

The Rapids: US EPA's Trash Free Waters Monthly Update August 2020

<https://www.epa.gov/trash-free-waters>

Introduction

Happy Monday, everyone!

We hope you enjoy reading this month's US EPA Trash Free Waters monthly Rapids email. Below, you'll find a slew of information and opportunities related to our cause – keeping trash out of our waterways.

The TFW team hosted the third webinar in our new webinar series on July 9th, bringing in over 200 participants. The event, “The Current State and Uncertain Future of Local Policies on Single-Use Plastics in the U.S.” featured subject matter experts from local and state government and the Surfrider Foundation. Panelists discussed the challenges of reducing plastic waste at the state and local level, including the ways in which public health concerns may factor into decision-making around single-use plastics. If you were not able to join or want to share the webinar with others, you can access this and all other webinar recordings on our [TFW webinar archive](#).

In other great news, over \$2 million in Great Lakes Restoration Initiative (GLRI) Trash Free Waters grant projects have been announced. This grant program aims to remove trash from local marine and freshwater environments to ensure the Great Lakes watershed continues to provide habitat for wildlife and drinking water and recreation for all Americans. Read more about it below!

Please continue to share any upcoming events with Layne Marshall (marshall.layne@epa.gov) so that the Trash Free Waters team can advertise these opportunities with all of you on the first Monday of each month. I hope everyone is having a good summer.

Romell Nandi
US EPA
Trash Free Waters program lead

EPA Announcements

On July 21st, EPA published a news release announcing \$1.2 million in GLRI Trash Free Waters grant projects to remove hundreds of tons of trash from the Great Lakes. Administrator Andrew Wheeler announced this funding at a press conference in Lakewood, OH, stating that “Trash Free Waters has the chance of becoming one of the most successful new programs launched by EPA in recent years, given how quickly it's traveled from idea to execution.” This funding, in conjunction with two other GLRI Trash Free Waters grant projects announced by the Administrator on prior visits to the Great Lakes region, now totals almost \$2.1 million. Grant awardees include the Milwaukee Harbor District, City of Toledo, Alliance for the Great Lakes, Belle Isle Conservancy, Great Lakes Community Conservation Corps, Buffalo Niagara Waterkeeper, and Macatawa Area Coordinating Council. The community-based projects funded through this program will help expand volunteer beach and waterway clean ups and install trash capture devices within the Great Lakes watershed. To read the full July 21st EPA news release, click [here](#). To learn more about the City of Toledo grant specifically and additional related EPA funding news for cleanup and restoration efforts in the greater Toledo area, read the July 20th EPA news release [here](#).

Also in July, Administrator Wheeler posted a [video](#) about the new United States-Mexico-Canada Agreement (USMCA). In the video, he highlighted the Trash Free Waters program and our efforts to bring together local stakeholders to identify “low cost, low tech methods that can have a high impact on land-based sources of trash.”

The Trash Free Waters team helped provide insight on the River Network's recently released “Waste in our Waters: A Community Toolkit for Aquatic Litter Removal.” The toolkit outlines various measures to consider when exploring how to strategically address litter in your community. It also provides a detailed breakdown of several trash capture device technologies, many of which our program has helped deploy in watersheds across the nation. The EPA's forthcoming Escaped Trash Assessment Protocol (ETAP), a quantitative survey tool which provides a standard

method for collecting and assessing litter data, is also referenced in the document. We consider this toolkit an essential resource for both community advocates and experts alike. You can read the toolkit [here](#).

TFW hosted the “Current State and Uncertain Future of Local Policies on Single-Use Plastics in the U.S.” webinar on July 9th. If you were not able to join or want to share the webinar with others, as noted above, you can access the webinar recording on our TFW webinar archive [here](#).

This [U.S. EPA video](#) reminds citizens to recycle right, stating that “rubber gloves, masks, medical waste and plastic bags should never go in your recycling bin.”

The TFW team proudly announces the second article in the Trash Free Waters series, titled "What You Need to Know About Microfiber Pollution." This resource outlines the issue of microfiber pollution, highlights existing solutions to address it, and provides five simple recommendations for what an individual can do to help reduce microfiber leakage. Read the full article on our website [here](#). If you missed our recently published article titled “Trash Free Waters On Any Timeline” and would like to read it, click [here](#).

Funding Opportunities

The Water Research Foundation (WRF) Research Priority Program

WRF has funded 12 new Research Priority Program projects with a total funding amount of \$2,125,000. This research allocation will be significantly leveraged with partnership funding and in-kind support. Requests for Proposals (RFPs) for these projects will be released in August 2020. Please track progress [here](#).

National Estuary Program Coastal Watersheds Grant Program RFP

US EPA has created a new national competitive grants program. Restore America’s Estuaries is administering the grant program and will fund projects within specific geographic areas that support Congressionally-set priorities, including: loss of key habitats, harmful algae blooms, invasive species, flooding and coastal erosion, nutrients, and contaminants of emerging concern such as microplastics. Each award will range between \$75,000 and \$250,000. Letters of Intent are due August 7. Learn more [here](#).

SeaAhead and New England Aquarium BlueSwell Incubator Program

SeaAhead, Inc. and the New England Aquarium have announced the launch of BlueSwell, New England's first dedicated, comprehensive early-stage business incubator program for new ocean-related technologies and innovations. BlueSwell will catalyze new business creations by providing a grant of \$35,000 to founders with a new ocean-related technology or business model innovation. A tailored 20-week curriculum and in-depth mentoring program based in Boston, MA are also included. Marine pollution is one of the grant’s priority areas. Applications for the program will close on August 9th, 2020. Click [here](#) for more info.

MassDEP Reduce, Reuse, Repair Micro-Grant

Massachusetts Department of Environmental Protection is now accepting applications for the Reduce, Reuse, Repair Micro-Grants for 2020. This grant program provides small amounts of funding (up to \$5,000) for eligible for-profit and nonprofit organizations for innovative, short term waste reduction initiatives. Initiatives must focus on promoting source reduction, reuse, or repair in Massachusetts. MassDEP accepts applications on a rolling basis and evaluates them quarterly until all available funds are obligated. Click [here](#) to read the grant guidelines and apply.

National Science Foundation Proposal: Microplastics and Nanoplastics

The National Science Foundation seeks proposals that tackle some of the fundamental scientific questions underlying microplastic and nanoplastic characterization, behavior, and reactivity in the environment, as well as their elimination from land and water systems. NSF is considering proposals in a wide range of research having to deal with chemistry, toxicity and the geoscience, ecological and evolutionary science interactions of microplastics and nanoplastics, as well as solutions regarding engineering, innovation, and education around the topic. [Learn more by clicking here!](#)

NOAA Great Lakes Bay Watershed Education and Training (B-WET) 2021 Federal Funding Opportunity

The NOAA Office of National Marine Sanctuaries is seeking proposals under the Great Lakes B-WET program, a competitive grant program that supports existing, high quality environmental education programs, fosters the growth of new, innovative programs, and encourages capacity building and partnership development for environmental and place-based education programs throughout the entire Great Lakes watershed. For additional resources on developing an application and examples of previously funded projects go to the [Great Lakes B-WET website](#). Deadline for applications is August 21, 2020, 11:59 pm (EST).

Pollution Prevention and Mitigation BAA

This Broad Agency Announcement (BAA) seeks opportunities to co-create, co-design, co-invest, and collaborate in the research, development, piloting, and scaling of innovative interventions for effectively mitigating air, water, and soil pollution, including ocean plastic pollution, electronic and other forms of solid waste in low and middle-income countries. USAID invites organizations, companies, academic and research institutions, and investors to propose innovative approaches for preventing and mitigating pollution in countries to promote healthier populations, cleaner environments, and inclusive, sustainable economic growth. Read more about this opportunity [here](#).

FY2021 NOAA Marine Debris Removal Grant Opportunity

The NOAA Marine Debris Program's FY2021 Marine Debris Removal grant competition (NOAA-NOS-ORR-2021-2006587) is open and soliciting Letters of Intent for review. Letters of Intent (LOIs) are due September 4, 2020. Projects awarded through this grant competition will create long-term, quantifiable ecological benefits and habitat improvements for NOAA trust resources through on-the-ground marine debris removal activities, with highest priority for those targeting derelict fishing gear and other medium- and large-scale debris. Projects should also foster awareness of the sources and effects of marine debris to further the conservation of living marine resource habitats, and contribute to the understanding of marine debris composition, distribution and impacts. Follow all submission instructions for the LOI outlined in the Notice of Funding Opportunity published at Grants.gov [here](#).

NOAA RESTORE Science Program: Planning for Actionable Science

The NOAA RESTORE Science Program plans to release its next funding opportunity sometime this month. This competition will provide natural resource managers, researchers, and other stakeholders with funding to plan a research project that informs a specific management decision impacting natural resources in the Gulf of Mexico. All natural resources and decisions associated with them are eligible. \$2.5 million is expected to be made available through this funding opportunity. The minimum and maximum individual award amount is approximately \$25,000 and \$125,000, respectively. For updates, check [here](#).

Alliance to End Plastic Waste: Request for Proposals (RFP)

The Alliance to End Plastic Waste is now accepting project proposals on the implementation of infrastructure to eliminate leakage of plastic waste through collection and containment. This RFP prioritizes support to cities in Asia, Africa and Latin America. In partnership with organizations that directly work with cities, they hope to shape high-quality submissions that ultimately deliver against the goal of driving investments in much-needed infrastructures. The first window for submission of Concept Papers closes December 31st, 2020. To submit your proposal, please visit the [Plastic Free Waste Cities page](#).

Save the Dates/Calendar

August 4-6th: Association of Clean Water Administrators 2020 Annual Meeting

Conference agenda items include a deep-dive of the implications of the recent County of Maui Supreme Court decision regarding the Navigable Waters Protection Rule and Section 401 revisions, insight on environmental justice, integrated planning from the local perspective, and EPA PFAS updates. Register and view the full agenda [here](#).

August 24-27th: 6th International Marine Conservation Congress (IMCC6)

An event for scientists, practitioners, educators, policy-makers, artists, and journalists to network and learn from one another about marine conservation, using science to inform policy and management to catalyze change. Register and explore plenary sessions and speakers [here](#).

August 25-27th: Circularity 20 Conference

Circularity 20 is the largest circular economy conference in the US. Building on the success of last year's sold-out launch event, Circularity 20 will bring together more than 1,000 thought leaders and practitioners across industries and functions and empower participants to turn circular economy concepts into profitable opportunities. Read more about the conference [here](#).

Save the dates for future months...

September 2nd (2PM EDT): “Working with unlikely stakeholders to prevent marine debris” webinar

This webinar is co-sponsored by OCTO and will be led by Nicole Baker, Founder of Net Your Problem LLC, a solutions-oriented company which provides responsible disposal services (i.e., recycling) for fishing gear in Alaska and programs in development for all US coasts. To learn more about their work, please register [here](#).

September 14-17th: Waste Expo

The largest waste and recycling event in North America, featuring 20+ virtual sessions about solid waste management. Agenda forthcoming [here](#).

September 29-October 1st: The National & Coastal Estuarine Conference

Restore America's Estuaries (RAE) expects this summit to be a highly interactive, state of the art, virtual opportunity to network with colleagues, share lessons learned, and hear from experts on the latest in coastal restoration and management. More than 300 proposals for panels, presentations, and posters have been submitted and nearly 30 sponsors already committed to the Summit. Read more about the Summit [here](#).

October 14-17th: The North American Association for Environmental Education Annual Conference

For nearly five decades, NAAEE has convened one of the leading annual conferences for environmental education professionals, designed to promote innovation, networking, learning, and dissemination of best practices. The goal of this year's conference, held virtually, is to "educate, collaborate, and inspire change." Check back [here](#) to register.

October 20th (2PM EDT): Webinar on The Clean Currents Coalition: "A global collaborative solution to the complex plastics problem"

This webinar will be led by Molly Morse and Valeria Tamayo-Canadas from the Benioff Ocean Initiative with support from OCTO. The Clean Currents Coalition is a global network of 9 teams combatting the flow of plastic waste from river systems to the ocean. Join the webinar to learn more about the solutions championed by Coalition member teams in their river systems, the plastic-intercepting technologies they are piloting, and the social, policy, and infrastructure-related strategies they are catalyzing in these communities. Register for the event [here](#).

November 23-27th: MICRO2020 International Conference – Fate and Impacts of Microplastics: Knowledge and Responsibilities

MICRO's biannual international conference will be held during the originally planned dates of November 23-27, 2020, but it will be substantially online-based with several in-person meeting nodes. The goals of this conference are to: (i) identify the research challenges; (ii) facilitate open access to the breadth of ongoing research; and (iii) contribute a collaborative effort to our continuously expanding community. The call for abstracts is open from June 25 to September 20. Read more about the conference [here](#).

December 7-8th: The Our Ocean Conference in Palau

The goal of Our Ocean 2020 is to show how local ocean actions and innovations drawn from diverse contexts can translate into raising the level of global ocean ambition. Areas of action for conference discussions include: protected areas, climate change, sustainable food from the ocean, a clean ocean, sustainable blue economies, and maritime security. Keep apprised of news by clicking [here](#).

The Microplastics Breakdown

The section below only includes a selection of notable, recent microplastics study summaries. If you would like to receive the complete Microplastics Breakdown, please contact Bathersfield.Nizanna@epa.gov

MICROPLASTICS SOURCES, TRANSPORT AND FATE

Coastal Zone Use Influences the Spatial Distribution of Microplastics in Hangzhou Bay, China

Ting Wang, Menghong Hu, Lili Song, Jun Yu, Ruijuan Liu, Shixiu Wang, Zhifu Wang, Inna M. Sokolova, Wei Huang, Youji Wang

The authors examined microplastics in seawater, sediment, and biota samples (fish, shrimp, and crab) and characterized the abundance, shape, polymer type, and size of microplastics in Hangzhou Bay. Overall, the abundance of microplastic in the bay was found to be lower than in other estuaries and adjacent sea areas in China. Their analyses of the spatial distribution, polymer types, and shapes of microplastics indicate that aquaculture and urban activities (e.g., coastal sewage) are the most important sources in the bay. Read the full abstract [here](#).

Interaction of Freshwater Microplastics with Biota and Heavy Metals: A Review

Nafiah Naqash, Sadguru Prakash, Dhriti Kapoor, Rahul Singh

The authors reviewed studies of microplastic contamination in freshwater systems with a focus on the adsorption of heavy metals. Both aged and virgin microplastic particles were reported as carriers of heavy metals, while aged particles were reported to adsorb significantly higher rates. This was attributed to surface alterations by excessive weathering and ultraviolet radiation. These changes expand the surface area and result in anionic active sites for the adsorption of pollutants such as metals. Read the full abstract [here](#).

Impact and Fate of Microplastics in the Riverine Ecosystem

DJ Sarkar, SD Sarkar, S Mukherjee, BK Das

This chapter in “*Contaminants in Drinking and Wastewater Sources*” examines the processes via which microplastics enter the river ecosystems and the fate of the plastic particles afterwards. In addition, it discusses the ecotoxic effect of microplastics on aquatic biota, their detection techniques and possible risk management. The authors identify the transport and fate analysis of the plastic particles through rivers as of particular importance in establishing their abundance and to develop strategies to reduce possible human health impacts. Read the full abstract [here](#).

MICROPLASTICS IN WASTEWATER AND STORMWATER

Towards Control Strategies for Microplastics in Urban Water

E Fältström, S Anderberg

In this study, the authors use three substance flow analysis (SFA) studies for three pollutants: cadmium, copper and pharmaceuticals, selected based on three criteria that the authors deemed made them similar to microplastics. Flows and strategies to control the flows of wastewater and stormwater in certain European city regions were compared with the goal of obtaining guidance for microplastic management and evaluating potential strategies for controlling microplastics. Based on their analysis, the authors concluded that when developing management plans for microplastics, the responsibility for each measure and the impact on the entirety of the urban system should be considered as well as which portions of the system are particularly valuable and should be avoided. They also acknowledge that there are advantages to prevention but that it can be difficult to implement or need to be combined with other measures to significantly impact the load, especially if they are based on voluntary action. Read full abstract [here](#).

POTENTIAL IMPACTS ON AQUATIC LIFE, ECOSYSTEMS AND HUMAN HEALTH

Evidence of Selective Enrichment of Bacterial Assemblages and Antibiotic Resistant Genes By Microplastics in Urban Rivers

J Wang, X Qin, J Guo, W Jia, Q Wang, M Zhang

In this study, microplastic particles were sampled in two urbanized rivers in Jiaxing, Zhejiang, China. The bacterial assemblages colonizing microplastics were compared to planktonic bacteria in water samples from the river. One of the significant results of this study was that microplastics selectively enriched antibiotic resistant genes. Results suggest that microplastics may serve as hotspots for microbial interaction, which possibly increases risks to freshwater ecosystems and human health. Read full abstract [here](#).

Microplastics in the Agroecosystem: Are they an Emerging Threat to the Plant-Soil System?

Huadong Zang, Jie Zhou, Miles R. Marshall, David R. Chadwick, Yuan Wen, Davey L. Jones

The authors investigated the effect of microplastics on plant growth, soil microorganisms, and photoassimilate carbon (C) allocation. They found that microplastics had numerous impacts on plants, which varied depending on the type and amount. They found that microplastics had a negative effect on plant growth, they greatly altered the flow of carbon through the plant-soil system, and increased the soil microbial biomass as well as changed the structure and metabolic status of the microbial community. The authors concluded that microplastics in soil are not benign and therefore every step should be made to minimize their entry into the soil ecosystem and potential to transfer into the food chain. Read full abstract [here](#).

MICROPLASTICS IDENTIFICATION METHODS

Pyrolysis Gas Chromatography-Mass spectrometry in Environmental Analysis: Focus on Organic Matter and Microplastics

Y Picó, D Barceló

The authors reviewed existing literature on Pyrolysis gas chromatography-mass spectrometry (Py-GC-MS) and explored its possible use to identify micro and nanoplastics in environmental samples. They concluded that Py-GC-MS is more sensitive than other methods like Raman and FTIR, and less affected by impurities and interferences of the samples. In addition, they found that it is the only technique able to detect nanoplastics. Read the full abstract [here](#).

Separation and Identification of Microplastics From Primary and Secondary Effluents and Activated Sludge from Wastewater Treatment Plants

CB Alvim, MA Bes-Piá, JA Mendoza-Roca

This study investigated three methods for extracting and characterizing microplastics at wastewater treatment plants: one directed for effluents (peroxidation), and two for activated sludge (peroxidation and Fenton). Samples of primary effluent, secondary effluent and activated sludge were collected from a wastewater treatment plant located in Valencia, Spain. Peroxidation was found to be an effective method for primary and secondary effluents and for activated sludge. A large amount of microfibers was observed in all samples, corresponding to more than 90% of the microparticles. In the case of secondary effluents, only 9% of these microfibers were identified as plastics, the remaining ones corresponded to cotton. Read the full abstract [here](#).

If you'd like to see your posting in this email, please email Marshall.Layne@epa.gov with any suggestions!