



THE FLOW OF... TRASH FREE WATERS

ISSUE 18

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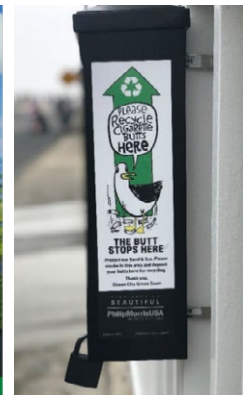
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HOW'S IT FLOWING?

10-Years and Counting for the Trash Free Waters Program!

Trash Free Waters (TFW) is happy to announce our [10-year anniversary as a program](#) at the EPA! TFW was created to support stakeholder efforts to reduce the volume of trash entering waterways around the country and to collaborate across Agency programs to increase the focus on tackling the problem of aquatic trash. Over the past ten years, the program developed over twenty technical reports and helped with over ninety place-based projects in all ten of the EPA’s regions. TFW has focused on projects that prevent the generation of waste, remove trash from waterways, educate the public on the impacts of trash in waterways and research the understanding of aquatic trash.

Going forward, the program will continue working with the EPA’s Office of Resource Conservation and Recovery to finalize the [Draft National Strategy to Prevent Plastic Pollution](#)—a requirement of the [Save Our Seas 2.0 Act](#) of 2020. This strategy will include actions across the plastic lifecycle intended to maximize impact, as well as circular economy approaches such as facilitating material reuse. Consistent with this approach, the TFW program is working with partner cities to launch citywide reusable foodware systems and is exploring other national initiatives to reduce trash generation. TFW will also help implement strategy actions related to education, research, trash capture and more. The program will continue to develop and implement trash mitigation efforts in specific locations through partnerships with the EPA’s place-based programs and other entities, and will strengthen the existing emphasis on disadvantaged communities impacted by trash in local waterways.



Photos, clockwise from top: Litter Gitter installation in Mobile Bay Watershed; recycling station for cigarette butts; cover of South Atlantic Strategy for Trash Free Waters.

The program would like to thank all of the many wonderful stakeholders we have worked with over the last ten years – so many of our successes have been because of our work with people who have the passion and drive to tackle this serious issue.

A New Path Forward on Plastic Waste – EPA’s Draft National Strategy to Prevent Plastic Pollution

Section 301 of the Save our Seas 2.0 Act mandates that the EPA develop a “Strategy for Improving Post-Consumer Materials Management and Water Management.” This Act makes it clear

that domestic stakeholders should be involved in developing and implementing the strategy.

In November 2021, the EPA held a series of feedback meetings on a detailed outline of the strategy

with academics, environmental groups, states, local governments, Tribes and industry. This feedback was used as part of the process to develop an early draft of the strategy that was reviewed (continued on p.2)

This newsletter is intended to provide the latest information to all of our Trash Free Waters (TFW) partners and friends.

The Flow...of Trash Free Waters is our opportunity to highlight recent successes, as well as shine a spotlight on news and other related items. It is produced by the U.S. Environmental Protection Agency, with support from IEc. Mention of commercial products, publications, or Web sites in this newsletter does not constitute endorsement or recommendation for use by the EPA, and shall not be used for advertising or product endorsement purposes.

HOW'S IT FLOWING?

(continued from p.1)

by other federal agencies with equities in the plastic waste issue. In Summer 2023, the EPA published the Draft National Strategy to Prevent Plastic Pollution in the Federal Register, seeking public comment.

The EPA received nearly 92,000 comments during the public comment period. The Agency is currently reviewing these comments to consider how it may modify the draft strategy prior to review by the Office of Management and Budget and the Council on Environmental Quality and eventual final release of the strategy.

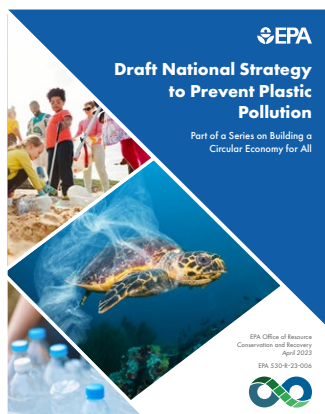
The Draft National Strategy to Prevent Plastic Pollution identifies actions EPA can implement, in collaboration with stakeholders, to eliminate the release of plastic waste into the environment by 2040 – a goal in alignment with the February 2023 United States submission to the UNEP Intergovernmental Negotiating Committee on plastic pollution.

The strategy consists of three broad objectives:

- Objective A: Reduce pollution during plastic production;
- Objective B: Improve post-use materials management; and
- Objective C: Prevent trash and micro/nanoplastics from entering waterways and remove escaped trash from the environment.

The proposed voluntary actions under each objective support a circular approach that is restorative or regenerative by design, enables resources to maintain their highest value for as long as possible and aims to eliminate waste in the management of plastic products.

The ongoing negotiations on a global plastics treaty under the auspices of the United Nations demonstrate that the governments of the world, including the United States, understand the seriousness of the plastic waste in the environment issue. The current “business-as-usual” approaches are no longer tenable given the extent and gravity of the problem. The release and implementation of the final strategy will be a critical step towards comprehensively addressing the problem of plastic pollution in the country.



Cover of the Pre-Public Comment Draft National Strategy to Prevent Plastic Pollution.

Escaped Trash Assessment Protocol App

The EPA's Trash Free Waters Program originally released the [Escaped Trash Assessment Protocol \(ETAP\)](#) in April of 2021. The quantitative survey tool provides a standard method for collecting and categorizing litter data. A mobile version of the tool was released this summer on the [Marine Debris Tracker \(MDT\) application](#), free on all smartphones. The MDT version of the tool seeks to provide an electronic format for data collection, retention and basic analysis. Data can be exported to a .csv file for further manipulation using your preferred data analysis platform. The MDT version incorporates item list customization via the creation of sublists to meet project specific needs. The MDT application platform will aid in data synthesis, allowing stakeholders to tell a more comprehensive story on the status of trash in our waterways and communities.

ETAP was designed to be applied to a broad range of site types—parks, streets, parking lots—and environmental conditions including various hydrological and climatic regimes. ETAP is a highly adaptable method for trash monitoring providing practitioners and citizen scientists with a comprehensive and rigorous method for quantifying trash loadings. The tool can also be used to assess item age and level of fouling, and analyze and compare across specific material types and categories of trash collected. This information can eventually be used to guide upstream source reduction decisions.

A Standard Operating Procedure and companion materials are being developed to help ETAP users adapt to the MDT platform (or combination of app and paper) for categorizing and analyzing collected debris.



Marine Debris Tracker app logo.

HOW'S IT FLOWING?

Updates Related to the Intergovernmental Negotiating Committee (INC) on Plastic Pollution

At the United Nations Environmental Assembly meeting in March 2022, the United States joined other countries in adopting a resolution on plastic pollution. The resolution, titled [End Plastic Pollution: Towards an International Legally Binding Instrument](#), launched a process to develop a new legally-binding instrument on plastic pollution, with the aim of concluding negotiations by 2024.

The State Department, through the Bureau of Oceans and International Environmental and Scientific Affairs, leads the negotiation process for the U.S. government toward a global agreement on plastic pollution.

The EPA is actively involved in the negotiations to develop this new global instrument.

The Agency is also working closely with federal and international partners to provide technical and policy expertise on the prevention and management of plastic pollution.

In June 2023, at the conclusion of the [second session of the intergovernmental negotiating committee](#) (INC-2) in Paris, France, the Chair of the INC was tasked with preparing a “[zero draft text](#)” (i.e., a draft to start work from) of the instrument to support negotiations at INC-3. [INC-3](#) is scheduled to take place from November 13-19 in Nairobi, Kenya. The U.S. Government is actively preparing for its involvement in this session.



Photo Credit: United Nations Environmental Programme

For more information on the INC, please visit the [INC Secretariat's website](#) or [EPA's International Actions to Address Marine Litter website](#).

REGIONAL PROJECT SUCCESSES

Reusable Foodware Program Reports Progress in Four U.S. Cities

In the [January 2023 Flow](#), TFW announced a partnership with the NGO [Perpetual](#) to help bring an immersive reuse experience to four select cities. Since then, four partner cities—Galveston, Texas; Ann Arbor, Michigan; Hilo, Hawaii; and Savannah, Georgia—were chosen to develop and launch citywide reusable foodware systems. In each city, TFW and Perpetual partner with local nonprofits to facilitate a community-driven design process to ensure that the resulting reuse program effectively and equitably serves each community. The data-driven design process also leverages a parametric Life Cycle Assessment model developed by researchers at the University of Michigan. The model is customized for each city and used to assess the environmental impacts of system design choices during the design process.

While the design principles and process are the same in each community, the unique characteristics, culture, geography, existing community assets and context mean that

the resulting system designs are expected to be distinct, but still interoperable and aligned with emerging reuse standards.

The Circularity Assessment Protocol (CAP), conducted by Dr. Jenna Jambeck's [Circularity Informatics Lab](#) team, is one of the first pieces of research completed in each city. A CAP was conducted in Galveston in December 2022, in Ann Arbor in May 2023, in Hilo in August 2023, and is planned for Savannah in November 2023. A CAP will be conducted after implementation of the reuse system in each city to provide important “before and after” data.

In Galveston, TFW and Perpetual have partnered with [Turtle Island Restoration Network](#), a local environmental nonprofit with deep roots in the community. The groups held public design workshops in March to gather input from inhabitants and visitors, and also met with local nonprofits and restaurant owners. With the engagement and support of Galveston's mayor, city



Photo Credit: Perpetual

Display from Galveston reusable foodware workshop.

council, Park Board and city staff, the system design for Galveston is nearly final. Next steps include establishing the governing entity for the reuse system and putting out the Request for Proposal for needed elements of the reuse system, including a backend technology platform, reusable cups with tracking, washing and logistics service providers, and both tech-enabled and non-tech enabled secure reuse collection bins.

(continued on p.4)

REGIONAL PROJECT SUCCESSES

(continued from p.3)

In Ann Arbor, the reuse coalition includes the [City of Ann Arbor, ZeroWaste, Recycle Ann Arbor](#) and the [University of Michigan](#), together with Perpetual. Public design workshops were held in-person in May, and additional virtual workshops for both the general public and for local foodservice business owners were held over the summer. This fall, Recycle Ann Arbor is working with existing equipment and technology partners to test the viability of several models for the co-collection of reusable items with recyclables. Community interest in reuse has surged since a key compost service provider announced they will cease accepting most compostable packaging, effective January 1, 2024. The reuse coalition is incorporating all of the input and data gathered into a system design requirements document, which will be further shared with a range of community stakeholders.

In Hilo, [Zero Waste Hawaii Island](#) is leading the reuse work with support from TFW, Perpetual and [Hawaii County](#). Community design workshops were held the last week of October. At the workshops, TFW and Perpetual solicited input from community members on how a reuse program could work best for them and for the whole Hilo community, with participants using stickers or dried beans to vote for different options or respond to questions. The local team had previously met with many community members and groups and held a workshop for Native Hawaiians and Pacific Islanders in August to understand how a reuse system could work best for them.

In September, Hawaii County was awarded an EPA Solid Waste Infrastructure for Recycling grant for \$1.5 million to acquire infrastructure for the reusable foodware system. The University of Hawai'i Sea Grant College Program also received a notice of an award in September from the [Prevention Grant: Environmental Justice Through Safer and More Sustainable Products Request for Applications](#). The \$633,727 in funding from this grant source will provide



Photos from top: Ann Arbor stakeholder meeting; Hilo, Hawaii reusable foodware stakeholder workshop.

technical assistance to businesses that make or serve food in Hilo to establish a safe, affordable, community-wide reusable foodware program. Technical assistance will include on-site assessments; provision of written materials and online training; and help in developing collection, washing and logistics infrastructure to support the circulation of reusable items through a fee-for-service model.

In Savannah, which is sequenced fourth in the staggered design process, TFW and Perpetual are partnering with the [Savannah College of Art & Design's](#) "Design for Good" class this fall to support the first stages of the design process, including on-the-ground research and data gathering. A coalition of local nonprofits focused on environmental

justice, economic development and sustainable business are coalescing around the reuse system design process, and both the [City of Savannah](#) and [Chatham County](#) are engaging to support this process.

No single restaurant or foodservice establishment can create a citywide reuse program on their own. While large-scale multi-stakeholder collaboration can be a challenge, it is essential for creating a reusable foodware system that can succeed for businesses, for community members and for cities. Each of these cities is on a path to provide a model and a roadmap for other cities to follow as reuse systems come to scale across the U.S. and the world. TFW and Perpetual will share lessons learned from these models.

REGIONAL PROJECT SUCCESSES

2023 – 2028 Puerto Rico Strategic Plan to Reduce Aquatic Debris

The NOAA Marine Debris Program and TFW collaborated with stakeholders in Puerto Rico on the development of the [2023 - 2028 Puerto Rico Strategic Plan to Reduce Aquatic Debris](#), released in October 2023. With the vision of reducing debris in aquatic environments in Puerto Rico, the Plan will help to guide the implementation of key actions by partners involved in aquatic debris prevention, research and removal.

Aquatic debris comes from many sources and takes many shapes and sizes. From microplastics and microfibers to oversized abandoned barges, this debris is detrimental to Puerto Rico’s ecology, economy and public health. Despite trying to contain the trash through waste management systems, aquatic debris may end up polluting water resources because of littering, unintentional spills or other causes. These challenges have generated widespread interest and commitment from partners across different sectors to create a plan that can strategically address aquatic debris in Puerto Rico. The Plan will enhance cross-sectoral coordination, public awareness and behavior change.

Why Do We Need a Plan?

The Plan is a tool that can promote active and measurable multisectoral coordination and wider collaboration. It will also help to frame the challenges associated with resource limitations and identify effective activities, projects or initiatives.

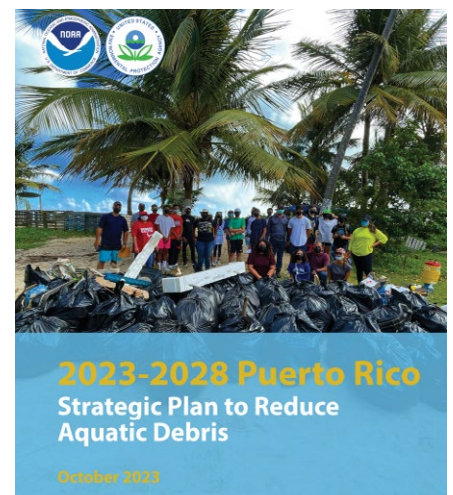
Through the implementation of this plan, the following results are expected:

- Knowledge of impacts, causes and pathways of aquatic trash and of the effectiveness of solutions;
- Strong education and outreach efforts focused on anti-littering, behavior change and source reduction;



Volunteers pick up trash in Puerto Rico.

- Better understanding of the quantity, hotspots and causes of illegal dumpsites;
- Strong collaboration across academia, municipalities, nongovernmental organizations and the private sector to stop illegal dumping and to develop region-specific anti-littering solutions;
- Efforts to support enforcement of the 2015 ban on plastic bags and the 2022 ban on single use plastic in restaurants and retail;
- Awareness among the fishing community on the dangers of derelict fishing gear and the proper techniques for removing it; and
- Incorporation of best management practices in all removal efforts, from beach cleanups to removal of abandoned fishing gear and vessels.



Cover of the 2023-2028 Puerto Rico Strategic Plan to Reduce Aquatic Debris.

During the implementation of this Plan, partners will develop, track and report on the progress of specific actions. The actions will be updated annually, and progress towards each action will be reviewed twice a year with the contributors.

REGIONAL PROJECT SUCCESSES

Cleaning Up Hurricane Ian Waterway Debris in Southwest Florida

Since Hurricane Ian hit Florida in September 2022, divers have noticed increased presence of debris and lost or discarded fishing gear in and around Southwest Florida’s coastal waters. Traps are lost during storm events, moved around by the swell and waves and some end up entangled in artificial reefs. Rope poses an entanglement risk to marine creatures, birds and divers; traps continue capturing and killing marine creatures until they are removed.

The [Coastal and Heartland National Estuary Partnership \(CHNEP\)](#)—part of the [EPAs National Estuary Program](#)—has a mission to protect Central and Southwest Florida’s estuaries and their watersheds. CHNEP is funding community non-profit organizations to help clean up waterway debris from Hurricane Ian. Removing hurricane and other debris is part of the [CHNEP Comprehensive Conservation and Management Plan](#) for protecting and restoring the region’s waterways.

The [Suncoast Reef Rovers](#) received a \$3,000 [Conservation Grant](#) from CHNEP for removal of lost and discarded fishing gear and trash from Venice’s reefs. Following multiple planning meetings, five volunteer underwater clean-ups were conducted in offshore areas in Sarasota County between May - August 2023. To further minimize the impact to the environment, the Suncoast Reef Rovers received authorization from the Florida Fish and Wildlife Conservation Commis-

sion (FWC) to send all crab traps still in reusable condition to the Venice PD/Sarasota County/FWC facility—instead of sending crab traps to a landfill facility—to allow traps to be returned to their owners. All serviceable anchors and chains recovered were provided to the Venice Police Department for securing drifting vessels during storms. The repurposing of recovered assets by Venice Police Department is another example of the positive impact this grant has on the community. In total, volunteers removed 7,702 pounds of trash during these clean-ups with the majority being derelict crab traps, followed by anchors and chains, cast nets, vessel components and other types of typical marine debris.

In Charlotte County, CHNEP funded [Keep Charlotte Beautiful](#) \$4,400 dollars towards several waterway clean-up there. The Charlotte Harbor West Wall Cleanup was the first offshore cleanup. Many organizations came together including [Florida Department of Environmental Protection Aquatic Preserves, Florida Sea Grant](#), FWC, CHNEP, Charlotte County and Keep Charlotte Beautiful. The clean-up resulted in removal of 2,013 pounds of trash—mostly Styrofoam and some derelict fishing gear—from the mangroves.

A student cleanup in June provided an opportunity to educate youth on the issue of aquatic trash. The [Great American Cleanup](#) wrap up was in June, with 58 people bringing



Clockwise from top: Volunteers from Rotunda West taking part in International Coastal Clean-up; underwater marine debris cleanup event; derelict crab traps are collected and either properly disposed of or repurposed.

in 600 pounds of debris. The official kick off day for the [International Coastal Cleanup](#) was a success, with 151 volunteers working in eight locations from [Charlotte Harbor Environmental Center](#) at Alligator Creek to Bay Heights Park in Englewood collecting 850 pounds of debris. Overall, the top type of debris collected was construction materials, followed by lines, nets, traps and ropes.

In Lee County, CHNEP provided the [Healthy Earth](#) organization \$4,999 in funds to conduct three underwater clean-ups in the Pine Island Sound area. Volunteers worked over 120 hours to collect a total of 11,678 pounds of underwater

debris, including ten derelict crab traps, one abandoned pinfish trap, seven anchors and over 300 pounds of rope and chains, amongst other items. Some items were found trapping or entangling marine life, thus removing the debris had an immediate effect of improving marine life habitat.

Dedicated non-profits and devoted volunteers literally dove into cleaning up from Hurricane Ian and other debris in area waterways with the help of CHNEP’s funding support. While more clean-ups are needed, these groups collectively removed over 12,300 pounds of trash—creating cleaner safer waters for both people and marine life.

Photo Credits (clockwise from top): Keep Charlotte Beautiful, Healthy Earth Organization, Suncoast Reef Rovers.

REGIONAL PROJECT SUCCESSES

The Chesapeake Bay's Plastic Pollution Action Team: A Multi-stakeholder Group Collaborating on Plastic Pollution

Formed in 2020, the Chesapeake Bay Program Plastic Pollution Action Team (PPAT) works to address the rising concerns that plastic pollution may be impacting the Chesapeake Bay and its resources. The PPAT seeks to reduce the presence and impacts of plastic by overseeing research that helps to determine the effects plastic pollution has on the Chesapeake Bay ecosystem. Activities supported by the PPAT include:

- Provide oversight on the development of ecological risk assessments of microplastics;
- Use the results of ecological risk assessments to develop and update a strategy that identifies and prioritizes gaps in information and guide future research;
- Share results to Chesapeake Bay leadership and stakeholders; and
- Monitor policy advances that could potentially impact, advance or complement this work to inform the science strategy and identify potential policy or management options for source reduction strategies.

In 2021, the PPAT provided support to several EPA-funded projects including:

- Uniform Size Classification and Concentration Unit Terminology Guide;
- Preliminary Conceptual Ecological Risk Assessment Model for Microplastics on Juvenile Striped Bass in the Potomac River, a major Chesapeake Bay tributary; and
- Microplastics Monitoring and Science Strategy for the Chesapeake Bay and its Watershed.

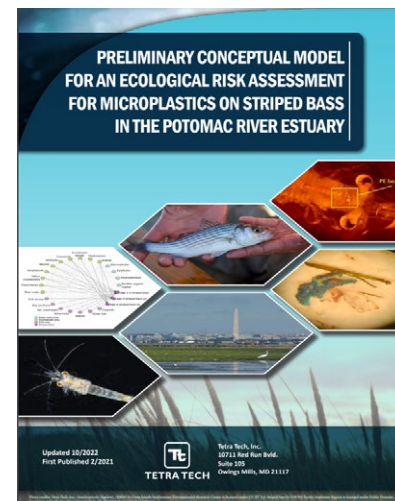


Chesapeake Bay Program logo.

Conclusions were:

- Microplastics are ubiquitous in both tidal and non-tidal waters, and the consensus is that plastic pollution is widespread but unquantified;
- There is no systematic organized effort in researching plastic pollution;
- The ecological risk assessments demonstrated evidence that microplastics could impact valuable resources like striped bass, and more research into diets and trophic transfer are needed to accurately estimate those effects; and
- Implementing the science and monitoring strategy would be an important step to better understanding plastic pollution in the watershed.

In 2022, the PPAT provided oversight for updating the ecological risk assessments focused on specific taxa and considering plankton regime shifts, incorporating new



Risk Assessment document cover.

striped bass diet studies and focusing on specific prey items such as mysids, amphipods and bay anchovy.

The PPAT is continuing to provide technical oversight on the emerging issue of plastic pollution in the watershed. Currently, the PPAT is supporting three projects in 2023-2024:

- Develop a Monitoring and Analytical Reference Guide and Monitoring Framework for Plastic Pollution in the Chesapeake Bay Watershed;
- Assessing Biological Effects of Plastic Pollution Exposure on Young of Year Striped Bass (*Morone saxatilis*) in the Chesapeake Bay and its Tributaries; and
- Piloting Microplastics Source Tracking in the Chesapeake Bay Watershed.

For copies of PPAT publications and more information on the Plastic Pollution Action Team, please visit <https://www.chesapeakebay.net/who/group/plastic-pollution-action-team>.

REGIONAL PROJECT SUCCESSES

Pala Band of Mission Indians Reusable Foodservice Ware Pilot



From left: New Tribal lunch program dishwasher; before and after photos; outreach material.

The [Pala Band of Mission Indians](#) (located in Pala, California) is implementing Tribal zero-waste goals by piloting two single-use plastic reduction projects and conducting outreach and education to increase staff and the Tribal community's awareness of plastic overuse. This effort builds on previous recycling and waste reduction efforts by the Tribe.

Building Relationships With the Tribe's Senior Lunch Program Over Food

The Pala Environmental Department (PED) is working with the Tribe's senior lunch program to switch from single-use foodservice ware to reusables. Starting in fall 2022, Department staff began working closely with the lunch program to choose an appropriate dishwasher, reusable plates, and silverware and plan long-term systems for maintaining the reusables program. This new system is also utilized for all events hosted in the Pala Administration Building's meeting room spaces.

The program has been up and running since May 2023, and early reactions have been very favorable. The Tribe's kitchen staff are happier because of cost savings—they no longer have to purchase huge amounts of single-use plastics. Tribal

seniors who eat lunch onsite have been mostly on board with the change. The most resistance was by staff who now must carry dishes upstairs to the breakroom instead of using a sealed single use disposable clamshell. Education and outreach for this group is ongoing.

Additionally, the [Pala Environmental Department](#) is piloting removal of single-use plastics from the employee breakroom and using the same reusable plates/silverware purchased for the lunch pilot program. Staff can wash the items by hand in the employee breakroom, or place items on a cart for kitchen staff to bring to the Pala Kitchen once a day to go through the industrial dishwasher. The Department started this portion of the pilot in late summer 2023 and education is ongoing.

Tasty Water

Pala Environmental Department staff identified the staff breakroom as a good opportunity for reducing single-use plastics. The Tribe is replacing disposable water bottles with three different water bottle filling stations around the Pala Administration Building in an employee breakroom and two public hallways. The pilot strives to reduce single-use plastics by Tribal

employees, Tribal members who are in the building, and members of the public who occasionally rent out the larger meeting rooms. There were a few siting issues initially due to needing access to a water line, water drain, and electricity—seemingly reasonable requirements that turned out to be more difficult to deliver on than originally believed. This effort is just getting underway and the Department will have more information to share in 2024.

Getting the Word Out

An important part of this project is conducting community based social marketing to garner staff and community buy-in for the reuse program. The Pala Environmental Department successfully used this technique in the past to develop Tribal-specific recycling outreach as part of another pilot with the EPA. Conducting surveys to properly identify any barriers before PED started the pilot helped steer away from unproductive outreach efforts and tailor the message to both Pala Tribal staff and The Tribal community. The Department will also be outlining the steps taken and the questions asked when developing this tool in the hopes that it can be used by other Tribes to conduct similar outreach campaigns.

Photo Credits (all photos): Pala Band of Mission Indians

REGIONAL PROJECT SUCCESSES

Trash Free Waters Art Contest Draws Creative Ways to Reduce Pollution

Every day, litter and debris wash into the Delaware River and its tributaries. In addition to being an eyesore, this pollution hinders recreation, hurts fish and wildlife, and affects the overall water quality in the Delaware River Basin.

Keeping our waterways trash-free is a priority for Partnership for the Delaware Estuary given that more than 13 million people rely upon the basin for clean, safe drinking water. In 2023, the Partnership its Trash Free Waters Art Contest to raise awareness about the importance of keeping our waterways clear.

To do this, the Partnership called upon professional and amateur artists from Pennsylvania, New Jersey and Delaware to submit creative, original pieces of art that illustrated the theme of reducing trash in local waterways. Submissions could be in any medium but had to be created on a provided 12-inch-by-9-inch canvas.

The Partnership received 67 entries produced in various mediums, from oil and watercolor paints to recycled items, knitted fabric and mixed media.

"It was fascinating to see how artists interpreted the theme," said Chesa Blom, the Partnership's Philadelphia Community Coordinator. "Some imagined what a Trash Free Waters habitat could be while others used actual recycled materials to highlight the problem they cause in the environment."

The Independence Seaport Museum in Philadelphia displayed the canvases during the Delaware River Festival on September 9. Festival attendees were invited to view the artwork and more than 600 people voted for their top three favorites. Congratulations to the winning artists and honorable mentions:

1st Place: Fishing for Trash Free Waters by Helen Munnelly

2nd Place: Discarded Line by Jennifer Boileau

3rd Place: Sunrise on the Delaware by Stephanie Janice

Honorable Mentions included pieces by Paula Brown, Fred Brown and Dante del Vecchio.

Winning artwork will be used next year in an advertising campaign to promote proper trash disposal and cleaner waterways.

Partnership for the Delaware Estuary received financial support from the EPA under Assistance Agreements funded by the 2021 Bipartisan Infrastructure Law and the National Estuary Program (section 320 of the Clean Water Act).

This project was also financed in part by the Philadelphia Water Department and a Federal Coastal Zone Management Grant provided by the Pennsylvania Department of Environmental Protection with funds provided by the National Oceanic and Atmospheric Administration.



From top: Photos of the first, second, and third-place art pieces.

NEW AND FORTHCOMING RESOURCES & PUBLICATIONS

Report on Microfiber Pollution

Scientists have estimated that over 8 million tons of plastic enter our oceans each year. The most prevalent type of microplastic found in the environment is [microfibers](#). Clothing is a major source of microfibers, the majority of which is made when plastic-based materials like polyester, rayon, nylon and acrylics shed when washed.

Section 132 of the Save our Seas 2.0 Act required federal agencies to complete reports on an array of marine debris and waste management topics, and directed the [Interagency Marine Debris Coordinating Committee](#) to develop a report to Congress focused on microfibers. The Coordinating Committee is a multi-agency body established in 2006 and made up of different federal agencies responsible for coordinating the Federal Government's efforts to address marine debris. TFW and NOAA co-lead drafting the report to Congress on behalf of the Coordinating Committee.

Consistent with the Section 132 requirements, the draft report to Congress includes: (1) a definition of microfibers; (2) an assessment of the sources, prevalence and causes of microfiber pollution; (3) a recommendation for a standardized methodology to measure and estimate the prevalence of microfiber pollution; (4) recommendations for reducing microfiber pollution; and (5) a Federal Plan. The Federal Plan identifies specific actions that the twelve participating agencies could take to address different aspects of microfiber pollution under their own legal authorities, individually and in partnership with stakeholders, during the five-year period after report finalization.

The initial [draft report to Congress](#) was published in the Federal Register for public comment from September 15 until October 17, 2022. NOAA and the EPA reviewed the public comments and revised the draft report. This revised draft document is currently in management review at the



Laundry prepared to enter a washing machine.

agencies ahead of being sent to the Office of Management and Budget. Once all reviews are completed, the report will be sent to Congress and then shared publicly (anticipated to occur Spring 2024).

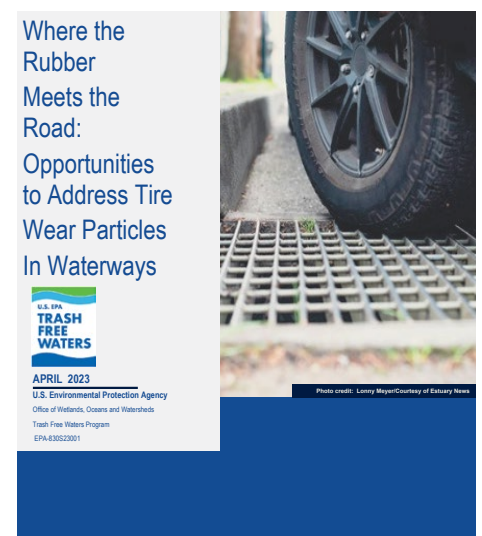
TFW Tire Particles Summary Paper: Where the Rubber Meets the Road

Tire wear particles are small, plastic particles primarily generated by abrasion with pavement. [Studies](#) have shown that stormwater runoff can transport tire particles from roadways and to waterbodies in which various aquatic organisms reside. Existing research has demonstrated that tire wear particles, and their associated contaminants, can harm aquatic life. For example, a [study in 2021](#) found that 6PPD quinone, a tire rubber-derived chemical, induces acute mortality in coho salmon. However, the impacts of tire wear particles on human health via ingestion or through other exposure pathways is unknown.

The emergence of tire wear particles as a significant category of microplastics found in waterways prompted TFW to convene stakeholders in two roundtable discussions in Spring 2022 to facilitate shared learning about the challenges of addressing tire wear particle pollution. The workshop focused on

tire wear particles generated by vehicles driving on roadways and did not address tire particle emissions from recycled tire crumb rubber used in applications such as sports fields or playgrounds. Workshop participants came from a range of sectors, including academia, the tire industry, municipalities and wastewater utilities.

Each roundtable discussion had the same format, which was structured to facilitate sharing of information without committing the participant to a specific course of action. Participants discussed a set of questions centered on better understanding the barriers and opportunities to effectively manage tire wear particles that pollute waterways. TFW developed a summary paper, [Where the Rubber Meets the Road: Opportunities to Address Tire Wear Particles in Waterways](#), with the results of these roundtable discussions. TFW has been actively sharing the report and its findings to inform the public



Cover of Where the Rubber Meets the Road.

and broaden the community engaged in addressing tire wear particle pollution. TFW is considering further actions to help implement actions in the paper.

NEW AND FORTHCOMING RESOURCES & PUBLICATIONS

Recycled Plastics in Infrastructure: Current Practices, Understanding and Opportunities

Section 303 of the Save Our Seas 2.0 Act of 2020 mandated that the EPA and the Department of Transportation enter into an arrangement with the National Academies of Science, Engineering, and Medicine to create a [report on the uses of plastics waste in infrastructure](#). The final published report looks at research and the current state of use of recycled plastics in both transportation and non-transportation infrastructure.

The report shows that, while there are opportunities for expanding the use of recycled plastics in infrastructure, a lack of data makes it unclear that use in infrastructure is better environmentally when compared to plastics reuse and recycling options for other purposes. The report contributors find that the recycled plastic option that creates the greatest benefit is contingent on the goal to be achieved (for example, reducing plastic waste in waterways to the greatest degree possible versus reducing greenhouse gas emissions as much as possible).

The report shows that producers of some infrastructure products—including asphalt pavement mixes, drainage pipes and railroad ties—are interested in using recycled plastics. However, currently only drainage pipes are a source of significant demand. The report identified pavements as a significant opportunity for the use of recycled plastics; composite utility poles and highway sound barriers offer other high potential opportunities.

Barriers to expanded use of recycled plastics in infrastructure include a lack of understanding of recycled plastics as a potential use option, uncertainties over formulation and methods of use, lack of data with respect to potential environmental impacts (such as microplastic emissions) and long-term performance of infrastructure that includes recycled plastics as a component.

The report recommends the EPA should track and model the supply of recycled plastics (categorizing by quality and polymer type) and the demand generated

for recycled plastics by type of use. The report also calls on the EPA to identify policies and regulations to support plastics recycling and take steps to encourage more collaboration among plastics manufacturers, suppliers, recyclers and industrial users. An additional recommendation is that the EPA promote interagency coordination and work with the Department of Transportation, the Department of Energy, the National Science Foundation, the National Institute of Standards and Technology and the U.S. Army Corps of Engineers to consider how each agency can apply its research and expertise more effectively to plastic waste recycling and reuse.

Policies to increase the supply of high-quality recycled plastics that can be used in infrastructure is a critical need. Such policies would include state requirements for plastic recycling programs, promulgating extended producer responsibility laws and providing funding from the federal government for research into new products and materials design.

IN THE NEWS

Recent Additions to the TFW Webinar Series

TFW has added two webinars to the TFW webinar series since our last issue of the Flow in January. In February, TFW hosted [Extended Producer Responsibility - The Corporate Contribution to Keeping U.S. Waterways Clean](#). The webinar included speakers from [Product Stewardship Institute](#), [Maine Senate District 7](#), and [As You Sow](#). Speakers discussed the opportunities and barriers to implementing Extended Producer Responsibility as part of the solution space for the trash-in-waterways problem. Extended Producer Responsibility is a policy approach that holds producers responsible for the environmen-

tal impact of their products. The panel gave context and examples of such policies at national, state and corporate levels.

The second webinar, [The Voyage of 5 Gyres](#), was hosted in June. This more intimate and personal webinar consisted of a conversation with Dr. Marcus Eriksen and Anna Cummins, co-founders of the [5Gyres Institute](#). The co-founders are experts on and advocates for the elimination of plastic pollution. Marcus and Anna shared their personal story as a couple, how their personal partnership has impacted their work, and the adventures they have experienced as advocates for a healthier



5Gyres team.

world. They also spoke about their vision for how a cleaner planet can be created for future generations.

Photo Credit: 5Gyres

IN THE NEWS

Biden-Harris Administration Invests More than \$100 Million in Recycling Infrastructure Projects Through Investing in America Agenda

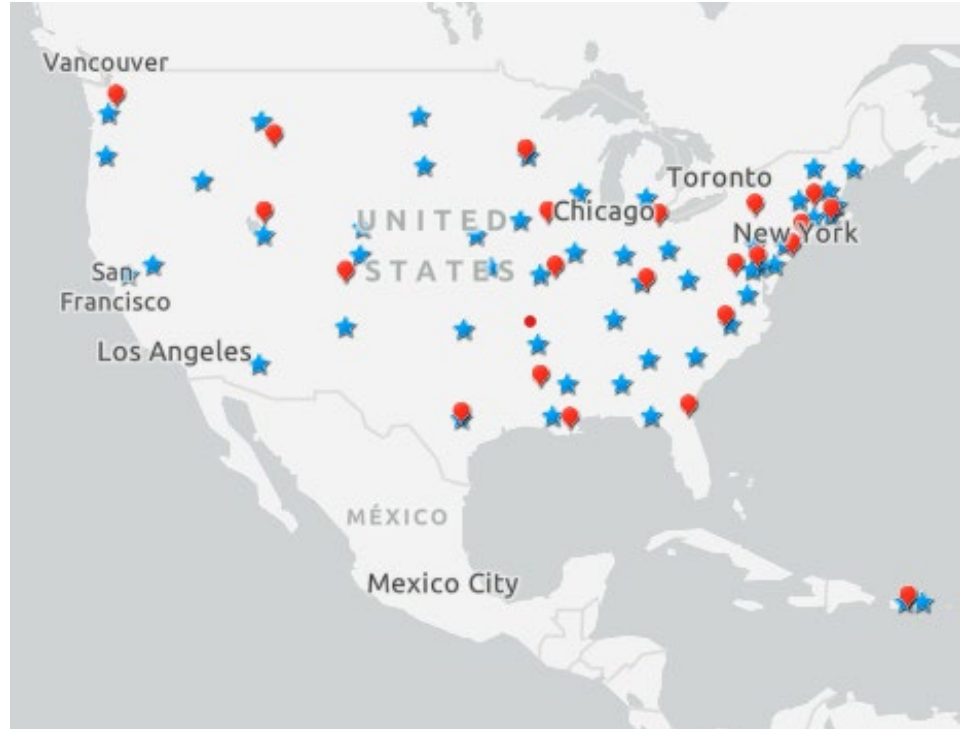
In mid-September, the EPA announced more than [\\$100 million to expand recycling infrastructure and waste management systems across the country](#), representing the EPA's largest recycling investment in 30 years.

The EPA selected 25 communities to receive grants totaling more than \$73 million under the newly created Solid Waste Infrastructure for Recycling [funding opportunity](#). In addition, the Agency is making available approximately [\\$32 million for states and territories](#) to improve solid waste management planning, data collection and implementation of plans.

The EPA's Solid Waste Infrastructure for Recycling Grant Program is also advancing the [Justice40 Initiative](#), which aims to ensure that 40 percent of the overall benefits of certain federal investments flow to disadvantaged communities that are marginalized, underserved and overburdened by pollution. Approximately \$56 million—or 76 percent—of the total funding for communities will go toward projects that benefit disadvantaged communities.

Solid Waste Infrastructure for Recycling Grants for Communities

The recycling grants for communities, ranging from \$500,000 to \$4 million per grant, will support improvements to waste management systems across the country. Selected projects include: purchasing new fleets of recycling collection vehicles and bins to provide curbside recycling services for communities currently lacking access; upgrades to material recovery facilities to reduce contamination; enhancements to composting and organics programs and infrastructure; and construction of various types of facilities that improve recycling, composting and reuse infrastructure for materials such as plastics and food waste.



Map of Recycling Grant Selectees and Recipients.

Solid Waste Infrastructure for Recycling Grants for States and Territories

The recycling grants for states and territories will provide funding to all 56 states, territories, and the District of Columbia via grants ranging from \$360,000 to \$750,000; with the highest grant amounts supporting those states and territories that need it the most. These grants represent important steps toward achieving the [EPA's National Recycling Goal](#) and [Food Loss and Waste Reduction Goal](#). Funded activities include improving post-consumer materials management programs through developing or updating solid waste management plans and strengthening data collection efforts.

The announcement for states, territories and communities is the first round of

funding from this new grant program. In the coming months, the EPA will announce the selected recipients of the recycling grants for Tribes and intertribal consortia, as well as the recipients of the EPA's new [Recycling Education and Outreach](#) grant program.

The Bipartisan Infrastructure Law provides \$275 million total from fiscal year 2022 to fiscal year 2026 for grants authorized under the Save Our Seas 2.0 Act—the largest investment in recycling in 30 years. The recycling grants are supplemented with additional funding provided through the EPA's annual appropriations.

For details about the Solid Waste Infrastructure for Recycling Grant Program selectees and other Bipartisan Infrastructure Law-related funding opportunities, visit the [EPA recycling grants webpage](#).

IN THE NEWS

Break Free from Plastic Pollution Act

On October 25, Senator Jeff Merkley (OR) and Representative Jared Huffman (CA) reintroduced the [Break Free from Plastic Pollution Act](#) (of 2023). Although the Break Free from Plastic Pollution Act was initially introduced in 2021, Congress failed to pass the bill. When the bill was reintroduced on October 25, Senator Merkley claimed it was a far more comprehensive plan to address plastic pollution than Congress has seen in the past.

The bill would establish extended producer responsibility rules for beverage containers and packaging. Source reduction would be a focus, with a target of no more than 50 percent plastic content in single use products by 2050. Certain toxic substances used in plastics would be prohibited and certain items, such as plastic bags, would be banned altogether at the national level. The bill introduces strict limits on chemical "recycling." The bill would also create a competitive grant program for reuse and refill projects.

Plastic Pellet Free Waters Act

Senators Dick Durbin (IL), Jeff Merkley (OR) and Ben Cardin (MD) re-introduced the [Plastic Pellet Free Waters Act](#) in July that would require the EPA to prohibit the discharge of plastic pellets and other pre-production plastic into waterways from facilities and sources that make, use, package or transport pellets. The bill's provisions—which would be the first law to regulate plastic pellets—would be incorporated into permits issued by the EPA and state-delegated programs for wastewater, stormwater and other sources.



Pre-production plastic pellets.

Photo Credit: Caroline Seidel, Plastics News

Marine Debris Foundation

When a photograph of a sea turtle with a plastic straw lodged in its nostril went viral, this unfortunate creature inadvertently became a "poster child" for marine debris and, in so doing, raised the profile of this ubiquitous problem.

Marine debris is one of the most widespread pollution challenges facing our planet. Marine debris includes plastics—from drinking straws to the microscopic particles that marine life and humans unknowingly consume—as well as metals, rubber, paper, textiles, derelict fishing gear and vessels, and other lost and discarded items.

To address this growing issue, Congress enacted the Save Our Seas 2.0 Act which, among other objectives, called for the establishment of a new nonprofit organization to fill the gaps in federal funding for marine debris efforts. The [Marine Debris Foundation](#) (MDF) was created as a public-private partnership to enhance NOAA's Marine Debris Program. The Foundation raises funds from individuals, foundations, corporations and other entities to support local, state, national and international initiatives to reduce the amount of debris entering our waters. It specifically uses these funds to invest in research and development of technologies to mitigate the impact of marine debris; support cleanup efforts; and advocate for

policies that advance this work. The Foundation was launched through a federal grant, with the goal of creating the infrastructure necessary to raise significant funding from the private sector moving forward.

Appointed by the Under Secretary of Commerce, MDF's inaugural Board of Directors comprises an impressive, diverse collective of leaders and subject matter experts from the government, industry, and academic sectors. Ginny Eckert, PhD, serves as MDF's Board Chair. Dr. Eckert is Director of Alaska Sea Grant and faculty at University of Alaska. The organization recently hired its first Executive Director, Susan Sherman, who will work closely with MDF's board and NOAA's Marine Debris Program to build out the organization and maximize its impact. Ms. Sherman has held numerous leadership positions in the environmental sector, including as CEO of a nonprofit partner organization to the National Park Service.

The Marine Debris Foundation issued its first request for proposals in summer 2023 and received over 500 applications from NGOs and community groups across the U.S. and around the world. After scrupulous vetting of the applications, MDF's first round of grants will be issued in late fall/early winter 2023.

IN THE NEWS

OECD Environmental Performance Review of the U.S.

The EPA represents the U.S. government as the delegate to the Organization for Economic Cooperation and Development's (OECD) Environmental Policy Committee. The OECD, a consensus-based organization of governments from 38 countries, is the premier international organization for economic based policy analysis and modeling. Through the OECD, members analyze common problems, identify best practices and coordinate national responses to address international challenges.

One of the roles of the Environmental Policy Committee is conducting Environmental Performance Reviews of the policies of OECD member countries and those seeking to join the OECD. These data driven assessments help facilitate peer learning and encourage government accountability for pursuit of environmental goals. OECD reviews use economic and environmental data to provide country-specific recommendations to improve environmental performance on both an individual and community scale.

In 2023—for the first time in over 15 years—the [OECD conducted the third Environmental Performance Review of the United States](#).

The U.S. Environmental Performance Review is focused on U.S. approaches to address marine litter, including plastics, and examines other high priority issues such as environmental justice and implementation of the Bipartisan Infrastructure Law and the Inflation Reduction Act. The final Environmental Performance Review report was released to the public and press on June 22, 2023, at the OECD's Washington Center.

The report highlights progress in addressing many environmental pressures that the U.S. faces as a nation with such a high gross domestic product per capita. Since the last assessment, emissions of greenhouse gases, air pollutants, water abstractions and



Photo Credits (from top): OECD; Megan Barnhart, US EPA

Photos from top: OECD Environmental Performance Review public release event; OECD review team field visit.

domestic material consumption have improved. However, the report also provides recommendations for further efforts needed to ensure achievement of net-zero greenhouse gas emissions by 2050. The U.S. is one of the largest contributors to marine litter across the globe, in part because of the high consumption levels; OECD provided 30 recommendations for the U.S. to improve its environmental behaviors including a strong focus on marine litter.

Rewarding Efforts to Decrease Unrecycled Contaminants in Ecosystems (REDUCE) Act

In September, Senator Sheldon Whitehouse (RI) and Congressman Lloyd Doggett (TX) reintroduced the [Rewarding Efforts to Decrease Unrecycled Contaminants in Ecosystems \(REDUCE\) Act](#), which would encourage corporations to use recycled plastic by enacting a virgin plastic tax.

One reason corporations often utilize more virgin plastics than recycled plastics is because of the cost advantage of the former. The REDUCE Act would financially level the playing field by

imposing an excise tax on virgin plastic resin. The revenue collected from this tax would go towards a Plastic Waste Reduction Fund. Money from this fund would be available to make improvements to recycling infrastructure; carry out marine debris reduction, detection, monitoring and cleanup activities; and address environmental justice and pollution impacts from the production of plastic. Exemptions would be available for certain products and small businesses.

Join the Trash Free Waters
Email List

Join the TFW contact list to receive the *Flow* newsletter, the *Rapids* monthly email blast, and TFW webinar announcements in your inbox! [Sign up today!](#)