2020

National Oceanic and Atmospheric Administration

Marine Debris Program
Accomplishments Report

Table of Contents

Letter from the Director

Around the world, addressing marine debris has become a challenging and increasingly critical task. At the NOAA Marine Debris Program and globally, this year presented its own set of challenges that no one could foresee. Though there were disruptions in our efforts to take on marine debris, the health and safety of our team and partners is our priority, and we are committed to close coordination and flexibility during this difficult period. The dedication, resolve, and patience of our team gives me great pride and hope for the future as we continue to adapt with ever-changing circumstances.

Despite the obstacles we faced this year, I am pleased to present the NOAA Marine Debris Program 2020 Accomplishments Report. The 2020 report not only recognizes achievements of the Marine Debris Program and our partners throughout this challenging year, but represents the conclusion of our fiscal years 2016-2020 Strategic Plan. The highlights we provide in this report show the breadth of our work across our program pillars - prevention, removal, research, regional coordination, and emergency response - to meet our mission to investigate and prevent the adverse impacts of marine debris.

In 2020, our team and partners worked with students in an underserved San Diego, California community to collect data on urban trash and provide experiential learning opportunities; removed thousands of derelict crab traps from the Lake Pontchartrain Basin in Louisiana; explored whether freshwater mussels in a Wisconsin estuary could be used as a potential monitoring tool for microplastics in the Great Lakes; coordinated local marine debris messaging, outreach, and education efforts across Oregon; and removed displaced vessels, damaged docks, pieces of houses, and other debris in coastal areas of the United States Virgin Islands created by Hurricanes Irma and Maria. These highlights are only a snapshot of the efforts by our team and partners throughout the year.

As I reflect on the past five years and our strategic plan comes to a close, I am reminded of the unique collaborations, creative approaches, and growing national and international attention focused on the pervasive global problem of marine debris. During this period, we grew, learned, adapted, and accomplished a great deal. As you read through this report, I ask you to think about the power of collective action and how together, we can achieve a global ocean and its coasts free from the impacts of marine debris.

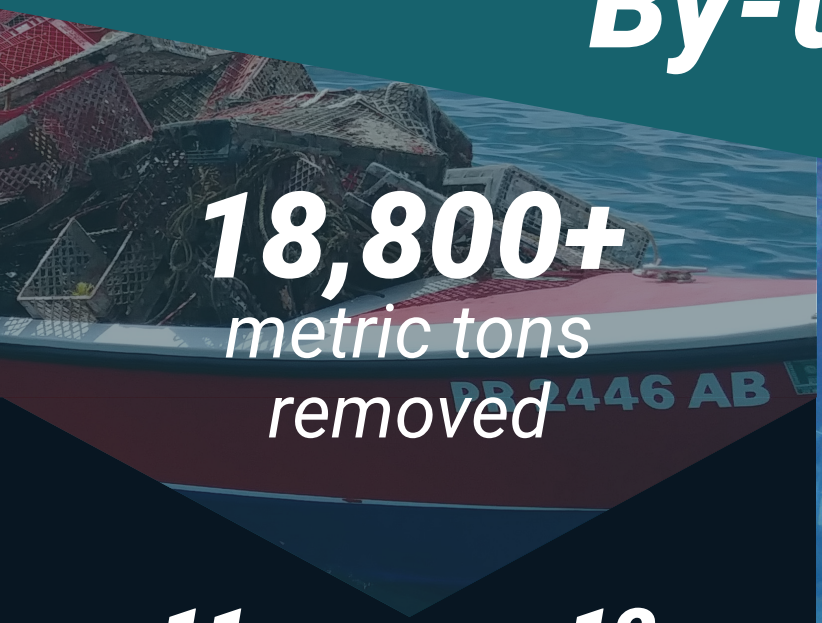
We deeply appreciate the contributions of our partners and the people we serve. Without innovative organizations, dedicated volunteers, and hard-working staff, we would not be able to accomplish our mission. We thank you and look forward to the future.

Nancy Wallace
Director, NOAA Marine Debris Program

Five Years of the NOAA Marine Debris Program Strategic Plan

Fiscal Years 2016-2020

Fiscal Years 2016-2020
By-the-Numbers



18,800+
metric tons removed

125 abandoned and derelict vessels removed

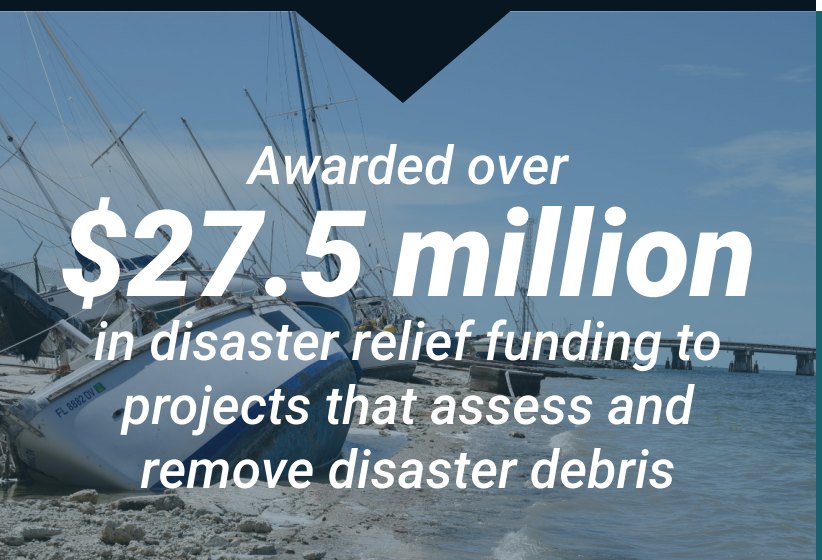
65,000+
students engaged

11
action plans developed for California, Florida, the Great Lakes, the Gulf of Maine, the Gulf of Mexico, Hawaii, Oregon, the Southeast, Virginia, and Washington

12
marine debris emergency response guides developed for Alabama, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Texas, U.S. Virgin Islands, and Virginia

Responded to Hurricanes Harvey, Florence, Irma, Laura, Maria, Michael and Sally; and Typhoon Yutu

Awarded over
$11.8 million
in funding to projects that prevent, remove, and research marine debris



Awarded over
$27.5 million
in disaster relief funding to projects that assess and remove disaster debris

Supported
36 prevention **57** removal **9** research
projects

2016

Ten Years of the NOAA Marine Debris Program

In 2016, the NOAA Marine Debris Program celebrated its ten-year anniversary. During our first decade, the Program saw tremendous growth and success as we worked to address the issue of marine debris. We expanded from an initial staff of six to nineteen, covering ten regions around the country. Through the dedicated efforts of our team members and partners, we removed thousands of metric tons of marine debris from our shores, gained valuable knowledge through scientific research, and reached thousands of students, teachers, and community members to raise awareness and prevent marine debris. We are proud of all that we accomplished to prevent and reduce marine debris in our global ocean.

Marine Debris Monitoring and Assessment Project Toolbox Launch

In 2016, the "Get Started Toolbox " for the NOAA Marine Debris Program's Marine Debris Monitoring and Assessment Project (MDMAP) was launched. This citizen science initiative engages NOAA partners and volunteers across the nation to survey and record the amount and types of marine debris on shorelines, helping answer some of our biggest questions about marine debris. The Toolbox serves as a resource to aid current and new project participants in their monitoring efforts, providing access to protocol documents, tutorials, a photo gallery for identifying marine debris, and frequently asked questions.

TRASH TALK Wins a Regional Emmy®

In 2015, the NOAA Marine Debris Program and NOAA Ocean Today partnered to produce the TRASH TALK educational video series, which takes a deep-dive into the issue of marine debris, how it affects our ocean, and what people can do to prevent it. In 2016, TRASH TALK was honored with a Regional Emmy® Award from the National Capital Chesapeake Bay Chapter of The National Academy of Television Arts and Sciences in the Informational/Instructional Program/Special category. You can view the full TRASH TALK video series on the NOAA Marine Debris Program website.

2017

Completed Series on Marine Debris

In 2017, the NOAA Marine Debris Program completed a series of six topic papers that review the state of the science on marine debris issues. This series explores the impacts of marine debris on wildlife from **ghost fishing**, **ingestion**, and **entanglement**, as well as its impacts to **coastal and benthic habitats**, the **transport of marine debris** throughout the ocean, and its potential to carry **invasive species**.

Quantification of Microplastics on National Park Beaches

In a coordinated effort with the National Park Service and Clemson University, researchers investigated the abundance and distribution of microplastics on National Park beaches. As part of this study, sediment samples were collected from 37 beaches from 35 national parks, monuments, recreation areas, and seashores across the country. This **snapshot study** showed that microplastics were present at all 37 beaches and that there was no relationship between microplastics and geographic features such as rivers, wastewater treatment plants, or urban centers. It also showed that the highest concentrations of microplastics and microfibers were observed at beaches in the Great Lakes and Pacific Islands, and were even found in remote areas of Alaska. Studies such as this help us to better understand the movement of microplastics in beach ecosystems and potential threats to wildlife and the marine environment.

Effects of Derelict Fishing Gear in the Chesapeake Bay

A team of researchers led by Global Science & Technology, Inc. completed a **study** to assess the impact of lost and abandoned crab pots on both wildlife and the economy in the Chesapeake Bay. This study estimates that some 145,000 derelict crab pots exist in the Chesapeake Bay, with 12-20% of actively-fished pots becoming lost each year. The study also estimates that by removing derelict pots in active fishing areas, the harvest of blue crabs could increase by 23.8%, or 38 million pounds, which translated to $33.5 million over the study period. A **Guiding Framework** was produced for derelict fishing gear assessments, which can be applied to other trap fisheries and regions.

2018

Sixth International Marine Debris Conference

In March 2018, the NOAA Marine Debris Program and the United Nations Environment Programme (UN Environment) co-hosted the **Sixth International Marine Debris Conference** (6IMDC) in San Diego, California. The conference brought together more than 700 participants from more than 50 countries to work towards a marine debris-free ocean. The conference promoted zero waste initiatives and aimed to celebrate and encourage further innovation, collaboration, and action around this far-reaching topic, highlighting innovative marine debris solutions, research, and technological advances since the last international marine debris conference held in 2011, and facilitating discussions around strategies to minimize the impacts and occurrence of marine debris. A major strength of the conference was its waste diversion efforts and the diversity of disciplines and expertise, including science, art, outreach, and education from individuals representing government, academia, private industry, community groups, and many more. Proceedings of the conference are available on the 6IMDC **website**.

Ocean Plastics Lab

The NOAA Marine Debris Program, alongside other partners, sponsored the **Ocean Plastics Lab**, an international outdoor, interactive, and free exhibit, composed of four shipping containers that highlight the global problem of ocean plastic pollution. This exhibit was created by the German Marine Research Consortium and is supported by Germany's Federal Ministry of Education and Research and the European Commission. It began its tour of marine debris outreach in 2017 in Turin, Italy, and included a stop in Washington, D.C. on the National Mall. The Lab features the **Marine Debris Tracker App**, which serves as an easy-to-use and simple tool for marine debris data collection. While in the Nation's capital, an estimated 20,000 people visited the exhibit, learning about marine debris and science-based solutions.

2018

Understanding Marine Debris on U.S. Shorelines

The Ocean Conservancy and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) carried out a rigorous **statistical analysis** of marine debris shoreline monitoring datasets from the Ocean Conservancy and the NOAA Marine Debris Program. Through modeling, this project identified geographic patterns and trends in marine debris distribution, assessed marine debris management actions, and produced recommendations to improve marine debris monitoring protocols. From this in-depth analysis, it was estimated that at any given moment, there are between 20 million and 1.8 billion marine debris items along the shoreline of the continental United States, with marine debris hotspots found on shorelines in the Gulf of Mexico, California, and the Mid-Atlantic. Analysis of NOAA's data showed that container deposit legislation for plastic bottles in Hawaii, Oregon, and California was effective in reducing the amount of plastic bottles found on the shorelines surveyed using the Marine Debris Monitoring and Assessment Project protocol in those states.

Hurricanes Harvey, Irma, and Maria Response

The 2017 hurricane season left a swath of destruction and significant amounts of marine debris over large areas of the Caribbean, Florida, Georgia, South Carolina, and Texas. The NOAA Marine Debris Program provided technical assistance to local, state, and federal partners with the responses to Hurricanes Harvey, Irma, and Maria. The NOAA Marine Debris Regional Coordinators for the Florida & Caribbean and the Southeast regions functioned as the statewide Natural Resource Advisor Coordinator during four separate rotations. In addition, NOAA's Florida Marine Debris Emergency Response Guide was used to determine agency jurisdiction for debris issues and necessary consultations with other agencies. In 2018, NOAA received $18 million in disaster relief funding to aid in coastal recovery efforts by supporting marine debris assessment, removal, and disposal in the impacted areas of Florida, Texas, South Carolina, Georgia, Puerto Rico, and the U.S. Virgin Islands.

Save Our Seas Act of 2018

Congress passed the Save our Seas Act of 2018 with bipartisan support, and the President signed the bill into law on October 11, 2018. The Act reauthorizes the NOAA Marine Debris Program for five years (2018-2022) and amends the Program's enabling legislation, the Marine Debris Act. It directs NOAA to promote international action to reduce marine debris, gives NOAA the authority to declare severe marine debris events, directs NOAA to work with other federal agencies to develop additional outreach and education strategies to address sources of marine debris, and updates the membership of the Interagency Marine Debris Coordinating Committee. Through this Act, the Program is continuing and expanding upon its work to develop solutions to marine debris.

Papahānaumokuākea Marine National Monument Removal Mission

The Papahānaumokuākea Marine National Monument (monument), which is located northwest of the main Hawaiian Islands, is a part of the most remote archipelago in the world. However, the isolation of the islands doesn't make them immune to marine debris. An estimated 52 metric tons of marine debris, mostly made up of derelict fishing gear, finds its way to the monument every year. Removing this marine debris is a crucial part of responsibly stewarding and protecting the health of the monument. Since 2006, the NOAA Marine Debris Program has been a partner in the NOAA Pacific Island Fisheries Science Center Marine Debris Removal Project. This is a major multi-agency undertaking that aims to remove nets and plastics with a priority focus on hazards to Hawaiian monk seals, green sea turtles, and sea birds. The latest removal mission removed 74 metric tons of marine debris from six islands, mostly made up of derelict fishing gear and nets. Debris from the mission was disposed of through the Hawaii Nets-to-Energy Program, art projects, and various recycling programs.

Zero Waste Initiative

The NOAA Marine Debris Program has been actively implementing zero waste efforts in our daily operations since we co-organized the Sixth International Marine Debris Conference (6IMDC) for over 700 attendees in 2018. The 6IMDC zero waste efforts, which included limiting single-use items, composting, donating excess food, and recycling remaining conference materials, resulted in over 80,000 single-use items and nearly 3.4 metric tons of waste diverted from the landfill. Using the momentum from the 6IMDC, the NOAA Marine Debris Program began incorporating zero waste initiatives into our meetings and workshops by supplying reusable coffee mugs and dishes, taking electronic notes, and eliminating unnecessary handouts. This success has led to the formation of a larger Zero Waste Team in the National Ocean Service with representatives from each Program Office. In the coming years, the Team plans to refine and expand data collection methods for workshops and events, work on actions that will reduce waste in both daily office activities and at events, and encourage participation in zero waste efforts across the National Ocean Service.

2020

Addressing Marine Debris Across North America

On July 1, 2020, the new trade agreement between the United States, Mexico, and Canada, known as the United States-Mexico-Canada Agreement (USMCA), entered into force, replacing the North American Free Trade Agreement. This new agreement includes significant provisions to encourage the three governments to work together to address marine debris. It is also the first large-scale trade agreement signed by the United States since the passage of the Save Our Seas Act of 2018 that mandated that the United States consider marine debris in any new such agreement. In January 2020, the United States also passed the USMCA Implementation Act, domestic legislation which provided $8 million in supplemental funding to the Marine Debris Program to implement its work to prevent, remove, and assess marine debris in North America through fiscal year 2023.

NOAA Project with the Asia Pacific Economic Cooperation Forum

The NOAA Marine Debris Program began working on a project approved by the Asia Pacific Economic Cooperation (APEC) forum to increase the capacity of governments, researchers, and others in the Asia Pacific region to more effectively monitor marine debris. Marine Debris Program staff will lead this effort, working closely with partners in the Department of State Office of Ocean and Polar Affairs. The project will engage APEC participants and key global experts to develop a marine debris monitoring decision framework, assisting APEC economies to monitor shorelines based on local conditions, capacity, and needs. This project will help us understand more about marine debris in our global ocean, and will inform cost effective solutions.

U.S. Government Joins the Global Ghost Gear Initiative

On July 16, 2020, the Department of State announced that the United States formally joined the Global Ghost Gear Initiative (GGGI) as a member government of this multi-stakeholder partnership, joining 15 other governments and 85 non-government partners. The GGGI is the foremost international collaboration working to address the problem of derelict or "ghost" gear and has broad representation across industry, government, and civil society. Addressing marine debris, including ghost gear, is a key priority for the United States and by becoming a member of GGGI, the United States Government can better support this key international initiative and foster stronger collaboration between the Department of State and the NOAA Marine Debris Program to reduce ghost gear. In spring 2020, the Marine Debris Program collaborated with GGGI and the Department of State to develop a project to prevent the loss of fishing gear in the Asia Pacific in coordination with governments and stakeholders throughout the region.

The NOAA Marine Debris Program and National Park Service Team Up For Outreach

The NOAA Marine Debris Program and the National Park Service signed a five-year agreement to support the development and installation of outreach and educational displays in coastal National Parks. The exhibits will support marine debris prevention efforts and seek to raise awareness about the sources and impacts of marine debris, as well as encourage individuals to take action. This project will help meet a new program requirement included in the Save Our Seas Act of 2018, to develop outreach and education strategies in partnership with other federal agencies. The first three sites that will develop displays under this agreement include: Cape Lookout National Seashore in North Carolina, Perry's Victory and International Peace Memorial in Ohio, and Bering Land Bridge National Preserve in Alaska.

The NOAA Marine Debris Program Awards Funds to Eight Sea Grant Programs

The NOAA Marine Debris Program, in a new collaboration with the National Sea Grant College Program, awarded $350,000 to eight Sea Grant programs for projects that will research, prevent, and remove marine debris in United States waters. These projects are matched with funding from the state Sea Grant programs, bringing the total investment for these marine debris projects to $700,000. The projects take on a number of key marine debris issues in Connecticut, Delaware, Hawaii, Louisiana, Massachusetts, North Carolina, Oregon, and Wisconsin, including preventing and removing derelict crab traps, reducing the presence of plastics in waterways, empowering students through marine debris education, and removing marine debris from sandy beach ecosystems.

NOAA Marine Debris Program
Fiscal Year 2020 Accomplishments

Prevention

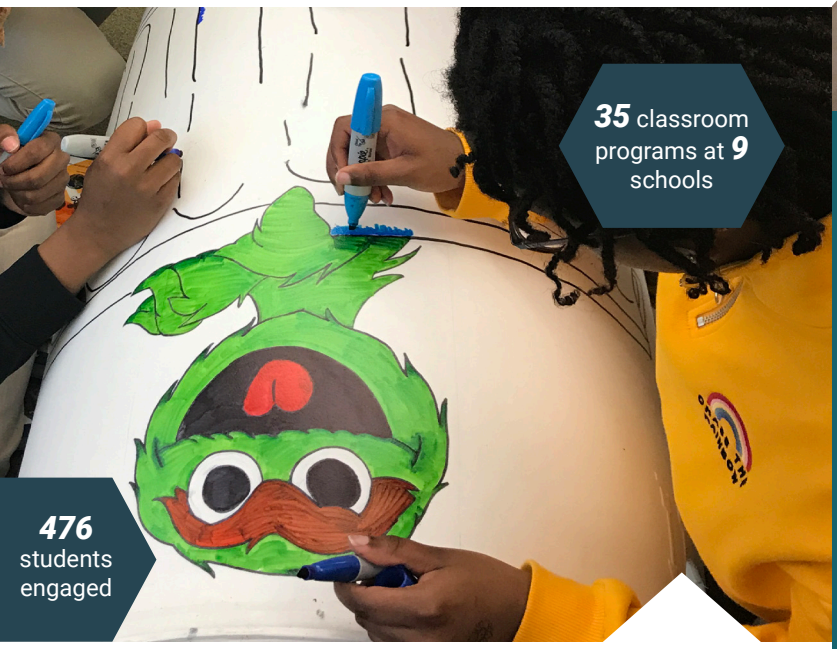
With immense amounts of marine debris already in our ocean and Great Lakes, our first priority is to stop the problem at its source. The NOAA Marine Debris Program supports projects that provide the knowledge and resources necessary to change behaviors, raise awareness, and promote the long-term prevention of marine debris before it can enter our ocean, waterways, and Great Lakes.

Environmental Education and Awareness in Wisconsin

The National Marine Sanctuary Foundation, in coordination with the NOAA Marine Debris Program, worked with the University of Wisconsin-Madison to promote marine debris education and outreach in the Great Lakes region. As part of the Chazen Museum of Art's exhibition ***Plastic Entanglements: Ecology, Aesthetics, Materials***, the project team gave students and educators the opportunity to tour the exhibition and bridge the connection between science and art. Participants learned about marine debris and its impacts on the environment through museum visits and hands-on science activities.

102 educators engaged

866 students engaged



35 classroom programs at ***9*** schools

476 students engaged

Developing Student Leaders to Prevent Littering

In Prince George's County, Maryland, the Alice Ferguson Foundation is partnering with thirteen teachers from nine high schools to train and equip students in grades 9-12 to lead community cleanups, pilot their own litter prevention strategies, and mentor younger students in their communities. The project reduces littering and waste at school facilities and grounds, as well as a reduced littering rate among high school students. Students at nine different high schools created action plans to address marine debris at their schools.

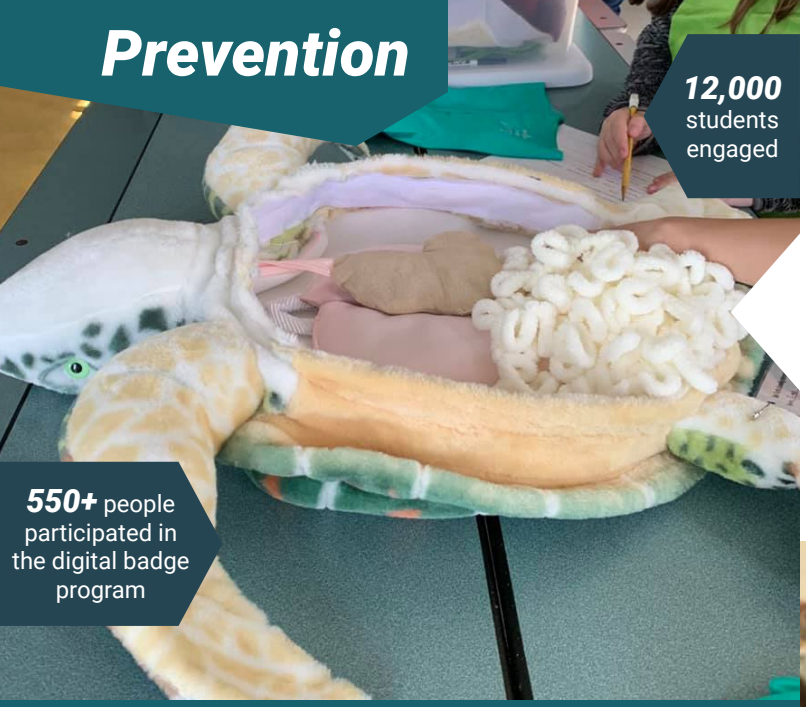
Talking with Our Tourists on South Bass Island

The Ohio State University and Ohio Sea Grant, along with numerous community partners, are tackling marine debris that comes from visitors to South Bass Island and the village of Put-in-Bay, Ohio. Tourists visiting the island receive information at ferry terminals, on ferries, and in shuttles and taxis that focus on the hazards of improper disposal of plastics and simple actions they can take to prevent these problems. Messaging on menus and signage on tables at partner restaurants are raising awareness about issues caused by plastic straws, while boaters visiting the island are being taught how to properly manage trash when out on the water, in collaboration with yacht clubs and the Ohio Clean Marinas Program.

31 community cleanups

2,500 people engaged

Prevention



Highlighting Marine Debris Impacts Through Simulated Turtle Dissections

The University of North Carolina Wilmington MarineQuest is connecting students to the impacts of marine debris through their Turtle Trash Collectors program. Using model sea turtles to perform a hands-on simulation of a sea turtle necropsy, or animal dissection, students identify the types of marine debris found in the turtle and consider alternatives to these items. This program has been successfully converted to an online format, and anyone can participate, as well as earn digital badges for their personal cleanup actions.

Creating Community on a College Campus

Eckerd College is working to address the root source of marine debris by reducing the consumption of single-use plastics across its St. Petersburg, Florida college campus. By offering courses on plastic marine debris, leading beach cleanups, hosting plastic reduction challenges, and switching to single-use plastic alternatives across campus stores, students and the entire Eckerd community are becoming more mindful of their choices and aware of their impact. In November 2019, the Eckerd College President signed a pledge committing the college to further eliminate non-essential plastics from the campus, setting an example for other colleges and universities.

Empowering a Plastic Free Gulf Coast

Mississippi State University's (MSU) Gulf Coast Community Design Studio's Plastic Free Gulf Coast (PFCG) program, along with MSU Coastal Extension, Mobile Baykeepers, Marketing for Change, and Plastic Free April, is working to engage and educate consumers and businesses about single-use plastic pollution. Restaurants are a driving force for behavior change by offering alternatives to single-use plastics, raising awareness about plastic pollution, and providing consumers the opportunity to make an immediate impact. PFGC supports restaurants to make the transition away from single-use plastics and has already worked with various restaurants to qualify for certification in four categories that range from providing straws upon request, to going completely plastic free.

Prevention

Reducing Shotgun Wads in San Francisco Bay

The Greater Farallones National Marine Sanctuary, Greater Farallones Association, Root Solutions, and other partners worked to tackle the issue of plastic shotgun wads, which are used to separate shotgun shells from the powder, on shorelines in the San Francisco Bay. Through this project, the Sanctuary and their partners surveyed hunters to understand common barriers to picking up shotgun wads while hunting, such as low visibility and inaccessibility, in order to create best management practices. Signs reminding hunters to look closely for shotgun wads and pick them up were installed along with receptacles at two hunting reserves, which collected 58 wads and 485 shells over the final three weeks of the 2019-2020 hunting season.

540+ shells and wads collected

4 wad receptacles installed at hunting reserves

60 gallons of debris removed

15 students participated in the first camp

Boaters Make Waters Better

Washington Sea Grant is engaging the local boating community to raise awareness of the dangers that marine debris poses and how they can contribute to solutions. Sea Grant has created outreach materials and distributed them online and in print through ongoing Washington Sea Grant programs that reach the boating community, citizen stewards, and the public. Since its launch, the marine debris and boating campaign has reached thousands of individuals, and Washington Sea Grant will continue outreach efforts by disseminating educational rack cards and boat oil bibs with reminders to prevent oil spillage and marine debris at local marinas and through social media.

Taking it to the Streets with Students

California Sea Grant and Ocean Discovery Institute are working with local communities, including students from highly urbanized and under-resourced middle schools in San Diego, California, to better understand the sources of urban debris, identify storm drains collecting debris, and create programs to educate students and citizens about urban trash. In January 2020, the first “Trash Troop Camp” was completed, using urban trash monitoring protocols to collect data that will be used to inform solutions to prevent litter and leakage of trash through waste management systems.

Removal

Once in the ocean and Great Lakes, marine debris can wreak havoc for wildlife, habitats, and the economy. In order to reduce the harmful effects of marine debris, the NOAA Marine Debris Program supports projects that remove marine debris from coastal areas and waterways, including large and highly damaging debris, such as derelict fishing gear and abandoned and derelict vessels.

Mobilizing Volunteers to Remove Derelict Fishing Gear

In Massachusetts, the Center for Coastal Studies mobilized a diverse set of volunteers to identify, document, and properly dispose of derelict fishing gear in Cape Cod Bay and the Cape Cod National Seashore. Volunteers included commercial and recreational fishers, middle school students, the Massachusetts Environmental Police, private and municipal solid waste disposal providers, surfers, and other interested groups. Through this project, over 15 metric tons of derelict fishing gear was removed from Cape Cod Bay, including a trap that was over 20 years old.

Removing Derelict Lobster Gear Through Partnerships

In the Long Island Sound, the Cornell Cooperative Extension Marine Program collaborated with an extensive network of partners, including active lobstermen, to locate and remove derelict lobster fishing gear. Derelict traps can continue to trap and kill lobsters, as well as other species, through ghost fishing and can increase bycatch mortality. Through multi-sectoral partnerships, removed traps were properly disposed of or recycled, and usable and identifiable gear was returned to its owners.

Working with Commercial Crabbers to Prevent Derelict Traps

In southern New Jersey, Stockton University scientists have engaged commercial crabbers to break the cycle of derelict crab trap loss through a project that pairs next generation crabbers with experienced crabbers, providing direct peer-to-peer mentoring, financial assistance during the off-season, and low-cost sonar equipment to find and remove lost traps in the off season. Through this project, Stockton University estimated that with a one-time investment in a low-cost sonar and grapple system, a single crabber could retrieve and prevent more than 800 lost traps over 20 years, reducing the loss of an estimated 40,000 blue crabs to the fishery from ghost fishing.

Removal

Tackling Marine Debris in Southeast Stomping Grounds

The North Carolina Coastal Federation is cleaning up disaster debris left in the wake of Hurricane Florence in Pender, New Hanover, and Brunswick counties in North Carolina. They partnered with the North Carolina Division of Coastal Management and local governments to remove dock debris, wood, metal, foam, and plastic that still remain in the estuary, on remote shorelines, in tidal marshes and oyster reefs, and in publicly-owned conservation areas. In 104 days, a cleanup crew of four commercial fishers removed more than 115 metric tons of marine debris — nearly one metric ton of marine debris per day — by hand.

Wrangling Unregulated Fishing Traps in Puerto Rico

With support from the NOAA Marine Debris Program and Fishing for Energy Partnership, The Ocean Foundation is collaborating with Conservacion ConCiencia, the Puerto Rico Department of Natural and Environmental Resources, and the fishing sector to take on illegally placed derelict fishing traps in the coastal waters of Puerto Rico. These illegal traps impact the fishing community by competing with licensed-fishers and damaging coral reefs. The Ocean Foundation and partners have already removed over 650 derelict traps, and plan to create a long-term disposal and management plan for Puerto Rico.

Removing Hurricane Debris from Mangrove Shorelines

When they struck the U.S. Virgin Islands, Hurricanes Irma and Maria created large amounts of marine debris, much of which ended up in vulnerable mangrove shorelines. Through a series of "Great Mangrove Cleanups," The University of the Virgin Islands Center for Marine and Environmental Studies is working to remove marine debris from five miles of mangroves. With the participation from community volunteers of all ages, the first of these cleanups removed marine debris from 1.8 miles of mangrove shoreline.

Removal

Removing Crab Traps from the Lake Pontchartrain Basin

The Pontchartrain Conservancy, along with various partners, have removed thousands of derelict crab traps from the Lake Pontchartrain Basin. In order to reduce future trap loss, outreach efforts are being expanded to inform the public and stakeholders about the harm caused by derelict traps. Additionally, data collected during removal revealed that 70% of the traps continued ghost fishing, and this data is being used to analyze the economic impact of derelict crab traps on the Louisiana blue crab fishery.

Restoring the Lower Pearl River Basin

The Southeast Aquatic Resources Partnership and Southeastern Association of Fish and Wildlife Agencies, along with their partners, including the United States Fish and Wildlife Service and Pearl Riverkeeper, removed a large log jam made of both human-made and natural debris in the Pearl River, a natural boundary between Mississippi and Louisiana. Without this partnership, the project would not have the capacity to restore hydrologic functions of the Pearl River basin by improving connectivity and allowing for fish passage and normal river flow.

Cleaning up Vessels on Richardson Bay

Richardson's Bay Regional Agency is working to remove deteriorated or unseaworthy vessels from Richardson Bay, part of San Francisco Bay, to preserve and protect local natural resources, such as eelgrass beds, herring, and migratory birds. Unless these vessels are removed, they can sink, leak contaminants, discharge debris, release hazardous materials into the Bay, or become a navigational hazard. Richardson's Bay Regional Agency has significantly reduced the number of vessels in the Bay, and has implemented programs to prevent new vessels that could become derelict from anchoring in the Bay.

The GrassRoots Garbage Gang Gathers Trash Together

Since 2012, the GrassRoots Garbage Gang has worked to remove marine debris from the north coast of the Long Beach Peninsula and the Willapa Bay Wildlife Refuge in Washington. They work to maintain healthy oceans and coasts for their community, habitat, wildlife, navigation, and economic and human health. Throughout 2020, they continued these volunteer efforts to remove and dispose of marine debris, resulting in the removal of thousands of pounds of debris.

Community Digging Out Debris from Salmon Habitat

The Southeast Alaska Watershed Coalition, the National Marine Sanctuary Foundation, and local partners are working to remove abandoned vehicles, oil containers, and other large debris to improve the health of the habitat and foster community stewardship in the Maybeso Estuary. These large debris items are the result of past logging operations and illegal dumping in the area. Located on Prince of Wales Island in Southeast Alaska, the estuary serves as a nursery for salmon and other important fish species, but debris has partially blocked fish access to Halftime Creek. Additionally, this project brings improved recreation and scenic views for the community.

Big Nets Require Big Efforts

Hawai'i Wildlife Fund, in partnership with the Surfrider Foundation's Kaua'i Chapter and Pūlama Lāna'i, is removing derelict fishing gear and medium- to large-scale marine debris items from the islands of Hawai'i, Kaua'i, Maui, and Lāna'i. Now in its second year, these collaborative community-based cleanups and net recovery patrols have already exceeded their planned goals for cleanups hosted, acres restored, volunteer hours, and more. So far, an estimated nearly 50% of the total debris collected (by weight) through this multi-island, collaborative project has been derelict fishing nets and rope/line bundles.

Keeping a Community Lagoon Clean

The Nu'uuli Pala Lagoon, the largest wetland area in American Samoa, provides fish and wildlife habitat, and is an important place for recreation and the community. In order to reduce the impacts of marine debris in the Lagoon and raise community awareness around the issue, the National Marine Sanctuary Foundation, Remote Elite Services, and the Nu'uuli Vocational Technical High School Marine Debris Club partnered for weekly shoreline monitoring and monthly large-scale cleanups. Students from the Marine Debris Club identify and quantify the removed debris and share their findings through public service announcements and presentations at monthly community night markets.

Eliminating Entanglement in Kodiak

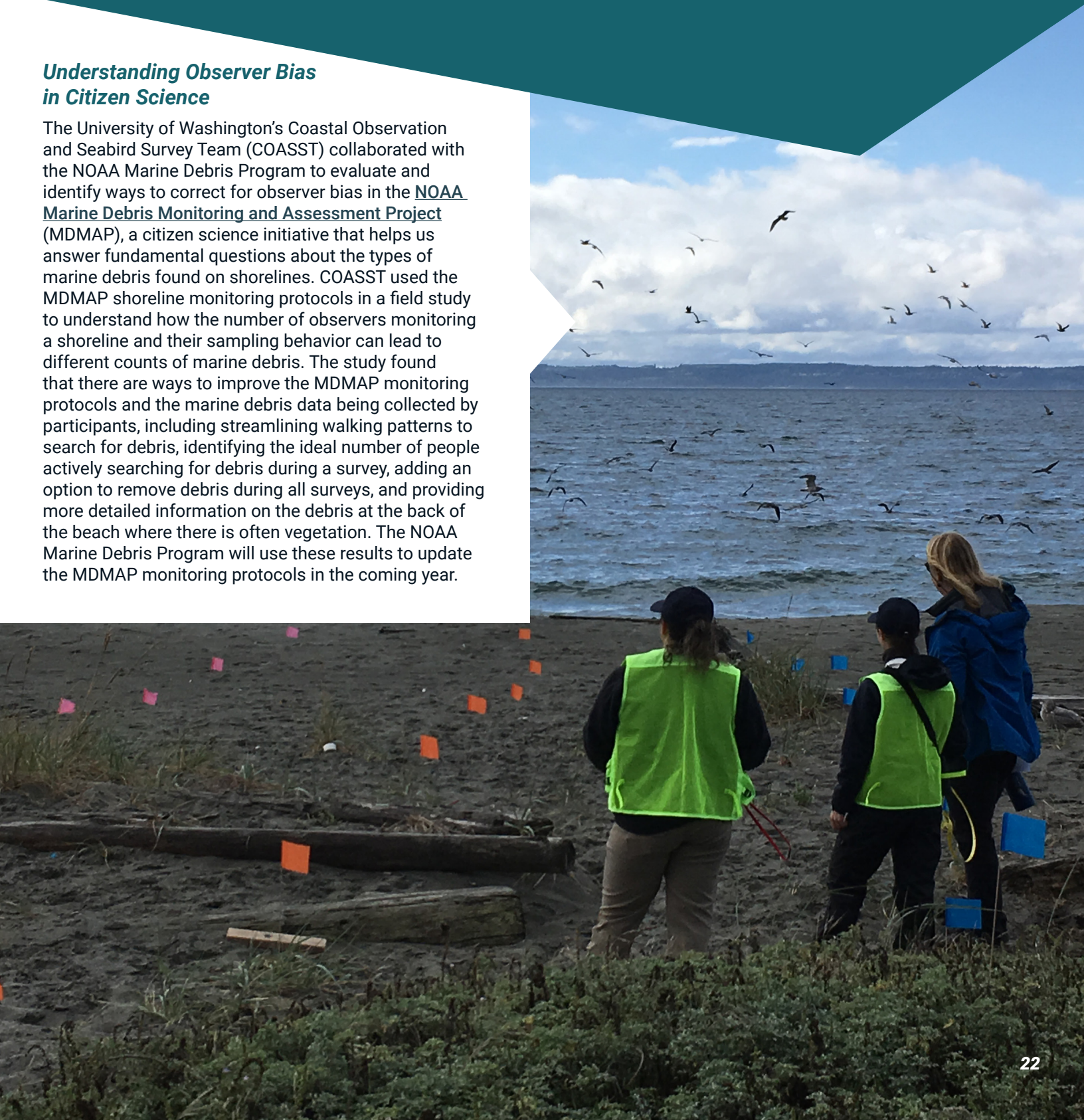
Island Trails Network is working with partners, volunteers, and the commercial fishing industry in Alaska to remove derelict fishing gear and increase the education and awareness of marine mammal entanglement. Volunteers from the community and the commercial fishing industry removed derelict fishing gear from the Kodiak archipelago, including Afognak, Shuyak and Uganik Islands, to reduce entanglement impacts to whales, Steller sea lions, and other marine mammals. Cleanup kits that include instructions and safety protocols for handling debris and cleanup supplies, such as bags and gloves, were provided to fishers to remove and measure debris.

Research

In the last decade, research on marine debris has grown exponentially. The issue is multi-faceted, often involving science across several disciplines. The NOAA Marine Debris Program supports research projects across the United States that help expand our understanding of debris by investigating the sources of marine debris, how it moves in the environment, where it ends up, and how it impacts wildlife and our ocean, waterways, and Great Lakes.

Understanding Observer Bias in Citizen Science

The University of Washington's Coastal Observation and Seabird Survey Team (COASST) collaborated with the NOAA Marine Debris Program to evaluate and identify ways to correct for observer bias in the NOAA Marine Debris Monitoring and Assessment Project (MDMAP), a citizen science initiative that helps us answer fundamental questions about the types of marine debris found on shorelines. COASST used the MDMAP shoreline monitoring protocols in a field study to understand how the number of observers monitoring a shoreline and their sampling behavior can lead to different counts of marine debris. The study found that there are ways to improve the MDMAP monitoring protocols and the marine debris data being collected by participants, including streamlining walking patterns to search for debris, identifying the ideal number of people actively searching for debris during a survey, adding an option to remove debris during all surveys, and providing more detailed information on the debris at the back of the beach where there is often vegetation. The NOAA Marine Debris Program will use these results to update the MDMAP monitoring protocols in the coming year.



Research

Using Invasive Mussels to Monitor Microplastics

A collaborative study between the NOAA Great Lakes Mussel Watch Program, Loyola University Chicago, and the NOAA Marine Debris Program evaluated the use of invasive zebra and quagga mussels as a potential monitoring tool for estimating the amount of microplastics across the urban estuary of Milwaukee, Wisconsin. Many species of bivalves filter microplastics and other pollutants, and these invasive mussels are already used by Mussel Watch to monitor contaminants in the Great Lakes. In this study, mussels were collected from Lake Michigan and deployed in cages at five locations within the Milwaukee Estuary, and then were retrieved and analyzed for microplastics. Results showed that while most of the ingested microplastics were fibers, mussels of different sizes had different patterns for ingesting microplastics and that there was no clear relationship between presence of microplastics and legacy contaminants in mussels. As a result, the study found that these invasive mussels may not be a good indicator of microplastic pollution in freshwater environments, such as the Great Lakes, without further investigation.

Catching Marine Debris in the Hawaii Longline Fishery

The NOAA Marine Debris Program, in partnership with researchers from Walsh Analytical Service and the NOAA Pacific Islands Fisheries Science Center, published a study that analyzed derelict fishing gear in the Hawaii-based pelagic longline fishery grounds. There are large amounts of marine debris across the North Pacific Ocean, which accumulate in convergence zones that overlap with the fishing grounds of the longline fishery and often snag on the longlines. This study used data collected by fishery observers from NOAA's Pacific Islands Region Observer Program from 2008-2016 to better understand debris interactions with longlines and to estimate trends in the amount of marine debris within the commercial fishing grounds. The study found that nearly 90% of the marine debris snagged by the longlines were derelict fishing gear from other fisheries operating in the North Pacific Ocean. It also showed that the amount of derelict fishing gear snagged by the longlines has declined by nearly 66% during the study period. Read the full paper in the journal ***Scientific Reports***.

Regional Coordination

Marine debris is a wide-spread issue that affects us all, no matter where we live. Establishing relationships, sharing information, and coordinating activities is important to effectively and efficiently reducing and preventing the impacts of marine debris. The NOAA Marine Debris Program staff is positioned across the country, in ten different regions, to support projects and partnerships with state and local agencies, tribes, non-governmental organizations, academia, and industry that addresses marine debris locally.

3 new marine debris action plans for Florida, the Great Lakes, and the Gulf of Maine

Coordinating Locally to Address Marine Debris Nationally

Across the United States and territories, the NOAA Marine Debris Program supports the development of regional marine debris action plans. These plans act as strategic frameworks for marine debris stakeholders across the country to address the problem of marine debris in their area. Action plans help to document, facilitate, and track local actions that prevent, research, and remove marine debris. In fiscal year 2020, new marine debris action plans were created for Florida, the Great Lakes, and the Gulf of Maine. These action plans will be carried out through broad partnerships with federal, state, and local governments, industry, and non-governmental and academic organizations from the United States and Canada.

Regional Coordination

The Great Lakes Completes the First Marine Debris Action Plan

The Great Lakes marine debris community wrapped up its first five-year Great Lakes Marine Debris Action Plan. Created as a voluntary, collaborative effort, the action plan engaged more than 30 organizations from eight U.S. states (Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin) and Ontario, Canada, and made strides to address marine debris to ensure that the Great Lakes, its coasts, people, and wildlife are free from its impacts. This action plan was the first of its kind to be completed and demonstrates the commitment and collaboration of stakeholders within the Great Lakes region. Accomplishments from the first Great Lakes Marine Debris Action Plan can be viewed here. Stakeholders will continue to work together to address marine debris in the region in a new action plan.

Collaborating to Educate

The Oregon Coast Aquarium and Surfrider Foundation Oregon organized a workshop to bring together Oregon Marine Debris Action Plan education partners to coordinate local marine debris messaging, outreach, and education efforts across the state. Participants presented information about their work and projects in the areas of research, policy, and education. Together, they identified next steps for collaborative efforts and outlined a framework for a marine debris outreach and education plan for Oregon. Building off of an initial 2019 workshop, this is the second workshop dedicated to marine debris education planned by and for Oregon partners.

Emergency Response

Along with the devastation they cause, natural disasters, such as hurricanes, tropical storms, tsunamis, floods, and landslides, can move large amounts of marine debris from land into the ocean. The NOAA Marine Debris Program works with local, state, tribal, and federal partners around the country to improve natural disaster preparedness and response through the collaborative development of marine debris emergency response guides. Currently, there are guides in 12 states that cover the Gulf of Mexico and Southeast regions, Florida, and part of the Caribbean and mid-Atlantic regions. Additionally, the NOAA Marine Debris Program shares storm preparedness information with the public and supports projects that address storm-generated marine debris.

Addressing Hurricane Debris through the Hurricane Response Marine Debris Removal Fund

The 2018 hurricane and typhoon seasons inflicted severe damage to communities and coastal resources across North Carolina, Florida, and the Commonwealth of the Northern Mariana Islands. Hurricanes Florence and Michael, and Typhoon Yutu left a swath of destruction and large amounts of debris in the coastal zones of the affected states and territory. Following the storms, NOAA received disaster relief funding to aid in coastal recovery efforts by supporting marine debris assessment, removal, and disposal in the impacted states and territory. In 2020, NOAA and the National Fish and Wildlife Foundation awarded $8.2 million of these federal funds through the Hurricane Response Marine Debris Removal Fund to six projects that assess, remove, and dispose of marine debris that was caused by or moved by the storms and prevent further harm to habitats and fish and wildlife populations. The projects will assess and remove debris impacting coral reefs, as well as debris that is near National Wildlife Refuges, state parks and reserves, and aquatic preserves, among other sensitive habitats.

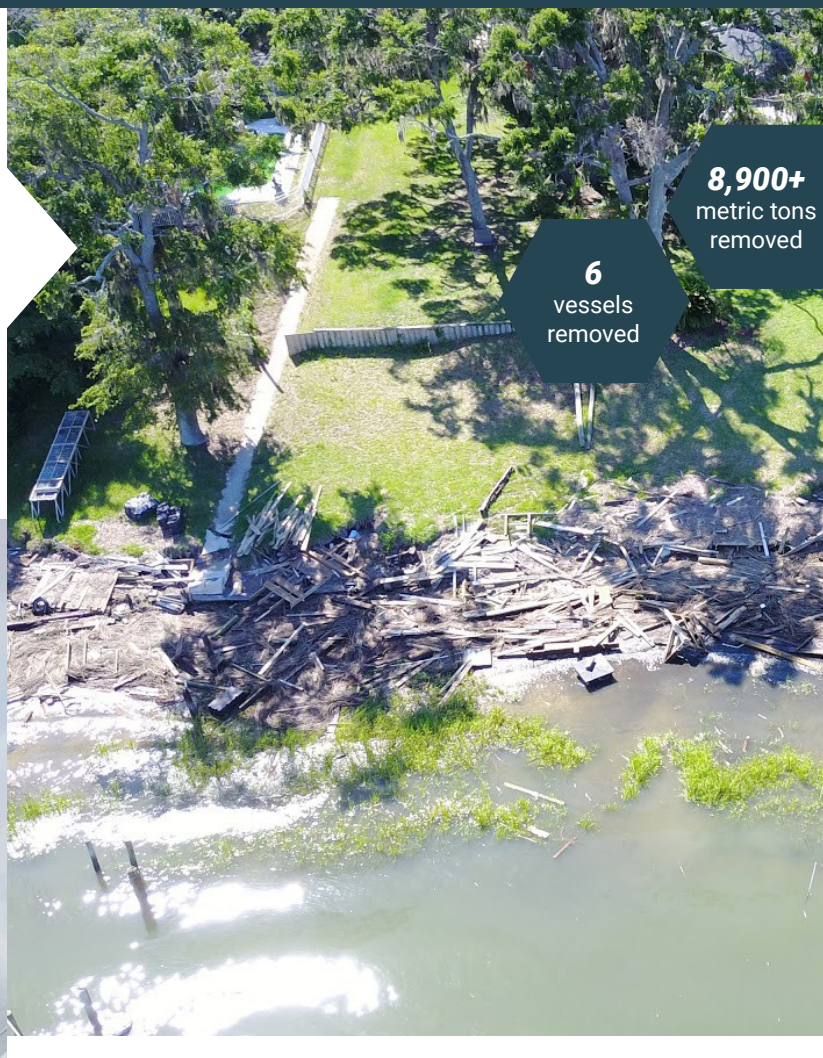
Emergency Response

Cleaning Up After Hurricanes Irma and Maria

The 2017 hurricane season inflicted severe damage to communities and coastal resources over large areas of the Caribbean, Florida, Georgia, South Carolina, and Texas, leaving a swath of destruction and large amounts of debris in the coastal zone of the affected states and territories. NOAA received $18 million in disaster relief funding to aid in coastal recovery efforts by supporting marine debris assessment, removal, and disposal in the impacted areas of Florida, Texas, South Carolina, Georgia, Puerto Rico, and the U.S. Virgin Islands.

Cleaning up Marine Debris in Coastal Georgia after Hurricane Irma

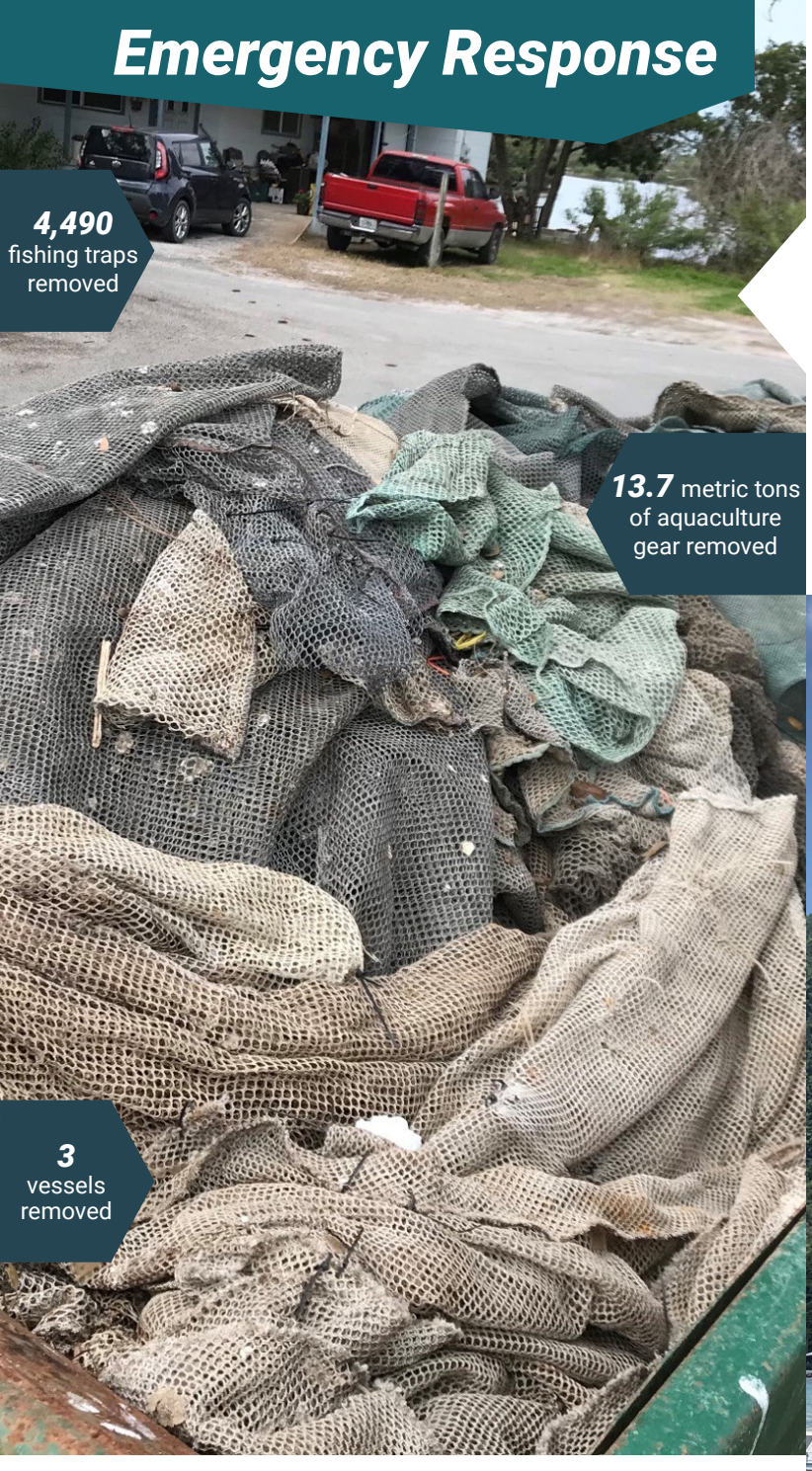
The Georgia Department of Natural Resources was awarded $600,000 in disaster relief funding to remove Hurricane Irma-related marine debris from coastal counties in Georgia. Successfully working with local municipalities, they removed over 8,900 metric tons of marine debris from Camden, Glynn, McIntosh, Chatham, Bryan, and Liberty Counties, including six vessels, construction materials, and floating docks made of concrete, foam, and PVC, that were submerged or lodged in coastal marshlands and tidal waters.



The South Carolina Lowcountry Cleans Up Marine Debris after Hurricane Irma

Through disaster relief funding from the NOAA Marine Debris Program, the South Carolina Department of Health and Environmental Control (SC DHEC) was awarded $174,220 to aid in marine debris cleanup efforts, and the City of Folly Beach and the Charleston City Marina contributed a funding match of $22,000 and $5,000, respectively. SC DHEC worked collaboratively with the City of Charleston, Charleston City Marina, and the City of Folly Beach to target derelict vessels, construction materials, and floating docks that were submerged or lodged in coastal marshlands. Over 100 metric tons of Hurricane Irma debris were removed from the Ashley River around the Charleston Harbor, and from the Folly River and Folly Beach areas.

Emergency Response



Taking on Storm Debris in Florida

The Florida Fish and Wildlife Conservation Commission (FWC) was awarded $4.5 million in disaster relief funding through a NOAA Marine Debris Program grant to map and remove marine debris from commercial and recreational areas impacted by Hurricane Irma. By coordinating with other federal partners, local counties, and the Florida Department of Agriculture and Consumer Services, large marine debris, including derelict vessels, aquaculture gear, and fishing gear, was removed from key locations statewide, such as the Florida Keys National Marine Sanctuary. FWC has also completed mapping marine debris hot spots in Sarasota Bay to aid in future removal efforts.

Helping USVI Recover Through Marine Debris Removal

Following the destruction from Hurricanes Irma and Maria, the U.S. Virgin Islands Department of Planning and Natural Resources was awarded $4.2 million in disaster relief funding through a NOAA Marine Debris Program grant to take on debris created by the hurricane storm surge. Removal efforts are targeting displaced vessels, damaged docks and piers, appliances, parts of cars, pieces of houses, and other large debris that remain in the sensitive coastal environment. The removal project, named the USVI Marine Debris Sweep, has addressed hurricane debris through activities ranging from small-scale community cleanups to large-scale vessel removals.

Looking Ahead

The NOAA Marine Debris Program is looking forward to launching 25 newly-funded removal, prevention, and research initiatives, as well as four Fishing for Energy projects and six hurricane response projects. Here is a look at the year ahead.

Prevention

Eckerd College, Inc. will reduce single-use plastic consumption among undergraduates at both Eckerd College and University of North Florida by increasing individual accountability and commitments to long-term sustainable behaviors. The project will implement an easy-to-use Plastic Reduction Challenge mobile application, as well as broader education and outreach initiatives, to foster sustained individual behavioral change that results in long-term and widespread reductions in plastic consumption.

Community Foundation for Northeast Michigan will engage 500 youth from grades 3-12 to become Marine Debris Prevention Ambassadors and reduce waste produced in school lunchrooms. Teachers and their students will participate in shoreline cleanups, research and analyze their lunchroom waste, and present their findings and solutions to peers, teachers, administrators, and the school board.

Rhode Island Marine Trades Association Foundation will assist Washington and states in the New England region in replicating the successful Rhode Island Fiberglass Boat Recycling Program, further building a sustainable financial model for fiberglass boat recycling. The project will also develop educational tools and engage regional and national marine industry organizations and businesses to promote awareness of and participation in the creation of proactive, long-term solutions to prevent pollution, habitat destruction, and navigation impediments related to marine debris resulting from abandoned, derelict, storm-wrecked and end-of-life boats.

Zero Waste O'ahu will reduce marine debris from single-use plastic take-out containers by providing a subscription service for reusable containers. The Full Cycle Take-Out pilot project will save businesses money by eliminating the recurring expense of purchasing single-use food ware and generate a profit through the lease of containers on the island of O'ahu.

Arizona Board of Regents on behalf of Arizona State University will identify and implement culturally appropriate and sustainable alternatives to plastic clamshell and foam take-out food containers, plastic cups, and plastic carrier bags in at least eight local food establishments and convenience stores in American Samoa. The project will also initiate long-term behavioral change through intensive community outreach and media campaigns, and the implementation of a new "plastic-free food provider" recognition program for businesses and community groups.

Salem Sound 2000 Inc. (DBA Salem Sound Coastwatch) will work with Girls Inc., and Salem Public Schools to recruit and work with groups of high school interns in Salem and Lynn, Massachusetts to execute service projects that focus on the marine debris problem and the community's reliance on single-use plastics. Students will work on the CoastSmart Restaurant Campaign to get restaurants to offer more sustainable products, while other students will produce a Composting 101 video with restaurant owners and create a Plastic Reduction Advertisement Campaign focused on commuters.

Mobile Baykeeper, Inc. will work with 18 businesses to go plastic-free, supporting the Downtown Mobile Alliance's Clean, Safe, and Beautiful program. Participating local restaurants, businesses, and government agencies will reduce single-use plastics, educate their customers, and install public art about the problem of marine debris. The project will reduce plastic generated in the Downtown Mobile Business area by more than 1,000 pounds per year and support long-term prevention of marine debris.

Aleut Community of St. Paul Island will change behaviors around the use and disposal of packing bands to prevent marine debris that poses an entanglement threat to marine wildlife on St. Paul Island, Alaska, particularly northern fur seals. It will

include a localized campaign to cut plastic packing band loops prior to disposal, volunteer data collection, and the creation of messages to encourage industry to invest in environmentally friendly materials and cut their loops.

George Mason University will work with 20 teachers and 35 high school student delegates to reduce the use of single-use plastic water bottles by students at two high schools in Prince William County, Virginia. The project will raise awareness of and connect participants to the ecological impacts of marine debris, expand participation in cleanup efforts, and change behaviors related to disposable water bottles.

Zero Waste Washington will implement a youth-led education project to reduce barriers to plastic pollution reduction and waste prevention in the Duwamish River area of Washington State. The project will engage three cohorts of the Duwamish Valley Youth Corps to conduct peer and community outreach, including door-to-door outreach to businesses, creating and presenting videos, and developing recommendations for decision-makers.

North Slope Borough will educate students and residents of the North Slope Borough of Alaska about debris in the marine and coastal environment, focusing on how to prevent single-use plastics in local communities. Education efforts will include raising awareness of local problems with marine debris being found in stomachs of bowhead whales, polar bears, and other marine organisms, as well as encouraging and supporting the use of alternatives to single-use plastics , and hosting beach cleanup events in each local community.

One Cool Earth will work with public schools to reach youth and affect their waste-disposal behaviors. The Earth Genius program will provide year-round marine debris education to underserved public school students, promote school-wide waste diversion and reduction policies and practices, and train and support teachers in order to reduce marine debris affecting NOAA trust resources, including the Channel Islands and Monterey Bay National Marine Sanctuaries, the Morro Bay National Estuary, and the fisheries and recreation areas along the central coast of California.

Shedd Aquarium Society will work with businesses to measurably reduce single-use plastics used in food service industry operations by building capacity and skills in Chicago, Illinois communities. The project will work with minority and women-owned businesses and small businesses to change business practices, educate staff and customers, and support business leaders in adopting new sustainability efforts.

Removal

California State University, Channel Islands will remove marine debris from seven remote beaches in the Northern Channel Islands and monitor the accumulation of debris in order to create a longer-term data set. The sustained reduction in marine debris will benefit marine life in the Channel Islands National Marine Sanctuary, including California sea lions, northern fur seals, harbor seals, northern elephant seals, Western snowy plover, shorebirds, and the endangered island fox, and the habitats upon which they depend.

Coastal Bend Bays and Estuaries Program, Inc. will organize volunteers to locate and remove over 1,000 derelict crab traps in coastal waters from Matagorda Bay to Aransas Bay, as well as collect data to better understand the impacts of derelict crab traps on the mid-Texas coast. Results will be used to engage commercial crabbers in San Antonio Bay in conversations to develop alternatives for reducing the number of lost traps, ultimately reducing the amount of ghost fishing and potential economic losses.

Hawaii Marine Mammal Alliance, Inc. will identify and remove debris from hotspots in nearshore waters of O'ahu, Hawaii with the help of snorkel and SCUBA divers. The project will engage community volunteers and encourage ocean stewardship in schools and at community events, while reducing the negative impacts of marine debris, in particular derelict fishing gear, on protected marine species and the ecosystem they inhabit in Hawaii.

Oregon State Marine Board will remove abandoned and derelict vessels (ADVs) from marinas while they are still securely moored and afloat. Removing ADVs at no cost to marinas that agree to implement ADV-prevention practices as part of the voluntary Clean Marina program is a cost-effective removal strategy that will address the environmental and navigational hazards, as well as the financial burden associated with future abandoned and derelict vessels.

National Marine Sanctuary Foundation will work with Blue Star operators, dive professionals, recreational divers, and other local partners, such as the Florida Keys Commercial Fishermen's Association, to remove underwater marine debris, including traps, fishing gear, and trash from Florida Keys National Marine

Sanctuary. The project will engage the public in marine debris awareness and prevention through education and outreach and expects to conduct 70 cleanup trips, removing 21,000 pounds of debris.

North Carolina Coastal Federation, Inc. will remove at least 20 abandoned and derelict vessels (ADVs) in North Carolina's northeastern estuaries, focusing on sites that are not likely to be cleaned up by private property owners or government agencies. Multiple ADVs located within North Carolina's sounds and estuaries were either purposely abandoned or became derelict after floating away from docks that were destroyed or washed away during hurricanes, such as Irene (2011), Sandy (2012), Arthur (2014), Matthew (2016), Michael (2018), and Dorian (2019).

Ocean Conservancy will work with the Gulf of Maine Lobster Foundation to remove derelict fishing gear and large debris from identified hotspots in Maine state waters and build capacity and raise awareness among fishermen and other stakeholders to implement best practices for managing gear and preventing and reporting gear loss. Removed gear will be recycled and/or recovered for energy if feasible and the lessons learned from this project will be replicated in future workshops around the region when bringing together fishermen and other stakeholders.

Ocean Plastics Recovery Project, LLC will engage volunteers in a high-visibility, large scale marine debris cleanup in Alaska's Katmai National Park. Following that cleanup, the project will explore innovative recycling and recovery processes in order to determine the best recycling methods and likely recycling markets for the collected ocean plastics. Katmai National Park is an ecologically sensitive area which includes marine mammal critical habitat, seabird nesting colonies, and the world's densest concentration of coastal brown bears.

The Ocean Foundation will locate and remove lost and abandoned fishing gear in southeast Puerto Rico and marine reserve areas. The removal activity will be conducted by local fishermen that already have experience removing derelict fishing gear. The project will also host training opportunities to build capacity for marine debris removal and collaboration among the fishing communities in the target areas.

University of Delaware will identify and remove 1,000 derelict crab pots from a recreational blue crab fishery in highly active fishing areas of Indian River Bay, Delaware. The project will also assess how derelict crab pots affect catch rates and habitats to better understand the economic impact such traps have on the fishery, as well as the physical impact of derelict traps in the area.

Research

National Academies of Science will advance one of the studies required in the draft legislation for the Save our Seas 2.0 Act. The study will examine the contributions of the United States to global ocean plastic waste, including types and sources, the amount of marine debris in our domestic waterways, and the export and import of plastic waste to and from the United States, among other questions. The final report will include recommendations for further scientific study and for reducing contributions to global ocean plastic waste.

NOAA's National Centers for Coastal Ocean Science will collaborate with the NOAA Marine Debris Program, and Oregon State University, with funding from the NOAA Research Unmanned Aircraft Systems Program, to investigate the detection and geolocation of marine debris on shorelines using Unmanned Aerial Systems-based imagery, machine learning, and photogrammetry. This project will use standard color imagery, as well as polarimetric imaging to compare whether marine debris on shorelines is more easily detected and identified using one or the other.

Fishing for Energy

Fishing for Energy, a partnership between the NOAA Marine Debris Program, National Fish and Wildlife Foundation, and Covanta Energy, launched newly-funded projects to prevent and reduce the impacts of derelict fishing gear in the marine environment. This year, additional funding was provided by Shell Oil Company and through community service funds. The Marine Debris Program contributed funding to the following four projects.

College of William and Mary, Virginia Institute of Marine Science will employ commercial-grade biodegradable hinges on Dungeness crab traps in Virginia, Washington, and Alaska to minimize adverse impacts when the traps become derelict. This project will test the durability of the hinges in both the active fishery working with fishers and in a simulated derelict trap mode to ensure they work as needed to be functional for fishers and protect marine ecosystems.

Blue Planet Strategies will develop an innovative technology that is designed to track fishing gear anchored at the sea floor and connected to surface buoys. The technology will be tested in Maine with the New England groundfish fishery. The technology aims to reduce entanglement of critically endangered marine life, reduce the amount of derelict gear within the fishery, and advance the practical application of gear tracking technology.

Florida Fish and Wildlife Conservation Commission will build capacity for marine debris conservation and implement key elements of a comprehensive marine debris management program in Florida. The project will develop and implement multiple state marine debris plan activities and develop a website to facilitate statewide and regional marine debris prevention, removal, research, education and outreach.

Ocean Aid 360 will mobilize diverse stakeholders including boaters, anglers, watershed groups, industry, students and government through training and sponsored events to detect and remove marine debris along Florida coastlines. The project will remove roughly 30,000 pounds of derelict fishing gear from estuary habitat.

Hurricane Response Marine Debris Removal Fund

The Hurricane Response Marine Debris Removal Fund is a partnership between the National Fish and Wildlife Foundation and the NOAA Marine Debris Program that awards grants to assess, remove, and dispose of marine debris caused by Hurricanes Florence and Michael, and Typhoon Yutu. Grants were awarded in 2020 to the following six projects.

Pacific Coastal Research & Planning will remove and properly dispose of the derelict fishing vessel Lady Carolina, a vessel grounded by Typhoon Yutu in the Saipan Lagoon of the Commonwealth of the Northern Mariana Islands to prevent further damage to the reef and allow it to recover.

Mariana Islands Nature Alliance will assess, remove, and dispose of marine debris from Typhoon Yutu in Tinian Harbor and south shore of Saipan, Commonwealth of the Northern Mariana Islands, preventing further damage to coral reefs and other sensitive coastal habitats.

The City of Mexico Beach will assess marine debris from Hurricane Michael remaining along 16,000 linear feet of shoreline, including the City of Mexico Beach, Florida and nearshore area, and develop a plan for removal and disposal.

Dog Island Conservation District will remove debris from Hurricane Michael that is impacting coastal habitat on Dog Island in Florida, restoring two miles of beach and dunes that were severely impacted by damage and debris from this storm.

The University of Florida will remove and dispose of hurricane-caused vessel and structural debris negatively impacting coastal vegetation and adjacent uplands in the St. Andrew, St. Joseph, and Apalachicola Bay communities of Florida.

The North Carolina Coastal Federation, Inc. will remove 40-44 abandoned and derelict vessels from Hurricane Florence in North Carolina coastal waterways. The vessels were prioritized by state and federal agencies based on their current impact to wildlife and habitats.

Photo Credits

All photographs featuring groups of people were taken before social distancing rules went into effect.

1. *U.S. Fish and Wildlife Service (page 1)*
2. *Leilani Katoa, Remote Elite Services (page 2)*
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4. *NOAA (page 4)*
5. *Conservacion ConCiencia (page 5, top left)*
6. *Kitty Edwards (page 5, top right)*
7. *U.S. Coast Guard (page 5, bottom left)*
8. *Protectores de Cuencas (page 6)*
9. *Susan Allen, Stockton University (page 7)*
10. *NOAA (page 8)*
11. *NOAA (page 9)*
12. *NOAA (page 10)*
13. *Tijuana River National Estuarine Research Reserve (page 11)*
14. *NOAA (page 12)*
15. *Pontchartrain Conservancy (page 13)*
16. *University of Wisconsin-Madison (page 14, top right)*
17. *Alice Ferguson Foundation (page 14, middle left)*
18. *Ohio State University (page 14, bottom right)*
19. *Kiran Sinha, Turtle Trash Collectors (page 15, top left)*
20. *Mississippi State University (page 15, middle right)*
21. *Eckerd College (page 15, bottom left)*
22. *Kate Bimrose (page 16, right)*
23. *Lupita Barajas (page 16, left)*
24. *Center for Coastal Studies (page 17, top left)*
25. *Stockton University (page 17, middle right)*
26. *Scott Curatolo-Wagemann (page 17, bottom left)*
27. *North Carolina Coastal Federation (page 18, top right)*
28. *Conservacion ConCiencia (page 18, middle left)*
29. *Leslie Henderson, University of the Virgin Islands (page 18, bottom right)*
30. *Pontchartrain Conservancy (page 19, top left)*
31. *NOAA (page 19, middle right)*
32. *U.S. Fish and Wildlife Service (page 19, bottom left)*
33. *Steve McCurdy, Southeast Alaska Watershed Coalition Board Member (page 20, top right)*
34. *Russ Lewis, GrassRoots Garbage Gang (page 20, middle left)*
35. *Hawai'i Wildlife Fund (page 20, bottom right)*
36. *Leilani Katoa, Remote Elite Services (page 21, right)*
37. *Scott Farling (page 21, left)*
38. *NOAA (page 22)*
39. *NOAA (page 23, right)*
40. *NOAA (page 23, left)*
41. *Dave Doebler, VolunteerCleanup.org (page 24)*
42. *NOAA (page 25, left)*
43. *Kerry Carlin-Morgan, Oregon Coast Aquarium (page 25, right)*
44. *NOAA (page 26)*
45. *Georgia Department of Natural Resources (page 27, right)*
46. *NOAA (page 27, left)*
47. *Florida Fish and Wildlife Conservation Commission (page 28, left)*
48. *Kitty Edwards (page 28, right)*

NOAA Marine Debris Program

Office of Response and Restoration
National Ocean Service
November 2020

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