



REPORT TO CONGRESS

2020-2021 INTERAGENCY MARINE DEBRIS COORDINATING COMMITTEE BIENNIAL REPORT

*Developed pursuant to: Marine Debris Research, Prevention, and Reduction Act, 2006
(Public Law 109-449), as amended*

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THIS INTERAGENCY MARINE DEBRIS COORDINATING COMMITTEE PROGRESS REPORT IS PROVIDED PURSUANT TO THE MARINE DEBRIS ACT (33 U.S.C. § 1951 ET SEQ.) AND SECTION 1954(E) OF THE ACT REQUIRES

(e) Biennial Progress Reports. Biennially, the Committee, through the Chairperson, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure and the Committee on Natural Resources of the House of Representatives a report that evaluates United States and international progress in meeting the purpose of this chapter. The report shall include—

- (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 1952 of this title, 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.*

THIS REPORT RESPONDS TO THE ACT'S REQUEST.

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Interagency Marine Debris Coordinating Committee

Chair, Department of Commerce, National Oceanic and Atmospheric Administration

Vice-Chair, United States Environmental Protection Agency

Department of Defense, United States Navy

Department of Energy

Department of Homeland Security, United States Coast Guard

Department of the Interior, Bureau of Safety and Environmental Enforcement

Department of the Interior, National Park Service

Department of the Interior, United States Fish and Wildlife Service

Department of Justice, Environment and Natural Resources Division

Department of State, Office of Ocean and Polar Affairs

Marine Mammal Commission

National Aeronautics and Space Administration

National Science Foundation

United States Agency for International Development

Committee Members

<p>Nancy Wallace IMDCC Chair Department of Commerce National Oceanic and Atmospheric Administration</p>	<p>Brian Frazer IMDCC Vice-Chair United States Environmental Protection Agency Office of Water</p>
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Federal Department and Agency Members

<p>MaryLee Haughwout Department of Commerce National Oceanic and Atmospheric Administration</p>	<p>Lucy Chiu Department of Justice Environment and Natural Resources Division</p>
<p>Michael Pletke Department of Defense United States Navy</p>	<p>John Griffith Department of State Office of Ocean and Polar Affairs</p>
<p>Benjamin Maurer National Renewable Energy Laboratory Department of Energy</p>	<p>Victoria R. Cornish Marine Mammal Commission</p>
<p>Michael D. Emerson Department of Homeland Security United States Coast Guard</p>	<p>Laura Lorenzoni Ocean Biology and Biogeochemistry Program National Aeronautics and Space Administration</p>
<p>David Fish Department of the Interior Bureau of Safety and Environmental Enforcement</p>	<p>Jeanne Van Briesen Engineering Directorate National Science Foundation</p>
<p>Eva DiDonato Department of the Interior National Park Service</p>	<p>Clare Romanik United States Agency of International Development</p>
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I. EXECUTIVE SUMMARY

This Interagency Marine Debris Coordinating Committee (IMDCC) Progress Report provides an update on the activities Federal agencies have undertaken between October 2019 and September 2021 (fiscal years (FY) 2020 and 2021) to address marine debris, as mandated by the Marine Debris Act, 33 U.S.C. § 1951 et seq., as amended. The Marine Debris Act requires IMDCC to submit biennial progress reports that evaluate the United States' and international community's progress in meeting the purposes of the Marine Debris Act.

This is the seventh progress report since the publication of the first Interagency Report on Marine Debris Sources, Impacts, Strategies, and Recommendations, submitted to Congress in August 2008. This progress report contains all of the information required by 33 U.S.C. § 1954(e) of the Marine Debris Act, entitled *Biennial Progress Reports*, including the following:

- Section III: the status of implementation of any recommendations and strategies of the Interagency Committee and analysis of their effectiveness;
- Section IV: a summary of the marine debris inventory to be maintained by the National Oceanic and Atmospheric Administration (NOAA);
- Section V: a review of the NOAA Marine Debris Program (MDP), including projects funded and accomplishments relating to the reduction and prevention of marine debris;
- Section VI: a review of U.S. Coast Guard programs and accomplishments relating to marine debris removal, including enforcement and compliance with International Convention for the Prevention of Pollution from Ships (MARPOL) requirements; and
- Section VII: estimated Federal and non-Federal funding provided for marine debris and recommendations for priority funding needs.

This report also responds to two recommendations in the Government Accountability Office (GAO) Report, *Marine Debris: Interagency Committee Members Are Taking Action, but Additional Steps Could Enhance the Federal Response*, published in September 2019.¹

The GAO report recommends that the IMDCC 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.” It also recommends that the IMDCC should “develop a process to identify recommendations for priority funding needs to address marine debris and include such recommendations in its biennial reports.” These recommendations are addressed in sections III and VII, respectively.

The appendices contain an overview of relevant Federal agency authorities.

¹ United States Government Accountability Office (2019). *Marine Debris: Interagency Committee Members Are Taking Action, but Additional Steps Could Enhance the Federal Response* (GAO-19-653). Washington, DC, available at www.gao.gov/assets/710/701694.pdf.

II. INTRODUCTION

A. Overview of the Marine Debris Issue

Marine debris is one of the most pervasive global threats to the health of the ocean and our waterways and is an issue of growing local, regional, national, and international concern. 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 Great Lakes.”² Anything human-made – such as vessels, fishing gear, plastic bags, beverage bottles, and food wrappers – can become marine debris through dumping, improper waste management, transport through storm drains, and natural weather events.

From consumer items to abandoned and derelict vessels, marine debris is polluting the global ocean and Great Lakes. Marine debris can injure or kill marine and coastal wildlife; damage and degrade habitats; interfere with navigational safety; cause economic loss to fishing, maritime industries, and coastal communities; and threaten human health and safety. The problem is substantial, but it is not unsolvable. Marine debris is preventable if everyone, including government, businesses, and communities, work together.

B. The Interagency Marine Debris Coordinating Committee

The IMDCC was established by Congress under the Marine Plastic Pollution Research and Control Act of 1987 and was re-established in 2006 under the Marine Debris Act.³ The Save Our Seas Act of 2018 amended the membership of the IMDCC to include the Department of State and the Department of the Interior.⁴ The IMDCC is the interagency coordinating body responsible for addressing marine debris. The IMDCC consists of the following agencies, as designated in 33 U.S.C. § 1954:

- NOAA;
- the Environmental Protection Agency (EPA);
- the U.S. Coast Guard;
- the U.S. Navy;
- the Department of State;
- the Department of the Interior; and
- such other Federal agencies that have an interest in ocean issues or water pollution prevention and control as the Secretary of Commerce determines appropriate.

² Marine Debris Act, 33 U.S.C. § 1956 (2012)

³ Marine Debris Act, 33 U.S.C. § 1951 et seq. (2006), as amended by title VI, Public Law (P.L.) 112-213, Dec. 20, 2012, 126 Stat. 1576; P.L. 115-265, Oct. 11, 2018, 132 Stat. 3742; P.L. 116-224, Dec. 18, 2020, 134 Stat. 1072.

⁴ P.L. 115-265, Oct. 11, 2018, 132 Stat. 3742.

The following agencies have been approved as additional member agencies:

- the Department of Energy;
- the Department of Justice, Environment and Natural Resources Division;
- the Marine Mammal Commission;
- the National Aeronautics and Space Administration;
- the National Science Foundation; and
- the U.S. Agency for International Development.

The IMDCC is primarily responsible for sharing information, assessing, and promoting best management practices, as well as coordinating interagency responses to marine debris. The IMDCC ensures coordination of Federal agency research priorities, monitoring techniques, educational programs, and regulatory actions. The IMDCC is also responsible for recommending priorities and strategies to identify, determine sources of, and assess, reduce, and prevent marine debris, as well as mitigate its adverse impact on the economy of the United States, the marine environment, and navigation safety.

III. IMPLEMENTATION OF IMDCC RECOMMENDATIONS AND STRATEGIES

The 2008 *Interagency Report on Marine Debris Sources, Impacts, Strategies, and Recommendations* provided a detailed review of the problems associated with marine debris and laid out 25 recommendations intended to guide the Federal Government's strategies with respect to the problems of persistent marine debris. In response to the 2019 GAO Report No. GAO-19-653, *Marine Debris: Interagency Committee Members are Taking Action, but Additional Steps Could Enhance the Federal Response*, the IMDCC reviewed the 2008 recommendations. The IMDCC acknowledges that the recommendations are more than a decade old, and that it is time to revisit the recommendations in order to more effectively coordinate the marine debris efforts of Federal agencies.

In June 2021, the IMDCC agreed to initiate a process to develop new recommendations to guide the Federal Government's strategies with respect to addressing the problems of persistent marine debris. The IMDCC will also develop metrics to better monitor, evaluate, and report the results of collective efforts to address the complex facets of marine debris. While this process is ongoing, the IMDCC will not report against the 2008 recommendations.

The following section includes brief descriptions of the marine debris-related activities of the IMDCC member agencies. It also includes information from Federal agencies that are not named as member agencies in 33 U.S.C. § 1954 and have not formally joined the IMDCC through the process outlined in the Charter – but that have been involved in relevant marine debris activities.

A. **IMDCC Member Agency Activities**

1. **Department of Energy**

Over FY 2020 and FY 2021, the Department of Energy maintained major activities relevant to the avoidance, removal, and reclamation of plastics debris within and across multiple offices within the agency. The Office of Science (Basic Energy Science Program, Biological and Environmental Research Program), the Office of Energy Efficiency and Renewable Energy (Advanced Manufacturing Office, Bioenergy Technologies Office, and Water Power Technologies Office), the Office of Fossil Energy, and the Advanced Research Projects Agency-Energy funded research and development efforts to tackle plastic waste through a coordinated research and development approach. Most of these activities lie within the cross-office Strategy for Plastics Innovation.

The Strategy for Plastics Innovation

Announced in November 2019 as the Plastics Innovation Challenge, the Strategy for Plastics Innovation is a comprehensive program to accelerate innovations in energy-efficient plastics recycling technologies, positioning the United States as a global leader in design and implementation of advanced plastics recycling technologies and in the manufacture of new plastics that are recyclable by design.

The Strategy for Plastics Innovation aims to make domestic processing of plastic waste economically viable and energy efficient, develop new and improved plastic materials lacking the same end-of-life concerns as incumbent materials, and ultimately reduce plastic waste accumulation. Four strategic goals define the scope of the Strategy for Plastics Innovation:

- Deconstruction: Develop biological and chemical methods for deconstructing plastic wastes into useful chemicals.
- Upcycling: Develop technologies to upcycle waste chemical streams into higher-value products, encouraging increased recycling.
- Recycle by Design: Design new, renewable plastics and bioplastics that have the properties of today's plastics, are easily upcycled, and can be manufactured at scale domestically.
- Scale and Deploy: Support an energy- and material-efficient domestic plastics supply chain by helping companies scale and deploy new technologies in domestic and global markets, while improving existing recycling technologies such as collection, sorting, and mechanical recycling.

Major FY 2020 and FY 2021 accomplishments include: 1) the establishment of a new consortium, known as BOTTLE, to coordinate across the portfolio of research activities; 2) the release of focused Funding Opportunity Announcements

and Small Business and Innovation Research opportunities in polymer circularity; and 3) the release of the Strategy for Plastics Innovation Draft Roadmap.

In addition to BOTTLE, some of the key Department of Energy-funded organizations that support the Strategy for Plastics Innovation are the REMADE Institute, ReCell Center, the Institute for Advanced Composites Manufacturing Innovation, and the Energy Frontier Research Centers.

Early research and development successes within the Strategy for Plastics Innovation include using enzymes as a sustainable, low-energy, low-carbon approach to recycling a common plastic found in beverage containers, clothing, and food packaging.

More information on the Strategy for Plastics Innovation can be found on the Plastic Innovation Challenge website⁵ and in the Strategy for Plastics Innovation Draft Roadmap.⁶

BioOptimized Technologies to keep Thermoplastics Out of Landfills and the Environment (BOTTLE)

The BOTTLE consortium is a multi-organization consortium established in FY 2021 and funded by the Department of Energy's Advanced Manufacturing Office and Bioenergy Technology Office. BOTTLE's vision is to deliver selective, scalable technologies to enable cost-effective recycling, upcycling, and increased energy efficiency for plastics. The mission of BOTTLE is to develop robust processes to upcycle existing waste plastics and develop new plastics and processes that are recyclable-by-design.

BOTTLE encompasses a team of thoughtfully chosen experts from multiple partner national laboratories and universities with demonstrated experience in process development and integration, chemical catalysis, biocatalysis, material science, separations, modeling, economic analysis, and life cycle assessment. The consortium team comprises over 100 researchers from the following 10 institutions: Argonne National Laboratory, Los Alamos National Laboratory, National Renewable Energy Laboratory, Oak Ridge National Laboratory, SLAC National Accelerator Laboratory, Colorado State University, the Massachusetts Institute of Technology, Montana State University, Northwestern University, and the University of Portsmouth.

Through analysis-guided research and development, the BOTTLE consortium is establishing a robust pipeline of fundamental science innovations which prioritize increased energy savings, carbon utilization, and economic efficiency to incentivize the reclamation and recycling of plastic waste. BOTTLE has also

⁵ www.energy.gov/plastics-innovation-challenge/plastics-innovation-challenge

⁶ www.energy.gov/sites/default/files/2021/01/f82/Plastics%20Innovation%20Challenge%20Draft%20Roadmap.pdf

found success in partnering with industrial partners. The Department of Energy's research and development investments in BOTTLE are being leveraged by industry, in pursuit of more sustainable polymeric supply chain solutions.

Waterborne Plastics Assessment and Collection Technologies (WaterPACT)

WaterPACT is a joint project between the National Renewable Energy Laboratory and the Pacific Northwest National Laboratory. Scoped in FY 2021, WaterPACT will focus on developing new technology solutions for sensing and collection of the breadth of waterborne plastics debris in U.S. rivers and coastal seas, as well as partner with BOTTLE to modify polymer conversion and redesign efforts to mitigate waterborne plastics debris.

Envisioned as a two-phase program, WaterPACT will begin as a field campaign to characterize, model, and valorize the waterborne flux of macro- and microplastics in five U.S. rivers, before transitioning to a research, development, and deployment portfolio, leveraging the existing capabilities of the national laboratory system.

In phase I, WaterPACT will depend on key partnerships with fieldwork and laboratory partners, including the Environmental Molecular Science Laboratory, EPA, and multiple universities and nonprofit partners.

The WaterPACT project seeks a robust pipeline of engineering innovation in the remediation of waterborne plastics pollution and the reclamation of valuable feedstock for the circular economy.

2. Department of the Interior, Bureau of Safety and Environmental Enforcement

The Bureau of Safety and Environmental Enforcement (BSEE) works to promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement. The BSEE Marine Trash and Debris Prevention standards require private sector companies working in offshore oil and gas to conduct annual training and to follow best practices guidelines to limit the introduction of trash and debris into the marine environment. BSEE scientists and engineers review industry training certifications and conduct field inspections to ensure that all Outer Continental Shelf workers have had proper marine trash and debris training and that Outer Continental Shelf facilities are following proper marine trash and debris policies, including securing and labeling loose items and maintaining marine trash and debris placards. BSEE also performs Seafloor Compliance and Monitoring Program site clearance inspections in the Gulf of Mexico to ensure that operators do not leave any marine trash, debris, or abandoned equipment on the seafloor after decommissioning an Outer Continental Shelf structure.

In FY 2020 and FY 2021, BSEE completed the following marine debris priority activities:

- BSEE's Environmental Compliance Program worked with the Bureau of Ocean Energy Management (BOEM) to develop an effective marine trash and debris condition of approval of the Vineyard Wind 1 and South Fork Wind Farm Construction and Operations Plans. BOEM also incorporated this condition as a Project Design Criteria and Best Management Practice into their Endangered Species Act Section 7 informal programmatic consultation with the NOAA National Marine Fisheries Service for renewable energy site characterization and site assessment/data collection activities associated with Atlantic Outer Continental Shelf leases. The purpose of BOEM's environmental conditions of approval is to ensure offshore wind energy projects are constructed and operated in a manner that prevents undue harm or damage to natural resources. BSEE will continue to provide feedback to BOEM on the effectiveness of the marine trash and debris mitigation measures as BSEE conducts compliance verification of offshore wind energy activities.
- BSEE's Environmental Compliance Program provided a formal recommendation to BOEM on site clearance verification for decommissioning buoys used for site assessment on renewable energy leases. BSEE noted that the lessee's use of photos and inventory of equipment alone may not constitute sufficient verification of site clearance because undocumented material or damage from site assessment activities may not be shown in photos. BSEE recommended the use of bottom surveys for site clearance verification to confirm the removal of all material documented or not from the seafloor after decommissioning activities.
- BSEE's Environmental Compliance Program conducted more than 29 compliance reviews of marine trash and debris-related events that unexpectedly took place during site assessment activities on renewable energy leases on the Atlantic Outer Continental Shelf.
- BSEE has enforced the Gulf of Mexico Marine Trash and Debris Awareness and Elimination Survey Protocols found under Appendix B of the Biological Opinion for OCS oil and gas activities issued by NOAA's National Marine Fisheries Service on March 13, 2020, as amended, pursuant to a consultation with BOEM and BSEE under section 7 of the Endangered Species Act. For example, BSEE's Environmental Compliance Program inspected 24 offshore oil and gas facilities in the Gulf of Mexico for compliance with marine trash and debris prevention requirements. The program also requires annual training for all offshore workers and annual reporting of training records. BOEM makes compliance with these protocols mandatory by including them as lease stipulations in lease sales and as a condition of approval for all new and revised OCS oil and gas exploration and development plans in the Gulf of Mexico.

3. Department of the Interior, National Park Service

The National Park Service entered into a 5-year agreement with NOAA’s Marine Debris Program, whereby NOAA is funding marine debris educational displays at three park units every year for 5 years. In FY 2020, the first year of the agreement, Perry’s Victory and International Peace Memorial (Ohio), Bering Land Bridge National Preserve (Alaska), and Cape Lookout National Seashore (North Carolina) were chosen to develop these displays, which were completed in FY 2021. Kenai Fjords National Park (Alaska), Biscayne National Park (Florida), and Kaloko-Honokōhau National Historical Park (Hawaii) began developing their displays in FY 2021.

4. Department of the Interior, U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) provides education and outreach opportunities to the public in a variety of ways. At the local level, marine debris issues are presented via interpretive panels, talks, and fishing line recycling stations on National Wildlife Refuges. At the regional and national level, marine debris cleanup and prevention are frequent topics for blogs and articles shared through social media.

The USFWS Migratory Bird Program is working with partners on multiple marine debris projects. They are partnering with the NOAA Marine Debris Program to research and issue a report on the impacts of derelict fishing gear and aquaculture debris to migratory birds in the Gulf of Maine. They have also helped to develop a community science app for documenting wildlife-debris interactions in the southeastern United States called “Tangled in Trash.”⁷

Marine debris is a continual hazard on coastal National Wildlife Refuges. Refuge staff work with communities and volunteers to remove debris from shorelines and reefs across the Nation. The USFWS partnered with the Papahānaumokuākea Marine Debris Project, NOAA, the State of Hawaii, and the Papahānaumokuākea Marine National Monument to remove over 100 tons of marine debris from the marine national monument in 2021. This is in addition to the removal of over 150 tons of debris in 2020 from French Frigate Shoals in the monument after Hurricane Walaka caused significant damage in 2018.

Regional USFWS staff also contribute to the development of NOAA Marine Debris Program regional marine debris action plans.

5. Department of Justice

Referrals of pollution/dumping violations to DOJ

⁷ www.anecdata.org/projects/view/861

The Department of Justice (DOJ) addresses the problem of marine debris through judicial civil and criminal enforcement of environmental violations involving marine debris. Agencies such as Environmental Protection Agency, NOAA, and the U.S. Coast Guard refer cases (e.g., Act to Prevent Pollution from Ships, Clean Water Act, Ocean Dumping Act) to DOJ where they are handled by the Environment and Natural Resources Division (ENRD), sometimes working with the U.S. Attorney's offices.

Additionally, ENRD's enforcement of pollution laws, such as the Resource Conservation and Recovery Act and the Clean Water Act, as well as ocean dumping and natural resource damage provisions, addresses the problem of marine debris by targeting pollution that, while not directly released into the ocean, may migrate downstream and eventually contribute to such debris.

During the reporting period, DOJ prosecuted several cases involving marine pollution. For example, in December 2020, Pacific Carriers Limited, a Singapore-based company that owns subsidiaries engaged in international shipping, was sentenced to pay a fine of \$12 million and placed on probation for a period of 4 years after Pacific Carriers Limited pled guilty to, among other counts, violations of the Act to Prevent Pollution from Ships.⁸ Among other admissions, crew members on board the Pacific Carriers Limited ship admitted to discharging oily garbage and plastic overboard into the waters along the North Carolina coast.

Participation in international activities to mitigate marine debris

The Deputy Chief of ENRD's Environmental Crimes Section served as the Chair of The International Criminal Police Organization's (or INTERPOL) Pollution Crime Work Group. During the reporting period the Pollution Crime Work Group conducted two global maritime law enforcement operations focused on the international and growing threat of marine pollution, including illegal discharges of garbage and other debris from vessels. The operations, 30 Days at Sea 2.0 and 3.0, were the largest-ever global maritime operations focused exclusively on marine pollution. Despite logistical challenges posed by the pandemic, 300 agencies from 67 countries participated in the most recent operation and conducted 38,138 inspections that resulted in 5,607 violations detected.

6. Department of State

In FY 2020 and FY 2021, the U.S. Department of State, through the Bureau of Oceans and International Environmental and Scientific Affairs, worked closely with interagency partners and private sector, academic, industry, and other nongovernmental stakeholders to address plastic pollution and marine debris around the world. The State Department's international efforts focused on

⁸ www.justice.gov/opa/pr/singaporean-shipping-company-fined-12-million-multi-district-case-concealing-illegal

engaging multilaterally, regionally, and bilaterally with partners to promote environmentally sound waste management, support recycling and recycling markets, promote sustainable materials management, encourage innovation to prevent mismanaged waste from entering the environment, and support debris removal efforts. Working closely with EPA, NOAA, the U.S. Agency for International Development (USAID), the U.S. Department of Energy, the U.S. Coast Guard, and others, the Department highlighted United States expertise and innovation to combat marine debris through new waste management technologies, materials research, and other cutting-edge solutions. The Department also engaged with countries to understand the scale and scope of the problem, supported efforts to combat land- and sea-based sources of marine debris, promoted government and stakeholder outreach to positively influence cultural and societal norms, encouraged a more sustainable approach to plastic use and disposal, and fostered dialogues to expand research into more recyclable materials and alternatives. The U.S. Government remains dedicated to supporting and highlighting the best available scientific information and data collection methods necessary to inform policy makers and nongovernmental stakeholders about the economic, environmental, and health implications of marine debris and identify pollution hot spots.

From May 2018 until November 2020, the United States was an active participant in the United Nations Environment Assembly Ad Hoc Open-Ended Expert Group on marine litter and microplastics, which developed potential response options for consideration by the United Nations Environment Assembly at its 5th meeting. At this meeting in February and March 2022, the United States and other countries adopted a resolution by consensus to initiate negotiations on a new international legally binding instrument to address plastic pollution. A preparatory meeting for this negotiating process was held in May-June 2022 in Dakar, Senegal, where participants developed rules of procedures and a timeline for the negotiations. Substantive negotiations will be conducted by an intergovernmental negotiating committee, whose first meeting is scheduled for late November 2022.

The Department also worked through the existing Regional Seas Programmes and other regional initiatives to address marine debris and marine plastic litter. The United States is a member of two Regional Seas Programmes that engage neighboring countries to collaborate on preventing pollution from entering the ocean: The Caribbean Environment Programme and the Secretariat for the Pacific Regional Environment Programme. Through the Caribbean Environment Programme, created in connection with the Cartagena Convention, the Department led an effort to make marine debris reduction a priority. The Department also worked jointly with EPA to launch an initiative in partnership with United Nations Environment Programme and the Peace Corps to develop community-based trash reduction projects and create effective solid waste management policies. Through the Secretariat for the Pacific Regional Environment Programme, the Department continued efforts with the U.S. Coast

Guard to train Pacific Island countries in best practices for marine pollution prevention, control, and remediation.

U.S. Government work in the Asia-Pacific Economic Cooperation (APEC) forum has yielded significant public and private action. For example, following the success of several State Department-sponsored workshops in meetings held in the Asia-Pacific region over the last several years, the Department of State and NOAA spearheaded the establishment of a marine debris sub-fund with nearly \$1 million in seed funding for projects to combat land-based sources of marine debris in the APEC region. The Department also led an interagency effort with the Republic of Korea to establish an APEC Roadmap on Marine Debris and accompanying implementation guide that now informs APEC's efforts on these issues.

The Department also funded a project in Senegal to build capacity for environmentally sound management of plastic waste. This grant with the International Union for Conservation of Nature is working to reduce plastic waste leakage into the marine environment through plastic waste collection, cleanup activities, and public awareness campaigns in two areas in Senegal.

7. Environmental Protection Agency

EPA's Trash Free Waters (TFW) program made significant progress in FY 2021 on three state/local trash reduction strategies/plans⁹ that were officially completed in FY 2022. TFW hosted a series of virtual engagement sessions for stakeholders in North Carolina, South Carolina, Georgia, and Florida to solicit input to develop a joint TFW South Atlantic Strategy with the intent of reducing trash loadings into southeastern watersheds and the Atlantic. Work to implement the Strategy will continue in the future. TFW also worked with the Mystic River Watershed Association to develop a "Trash Free Mystic" shared trash-reduction plan for the Mystic River watershed near Boston. Furthermore, TFW held a workshop to gather input from stakeholders to inform a revised TFW strategy for Puerto Rico, which will be posted on the TFW website. EPA and NOAA will incorporate this TFW strategy to become part of a larger forthcoming joint TFW Strategy/Marine Debris Action Plan for Puerto Rico in the next reporting period.

TFW's Escaped Trash Assessment Protocol¹⁰ offers a comprehensive quantitative trash assessment tool that provides a standard method for collecting and assessing litter data. The *Escaped Trash Assessment Protocol Reference Manual* was published in spring 2021 and provides a step-by-step guide to using the protocol. A customizable mobile version of the Escaped Trash Assessment Protocol data card will be available via the Marine Debris Tracker app in the next reporting period.

⁹ www.epa.gov/trash-free-waters/trash-free-waters-state-and-local-strategies

¹⁰ www.epa.gov/trash-free-waters/epas-escaped-trash-assessment-protocol-etap

TFW also partnered with the District of Columbia in FY 2021 on a campaign to educate residents about proper waste containment and reduce unintentional leakage associated with curbside municipal trash collection. A case study report summarizing project findings and recommendations for other communities will be posted on the TFW website.

In FY 2021, TFW funded and supported ongoing efforts to install Seabin trash capture devices in the Anacostia River and Delaware River Watersheds. Data about the amount and type of trash captured by Seabins will help to inform upstream source reduction efforts. A future project highlight will eventually be posted on the TFW website.

TFW also published a TFW Tribal Program Handbook¹¹ to assist tribal governments, indigenous communities, and other relevant stakeholders in EPA Region 8 states (covering Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming) to develop and implement projects that reduce trash in waterways on tribal lands.

TFW does not have a national grant program, but did provide more than \$2.8 million in funding for trash mitigation projects in the Great Lakes basin and \$3.5 million for trash mitigation projects through EPA's Gulf of Mexico Division.

EPA's Office of Land and Emergency Management released *The National Recycling Strategy: Part One of a Series on Building a Circular Economy*.¹² The National Recycling Strategy is focused on enhancing and advancing the national municipal solid waste recycling system and identifies strategic objectives and stakeholder-led actions to create a stronger, more resilient, and cost-effective domestic municipal solid waste recycling system. It is the first part of a series dedicated to building a circular economy for all. The National Recycling Strategy is aligned with and supports implementation of the National Recycling Goal to increase the recycling rate to 50 percent by 2030.

EPA published *The Trash Free Waters International Implementation Guide*¹³ to be used as a reference for countries looking to implement this stakeholder-based program to address marine litter. EPA also published the *Solid Waste Management Guide for Developing Countries*¹⁴ and companion training modules that walk users through best practices for local decision-makers in developing countries on improving solid waste management, which prevents and reduces waste from entering the marine environment.

¹¹ www.epa.gov/trash-free-waters/best-management-practices-tools#R8

¹² www.epa.gov/system/files/documents/2021-11/final-national-recycling-strategy.pdf

¹³ [www.epa.gov/international-cooperation/trash-free-waters-tfw-international-implementation-guide#:~:text=The%20Trash%20Free%20Waters%20\(TFW,based%20sources%20of%20marine%20litter](http://www.epa.gov/international-cooperation/trash-free-waters-tfw-international-implementation-guide#:~:text=The%20Trash%20Free%20Waters%20(TFW,based%20sources%20of%20marine%20litter)

¹⁴ www.epa.gov/international-cooperation/solid-waste-management-guide-developing-countries

8. National Aeronautics and Space Administration

The National Aeronautics and Space Administration (NASA) supports observations and research activities that use the vantage point of space to better understand the Earth system and characterize its properties on a broad range of spatial and temporal scales, including naturally occurring and human-induced processes. This is done through competitive selection of projects for scientific research and analysis, applications, and technology development. In FY 2020, NASA selected three projects to assess remote detection of floating and submerged marine debris, including microplastics on the ocean surface, and how marine debris may impact satellite ocean color retrievals. NASA also supported a citizen science project centered around linking coastal and ocean ecology, ecology associated with islands of marine debris, and mechanisms for advection of debris to provide in situ data for validation of satellite measurements. In FY 2021, NASA selected a technology development project that seeks to develop different measurement techniques for classifying remotely sensed signatures of marine plastic debris, aimed at future space-based ocean science instruments.

NASA regularly participates and supports national and international activities that aim to improve satellite retrievals of the ocean surface and better discriminate among marine debris, marine life (e.g., algae), and other aquatic substances and constituents (e.g., sea snot, sea foam). Examples include participation in the International Ocean Colour Coordinating Group Remote Sensing of Marine Litter and Debris task force and a NOAA-led remote sensing working group. This also includes support to develop new technology and platforms to enable the detection, characterization, monitoring, and tracking of marine debris using polarimetric and spectral information from the ultraviolet, visible, shortwave, and infrared portions of the electromagnetic spectrum.

NASA will continue to support recommendations made by the National Academies of Science, Engineering, and Medicine's *2018 Decadal Survey Thriving on our Changing Planet: A Decadal Strategy for Earth Observation from Space*. The survey serves as a foundational strategic document for NASA's Earth Science Division and includes recommendations guiding foci, scope, and budget for the Earth Science Division's Flight, Research and Analysis, Applications, and Technology programs. NASA will also support, to the extent possible, other recent consensus study reports published by the National Academies of Science, Engineering, and Medicine, such as the *Reckoning with the U.S. Role in Global Ocean Plastic Waste*, a congressionally mandated report under the Save Our Seas 2.0 Act.

9. U.S. Agency for International Development

In FY 2020 and FY 2021, USAID implemented the priorities of section 202 of the Save Our Seas 2.0 Act (P.L. 116-224) through three primary ocean plastic pollution programs and partnerships:

- **Municipal Waste Recycling Program (2016-2021)** – USAID’s first program to combat ocean plastic pollution, which worked primarily through small grants to reduce land-based sources of plastic pollution in Indonesia, the Philippines, Sri Lanka, and Vietnam.
- **Clean Cities, Blue Ocean (2019-2024)** – USAID’s global flagship program to combat ocean plastic pollution works across seven countries and more than 25 cities in Asia, Latin America, and the Caribbean.
- **Circulate Capital Partnership (2019-2028)** – A blended-finance partnership with impact investor Circulate Capital to catalyze investments in the recycling value-chain in Asia.

Per section 202 of the Save Our Seas 2.0 Act, these programs are: 1) improving the capacity and operations of solid waste management systems; 2) creating incentives for proper disposal of waste and the 3Rs (reduce, reuse, recycle); and 3) developing markets and business opportunities.

Impacts and highlights from these programs are shared below.

Overall

- Prevented over 55,000 metric tons of plastic waste from entering the ocean through Clean Cities, Blue Ocean and the Municipal Waste Recycling Program. This is the equivalent of almost 6 billion half-liter plastic bottles.
- Improved access to Solid Waste Management and recycling services, which in turn improved air and water quality for over 4.6 million people.
- Empowered women in the waste management and recycling sector by training 36,000 women (78 percent of all trainees) in solid waste management and recycling, with over 1,700 women gaining jobs (63 percent of jobs created) in the Solid Waste Management sector. For example, in the Philippines and Indonesia, USAID recently launched a new “Women in Waste’s Economic Empowerment Activity,” to enable women to establish or expand waste businesses through training, mentorship, and access to blended financing.

Improving Capacity and Operations

Since 2016, USAID has invested over \$15 million in 45 locally led grants in the Dominican Republic, Indonesia, Maldives, Peru, the Philippines, Sri Lanka, and Vietnam. USAID has also formed partnerships with more than 50 local governments to improve Solid Waste Management services. The Solid Waste Capacity Index for Local Governments developed under Clean Cities, Blue Ocean enables local governments to measure their capacity to manage 3R/waste management systems and create a path towards system strengthening by identifying needed training and policy and operational changes.

USAID also provides direct technical assistance to national governments. For example, USAID provided technical assistance to the national government of the Dominican Republic to remediate and close open dumps in Samaná Province, preventing plastic and other waste from entering into waterways. Community members noted relief from the toxic fumes that emanated from the dump due to waste fires ignited by spontaneous combustion.

Incentives and Policy/Enabling Environment

USAID programs have supported over 60 new and improved laws and regulations to reduce ocean plastic pollution, including supporting national action plans and local policies in key countries such as Vietnam and the Philippines. For example, with USAID grant funding, the Indonesia Plastic Bag Diet Movement assisted several city and provincial governments with developing and enacting single-use plastic reduction policies. The Indonesia Plastic Bag Diet Movement created a Plastic Free Cities Forum to serve as a peer support group for city government environment departments to design, promote, and enact these single-use plastic reduction policies.

USAID programs are also supporting improved incentives for ocean plastics reduction by raising awareness and behavior change. For example, in the Maldives, a USAID grantee is advising the Government of Maldives on policies about eliminating single-use plastics by carrying out formative research to understand how households interact with single-use plastics. In close collaboration with businesses, the grantee is identifying affordable alternative products to problematic single-use plastics.

USAID is working to support the development and piloting of new policy-based approaches to reduce ocean plastic pollution, such as through Extended Producer Responsibility legislation in Sri Lanka.

Markets and Business Opportunities

Through an investment of \$2 million, USAID facilitated a \$35 million, 50-percent loan portfolio to impact investor Circulate Capital through a guarantee with the U.S. International Development Finance Corporation. With this investment, Circulate Capital was able to leverage the guarantee to mobilize \$106 million in private capital for investments in recycling and management infrastructure in Asia. For example, the fund invested in Tridi Oasis, a female-led Indonesian company specializing in recycling polyethylene terephthalate bottles into recycled polyethylene terephthalate flakes, which are used to manufacture circular

packaging and textiles. The investment from Circulate Capital helped the company expand operations.

Clean Cities, Blue Ocean mobilized over \$3.9 million in public and private investment for projects like the remediation of open dumps and development of new waste infrastructure in the Dominican Republic.

USAID programs are also supporting local markets and business innovations, such as Plastic Credit Exchange in the Philippines, which is implementing a replicable and sustainable waste-to-cash program that empowers women micro-entrepreneurs.

USAID’s approach to reducing ocean plastic pollution draws on its deep experience in advancing comprehensive local solutions to complex development challenges. USAID’s approach is articulated in a set of five building blocks that, together, create the foundation for preventing additional ocean plastic pollution.

USAID’s Building Blocks to Increasing Circularity and Reducing Ocean Plastic Pollution	
Data-driven policy and institutional environments that enable a circular economy.	Progress towards a more circular economy requires evidence-based national policies and regulations, an integrated policy framework across national and local levels, and stakeholder input in the policy formulation process.
Increased infrastructure investment and improved solid waste services.	Efficient systems for collecting, aggregating, and sorting solid waste are a prerequisite for maximizing investment in recycling facilities and sanitary landfills. Cities can expand and improve waste services through a data-based solid waste management plan, good quality financial management, local regulations that are enforced, well-trained staff, and strong connections to the community.
Developed markets for locally viable innovations and technologies.	Recycling markets require a supply of clean, consistent feedstocks and demand from processors and manufacturers. Hard-to-recycle materials need solutions that can be scaled appropriately on a local level through new products or technologies. In developing countries, technological solutions should take advantage of low labor costs and empower vulnerable workers.
Widespread and sustained behavior change for increased recycling and reduced	Reducing single use plastic consumption and increasing the quality and volume of materials collected for recycling cannot be achieved without sustained social and behavior change. Strategies need to go beyond awareness-raising;

<p>demand for single-use plastics.</p>	<p>they must be based on a deep understanding of people’s current behaviors and attitudes, and what they are willing to do to change this behavior – not just once, but on a regular basis.</p>
<p>An inclusive and equitable system that integrates all members along the solid waste management value chain.</p>	<p>Informal sector workers are the foundation of the waste management pyramid and are indispensable to improving waste management. A city’s ability to create a more circular economy is a function of how members of the solid waste management value chain, especially women and minority groups, are included.</p>

10. U.S. Army Corps of Engineers

USACE removes debris under two authorities: (1) the Congressionally authorized and funded Marine Debris/Drift Collection Program in specified ports and waterways; and (2) under mission assignment from FEMA in a Presidentially Declared Stafford Act event. USACE also moves obstructions to navigation in federal waterways to a place, usually in the same waters, where the item is no longer an obstruction to navigation.

Through its marine debris/drift collection program, the U.S. Army Corps of Engineers (USACE) operates vessels in several coastal harbor areas in the continental United States to regularly remove large items that pose the potential to obstruct or damage vessels operating in Federal navigation channels. This collection often results in the incidental pick up and removal of items such as plastic bottles, drums, and other floating marine waste. However, the goal of the program focuses on collection and onshore disposal of tree trunks and large branches, broken dock sections, timbers from building, and dock demolition, among others. The debris/drift collection program is carried out in Puget Sound, Washington; San Francisco Bay, California; New York Harbor, New York and New Jersey; Baltimore Harbor and Channels, Maryland and Virginia; Potomac River and Anacostia River, District of Columbia; Hudson River, New York; and Hampton Roads, Norfolk, and Newport News Harbor, Virginia. USACE also responds to calls to remove debris within federally maintained navigation channels received from the U.S. Coast Guard, U.S. Navy, boat and marina operators, and private citizens. The program is coordinated with the U.S. Coast Guard and local port authorities.

USACE, when mission assigned by the Federal Emergency Management Agency, may remove and dispose of wet debris from any body of water as the Federal Emergency Management Agency directs, as long as it can be performed within safety requirements for wet debris removal. The Federal Emergency Management Agency can assign USACE to remove marine debris, commonly referred to as wet debris, that is outside of federally maintained navigation channels in response to a Presidentially Declared Disaster or emergency. The

work performed by USACE under this task addresses the removal of eligible obstructions, debris, and vessels from waterways impacted by an event. The debris removal boundaries are within the waterway and include the shorelines of the waterway itself. Anything in a waterway that creates an obstruction to the movement of vessel traffic in a commercial or commonly used waterway and within the task-defined area is eligible. Wet debris may include objects that have been carried by the flood waters, tidal/storm surge, and/or the wind and deposited in the waterway. Debris may include, but is not limited to, plastic foam containers, barrels, construction and demolition debris, household goods, boats, and automobiles (i.e., anything human-made that remains resident in the water). USACE does not remove hazardous waste materials and receptacles.

The USACE government fleet complies with the EPA's Vessel General Permit program (vessels 79 feet and greater in length) and Small Vessel General Permit program (vessels under 79 feet in length). These self-administering programs rely on adherence to best management practices and good housekeeping in day-to-day vessel operations to manage vessel waste and prevent debris from entering the marine environment.

The USACE Construction Engineering Research Lab received approximately 500 plastic waste disks from the USS Dwight D. Eisenhower (or CVN 69 class ships) and Gerald R. Ford, which was used for waste to energy research.

11. U.S. Navy

The Navy continues to instruct all sailors on the proper handling of solid wastes and the correct operation and maintenance of solid waste handling equipment. Training includes proper labeling and offloading procedures of foreign/regulated garbage from ships returning from overseas deployments back to home port to prevent the spread of foreign plant pests and diseases and animal diseases into U.S. agriculture.

The Navy continues to upgrade solid waste processing equipment on its ships and submarines to improve performance and facilitate ease of maintenance. Upgrades to incinerators and pulpers are underway. Upgrades to plastic waste and metal/glass processing equipment are under development.

The Navy has continued research and development of technologies, including compaction, conversion, and thermal destruction, to enable Navy ships and submarines to achieve zero discharge of metal, glass, paper, and cardboard waste. Examples of this research and development include:

- The Plasma Arc Waste Destruction System is now the primary solid waste processing system that is installed aboard USS *Gerald R. Ford* (CVN 78) and being installed on future CVN 78 class ships.
- The Next Generation Plastic Waste Processor/Solid Waste Processor system, which shows capability to process four times more than legacy/conventional shipboard plastic waste processing systems, and simplifies waste processing by reducing sorting requirements.
- The Navy provided the U.S. Army Corps Construction Engineering Research Lab waste to energy project with approximately 500 plastic waste disks from the USS *Dwight D. Eisenhower* (or CVN 69 class ships) and *Gerald R. Ford*. Use of the disks for waste to energy research prevented over 10,000 pounds of plastic waste from going into landfills.

The Navy, led by U.S. Fleet Forces Command, engages the public regularly with its “Stewards of the Sea” environmental outreach program. Approximately 10,000 people were engaged with the Navy’s environmental messaging during 34 virtual and in-person events, which include Fleet Weeks, Navy Weeks, air shows, environmental seminars, and other venues. In addition, the Navy has handouts and informational material available for distribution to the public, and subject matter experts available to discuss Navy at-sea waste disposal procedures in conformity with the Act to Prevent Pollution from ships, including separation and processing of all plastic products at sea, as well as retention of plastic aboard ships until it is able to be properly disposed of ashore.

Navy installations continue to partner with state and local authorities to assist in the removal of marine debris, as well as conduct beach and shore cleanups at its installations. Navy installations also participate in voluntary programs, such as state-sponsored Clean Marina programs for morale, welfare, and recreation marinas.

The Navy is a member of the Gulf of Mexico Alliance, which engages and partners with Federal, state, and local agencies, as well as nongovernmental organizations, to engage in conservation and marine debris efforts. The Gulf of Mexico Alliance has a Priority Implementation Team solely for marine debris actions, research, and prevention. The Navy also works on environmentally responsible practices through partnerships such as the Chesapeake Bay Program and others throughout the Nation.

IV. NOAA SUMMARY OF MARINE DEBRIS INVENTORY

In June 2013, the NOAA Marine Debris Program (MDP) launched the Marine Debris Clearinghouse, an online database that serves as the Federal Government’s information hub for marine debris stakeholders.¹⁵ The site provides members of the marine debris community access to specific information about, and environmental data from ongoing and historical marine debris

¹⁵ <https://clearinghouse.marinedebris.noaa.gov/>

removal, research, and outreach projects. It includes capabilities for direct data discovery and accessibility and data visualization features for project focus, location, and outcomes, providing users inside and outside of NOAA with information more rapidly and intuitively. The Clearinghouse has been expanded to include additional historical projects and new functionality, and the MDP is working to evaluate and integrate additional debris project information. The MDP will continue to evaluate the site for iterative improvements and development in the coming years.

V. REVIEW OF THE NOAA MARINE DEBRIS PROGRAM

A. Program Administration and Structure

The NOAA Marine Debris Program (MDP) is the Federal lead on efforts to research, prevent, and reduce the adverse impacts of marine debris. The MDP was originally authorized by Congress in 2006 through the Marine Debris Research, Prevention, and Reduction Act, which was amended in 2012, 2018, and 2020. Under the amended Marine Debris Act, the program is mandated to lead national and regional coordination, and to assess, research, prevent, reduce, and remove marine debris. These mandates and authorities are the foundation for the six pillars of the MDP: prevention, removal, research, monitoring and detection, response, and coordination.

In FY 2020 and FY 2021, the MDP continued to support activities across the country in each of the six program pillars and to address the adverse impacts of marine debris on the marine environment, navigational safety, human health, and the U.S. economy. The program spearheads research efforts and provides nationally competitive funding opportunities for marine debris removal, research, and prevention projects. The MDP has staff strategically located across the country to lead region-specific approaches to addressing marine debris through partnerships with state and local agencies, tribes, nongovernmental organizations, academia, and industry.

In addition to addressing marine debris on a national scale, the MDP has assumed a leading role in the global effort to combat marine debris by convening experts and promoting information-sharing.

B. Prevention

The MDP works to educate the public about the causes and impacts of marine debris, and to motivate attitude and behavior changes that result in the prevention and reduction of marine debris.

Through its prevention grant competitive funding opportunity, the MDP supports projects that conduct education and outreach with the public across the country. In FY 2020, the MDP provided \$1.3 million to 13 projects that focused on a diverse set of strategies for preventing marine debris. For a complete list of prevention projects awarded in FY 2020,

please see the MDP Prevention webpage¹⁶ or the Marine Debris Clearinghouse.¹⁷ The MDP also supports prevention through the Fishing for Energy partnership, which funds projects that install containers for collection of derelict fishing gear in ports and conduct outreach to the fishing community.

MDP staff participate in school education programs, participate in teacher workshops, conduct outreach at events, and engage with local stakeholders. The MDP supports development of education and outreach materials, such as fact sheets, posters, activity books, and curricula to assist with reaching these audiences, as well as holds an annual national art contest for K-8th grade students. The MDP has also installed educational displays at National Marine Sanctuaries, National Estuarine Research Reserves, and National Parks around the country. From FY 2020 through FY 2021, the MDP reached 17,333 students and teachers and 47,855 members of the public.

The MDP also provides original content through its website, blog, monthly e-newsletter, quarterly educator e-newsletter, and social media platforms, which include Facebook, Twitter, and Instagram. From FY 2020 through FY 2021, the MDP published 132 blog posts with 145,260 views and the website had 828,330 views.

In addition, the MDP has implemented zero waste efforts in its daily operations in order to prevent marine debris. The MDP supplies reusable coffee mugs and dishes, takes electronic notes, and eliminates unnecessary handouts in workshops and meetings. This success has led to the formation of a larger Zero Waste Team with representatives from across NOAA's National Ocean Service (NOS). In the coming years, the Zero Waste Team will support actions that reduce waste in both daily office activities and at events, and encourage participation in zero waste efforts across NOS.

C. Removal

While prevention is essential to stemming the input of new debris into the ocean, removal is necessary to diminish the impacts of debris already introduced into the ocean and Great Lakes. Each year, subject to the availability of appropriations, the MDP provides funding through its removal grants competitive funding opportunity. The program also provides support to the annual International Coastal Cleanup.

In FY 2020 and FY 2021, the program provided over \$3 million to support 20 organizations in 16 coastal states and U.S. territories on projects ranging from community cleanups, crab trap recovery, derelict vessel removal, and more. For a complete list of projects awarded in FY 2020 and FY 2021, please see the MDP Removal webpage¹⁸ or the Marine Debris Clearinghouse.¹⁹

¹⁶ <https://marinedebris.noaa.gov/current-efforts/prevention>

¹⁷ <https://clearinghouse.marinedebris.noaa.gov/>

¹⁸ <https://marinedebris.noaa.gov/our-work/removal>

¹⁹ <https://clearinghouse.marinedebris.noaa.gov/>

In FY 2021, the MDP also supported a mission to remove marine debris from Papahānaumokuākea Marine National Monument. The mission was led by the NOAA Fisheries Pacific Islands Fisheries Science Center, and funded by the MDP and NOAA Damage Assessment Remediation and Restoration Program, with additional support from Papahānaumokuākea Marine Debris Project, U.S. Fish and Wildlife Service, State of Hawaii, NOS Office of National Marine Sanctuaries, and other NOAA programs. Over 18 operational days, the marine debris team removed 118,400 pounds of derelict fishing nets and nearly 5,300 pounds of plastic and other debris.

D. Research

The MDP supports research projects across the United States through a research grant competitive funding opportunity. The projects help expand our understanding of debris by investigating where debris comes from, how it moves through the environment, and how it impacts wildlife and our ocean, waterways, and Great Lakes.

In FY 2021, the MDP provided \$1.4 million in funding for five original, hypothesis-driven research projects focused on the critical input pathways for marine debris introduction into the coastal zone. Detailed information on these projects may be found on the MDP Research webpage²⁰ or on the Marine Debris Clearinghouse.²¹

E. Monitoring and Detection

The MDP supports projects that generate monitoring and detection data, involve the public, incorporate innovative technologies, and provide guidance to the marine debris community. Marine debris is a global issue, but the challenges it presents can really vary across geographic regions. Monitoring and detection efforts improve our understanding of the scope, scale, and distribution of marine debris in the environment, as well as provides critical data on the types and amount of debris, which can inform management practices and prevention.

In FY 2021, the MDP made significant updates to the NOAA Marine Debris Monitoring and Assessment Project, an initiative that helps answer fundamental questions about the types of marine debris found on shorelines. The MDP updated monitoring protocols and the Marine Debris Monitoring and Assessment Project Monitoring Toolbox, and launched a new online database, featuring interactive data visualizations. With these new tools and resources, the Marine Debris Monitoring and Assessment Project already established 12 new sites across the United States, along with six new international sites.

F. Response

Natural disasters such as hurricanes, tropical storms, tsunamis, floods, and landslides can introduce immense quantities of debris into the marine environment, turning an everyday

²⁰ <https://marinedebris.noaa.gov/our-work/research>

²¹ <https://clearinghouse.marinedebris.noaa.gov/web/marine-debris-clearinghouse/projects>

problem into an even greater challenge. Hurricanes for example, can result in accumulations of large debris items such as furniture, vessels and even entire homes. Over the past 2 years, the MDP has been able to support states and territories in the removal of post-hurricane marine debris.

In FY 2020 and FY 2021, the MDP continued to work closely with communities to implement the \$10.9 million received in the FY 2019 Hurricane Supplemental funding for marine debris. Of that funding, \$8.2 million in grants were awarded for projects through the Hurricane Response Marine Debris Removal Fund, a partnership between the MDP and the National Fish and Wildlife Foundation, to assess, remove, and dispose of marine debris in areas impacted by Hurricanes Florence and Michael, and Typhoon Yutu. The MDP also continued to work with partners to implement the \$18 million in disaster relief funding in FY 2018 to aid in coastal recovery efforts from the impacts of Hurricanes Harvey, Irma, and Maria.

The MDP also works before disasters strike to help communities prepare to respond to marine debris. As part of this work, the Program partners with coastal states and U.S. territories to develop state-specific marine debris emergency response guides.²² In FY 2020 and FY 2021, the MDP supported the creation of response guides for the U.S. Virgin Islands, Delaware, New Jersey, and Puerto Rico, and implemented virtual trainings for response stakeholders.

G. Coordination

Regional Coordination

The MDP works with local communities to address region-specific marine debris issues. The MDP has 11 Regional Coordinators working in Alaska, the Pacific Northwest, California, the Pacific Islands, the Gulf of Mexico, Florida, the Caribbean, the Southeast, the Mid-Atlantic, the Northeast, and the Great Lakes to support projects and partnerships with state and local agencies, tribes, nongovernmental organizations, academia, and industry that addresses marine debris locally.

The MDP Regional Coordinators also work with partners to develop and implement regional marine debris action plans. These action plans focus on long-term solutions to the causes and impacts of marine debris in the regions, as well as outline operational best practices and data collection protocols. The purpose of these action plans is to aid states in preventing and reducing debris and mitigating coastal impacts.

The following action plans were published or updated in FY 2020 and FY 2021:

- Gulf of Maine Marine Debris Action Plan (published November 2019)
- Great Lakes Marine Debris Action Plan (published January 2020)
- Florida Marine Debris Reduction Plan (published April 2020)

²² <https://marinedebris.noaa.gov/emergency-response/marine-debris-emergency-response-guides>

- Mid-Atlantic Marine Debris Action Plan (published May 2021)

International Coordination

There are many ongoing international, multilateral, and bilateral initiatives to understand and combat the issue of marine debris across the world. The MDP works closely with the Department of State and other U.S. national agencies to provide input and leadership on the issue, and also collaborates with other countries to research, prevent, and remove marine debris.

The United States-Mexico-Canada Agreement Implementation Act of 2020 provided \$8 million in funding, available from FY 2020 through FY 2023, to prevent, reduce, or remove marine debris in the U.S.-Mexico and U.S.-Canada border areas. In FY 2021, the MDP awarded ten grants totaling more than \$4 million for projects that will focus on prevention and removal from Alaska, to Maine, to Mexico. The remaining funds will be awarded as grants in the following fiscal years, through FY 2023.

The MDP also worked closely with the Department of State and other regional economies in the APEC to develop and implement the APEC Marine Debris Roadmap, which guides APEC's work on understanding and addressing marine debris through promoting policy development, capacity building, research and innovation, and financing and private sector engagement. In addition, the MDP continued to work with the Arctic Council on the unique marine debris issues in the region, including contributing to the development of monitoring guidelines and a monitoring plan that have been released by the Arctic Council's Arctic Monitoring and Assessment Programme Working Group, and the Regional Action Plan on Marine Litter developed by the Protection of the Arctic Marine Environment Working Group.

VI. REVIEW OF U.S. COAST GUARD PROGRAMS

A. Emergency Response

Under very specific circumstances, the U.S. Coast Guard (USCG) Office of Marine Environmental Response Policy has authorities under the Federal Water Pollution Control Act (33 U.S.C. § 1251), as amended by the Clean Water Act (33 U.S.C. § 1321), Oil Pollution Act (33 U.S.C. § 2761), and National Contingency Plan (40 C.F.R. § 300), to remove abandoned or derelict vessels following a natural disaster or to remove marine debris if marine debris impedes or has the potential to impede safe navigation.

Between FY 2020 and FY 2021, USCG led pollution response initiatives, in accordance with the Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 68 § 5121

et seq.), as a result of Hurricane Laura that impacted the state of Louisiana. A mission assignment from the Federal Emergency Management Agency was assigned to USCG for \$5 million to assist with the response. USCG operations, called Emergency Support Function 10, focused on the mitigation of the pollution threat posed by displaced vessels and orphan containers impacting the coastal zone. Working in a unified operation with relevant state agencies, the Emergency Support Function 10 response allowed USCG to recover and deposit displaced vessels in state custody for further disposition.

In addition, between FY 2020 and FY 2021, although no Emergency Support Function 10 mission assignment for removal of oil, chemicals, and associated containers/vessels was assigned, USCG led the pollution response as Federal On-Scene Coordinator of the National Oil and Hazardous Substances Contingency Plan for Hurricane Ida, pursuant to the Stafford Act declaration. Hurricane Ida impacted the states of Louisiana, Alabama, and Texas. Three separate Federal project numbers were opened from the Oil Spill Liability Trust Fund in the amounts of \$500,000 for Sector New Orleans, \$500,000 for Sector Houston, and \$2.29 million for the affected states.

The funding permitted USCG to respond to 227 derelict or abandoned vessels (as of September 28, 2021) that were assessed to pose a significant threat of discharge. This operation continued into FY 2022 and so those numbers were not included in this report.

B. Maintain Safe Navigation

The USCG Office of Waterways Management oversees the removal of marine debris if it impedes or has the potential to impede safe navigation, requiring marine debris identification and time-intensive outreach and collaboration with public and private sector agencies. Factors such as the size and configuration of marine debris, water-depth, tide cycles, and waterway characteristics impact USCG's ability to remove marine debris. For marine debris that cannot be removed from navigable channels, USCG personnel work with NOAA and the U.S. Army Corps of Engineers to ensure marine debris is marked and charted, and cannot pose an obstruction or hazard to navigation.

Various marine debris removals occurred across the nation in FY 2020 and FY 2021. During this timeframe, USCG personnel oversaw the removal of abandoned barges and a house boat, large mooring fenders, lighted buoys, fishing nets, shipping containers, and sunken vessels from navigable channels. Notably, Sector Puget Sound has perennial issues with abandoned and derelict vessels, averaging almost one report every 2 days in FY 2021. The U.S. Army Corps of Engineers and Washington State Department of Ecology are able to conduct the removal if the position is provided in real time. To address this, Sector Puget Sound worked with the USCG Research and Development Center to initiate a pilot program using solar-powered SPOT trackers to maintain positions that can be provided to the U.S. Army Corps of Engineers or the state agency to facilitate removal.

Another example in August 2021 included the USCG Sector Long Island Sound, which partnered with USCG Small Boat Station New Haven, USCG Aids to Navigation Team Long Island Sound, the New Haven Harbormaster, the City of New Haven Emergency

Operations Manager, Connecticut Department of Energy and Environmental Protection, pilots, and local industry to mark and remove an abandoned barge in poor condition from New Haven Harbor. The seamless interagency coordination effectively maintained the navigability of a Federal waterway and prevented harm to people, property, and the environment.

C. Incentive Programs and Outreach

USCG continues to support education and outreach to mariners and promote marine debris awareness among the public through its Sea Partners Campaign and USCG Auxiliary outreach program. The Sea Partners Campaign is USCG's environmental education and outreach program focused on developing community awareness of maritime pollution issues and improving compliance with marine environmental protection laws and regulations. The Sea Partners Campaign has educated hundreds of thousands of children on the stewardship of our oceans. In partnership with the USCG Auxiliary, the Sea Partners Campaign has been correlating marine debris, oil spill, and invasive species subject matter with national education standards. In addition to its education and outreach efforts, the Sea Partners Campaign continues its efforts to reach the maritime industry through a proactive USCG presence at boat shows, distribution of MARPOL placards to merchant mariners, distribution of placards with anti-pollution messages to marinas and boating communities, and outreach to marina owners and operators through the USCG Auxiliary.

A part of this effort includes USCG Auxiliary beach cleanup efforts. In 2021, there were 25 beach cleanup events across the nation constituting over 75 hours of service time by over 100 Auxiliary members and over 500 pounds of trash directly removed from beaches.

USCG continues to work with the North American Marine Environment Protection Association and provides guest speakers to its industry functions discussing port reception facility issues and their nexus with marine debris. In 2020, USCG continued its tradition of awarding the Biennial Rear Admiral William M. Benkert Award for Environmental Excellence. The event, hosted by the North American Marine Environment Protection Association, encourages applicants to provide examples of programs and initiatives that involve state, local, tribal, and nongovernmental entities as part of a company's efforts to prevent pollution, ensure corporate buy-in, and work within its community. Key issues for Benkert awardees include development of company policies on reduce, recycle, and reuse efforts, and monitoring of effectiveness of their pollution prevention and environmental protection programs. For the 2020 award cycle, four companies earned formal recognition: Alaska Maritime Prevention & Response, Alyeska Pipeline Service Company, Marathon Petroleum Company, and Maersk Line.

D. Interagency Coordination

During FY 2020 and FY 2021, USCG continued to provide leadership as the Head of Delegation to the International Maritime Organization. The work during this period included provisions for protecting the Arctic marine environment from ship-based pollution. The United States co-sponsored a submittal to the International Maritime Organization’s Marine Environment Protection Committee which was co-sponsored by the eight-member States of the Arctic Council’s Working Group on Protection of the Arctic Marine Environment. The proposal is to amend MARPOL and allow for regional reception facilities for Arctic and near-Arctic ports and terminals. This proposal was adopted in 2019 and initial drafts of the proposed amendments are being socialized among U.S. Federal agencies. USCG’s knowledge of the unique challenges for the prevention and removal of marine debris in Polar Regions is an important contribution to the U.S. Delegation to the Arctic Council’s Working Group as shipping activity continues to increase.

USCG staff continued its cooperation with international partners on marine environmental protection and continued to chair the International Organization for Standardization work group (ISO/TC8/SC2/WG4) on the development of international standards for management and handling of ship waste. Such ISO standards include specific guidance for ship operators and port and terminal operators aimed at managing shipboard wastes and preventing those wastes from entering the marine environment.

E. Enforcement

The January 1, 2013, amendments to MARPOL Annex V prohibit the discharge of wastes, many of which would contribute to marine debris. Implementing regulations, under the authorities in the Act to Prevention Pollution from Ships (33 U.S.C. § 1901 et seq.), are contained in 33 C.F.R. § 151 and 33 C.F.R. § 158.

USCG inspects U.S. commercial vessels and carries out port state safety and environmental inspections of foreign ships visiting U.S. ports (or transiting waters under U.S. jurisdiction, in some cases out to the 200 nautical mile exclusive economic zone) as allowed by international regulations (MARPOL and the International Convention for the Safety of Life at Sea). Where violations of regulations aimed at pollution prevention occur, USCG investigates and may impose fines, prevent ships from sailing, or prevent ports or terminals from receiving ships. Where a ship violates pollution regulations, USCG may refer cases to the Environment and Natural Resources Division of DOJ under relevant authorities (Act to Prevent Pollution from Ships, Clean Water Act, and Ocean Dumping Act). USCG conducted 99,346 and 111,618 boardings and safety inspections, respectively, in FY 2020 and FY 2021, on all types of vessels. Table 1 describes the overall enforcement efforts that USCG implements to include the number of examinations, the total number of deficiencies across all operation, safety and environmental regulations, and the number of specifically garbage-related deficiencies.

Table 1. Recorded Vessel Deficiencies Across All Vessel Operation, Safety, and Environment Requirements.

FY 2020			
All USCG Enforcement Actions	Activities	Deficiencies	Garbage
Boarding	49,816	12,833	345
Fishing Vessel Exam	5,734	6,452	35
Uninspected Towing Vessel Exam	9	7	
Vessel Inspection	37,480	35,158	95
Vessel Transfer Monitor	307	10	
Total	93,346	54,460	475
FY 2021			
All USCG Enforcement Actions	Activities	Deficiencies	Garbage
Boarding	65,649	14,441	389
Fishing Vessel Exam	6,276	8,157	49
Uninspected Towing Vessel Exam	4	10	
Vessel Inspection	39,400	40,467	125
Vessel Transfer Monitor	289	10	
Total	111,618	63,085	563

Table 2 discloses the same data as in Table 1, but distinguishes the vessel's flag designation where recorded.

Table 2. Recorded Vessel Deficiencies Across All Vessel Operation, Safety, and Environment Requirements – Separated by Vessel Flag Designations.

FY 2020			
U.S. Flag Vessels	Activities	Deficiencies	Garbage
Boarding	47,823	12,491	333
Fishing Vessel Exam	5,728	6,410	35
Uninspected Towing Vessel Exam	9	7	
Vessel Inspection	24,788	31,266	68
Vessel Transfer Monitor	193	8	
Subtotal	78,541	50,182	436
Foreign Flag Vessels	Activities	Deficiencies	Garbage
Boarding	1,823	310	11
Fishing Vessel Exam	5	42	
Uninspected Towing Vessel Exam	0	0	
Vessel Inspection	12,692	3,892	27
Vessel Transfer Monitor	114	2	
Subtotal	14,634	4,246	38
Unspecified Flag Vessels	Activities	Deficiencies	Garbage
Boarding	170	32	1

Fishing Vessel Exam	1	0	
Uninspected Towing Vessel Exam	0	0	
Vessel Inspection	0	0	
Vessel Transfer Monitor	0	0	
Subtotal	171	32	1
2020 Total Garbage-Related Deficiencies			475

FY 2021			
U.S. Flag Vessels	Activities	Deficiencies	Garbage
Boarding	63,622	14,223	385
Fishing Vessel Exam	6,268	8,118	46
Uninspected Towing Vessel Exam	4	10	
Vessel Inspection	25,996	35,708	90
Vessel Transfer Monitor	185	4	
Subtotal	96,075	58,063	521
Foreign Flag Vessels	Activities	Deficiencies	Garbage
Boarding	1,836	186	3
Fishing Vessel Exam	6	38	3
Uninspected Towing Vessel Exam	0	0	
Vessel Inspection	13,403	4,759	35
Vessel Transfer Monitor	104	6	
Subtotal	15,349	4,989	41
Unspecified Flag Vessels	Activities	Deficiencies	Garbage
Boarding	191	32	1
Fishing Vessel Exam	2	1	
Uninspected Towing Vessel Exam	0	0	
Vessel Inspection	1	0	
Vessel Transfer Monitor	0	0	
Subtotal	194	33	1
2021 Total Garbage-Related Deficiencies			563

In FY 2020 and 2021, a total of 1,038 deficiencies were related to garbage management. Table 3 provides a descriptive list of all garbage-related deficiencies recorded.

Table 3. Recorded Vessel Deficiencies Concerning Garbage Management.

Deficiency Area	Description	FY 2020	FY 2021	Total
Garbage Management Plan	01199 - Other (certificates)	3	2	5
	01310 - Signs, indications	1	1	2
	01320 - Garbage record book	7	1	8
	09198 - Other (crew and accommodation)	2		2
	14101 - Control of discharge		1	1
	14501 - Garbage	6	10	16
	14503 - Garbage management plan	20	38	58
	15101 - Safety and environment policy	1		1
	99101 - Other (Safety in general)	4	1	5
	99103 - Other (MARPOL operational)		1	1
	Control of Discharge of Sewage	1		1
	Control of Garbage	6	6	12
	Garbage Placard	2	3	5
	Garbage Recordkeeping	2	2	4
	Marine Sanitation Device, Type III		1	1
	Means of Removal from within Coaming	1		1
	Other	1		1
	Removal Methods/Procedures	7	4	11
	Safety/Environmental Protection Policy	1		1
	Waste Management Plan	47	55	102
	Subtotal	112	126	238
Garbage Placard	01310 - Signs, indications	2		2
	01320 - Garbage record book	1		1
	09217 - Warning notices	1		1
	14501 - Garbage	1	2	3
	14502 - Placards	23	29	52
	14503 - Garbage management plan		2	2
	14599 - Other (MARPOL Annex V)	1		1
	99103 - Other (MARPOL operational)		2	2
	Certificate of Number (state)		1	1
	Control of Garbage	53	56	109
	Fixed Containment		1	1
	Garbage Placard	249	290	539
	Injury Placard		1	1
	Marine Sanitation Device, Type 1		2	2
	Oil Discharge Placard		2	2
	Portable Containment	1	3	4
Reception Facilities - Annex VI	2	4	6	

	Removal Methods/Procedures	4	4	8
	Rubbish/Waste Materials	1	1	2
	Standard Discharge Connection		1	1
	Waste Management Plan		1	1
	Subtotal	339	402	741
Garbage Record Book	01305 - Log-books/compulsory entries		1	1
	01320 - Garbage record book	12	20	32
	14501 - Garbage	2	7	9
	14503 - Garbage management plan	1		1
	14599 - Other (MARPOL Annex V)	4	2	6
	14605 - Type approval certificate of incinerator	1		1
	Garbage Recordkeeping	1		1
		21	30	51
Placards	14502 - Placards	1	2	3
	Control of Discharge of Sewage	1		1
	Subtotal	2	2	4
Worklist	15109 - Maintenance of the ship and equipment		1	1
	99101 - Other (Safety in general)	1	2	3
	Subtotal	1	3	4
Total		475	563	1038

Of the 1,038 deficiencies issued, 236 were further pursued by USCG as a civil penalty or notice of violation. Table 4 provides a summary of these enforcement actions against vessels.

Table 4. Recorded Fines or Violations Filed Against Vessels.

Citation	Analyst Text	FY 2020	FY 2021
33 C.F.R. 151.55	Garbage Record Book	1	0
33 C.F.R. 151.57	Garbage Management Plan	20	13
33 C.F.R. 151.59	Garbage Placard	115	87
	Total	136	100

USCG verifies that domestic waterfront facilities maintain the capability of receiving garbage and wastes from all ships calling at U.S. ports or terminals through its Certificate of Adequacy (COA) program. Criteria for determining the adequacy of garbage reception facilities and their compliance with MARPOL Annex V can be found in 33 C.F.R. §§ 158.400-420. USCG continued its domestic and international outreach efforts

by publishing in January 2020 four articles on Waste Reception Facilities on the USCG Maritime Commons²³ and updating its Inspection Instruction Manual to emphasize the importance of the COA program on preventing marine debris. Currently over 1,500 U.S. ports and terminals have been inspected and hold an active COA. USCG maintains a list of U.S. ports and terminals with valid reception facility COAs in compliance with the Act to Prevention Pollution from Ships on the USCG Maritime Information Exchange website.²⁴

There were 47 deficiencies issued in FY 2020 and FY 2021 for waterfront facilities concerning the COA. Table 5 provides a description of the deficiencies issued.

Table 5. Recorded Deficiencies at Waterfront Facilities Concerning COA.

Description	FY 2020	FY 2021	Total
COA applicants no longer in service		1	1
COA Expired	4	20	24
COA Incomplete	2	11	13
COA Limited to exclude Garbage		1	1
COA non-compliance		1	1
COA not available for inspection		1	1
COA not available for review	2		2
Failure to renew COA		1	1
No COA		2	2
Receiving oily mixtures without a valid COA	1		1
Total	9	38	47

Of the 47 COA deficiencies issued, 13 were further pursued by the USCG as a civil penalty or notice of violation. Table 6 provides a summary of these enforcement actions against waterfront reception facilities.

Table 6. Recorded Fines or Violations Filed Against Waterfront Facilities Concerning the Certification of Adequacy.

Fiscal Year	Area	Sector / Department	Enforcement Activity Type	Citation
2020	Pacific Area	Puget Sound	Warning (Civil Penalty)	33 C.F.R. 158.140
2020	Pacific Area	Puget Sound	Warning (Civil Penalty)	33 C.F.R. 158.140
2020	Atlantic Area	Houston/Galveston	Notice of Violation	33 C.F.R. 158.163
2020	Atlantic Area	Houston/Galveston	Notice of Violation	33 C.F.R. 158.135(c)

²³ <https://mariners.coastguard.blog>

²⁴ <https://cgmix.uscg.mil/>

2020	Atlantic Area	Houston/Galveston	Notice of Violation	33 C.F.R. 158.135(b)
2020	Atlantic Area	Houston/Galveston	Notice of Violation	33 C.F.R. 158.135(a)
2021	Atlantic Area	Houston/Galveston	Notice of Violation	33 C.F.R. 158.135(a)
2021	Atlantic Area	Houston/Galveston	Notice of Violation	33 C.F.R. 158.135(c)
2021	Atlantic Area	St. Petersburg Los Angeles/Long Beach	Notice of Violation	33 C.F.R. 158.163
2021	Pacific Area	MSU Lake Charles	Warning (Civil Penalty)	33 C.F.R. 158.135
2021	Atlantic Area	MSU Lake Charles	Warning (Civil Penalty)	33 C.F.R. 158.135(a)
2021	Atlantic Area	MSU Lake Charles	Warning (Civil Penalty)	33 C.F.R. 158.135(a)
2021	Atlantic Area	MSU Lake Charles	Warning (Civil Penalty)	33 C.F.R. 158.135(a)

VII. FUNDING

Section 1954(e)(5) of the Marine Debris Act requires the IMDCC to provide Congress an estimate of “Federal and non-Federal funding provided for marine debris and recommendations for priority funding needs.” The IMDCC interprets non-Federal funding to be the required non-Federal match associated with the grants program authorized in section 1952 of the Marine Debris Act. The Federal agencies on the IMDCC provided the following information for FY 2020 and FY 2021. IMDCC agencies’ recommendations for priority funding needs are reflected in the President’s Budget request and annual operating plan for each agency in any given fiscal year. The IMDCC also identified recommendations for priority funding needs to address marine debris, should more funding become available.

Please note that several IMDCC agencies conduct activities within multiple programs, offices, and projects that are indirectly related to marine debris efforts. They do not receive funding specific to marine debris in their annual appropriations – and instead receive funding by missions or programs. This complicates extracting the exact funding amount related to marine debris within these integrated actions.

Agency	FY 2020	FY 2020 Non-Federal Match	FY 2021	FY 2021 Non-Federal Match	General Activity Description	Budget Line
BSEE	\$31,046	N/A	\$40,026	N/A	Debris Prevention	Salaries

Department of Commerce/NOAA	\$16.5M ²⁵	\$3.2M	\$9.0M	\$7.4M	Prevention, Removal, Research, Monitoring & Detection, Response, Coordination	Coastal Science, Assessment, Response & Restoration
DOE	\$27.2M	20%+	\$10M	20%+	Plastic circularity in general. Recyclability, upcyclability, energy efficiency of plastics	
DOE	-	-	\$0.8M	0%	Waterborne Plastics Pollution	
EPA	\$425,000	-	\$435,000	-	Outreach and education; trash capture; source reduction; technical resources and assistance	
NASA	\$1M	\$0	\$2M	\$0	NASA-supported competitive research to assess the viability of marine debris detection and tracking via remote sensing techniques	Science Mission Directorate / Earth Science Division / Earth Science Research and Analysis
NPS	\$75,000	\$0	\$75,000	\$0	Agreement with NOAA	
U.S. Navy ²⁶	\$1.537M	\$0	\$1.457M	\$0	Solid Waste RDT&E,N	0603721N
U.S. Navy ²⁷	\$2.845M	\$0	\$3.181M	\$0	Solid Waste O&M,N	4B2N
USACE	\$20.411 M	\$0	\$21.844M	\$0	Operational support for marine debris removal activities	Dept. of Army, Civil Works,

²⁵ \$8.5 million received through the FY 2020 annual appropriation, and \$8 million received through the FY 2020 United States-Mexico-Canada Agreement Implementation Act.

²⁶ SEA05P

²⁷ SEA05P

						Operations and Maintenance
USAID	\$12M	0	\$62.5M	0	Clean Cities Blue Ocean, Circular Economy Policy Solutions, Indonesia Solid Waste Management and Partnerships, new bilateral and regional programs	
USFWS	\$18,000	\$0	\$0	\$0	Marine Debris Removal	Resource Management, Coastal Program
USFWS	\$12,800	\$0	\$10,000	\$0	Tracking and quantifying derelict fishing gear and effects to birds	Conservation and enforcement, Migratory Bird Management
USFWS	\$58,695	\$0	\$0	\$0	Removal of Hurricane Walaka debris	Resource Management, National Wildlife Refuge System

A. Funding Recommendations

In Government Accountability Office (GAO) Report No. GAO-19-653, *Marine Debris: Interagency Committee Members are Taking Action, but Additional Steps Could Enhance the Federal Response*, the GAO recommended that the IMDCC “should develop a process to identify recommendations for priority funding needs to address marine debris, and include such recommendations in its biennial reports.”²⁸ In response to this recommendation, the IMDCC coordinated to identify several priority funding needs to address marine debris that were common across the member agencies should more funding become available. Through this process, the IMDCC compiled this high-level list of priority funding needs to address marine debris should more funding become available:

- Enhance the ability of Federal agencies to meet their statutory, regulatory, and operational obligations to address marine debris, including through prevention and circular economy approaches;

²⁸ GAO Report No. GAO-19-653, available at: www.gao.gov/assets/710/701694.pdf.

- Enhance Federal efforts to build global capacity to better understand and more effectively address marine debris, including through prevention and circular economy approaches; and
- Enhance Federal efforts to prevent, remove, monitor and assess, and research marine debris in the United States, including through prevention and circular economy approaches.

APPENDIX A: FEDERAL AUTHORITIES BY AGENCY

Authorities listed are those that: 1) explicitly mention marine debris in their authority; 2) address sources and items that may become marine debris (e.g., plastic, fishing gear, garbage); or 3) address entities that may be impacted by marine debris. An “X” in the last column indicates that the legislation has a regulatory component.

Authority	Explicitly mentions marine debris	Addresses sources and items that may become marine debris	Addresses entities that may be impacted by marine debris	Regulatory
Save Our Seas Act of 2018, 33 U.S.C. § 1951 et seq.	NOAA			
Save Our Seas 2.0 Act of 2020, 33 U.S.C. § 1951 et seq., 33 U.S.C. § 4201 et seq.	EPA, DOS, NOAA, USAID			
Marine Debris Act, 33 U.S.C. § 1951 et seq.	NOAA, USCG			
Coral Reef Conservation Act of 2000, 16 U.S.C. § 6406(b)(3)	NOAA			
Coastal Zone Management Act of 1972, 16 U.S.C. § 1456b	NOAA			
Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601, 9604, 9607		EPA, NOAA, USCG		X
Driftnet Act Amendments of 1990 16 U.S.C. § 1826		NOAA, USFWS, DOS		X
Marine Protection, Research and Sanctuaries Act, 33 U.S.C. §§ 1401-1445 (Ocean Dumping Act) title I and II		EPA, NOAA, USCG		X
Shore Protection Act, 33 U.S.C. § 2603		EPA, USCG		X
Clean Water Act, 33 U.S.C. § 1321		EPA, USCG, NOAA		X
Clean Water Act, 33 U.S.C. §§ 1346(f), 1342, 1329		EPA	EPA	X

Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. § 1801 et seq.		NOAA, USCG		X
Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq.		EPA		
Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109 et seq.		EPA, NOAA		
Act to Prevent Pollution from Ships, 33 U.S.C. § 1901 et seq. (as amended by the Marine Plastic Pollution Research and Control Act)		USCG		X
Rivers and Harbors Act of 1899, 33 U.S.C. §§ 407, 409, 414, 415		USACE		X
Amended § 2 of the Flood Control Act of 1954 § 208		USACE		
Section 202, Water Resources Development Act of 1976 (33 U.S.C. § 426m)		USACE		X
Outer Continental Shelf Lands Act, 43 U.S.C. § 1331 et seq. and Amendments 43 U.S.C. § 1801 et seq.		BSEE		X
Oil Pollution Act of 1990, 33 U.S.C. § 2701 et seq. and E.O. 12777		BSEE, EPA, NOAA		X
Energy Policy Act of 2005, 42 U.S.C. § 15801 et seq.		BSEE		X
Microbead-Free Waters Act of 2015, P.L. 114-114		Food and Drug Administration		
National Marine Sanctuaries Act, 16 U.S.C. § 1431 et seq.		NOAA	NOAA	X
National Wildlife Refuge System Administration Act of 1966, 16 U.S.C. § 668dd			USFWS	
National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. § 668dd			USFWS	
Anadromous Fish Conservation Act, 16 U.S.C. § 757a et seq.			USFWS	

Endangered Species Act of 1973, 16 U.S.C. § 1531 et seq.			NOAA, USFWS	X
Marine Mammal Protection Act, 16 U.S.C. § 1402			NOAA, MMC, USFWS	X
National Park Service Organic Act (as amended and supplemented), 54 U.S.C. § 100101			NPS	X
Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5121 et seq.			FEMA	X

APPENDIX B: ACRONYMS

APEC	Asia-Pacific Economic Cooperation
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CFR	Code of Federal Regulations
COA	Certificate of Adequacy
DOS	Department of State
ENRD	Environment and Natural Resources Division
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GAO	Government Accountability Office
IMDCC	Interagency Marine Debris Coordinating Committee
ISO	International Organization for Standardization
MARPOL	International Convention for the Prevention of Pollution from Ships
MDP	NOAA Marine Debris Program
MMC	Marine Mammal Commission
Navy	U.S. Navy
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
TFW	Trash Free Waters
USACE	U.S. Army Corps of Engineers
USAID	U.S. Agency for International Development
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service