

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

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

Introduction

I hope this message finds everyone well. While the ongoing COVID-19 pandemic continues to impact our daily lives and have complicated some efforts to keep trash out of our waterways, I know many of you continue to work hard to address this important issue. Historically, September has been a significant month for trash removal and remediation worldwide with the celebration of International Coastal Cleanup Day on September 19th. While large volunteer cleanups have been postponed due to social distancing guidelines, we encourage you to participate in this day in whatever way you feel you are able to, even if in a small way. Please be sure to scroll down to the "Save the Dates" section below for a comprehensive list of virtual webinars and conferences to look forward to this month!

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.

Finally, some users have experienced difficulty with the links contained in the Rapids. We are told that there is a work-around - simply disconnect from your VPN and try again. In the coming weeks we will see if we can rectify the problem on our end.

Romell Nandi
US EPA
Trash Free Waters program lead

EPA Announcements

EPA Administrator Announces Border Water Infrastructure Program Projects for Tijuana River

On September 3rd, EPA Administrator Andrew Wheeler travelled to San Diego, CA to highlight efforts to reduce transboundary Tijuana River Pollution. Administrator Wheeler announced a new EPA partnership project with the City of San Diego to develop and deploy a permanent solution to better control ocean-bound sediment and trash in Smuggler's Gulch, a canyon just north of the US-Mexico border. This initiative will help improve water quality, protect public health, and reduce the risk of flooding in southern California communities. Read the full news release [here](#).

EPA Memorandum of Understanding with Boy Scouts of America Highlights TFW

On August 17th, the U.S. EPA published a [news release](#) announcing signature of a Memorandum of Understanding (MOU) with Boy Scouts of America (BSA). This collaborative effort will lead to the creation of an EPA/BSA special award to be presented as part of a new environmental education awards and recognition program. This program will introduce Scouts to EPA's 50 year history of environmental protection as well as educate Boy Scouts member councils and leadership about priority initiatives including the Trash Free Waters program. To receive the EPA award, Scouts must earn merit badges in earth sciences, animal studies, outdoor activities, and public health and participate in an environmental/public health community service project. To watch a video of Administrator Wheeler unveiling the new award, please click [here](#).

EPA's Public Comment Period on Trash-Impaired Hawaii Waterbodies Closes

On July 10, EPA issued its decision that Hawaii partially met the requirements of their 2018 List of Impaired Waters submitted under Clean Water Act Section 303(d). During its review, EPA identified two waterbodies that were not included in Hawaii's 303(d) List but which are impaired by trash, Kamilo Beach and Tern Island. The public comment period on the addition of these two waterbodies as impaired by trash closed on August 19. EPA will now consider the public comments and make any revisions before transmitting the listing to Hawaii. Read the public notice [here](#).

Two EPA-Funded Microplastics Projects Highlighted in Lake Tahoe

On August 25, EPA Region 9 published a news release highlighting nearly \$100,000 in grant funding to address microplastic pollution in Lake Tahoe. The announcement coincided with the 24th Annual Lake Tahoe Summit, which several members of EPA Region 9 participated in. The two projects mentioned in the release include research around

microplastics accumulation in the lake and its potential impact on wildlife and humans and education and outreach around proper trash disposal and single-use plastic consumption to incite behavior change. Read the news release [here](#).

EPA Region 4 Visit to Florida

During the last week of August, Associate Deputy Administrator Douglas Benevento and Region 4 Regional Administrator Mary Walker visited Florida where they discussed the Trash Free Waters program with state partners like the Florida Department of Environmental Protection. View a related EPA Instagram post [here](#).

Planning to Prevent Natural Disaster Debris

In preparation for Hurricane Laura, EPA recommended reducing the amount of potential natural disaster debris by stowing the loose items from around your home in this [Instagram post](#). Other government agencies such as FEMA took to [social media](#) to remind citizens that flood water can contain dangerous debris.

Funding Opportunities

North American Wetland Conservation Act (NAWCA) Small Grants

The U.S. Small Grants Program is a competitive, matching grants program that supports public-private partnerships carrying out projects in the United States that further the goals of the North American Wetlands Conservation Act. Projects must involve only long-term protection, restoration, enhancement and/or establishment of wetland and associated upland habitats to benefit migratory birds. Applications are due by October 15, 2020. For info about eligibility criteria and instruction on how to prepare an application, please click [here](#).

Water Research Foundation (WRF) Research Priority Program RFP 5088 – Defining Exposures of Microplastics/Fibers in All Waters: Occurrence, Monitoring, and Management Strategies

The objectives of this project are to: (1) Characterize typical microplastic (MP) numbers, types, and sizes in all waters (including secondary and tertiary treated wastewater, recycled water, stormwater, drinking water supplies); (2) Develop reliable monitoring and sampling guidelines, based on MP sizes and source media; (3) If needed, develop a decision-making framework for MP reduction strategies from the whole water supply cycle; and (4) Describe the relative effectiveness of various technologies and legislation to mitigate sources and pathways of MPs. Project proposals are due October 29, 2020. To submit an application, click [here](#).

NOAA RESTORE Science Program: Planning for Actionable Science

The NOAA RESTORE Science Program recently released its next funding opportunity. 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. \$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. The application period closes on December 15, 2020. For updates, check [here](#).

BoatU.S. Foundation: Grassroots Grants Program

The BoatU.S. Foundation is looking for creative and innovative projects that promote safe and clean boating on your local waterways. Projects should facilitate behavior change in the boating community through unique ideas and extensive outreach efforts to boaters. They should incorporate widespread reach and hands-on work with the boating community by using technology and/or social media to educate boaters as well as have a means to measure the success of the program. For examples of previously funded projects, grant guidelines and more info about the program application process, visit their grant page [here](#). Applications are reviewed on a rolling basis.

Clean Cities, Blue Oceans Grant Program (Philippines, Vietnam, and Sri Lanka and Maldives)

CCBO's grants program is designed to identify and implement locally-led, sustainable solutions and approaches that support the program's objectives and combat ocean plastics pollution directly at the source. Program goals include 1) Promote reducing, reusing, and recycling practices—the 3Rs—and strengthen markets for recycled plastic; 2) Improve local implementation and enforcement of laws, policies, and regulations; 3) Build social behavior change for 3Rs and sustainable solid waste management; and 4) Forge new private sector partnerships for improved impact, sustainability, and forward-looking commitments. CCBO is seeking the support of grantees throughout its focal countries and currently has several opportunities available for application. Learn more about current opportunities and how to apply [here](#). Application deadlines close within the coming months and vary by country.

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](#).

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

September 8th (4PM EDT): Kaiteki Circular Plastic Roadmap Webinar

The Global Kaiteki Center at Arizona State University has sponsored a project with the Sustainability Consortium to work together with the Mitsubishi Chemical Holdings Company on developing an innovation roadmap for a more circular plastic value chain. In this session, speakers will discuss the results of their circular innovation stakeholder survey, LCA modeling efforts, and a risk-based perspective of circular success. Click [here](#) to register for the webinar.

September 10 (9AM EDT): Circular Economy Business Models in Practice- UK and US Perspectives

This WasteWise webinar will explore what makes circular economy business models work in practice with panelists from the UK and the US. Panelists representing Resource Futures, Honeymaker, and OceanCycle have first-hand experience of implementing circular business models and will share the lessons they have learned, and their tips for success. Register [here](#).

September 14-17th: Waste Expo

The largest waste and recycling event in North America, featuring 20+ virtual sessions about solid waste management. Session discussions include topics such as recycling infrastructure on the national, regional, and municipal levels, waste management resiliency in the wake of the Covid-19 pandemic, textile recovery, and more. Check out the agenda [here](#).

September 17th (2PM EDT): “Tracking Marine Debris” webinar with Kathryn Youngblood

Debris Tracker is a global citizen science tool used to monitor and record litter in an open-access database. Every day, educational, non-profit, and scientific organizations and dedicated citizen scientists from all around the world record data on inland and marine debris with the app, resulting in over 2.5 million items tracked to date. As a Research Engineer at the University of Georgia New Materials Institute and the Citizen Science Director of Marine Debris Tracker, Kathryn Youngblood has worked with the Jambeck Research Group for over five years studying upstream solutions to ocean plastic pollution. Sign up for the webinar [here](#).

September 19th: International Coastal Cleanup Day (also month-long)

International Coastal Cleanup Day is typically held on September 19th each year. During the Ocean Conservancy's International Coastal Cleanup last September, over 1 million people removed more than 24 million pounds of trash from some 25,000 miles of coastline. Due to COVID-19 social distancing guidelines, ICC recommends you #CleanOn by participating in solo cleanups in your local neighborhood or take action at home. Visit the [ICC 2020 website](#) to read more about how to safely conduct a solo or small cleanup or learn, advocate, and create from home.

September 22nd (8:30PM EDT): Global Plastics Containers & Packaging Sector, Pollution and Global Investor Risks: Survey of Trends Webinar

Join Planet Tracker and panelists from Carmignac, ICIS, and DuPont in a discussion about the publicly-traded global plastics containers and packaging sector, which faces immediate financial risks from declines in upstream production margins coupled with increases in downstream regulatory changes and product substitution alongside corporate, government and consumer pressure on industry its plastic pollution footprint. During the webinar, Planet Tracker will cover current research sizing institutional investors' financial risks, describing their exposure to these risks and segmenting these risks by asset class and geography. Please register in advance [here](#).

September 23rd (1PM EDT): Circulate Capital Ocean Fund: A pioneering, \$100M investment fund to prevent ocean plastic

Please join us for a webinar hosted by April Crow of Circulate Capital and co-sponsored by OCTO. In 2018, Circulate Capital established the US\$100M Circulate Capital Ocean Fund (CCOF), the world's first investment fund dedicated to preventing ocean plastic. CCOF invests in companies and technologies that improve waste collection, waste sorting

and processing, waste recycling, and plastic end use in South and Southeast Asia. This webinar will examine what the investments could look like at the ground level, how improvements could be scaled, and how South and Southeast Asia could ultimately become a model for fighting plastic waste. Register for the webinar [here](#).

September 24th (1PM EDT): Webinar on New International Requirements for Exports and Imports of Plastic Recyclables

This EPA Sustainable Materials Management webinar will explain the new international requirements for exports and imports of plastic recyclables or scrap. In May 2019, 187 countries decided to significantly restrict international trade in plastic scrap and waste to help address the improper disposal of plastic waste and reduce its leakage into the environment through a treaty called the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The webinar will discuss how plastic scrap is covered under that agreement. Register [here](#).

September 25- 26th: Sustainable Oceans Conference 2020

The Sustainable Oceans Conference is a free, virtual public event that brings together a wide audience. It is the only student-led conference of its kind in Atlantic Canada, and is being held for the 9th consecutive year. The theme of the conference this year is *Local Ripples, Global Waves*. The conference aims to explore multi-disciplinary approaches for creating healthy oceans and sustainable economies. Collectively, the Sustainable Oceans Conference aims to promote opportunities for collaboration on solutions addressing a range of issues affecting our ocean ecosystems. To register, click [here](#).

September 28- October 3rd: International Conference on Marine Science 2020

ICMS 2020: Tropical Oceans for the Future will feature virtual sessions on a variety of marine topics: global change in our oceans, fair and sustainable use of marine resources, ocean-land-atmosphere interactions, big and open data in the ocean, and participatory science. To learn more about the opportunity, visit the ICMS website [here](#).

September 29th (6PM EDT): Break Free From Plastic Pollution Act Informational Webinar

Please join Senator Tom Udall (D-NM), Senator Udall's senior policy advisor, Jonathan Black, and Representative Alan Lowenthal's senior legislative assistant, Shane Trimmer for an informative and interactive webinar on the new Break Free From Plastic Pollution Act (SB 3263/ HR 5845) moderated by Beyond Plastics' president, Judith Enck. Register for the webinar [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](#).

Save the dates for future months...

October 13-15th: 2020 Global Symposium on Waste Plastic

Hosted by AIChE, the global home of chemical engineers, this virtual conference features experts from a variety of engineering disciplines contributing to the accelerated development of alternative plastics with the goal of mitigating the effects of traditional plastics in our environment. To learn more about the symposium, click [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): Clean Currents Coalition: "A global collaborative solution to the complex plastics problem" webinar

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 16th: EPA's 2020 America Recycles Innovation Fair

The America Recycles Innovation Fair showcases recent advances in recycling technology, product development, and materials usage. Exhibitors will display new recyclable products, goods made from recycled content, innovative education and communication methods, or materials that promote more effective recycling, recycling and manufacturing research, and new technologies that are advancing recycling today and into the future. This year, the America Recycles Innovation Fair plans to showcase exhibitors both online (via a virtual exhibit hall) as well as in person (dependent on Washington, DC's guidance related to the ongoing COVID-19 pandemic). All organizations with

innovations that advance recycling are encouraged to apply to partake at this year's Innovation Fair via filling out the [exhibitor application form](#) due September 10.

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](#).

Our Coastal Futures Conference (POSTPONED)

Originally scheduled for this October, the 2021 Our Coastal Futures conference will bring together voices from researchers, practitioners, Indigenous peoples, activists, businesses, youth, and decision-makers. This vibrant conference will inspire new ideas to enable a transition towards respectful custodianship of our oceans and coasts. Conference themes include ontologies, sciences, economies, and reciprocity. For updates on the rescheduled conference date, check back [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 POLLUTION AND HUMAN ATTITUDES AND EXPOSURE

Public Attitudes Towards Microplastics: Perceptions, Behaviors and Policy Implications

Lingzhi Deng, Lu Cai, Fengyun Sun, Gen Li, Yue Che

This study was conducted based on the idea that public attitudes are key to reducing microplastic emissions. The authors interviewed randomly selected members of the public in Shanghai and completed a total of 437 valid questionnaires. Only 26% of the respondents were found to have heard of microplastics before the survey. When informed about the possibility that microplastics may affect human health, 75% of respondents reported becoming concerned. Women's willingness to reduce emissions was found to be higher than men's. Read the full abstract [here](#).

Analysis of Microplastics in Food Samples

Juan A. Conesa and Maria E. Iñiguez

This chapter in the *Handbook of Microplastics in the Environment*, compiles and examines the analytical techniques used to detect and analyze microplastics in food, and includes a description of microplastics found in different samples and an estimate of the annual intake of these particles. Notably, the authors pointed out that the presence of microplastics in the gastrointestinal tract of different fish species does not imply human exposure, as this organ is usually not consumed; however, there are other species of seafood that are consumed whole and therefore, could be sources of human exposure. Read the full chapter [here](#).

MICROPLASTICS IN SOIL

Microplastics in Agricultural Soils: Extraction and Characterization after Different Periods of Polythene Film Mulching in an Arid Region

Wenfeng Li, Rehemanzhang Wufuer, Jia Duo, Shuzhi Wang, Yongming Luo, Daoyong Zhang, Xiangliang Pan

The authors developed a method of separating and extracting MPs from the soil matrix. Clean polyethylene (PE) microplastics were obtained after a series of treatments including pressure leaching, flotation, electrostatic adsorption, and concentrated sulfuric acid carbonization. The characteristics of MP pollutants,

such as abundance, size, and morphology, in soils that have been continuously mulched with PE film for various periods of time were determined after extraction. The authors found that the highest abundance of MPs with sizes ranging from 0.9–2.0 mm was found in soil samples that had been continuously mulched with plastic film for 30 years. The size of MPs decreases gradually as the period of mulching increased. The authors also observed that the surface of the MP particles showed visible cracks, with round holes, and the particle surface roughened as the number of years of continuous mulching increased. Read the full abstract [here](#).

MICROPLASTIC POLLUTION AND INTERACTION WITH CHEMICALS AND MICROBES

Microplastics as Vectors of Chemicals and Microorganisms in the Environment

Yini Ma, Lin Wang, Ting Wang, Qianqian Chen, and Rong Ji

This chapter in *Particulate Plastics in Terrestrial and Aquatic Environments*, analyzes research focused on microplastics (MPs) as vectors for microorganisms and pollutants in river and ocean environments and considers the possible interactions between the microbial community and pollutants in the “plastisphere.” One of the main conclusions is that the diverse communities of active microbes and the high concentrations of organic pollutants adsorbed on MPs contribute substantially to the potential impact of plastics on global biogeochemical cycles and ecosystem health. The authors suggested future research areas: (1) improved methods for the detection and quantification of sub-micron/nano-sized MPs and organic contaminants in complex matrices; (2) determination of the ecosystem effects of MPs using particles with environmentally relevant characteristics; and (3) long-term studies on the vector effects of MPs in open, dynamic systems. Read the full chapter [here](#).

Adsorption and Desorption Behaviour of Polychlorinated Biphenyls onto Microplastics’ Surfaces in Water/Sediment Systems

Marta Llorca, Manuela Ábalos, Albert Vega-Herrera, Miquel A. Adrados, Esteban Abad and Marinella Farré

The authors evaluated the behavior of marker polychlorinated biphenyls (PCBs), on microplastic surfaces of three polymers—polystyrene (PS), polyethylene (PE), and polyethylene terephthalate (PET), ranging in size from 1 to 600 µm. PCB adsorption/desorption was evaluated in sediment/water systems simulating marine environmental conditions for 21 days. The main results showed that between 20% and 60% onto MPLs of PE, PS, and PET: onto cavities of PE-MPL surfaces, rather than inside the polymeric structure; while in PS-MPL and PET-MPLs. The authors concluded that PCBs associated with plastic particles are likely to be a significant factor in the environmental fate, behavior, and potential transfer to the food chain. Read the full article [here](#).

MICROPLASTICS DISTRIBUTION AND ECOSYSTEMS IMPACTS

Plastics and Microplastics, Effects on Marine Coastal Areas: A Review

Claudia Díaz-Mendoza, Javier Mouthon-Bello, Natalia Lucia Pérez-Herrera and Stephanie María Escobar-Díaz

This article reviews the classification of the different types of plastics that can be found within coastal marine debris. High-density polyethylene (HDPE), low-density polyethylene (LDPE), polyvinyl chloride (PVC), polystyrene (PS), polypropylene (PP), and polyethylene terephthalate (PET) constitute the 90% of the total global plastic production. Significant effects on marine species mainly due to the ingestion of these materials have been identified by several studies conducted around the world. The authors conclude that research on the impacts of these materials on human health is required due to the people’s frequent recreational activities in coastal areas where the presence of microplastics is evident. Read the full article [here](#).

Microplastics in Freshwater Ecosystems

Shaun A. Forrest, Madelaine P. T. Bourdages, and Jesse C. Vermaire

Microplastics have been found in nearly all types of freshwater environments, including remote lakes and rivers. Wastewater treatment plants and stormwater runoff appear to be important conduits of microplastics to lakes and rivers. The article concludes that more research is required to determine the role of atmospheric fallout in loading microplastics to freshwater ecosystems. In addition, it also concludes that additional research is required to increase understanding of the sources, movement, and fate of microplastics in aquatic ecosystems and the potential impacts of microplastics on freshwater organisms. Read the full article [here](#).

Microplastics in Polar Samples

V. Tirelli, G. Suaria, and A. L. Lusher

The authors reviewed current research about microplastic occurrence and distribution in polar environments. Based on their review, the authors found that microplastic pollution has made its way into the Polar Regions and microplastics have been found in seawater, marine sediments, ice, and snow and in the gut content of several species at different trophic levels in the Arctic. They also determined that Antarctica is the region least affected by human activity in the world. The authors concluded that more studies focusing on

microplastic threats to key species of Arctic and Antarctic marine food webs are urgently needed as are coordinated long-term studies on microplastic pollution, which are mandatory to follow the temporal trend of human impact in these remote regions to fully elucidate the actual risks that this emerging pollutant can pose to the last great wildernesses of our planet. Read the full article [here](#).

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

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