



2024 Hawai'i Marine Debris Action Plan

March 2024

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Acknowledgements

The Hawai'i Marine Debris Action Plan is the result of a productive and collaborative effort. Mahalo to the participants of the 2023 workshop, who provided the content of this plan and will participate in its implementation, and to the planning team for the planning and execution of the meeting.

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Though this document is created through a collaborative process, not all partners support or work on all actions contained herein. Actions will be carried out by interested partner organizations and Action Plan affiliation does not constitute advocacy of all listed actions.

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Several actions contained herein reference potential legislative changes. These actions will be carried out by interested partner organizations and are not affiliated with NOAA or the Marine Debris Program.

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Executive Summary

The Hawai'i Marine Debris Action Plan (Action Plan) was the first of its kind in 2010 and led to the creation of several other plans throughout the coastal United States and its territories. From 2010-2020 the Action Plan was updated every two years to reflect changes in the marine debris issue and the work being done by partners throughout the state. The Action Plan established a framework for strategic action throughout the Hawaiian archipelago to work towards a marine debris-free Hawai'i. After the conclusion of the [2010-2020 Action Plan](#), the Hawai'i marine debris community met in 2021 to develop a new [10-year Action Plan](#), with the aim to reduce the ecological, health and safety, and economic impacts of marine debris in Hawai'i by 2031.

In August of 2023, Hawai'i Marine Debris Action Plan partners met to update the plan structure and actions. Significant changes were made, including the removal of the Ocean-based Marine Debris goal and moving still-relevant actions to the remaining goals. Since marine debris is a complex and continuously evolving issue, stakeholders, including federal, state, private, academic, and nongovernmental organizations, play a pivotal role in implementing the plan. The 2023 Hawai'i Marine Debris Action Plan is the first update of the current 10-year action plan.

Action Plan Status

By-the-Numbers

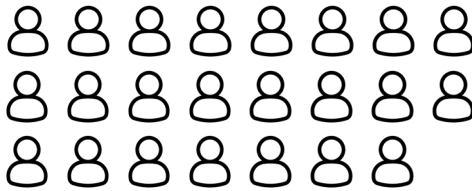


3 Goals

The 2023 Hawai'i Marine Debris Action Plan contains three goals: Prevention, Removal and Research. In 2023 Action Plan partners removed the Ocean-Based Marine Debris goal.

82 Actions

63 Long-term actions
19 Short-term actions



23 Organizations

23 organizations attended the 2023 workshop, which was the first in-person meeting since 2018.

Metrics Tracking

In an effort to track the progress of actions and improve information gathering, the 2021 Hawai'i Marine Debris Action Plan included metrics associated with each action. During the 2023 Action Plan workshop, participants discussed and suggested that it was most appropriate and manageable to track success at a broader scale. Moving forward, a set of quantitative metrics and qualitative information will be collected at the goal level, depending on each organization's activities.

Communications Plan

To track the progress of the Action Plan and its actions, bi-annual coordination calls will be scheduled for each goal to check in with partners and share updates. Newsletters, workshops, and an online collaboration portal will also be used to keep partners informed of the Action Plan's progress.

Document Structure

The following tables are at the core of the Action Plan. These tables detail strategies and actions by listed partner organizations to mitigate the impacts of marine debris throughout the Hawaiian islands. Specific actions are color-coded to represent a timeline for progress. **Short-term actions in green** are to be completed within the next two years, while **long-term actions in blue** will be achieved by 2031. Though this document is created through a collaborative process, not all partners support or work on all actions contained herein. Actions will be carried out by interested partner organizations and Action Plan affiliation does not constitute advocacy of all listed actions.

Partner Acronym List

| Acronym | Partner Name |
|--------------------|--|
| BOW | Blue Ocean Warriors |
| DLNR DAR | Hawai'i State Department of Land and Natural Resources, Division of Aquatic Resources |
| DLNR DOBOR | Hawai'i State Department of Land and Natural Resources, Division of Boating and Ocean Recreation |
| DLNR DSP | Hawai'i State Department of Land and Natural Resources, Division of State Parks |
| HMAR | Hawaii Marine Animal Response |
| HPU CMDR | Hawai'i Pacific University Center for Marine Debris Research |
| HWF | Hawai'i Wildlife Fund |
| KPB | Keep Puakō Beautiful |
| NIST | National Institute of Standards and Technology |
| NOAA MDP | National Oceanic and Atmospheric Administration, Marine Debris Program |
| NOAA PIRO | National Oceanic and Atmospheric Administration, Pacific Islands Regional Office |
| OPDERA | Ocean Plastic Debris Education, Research and Awareness |
| PMDP | Papahānaumokuākea Marine Debris Project |
| PWF | Pacific Whale Foundation |
| SCH | Sustainable Coastlines Hawai'i |
| SFH | Surfrider Foundation Hawai'i Region |
| SFK | Surfrider Foundation Kaua'i Chapter |
| UH Hilo | University of Hawai'i Hilo |
| UH SeaGrant | University of Hawai'i Sea Grant |



Goal 1: Prevention

Prevention is key to solving the marine debris problem over time. For prevention efforts to be successful, they will need to include waste reduction support from industry and a change in consumer behaviors. Only a joint effort between industry and consumers will account for and include all debris entering the environment. Hawai'i Marine Debris Action Plan partners continue to make progress toward preventing marine debris through multi-stakeholder collaboration in the areas of policy, information sharing, education and outreach, providing plastic alternatives, and upstream waste prevention.

Marine debris threatens the marine environment throughout the state (Photo Credit: Papahānaumokuākea Marine Debris Project).

| Strategy 1.1. Change consumer behavior through outreach and education. | |
|--|--|
| Action | Contributing Organizations |
| 1.1.1. Use social media as a platform for outreach and to promote cleanup and education events. Utilize #HImarinedebris and other related hashtags to organize a collective point of information for what's going on in Hawai'i. | 808 Cleanups, UH SG, SFH, SFK, NOAA MDP, PWF, HMAR, OPDERA, SCH, DLNR DAR, HWF, HPU CMDR, NOAA PIRO, KPB, BOW |
| 1.1.2. Conduct education and outreach to schools, industry and the general public (including non-traditional target audiences) through, but not limited to, presentations, educational volunteer events, news events, featured speakers, and film screenings. <ul style="list-style-type: none"> • Topics could include: • Circular economy • Alternative products (reusable, compostable) • Composting • Legislation and civics • Fishing industry (commercial and recreational) and seafood/consumer choices • Fishing practices (community and culture-based) • Greenwashing • Recycling • Human Health | 808 Cleanups, UH Hilo, UH SeaGrant, SFH, SFK, NOAA MDP, PWF, HMAR, OPDERA, SCH, DLNR DAR, HWF, HPU CMDR, NIST, NOAA PIRO, KPB, BOW |

Strategy 1.1. Change consumer behavior through outreach and education.

| Action | Contributing Organizations |
|--|--|
| 1.1.3. Support and encourage student and community engagement in zero waste programs and initiatives. | UH Hilo, UH SeaGrant, SFH, SFK, PWF, OPDERA, SCH, DLNR DAR, HWF, HPU CMDR, NIST, BOW |
| 1.1.4. Create a pre- and post-survey or a set of standardized questions to track behavior change before and after public engagement. | HMAR, SCH, BOW |
| 1.1.5. Engage communities to get involved with local, national, and international policy. | SFH, SFK, PWF, OPDERA, SCH, HWF, HPU CMDR, BOW |
| 1.1.6. Promote physical spaces as hubs for outreach events supporting marine debris education. | PWF, SCH, DLNR DAR, HPU CMDR, DLNR DSP, KPB |
| 1.1.7. Coordinate a workshop about plastic pollution education and outreach focused on consistent messaging. | NOAA MDP, HMAR, SCH |

Strategy 1.2. Partner with businesses and industry to support waste reduction efforts.

| Action | Contributing Organizations |
|--|--|
| 1.2.1. Encourage restaurants to go plastic-free. | UH SeaGrant, SFH, SFK, PWF, OPDERA, SCH, HWF, BOW |
| 1.2.2. Form a dedicated coalition to work with restaurants and the Department of Health to revise Bring Your Own Container rules and then inform the public. | PWF, SFH, SCH |
| 1.2.3. Continue development of or follow up on actions of the Plastics Source Reduction Working Group. | SFH, SCH, KPB |
| 1.2.4. Encourage government and businesses to adopt zero waste and plastic waste reduction efforts for conferences, large gatherings, events, and operations. | PWF, OPDERA, SCH, DLNR DAR, HWF, HPU CMDR, NIST, BOW |
| 1.2.5. Encourage patronage for sustainable, locally sourced food and products that are not packaged in plastics. | PWF, SCH, HWF, BOW |
| 1.2.6. Continue plastic waste reduction conversations with plastic industry stakeholders. | PWF, OPDERA, SCH, HPU CMDR, NIST, BOW |
| 1.2.7. Summarize existing domestic and international at-sea waste management policies, best management practices, and educational materials from the Pacific and utilize them in outreach efforts. | |

Strategy 1.2. Partner with businesses and industry to support waste reduction efforts.

| Action | Contributing Organizations |
|--|---|
| 1.2.8. Annually review content in the state mandatory boater education course for updated marine debris information related to fishing practices, derelict fishing gear, proper waste management, and port reception facilities. | HMAR, DLNR DAR |
| 1.2.9. Identify and communicate with fishing, maritime, military, shipping, cruise ship, and tourism industry partners to encourage and incentivize the reduction of marine debris. | UH SeaGrant, PWF, HMAR, DLNR DAR, HWF, HPU CMDR, NOAA PIRO, BOW |
| 1.2.10. Participate and engage with domestic and international fisheries and gear manufacturers to discuss industry standards for reducing marine debris, specifically derelict fishing gear. | SFK, DLNR DAR, HPU CMDR |

Strategy 1.3. Enhance coordinated efforts between county, state, federal, and international governments and volunteer groups to create and enforce laws reducing sources of marine debris. Deploy physical mechanisms to prevent debris.

| Action | Contributing Organizations |
|---|---|
| 1.3.1. Continue to support county and state laws that reduce and ban the use of single-use and disposable plastics. | SFH, SFK, PWF, OPDERA, SCH, DLNR DAR, HWF, BOW |
| 1.3.2. Work with state and county permitting offices to include zero waste and plastic waste reduction requirements in event applications, especially for events near the coastline or streams. | SFK, PWF, SCH, DLNR DAR |
| 1.3.3. Participate in federal and international policy prevention efforts. | PWF, SFH, NOAA MDP, SCH, DLNR DAR, HWF, HPU CMDR, NIST, BOW |
| 1.3.4. Work collaboratively with county and state representatives to create new or strengthened laws to reduce plastic pollution. | SFH, PWF, SCH, DLNR DAR, HWF, BOW |
| 1.3.5. Continue to support legislation on reducing ocean dumping. | PWF, SCH, DLNR DAR, HWF, BOW |

Strategy 1.4. Deploy physical mechanisms to prevent debris.

| Action | Contributing Organizations |
|---|----------------------------|
| 1.4.1. Evaluate, install new, and improve existing technologies to capture debris in waterways. | NOAA MDP, PWF |
| 1.4.2. Increase waste diversion receptacle options (i.e., with lids) at beach parks throughout the state. | SCH, HWF, DLNR DSP |

Strategy 1.4. Deploy physical mechanisms to prevent debris.

| Action | Contributing Organizations |
|---|-----------------------------------|
| 1.4.3. Increase water bottle refilling stations in Hawai'i State Parks, county and state facilities, beach parks, and other public spaces. | SFH, SFK, PWF, DLNR DSP |
| 1.4.4. Reduce plastic usage in commercial and residential property landscaping and agriculture. | |
| 1.4.5. Include marine debris aspects when planning for climate change adaptation projects (e.g., projects that stabilize an eroding shoreline). | PWF |



Goal 2: Removal

Conducting shoreline, near-shore, and other in-water debris removal is imperative to reducing the immediate threats and harm caused by marine debris. Removal operations for most types of marine debris are performed primarily by volunteers and non-profit organizations through various activities, including community beach cleanups, targeted net patrols, long-term missions at sea, and solo activities. Through these dedicated and consistent removal efforts, Hawai'i Marine Debris Action Plan partners continue to remove thousands of pounds of marine debris every year. Removal of abandoned and derelict vessels is different and typically performed by professional for-profit salvage companies hired by federal, state, or private insurers.

Removing shoreline debris from Papahānaumokuākea Marine National Monument (Photo Credit: NOAA).

Strategy 2.1. Coordinate effective systems for reporting and responding to marine debris.

| Action | Contributing Organizations |
|---|--|
| 2.1.1. Continue to coordinate with partners to report marine debris through the DLNR Marine Debris Report Form and/or call the hotline, (833) 4da-NETS (833-432-6387). Increase public awareness of this form and hotline (e.g., through signs at boat ramps, state parks, outreach, and website promotion through social media). | 808 Cleanups, SFH, SFK, NOAA MDP, PWF, SHARKastics, HMAR, OPDERA, SCH, DLNR DAR, HWF, HPU CMDR, DLNR DSP, KPB, BOW |
| 2.1.2. Maintain and promote marine debris hotlines utilized by nongovernmental and governmental organizations. | SFK, PWF, SHARKastics, HMAR, SCH, DLNR DAR, HWF, HPU CMDR, BOW |
| 2.1.3. Expand and promote a task force on each island to improve communication to respond to derelict net masses and large marine debris pulses (e.g., flooding event, tsunami). | 808 Cleanups, SFH, SFK, NOAA MDP, PWF, SHARKastics, HMAR, SCH, DLNR DAR, HWF, HPU CMDR, BOW |

Strategy 2.2. Use available information to prioritize cleanup sites.

| Action | Contributing Organizations |
|--|---|
| 2.2.1. Create and maintain a central calendar of statewide cleanup events. | 808 Cleanups, NOAA MDP, PWF, HMAR, SFH, SCH, DLNR DAR |

Strategy 2.2. Use available information to prioritize cleanup sites.

| Action | Contributing Organizations |
|--|--|
| 2.2.2. Continue to identify and prioritize cleanup sites and debris types on each island. | 808 Cleanups, PMDP, SFK, NOAA MDP, PWF, SHARKastics, HMAR, SCH, HWF, HPU CMDR, BOW |
| 2.2.3. Continue engagement with local communities, and county, state, and federal representatives regarding their high-priority regions/seasons by island. | 808 Cleanups, PMDP, NOAA MDP, PWF, HMAR, SFK, SCH, HPU CMDR, NIST, KPB, BOW |
| 2.2.4. Share data and information amongst partners and local communities that organizations are collecting and using to inform the prioritization of cleanup sites (e.g., HWF wildlife monitoring form). | 808 Cleanups, SFK, NOAA MDP, PWF, SHARKastics, HMAR, SCH, DLNR DAR, HWF, HPU CMDR, BOW |

Strategy 2.3. Develop capacity to collaboratively remove, dispose, repurpose, and recycle marine debris.

| Action | Contributing Organizations |
|--|--|
| 2.3.1. Create, update, and share island-specific flow chart options depicting the disposal process and reevaluate a preferred marine debris disposal hierarchy, as informed by research. | SFK, NOAA MDP, SHARKastics, SCH, HWF, HPU CMDR, NIST |
| 2.3.2. Create and maintain systems that improve collection, disposal, repurposing, and recycling of salvaged marine debris, especially processes that are shown through testing to be the most environmentally beneficial. | UH Hilo, PWF, HMAR, SCH, HWF, HPU CMDR, NIST |
| 2.3.3. Conduct meetings with state and county partners to allow marine debris to be accepted at convenience centers and transfer stations while investigating opportunities to build removal and disposal capacity. | SCH, DLNR DAR, HWF, HPU CMDR |
| 2.3.4. Research, design, and install effective and secure reception bins for different types of marine debris throughout the state. Coordinate maintenance agreements, disposal options, and awareness efforts. | NOAA MDP, PWF, HMAR, SCH, DLNR DAR, HWF |
| 2.3.5. Advocate for a dedicated marine debris coordinator position within the Department of Land and Natural Resources. | PWF, HMAR, SFH, SCH, DLNR DAR, HWF, HPU CMDR |
| 2.3.6. Continue to facilitate, coordinate, and conduct regularly scheduled shoreline, in-water, and stream cleanups and net patrols. | SFH, SFK, PWF, SHARKastics, HMAR, SCH, DLNR DAR, HWF, HPU CMDR, KPB, BOW |
| 2.3.7. Continue to work with vessels of opportunity on at-sea visual surveys and removal of large floating marine debris in the North Pacific. | NOAA MDP, PWF, HPU CMDR |

Strategy 2.3. Develop capacity to collaboratively remove, dispose, repurpose, and recycle marine debris.

| Action | Contributing Organizations |
|---|------------------------------------|
| 2.3.8. Create an on-call response team to respond to off-shore marine debris reports. | SFK, PWF, HMAR, DLNR DAR, HPU CMDR |

Strategy 2.4. Effectively prevent, remove, and dispose of abandoned and derelict vessels.

| Action | Contributing Organizations |
|--|-----------------------------------|
| 2.4.1. Resubmit legislation to require mandatory insurance for vessels under 26 feet through the state registration process or documented by the United States Coast Guard (>26 feet already required). | DLNR DOBOR |
| 2.4.2. Promote boater hurricane and tsunami preparedness with a focus on preventing marine debris. | NOAA MDP, PWF, DLNR DOBOR |
| 2.4.3. Explore opportunities to minimize potential issues that may arise during the 30-day abandoned and derelict vessel owner notification and waiting periods. | PWF, DLNR DOBOR |
| 2.4.4. Enhance interagency coordination for addressing abandoned and derelict vessels. | NOAA MDP, DLNR DOBOR |
| 2.4.5. Create and identify an abandoned and derelict vessel situational response contact list and update it annually. | NOAA MDP, DLNR DOBOR |
| 2.4.6. Revisit discussions to establish a memorandum of understanding or standard operating procedure with the United States Coast Guard for a more collaborative approach to address abandoned and derelict vessels in navigable waterways. | DLNR DOBOR |
| 2.4.7. Propose a rule/amendment to charge a disposal fee at the time of vessel transfer or first time registration to help establish a response fund. | HMAR, DLNR DAR, DLNR DOBOR |
| 2.4.8. Develop the capacity to properly dispose of old vessels, such as a vessel turn-in program, and make these disposal options publicly available. | DLNR DOBOR |



Goal 3: Research

The marine debris issue has rapidly evolved, and researchers around the world are constantly working to better understand it. Researchers in Hawai'i have made great strides, helping to develop this field of study and create new research opportunities. Their shared capabilities and comprehension of sourcing, polymer identification, and tracking have increased along with their research contributions. Hawai'i Marine Debris Action Plan partners are poised to build on their accomplishments and momentum to continue making strides in marine debris research.

Microplastics collected from the Papahānaumokuākea Marine National Monument (Photo Credit: NOAA).

Strategy 3.1. Develop an understanding of marine debris physical and chemical traits, source, transport, fate, and quantity.

| Action | Contributing Organizations |
|---|---|
| 3.1.1. Identify and conduct standardized shoreline (use NOAA Marine Debris Monitoring and Assessment Project protocols where possible) and in-water monitoring, and share data and survey methods to determine accumulation rates and trends. | SFK, NOAA MDP, PWF, SHARKastics, HWF, HPU CMDR, BOW |
| 3.1.2. Continue to model and forecast marine debris movement in the Pacific Ocean while incorporating local dynamics, with the purpose of preventing impacts to coastal resources. | |
| 3.1.3. Quantify derelict fishing gear by source to determine the best prevention efforts. | SFK, HMAR, HPU CMDR |
| 3.1.4. Maintain a database of derelict fishing gear types and metrics in order to try to identify the fishery or manufacturer source. | SFK, HMAR, HPU CMDR, NIST |
| 3.1.5. Test the efficiency of beach remediation of microplastics with various techniques and equipment. | SCH, HWF, HPU CMDR, NIST |
| 3.1.6. Assess the effect of outdoor weathering on the buoyancy of floating plastics. | HPU CMDR, NIST |
| 3.1.7. Tag derelict fishing gear with buoys equipped with global positioning systems to determine their movements and potential marine debris accumulations. | HWF |

Strategy 3.1. Develop an understanding of marine debris physical and chemical traits, source, transport, fate, and quantity.

| Action | Contributing Organizations |
|---|--|
| 3.1.8. Develop and implement the Integrated Marine Debris Observing System. | HWF |
| 3.1.9. Continue to support and conduct in-land, coastal, underwater and at-sea marine debris detection across the Hawaiian Islands. | NOAA MDP, PWF, OPDERA, SCH, DLNR DAR, HWF, HPU CMDR, BOW |
| 3.1.10. Better understand the dynamic between the North Pacific Garbage Patch and accumulation of debris on Hawai'i shorelines. | OPDERA, SCH, HWF, HPU CMDR, NIST |
| 3.1.11. Assess the abundance of plastic particles in the air and their polymer composition. | |

Strategy 3.2. Develop or identify standardized methods or best management practices for applicable aspects of research to ensure data can be meaningfully analyzed.

| Action | Contributing Organizations |
|--|-----------------------------------|
| 3.2.1. Develop standardized, optimal, and accessible laboratory methods for plastic research. | HPU CMDR, NIST |
| 3.2.2. Identify standardized sampling and processing methods to quantify and characterize small plastic particles in different environmental compartments (e.g., water, sediment, etc.). | HPU CMDR, NIST |
| 3.2.3. Continue to explore new methods for quality control to minimize and eliminate microplastic contamination in samples. | HPU CMDR, NIST |
| 3.2.4. Identify a shared set of standardized information for organizations to collect from cleanup activities for comparable analysis. | SCH, HWF, HPU CMDR |
| 3.2.5. Develop a chemical timestamp to know the amount of time a plastic item has been in the environment. | HPU CMDR, NIST |

Strategy 3.3. Enhance and advance research on ecological, economic, social, and health impacts of marine debris.

| Action | Contributing Organizations |
|---|-----------------------------------|
| 3.3.1. Research the interaction of invasive species with marine debris, including species identification, impacts, transport, and fate. | DLNR DAR |
| 3.3.2. Conduct research on the biological effects of plastic ingestion. | PWF, UH Hilo, HPU CMDR, NIST |

Strategy 3.3. Enhance and advance research on ecological, economic, social, and health impacts of marine debris.

| Action | Contributing Organizations |
|---|-----------------------------------|
| 3.3.3. Conduct research and assess published information on the impacts of entanglement to wildlife. | PWF, PMDP, HPU CMDR |
| 3.3.4. Conduct research and assess published information on the impacts of marine debris to habitats. | UH Hilo, PMDP, HWF, HPU CMDR |
| 3.3.5. Study smart fish aggregating devices. Analyze the devices' impacts and develop ways to identify the source fishery or vessel. | HPU CMDR |
| 3.3.6. Identify the economic impacts and effectiveness of cleanup efforts and plastic reduction policies. | PWF, NOAA MDP, HWF |
| 3.3.7. Identify the economic impacts of marine debris in Hawai'i to the tourism industry, local businesses, cleanup organizations, municipalities, and residents. | HPU CMDR |
| 3.3.8. Research marine debris human health impacts and share publicly. | |

Strategy 3.4. Support communication, collaboration, and dissemination of research to all stakeholders.

| Action | Contributing Organizations |
|--|--|
| 3.4.1. Improve collaboration and data sharing among the local marine debris community by publishing, compiling, and sharing marine debris research completed in Hawai'i state and regional waters. | PWF, UH Hilo, SFK, NOAA MDP, SHARKastics, HMAR, SCH, DLNR DAR, HWF, HPU CMDR, NIST |
| 3.4.2. Explore and share funding opportunities to grow research capacity and develop partnerships for Hawai'i-based research organizations. | PWF, UH Hilo, UH SeaGrant, NOAA MDP, SHARKastics, DLNR DAR, HPU CMDR, NIST |
| 3.4.3. Participate in international conferences, partnerships, and information sharing (e.g., research techniques and technology). | PWF, UH SeaGrant, SFK, NOAA MDP, SHARKastics, OPDERA, SCH, DLNR DAR, HWF, HPU CMDR, NIST |
| 3.4.4. Prioritize research for long-term monitoring programs within different environmental compartments. | PWF, SHARKastics, HPU CMDR, NIST |

Strategy 3.5. Develop an understanding of the life-cycle of plastics.

| Action | Contributing Organizations |
|---|-----------------------------------|
| 3.5.1. Research and develop optimal recycling techniques in the least environmentally harmful way. | HPU CMDR, NIST |
| 3.5.2. Perform life-cycle assessments to compare economic and ecological cost/benefit among different plastic products or disposal/reuse options. | HPU CMDR |
| 3.5.3. Investigate the true biodegradability of plastic alternative materials meant to replace single-use plastics and assess their environmental impact. | SFK |
| 3.5.4. Build a pilot-scale mechanical recycling facility to aid in life-cycle research, and research microplastics released during this process. | HPU CMDR, NIST |

Appendix A: Metrics

In an effort to track the progress of actions and improve information gathering, the 2021 Hawai'i Marine Debris Action Plan included metrics associated with each action. During the 2023 Action Plan workshop, participants discussed and suggested that it was most appropriate and manageable to track success at a broader scale. Moving forward, a set of quantitative metrics and qualitative information will be collected at the goal level, depending on each organization's activities.

| <i>Prevention</i> | <i>Removal</i> | <i>Research</i> |
|---|---|---|
| Participants engaged through formal education/outreach (P-12) | Number of cleanup events hosted or participated in | Number of publications |
| Participants engaged through formal education/outreach (post-secondary/adult students) | Mass of marine debris removed (kilograms) | Number of methods developed |
| Youth and adults (combined) engaged through informal education/outreach | Mass of marine debris recycled or repurposed (kilograms) | Youth and adults (combined) engaged through informal education |
| Number of education/outreach events participated in or hosted | Number of surveys conducted and the distance/area covered (meters, kilometers, m ² or km ²) | |
| Number of policies/laws supported, drafted and enacted | | |

Appendix B: Workshop Participants

The Hawai'i Marine Debris Action Plan was built and maintained through a collaborative process. Workshop participants represented a wide range of organizations whose work all intersect around marine debris. The following organizations participated in the August 2023 workshop:

| Organization |
|---|
| 808 Cleanups |
| Blue Ocean Warriors |
| Department of Land and Natural Resources Division of Aquatic Resources |
| Department of Land and Natural Resources Division of State Parks |
| Hawai'i Marine Animal Response |
| Hawai'i Pacific University Center for Marine Debris Research |
| Hawai'i Wildlife Fund |
| Keep Puakō Beautiful |
| National Institute of Standards and Technology |
| National Oceanic and Atmospheric Administration Marine Debris Program |
| National Oceanic and Atmospheric Administration Pacific Islands Regional Office |
| Ocean Plastic Debris Education Research and Awareness |
| Pacific Whale Foundation |
| Papahānaumokuākea Marine Debris Project |
| SHARKastics |
| Surfrider Foundation Kaua'i Chapter |
| Surfrider Foundation Hawai'i Region |
| Sustainable Coastlines Hawai'i |
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