

LONG ISLAND SOUND MARINE DEBRIS ACTION PLAN: May 2022- April 2023 PROGRESS REPORT

GOAL 1: Understand, Prevent and Mitigate Impacts of Single-Use Plastic and Other Water/Land-based Consumer Debris

Strategy 1.1 Prevention, Education & Outreach

Action 1.1.4: Adapt existing or create new communication/outreach products on consumer debris and single-use plastic and disseminate to **coastal** communities.

Reported by S. Ebbin, CT Sea Grant

Number of outreach products for coastal audiences adapted/created: 1

“Organizing a Community Beach Clean-up”; brochure produced by MAST students, UConn-Avery Point

Action 1.1.5: Adapt or create new and implement coordinated social media campaigns focused on the source reduction/prevention of consumer debris and single use plastic that are unified by one common message and shared by Action Plan leads and partners.

Reported by J. Benson, CT Sea Grant

Number of adapted or new social media campaigns implemented: 2

Number of people engaged: 60 at events + at least 200 through social media posting

First article about 2022 #DontTrashLISound social media campaign and kick-off clean-up; second article about artist sTo Len's exhibit of works made from trash from New Haven shoreline cleanup

<https://seagrant.uconn.edu/?p=9264>

https://seagrant.uconn.edu/wp-content/uploads/sites/1985/2022/12/sTo.Len_.WL_.22-23.pdf

Distribution of #Don'tTrashLIS stickers focused on reducing use of single-use plastics

Action 1.1.6: Engage Long Island Sound watershed residents in meaningful interactions through outreach activities to promote source reduction of common consumer debris items, including single-use plastic, and encourage increased use of sustainable alternatives such as reusable items.

Reported by M. Klimczak, Fishers Island Conservancy

Number of people engaged in meaningful interactions: 7

Number of outreach activities: 20

Worked with 2-4th graders & teacher at Fishers Island School bi-weekly for 1-1.5 hours/session for 20 sessions from October 2022 to June 2023

Discussed consumerism, what is single use plastic, mylar and microplastics

Spent 30 mins/session collecting debris; sort by color; discuss items collected

Students each made piece of art with small plastics and Styrofoam collected and sorted by color

Artwork displayed August 12, 2023 at annual Nature Days program for year-round residents and 4,000 summer residents

Action 1.1.13: Adapt/create and disseminate educational materials focused on source reduction/prevention of consumer debris and single use plastic for P-12 students that align with Next Generation Science Standards where applicable and that have been successfully demonstrated through online platforms, in-person events, education workshops, after-school programs and visits, summer camps, campaigns and field trips to P-12 educators and Long Island Sound watershed students.

1) Reported by M. Dushay, North American Marine Environment Protection Association (NAMEPA)

Number of educational materials created/adapted and disseminated: 5

Number of P-12 educators reached: 40

Number of P-12 students reached: 3,500

Expanded Planet Ocean Discovery Series with Wetlands and examples from Long Island Sound - www.namepa.net/pods/

Engaged with local Boys & Girls Clubs and YMCAs along Long Island Sound communities

2) Reported by K. Bunting-Howarth, NY Sea Grant/Cornell Cooperative Extension

Number of educational materials created/adapted and disseminated: 1

Number of P-12 educators reached: 325

Webinar, presentations at 2022 Marine Educators Association conference, 2022 Trout in Classroom conference –Hyde Park

Action 1.1.22: Review marine debris data reported to the Ocean Conservancy International Coastal Cleanup database and the University of Georgia Marine Debris Tracker annually to inform the Long Island Sound Study's Marine Debris Ecosystem Target(s) and highlight results.

Reported by C. Sullivan, EPA Region 2, Long Island Sound Office

Used ICC database to develop a new indicator, Marine Debris by Category

<https://longislandsoundstudy.net/ecosystem-target-indicators/marine-debris-by-category/>

Annual report on LISS Ecosystem Target related to marine debris: Completed

Action 1.1.24: Highlight and share links to NOAA Marine Debris Program resources on marine debris emergency preparedness for storm events and other natural disasters.

Reported by K. Morgan, NOAA Marine Debris Program

Links shared and updated : 1

The NOAA Marine Debris Program recently published the *New York Marine Debris Emergency Response Guide*, which was developed in collaboration with emergency response partners in New York throughout 2021 and 2022. <https://marinedebris.noaa.gov/emergency-response-guide/new-york-marine-debris-emergency-response-guide>

Strategy 1.2: Research Assessment, Wildlife Impacts and Monitoring

Action 1.2.1: Compile existing consumer debris information and wildlife impacts annually and make them available to facilitate analysis of information gaps, best practices and available resources.

1) Reported by R. Murray, New York Marine Rescue Center

Links to resources posted and maintained annually: 4

Updated Marine Pollution and Debris Lecture in Spring 2023; program highlights plastic pollution, derelict fishing gear, microplastic, and microfibers, reducing single-use plastic, and preventing balloon litter and how all of these affect the marine life we rescue; geared towards elementary to high school-aged students.

Number of P-12 educators reached: 2

Number of P-12 students reached: 15

<https://nymarinerescue.org/>

<https://nymarinerescue.org/wp-content/uploads/2020/04/Marine-Debris-Word-Search.pdf>;

<https://nymarinerescue.org/wp-content/uploads/2020/04/NYMRC-Data-Sheet-1.pdf>

<https://nymarinerescue.org/wp-content/uploads/2020/04/Pollution-Lab-Outline.pdf>

2) Reported by K. Morgan, NOAA Marine Debris Program

Links to resources posted and maintained annually: 3

George Mason University (VA), supported by a NOAA Marine Debris Program FY20 Prevention grant, recently published an online toolkit to showcase how they implemented a single use plastic water bottle reduction campaign in two area high schools. This toolkit may be informative to others looking to implement similar campaigns. **GMU Toolkit:** <https://kpwb.org/prince-william-county-community-marine-debris-project/>

The **Mid-Atlantic Regional Council on the Ocean (MARCO)**, supported by a NOAA Marine Debris Program FY18 Prevention grant, has created outreach materials related to their Community Based Social Marketing Campaign on preventing the intentional release of balloons. NOAA MDP shared these resources with Save the Sound after reviewing their cleanup report which highlighted balloon litter in Long Island Sound. **MARCO campaign website:** <https://www.preventballoonlitter.org/>

Clean Water Fund, supported by a NOAA Marine Debris Program FY22 Prevention grant, is working in CT to transition schools and restaurants from single use to reusable materials.

Clean Water Fund Project Overview:

<https://clearinghouse.marinedebris.noaa.gov/project?mode=View&projectId=2437>

Action 1.2.3: Seek/share grant opportunities to address Action Plan research priorities, including research: that identifies and addresses knowledge gaps so that new consumer debris efforts can be launched that successfully support Actions 1.1.2-1.1.6; that improves understanding of the impacts of consumer debris on wildlife to inform public outreach campaigns and policymakers; that identifies more sustainable alternatives to recycling; that identifies and/or informs interception technology effectiveness or alternatives; that focuses on consumer debris to better inform decision-makers and raise public awareness

1) Reported by N. Balcom, CT Sea Grant

Number of proposals submitted: 4 (2 Marine Challenge, 2 Community Coalition)

Number of partners engaged: 11

2) Reported by K. Bunting-Howarth, NY Sea Grant

Number of proposals submitted: 7 (4 – Marine Challenge, 3 – Community Coalition)

Number of proposals funded: 3

2 Marine Challenge (Technology development for captures and reuse of micro-fibers from laundry processes; Field testing of a technology to remove microplastics from waterbodies)

1 Community Coalition (Installation of Littatrap in Rochester, NY)

Action 1.2.5: Promote community science programs that collect data on marine debris to better inform decision-makers and raise public awareness.

Reported by K. Morgan, NOAA Marine Debris Program

Number of community science programs promoted: 1

Name of community science program: NOAA Marine Debris Program's Marine Debris Monitoring and Assessment Project

Action 1.2.6: Survey local and state policies and management plans aimed at source reduction, prevention and interception practices using available data and information. This will inform Action 1.5.2.

Reported by S. Ebbin, CT Sea Grant

Survey completed: 1 (Student paper on statewide (CT) recycling)

Strategy: 1.4 Removal

Action 1.4.1: Collectively support and coordinate annual cleanup events around land-based litter.

1) Reported by P. Paton, Univ of Rhode Island

Number of cleanup events : 2

Numbers of cleanup participants: 20

Locations of cleanup events: Great Gull Island, NY

Miles of beaches cleaned: 1.5

Approximate # of pounds of trash removed: 100

2) Reported by C. Scheetz, Project Oceanology

Number of cleanup events: 50 (Pine Island, Bluff Point SP, Haddam Meadows SP, Avery Point)

Number of cleanup participants: 400

Miles of beaches cleaned: not reported

Approx. # of pounds of trash removed: not reported (1,445 pieces of plastic/foam, beverage cans, food wrappers, fishing gear and plastic bottles reported for Pine Island)

Strategy 1.5: Policy and Management

Action 1.5.2: Inform, advocate and/or implement new local, municipal and state policies, management plans and/ or campaigns aimed at source reduction (e.g., balloons, single-use plastic straws, single-use utensils, nip bottles), prevention and/or interception practices, informed by available marine debris collection data.

Reported by C. Sullivan, EPA Region 2, Long Island Sound Office

Annual report on LISS Ecosystem Target related to marine debris: Completed

Number of new local/county/policies, management plans or campaigns developed: 0

Number of policies adopted: 0

EPA Region 2 has initiated discussion with Urban Waters Federal Partners to explore the implementation of a marine debris TMDL in the Bronx River

GOAL 2: Understand, Prevent and Mitigate Impacts of Abandoned and Lost Fishing/Aquaculture Gear

Strategy 2.2: Research Assessment, Wildlife Impacts and Monitoring

Action 2.2.2: Engage with stranding networks and wildlife rehabilitation centers to better understand the marine debris interaction data available for analysis.

1) Reported by R. Murray, New York Marine Rescue

Number of stranding networks/rehabilitation centers contacted: 1

Summary of available data from relevant organizations/public: New York Marine Rescue Center (NYMRC) rescues and rehabilitates marine mammals and sea turtles that have been stranded due to entanglement. During this reporting period, we admitted 5 individuals that had evidence of marine debris entanglement which included:

1 Kemp's ridley (*L. kempii*) - 1 die in rehab (DIH); 1 harbor seal (*P. vitulina*) - Disentangled by the public, unable to recover for rehab; 4 gray seal (*H. grypus*) - 2 released; 1 pending release; 1 die in rehab (DIH); All 5 cases involved entanglement in monofilament and injuries varied by case.

Annual review of data completed : yes

2) Reported by K. Morgan, NOAA Marine Debris Program

Number of stranding networks/rehabilitation centers contacted: 2

Summary of available data from relevant organizations/public:

A group of organizations including the NY Marine Rescue Center, Atlantic Marine Conservation Society, NOAA Fisheries (Greater Atlantic Region), and NOAA MDP have met a few times in initial dialogue primarily driven by the Mid-Atlantic Marine Debris Action Plan, but with potential cross-over to the Long Island Sound community.

Strategy 2.3: Proper Disposal and Infrastructure

Action 2.3.2: With proper state permissions, coordinate directed fishing/aquaculture gear disposal events in Long Island Sound communities.

Reported by J. Susarchick, The Maritime Aquarium at Norwalk

Number of disposal events facilitated: 1

Pounds of gear collected (lbs): 7,020

Action 2.3.3: Coordinate with state and local authorities, metal recyclers, waste-to-energy companies and haulers annually to return or dispose of recovered fishing/aquaculture gear.

Reported by J. Susarchick, The Maritime Aquarium at Norwalk

Number of state and local authorities engaged: 2

Pounds of gear collected (lbs): 6,300

Pounds recycled or disposed of sustainably (lbs): 2,710

Action 2.3.7: Seek/share grant opportunities to support the prevention of abandoned and lost fishing/ aquaculture gear and its removal annually.

Reported by K. Morgan, NOAA Marine Debris Program

Number of funding opportunities shared: 1

Summer 2022, NOAA Marine Debris Program broadly advertised a FY22 Bipartisan Infrastructure Law Notice of Funding Opportunity for the removal of marine debris across the United States. Included in this funding opportunity was a priority for the removal of abandoned and lost fishing/aquaculture gear. List of recommended projects from this funding opportunity on the NOAA MDP website:

<https://blog.marinedebris.noaa.gov/noaa-marine-debris-program-awards-funding-new-projects-bipartisan-infrastructure-law>

In addition, NOAA Marine Debris Program Regional Coordinators share funding opportunities in regular Northeast and Mid-Atlantic newsletters.

Subscribe to newsletters:

Northeast (monthly):

https://public.govdelivery.com/accounts/USNOAANOS/subscriber/new?topic_id=USNOAANOS_151

Mid-Atlantic (quarterly):

https://public.govdelivery.com/accounts/USNOAANOS/subscriber/new?topic_id=USNOAANOS_149

Action 2.3.8: Coordinate a platform where partners can share ideas for grant applications and ask for collaborators, help with matching funds, recommendation letters or other relevant resources.

Reported by K. Morgan, NOAA Marine Debris Program

Summary of available data from relevant organizations/public:

A group of organizations including the NY Marine Rescue Center, Atlantic Marine Conservation Society, NOAA Fisheries (Greater Atlantic Region), and NOAA MDP have met a few times in initial dialogue primarily driven by the Mid-Atlantic Marine Debris Action Plan, but with potential cross-over to the Long Island Sound community.

Platform identified and utilized by partners:

The NOAA Marine Debris Program manages the Northeast and Mid-Atlantic Regional Collaboration Portals for partner use. Access the portals here:

Northeast: <https://northeast-mdc.diver.orr.noaa.gov/>

Mid-Atlantic: <https://midatlantic-mdc.diver.orr.noaa.gov/>

Strategy 2.4: Removal

Action 2.4.1: Maintain or acquire the necessary permits to remove abandoned and lost fishing gear.

1) Reported by J. Susarchick, The Maritime Aquarium at Norwalk

State permits maintained/acquired: 1

2) Reported by B. Lucey, Save the Sound

State permits maintained/acquired: 1

(State permit from CT DEEP authorizing Save the Sound to remove lobster traps from CT waters)

3) Reported by C. Scheetz, Project Oceanology

State permits maintained/acquired: 1

Action 2.4.2: Coordinate and support removal (active dragging) regions alongside commercial fishing and aquaculture industries with one data repository.

1) Reported by J. Susarchick, The Maritime Aquarium at Norwalk

Number of disposal events facilitated: 1

Pounds of gear collected/number of traps collected: 6,300

Number of industry partners involved: 4

Number of species and individuals captured: 30 species, 405 individuals

2) Reported by B. Lucey, Save the Sound

Number of disposal events facilitated: 5

Pounds of gear collected/number of traps collected: 177 traps

Number of industry partners involved: 2

Number of species and individuals captured: 4 species (lobster, tautog, black sea bass, porgy); 55 individuals

3) Reported by C. Scheetz, Project Oceanology

Number of disposal events facilitated: 0

Pounds of gear collected/number of traps collected: 121 traps

Number of industry partners involved: 3

Number of species and individuals captured: 24 species, 1006 individuals (308 live; 698 dead)

Action 2.4.4: Establish partnerships to remove and recycle traps and return usable, identifiable gear to its owners.

1) Reported by J. Susarchick, The Maritime Aquarium at Norwalk

Number of partnerships established: 4 (The Maritime Aquarium, Save the Sound, Remote Ecologist, Project Oceanology, Cornell Cooperative Extension)

Number of pots returned to owners: 0

2) Reported by B. Lucey, Save the Sound

Number of partnerships established: 1

Number of pots returned to owners: 14

3) Reported by C. Scheetz, Project Oceanology

Number of partnerships established: 3

Number of pots returned to owners: 2

Action 2.4.5: Investigate available technologies for detecting gear accumulations.

Reported by J. Susarchick, The Maritime Aquarium at Norwalk

Inventory of detection technologies complete: N/A

This action is relevant to our potential future work. We have investigated the potential of sonar-assisted lobster trap retrieval and have submitted a proposal to fund future work. Part of this proposed project would compare the capture rate and efficiency of sonar-assisted collection trips with the collection trips conducted without sonar that we are currently running.

Action 2.4.7: Establish protocols for access to equipment, haulers, storage sites, disposal/recycling sites for the removal of large quantities of fishing gear, docks and derelict vessels.

Reported by B. Lucey, Save the Sound

Protocols established: Use of boom truck at Captain's Cove Seaport, flatbed trailer constructed, locked storage on-site

Action 2.4.8: Identify and disseminate the processes involved and organizations and agencies responsible for removing abandoned and derelict vessels in Long Island Sound.

Reported by B. Lucey, Save the Sound

Report compiled: removed boat on-site with Rep. Joe Gresko (Stratford), reported through local reporter on cutting vessel apart with electric tools

GOAL 3: Understand, Prevent and Mitigate Impacts of Microplastics and Microfibers

Strategy 3.1 Prevention, Education and Outreach

Action 3.1.3: Adapt existing/create new outreach products containing relevant microplastics and microfiber information, data, research, best practices, literature and/or funding resources and disseminate to the Long Island Sound marine debris community.

Reported by K. Morgan, NOAA Marine Debris Program

Number of mechanisms/forums identified: 2

Number utilized: 2

Number of outreach products and materials adapted/created: 1

Number shared: The NOAA Marine Debris program hosts these "Microplastics in the Classroom" lesson plans on their website. Access the lesson plans here:

<https://marinedebris.noaa.gov/curricula/microplastics-microfibers-research-classroom>

Action 3.1.5: Share existing or new microplastics and microfibers lesson plans that align with Next Generation Science Standards where applicable, and that have been successfully demonstrated through online platforms, in-person events, educator workshops, after-school programs and visits, summer camps, campaigns and field trips, and/or materials relevant to Long Island Sound to raise awareness of relevant microplastic and microfiber issues among P-12 students and P-12 grade educators. (Crosscuts with 1.1.13)

Reported by: C. Scheetz, Project Oceanology

Number of lesson plans and educational materials shared: 1 (microplastics lesson plan)

Number of P-12 students engaged: 1,100

Number of P-12 educators engaged: 23

Strategy 3.2 Research Assessment, Wildlife Impacts and Monitoring

Action 3.2.1: Conduct and compile reviews of scientifically sound, peer-reviewed research literature on microplastic and microfiber research relevant to Long Island Sound.

Reported by S. Shumway and Kayla Mladinich Poole, UConn DMS

Number of literature review(s) completed: 2 (1 paper)

Shumway, S. E., Mladinich, K., Blaschik, N., Holohan, B. A., & Ward, J. E. (2023). A critical assessment of microplastics in molluscan shellfish with recommendations for experimental protocols, animal husbandry, publication, and future research. *Reviews in Fisheries and Aquaculture*, <https://doi.org/10.1080/23308249.2023.2216301>

Mladinich, K., Holohan, B. A., Shumway, S. E., & Ward, J. E. (2023). The relationship between microplastics in eastern oysters (*Crassostrea virginica*) and surrounding environmental compartments in Long Island Sound. *Marine Environmental Research*, 189, 106040. <https://doi.org/10.1016/j.marenvres.2023.106040>

Action 3.2.2: Seek/share grant opportunities to address Action Plan research priorities, including research: — to study microplastics and microfibers in Long Island Sound to better understand and identify informational gaps and needs — into technologies and strategies aimed at preventing the creation of microplastics and microfibers, their transport into marine/aquatic systems, and removal from these systems once within them.

1) Reported by CT Sea Grant

Funding grants shared: 10

NOAA Planet Stewards 2022, 2023; Youth Innovation Challenge 2022; Ghost Nets Innovative Solutions 2022; National Sea Grant Marine Debris Challenge Competition 2022; National Sea Grant Marine Debris Community Action Coalitions 2022; Marine Debris Foundation (MDF) grants 2023; NOAA Marine Debris Removal Grants 2022; CT Sea Grant 2024-2026 omnibus research competition; Long Island Sound Study Research Competition

2) Reported by S. Shumway, UConn DMS

Funding grants sought/shared: 2 microplastic grants received (CT Sea Grant; EPA LISS)

Informational gaps and needed identified: Ongoing efforts

Action 3.2.4: Conduct microplastic and/or microfiber focused webinar(s) or workshop(s) to share the latest research findings relevant to Long Island Sound and make them available to the public

Reported by K. Mladinich Poole, UConn DMS

Number of webinars: 1 webinar, 4 conference talks

Presentations:

NOAA research webinar on microplastics in bivalves and proper methodology with Dr. Evan Ward (Jan 31st 2023)

Mladinich K, Holohan BA, Shumway SE and Ward JE (2023) Microplastics in oyster aquaculture. 14th Biannual Feng Symposium, Groton, CT.

Mladinich K, Holohan BA, Shumway SE and Ward JE (2023) Microplastics in oyster aquaculture. National Shellfish Association Annual Meeting, Baltimore, MD.

Mladinich K, Holohan BA, Shumway SE and Ward JE (2022) An evaluation of microplastics found in the eastern oyster (*Crassostrea virginica*) and the surrounding environment. MICRO 2022, virtual.

Mladinich K, Holohan BA, Shumway SE and Ward JE (2022) An evaluation of microplastics found in the eastern oyster (*Crassostrea virginica*) and the surrounding environment. Long Island Sound Research Conference, Bridgeport, CT.