

Interagency Marine Debris Coordinating Committee

Recommendations and Metrics Report

September 2024

This report was developed by Meridian Institute—a mission-driven, non-profit organization that works with partners to develop and implement solutions to complex, environmental challenges—and approved by the Interagency Marine Debris Coordinating Committee to fulfill the requirements of the Marine Debris Act and the 2019 recommendations of a 2019 Government Accountability Office report (GAO-19-653).

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REPORT OF THE INTERAGENCY MARINE DEBRIS COORDINATING COMMITTEE

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EXECUTIVE SUMMARY

Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes. Anything human-made and solid can become marine debris once lost or littered in these aquatic environments.

Marine debris is a human-caused problem that harms people and the environment. Although the scope and impact of marine debris is widespread and complex, there is greater awareness, understanding, and commitment to addressing this issue than ever before. Public awareness about marine debris is rising, scientific and technological developments related to marine debris have advanced over the last decade, there is increasing coordination and collaboration around these issues on a domestic and global scale, and policies and programs to address marine debris are more established.

This report outlines key changes in the marine debris landscape and federal coordination around marine debris issues in the United States and establishes new recommendations and metrics for the Interagency Marine Debris Coordinating Committee (IMDCC) member agencies to report on in future biennial reports to Congress.

In 2019, the U.S. [Government Accountability Office \(GAO\) recommended](#)¹ that the IMDCC “develop and implement a process to analyze the effectiveness of the interagency committee’s recommendations and strategies, and include the results in its biennial reports.” However, there were challenges with analyzing the effectiveness of the 2008 recommendations because their scope did not reflect the full range of member agencies’ activities to address marine debris. Thus, the IMDCC agreed to conduct a full update of the recommendations and develop associated metrics to allow for the evaluation of effectiveness.

The recommendations and metrics were developed through an iterative process that engaged IMDCC member agencies to ensure that the updated recommendations and metrics aligned with relevant federal authorities and existing marine debris activities. The recommendations are intended to be broad in scope to capture the full range of IMDCC member agency activities and stay relevant for many years. Additionally, the flexibility of the recommendations allows federal agencies to refine implementation activities and reporting over time. The metrics associated with the new recommendations are intended to analyze the effectiveness of those recommendations over time, as required by the GAO’s 2019 recommendations to the IMDCC.

The new recommendations and metrics are organized into the following seven categories that capture the diversity of marine debris activities that IMDCC member agencies are engaged in:

- 1. International Activities**—support international efforts to address marine debris, including but not limited to strengthening the capacity of local communities, governments, and partners in foreign nations to prevent, mitigate, and remove marine debris.

¹ <https://www.gao.gov/products/gao-19-653>

2. **Prevention**—conduct and support federal and external efforts to prevent marine debris.
3. **Capture, Clean Up, and Removal**—support programs and other efforts to capture, clean up, and remove existing marine debris in the environment as well as waste that may become marine debris.
4. **Outreach and Education**—raise public awareness of marine debris, build greater understanding of marine debris issues, and engage members of the public in data collection efforts.
5. **Coordination**—coordinate across jurisdictions to address marine debris in a comprehensive way.
6. **Research and Monitoring**—improve understanding and tracking of marine debris issues by conducting and supporting research and technology efforts, and harmonize data collection as appropriate.
7. **Enforcement**—address violations of federal law related to marine debris through the appropriate enforcement mechanisms.

These recommendations and metrics form the basis of the IMDCC’s commitment to a collaborative approach to addressing marine debris and provide the standard that the IMDCC will report against as part of its biennial report to Congress. For the full list of recommendations and metrics, see Section 3.

SECTION 1 | BACKGROUND

1.1 INTRODUCTION

Marine debris is a global pollution problem that impacts many communities, from the world’s largest cities to the smallest towns, remote islands, and along coastlines. As humans produce more and more waste, much of it ends up in our waterways and ultimately the ocean. The sources and impacts of marine debris are complex and extensive. Land-based debris, ocean-based debris, and disaster debris (e.g., debris from natural disasters or accidents at sea) all contribute to the marine debris issue. Mismanaged waste can be blown or swept into waterways and once debris is in the ocean, it is further circulated and accumulated throughout the marine environment. This debris degrades aquatic and coastal ecosystems, harms wildlife, and has negative social, economic, cultural, and potential health impacts on humans.

Although the scope of the marine debris issue is daunting, global systems and structures are increasingly organizing to combat the problem. Governments, non-profit organizations, researchers, local communities, and others are working to understand and address this issue at multiple scales of intervention. Public awareness of the complexity and effect of marine debris is increasing, along with efforts to better understand, track, and address sources and impacts. In the United States, federal agencies and Congress are taking action to mitigate and prevent the widespread environmental, social, and economic impacts of marine debris.

Marine debris is defined in the Marine Debris Act as “any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes.” 33 U.S.C. 1956(3). The Interagency Marine Debris Coordinating Committee (IMDCC) is the multi-agency body responsible for coordinating a comprehensive program of marine debris research and activities among federal agencies. The IMDCC was re-established in 2006 by the Marine Debris Research, Prevention, and Reduction Act (“Marine Debris Act,” Public Law 109-449). Under the Marine Debris Act, 33 U.S.C. 1954(e), the IMDCC is required to submit to Congress biennial reports that include the following components:

1. The status of implementation of any recommendations and strategies of the Committee and analysis of their effectiveness;
2. A summary of the marine debris inventory to be maintained by the National Oceanic and Atmospheric Administration;
3. A review of the National Oceanic and Atmospheric Administration program authorized by section 3, including projects funded and accomplishments relating to reduction and prevention of marine debris;
4. A review of Coast Guard programs and accomplishments relating to marine debris removal, including enforcement and compliance with MARPOL requirements; and
5. Estimated Federal and non-Federal funding provided for marine debris and recommendations for priority funding needs.

In accordance with the charge of the Marine Debris Act, the IMDCC developed [recommendations](#)² to guide the federal government’s marine debris strategy in 2008. IMDCC member agencies aligned the reporting of their marine debris activities with the 2008 recommendations in the subsequent biennial reports to Congress.

Since the IMDCC recommendations were established in 2008, the state of marine debris has evolved and the composition of the IMDCC has changed. In 2019, a U.S. [Government Accountability Office \(GAO\) Report](#) GAO-19-653 (“GAO Report”) recommended, among other things, that the chair of the IMDCC, in coordination with member agencies, should develop and implement a process to analyze the effectiveness of the interagency committee’s recommendations and strategies, and include the results in its biennial report. The new recommendations and metrics in this report address this requirement. They are intended to capture the full range of marine debris activities of the IMDCC member agencies, and include metrics for assessing the effectiveness of the recommendations.

1.2 FEDERAL MARINE DEBRIS COORDINATION AND THE EVOLUTION OF THE IMDCC

Federal programs and authorities addressing marine debris and related issues have progressed significantly since they were introduced in the 1970s. The IMDCC provides an important platform to

² <https://marinedebris.noaa.gov/interagency-marine-debris-coordinating-committee-reports/interagency-marine-debris-coordinating-committee-biennial-report>

coordinate marine debris strategies at the federal level and address marine debris issues in a holistic manner. The following section provides context for the establishment of the IMDCC, outlines the responsibilities of the IMDCC, and describes how the IMDCC has evolved since 2006.

Early Federal Marine Debris Activities and Authorities

Although the Marine Protection, Research and Sanctuaries Act of 1972 (Public Law 92-532) regulated the disposal of waste in marine waters, coordination between agencies was limited and federal efforts to address marine debris were not approached in a comprehensive way until the 1980s, according to the IMDCC's 2008 report to Congress. In 1987, the Interagency Task Force on Persistent Marine Debris was formed by the White House Domestic Policy Council. This Task Force was the precursor to the IMDCC, and it produced a [report](#)³ with 23 recommendations for addressing marine debris issues.

During this period, federal agencies established marine debris reduction and educational activities, and several international conferences were convened to coordinate marine debris activities. Some informal interagency workgroups emerged, but none offered a sustained platform for a comprehensive marine debris strategy.

Interagency Marine Debris Coordinating Committee

The [U.S. Commission on Ocean Policy Report: An Ocean Blueprint for the 21st Century](#)⁴ was released in 2004. This report recommended the formation of an interagency committee to coordinate federal-level action to address marine debris issues. In 2006, the Marine Debris Act codified the IMDCC's mandate to "coordinate a comprehensive program of marine debris research and activities among federal agencies, in cooperation and coordination with non-governmental organizations, industry, universities, and research institutions, States, Indian tribes, and other nations, as appropriate." 33 U.S.C. 1954(a). To support a coordinated and comprehensive federal marine debris strategy, the Marine Debris Act, as amended, charges the IMDCC to meet at least twice a year, produce recommendations around priority areas for addressing marine debris, and submit biennial progress reports to Congress on the status of those recommendations.

The biannual IMDCC public meetings provide a forum for member agencies to share key updates and programs for addressing marine debris. Such updates can include information on upcoming funding opportunities for projects that address marine debris or highlights from agency marine debris activities that are aligned with the IMDCC recommendations.

IMDCC Membership

The original statutory members of the IMDCC included the National Oceanic and Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency, the U.S. Coast Guard, and the U.S. Navy. In 2018, the Save Our Seas Act (Public Law 115-265) amended the IMDCC membership to include the Department of State and Department of the Interior. Department of Interior bureaus that participate in the IMDCC include the Bureau of Safety and Environmental Enforcement, U.S. Fish and Wildlife Services, and the National Park Service. In response to the 2019 GAO Report, the IMDCC charter was updated in 2020 and established a process for designating new official members. Members that have been added since the 2020 charter update include United States Agency for International

³ <https://www.govinfo.gov/content/pkg/CZIC-gc1085-u52-1988/html/CZIC-gc1085-u52-1988.htm>

⁴ https://govinfo.library.unt.edu/oceancommission/documents/full_color_rpt/welcome.html

Development, Marine Mammal Commission, National Science Foundation, Department of Justice Environment and Natural Resources Division, National Aeronautics and Space Administration, and Department of Energy.

2008 IMDCC Recommendations

In 2008, the IMDCC presented its [first report to Congress](#),⁵ as specified in the Marine Debris Act. The report described sources and impacts of marine debris and provided recommendations to guide federal activities and approaches to addressing marine debris issues. The recommendations were designed to capture and align the marine debris activities of the member agencies at that time, and they were informed by the policy landscape and state of marine debris research in 2008. IMDCC member agencies reported against those recommendations in the biennial reports to Congress from 2008 to 2019, even as IMDCC membership has changed and the state of marine debris continued to evolve.

In 2017, Congress initiated a review of federal efforts to address marine debris. The GAO Report was published in 2019 and made four recommendations to enhance the federal response to marine debris issues:

1. The NOAA Administrator, in coordination with interagency committee member agencies, should establish a time frame for documenting the committee’s membership process.
2. The NOAA Administrator, in coordination with interagency committee member agencies, should clarify what is meant by “senior official” in the Marine Debris Act, such as through revisions to its charter.
3. The chair of the interagency committee, in coordination with member agencies, should develop and implement a process to analyze the effectiveness of the interagency committee’s recommendations and strategies, and include the results in its biennial reports.
4. The chair of the interagency committee, in coordination with member agencies, should develop a process to identify recommendations for priority funding needs to address marine debris, and include such recommendations in its biennial reports.

Accordingly, the IMDCC established an official process for adding IMDCC member agencies (Recommendation 1) and clarified the meaning of “senior official” in the Marine Debris Act through a revision to the IMDCC charter (Recommendation 2), and the IMDCC member agencies identified recommendations for priority funding needs (Recommendation 4). This report and the new recommendations and metrics address the third and final 2019 GAO recommendation by including metrics to evaluate the effectiveness of the new recommendations.

The responsibilities of the IMDCC have been further clarified since the Marine Debris Act was passed in 2006, and membership has grown since the IMDCC was first established. This context demonstrates the

⁵ <https://marinedebris.noaa.gov/interagency-marine-debris-coordinating-committee-reports/interagency-marine-debris-coordinating-committee-biennial-report>

value of updating the IMDCC recommendations to account for the range of activities that members are engaged in to address marine debris.

1.3 MARINE DEBRIS 2008 TO NOW

Public awareness and our scientific understanding of marine debris issues have evolved significantly since the initial IMDCC report was released in 2008. In addition to increased understanding and awareness, there has been an expansion of programs, partnerships, and policies to address marine debris on a national and international scale. The following section describes how the marine debris landscape has changed from when the IMDCC recommendations were initially set in 2008 to when they were updated in 2023–2024.

Increasing Awareness and Attention around Marine Debris

When the initial IMDCC recommendations were released in 2008, [there was less awareness and attention around marine debris](#)⁶ in the public, in government, and in the scientific community. Since that point, IMDCC member agencies have engaged in numerous efforts to bring greater attention to the marine debris issue, such as providing educational materials about how to reduce marine debris or about the local impacts of marine debris. For example, NOAA hosts a broad range of educational materials targeted at [students](#),⁷ [educators](#),⁸ and the general public to develop greater awareness and understanding around the marine debris issue, and the [Bureau of Safety and Environmental Enforcement](#)⁹ provides accessible guidance resources to inform best practices for industry operations.

Beyond greater public awareness and agency action around marine debris issues, marine debris has become a [more robust and established area of study and research](#).¹⁰ An increasing number of scientists are specializing in a broader range of niches across the field, including biological, toxicological, and ecological impacts; marine debris movement and accumulation; and the effects of micro and nano plastics on marine life. In addition to a more comprehensive range of scientific specializations, critical [estimates of plastic and other waste entering the ocean from land- and sea-based sources](#)¹¹ have furthered our understanding of marine debris.

⁶ https://tos.org/oceanography/assets/docs/33-3_rochman.pdf

⁷ <https://marinedebris.noaa.gov/our-work/education/students>

⁸ <https://marinedebris.noaa.gov/our-work/education/educators>

⁹ <https://www.bsee.gov/what-we-do/environmental-compliance/environmental-programs/marine-trash-and-debris-program>

¹⁰ <https://www.unep.org/resources/report/unep-year-book-2014-emerging-issues-our-global-environment>

¹¹ <https://jambeck.engr.uga.edu/wp-content/uploads/2022/02/science.1260352-Jambeck-et-al-2015.pdf>



National Park Service Art Installations

With support from the NOAA Marine Debris Program, the National Park Service is installing art exhibits to bring attention to the marine debris issue. Artist Cindy Pease Roe created a 14-foot shark sculpture from marine debris materials to bring awareness to this issue at Cape Cod National Seashore. [Credit: NPS Photo/Kristin Vinduska](#)

Developing Science and Technology

The expansion of marine debris science has advanced [the state of research](#)¹² and technology for understanding, tracking, and monitoring marine debris issues. Scientists have an improved understanding of the environmental effects of marine debris, including [how microplastics and other debris impact marine organisms](#)¹³ and how materials [enter, accumulate, and circulate](#)¹⁴ through the marine environment. Technologies and approaches for waste collection management and recycling have also advanced since 2008. Although science and technology have improved significantly, there are still notable gaps in our understanding of marine debris issues and opportunities to further the development and implementation of technologies that can help combat environmental challenges associated with marine debris.

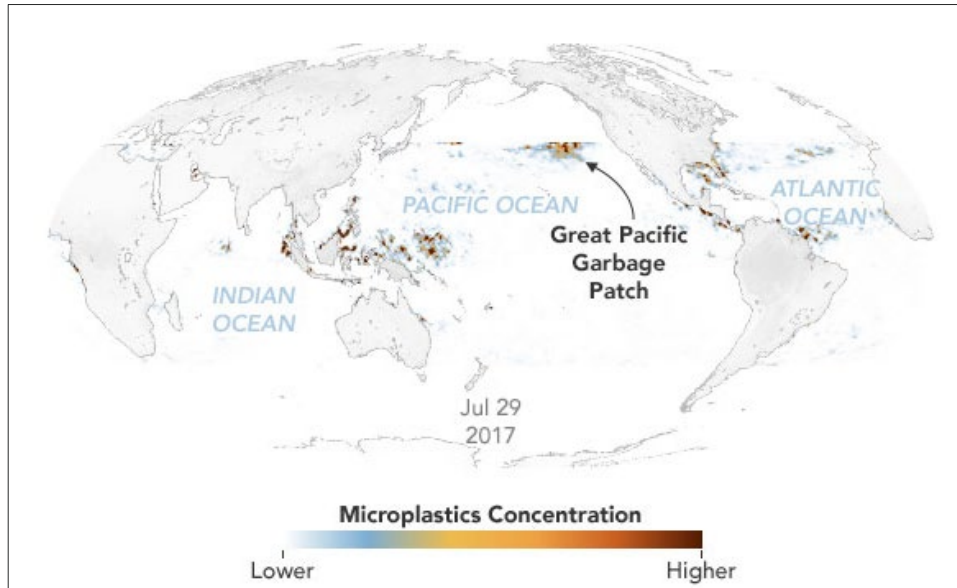
Addressing Plastic Pollution

Plastic pollution is a component of marine debris that has historically been elevated in public awareness of marine debris issues and in the scientific literature. Initiatives to address plastic pollution in the marine debris space have increased since 2008, and this area continues to be particularly relevant due to current waste management systems' inability to capture and keep up with the rapid growth of plastic production and waste generation. Between 2000 and 2019, global plastic production doubled to reach

¹² <https://nap.nationalacademies.org/catalog/26132/reckoning-with-the-us-role-in-global-ocean-plastic-waste>

¹³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7927104/pdf/toxics-09-00041.pdf>

¹⁴ <https://www.frontiersin.org/articles/10.3389/fmars.2021.697430/full>



Satellite Monitoring of Marine Debris

NASA's Cyclone Global Navigation Satellite System was launched in 2016, and one of its functions is tracking and mapping concentrations of global ocean microplastics. [Researchers at University of Michigan](#) were the first to map ocean microplastics at such a large scale and record concentrations at a high temporal resolution. NASA's Interagency Implementation and Advanced Concepts Team ([IMPACT](#)) also used data from this satellite system and machine learning to automatically detect and label marine debris across the globe. [Credit: NASA](#)

460 million tons, and global plastic waste generation more than doubled to reach 353 million tons, according to a [2022 Organisation for Economic Co-operation and Development report](#).¹⁵ The same study estimates that in 2019, 6.1 million tons of plastic waste leaked into aquatic environments and 1.7 million tons flowed into oceans.

IMDCC member agencies and other U.S. federal agencies support programs and initiatives to address plastic pollution. [Some key efforts](#)¹⁶ that have been introduced since 2008 include the [Trash Free Waters program](#),¹⁷ [Bio-Optimized Technologies to keep Thermoplastics out of Landfills and the Environment \(BOTTLE\)](#),¹⁸ [Waterborne Plastics Assessment and Collections Technologies \(WaterPACT\) project](#),¹⁹ the [Save Our Seas Initiative](#),²⁰ the [National Recycling Strategy](#),²¹ and the draft [National Strategy to Prevent Plastic Pollution](#).²²

¹⁵ <https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm>

¹⁶ <https://www.state.gov/u-s-actions-to-address-plastic-pollution/>

¹⁷ <https://www.epa.gov/trash-free-waters>

¹⁸ <https://www.bottle.org/home>

¹⁹ <https://www.nrel.gov/water/waterpact.html>

²⁰ <https://www.usaid.gov/urban/save-our-seas>

²¹ <https://www.epa.gov/circulareconomy/national-recycling-strategy>

²² <https://www.epa.gov/circulareconomy/draft-national-strategy-prevent-plastic-pollution>

In addition to programs that prevent, reduce, and support the management of plastic waste, there are efforts to remove marine debris and plastics from the environment at multiple scales. Such efforts range from local beach cleanups to more technically advanced or specialized removals of derelict vessels and lost and abandoned fishing gear. While plastics are a particularly visible and harmful element of the marine debris issue, marine debris includes a wide range of land- and ocean-based materials and federal programs do not exclusively focus on plastic pollution.

Accelerating International Efforts and Partnerships

International initiatives and partnerships to address marine debris have accelerated in the last 15 years. Global platforms, such as the [Global Partnership on Plastic Pollution and Marine Litter](https://www.gpmarinelitter.org/who-we-are)²³ which was established in 2012, have brought different stakeholders and parties into conversation to share information about marine debris, collaborate on solid waste management issues, and work towards global solutions. The [Global Ghost Gear Initiative](https://www.ghostgear.org/)²⁴ is another effort that has brought significant international momentum to marine debris issues since 2015, including emphasizing the need to address the fisheries side of the conversation and garnering private interest and resources to combat marine debris.

International efforts to address marine debris continue to grow. A recent demonstration of the international commitment to address marine debris comes from the [Fifth Session of the United Nations Environment Assembly of the United Nations Environment Programme](https://www.unep.org/inc-plastic-pollution) in 2022,²⁵ where a resolution to convene an intergovernmental negotiating committee to develop a global legally binding instrument on plastic pollution initiated a global treaty process.

²³ <https://www.gpmarinelitter.org/who-we-are>

²⁴ <https://www.ghostgear.org/>

²⁵ <https://www.unep.org/inc-plastic-pollution>



International Legally Binding Instrument on Plastic Pollution

Representatives at the fifth session of the United Nations Environment Assembly in Nairobi celebrating the resolution to end plastic pollution and implement an international legally binding agreement by 2024.

Credit: UNEP

Expanding the Policy Framework

In addition to global efforts to address marine debris, national policies and governmental programs in the United States have evolved significantly since 2008. The Save Our Seas Act (Public Law 115-265) is a key bipartisan statute that expanded efforts to address the marine debris issue on a domestic and international scale. The Act was signed into law in 2018, reauthorizing and amending the Marine Debris Program, expanding IMDCC membership, promoting international action, authorizing response actions for severe marine debris events, and requiring NOAA work in partnership with other federal agencies to develop outreach and educational strategies to address sources of marine debris. The Save Our Seas 2.0 Act (Public Law 116-224) was passed in 2020. The Act contains three titles that enhance: (1) the United States' domestic programs to address marine debris, (2) international engagement to combat marine debris, and (3) domestic infrastructure to prevent marine debris.

Another significant piece of legislation is the Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law, Public Law 117-58), which allocates millions of dollars to addressing marine debris and related issues. For example, it provides NOAA with [nearly \\$3 billion over the course of 5 years](#)²⁶ to fund a range of ocean and coastal efforts, including \$200 million to address marine debris. Moreover, the Bipartisan Infrastructure Law [allocates \\$350 million to the U.S. Environmental Protection Agency](#)²⁷ to invest in the United States' recycling system, including \$275 million appropriated for grants

²⁶ <https://www.noaa.gov/infrastructure-law>

²⁷ <https://www.epa.gov/infrastructure>

authorized under section 302(a) of the Save Our Seas 2.0 Act. Pub. L. 117-58, Div. J, Title VI, 135 Stat. 429, 1404 (Nov. 15, 2021).

In conclusion, public and scientific understanding of marine debris as well as programs, partnerships, and policies for addressing these issues have advanced significantly since the IMDCC recommendations were first released in 2008. The updated recommendations in this report consider these changes in the marine debris landscape and the evolution of IMDCC membership.

Highlighted Federal Programs to Address Plastic Pollution

Trash Free Waters: The U.S. Environmental Protection Agency (EPA)'s Trash Free Waters program works with partners to implement collaborative solutions that address land-based waste sources and reduce the volume of trash that enters our waters.

BOTTLE Consortium: The Department of Energy's Bio-Optimized Technologies to keep Thermoplastics out of Landfills and the Environment (BOTTLE) Consortium develops chemical upcycling strategies and conducts high-impact research and development to deliver scalable technologies to support cost-effective recycling and upcycling.

Clean Cities, Blue Ocean: Clean Cities, Blue Ocean—USAID's global flagship program under the Save Our Seas Initiative—works in collaboration with local partners and global experts to implement and test locally-relevant and sustainable approaches to reduce ocean plastics.

The National Recycling Strategy: EPA's National Recycling Strategy is the first part in a Series of Strategies on Building a Circular Economy for All. It identifies strategic objectives and stakeholder-led actions to create stronger, more resilient, and cost-effective municipal solid waste recycling systems in the United States.

The National Strategy to Prevent Plastic Pollution: The National Strategy to Prevent Plastic Pollution is also part of the EPA's Series of Strategies on Building a Circular Economy for All. It presents actions that can be taken by a wide range of stakeholders to prevent plastic pollution and eliminate the release of plastic waste into the environment by 2040.

SECTION 2 | PROCESS TO UPDATE THE 2008 RECOMMENDATIONS

The Marine Debris Act re-established the IMDCC to coordinate a comprehensive program of marine debris research and activities among federal agencies. The Act, as amended, requires the IMDCC to submit biennial reports to Congress detailing the progress and status of the strategies and recommendations in the report.

In 2023 and 2024, the IMDCC underwent a process to update the 2008 IMDCC recommendations and develop metrics to better evaluate member agencies' efforts and activities to address marine debris. Beginning in the Fiscal Year 2024–2025 biennial report, member agencies will report on the updated recommendations and metrics included in this report.

2.1 PROCESS OVERVIEW

Between May 2023 and May 2024, Meridian Institute (Meridian)—a non-profit that builds understanding, guides collaboration, and drives action to address our world's complex challenges—collaborated with the NOAA Marine Debris Program, as the chair of the IMDCC, to conduct an iterative process to update the IMDCC recommendations to reflect the evolution of marine debris issues and the composition of the IMDCC. This included developing a new suite of quantitative metrics to analyze the effectiveness of the recommendations, in addition to qualitative reporting. Input to inform the new recommendations and metrics was solicited through three key phases: informational interviews, IMDCC working sessions, and a public comment period.

Informational Interviews

Meridian consulted representatives from all IMDCC member agencies to inform the updated recommendations. Each member agency identified priorities and requirements under its remit to address the challenges of marine debris. Agencies highlighted their most impactful marine debris activities and potential opportunities to improve and expand their efforts. Leading civil society organizations and researchers were also engaged to provide additional insight on which aspects of the marine debris issue are most critical and where government support is crucial. These insights concerning opportunities and challenges from agency and non-agency actors were incorporated into the initial draft of the new IMDCC recommendations.

Key insights and themes from the agency interviews are highlighted below:

- **Public engagement, outreach, and awareness:** Public awareness is one of the predominant activities that IMDCC member agencies are involved in. To date, these campaigns and educational efforts have provided accessible information about marine debris, supported behavior change, and engaged impacted communities. Interviews suggested that the IMDCC member agencies could advance marine debris messaging by streamlining communications efforts around reducing the use of plastics and single use items. Member agencies could also provide accessible (multilingual) materials that address existing and emerging marine debris issues.
- **Expanding the marine debris conversation:** Marine debris is more than an “ocean issue.” Interviewees noted that to address this issue effectively and comprehensively, marine debris solutions need to consider a wide range of factors. Examples of factors to take into account include production processes, supply chains, consumer behavior, and waste management systems.
- **Incentives and enforcement:** Greater understanding of the scope of authority and jurisdiction of IMDCC agencies is needed to improve enforcement for violations of marine debris regulations.

Additionally, documenting and sharing information about what types of incentives have been most impactful could support marine debris prevention strategies going forward.

- **Understanding the extent and impacts of marine debris:** Interviewees flagged that increased standardization of the information that agencies measure, gather, track, and report on could improve our understanding of the current impact of IMDCC member agency activities. However, it was also noted that greater consistency in data collection and reporting would be difficult to institute across federal agencies. Additionally, consistency of information could provide insights on how to address marine debris and pollution more effectively in the future.

Civil society has played a significant role in raising awareness about and addressing the marine debris issue. Through non-attributional interviews, eight marine debris experts representing researchers, non-profits, and multilateral partnerships contributed their insights about the marine debris issue and opportunities for the federal government to increase its impact on addressing marine debris.

Key insights and themes from the civil society interviews are highlighted below:

- **Looking upstream to reduce marine debris:** Among those interviewed, all stated that action to address marine debris is shifting to upstream solutions to prevent materials that could become marine debris from entering the environment. They suggested that the federal government can support a transition to circularity, domestically and abroad, noting the importance of stimulating the supply chain to mobilize the logistics infrastructure needed to accelerate the transition. Some of the marine debris experts interviewed identified a knowledge gap in understanding waste generation in the United States and suggested the IMDCC member agencies could help by supporting research to better understand the distribution of waste, such as what ends up in a landfill versus how much of the waste stream is recycled.
- **Reduce abandoned, lost, and otherwise discarded fishing gear with proactive solutions:** Abandoned, lost, and discarded fishing gear (ALDFG), also known as ghost gear, is a profound contributor to marine debris in the ocean and is a direct threat to wildlife and ecological health. Removal of ALDFG can require specialized equipment and highly skilled teams to recover masses of entangled gear. However, advocates suggest that reducing incidents of ghost gear, such as creating incentives to retire gear or implementing mandatory fishing gear requirements, would help reduce the contribution to the marine debris issue. Since ghost gear has an outsized impact on wildlife and fisheries, this issue is prime for collaborative efforts of IMDCC agencies, as well as interagency efforts, to tackle the problem.
- **Transparency about impact and learning:** Advocates want to know more about the federal government's marine debris activities, including how funding to address marine debris has been successful and what has been learned from the efforts of IMDCC member agencies to date. Some asked if there are best practices, lessons learned, or successful efforts to replicate and scale. Others suggest that assessing the data collected from IMDCC member agency efforts could illuminate opportunities for new partnerships to supplement IMDCC member agency actions and improve coordination domestically and internationally.

IMDCC Working Sessions

In December 2023, IMDCC member agencies participated in two working sessions to review and offer feedback on the first draft of the recommendations. During the working sessions, IMDCC agency members reviewed the draft recommendations and provided input that Meridian incorporated in an updated draft.

In January 2024, IMDCC agency representatives were asked to provide input on what qualitative and/or quantitative measures their agency could implement to track and report on the recommendations for future IMDCC biennial reports. Meridian drafted initial metrics based on this input. The draft metrics were intended to be feasible for the IMDCC member agencies to track and report on, while also being effective in evaluating progress on the recommendations. The IMDCC member agency representatives met again in January to review and finalize the metrics.

2.2 PUBLIC COMMENT

On February 23, 2024, the NOAA Marine Debris Program, on behalf of the IMDCC, initiated a [public comment period](#)²⁸ to offer the public an opportunity to review the recommendations and provide written input on them. Public comment was not sought on the draft metrics. Once the comment period closed on March 25, 2024, the written input was analyzed and incorporated into the new recommendations and metrics as appropriate. The following section includes a brief summary of the comments received and an explanation of how the IMDCC responded to the comments.

The NOAA Marine Debris Program, on behalf of the IMDCC, received five public comments from individuals and non-profits on the new draft recommendations. Overall, the comments were supportive of the efforts of the IMDCC member agencies to address marine debris and generally urged further effort or specificity in the recommendations. In most cases, the recommendations were written broadly enough to incorporate the suggested activities, and the agencies will report on any specific actions in the upcoming reports to Congress. Most of the recommendations were not amended based on public comment to keep the overarching recommendations broad and allow flexibility in how the agencies undertake specific actions and report on them over time. The fourth recommendation in the Research and Monitoring category was changed in response to public comments received. For more detail on the comments, please refer to the Appendix.

SECTION 3 | NEW RECOMMENDATIONS AND METRICS

The following recommendations and associated metrics consider the current state of marine debris, IMDCC member agency initiatives, and measurable information. The recommendations are designed to be broad in scope to capture the full range of IMDCC member activities and stay relevant for many years. Additionally, the flexibility of the recommendations allows federal agencies to refine implementation activities and reporting over time.

IMDCC member agencies are not responsible for reporting on every recommendation and not every recommendation will be relevant for each IMDCC member agency; however, each recommendation has

²⁸ <https://www.federalregister.gov/documents/2024/02/23/2024-03678/request-for-public-comment-on-interagency-marine-debris-coordinating-committee-recommendations>

at least one IMDCC member agency reporting to it. Similarly, member agencies are not expected to report on every metric, even if they contribute to recommendations or categories associated with that metric.

The recommendations are organized into categories that relate to the variety of activities that the member agencies conduct to address marine debris. Federal statutes, authorities, and individual agency strategic plans guide IMDCC member agency actions; as such, member agencies support and conduct activities under the individual recommendations that align with their remit.

- 1. International Activities** applies to member agencies that conduct and support efforts to address marine debris at international fora and/or through partnerships with foreign nations. Activities to address marine debris involve coordination and collaboration through multilateral and bilateral partnerships that support international efforts to address marine debris. This set of recommendations broadly addresses IMDCC member agency activities to strengthen the capacity of local communities, governments, and partners in foreign nations to prevent, mitigate, and remove marine debris.
- 2. Prevention** activities aim to keep persistent, solid material that is manufactured or processed from entering the environment. This may include: reducing the sources of marine debris, re-designing materials and products to reduce the creation of waste, improving recycling and upcycling pathways, supporting proper solid waste disposal, and changing behaviors and processes that lead to the creation of marine debris. This set of recommendations broadly addresses IMDCC member agency activities to conduct and support federal and external efforts to prevent marine debris.
- 3. Capture, Clean Up, and Removal** are essential actions to reduce marine debris in a given environment. Capture refers to the action to physically retain, aggregate, and collect marine debris in the environment, or in locations where it is likely to subsequently enter the environment and become marine debris, in order to remove it. Removal and clean up refers to the physical action of taking marine debris out of the environment. This set of recommendations broadly addresses IMDCC member agency activities to conduct and support many efforts to capture, clean up, and remove existing marine debris in the environment as well as waste that may become marine debris.
- 4. Outreach and Education** is an important activity to raise public awareness of marine debris and build greater understanding of marine debris issues, including by engaging members of the public in data collection efforts. IMDCC member agencies engage in a variety of efforts to make information about marine debris and its impacts accessible. These recommendations reinforce a commitment to public outreach and education and to incorporating the principles of environmental justice.
- 5. Coordination**, both among agencies and with external parties, is central to the purpose of the IMDCC. This set of recommendations broadly addresses IMDCC member agency collaboration across and within agencies as well as with partners, to increase the impact of efforts to address marine debris in a comprehensive way.

6. **Research and Monitoring** reflects the important contribution of the U.S. federal government to improve understanding of marine debris issues through conducting and support research and technology efforts. These recommendations reinforce IMDCC member agencies' commitment to advancing our understanding of marine debris, increasing the availability of reliable and consistent data, and identifying opportunities to harmonize data collection as appropriate.
7. **Enforcement** refers to how federal agencies address violations of federal law related to marine debris. IMDCC member agencies with enforcement authority are encouraged to address issues of noncompliance through the appropriate enforcement mechanisms.

The recommendations do not imply approval for any specific action, although they may inform future federal budget development. All activities included in the recommendations are subject to budgetary constraints, interagency processes, stakeholder input, and other approvals, including the weighing of priorities and available resources by the Administration in formulating its annual budget and by Congress in legislating appropriations. In some cases, implementing the recommendations may require a sustained, multi-year effort by federal, state, tribal, and community partners. The recommendations are not intended to, and do not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

3.1 INTERNATIONAL ACTIVITIES

Recommendation #1: The IMDCC member agencies should strengthen the capacity of local actors in foreign nations to prevent marine debris; mitigate waste that may contribute to marine debris; and capture, clean up, and remove waste that may contribute to marine debris and existing marine debris in the environment.

METRICS

1. **Number of countries engaged** through capacity development efforts to prevent marine debris; mitigate waste that may contribute to marine debris; and capture, clean up, and remove waste and debris.
2. **Number of people trained** to prevent marine debris; mitigate waste that may contribute to marine debris; and capture, clean up, and remove waste and debris.
 - **Number of P-12 students.**
 - **Number of post-secondary students and adults.**
3. **Number of international monitoring sites** supported by the NOAA Marine Debris Monitoring and Assessment Project (MDMAP), the EPA Escaped Trash Assessment Protocol (ETAP), or other established monitoring protocols.

Recommendation #2: The IMDCC member agencies should participate in and support international efforts to address marine debris.

METRICS

1. **Number of international fora** that address marine debris where IMDCC member agencies have actively contributed.

2. **Number of international initiatives** to address marine debris that IMDCC member agencies have participated in or supported.

3.2 PREVENTION

Recommendation #1: The IMDCC member agencies should work to reduce the federal contribution of materials that may contribute to marine debris in their operations.

METRICS

1. **Number of initiatives** to reduce the federal contribution of materials that may contribute to marine debris in IMDCC member agency operations, including fieldwork and research.
 - **Number of IMDCC member agencies** that have adjusted procurement guidance to reduce plastic consumption in their operations.
 - **Number of events** conducted or supported by IMDCC member agencies at which efforts are made to reduce materials that may contribute to marine debris.

Recommendation #2: The IMDCC member agencies should conduct and support external efforts to prevent marine debris and mitigate waste that may contribute to marine debris, incorporating principles of environmental justice and focusing on disadvantaged communities.²⁹

METRICS

1. **Number of initiatives** to prevent marine debris and mitigate waste that may contribute to marine debris.
 - **Number of initiatives** that work with or benefit disadvantaged communities.

Recommendation #3: The IMDCC member agencies should conduct and support efforts to prevent and mitigate abandoned, lost, or otherwise discarded fishing gear (ALDFG).

METRICS

1. **Number of initiatives** to prevent and mitigate ALDFG.
2. **Number of partnerships** with organizations or initiatives to prevent and mitigate ALDFG.

3.3 CAPTURE, CLEAN UP, AND REMOVAL

Recommendation #1: The IMDCC member agencies should conduct and support efforts to capture, clean up, and remove waste that may contribute to marine debris and existing marine debris in the environment, incorporating principles of environmental justice and focusing on disadvantaged communities.

METRICS

1. **Number of initiatives to capture, clean up, and remove** waste that may contribute to marine debris and existing marine debris in the environment.

²⁹ Executive Order 14008, Tackling the Climate Crisis at Home and Abroad, considers “disadvantaged communities” to be those communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care.

- **Number of initiatives** that work with or benefit disadvantaged communities.
- **Amount** of waste and marine debris removed.
- 2. Area (linear miles, square miles, or acres) improved** through the capture, clean up, and removal of waste that may contribute to marine debris and existing marine debris in the environment.
 - **Area improved** in disadvantaged communities.

3.4 OUTREACH AND EDUCATION

Recommendation #1: The IMDCC member agencies should conduct and support public awareness and education efforts to inform communities and the general public about marine debris, incorporating principles of environmental justice and focusing on disadvantaged communities.

METRICS

- 1. Number of public-facing outreach products**, including exhibits, to inform people about marine debris.
 - **Number of people** that interact with outreach products.
- 2. Number of initiatives or public outreach events** to inform people about marine debris.
 - **Number of people engaged** through initiatives or public outreach events.
 - **Number of initiatives** that work with or benefit disadvantaged communities.

Recommendation #2: The IMDCC member agencies should conduct and support efforts to engage members of the public in science and data collection efforts to learn about marine debris, incorporating principles of environmental justice and focusing on disadvantaged communities.

METRICS

- 1. Number of initiatives** that include outreach or education for science and data collection to address marine debris.
 - **Number of initiatives** that work with or benefit disadvantaged communities.
- 2. Number of people trained** in science and data collection to address marine debris.
 - **Number of people** trained in science and data collection from disadvantaged communities.
- 3. Number of volunteer-surveyed monitoring sites supported** by MDMAP, ETAP, or other established monitoring protocols.

3.5 COORDINATION

Recommendation #1: The IMDCC member agencies should conduct and support outreach to partners to improve coordination across jurisdictions to more effectively prevent, remove, inform people about, research, and monitor marine debris.

METRICS

- 1. Number of intra- and interagency collaborations** to more effectively prevent, remove, inform people about, research, and monitor marine debris.
- 2. Number of regional conferences, workshops, exercises, drills, and meetings relevant to marine debris** participated in or supported.

3.6 RESEARCH AND MONITORING

Recommendation #1: The IMDCC member agencies should conduct and support research to improve understanding of marine debris sources, abundance, distribution, transport, degradation, and the social, environmental, and economic impacts of marine debris.

METRICS:

1. **Number of initiatives** to improve understanding of marine debris sources, abundance, distribution, transport, degradation, and the social, environmental, and economic impacts of marine debris.
2. **Number of webinars, workshops, and presentations hosted** to inform and connect stakeholders and disseminate marine debris research findings.

Recommendation #2: The IMDCC member agencies should collaborate with partners on congruent and harmonized data collection, as appropriate.

METRICS

1. **Number of fora engaged** in that address data harmonization.
2. **Number of initiatives** that apply, test, and/or develop marine debris data harmonization practices.

Recommendation #3: The IMDCC member agencies should conduct and support efforts to develop and apply technologies (e.g., modeling or remote sensing) that support a more robust understanding of the status of marine debris, prevent marine debris, or address the impacts of marine debris.

METRICS

1. **Number of monitoring devices/instruments deployed** to monitor and track marine debris.
 - **Number of instruments deployed** that identify cases of marine mammal entanglement in marine debris.
2. **Number of initiatives** that integrate emerging or established monitoring technologies and techniques.

Recommendation #4: The IMDCC member agencies should conduct and support efforts to monitor marine debris to better understand marine debris sources, fate, transport, and impacts.

METRICS

1. **Number of initiatives** to monitor marine debris.
2. **Number of monitoring sites** surveyed on a regular basis using MDMAP, ETAP, or other established protocols.

3.7 ENFORCEMENT

Recommendation #1: The IMDCC member agencies, as appropriate, should issue notices of non-compliance to correct violations of federal law and either address violations through agency administrative processes or, when violations warrant, refer violations of federal law for civil or criminal enforcement action.

SECTION 4 | IMPLEMENTATION AND LOOKING FORWARD

4.1 ANALYZING THE EFFECTIVENESS OF THE RECOMMENDATIONS

Recommendation 3 in the 2019 GAO report stated that a process should be developed and implemented to analyze the effectiveness of the IMDCC's recommendations and strategies, and that the results of such analysis should be included in its biennial reports. The metrics included in the above section address this recommendation by offering a mechanism for analyzing the effectiveness of the IMDCC recommendations.

The activities conducted and information gathered by IMDCC member agencies vary based on their missions, jurisdictions, and resources. These quantitative metrics support a more standardized way to understand and assess the impact of the marine debris activities of the IMDCC member agencies. The biennial reports will also continue to have narrative reporting that captures additional information from agencies. Qualitative information will provide additional detail and nuance on the breadth and impact of agency activities.

Future biennial reports will use the quantitative metrics, sub-metrics, and additional qualitative and narrative discussion to analyze the effectiveness of the recommendations.

4.2 PROCESS FOR UPDATING THE RECOMMENDATIONS AND METRICS

Although the recommendations and metrics in this report are designed to be broad in scope and remain relevant for many years, they will need to be adjusted to reflect changes in the marine debris landscape and the evolution of the IMDCC. On an annual basis, the IMDCC intends to provide an opportunity for member agencies to share their progress informally and discuss what is and what is not working for them in terms of conducting activities aligned with the new recommendations and associated metrics. New and expanded authorities that have implications for member agencies' marine debris activities will also be tracked on a regular basis, particularly if they provide an opportunity to expand the recommendations.

In addition to regular consideration of how the recommendations and metrics are functioning and changes in relevant authorities, the IMDCC intends to review the recommendations and metrics after five reporting cycles, or every 10 years, for updates. At these points, the IMDCC intends to assess the contributions of member agencies in its biennial reports, consider if the recommendations and metrics are functioning as they should, and determine whether updates are necessary to better capture marine debris activities and analyze the impact of the IMDCC in light of shifts in policies, authorities, and ongoing or new activities.

4.3 CONCLUSION

The state of marine debris has changed significantly since the IMDCC recommendations were first established in 2008. This trend will likely continue as scientific understanding and public awareness around this issue increase and programs, partnerships, and policies to address marine debris are further developed. The IMDCC plays an important role in coordinating a wide range of federal marine debris activities, and the new recommendations and metrics will help to foster accountability among member agencies and evaluate the effectiveness of their marine debris efforts for the next 10 years and beyond.

APPENDIX | RESPONSE TO PUBLIC COMMENTS

International Activities

Two public comments contained recommendations relevant to the International Activities category of Interagency Marine Debris Coordinating Committee (IMDCC) recommendations. Both urged the IMDCC to take certain positions on the negotiations on an international legally binding instrument on plastic pollution, including supporting the inclusion of legally binding production limits and financing and technology transfer measures. One comment also recommended that the United States support the Basel Convention and halt the export of plastic waste.

At the time the IMDCC recommendations were drafted and published for public comment, the international negotiations were ongoing. The Department of State is the lead federal agency for the international negotiations, and hosted multiple stakeholder calls and meetings to draft, discuss, and develop U.S. Government positions for the negotiations.

The IMDCC recommendations are separate from the international negotiations and represent the actions that the IMDCC member agencies can take under their current authorities to address marine debris. Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes. (33 U.S.C. 1956). This definition includes plastics, but also other types of debris. As such, the IMDCC did not make any changes to the draft recommendations.

The public comments also encouraged the IMDCC member agencies to continue to work with international partners and support the efforts of foreign nations to address marine debris. The IMDCC believes this sentiment is adequately reflected in the current text of the recommendations and did not make any changes to the recommendations.

Prevention

Four public comments contained recommendations relevant to the Prevention category of IMDCC recommendations. In general, the comments were supportive of efforts to prevent marine debris and urged stronger efforts regarding federal procurement of plastics.

The first recommendation in this category addresses the federal contribution of materials, through agency operations, that may contribute to marine debris. Public comments encouraged the IMDCC member agencies to eliminate all single-use plastics from their operations and take specific additional steps, including use of a tool from the General Services Administration and a commitment to specific, timebound actions.

The IMDCC member agencies recognize that there are some situations where plastics may be needed in federal operations or where suitable alternatives do not yet exist. The new IMDCC recommendations are designed to maintain relevance for several years, but it may not be feasible to completely eliminate the federal procurement of single-use plastics in the time span of these recommendations. The IMDCC supports the intent behind the public comments, but did not make any changes to the text of the recommendation.

The second recommendation in this category addresses IMDCC member agency support for external efforts to prevent marine debris and mitigate waste that may contribute to marine debris. One comment emphasized the importance of incorporating environmental justice into pollution prevention. This is already included in the text of the recommendation. Another comment generally encouraged the transition to more sustainable lifestyles and emphasized the importance of recycling municipal solid waste, which both can be addressed under the current recommendation.

Public comments also advocated for changes to make the second recommendation more specific, including adding legally binding production limits and adding language to clarify that the recommendation applies to microplastics and the full lifecycle of plastics. Public comments also recommended that the IMDCC member agencies prioritize improved waste management practices; promotion of reuse, refill, and repair infrastructure; promotion of and support for product design to reduce waste generation and promote recycling; and action to eliminate problematic plastic items.

The recommendation was written broadly in order to be generally applicable across member agency activities, and thus adequately incorporates the specific activities suggested in the public comments to the extent those activities are authorized by current agency authorities.

The third recommendation in this category addresses IMDCC member agency activities to prevent and mitigate abandoned, lost, or otherwise discarded fishing gear. Two public comments provided input on this recommendation. One comment stated that the recommendation should include more information on saltwater angling, and another recommended focusing efforts on standardized gear loss reporting, establishing a central repository for data, and advocacy for effective strategies to reduce gear loss. As with the previous recommendation, the IMDCC appreciates the intent of the comments but did not make any changes to the recommendations. These specific activities can already be addressed under the recommendation text as written.

Capture, Clean Up, and Removal

One public comment addressed this category. It was supportive of the IMDCC member agencies conducting and supporting the activities included in the recommendation, and recognized the importance of significant or full funding to carrying out the recommendation. There were no suggested changes to the recommendation.

Outreach and Education

Three public comments provided input on this category. In general, the comments were supportive of efforts to conduct and support outreach and education. One comment urged the IMDCC member agencies to work in partnership with local coastal communities to reach the general public and continue to engage the public in science and data collection efforts, such as through the International Coastal Cleanup. One comment recommended adding language about educating the public on how to prevent marine debris, including through reduction, reuse, and recycling. These actions are generally covered under the recommendation as written, since it broadly describes public engagement “about marine debris,” and are specifically covered under the second recommendation in the Prevention category.

One comment recommended the addition of a new recommendation, with the following suggested text: “The IMDCC member agencies should conduct and support efforts to engage members in the Corporate Community in science and data collection efforts to learn about marine debris, incorporating principles

of environmental justice to those directly linked to being responsible for marine debris as data suggests, and by doing so support a more robust understanding of the status of marine debris, prevent marine debris, or address the impacts of marine debris [sic].”

The second recommendation in the Outreach and Education category is intended to address how public engagement in science and data collection can promote awareness of and concern about marine debris. In contrast, the Research and Monitoring category addresses the collection of scientifically rigorous data in order to improve understanding of marine debris, and recommends that the IMDCC member agencies “conduct and support” these efforts. Engaging members of the private sector in science and data collection falls underneath this category of recommendations, and the recommendations as written generally encompass the scope of the suggested additional language.

Coordination

Several of the comments encouraged the IMDCC member agencies to partner and collaborate with external stakeholders. One comment encouraged the development of public/private partnerships for addressing marine debris and municipal solid waste disposal challenges, recommended that “Environmental Justice concerns should include ‘Communities of Faith’ organizations,” and stated that the IMDCC member agencies should pursue coordination with coastal communities. Another comment encouraged the IMDCC member agencies to coordinate closely with tribes, communities, and other local entities, and provide support to local communities.

The IMDCC member agencies agree with the intent of the comments. Engagement with stakeholders is incorporated throughout the recommendations. Many of the recommendations direct the IMDCC member agencies to “conduct and support” specific activities. For the purposes of these recommendations, “support” includes providing funding, providing technical expertise, or otherwise facilitating the efforts of partners. The recommendation in the Coordination category also explicitly encourages outreach to partners to improve coordination to address marine debris.

Research and Monitoring

Two public comments provided input on this category. In general, the comments suggested specific areas of research for the IMDCC member agencies to focus on.

One comment recommended including information about the Watershed Ecological Risk Assessment approach under the first recommendation in this category; suggested including “the ecosystem approach,” “scenario planning,” and “ecological economics” under the third recommendation in this category; and generally encouraged the consideration of the cumulative impacts of multiple environmental stressors.

Another comment recommended that the research and monitoring efforts of the IMDCC member agencies should include a focus on microplastics and their impacts, work to identify marine debris hotspots that are co-located with biodiversity hotspots and sensitive ecosystems, incorporate tools to monitor climate threats, and evaluate the efficacy of upstream policy interventions. The comment also suggested the addition of marine debris impacts to the list of research focal areas in the fourth recommendation in this category.

The IMDCC believes that the recommendations are written broadly enough to include the specific additions suggested by the comments. However, the IMDCC appreciates the suggested areas of research, and agrees with the suggestion to add consideration of impacts under the fourth recommendation. The text of the recommendation was updated to say: “The IMDCC member agencies should conduct and support efforts to monitor marine debris to better understand marine debris sources, fate, transport, and impacts.”