- Make informed and adaptive management decisions

The Holomua Marine Initiative strives to strengthen monitoring efforts that not only encompass the biological conditions of nearshore waters, but their social and cultural value to communities as well. Through expanded partnerships with government agencies, non-governmental and community organizations, DAR aims to foster long-term collaborative monitoring programs informed by ecological and socio-cultural criteria. Monitoring programs will be guided by indicators aligned with specific social, cultural, and ecological objectives of management strategies for each island. These partnerships will help ensure that we collectively take action toward effective island-scale, regional and place-based management of Hawai'i's nearshore waters.

Monitoring Survey diver

Photo: Jeff Milisen

Restoration

What is Restoration?

The Restoration pillar is focused on protecting Hawai'i's nearshore marine ecosystems by preventing further damage and restoring degraded habitats and fisheries. This pillar refers to active rebuilding and replenishing actions to help improve nearshore habitats toward a healthier condition. Although we can't go back in time prior to any potential damage or human impacts, there are many things we can do collectively to mitigate or improve the condition and health of our nearshore areas. Also included in this pillar are efforts to prevent further degradation of nearshore ecosystems by reducing and eliminating threats such as invasive species introduction, degraded water quality, disease, and environmental damage.

DAR staff removing marine debris from coral reef

Photo: Norton Chan

Our nearshore waters face many threats that cause loss of habitat, impair ecosystem function, and jeopardize nearshore species. Global threats include warming ocean temperatures, changing ocean chemistry, sea level rise, increased frequency and intensity of storms, and altered ocean circulation patterns. Local threats include physical damage or destruction of reefs, unsustainable fishing practices, pollution, coastal development, invasive species, disease, and overuse and damage by visitors and residents.

Not all threats affecting the nearshore environment come from the ocean. Many threats to nearshore marine ecosystems come from land-based sources, such as sediment and pollution that enter the ocean from streams and run-off. Protecting nearshore marine resources requires that we manage our places from mauka to makai. Better management of the shoreline and adjacent mauka land activities can help reduce wastewater inputs, erosion, sedimentation, and land-based pollutants on nearshore reefs and can improve water quality for people, fish, and corals.

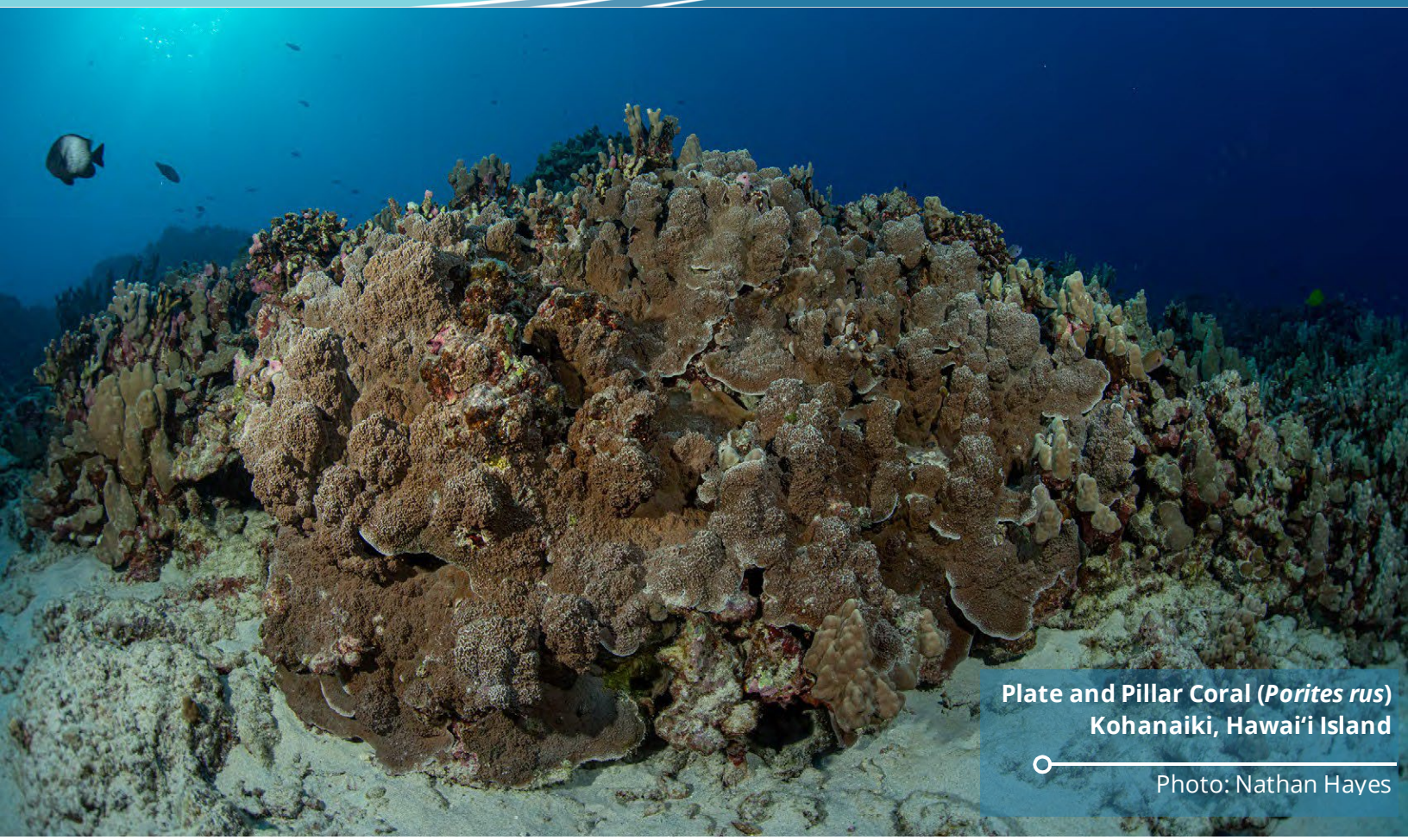


Plate and Pillar Coral (*Porites rus*)
Kohanaiki, Hawai'i Island

Photo: Nathan Hayes

Why is restoration important?

Healthy marine ecosystems provide many benefits and essential services, referred to as ecosystem services, to the communities of Hawai'i. For example, healthy coral reefs help protect our shoreline from storms, by acting as a natural barrier between large waves and coastal homes, roads, schools and businesses. They also provide jobs and food. In a balanced ecosystem, there is a reciprocal relationship: when we take care of the ecosystem, the ecosystem takes care of us. It is our responsibility to steward the resources so that the ecosystem can continue to provide important goods and services.

Coral reefs are degraded by poor water quality—through pollution and sedimentation—and changing ocean conditions, like warming seas and ocean acidification. By preventing pollution, nutrient inputs, run-off and sedimentation to manage the impacts in strategic locations, we can help protect coral reefs and the essential benefits and services they provide. Although it is best to minimize or prevent damage from occurring, restoration projects focus on speeding up the recovery process once damage is done.

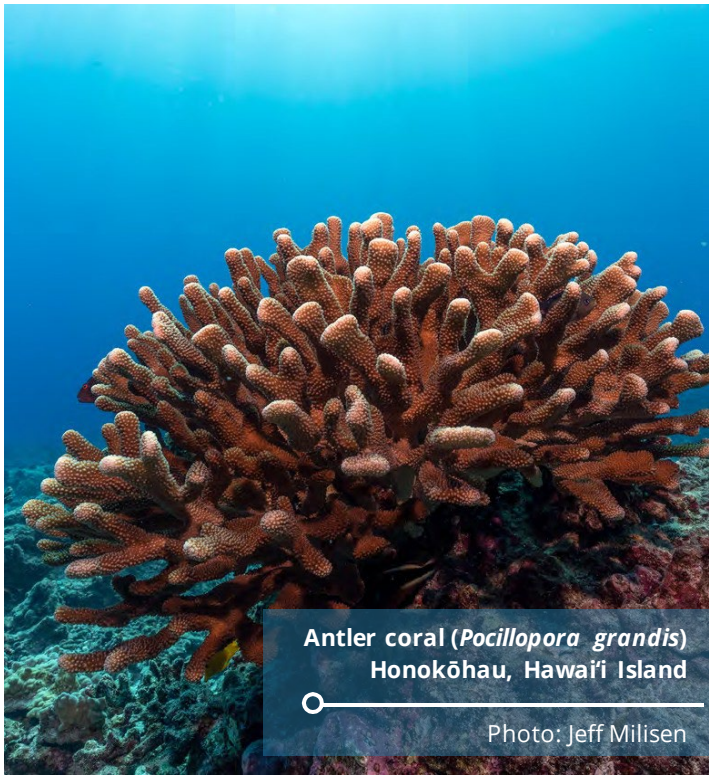
Forest and wetland restoration efforts can reduce damage to nearshore habitats by minimizing or eliminating sedimentation and land-based sources of pollution. These restoration approaches can improve nearshore water quality preserving ecosystem function and protecting valued species. Better water quality leads to increased availability of marine resources that support the health and well-being of the people that use these ecosystems as a resource.

Where are we now?

DAR leads multiple restoration projects and programs throughout the state and collaborates with partner agencies and organizations on restoration efforts. These restoration projects range from out-planting rare corals, restoring ship grounding sites, and native sea urchin biocontrol to control invasive species in nearshore waters. Here are some examples of DAR's restoration activities:

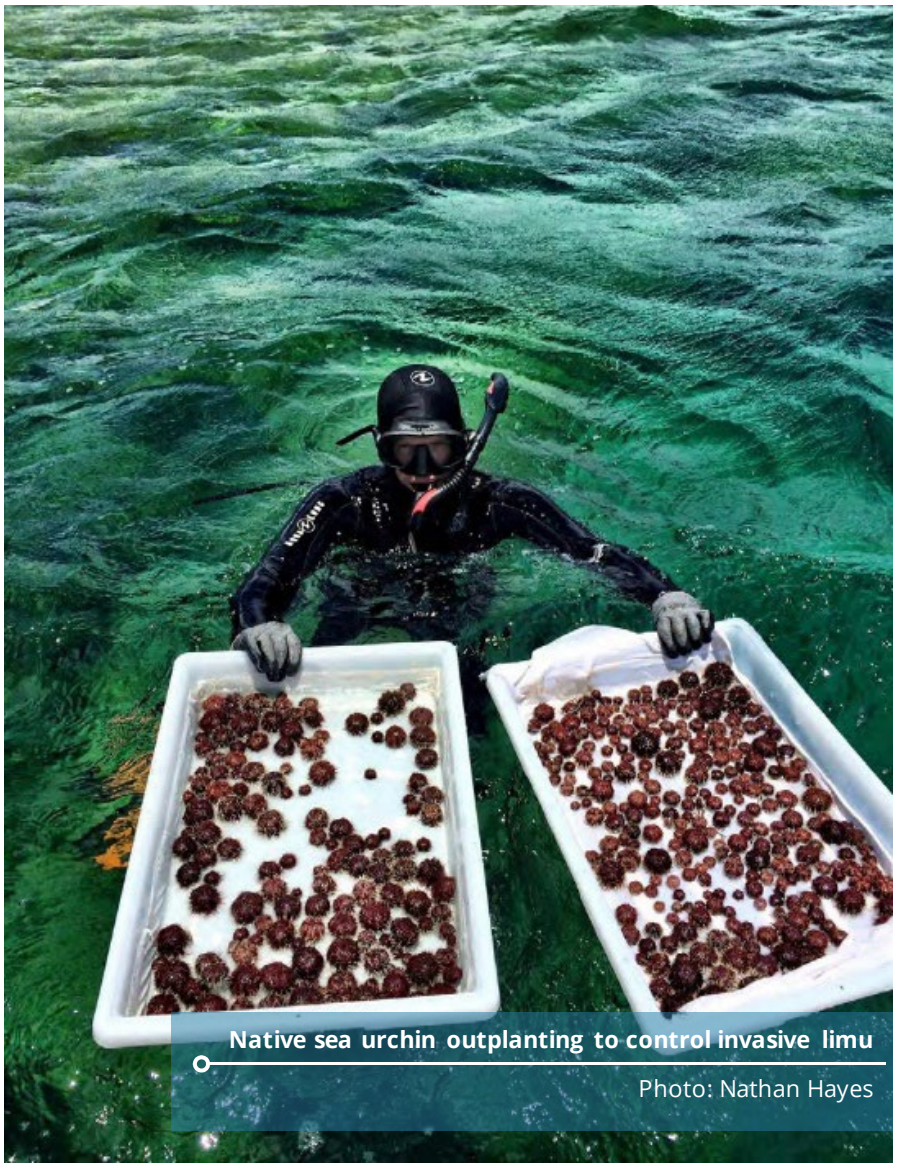
CORAL RESTORATION: DAR's coral nurseries are state-of-the-art facilities recognized globally for pushing the front lines of coral restoration technology. As a result, the nursery can grow approximately 220 large, module pyramids of coral each year for out-planting to speed recovery in areas where a reef has been damaged or destroyed. A vital part of Hawai'i's coral nursery is its Rare Hawaiian Coral Ark, which banks 50 species of rare corals. The Ark not only houses specimens that contain critical genetic information about coral species found nowhere else on earth, but also keeps them safe from natural and man-made disasters. The coral ark can help restore rare corals after bleaching or other devastating events.

WATERSHED PROTECTION AND RESTORATION: Streams support diverse ecosystems that depend on freshwater and play a critical role in maintaining productive watersheds and estuaries, and in doing so, help to sustain the cultural livelihoods of the islands. Healthy estuaries are needed for sustainable fishing, as the fish that use this resource as nursery and foraging habitats feed many local families. Wetlands and estuaries serve as the last stop before water enters the coastal marine ecosystem, acting as natural filters to improve water quality and a refuge for many species of juvenile fish.



Antler coral (*Pocillopora grandis*)
Honokōhau, Hawai'i Island

Photo: Jeff Milisen



Native sea urchin outplanting to control invasive limu

Photo: Nathan Hayes

DAR is contributing to multiple projects involving watershed and estuary restoration throughout the state, including in places like He'eia, Honouliuli, Kohala, and West Maui. Some of the projects include: removal of invasive fish species like tilapia from streams and estuaries; ungulate removal and protective fencing to prevent mauka degradation; collaborative monitoring of anchialine ponds to protect the rare and endemic species that live there; and monitoring fish communities after invasive plant removal. DAR works in partnership with conservation and community organizations to support and advance these restoration efforts. Expansion of these partnerships will increase the effectiveness and success management actions proposed by communities through the Holomua Marine Initiative.

AQUATIC INVASIVE SPECIES (AIS): A major threat to biodiversity in Hawai'i is invasive species, where species have evolved in isolation, causing Hawai'i to have a high rate of endemism but also be extremely susceptible to invasion. Competition, predation and habitat shifts caused by invasive species can add stress to ecosystems already encountering other pressures. One major pathway for marine introductions is shipping where alien species hitchhike on ships delivering goods to the Hawai'I island chain daily. In addition, aquarium releases, aquaculture, and aquatic plant sales pose a risk. DAR prevents species introductions primarily by conducting ballast water risk assessments on commercial vessel arrivals and supporting modern best practices to manage ballast water and hull fouling. The team is also working with other agencies and partners to drive policy directives to prevent species introductions via ballast water, hull fouling, and high-risk imports.

Once an invasive species is established, the effort and cost to manage AIS exponentially increases. Thus, prevention is key. Eradicating and controlling new introductions (early detection and rapid response) will help control the spread of non-native species to sensitive habitats. Controlling invasive species often involves direct removal of those species to manage existing populations where possible. One of DAR's most successful AIS control projects is managing invasive algae that was smothering coral reefs in Kāne'ohe Bay, by manually removing the algae and then out-planting native sea urchins for herbivore biocontrol. The native sea urchins are produced at DAR's Ānuenue Fisheries Research Center, minimizing pressure on already existing urchin populations.

Restoration Key Objectives

- Develop and expand processes to engage fishers to identify and implement restoration priorities for enhancing habitat.
- Develop plan for implementing restoration strategies identified by each island's Navigation Team and coordinate with partners to address inter-jurisdictional management actions.

What are the next steps?

Through Holomua, DAR aims to apply scientific and cultural knowledge to inform actions to protect our nearshore waters from further harm and enhance habitat recovery. Some examples of DAR efforts in habitat recovery include the out-planting of corals, re-attaching fragments of corals after ship groundings, designing artificial reef structures, and out-planting urchins to combat invasive algae species. Many of the threats to the ocean are results of, or intensified by, land-based actions. To help address these threats, as part of the Holomua Marine Initiative, DAR is coordinating with other government agencies, and other land-management organizations to revitalize a mauka to makai connection and engage in restoration projects that will enhance habitat and improve nearshore water quality. This type of management will bolster the success of community and agency efforts to protect and restore nearshore waters.

DAR invests significant resources into restoration, but efforts must increase to keep pace with growing threats, including climate change. Holomua Marine Initiative will expand, support, and strengthen DAR efforts to restore marine ecosystems, like estuaries and coral reefs by working with resource stewards to identify and prioritize management concerns and find actionable solutions. This work will require collaborations with communities and partner organizations to create and broaden restoration actions to effectively manage, replenish and protect our nearshore marine resources.

Public Participation: How can you get involved?

Community Engagement Process

The best way to get involved with the Holomua Marine Initiative is from the very beginning during the community engagement process for your region or island. Attend a Talk Story event in your area to help identify key management priorities for your island or serve as a Navigation Team member for a more active role in designing nearshore management. There will also be an opportunity to review the Navigation Team's ideas and proposal and provide feedback at Information Exchange Sessions following Navigation Team planning meetings, once they have drafted a proposal. The people of Hawai'i have diverse and deep connections nearshore resources. It's important to consider the feedback from many voices to develop strong management strategies that can account for the complexity of these needs and strike a balance between commercial, non-commercial, and conservation interests. There are a variety of ways to get involved at a local and regional level in developing management strategies for your island.

DAR Education Specialist engaging with community

Photo: DAR

Rule-making Process

Rules that regulate human activities in nearshore state waters are adopted, amended, and repealed through the administrative rulemaking process set forth in Hawai'i Revised Statutes (HRS) Chapter 91.

The "Chapter 91 process" requires DAR to seek public input and participation on any proposed rule change. Public input opportunities include public scoping meetings, public hearings, and BLNR meetings.

Public Scoping

Public scoping is an important opportunity for communities and interest groups to engage in meaningful discussions with DAR regarding new rule ideas or proposals. In communities throughout the main Hawaiian Islands, scoping can range from small talk story sessions to larger public meetings.

Although public scoping is not a legal requirement of the administrative rule-making process, DAR chooses to create public scoping opportunities throughout planning processes to include the ideas, concerns, and feedback of communities and interest groups. Public scoping meetings are an ideal opportunity for communities and interest groups to be involved in the early stages of rulemaking and provide input before rules are put into a formal proposed rule.

DAR engaging with community

Photo: DAR

Public Testimony and Hearings

Throughout the administrative rulemaking process, there are opportunities for interested parties to provide testimony on proposed rules. Testimony may support, oppose, or take no position on proposed rules and provide general sentiments along with specific recommendations amplifying support or opposition to parts of a particular rule. The Chapter 91 rule-making process provides a multi-step process that includes public notice and hearing requirements. DAR aims to ensure all interested individuals and groups are provided the opportunity to provide testimony, share data, personal views, and organizational positions orally and in writing. Notice for public hearings is published at least 30 days in advance.

Chapter 91, Hawaii Revised Statutes

DAR begins the formal Chapter 91 process by submitting a proposed rule package that proceeds through the steps outlined below to the Board of Land and Natural Resources. The first half of the process is designed to elicit public input, and the second half ensures that the proposed rules comply with all applicable State and Federal laws.

The steps in the Chapter 91 rulemaking process include:

1. Attorney General's office reviews the proposed rule package to ensure that the proposed rules fall within the statutory authority of the state agency and are consistent with all other existing state and federal laws.

2. DAR requests that the Chair of the BLNR approve the proposed rules to be presented at a bi-monthly meeting of the BLNR. At this meeting, DAR staff presents the proposed rule package. **The BLNR receives written and oral public testimony on the proposed rules.** The BLNR will either approve the proposed rules for public hearing or require changes to the proposed rules. If substantial changes are required, the process must begin from step one for the revised rule package.

3. If rules are anticipated to affect small businesses, DAR prepares a small business impact

statement (in accordance with Hawai'i Revised Statute 201M). The Small Business Regulatory Review Board (SBRRB) reviews the proposed rules to determine the impact on small businesses. The SBRRB makes a recommendation to the governor to approve or deny the request for a public hearing.

4. Following BLNR approval for public hearing, and review by the SBRRB if necessary, the proposed rules are submitted to the Governor for approval to hold public hearings. The Governor decides whether DAR may hold public hearings on the proposed rules.
5. Once allowed, DAR holds one or more public hearings to collect testimony in support or opposition of the proposed rules. Testimony can be submitted orally or in writing (via email or written letter). DAR compiles and analyzes the testimony for any necessary adjustments to the rule and develops a final rule proposal for the BLNR to consider.
6. Attorney General's office reviews the final rule package to ensure that the proposed rules fall within the statutory authority of the state agency and follow other existing state and federal laws.
7. DAR requests that the Chair of the BLNR accept the proposed rules to be presented at a bi-monthly meeting of the BLNR. At this meeting, DAR staff presents the final rule package, including a summary of the testimonies received through the public hearing process and any changes to the proposed rules. **The BLNR accepts both written and oral public testimony in support or opposition of the final rule package for consideration.** The BLNR will approve or deny the final rule package.
8. If the rules will affect small businesses, the SBRRB reviews the final rule package and makes a final recommendation to the governor to approve or deny the rules.
9. If approved by the BLNR the proposal is sent to the governor for review and approval.
10. If approved by the Governor, the rule is filed with the Office of the Lieutenant Governor, and 10 days later the rule goes into effect.

Community, NGO and Agency Partners

Nearshore management requires partnerships between multiple agencies and community groups to reach our shared goal of effectively managing nearshore marine resources for generations to come. As a community-guided engagement process, DAR relies on local communities to provide area expertise at the place-based level. Additionally, there are numerous non-governmental organizations, including non-profit organizations that help provide on-the-ground support and work on specific projects in specific areas. This expands the reach of management strategies by providing technical support, coordination and monitoring for specific places and communities. These partners are able to add more capacity and a greater level of

detail to projects at local levels that can then align with larger projects at regional and island scales. DAR will rely on collaborations with county, state and federal governmental partners to work across jurisdictional boundaries to work towards sustainable solutions. This collaboration, coordination and teamwork, with the help of numerous partners at various scales, will help build strategies to equip DAR and island Navigation Teams with more tools to address the numerous management concerns that impact the nearshore resources.

Fishers

The Holomua Marine Initiative and DAR will need ongoing and extensive collaboration with fishers to be successful. As key resource stewards, fishers lend their local knowledge and expertise to build meaningful management solutions.

DAR encourages fishers to engage in the process within each of the four pillars.

- For **Place-Based Planning**, fishers can provide their mana'o during community Talk Story sessions and Information Exchanges to help refine management proposals. Those who have more time to offer and would like to get more involved are encouraged to participate with the Navigation Team when the Initiative reaches their region. These are opportunities to offer common-sense management options that will encourage compliance from other fishers and address the most urgent concerns affecting nearshore resources.
- For **Pono Practices**, fishers can stay up to date on the latest fishing regulations and also apply best practices, taking only what is needed, and encourage other fishers to do the same. More experienced fishers can mentor the keiki and up and coming fishers on the best practices to ensure abundant resources for future generations.
- DAR anticipates expanding opportunities for fisher-dependent **Monitoring** in the future, that is where fishers' catch is needed for data collection. Fishers can get involved by participating in research projects and sharing information about catch that can fill data gaps on life history of lesser-known species and help inform future management by improving the understanding of the status of the fishery. This can include participating in fishing tournaments where life history biologists are on-hand to take measurements and samples from catch to contribute to larger studies.
- Fishers can continue to identify areas where **Restoration** is needed to improve habitat (through estuary restoration, coral restoration, and artificial reefs) and water quality (effluent and sedimentation run-off). These recommendations can be used by agency partners to prioritize restoration projects and where inter-agency coordination will be most useful.

Community Network Partners and Co-managers

The Holomua Marine Initiative will rely on collaboration with existing community networks and co-managers. Living in nearshore areas, community partners have intimate knowledge of and connection to nearshore marine resources and rely on the sustainability of these resources. As such, they are key to successful development, implementation and evaluation of proposed management actions. These partners can bring their expertise in marine resource management and planning and place-based perspectives into the process as co-managers with DAR. Members from these organizations can also help the Navigation Teams better incorporate existing planning efforts into the Holomua Marine Initiative regional and island-scale plans.

Water Quality and Quantity Partners

Improving the quality of water that flows mauka to makai requires extensive partnerships by DAR across a broad range of disciplines and jurisdictions. Stream flow and healthy estuaries are important to nearshore abundance. Ultimately, achieving healthy watersheds supports healthier and more resilient coastal ecosystems. Continuing partnerships and relationships with the Commission of Water and Resource Management (CWRM), Board of Water Supply, Department of Health, property owners, and many others, including non-governmental organizations, working to reduce run-off from cesspools and other land-based sources of pollution, allow for us to find integrated solutions to complex challenges.

Mauka Partners

DARs' jurisdiction ends at the high-tide water mark, but their kuleana extends to the mountain tops. Mauka and makai connections are critical to have a working ahupua'a system with flourishing resources. The health of our nearshore resources correlates with the quality of water coming from the land. Erosion and sedimentation from upland in the watershed can be detrimental to nearshore reefs. DAR currently works with the Division of Forestry and Wildlife (DOFAW) and various watershed partnerships across the state to foster more effective management strategies. The Holomua Marine Initiative will be looking to expand and strengthen partnerships with organizations that are helping with upland native plant reforestation, ungulate fencing and other erosion-control forestry efforts to reduce sediment reaching our reefs, especially during flooding events. These non-governmental organizations will be critical during planning efforts, to help align mauka project areas with nearshore areas prioritized by local communities to maximize the effectiveness of proposed management actions.

Academic and Research Partners

To ensure that the process is based on the best readily available science, academic and research partners support DAR with information for identified data gaps and research needs. For example, DAR is part of the Hawai'i Monitoring and Reporting Collaborative (HIMARC), contributing monitoring data statewide. DAR collaborates with HIMARC to create resources for

the Navigation Teams, including information on the current status of nearshore resources including indicators such as percent coral cover and fish biomass. Many researchers at the University of Hawai'i, including the Hawai'i Institute of Marine Biology, University of Hawai'i Natural Resources and Ecosystem Management, work on projects that directly inform DAR planning and management efforts. The United States Geological Survey Hawai'i Cooperative Fishery Research Unit at University of Hawai'i in Hilo supports many research projects to better understand data limited fisheries and engages with local fishers in research. NOAA is another agency that provides DAR with collaborative science and research. In addition to fish and coral statewide monitoring efforts, NOAA provides guidance and technical expertise regarding stock assessment and fish life history studies to inform fisheries management, and climate/bleaching forecasting, habitat mapping and oceanography, among many others, to inform response efforts and other management priorities. DAR relies on other research partners to help fill data gaps on life history for important cultural and food fish and to apply life history and known catch data into user-friendly applications that can be used by the Navigation Teams, resource stewards and DAR in species-specific management considerations. There are numerous partners that support Holomua by contributing the most up-to-date research findings and focusing studies on projects that help us better understand our nearshore ecosystems and resources.

Measuring Success

The success of the Holomua Marine Initiative will be measured at several levels: community engagement, effectiveness of management actions, overall ecosystem condition and socio-cultural factors. As part of this process, DAR intends to identify quantitative targets and explicit benchmarks at the island scale for indicators in these categories.

The first is an evaluation of **community participation and engagement**. Metrics for tracking progress of community participation and engagement include:

- Number of communities actively engaging with marine management per island through (for example):
    - Community stewardship agreements or co-management areas
    - Marine Resource Planning (proposals for area designation)
    - Active Makai Watch Programs
    - Community-based monitoring efforts
    - Participation in restoration activities or project planning
- Number of events and attendees at outreach events, restoration workdays, regional Talk Story sessions, community Information Exchanges, scoping sessions and other opportunities for engagement.
- Extent that community engagement and opportunities for participation are

promoted and encouraged (as measured through promotional "reach" and number of promotional methods such as radio ads, social media, distribution of flyers, etc.)

- Number of partnerships (including with other agencies, divisions, non-governmental organizations and community groups) formed or expanded to aid in the development and/or implementation of island proposals
- Number of management plans that are developed and implemented with community collaboration and that address community-identified management priorities

The next metric will be based on a series of indicators of **management effectiveness**. Each island's Navigation Team will develop a management strategy with actions at local, regional and island scales to address the unique concerns for each place. From this strategy, DAR will develop a management plan, clearly identifying these priorities and actions and creating a workplan for implementation. Indicators will be developed based on the priorities set in these island management strategies and will be evaluated at set intervals to track progress and adapt future actions as needed. *These indicators will be specific and unique to each island's management strategy*. For example, if certain species or groups of species are identified for regulations, an indicator would be tracking the biomass or abundance of that species or those species groups at the scale of management. If sedimentation on reefs is identified as a concern in a certain area and management actions are focused on reducing sediment inputs, an indicator could be a reduction in the amount of sediment in sediment traps collected or number of "brown water" days in a given nearshore place.

As this is a sustainability initiative with overarching *indicators of healthy reefs and abundant resources*, there are key indicators of ecosystem conditions that will also be monitored and evaluated. Some of these indicators include:

- Total fish biomass and average fish length
- Resource (species targeted for food) fish biomass
- Herbivore biomass and average fish length
- Abundance and size class structure of key fish species
- Species diversity
- Percent coral cover
- Ratio of calcified to fleshy benthic cover (how much coral or crustose coralline algae is on the reef versus fleshy macroalgae)
- Benthic rugosity and complexity
- Nutrients (effluent and pollution)
- Sedimentation

These will be evaluated at the island and moku scales and may also be evaluated at local levels, as needed based on proposed management actions. The target for these will vary based on how likely management actions are likely to improve the current condition and will focus on maintaining the current condition in areas where the resources are not depleted and improving the current conditions in areas where they are. For example, In a given area that is currently in good condition and has high indicator values due to oceanography and habitat availability, the goal would focus on maintaining the current condition. In an area with a low indicator value due to sedimentation, sewage run-off, and unsustainable fishing pressure, the goal would focus on improving the indicator value.

The Holomua Marine Initiative recognizes the importance of **socio-cultural principles and indicators**, which will allow us to identify how changes in management or the environment affect the local communities that depend on those ecosystem services. Nine socio-cultural principles, or the fundamental values or goals that management should aim to achieve, and a refined list of approximately 20 indicators were identified. Some of these include:

- Place names and mo'olelo are used, shared, and represented correctly in DAR management plans, maps, and signs
- Resources gathered or harvested are shared between community members
- Perception of support to community from DAR
- Factors that negatively affect users' overall quality of experience in area (factors that affect mental, physical, and spiritual wellbeing)
- Community perception of overall health condition of nearshore area
- Presence of mechanisms and other efforts (besides education) to manage visitor impacts

These are designed to be evaluated in collaboration with communities at a local scale. Targets established through community discussions and planning will be included in the management strategy and identified in management plans.

Given that success relies on strong partnerships and collaborations, the **Holomua Marine Initiative will also be externally evaluated**. This evaluation will be based on measuring how effective collaborative efforts are to manage the nearshore marine ecosystems and resources in Hawai'i along ecological, socio-cultural, and economic dimensions, to what degree outcomes are achieved, and if progress is being made. This will include **monitoring indicators that are outside of DAR's jurisdiction**, but important to the success of nearshore management and healthy ecosystems, such as water quality, land-based sources of pollution, and freshwater flow. It will also **include accountability metrics** for the initiative including evidence of public support

of management plans and policies, degree to which management plans and actions are implemented and updated, and opportunities provided for public engagement.

Given the scope of the Holomua Marine Initiative, the measures for success will be multi-faceted. The timeline for reaching these targets will depend on several factors including the scale of management actions, current condition of a given nearshore place or resources, and the engagement of communities in planning, implementation and support of management strategies identified. These metrics will help set a clear direction for the effort, track progress, and identify areas needing to adapt along the way.

Closing Message

The Holomua Marine Initiative is an opportunity and an invitation for communities, government agencies and other organizations to join together and work towards a better future. Though there are many uncertainties and challenges facing our nearshore ecosystem from changing climate, development, urbanization and increased pressure from human population growth, this effort is about planning for our keiki and securing their futures through the sustainability of their nearshore resources. It is a time for us to aspire to our hopes for our ocean's future for many generations to come.

The path forward will require collaboration and participation to be successful – DAR can not do it alone. Though DAR is the state agency tasked with this initiative, it will require guidance from communities, including fishers and other resource users, with the aspiration that this process will empower people of place in the government planning process to develop meaningful management solutions with place-based roots and intentions. Through this process, DAR strives to improve and strengthen relationships between government and communities through co-management and collaborative development of nearshore priorities and goals.

In outlining a path to effective management for Hawai'i's nearshore waters, it is our intention that the Holomua Marine Initiative serves as an invitation and call to action for Hawai'i residents to work with DAR to achieve our shared vision of a healthy nearshore ecosystem with abundant resources, which allows the people of Hawai'i to enjoy our coastal waters, support our local livelihoods, and feed our families. **The Holomua Marine Initiative is a once-in-a-generation opportunity to come together, address the threats affecting our nearshore ecosystems, and accept the challenge of caring for the resources that sustain us.** All are welcome to get involved. It will take guidance from many diverse perspectives to navigate this next chapter in collaborative resource management. Let's Holomua for our future and the futures of our keiki.

Holomua
Marine Initiative

How to get involved:

DAR will seek input via multiple channels throughout the Holomua process. To submit comments, ask questions, or get involved please contact DAR by email at holomua@hawaii.gov or by phone at 808-587-0100.

Sign up to receive additional information and Holomua Marine Initiative news on DAR's website: https://dlnr.hawaii.gov/holomua/