



2021 Marine Debris Program ACCOMPLISHMENTS REPORT

Office of Response and Restoration | National Oceanic and Atmospheric Administration

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Letter from the Director

Throughout fiscal year 2021, the National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program continued to work toward our vision of the global ocean and its coasts free from the impacts of marine debris. Though the problem persists and continues to be difficult for communities to address, we continue to make advancements and find creative solutions to reduce the prevalence and impacts of marine debris. I am proud of what the Program and our partners accomplished as we close the first year of our new strategic plan.

Despite continued obstacles during this difficult period, the NOAA Marine Debris Program and partners adapted and expanded our efforts to achieve the ambitious goals set in our strategic plan. In 2021, we saw the launch of new resources, including an updated protocol, database, and toolkit for the Marine Debris Monitoring and Assessment Project, as well as a tailored resource for accessing educational materials on our website. Through the United States-Mexico-Canada Agreement Implementation Act, our grant programs were expanded to prevent and remove marine debris across North America. We shared information on marine debris widely through webinar series focused on research efforts and the challenges of addressing abandoned and derelict vessels. Our staff provided support for the response to the 2021 hurricane season, as well as the removal of over 100,000 pounds of derelict fishing gear from the Papahānaumokuākea Marine National Monument.

This year, the NOAA Marine Debris Program continued to strive to advance justice, equity, diversity, and inclusion in our grant programs and organization. As an overarching goal of our strategic plan, we began to evaluate our grant programs and assess whether additional resources or outreach efforts could assist applicants. We incorporated criteria for justice, equity, diversity, and inclusion in our grant competitions, encouraged blind hiring practices, continued to build a work environment that promotes inclusion, and in partnership with the National Marine Sanctuary Foundation, piloted a NOAA Office of Response and Restoration internship program with students at the University of Maryland Eastern Shore, with a goal to expand our reach to additional Historically Black Colleges and Universities in the future.

These efforts are important steps toward our ultimate goal of preventing the impacts of marine debris and I am proud of the achievements of the Program and our partners. Although there is still much to be done to reach that goal, we have made great strides this year, and I look forward to the next four years of our strategic plan. I am happy to present the NOAA Marine Debris Program's accomplishments from 2021.

Nancy Wallace

Director, NOAA Marine Debris Program

2021 By-the-Numbers



2,121 metric tons removed




39 newly-funded projects



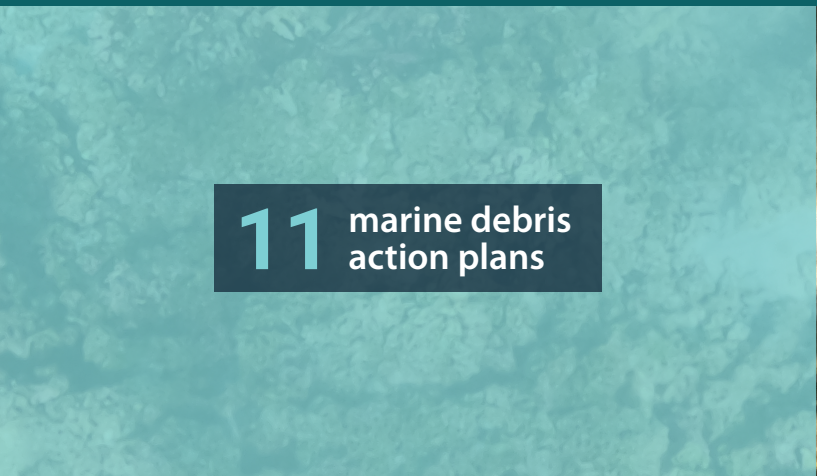
12,285 P-12 students engaged




447 teachers engaged



44,721 youth and adults engaged



11 marine debris action plans



13 marine debris emergency response guides

Save Our Seas 2.0 Act

On December 18, 2020, the Save Our Seas 2.0 Act was signed into law. The Act contains three titles that enhance the United States' domestic programs to address marine debris, international engagement to combat marine debris, and domestic infrastructure to prevent marine debris. Significant components of the Act within NOAA's jurisdiction include authorizing the NOAA Marine Debris Program to work on marine debris globally, establishing a Marine Debris Foundation and a Genius Prize for Save Our Seas Innovation, and requiring several new reports and studies on different aspects of marine debris. Throughout fiscal year 2021, the NOAA Marine Debris Program worked to implement these new mandates and authorities, including soliciting nominations for the Marine Debris Foundation Board of Directors and entering into agreements and contracts to produce the required studies and reports.



International Collaboration

There are many ongoing international, multilateral, and bilateral initiatives to understand and combat the issue of marine debris across the world. The NOAA Marine Debris Program works closely with the U.S. 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.

In 2021, the NOAA Marine Debris Program awarded ten grants totaling more than \$4 million for projects that will prevent, reduce, or remove marine debris in the U.S.-Mexico and U.S.-Canada border areas. Funded through the United States-Mexico-Canada Agreement Implementation Act, the projects will help to preserve human health and marine and coastal ecosystems, prevent the loss of biodiversity, and mitigate the costs and impacts of marine debris.

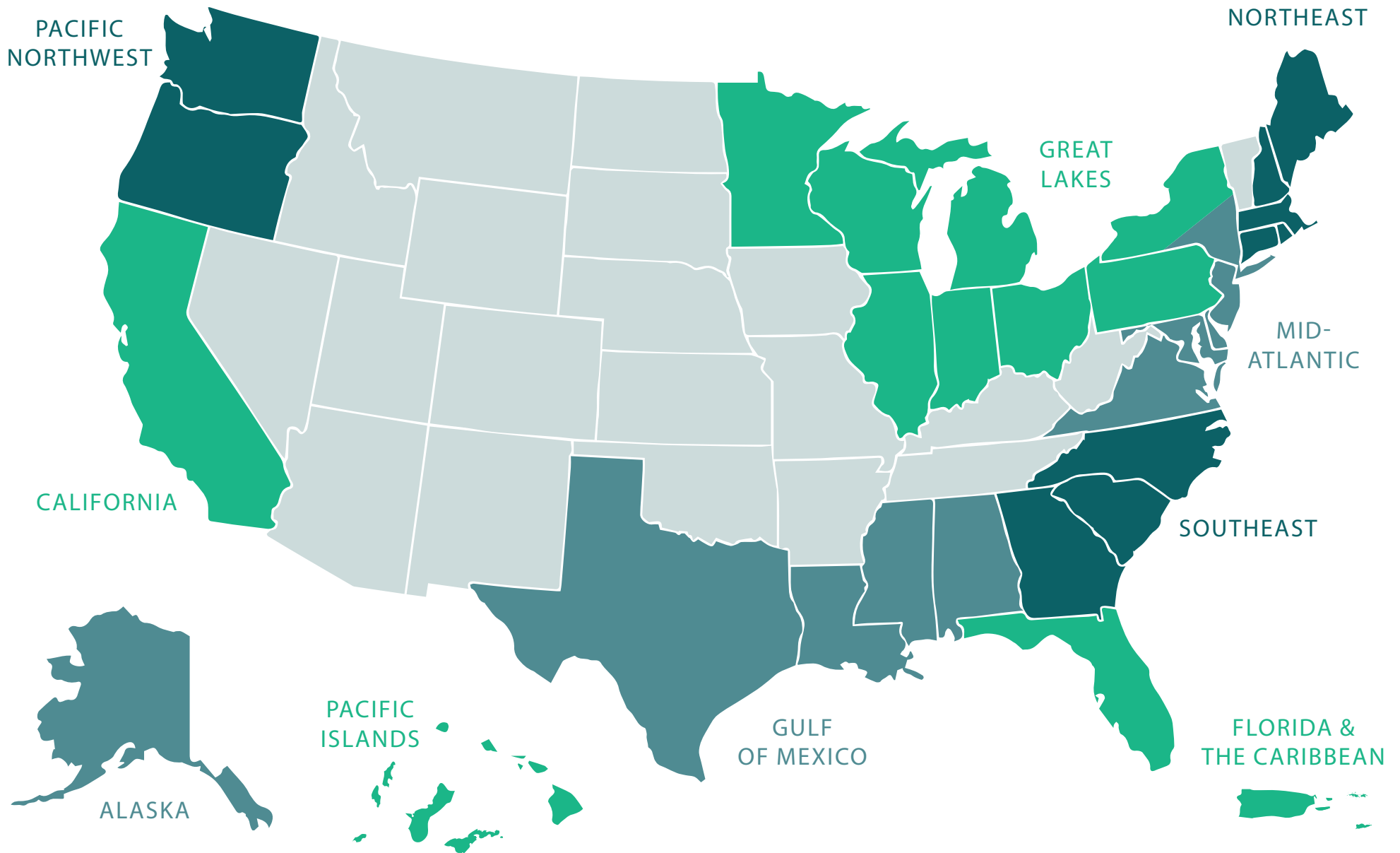
The NOAA Marine Debris Program also worked closely with the U.S. Department of State and other regional economies in the Asia Pacific Economic Cooperation forum (APEC) to implement a Marine Debris Roadmap, which guides APEC's work on understanding and addressing marine debris through promoting policy development, capacity building, research and innovation, and financing and private sector engagement.

The NOAA Marine Debris Program continued to work with the Arctic Council on the unique marine debris issues in the region. The Program contributed to the development of monitoring guidelines and a monitoring plan within the Arctic Monitoring and Assessment Programme working group, and submitted a cross-NOAA proposal for a Fishing Effort Inventory project, which will be implemented by Norway with support from NOAA.



Marine Debris Program Regions

With marine debris impacting each U.S. coastal and Great Lakes state and territory, it's impossible to take on the problem alone. The NOAA Marine Debris Program values collaboration, and supports efforts at the local, regional, national, and international levels. The Program works to eliminate the adverse impacts of marine debris by collaborating with local experts and marine debris stakeholders, supporting numerous projects, facilitating communication and information sharing, and guiding regional planning activities. Some of this year's most successful efforts within each of the NOAA Marine Debris Program's ten regions are highlighted in this report.




Great Lakes

Minnesota • Wisconsin • Illinois • Indiana • Michigan • Ohio • Pennsylvania • New York

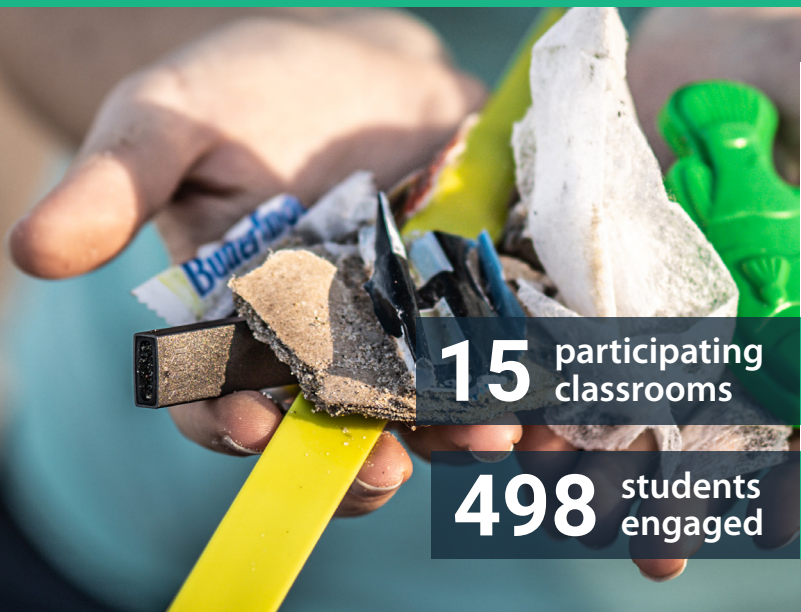
Casting a Wide Net Against Debris

In New York, Buffalo Niagara Waterkeeper led volunteer marine debris removal efforts coupled with robust pollution prevention efforts to address a potential source of microplastics in the Great Lakes watershed. Through in-water, shoreline, and upstream clean-up efforts, 1,119 volunteers removed approximately six metric tons of debris. The project team also worked to prevent marine debris from entering the environment by installing 14 fishing line recycling bins, organizing seven multilingual workshops, engaging 648 recreational anglers in outreach efforts around the hazards of abandoned gear, and coordinating four educational displays made of debris.



6 metric tons of debris removed

117 participants at multilingual events



15 participating classrooms

498 students engaged

Taking a Bite out of Lunchroom Waste in Michigan

The Community Foundation for Northeast Michigan and the Northeast Michigan Great Lakes Stewardship Initiative engaged 498 fourth graders in reducing waste produced in their schools. These Marine Debris Prevention Ambassadors conducted a two-day waste audit where students tallied their waste and investigated ways to reduce an item of concern for their classroom. This project expanded to 15 classrooms that will continue to connect students with their communities and provide them with the skills and knowledge to become stewards of our environment.

Tackling Plastic Pollution with Restaurants

To combat plastic marine debris, Chicago's Shedd Aquarium engaged with local businesses to build the capacity and skills needed to reduce single-use plastic in food service operations. This year, Shedd created resources to support restaurants in changing their practices and educating their staff and customers and prioritized new collaborations with minority- and women-owned businesses, small businesses, and others in disinvested communities that face greater challenges in adopting new sustainability efforts.



164 participating restaurants

1,352 people engaged through virtual programs

Northeast

Maine • New Hampshire • Massachusetts • Rhode Island • Connecticut


Opening Pathways for Vessel Disposal with Fiberglass Recycling

The Rhode Island Marine Trades Association (RIMTA) built on previous successes by providing opportunities to expand their fiberglass vessel recycling program. Several states, including California, Connecticut, Maine, Maryland, Massachusetts, North Carolina, Ohio, South Carolina, Rhode Island, Virginia, and Washington, are engaged at various stages in the process of establishing a vessel recycling program, from gathering initial information to actively recycling fiberglass vessel hulls. RIMTA also developed an “End-of-Life Vessel Material Guide” to address the most relevant questions and concerns shared by vessel owners, marine businesses, waste managers, and material end-users.



~20 metric tons of fiberglass recycled

3 states actively recycling fiberglass



36+ metric tons of end-of-life fishing gear collected

Artwork created with collected nets featured at Bigelow Laboratory in Maine

Keeping End-of-Life Gear Out of the Ocean

The Gulf of Maine Lobster Foundation (GOMLF) and their partners collected, transported, and disposed of over 36 metric tons of end-of-life nets that could have become derelict in the marine environment. Fishing gear from Gloucester, Massachusetts, was transported by local Maine fishermen to Portland, Maine, where two thirds of the gear was used by Gulf of Maine Ecoartists in projects and installations, and the remainder was taken to a disposal and recycling facility for processing. GOMLF will continue to collaborate with the involved fishermen on future projects to identify needs for net recovery and disposal locations.

Small Plastics Making Big Impacts in the Classroom

In partnership with the National Marine Sanctuary Foundation, Blue Ocean Society for Marine Conservation, Boothbay Sea and Science Center, and Rozalia Project for a Clean Ocean teamed up to develop two lesson plans focused on engaging, hands-on learning experiences for educators and students on the critical issue of microplastics and microfibers. To support these lesson plans, partners assembled six lending kits for educators, hosted virtual workshops that demonstrated the lessons, and gave teachers an opportunity to ask questions, share resources, and network. The workshops engaged educators across the United States, as well as in the Philippines, Australia, Canada, Ecuador, and Nigeria.



5 workshops hosted

230 teachers engaged

Mid-Atlantic

New York • New Jersey • Delaware • Maryland • District of Columbia • Virginia

Student and Community Leaders Reducing Single-Use Beverage Bottles

George Mason University and community partners engaged 40 Prince William County, Virginia high school student delegates in a community-based social marketing campaign to inspire behavior change among their peers and reduce dependency on single-use water bottles. Student-developed campaigns included collecting data on disposable bottle usage, identifying barriers to and benefits of using refillable bottles, soliciting peer commitments, providing reusable bottles, and engaging in social media outreach to raise awareness of the problems and participation in solutions, such as county cleanups. These young leaders participated in a number of campaign projects in their community to make measurable change in peer behavior and environmental awareness.

3,400 students engaged

352 adults engaged



75 pots removed

31 volunteers engaged

Rounding Up Derelict Crab Pots in Delaware

The University of Delaware and Delaware Sea Grant are working to remove derelict crab pots from heavily used recreational fishing areas in Delaware's Indian River and associated creeks and coves by engaging volunteers in boat-based cleanups during the closed blue crab seasons. After using side-scan sonar and innovative artificial intelligence approaches to locate the pots beforehand, volunteers removed 75 pots during the 2020-2021 season, and they aim to remove 500 pots during next year's events. In addition to their removal efforts, the University of Delaware is also working to monitor the impacts of this debris on blue crab catch, as well as educate the public and recreational crabbers and boaters on the impacts of derelict fishing gear in an effort to reduce the amount of crab pots that are lost and abandoned in the future.

Building Partnerships to Break the Cycle of Derelict Gear

Stockton University built upon previous successful projects to engage commercial crabbers to become leaders in removing and preventing derelict gear in New Jersey's network of coastal bays. Scientists from the project team leveraged their existing positive relationships with New Jersey's fishing community and recruited newer crabbers (ages 25-55 years old) into peer-to-peer mentoring programs to support training on low cost gear recovery methods, including the use of sonar to locate gear. These mentoring relationships and additional outreach facilitated by Stockton University are helping to bridge the gap between experienced commercial fishermen and the next generation, and pass along the skills needed to locate and remove derelict fishing gear.

1,200+ traps removed

90% of traps recycled



Southeast

North Carolina • South Carolina • Georgia

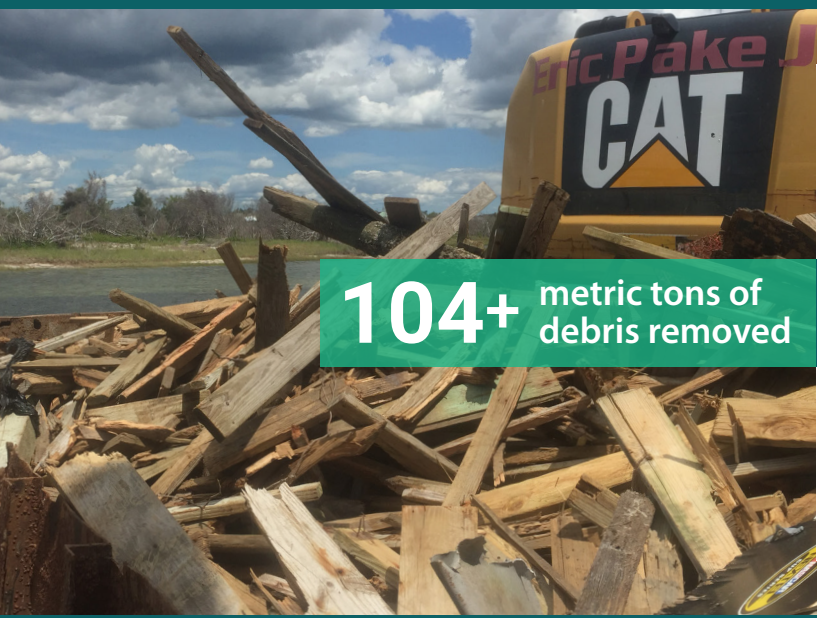
Simulating Sea Turtle Dissections Virtually to Engage Students

The University of North Carolina Wilmington MarineQuest adapted its successful hands-on outreach program to reach students virtually through one-hour online sessions where students learned how trash in the ocean can impact sea turtles by participating in simulated sea turtle necropsies. Online programming allowed the project to reach groups across the country and the world, including a fourth grade class in Vienna, Austria. The success of the virtual program led to the development of a [recording for educators and families](#), an educator guide for the recording, and printable resources for students to use to follow along.



Students from 14 states/U.S. territories and 2 countries engaged virtually

8,525 youth and 659 adults engaged



104+ metric tons of debris removed

Cleaning Up Marine Debris From Hurricane Florence

The North Carolina Coastal Federation partnered with the North Carolina Department of Environmental Quality and local governments in Onslow, Pender, New Hanover, and Brunswick Counties to remove debris caused by Hurricane Florence, including lumber, polystyrene, and plastic debris from waterfront structures. Four commercial fishers removed over 100 metric tons over five months by hand and with only a skiff. The project also coordinated a series of stakeholder workshops and developed recommendations for improving marine construction to reduce damage, losses, and marine debris resulting from storms in North Carolina.

Helping Shellfish Growers to Find and Prevent Lost Gear

In collaboration with many federal and state partners, the NOAA Marine Debris Program and Disaster Preparedness Program, both programs of the Office of Response and Restoration, held a virtual workshop focused on shellfish aquaculture gear management and storm preparedness in North Carolina. The workshop shared best practices and resources for managing, deploying, and maintaining shellfish aquaculture gear in order to prevent gear from being lost during storms, as well as guidance on useful NOAA National Weather Service products and how to develop a storm preparedness plan. Following the workshop, over 10,000 personalized identification tags were sent to shellfish growers to help with recovery after a future storm or other incident.

59 shellfish aquaculture stakeholders engaged

10,000 personalized tags distributed to farmers



Florida and the Caribbean

Florida • Puerto Rico • U.S. Virgin Islands

Removing and Preparing for Hurricane-Related Marine Debris

On St. Thomas, St. John, and St. Croix, the University of the Virgin Islands' Center for Marine and Environmental Studies organized a series of "Great Mangrove Cleanups" and led the development of a new marine debris action plan for the territory. Through this project, more than 83 volunteers have removed more than 5,100 pounds of marine debris from vulnerable mangrove habitats. In addition, planning workshops were hosted for a [U.S. Virgin Islands Marine Debris Action Plan](#), where approximately 80 stakeholders from a variety of sectors contributed to this strategic framework to address marine debris in the territory.

80 stakeholders attended workshops

5,100+ pounds of debris removed



Working with Divers to Clean Up the Florida Keys

The National Marine Sanctuary Foundation partnered with Blue Star Dive Operators and other local businesses to remove underwater marine debris from the Florida Keys National Marine Sanctuary. Divers removed derelict lobster traps, other fishing gear, and trash, including over 9 metric tons of marine debris and over 30,000 feet of fishing line and rope. The project also engaged tourists and the local community in cleanup dives to raise awareness of the issue and help to prevent marine debris.

9.3 metric tons of debris removed

30,000 feet of fishing line and rope removed

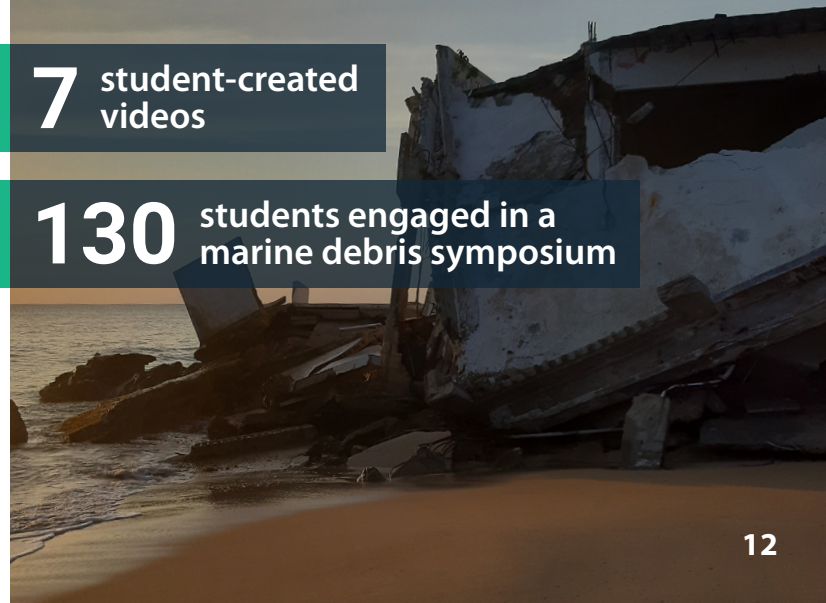


Engaging Girls in Science in Puerto Rico

At the Escuela Especializada en Ciencias, Matemática y Tecnología (CIMATEC), a specialized school in science, mathematics, and technology, the Marina Club engaged 12 female high school students in ocean science and marine debris issues. In partnership with the National Marine Sanctuary Foundation, the students participated in a series of workshops provided by female experts on these topics and created a series of videos on hurricanes and marine debris in Spanish. The videos aim to raise awareness about the dangers of marine debris, and share steps that families, communities, boat owners, and marinas can take to help prevent marine debris. The project empowered women with the knowledge and the tools to become future scientists, while also filling the need for marine debris education in Spanish.

7 student-created videos

130 students engaged in a marine debris symposium



Gulf of Mexico

Alabama • Mississippi • Louisiana • Texas

Removing Derelict Crab Traps in Coastal Texas

The Coastal Bend Bays & Estuaries Program is expanding efforts to remove derelict traps and gather standardized data that can be used to better assess the ecological and economic impacts, as well as the root causes, of trap abandonment. During the seven-day fishery closure period in 2021, volunteers removed 1,207 derelict crab traps in the coastal waters of Texas, from Matagorda Bay to Aransas Bay. Volunteers also collected specific data parameters about each derelict trap to help pinpoint the root causes of trap abandonment in the area, which will be used to help engage commercial crabbers in reducing future trap loss.

148 volunteers engaged

1,207 derelict crab traps removed



4,800+ derelict crab traps removed

4,300+ blue crabs released from derelict traps

Saving Wildlife and Preventing Economic Losses

The Pontchartrain Conservancy, in partnership with the Louisiana Department of Wildlife and Fisheries, Louisiana Master Naturalists Association, Common Ground Relief, Virginia Institute of Marine Science, local universities, and volunteers, removed over 7,800 derelict crab traps from the Lake Pontchartrain Basin in the past two years. During removal efforts in February and March 2021, project participants removed more than 4,800 traps, which averted estimated economic losses of more than \$718,000 due to ghost fishing. Thousands of animals were also released from those traps, including 75 diamondback terrapins, more than 700 fish, and more than 4,300 blue crabs.

Completing and Creating a Marine Debris Action Plan for the Gulf of Mexico

In 2016, the NOAA Marine Debris Program worked with the Gulf of Mexico Alliance to develop and implement a five-year regional action plan to address marine debris across the Gulf of Mexico. Through public-private partnerships, GOMA established Gulf Star, which provided competitive funding each year to support projects that accomplish the goals laid out in the action plan. The Marine Debris Cross Team Initiative completed 41 actions across the three focus areas of Research, Removal, and Prevention. Following completion of the action plan in 2021, the NOAA Marine Debris Program worked with stakeholders across the region to write a [new five-year action plan](#), with a goal to assess, prevent, remove, and eliminate marine debris and litter in the Gulf of Mexico and its watersheds.

113 action plan stakeholders


41 completed actions



California

Report on Reducing Shotgun Wad Debris in San Francisco Bay

Six years of monthly NOAA marine debris monitoring surveys conducted at six Greater Farallones National Marine Sanctuary beaches revealed shotgun wads as one of the most commonly found plastic items across the sites. Greater Farallones National Marine Sanctuary, Greater Farallones Association, and Root Solutions developed a pilot project to reduce plastic shotgun wad debris from entering San Francisco Bay and depositing onto coastal beaches, and documented the effort in a report. The [report](#) shares recommendations to reduce shotgun wads by partnering with hunting reserves and hunters to pick up and properly dispose of shotgun wads and affirmed that a behavior change campaign is an effective way to address this type of marine debris, which can be easily connected to a specific activity and location.



6 years of monitoring at 6 beaches

2 hunting reserves equipped with shotgun wad disposal receptacles



30,000+ reached through public service announcements

150+ butt cans installed in San Francisco

Reducing Cigarette Butt Litter in San Francisco

In order to significantly reduce the amount of cigarette butt debris entering San Francisco Bay, nearby National Parks, and National Marine Sanctuaries, Surfrider Foundation San Francisco worked with the City of San Francisco, the National Park Service, and community-based social marketing specialists to design and implement a comprehensive reduction program. The program included distributing pocket ashtrays, installing butt receptacles, and conducting smoker outreach surveys to assess behavior and awareness of butt debris. The program also reached many through a comprehensive media campaign using social media and televised public service announcements.

Capturing Trash in the Tijuana River Valley

Land-based debris contributes to flood risk in communities and threatens and degrades valuable ecological, cultural, recreational, and economic resources in the binational region. The Southwest Wetlands Interpretive Association and Tijuana River National Estuarine Research Reserve expanded on previous efforts to address marine debris by improving trash capture and removal, and implementing outreach and prevention programs in the U.S. and Mexico. With help from partners, they carried out a virtual binational solid waste and flooding event workshop in Tijuana, engaged volunteers in cleanups, supported Tijuana River Action Month with local partners, and collected data to inform upstream prevention.



5.6 metric tons of debris removed

150+ stakeholders engaged through binational workshops

Pacific Northwest

Washington • Oregon

Preventing Marine Debris for Environmental Justice

In the Duwamish Valley of Washington State, Zero Waste Washington is working with youth cohorts to learn about marine debris and reduce single-use plastics. Environmental justice is one of many important concerns in the Duwamish Valley, which consists of a highly multicultural and underserved community. Student groups created educational videos, conducted community-based education and engagement around litter that impacts the Duwamish River and nearby Puget Sound, and shared ways to prevent it. Students learned about and used different channels of communication to raise awareness of the issue, including social media and door-to-door outreach.

50 students engaged

4 student-created videos

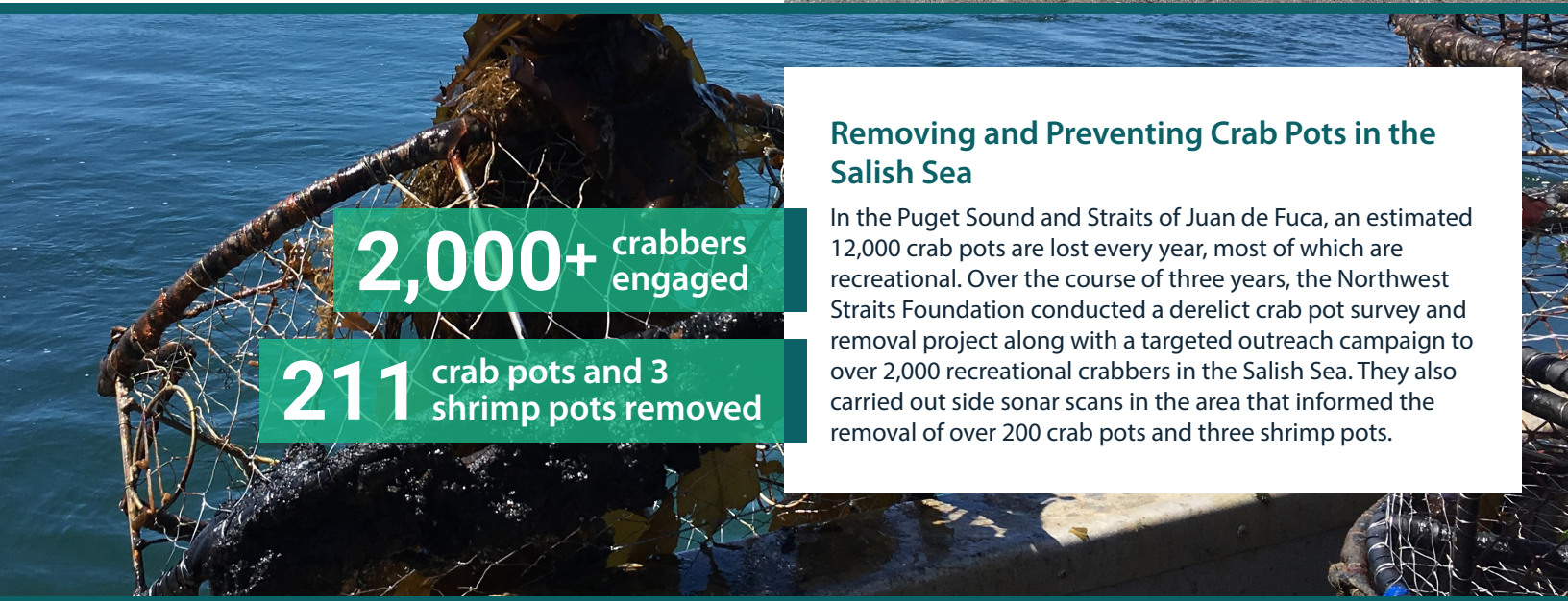


Removing and Preventing Crab Pots in the Salish Sea

In the Puget Sound and Straits of Juan de Fuca, an estimated 12,000 crab pots are lost every year, most of which are recreational. Over the course of three years, the Northwest Straits Foundation conducted a derelict crab pot survey and removal project along with a targeted outreach campaign to over 2,000 recreational crabbers in the Salish Sea. They also carried out side sonar scans in the area that informed the removal of over 200 crab pots and three shrimp pots.

2,000+ crabbers engaged

211 crab pots and 3 shrimp pots removed



Combating Abandoned and Derelict Vessels in Oregon

To minimize navigational hazards and protect fragile estuarine habitats, the Oregon State Marine Board is working with marinas to remove and prevent abandoned and derelict vessels. Working with the Certified Clean Marina Program, they removed and properly disposed of seven abandoned vessels. As part of the partnership, participating marinas committed to best management practices around vessel registration and enforcement, seaworthiness, and mandatory marina and/or tenant vessel insurance.

7 vessels removed

10 Certified Clean Marina Program facilities engaged



Alaska

Report on the Bering Strait Marine Debris Event

Beginning in July 2020, unusual amounts and types of marine debris washed ashore in the Bering Strait region of Alaska. Coastal communities were the direct responders to the event, removing the debris from their shorelines and worked to provide reports, images, and descriptions that created awareness of the event. The NOAA Marine Debris Program worked with local stakeholders and response agencies to share information, respond to the event, and identify opportunities for action. Following the event, the Program worked with these stakeholders to create the [Bering Strait Marine Debris Event Report](#), which documents the occurrence, impacts, observations, and lessons learned, in order to share experiences and improve the response to future debris events.



16 contributing local, state, and federal authors



5 focus groups hosted

20 students engaged

Banding Together to Prevent Plastic Packing Band Pollution

The Aleut Community of St. Paul Island is working to reduce the impacts of packing band debris by changing community and industry behaviors and the types of materials used in packaging goods. The Community created a five-unit marine debris curriculum, engaged 40% of students in grades 6-12, obtained environmentally-friendly school supplies to complete the curriculum, facilitated community based social marketing focus groups, and began carrying out a broader community outreach campaign.

Pacific Islands

Hawai'i • Guam • American Samoa • Commonwealth of the Northern Mariana Islands

Beating Debris in Hawai'i

Hawai'i Marine Animal Response (HMAR) took a multi-pronged, community-based approach to removing debris, primarily derelict fishing gear, in coastal waters off the island of O'ahu. Through the "BEAT DEBRIS" citizen science project, community volunteers joined in to remove and report debris collected while diving in order to gain a better understanding of accumulation patterns of underwater fishing debris. The HMAR team also implemented a fishing line recycling bin program throughout the island, conducted shoreline cleanups, and provided marine debris outreach and education to the community.



30 surveys and cleanup dives

4,600 feet of fishing line removed

80 metric tons of metal scrap removed

650 gallons of fuel and hazardous liquid materials recovered

Bringing the Lady Carolina Ashore

The abandoned and derelict fishing vessel, Lady Carolina, continued to be a reminder of the devastating impacts of Typhoons Soudelor and Yutu in the Commonwealth of the Northern Mariana Islands. With support from the NOAA Marine Debris Program and the Hurricane Response Marine Debris Removal Fund, a partnership of the NOAA Marine Debris Program and the National Fish and Wildlife Foundation, Pacific Coastal Research & Planning successfully managed the removal of the 83-foot steel-hulled fishing vessel from the central Saipan Lagoon. Removing the grounded vessel prevents further environmental impacts to sensitive habitats, such as coral reefs, and endangered species.

Clearing Tires in Guam's Cocos Lagoon

The Guam Environmental Protection Agency removed 22 metric tons of artificial tire reef within Cocos Lagoon, which was placed there over 50 years ago as a way to reuse old rubber tires. The large-scale cleanup also included transplanting corals to another area of the lagoon. Efforts, such as this, which work towards prioritizing and addressing key threats to the island's natural resources, will help further build long term resilience in both marine and local communities in Guam.

1,829 tires removed

80+ coral features removed and reattached

2021 Papahānaumokuākea Marine National Monument Marine Debris Removal Mission

The Papahānaumokuākea Marine National Monument (monument) is a sacred Native Hawaiian landscape. It is one of the largest fully protected marine conservation areas on the planet and spans 582,578 square miles, an area larger than all the country's National Parks combined. An estimated 52 metric tons of derelict fishing gear from commercial fisheries all over the Pacific float into the monument every year, and many of these nets become trapped on the extensive reefs. Marine debris removal is of critical importance to protecting the monument.

On September 22, the NOAA Pacific Islands Fisheries Science Center's Marine Debris Project team, joined by the non-profit Papahānaumokuākea Marine Debris Project, wrapped up a 30-day large-scale mission to remove derelict fishing gear and plastic debris from the shallow coral reef and shoreline environments of the monument. Removal took place at Kure Atoll (Hōlanikū, Mokupāpapa), Midway Atoll (Kuaihelani, Pihemanu), Pearl and Hermes Atoll (Manawai, Holoikauaua), Lisianski Island (Kapou, Papa'āpoho), Laysan Island (Kamole, Kauō), and Maro Reef (Kamokuokamohoali'i, Ko'anako'a, Nalukākala).^{*} 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.


This huge undertaking was made possible through the collaboration and partnership of many. The mission was led by the NOAA Pacific Islands Fisheries Science Center and funded by the NOAA Marine Debris Program and NOAA Damage Assessment Remediation and Restoration Program. Additional support for this project comes from Papahānaumokuākea Marine Debris Project, U.S. Fish and Wildlife Service, State of Hawai'i, NOAA Office of National Marine Sanctuaries, and other NOAA programs.

NOAA has conducted marine debris removal missions with partners in the monument since 1996. The NOAA Marine Debris Program was established in 2006 and is proud to have supported these missions ever since. Through the practice of mālama, or care taking and preserving, and stewardship it is our hope to perpetuate the mana, or divine power, of Papahānaumokuākea and keep this special landscape free of debris.

^{}It is important to use the ancient, contemporary, and common names of the islands to acknowledge the historical and cultural significance of Papahānaumokuākea Marine National Monument. Learn more about the ancient and contemporary Hawaiian names [here](#).*




2021 Removal Mission By-the-Numbers



18 operational days




295 large nets removed



~5,300 pounds of plastic and other debris removed



118,400 pounds of derelict fishing nets removed



123,650 pounds of debris in total removed from six islands

Kamokuokamohoali'i (Maro Reef) —nearly **43,000** pounds
Kuaihelani (Midway Atoll) —approximately **24,500** pounds
Manawai (Pearl and Hermes Atoll) —**23,650** pounds
Hōlanikū (Kure Atoll) —nearly **16,000** pounds
Kapou (Lisianski Island) —nearly **11,500** pounds
Kamole (Laysan Island) —more than **5,000** pounds

Research

Even as our understanding of marine debris expands, we recognize new gaps and emerging questions to address and investigate through research. The marine debris issue is complex, often requiring multidisciplinary collaborations and new partnerships. The NOAA Marine Debris Program supports research projects that address some of our most pressing questions about where debris comes from, how it moves through the environment, and how it impacts wildlife and our ocean, waterways, and Great Lakes.



Microfibers were the most common type of microplastics found in field collected scallops

In a preliminary analysis, 473 microfibers were found in 120 scallops

Evaluating Microplastic Risks to Sea Scallops

A collaborative study between Woods Hole Oceanographic Institution, the Royal Netherlands Institute for Sea Research, and Florida Atlantic University investigated the risk associated with microplastic ingestion by Atlantic sea scallops. The project focused on sea scallop populations in the Mid-Atlantic Bight and Georges Bank, which represent one of the most highly-valued commercial fisheries in the continental United States. In a study published in the journal [Water Research](#), the researchers found that the colonization of diatoms, a type of phytoplankton, on the surface of microplastic particles can allow them to sink to the seafloor, where they become available for ingestion by sea scallops. Additionally, an analysis of sea scallop populations in natural settings revealed they are ingesting microplastics, while preliminary laboratory results showed that microplastics impact growth, shell development, lipid content, and survival of larval scallops. It was also found that microplastics can carry pathogens to adult scallops. The [findings from this project](#) are being incorporated into a Risk Management Framework to assist resource managers and policy makers assess the impact of plastic on the scallop industry.

Understanding the Effects of Microplastics Ingested by Sea Bass

The University of North Carolina Wilmington and Oregon State University investigated the effect of microplastics on black sea bass populations, an important recreational and commercial fishery species in North Carolina. The study, published in the journal [Environmental Pollution](#), looked at differences in how microplastic ingestion affects black sea bass across developmental stages and whether contaminants leach into the fish during digestion. After confirming that wild adult sea bass off the coast of North Carolina were ingesting microplastics, researchers used laboratory experiments to determine how larval black sea bass are exposed to microplastics. [Their findings](#) suggest that larvae ingest significantly more microplastics found within their microzooplankton prey than from direct ingestion of particles in the water. Researchers also showed that exposure to certain types of microplastics in the water causes increased respiration and decreased immune responses in juvenile sea bass, and that plastic pellets did not leach contaminants into juvenile sea bass during the digestion period. These effects suggest that higher concentrations of microplastic exposure may contribute to population decline in this species.



Assessing Risks for Microplastics in Seafood

Pacific island nations face challenging solid waste management issues, and many nearshore ecosystems are highly impacted by plastic marine debris and associated chemical contaminants. In American Samoa, researchers from Arizona State University worked with partners from the American Samoa Environmental Protection Agency and Department of Marine and Wildlife Resources to measure microplastic pollution and organic contaminants, and assess the risk to marine ecosystems and human health. Student interns from American Samoan Community College assisted in both fieldwork and lab work for the project. The researchers analyzed microplastics and contaminants in marine waters, sediments, and seafood at three study sites in Tutuila, American Samoa. [Preliminary results](#) showed that microplastics are unevenly distributed in the marine environment, with a higher concentration of microplastics and contaminants detected in the tissues of small mollusks, compared to fish and water and sediment samples. However, based on estimated seafood consumption rates and contaminant field data used in a screening level risk assessment, there is likely little potential health risk to community members from eating locally caught mollusks and fishes. Future studies are needed to better understand the physical and chemical impacts of microplastics on marine species populations, the overall marine ecosystem health, and human health.

8 American Samoa Community College students participated in field and lab work

Monitoring and Detection

Marine debris is a global issue, but the challenges it presents can really vary across geographic regions. Monitoring and detection efforts not only improve our understanding of the scope, scale, and distribution of marine debris in the environment, but also provide critical data on the types and amount of debris, which can inform management practices and prevention efforts at a local scale. The NOAA Marine Debris Program supports projects that generate monitoring and detection data, incorporate innovative technologies, and provide guidance to the marine debris community.

New Marine Debris Monitoring Database and Resources

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, enjoyed a busy year of building new products and looking to the future. Following a 2018 field study to assess MDMAP protocols, the project team established updated monitoring protocols, incorporating input from partners with a vision to re-energize the project and expand to new sites. The MDMAP [Monitoring Toolbox](#) underwent a major update to reflect the revised protocols and guidance, while a new [MDMAP 3.0 online database](#) was launched, featuring dashboard tools to build powerful data visualizations. With these new tools and resources, the MDMAP already established 12 new sites across the United States, along with six new international sites.

9 publications and products used MDMAP data

18 new MDMAP sites established



Response

Disasters can create large amounts of marine debris that enters the ocean, waterways, and Great Lakes all at once. As a result, large items that may not normally become marine debris can be extremely problematic and require great efforts to remove and dispose. The NOAA Marine Debris Program continues to prepare for and respond to disaster debris and work closely with communities who are still grappling with the impacts of Hurricanes Irma, Maria, Florence, and Michael, and Typhoon Yutu.

Preparing for Disasters

The NOAA Marine Debris Program 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. In 2021, the NOAA Marine Debris Program supported the creation of a response guide for New Jersey, began work in Puerto Rico and the Commonwealth of the Northern Mariana Islands, and hosted over 100 response stakeholders during virtual workshops. By building relationships and bringing responders together before a disaster, states are connected to response resources and the country is more prepared to quickly respond to marine debris.



100+ response stakeholders attended virtual workshops

Transitioned in-person engagement to a virtual platform

Addressing Debris from Hurricanes Florence and Michael

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, leaving destruction and large amounts of debris in the coastal zones of the affected states and territory. The Hurricane Response Marine Debris Removal Fund, a partnership between the NOAA Marine Debris Program and National Fish and Wildlife Foundation, awarded \$8.2 million to projects that assess, remove, and dispose of marine debris in areas impacted by Hurricanes Florence and Michael, and Typhoon Yutu.



26 vessels removed

71 metric tons of vessel debris removed

1,105 cubic yards of habitat assessed

85 debris items identified through sonar assessment

Removing Vessels to Restore Habitat

The North Carolina Coastal Federation (NCCF) has removed 26 of over 40 abandoned and derelict vessels left in the southeastern part of the state following Hurricane Florence. Removing these vessels clears navigational hazards and reduces any remaining impacts on oyster reefs, submerged aquatic vegetation, coastal wetlands, and other important coastal habitats. Following removal activities, NCCF replanted and smoothed sediment to repair habitat that vessels damaged over time. Contractors also worked to document the removal effort, which is being developed into a case study that will serve as a resource for similar projects in the future.

Assessing Damage After Natural Disasters

The City of Mexico Beach, Florida and Dewberry completed a sonar assessment to detect and document marine debris in nearshore areas resulting from Hurricane Michael. Through the assessment, the partners identified sailboat and dock debris, most of which is buried under sand. This information was used to develop a plan for removal and will be utilized to identify a removal contractor.

Response

Cleaning Up After Hurricanes Harvey, 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.

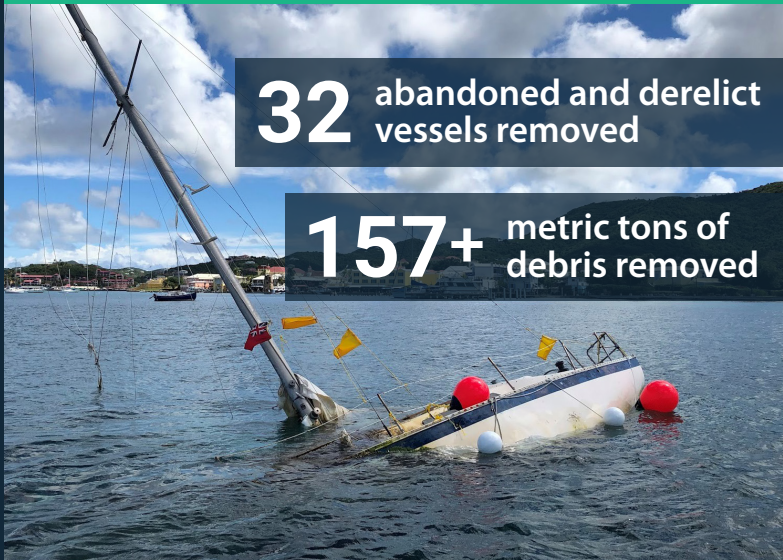
Removing Hurricane Debris from Sensitive Habitats

The Texas General Land Office and Mission-Aransas National Estuarine Research Reserve are working to remove large amounts of debris left in sensitive habitats, recreational parks, and critical research areas by Hurricane Harvey. Removal efforts are taking place at six sites, with over 282 metric tons of debris already removed from Holiday Beach, Goose Island State Park, Estes Flats, and the University of Texas Marine Science Institute. Remaining debris will be removed by the end of 2022.



282+ metric tons of debris removed

Debris removed from **7,559** acres of habitat



32 abandoned and derelict vessels removed


157+ metric tons of debris removed

Prioritizing Locations and Vessels in the U.S. Virgin Islands

The U.S. Virgin Islands Department of Planning and Natural Resources (DPNR) is working to tackle the damage caused by Hurricanes Irma and Maria in 2017. The prioritization of abandoned and derelict vessels resulted in the coordinated removal of vessels throughout Saint Thomas, Saint John, and Saint Croix, as well as the remains of houseboats and other large debris. Community mangrove cleanup efforts have also been ongoing throughout the project. Through site assessments, DPNR determined priority areas within Krum Bay, which will be targeted for marine debris removal during the next phase of the project.

Continuing Efforts to Ease Hurricane Damage in Puerto Rico

Addressing displaced and sunken vessels, damaged docks, concrete structures, and other coastal debris that resulted from Hurricanes Irma and Maria is a priority for the Puerto Rico Department of Natural and Environmental Resources (PR DNER). PR DNER completed site assessments and manual removal of debris in Culebra, Vieques, and Isleta Marina, while ongoing removal efforts are focused around several coastal municipalities and the Jobos National Estuarine Research Reserve. This work is helping to ease the devastation caused by these storms, improve the health of local marine ecosystems, and will benefit endangered species.



9 abandoned and derelict vessels removed

225+ metric tons of debris removed

Education and Outreach

The first step to solving a problem is learning more about it. The NOAA Marine Debris Program's education and outreach efforts aim to share the important information about marine debris with everyone we can, from outdoor enthusiasts, to educators and students, and organizations. This year, the NOAA Marine Debris Program broadened the horizon of education and outreach efforts through collaboration with the National Parks Service, expanded digital offerings, and hosted webinars highlighting topics related to abandoned and derelict vessels.

Reaching Visitors at Coastal National Parks

The NOAA Marine Debris Program and the National Park Service are pleased to have completed the first in a series of marine debris displays in coastal National Parks. Through a collaborative development process, three displays were developed and installed at Cape Lookout National Seashore in North Carolina, Perry's Victory and International Peace Memorial in Ohio, and Bering Land Bridge National Preserve in Alaska. These displays support marine debris prevention efforts and seek to raise awareness about the sources and impacts of marine debris in and around our National Parks, as well as encourage individuals to take action to combat the problem.



3 new displays installed



4 new education collections for students, educators, families, and professionals

Expanding Marine Debris Education Online

In an effort to make marine debris education materials more accessible to educators and the general public, the NOAA Marine Debris Program developed an online [one-stop-shop for educational resources](#) on marine debris for educators, students, families, and professionals. In addition, the Program made additional information about marine debris types, sources, and impacts across our ocean and Great Lakes available through [Discover Marine Debris](#). These improvements will help students, educators, and stewards who hope to keep the sea free of debris access our resources and learn more about the problem and solutions.

Highlighting the Challenges of Abandoned Vessels

The NOAA Marine Debris Program presented Salvaging Solutions for Abandoned and Derelict Vessels, a comprehensive 9-part webinar series discussing issues around abandoned and derelict vessels (ADV), featuring specialist speakers from federal, state, and local governments; nongovernmental organizations; universities; and industry. The webinar series covered a variety of ADV topics, including communications, funding, policy, and successes and challenges under blue skies and storm conditions, in order to share perspectives from across the country and help communities better address ADV issues.



9 monthly webinars

1,100+ webinar attendees

Looking Ahead

The NOAA Marine Debris Program is looking forward to launching 39 newly-funded projects, including 15 removal and research initiatives, 10 projects for North America Marine Debris Prevention and Removal, six projects in partnership with NOAA Sea Grant, and eight Fishing for Energy projects. Here is a look at the year ahead.

Removal

Alaska Department of Fish and Game will remove, study, and recycle marine debris in the Forrester Island complex in Southeast Alaska. The Forrester Island complex suffers from a high density of marine debris, more than half of which is derelict fishing gear, and supports North America's largest breeding and birthing grounds for Steller sea lions. The project will also educate commercial fishers and school groups about marine debris in order to help reduce future accumulation of debris.

Center for Coastal Studies will locate, remove, and properly dispose of approximately 24 tons of derelict fishing gear in Cape Cod Bay and Cape Cod beaches. The project will work with the shellfish industry and local fishermen to remove derelict fishing gear from sensitive habitats along shorelines, breakwaters, shellfish flats, and the seabed. Collected gear will be returned to its owner, repurposed by artists, recycled when possible, or converted to energy.

City of Hoboken will partner with Riverkeeper and the New York-New Jersey Harbor & Estuary Program to remove up to 17 abandoned and derelict vessels (ADVs) from the Hudson River Estuary, representing all known ADVs in the estuary. The project will also conduct a public education campaign for recreational boaters and the recreational boating industry to discourage future abandonment of vessels.

Hawai'i Wildlife Fund will partner with Surfrider Kaua'i to conduct weekly "net patrols" on Kaua'i and Hawai'i Islands, quarterly beach cleanups on Hawai'i, Kaua'i, and Maui Islands, four operations to airlift debris from inaccessible areas, and manage derelict net drop-off stations at six locations. The project is expected to remove over 100 metric tons of debris, representing the efforts of more than 1,000 volunteers and almost 8,000 volunteer hours.

Mississippi State University will remove 12 large marine debris items, including eight abandoned or sunken derelict vessels, one travel trailer, and three large accumulations of appliances and tractor tires from the lower Pascagoula River. The project will then monitor the recovery of the impacted ecosystem for two years.

Northwest Straits Foundation will engage with tribal and state commercial crabbers to remove derelict crab traps from Padilla Bay and Anacortes Bay, including waters within the Padilla Bay National Estuarine Research Reserve. The project will also develop and implement an outreach campaign to prevent re-accumulation of derelict crab pots.

Richardson's Bay Regional Agency will remove approximately 27 abandoned or derelict vessels and floating homes, weighing an estimated 200 tons, from Richardson's Bay. The project will also work with vessel owners to prevent vessels from becoming derelict or to voluntarily turn in vessels that have become marine debris.

Scuba Dogs Society will work with local partners to coordinate year-round coastal cleanups and remove large underwater, coastal, or estuarine debris. The cleanups are part of an action-based educational program offering volunteer and citizen science opportunities for all audiences in Puerto Rico.

South Carolina Department of Natural Resources will remove derelict crab traps in intertidal and subtidal areas of South Carolina coastal estuaries, including part of the ACE Basin National Wildlife Refuge. The project will detect, map, and remove traps, and collected traps will be used to build oyster reef habitat to reduce erosion and habitat loss.

Superior Watershed Partnership will partner with Upper Peninsula tribes to conduct a marine debris removal and outreach campaign in Michigan. Cleanup events will target high-traffic areas, including harbors, coastal wetlands, river mouths, and recreational areas adjacent to the Lake Superior shoreline. The project will engage residents and visitors through these hands-on removal events and spread educational messages over local media to reach an estimated 70% of the population of the Upper Peninsula.

Research

Rochester Institute of Technology will examine sources of both macro- and micro-debris entering Lake Ontario, including storm drains, stormwater ponds, tributaries, and riparian areas. The researchers will also evaluate how marine debris breaks down over time and create a model to understand the total amount of marine debris in Lake Ontario. This project will provide information about the socioeconomic and geographic factors leading to marine debris in the Great Lakes region and identify leverage points where local resource managers and stakeholders can take action to prevent and reduce marine debris.

San Diego State University will conduct field, laboratory, and modeling studies to understand the sources and amounts of marine debris entering the San Diego River watershed. Using new and existing data and remote sensing techniques, the researchers will develop a model for the watershed to compare inputs of debris from river margin sources, including encampments and illegal dumping, with debris from storm drain outfalls. The project will also interview unhoused individuals to determine the drivers of debris-generating behavior and develop strategies to reduce debris from encampments.

University of Delaware will measure marine debris abundance, size, and type in the Delaware Bay. The researchers will conduct boat-based sampling, shoreline cleanups, and satellite imagery analysis to refine a model of the Bay to predict how marine debris enters and exits, as well as how it moves within the Bay. This research will provide actionable information for future management decisions to reduce marine debris and improve the quality of Delaware coastal waters.

University of Maryland Center for Environmental Science

will examine how marshes and submerged aquatic vegetation influence the way plastic debris flows down the Choptank River. Using field sampling, uncrewed aerial vehicles, and modeling, the researchers will characterize the size and abundance of debris in the water and sediments of the Choptank River basin, and compare how plastic debris is deposited and degrades in open water and vegetated habitats. The project will also develop and model scenarios to determine which factors and mitigation strategies could have the greatest impact on reducing marine debris in riverine environments.

Villanova University will use field and laboratory experiments to explore how marine debris moves from the upstream areas of the Guánica Watershed to the nearshore coastal waters of southwest Puerto Rico. In partnership with local partners in Puerto Rico, the researchers will look at sources of debris, how debris transport varies across the wet and dry seasons, and what factors influence debris degradation. This information will be used to develop a regional assessment of marine debris in the Guánica Watershed, which can both be used to improve natural resource management in the region and be applied to increase our understanding of marine debris in other riverine and coastal locations.

North America Prevention and Removal

These ten North America Marine Debris Prevention and Removal projects were funded through the United States-Mexico-Canada Agreement Implementation Act and will prevent and remove marine debris in Mexico and the U.S.-Mexico and U.S.-Canada border areas.

Association of U.S. Delegates to the Gulf of Maine Council

will create an international collaborative approach to reduce and prevent the introduction of marine debris into the Gulf of Maine. Project activities include conducting shoreline cleanups, increasing public awareness of the issue, and tracking and documenting the presence of single-use plastic consumer debris. The project will also expand a regional database to document abandoned, lost, and derelict fishing gear, providing important data for regional fisheries managers and policy makers to use in making decisions about preventing marine debris and its impacts.

City & Borough of Yakutat will document, remove, and dispose of marine debris along the shoreline of Yakutat, located in the Gulf of Alaska. The project will increase understanding of the types and amount of marine debris impacting five target beaches, resulting in a report that characterizes the removed marine debris. This information will be used to engage local community members in learning about marine debris and ultimately enhancing efforts to prevent marine debris from entering the environment in the first place.

Council of the Great Lakes Region will analyze the production, use, and management of plastic material in the Great Lakes region, with a focus on how plastics become waste. In addition, the project will support the Canada Great Lakes Plastic Cleanup initiative, enabling it to expand its deployment of trash trapping technologies to the United States. Together, these activities will support the removal of more plastic debris from the Great Lakes and increase the ability of policy makers and coastal communities to address the problem of plastic pollution.

Instituto Tecnológico y de Estudios Superiores de Monterrey

will work with stakeholders to design, implement, and operate a municipal recycling program to improve waste collection and prevent plastic waste dumping and littering in the City of Monterrey, Mexico. Installing a recycling facility and building awareness of the importance of recycling will help to manage the average 25 tons of waste generated per month in the city and increase services to marginalized, low income, and at-risk populations. In addition, the project will remove debris from illegal dump sites and other priority areas, mitigating the leakage of waste into the upstream watersheds of the Rio Bravo, which flows into the Gulf of Mexico.

National Marine Sanctuary Foundation will detect and remove medium- to large-scale marine debris, including derelict fishing gear, along Washington's outer coast and the Strait of Juan de Fuca. The project will also organize six beach cleanup events, create a baseline understanding of marine debris in Grayland, Washington, and work collaboratively with the shellfish industry to address the issue of yellow aquaculture rope, a common debris item in the region.

Ocean Conservancy will work to reduce the amount and impact of abandoned, lost, and discarded fishing gear (ALDFG) along North America's Pacific Coast, from Canada to Mexico. Project activities include: launching the North American Net Collection Initiative to collect and transform end-of-life fishing nets into high-value consumer goods; supporting the development of Mexico's national ALDFG action plan; building trilateral capacity to implement best practices for gear management, loss prevention, and disposal; and identifying hotspots for ALDFG removal in Mexico's coastal waters.

Parley Foundation will work in six Mexican states to collect and upcycle end-of-life fishing gear, clean up nearly 100,000 pounds of debris in remote areas, and engage with undeserved fishing communities and the general public to raise awareness of marine debris and how to prevent it. The project is focused on areas with reefs and other sensitive habitats, including 11 sites listed as Wetlands of International Importance, one UNESCO World Heritage Site, and five sites designated as UNESCO Biosphere Reserves.

Southwest Wetlands Interpretive Association will improve social-ecological resilience in the Tijuana River Estuary through marine debris prevention and removal. The project will train elected officials and decision-makers on solid waste management best practices to prevent marine debris and flooding, pilot a community-led circular economy program to reuse and generate income from waste, and improve binational flood emergency response and resilience, among other activities.

University of Texas at Austin will tackle the problem of plastic pellet pollution in the rivers, bays, and beaches along the Gulf of Mexico. The project will create Spanish language resources, host training sessions, and develop partnerships to expand the existing Nurdle Patrol citizen science program into Mexico. The new data will be shared widely and will contribute to collaborative research and the development of potential policy solutions by individuals, scientists, resource managers, and industry representatives.

WILDCOAST will reduce the amount of marine debris entering the Tijuana River from the Los Laureles Canyon tributary in Mexico. The Los Laureles Canyon is a significant source of waste entering the Tijuana River and flowing down to the Pacific Ocean, including trash, tires, sewage, and other pollutants. The project will capture debris with a trash boom, dispose of the collected debris, and conduct outreach in Tijuana to support behavior change that reduces single-use plastic and polyethylene foam consumption in the city.

NOAA Sea Grant Partnership

NOAA Sea Grant and the NOAA Marine Debris Program funded six projects to tackle marine debris challenges across the country. This year's projects focus on preventing the introduction of marine debris into marine, coastal, and Great Lakes environments.

Florida Sea Grant will partner with six Florida Clean Marinas to install Seabins to remove floating marine debris and prevent it from entering/re-entering the marine environment. The collected debris items will be sorted and the data will be used to inspire prevention in multiple ways, including the development of lesson plans for elementary, middle and high school on the importance of waste reduction and the proper disposal of plastic items. The data will also be used to coordinate outreach and the development of educational materials to assist marinas on best practices for reducing marine debris.

Georgia Sea Grant will pilot a Trawl to Trash program that recruits local commercial shrimpers to construct 800 "Trawl to Trash" stow bags from recycled shrimp nets. These bags are created for recreational boaters, fishermen and the public to use for cleanups and encourage prevention of marine debris from entering the environment. Additionally, Georgia Sea Grant will provide educational experiences to connect participants to the coastal and marine environment, create a "Trawl to Trash" webpage, to further disseminate information, and reinforce the importance of building community capacity for the long-term prevention of marine debris.

Hawai'i Sea Grant will collaborate with Hawai'i Marine Animal Response's Marine Debris Program to expand programmatic activities to enhance the long-term prevention of marine debris. This includes actively raising awareness about marine debris, developing new curricula for engaging middle school students, promoting and maintaining fishing debris disposal bins, and conducting focused outreach to fishers at popular fishing sites. Additionally, this project will increase active participation of community members in an ongoing citizen-science fishing debris removal project to inform management, education and outreach.

Illinois-Indiana Sea Grant will prevent marine debris in the Great Lakes ecosystem by developing a coordinated, regional and binational marine debris messaging campaign for the Great Lakes region. This comprehensive awareness and prevention campaign will provide audiences with the necessary call(s) to action to make informed decisions about their use and disposal of plastic goods. Development of a focused messaging campaign and Prevention Kits will be coupled with a strategy for outreach and distribution for the entire Great Lakes region.

Puerto Rico Sea Grant will develop a marine debris curriculum to introduce 4th to 12th grade teachers and students to marine debris, including its impact on coastal and marine ecosystems, the tourism and marine recreation industries, marine and coastal wildlife, human health, and navigation safety, as well as sources and solutions. This resource will include daily educational plans and a two-day workshop for teachers. Students will also participate in coastal cleanup activities with their families, presenting an opportunity to educate the whole family about proper disposal habits.

Wisconsin Sea Grant will partner with American Players Theatre to pilot a theatrical piece about marine debris science to educate and motivate change in two Lake Michigan communities through storytelling. The project includes theatrical performances, outreach and education activities, on-site cleanup events and marine debris prevention stewardship activities related to prevention of land-based marine debris and prevention of microplastics in wastewater.

Fishing for Energy

Fishing for Energy, a partnership between the NOAA Marine Debris Program, National Fish and Wildlife Foundation, Covanta Energy, and Schnitzer Steel, launched eight newly funded projects to prevent and reduce the impacts of derelict fishing gear in the marine environment.

City of Gloucester Harbormaster will collect and dispose of derelict fishing gear from the City of Gloucester, Massachusetts. This project will recycle or convert to energy 50 tons of fishing gear, including lobster pots, ropes, and buoys.

Conserve Wildlife Foundation of New Jersey will remove up to five tons of marine debris from Barnegat Bay, New Jersey. The project will provide a bin to collect and remove derelict crab pots that pose a threat to coastal marsh species.

Gulf of Maine Lobster Foundation will develop logistics for the collection of fishing nets from local New England fishermen, who are looking for ways to properly dispose of their end-of-life nets. The project will develop locations and proper disposal options to recycle or convert to energy 280 tons of fishing gear, reducing unwanted bycatch of many marine species.

Mississippi Commercial Fisheries United will maintain a derelict gear collection utility trailer to support the continued collection, hauling, and recycling of derelict blue crab traps for Mississippi's inshore shrimpers. The project will divert and recycle three tons of fishing gear from the Mississippi sound.

Maritime Aquarium at Norwalk will install a publicly accessible derelict fishing gear collection bin in Clinton, Connecticut to gather abandoned lobster traps posing ecological and navigational hazards in Long Island Sound. The project will gather an estimated 219 lobster traps in the collection bin to be recycled, increasing the resilience of fisheries in Long Island Sound and reducing hazards for commercial and recreational vessels.

National Marine Sanctuary Foundation will identify recycling solutions for gear approaching end-of-life. The project will use targeted engagement with local stakeholders to develop capacity and logistics for recycling of end-of-life and derelict fishing gear throughout the Florida Keys, a pervasive issue that affects the health and well-being of delicate ecosystems and habitats, including coral reefs.

Port of Garibaldi will maintain an existing bin for derelict fishing gear at the Port of Garibaldi. The project will intercept and haul 25 tons of fishing gear for recycling or conversion to energy.

WILD Coast will develop logistics to collect fishing net waste from ports across California. The project will establish derelict fishing gear collection at five ports, recycling 60 tons of unused fishing nets.

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NOAA Marine Debris Program

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National Ocean Service

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