

# The Rapids

## US EPA's Trash Free Waters Monthly Update

### September 2021

[epa.gov/trash-free-waters](http://epa.gov/trash-free-waters)

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## Introduction

Hello all,

I hope everyone had a nice Labor Day weekend. I highly recommend reading a recently published article which provides much-needed insight on the amounts, types, and potential origins of plastic pollution in the Caribbean using marine sampling methods and detailed ocean modeling: "[Source, sea and sink—A holistic approach to understanding plastic pollution in the Southern Caribbean.](#)"

Be sure to participate in [International Coastal Cleanup Day](#) on September 18<sup>th</sup>!

Please continue to share any upcoming events with Layne Marshall ([marshall.layne@epa.gov](mailto: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.

Thanks,  
Romell Nandi  
US EPA  
Trash Free Waters Program Lead

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## EPA Announcements

### [TFW Student Video Competition Winner Announced via Twitter and Facebook](#)

On August 31st, the EPA announced the winner of the "2020 American Marketing Association (AMA)-EPA Trash Free Waters Video and Marketing Brief Competition." This national competition capitalized on the innovative ideas of university marketing students to help advance the TFW cause of keeping trash out of our waterways. The winning student-made video targets college-aged students, citing that the over 14.5 million college students in the United States alone can create a major impact on our waters by reducing their everyday single-use plastic waste.

### [EPA's Microplastic Beach Protocol Released](#)

The EPA's Microplastic Beach Protocol was designed to help community scientists collect data on microplastic pollution along both freshwater and marine beaches and shorelines. This protocol provides an introduction to microplastics, an outline of how to collect and analyze samples using this methodology, and instructions for logging microplastics data in the EPA's Microplastic Beach Protocol list within the Marine Debris Tracker app.

### [Tampa Bay TFW Project Featured in Local Magazine](#)

The Tampa Bay Estuary Program, located on the west coast of Florida, received \$50,000 last year through the EPA Gulf of Mexico Program's Waterway Trash Reduction Grant Program. A recent feature article

provides lessons learned from project partners and details regarding the biweekly cleanouts of several trash capture devices using the EPA's Escaped Trash Assessment Protocol (ETAP).

#### **EPA Region 7 TFW Learning Event**

EPA R7 Water Division staff recently partnered with Kansas City Kansas Community College (KCKCC) on a "Kids on Campus" summer camp learning event to educate elementary and middle school students on the Trash Free Waters Program and how improperly disposed of trash can end up in our oceans. Students partook in interactive games and conducted a trash cleanup for further insight on the issue.

#### **EPA Report on Plastics in Food Waste Management and Composting**

EPA recently released two state of the science reports on "Emerging Issues in Food Waste Management" to further research concerns related to the levels of plastic and persistent chemical contaminants associated with recycling food waste. The reports explore the effects of this contamination on composting and anaerobic digestion and the potential risks to human health and the environment of applying soil amendments (compost or digestate) made from food waste streams to land.

#### **Barataria-Terrebonne National Estuary Program (BTNEP) Green Team**

The Green Team at Barataria-Terrebonne National Estuary Program (BTNEP) collected over 5,400 pieces of marine debris on Elmers Island, LA in early August during one of their weekly cleanups in partnership with the Louisiana Department of Wildlife and Fisheries. The team consistently reports finding more plastic than any other material type and have noticed many collected items, especially Styrofoam, have been bitten by fish or turtles.

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### **Funding Opportunities**

#### **Great Lakes FY2022 B-WET Program**

NOAA's Office of National Marine Sanctuaries is seeking proposals under the Great Lakes Bay Watershed Education and Training (B-WET) program [NOAA-NOS-ONMS-2022-2006929](#). The Great Lakes B-WET program is an environmental education program that supports locally relevant, authentic experiential learning in the K-12 environment. Funded projects provide Meaningful Watershed Educational Experiences (MWEEs) for students, related professional development for teachers, and help support regional education and environmental priorities in the Great Lakes. **Applications must be submitted prior to September 9.**

#### **NOAA FY2022 Marine Debris Removal Grants**

The NOAA Marine Debris Program supports the development and implementation of locally-driven, marine debris assessment, removal and prevention projects that benefit coastal habitat, waterways, and marine and Great Lake resources. Marine debris removal activities targeting derelict fishing gear and other medium- and large-scale debris will be given priority. Projects should also foster awareness of the sources and effects of marine debris, contribute to the understanding of marine debris composition, distribution and impacts, and work to prevent marine debris reaccumulation. Funding of up to \$5 million total is expected to be available. This funding opportunity requires a Letter of Intent to be submitted via email to [grants.marinedebris@noaa.gov](mailto:grants.marinedebris@noaa.gov) no later than **September 24**.

#### **EPA Region 2 Sustainable Materials Management Grants**

This notice announces the availability of funds and solicits applications that support the EPA Sustainable Materials Management Program, for the benefit of States or communities within EPA Region 2 (New York, New Jersey, Puerto Rico, U.S. Virgin Islands and eight Indian Nations). Sustainable Materials Management (SMM) is a systemic approach to using and reusing materials more productively over their

entire life cycles. This RFA looks to specifically address sustainable management of food and sustainable packaging. **Applications are due October 1.**

#### **Tortoise and Freshwater Turtle Conservation Fund**

The new USFWS Tortoise and Freshwater Turtle Conservation Fund is soliciting proposals that conserve threatened tortoise and freshwater turtle species that occur in foreign countries and in territories of the United States. USFWS will further prioritize projects that measurably advance one of the program's key goals: 1) Reduce threats to survival, 2) Enhance reproductive success, 3) Build country capacity for establishing/implementing protection policies, and 4) Change attitudes and behavior regarding the use and protection of turtles. **Applications are due October 4.**

#### **Sharing Science Grants for Science Communication and Outreach**

This funding opportunity, offered through the American Geophysical Union, will provide grants (averaging \$1,000 or less) to scientists around the world to encourage and jump-start outreach and engagement activities that will share science and its value with wider communities, from journalists to policymakers to students to members of the public. A variety of science communication and outreach activities are eligible. **The application period closes October 11.**

#### **Tom Ford Plastic Innovation Prize**

Tom Ford and 52HZ are offering \$1.2 million to the innovators who create the best replacement for thin-film plastic; one that can be used in everything from polybags (the fashion industry's packaging of choice) to single-use, resealable sandwich and storage bags. This opportunity is a two-year competition, followed by three years of support for competition finalists, designed to incentivize the development and adoption of these alternatives to thin-film plastic. **The submission window closes on October 24.**

#### *Other opportunities...*

#### **Inland Ocean Coalition's Ocean Ambassador Training**

The Inland Ocean Coalition, a non-profit focused on building land-to-sea stewardship across the nation, recently announced opening of the application period for their fifth cohort of Inland Ocean Ambassadors. Ocean Ambassadors partake in a virtual 5-week training that covers pertinent ocean protection topics.

#### **BoatUS Foundation Grassroots Grants Program**

The BoatUS Foundation is looking for creative and innovative projects that promote safe and clean boating on local waterways. Nonprofit organizations, boating clubs, student groups, chapters of national organizations, and other groups are eligible. Past topics have included hands-on education about the effects of marine debris. Applications are reviewed on a rolling basis, and up to \$10,000 is available.

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## **Upcoming Events**

#### **Keep America Beautiful's Third Annual Trash Bash**

*September 1<sup>st</sup> - September 30<sup>th</sup>*

The Keep America Beautiful TrashDash is a month-long "plogging" - picking up litter while jogging- event dedicated to eliminating trash in America through individual action, community engagement, and exercise. Register as an individual or form a TrashDash team. Grab a bag and gloves, pick up litter in your neighborhood, local park, or on a nearby trail or beach, and use the hashtag #TrashDash to share your impact on social media.

#### **Pick Up Pennsylvania**

*September 1<sup>st</sup>- November 30<sup>th</sup>*

For the months of September and November, thousands of Pennsylvanians will participate in Pick Up Pennsylvania. Keep Pennsylvania Beautiful partners with PennDOT, the Pennsylvania DEP, and the Ocean Conservancy to provide free trash bags, gloves, and safety vests for registered events, as supplies last. Individuals, families, neighbors, students, civic organizations and local governments are all invited to participate in both land- and water-based cleanups in the state.

#### **Estuaries and Coastal Seas in the Anthropocene Conference**

*September 6-9<sup>th</sup>*

This virtual conference will offer a stimulating learning and interactive experience to deepen understanding of a variety of issues facing our coastal ecosystems. The event will feature two special sessions on the impact of pollution and plastics on estuaries and the ocean.

#### **Microplastics Health Effects Workshop Report Out Webinar**

*September 8th (11AM-1PM ET)*

This webinar is hosted by the Southern California Coastal Water Research Project Authority (SCCWRP), the San Francisco Estuary Institute, and the University of Toronto. The event will bring together microplastic experts to summarize findings on how to develop thresholds when biological effects are likely to be triggered as a result of microplastics exposure, and the feasibility of developing these thresholds for both drinking water and for organisms exposed in the ambient environment.

#### **Beyond Plastic: Pollution in the Deep Ocean**

*September 8th (8-9:30AM ET)*

This Deep-Ocean Stewardship Initiative webinar will feature case study presentations from experts from across the world on pollution pathways to the deep sea, fish ingestion of plastics, the impact of ghost fishing, and more. Legal and policy frameworks to help prevent plastic pollution in the deep sea will also be discussed.

#### **StormCon and Water Pro Conferences**

*September 13-15<sup>th</sup>*

StormCon is the stormwater and surface water quality's premier conference and exhibition hosted by Endeavor Business Media, LLC. WaterPro is the annual conference of the National Rural Water Association and is designed to bring together water and wastewater utility systems for sessions in operations, management, boardsmanship and governance. These conferences will be hosted as two parallel, in-person events at the Wisconsin Center in Milwaukee, Wisconsin. They offer different programs, however, a joint exhibit hall will provide attendees with the opportunity to network with vendors and service providers from both events.

#### **International Coastal Cleanup Day**

*September 18<sup>th</sup>*

Where safe, small cleanups can happen, volunteers are tracking their impact, collecting important data on the amount and types of trash collected and submitting it all through Ocean Conservancy's app, Clean Swell. The International Coastal Cleanup (ICC) began over 30 years ago and has grown to engage volunteers throughout the U.S. and more than 100 countries. The Ocean Conservancy's ICC webpage also features a "8 Steps to Safely Conduct a Solo or Small Cleanup."

#### **Salvaging Solutions – ADV Info Hub Reflections**

*September 22<sup>nd</sup> (3PM ET)*

Attend the seventh webinar in the NOAA Marine Debris Program's series, *Salvaging Solutions to Abandoned and Derelict Vessels Webinar: ADV Info Hub Reflections*.

## **Global OCEANS 2021**

*September 20-23<sup>rd</sup>*

Join global thought leaders and innovators in the areas of marine technology, engineering, science, research, and education to hear from industry experts and engineers regarding the latest research and innovations, discuss current environmental issues and policies affecting the field, and collaboratively work together to move the fields of marine technology and engineering forward. The event will feature a special technical session called "Ocean Clean Up: Micro to Macro."

## **Cheers to Clean Water 2021**

*September 25<sup>th</sup> (9AM-12PM ET)*

The 4th annual *Cheers to Clean Water* will take place as part of the International Coastal Cleanup. This year, participants will be cleaning five sites across Baltimore: Middle Branch Park, Gwynns Falls Trail, Herring Run Park, Canton Waterfront Park, and Stony Run (Hampden). The first 200 volunteers to participate (aged 21+) will receive a voucher or discount for beverages from participating breweries.

***Save the dates for future months...***

## **Extended Producer Responsibility (EPR) Coffee Hour**

*October 1<sup>st</sup> (2PM ET)*

Join Beyond Plastics, Conservation Law Foundation, National Stewardship Action Council, UPSTREAM, and Break Free From Plastic US for a free informal "coffee hour" conversation to talk about the latest EPR proposals and what to look for to make sure the goals are achieved.

## **Sustainable Packaging Coalition ADVANCE 2021**

*October 5-6<sup>th</sup>*

SPC Advance 2021 will be held virtually by the Sustainable Packaging Coalition. The conference will be divided into 3 tracks: Regenerative and Renewable, Innovation and Trends, and EPR and Policy. The event will feature a range of topical experts with discussions surrounding circularity, Extended Producer Responsibility, plastic alternatives, chemical upcycling of waste plastics, and more.

## **Recycling Revisited – Other Recyclables and Emerging Markets**

*October 6<sup>th</sup> (11AM ET)*

This webinar is offered as part of the Southeast Recycling Development Council's (SERDC) "Recycling Revisited" webinar series. The event will focus on recyclables other than plastics, glass, paper, and metal, and discuss emerging markets.

## **NAAEE 2021- The Power of Connection**

*October 12-15<sup>th</sup>*

The North American Association of Environmental Education's 50<sup>th</sup> Annual Conference will feature six concurrent virtual tracks: 1) Advancing Civic Engagement and Sustainable Communities, 2) Building Leadership for Environmental Literacy, 3) Connecting with Nature, 4) Conservation and Environmental Education, 5) Green Schools, Universities, and Vocational Institutions and 6) Linking Research and Practice to Increase Impact.

## **Future of Plastics Forum**

*October 13-14<sup>th</sup>*

This virtual conference will assess how business can tackle plastics pollution and find solutions that drive sustainable plastics use. The Innovation Forum will bring together key industry players from across the value chain to discuss current expectations and drivers as well as practical and realistic solutions that are innovative and scalable. This event will bring together 200+ key actors from across the globe, including

speakers from organizations such as Unilever, Coca-Cola Europacific Partners, The Body Shop, and The Consumer Goods Forum.

### **Salvaging Solutions – Vessel Disposal**

*October 27<sup>th</sup> (3PM ET)*

Attend the eighth webinar in the NOAA Marine Debris Program's series, *Salvaging Solutions to Abandoned and Derelict Vessels Webinar: Vessel Disposal*.

### **Conservation Marketing Conference**

*October 28-30<sup>th</sup>*

The ConsMark 2021 conference theme is “Changing Behavior in a Changing Climate.” This virtual event will feature presentations on a wide range of environmental topics from traditional ecological knowledge to marine pollution and plastics.

### **Coastal and Estuarine Research Federation Biennial Conference**

*November 1-4<sup>th</sup> and 8-11<sup>th</sup>*

CERF 2021, hosted by the Coastal and Estuarine Research Federation, will virtually bring together hundreds of scientists and researchers in discussions surrounding the collective goals of preserving coastal and estuarine habitats, resources, and heritage.

### **Pinniped Entanglement Prevention and Response Workshop- Sharing Best Practices to Improve Safety and Success**

*December 12<sup>th</sup> (8:30AM-5:30PM ET)*

This in-person workshop will be held in advance of The Society for Marine Mammalogy 24th Biennial Conference on the Biology of Marine Mammals in Palm Beach, FL. The event is intended to bring together pinniped researchers, managers, and practitioners interested in reducing global pinniped entanglements and interactions with active fishing gear. Attendance preference will be given to those registered for the conference and non-conference registrants will have to pay a non-registrant participant surcharge.

### ***In case you missed it...***

#### **Working Towards a Global Plastic Pollution Treaty**

OCTO hosted a webinar on August 17<sup>th</sup> titled “Working towards a global plastic pollution treaty: Process and possibilities.” The webinar presenter, Trisia Farrelly of Massey University, New Zealand, is also co-founder of the New Zealand Product Stewardship Council and a member of UNEA’s Expert Group and the United Nations Environment Programme’s Scientific Advisory Committee on Marine Litter and Microplastics since 2017.

#### **Mid-Atlantic Marine Debris Summit**

On July 20-22, the Mid-Atlantic Marine Debris Summit brought together policy-makers, researchers, businesses and the public to explore current trends in marine debris, new science on marine debris impacts, and new technology, policies and initiatives to prevent and reduce marine debris.

#### **Ending Litter: Policies and Practices That Work**

Keep America Beautiful hosted a webinar on July 14<sup>th</sup> titled “Ending Litter: Policies and Practices That Work.” In this webinar, community leaders, public officials, community leaders, and others on the front lines of litter reduction explored what policies and practices have brought success in American communities.

## **Global Governance of Plastic Pollution: Transforming the Global Plastics Economy**

This series of panel sessions was originally hosted in late August by the Global Governance Centre at the Graduate Institute and the United Nations Conference on Trade and Development. Eight different session videos cover a variety of topics from stakeholder perspectives on a global plastic pollution treaty to plastics economy trends, forecasts, and financial levers for change and strategies for transforming the global plastics economy to reduce plastic pollution.

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## **Recent Legislation**

### **REDUCE Act of 2021**

The REDUCE Act, or “Rewarding Efforts to Decrease Unrecycled Contaminants in Ecosystems Act,” was introduced on August 5<sup>th</sup> by Senator Whitehouse and sent to the Senate Committee on Finance. If passed, the bill would place a 10-cent tax (starting in 2022 and increasing by 5 cents per pound each year after) on virgin plastic used to make single-use products, including plastic packaging, beverage containers, bags and food service products. Funds collected through this tax would go towards recycling, marine debris monitoring and removal, and addressing the environmental justice and pollution impacts of plastic production.

### **Infrastructure Investment and Jobs Act**

Text from the RECYCLE Act, originally introduced in March of this year, was incorporated into this infrastructure bill in July. Since then, the bill has passed the Senate and was shared with the House on August 16<sup>th</sup>. The bill includes provisions on improving the U.S. recycling system through increased public participation and reduced contamination in residential recycling programs.

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## **The Microplastics Breakdown**

### **MICROPLASTIC SOURCES, TRANSPORT AND FATE**

#### **Distribution and abundance of microplastics in coastal sediments depends on grain size and distance from sources**

*A.Marques Mendes, N.Golden, R. Bermejo, L. Morrison*

This study looked at microplastics (MPs) in intertidal and subtidal sediments at 87 locations in habitats designated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) on the Ireland coastline. Colorless, polyethylene fibres and polypropylene fragments were the most abundant MP recorded and finer grained sediments were shown to entrap more MPs than coarser sediments. Higher concentrations of MPs in finer sediments (<63 µm) within a 2 km distance from a known source was observed, with MP concentrations decreasing with an increase in sediment grain size and/or distance from a possible source. The authors concluded that MP abundance was closely related with distance from known sources and concentrations were greater in intertidal as opposed to subtidal sediments. They also observed that the association between finer sediment particles and a greater burden of micro debris was more notable in locations rich in organic matter, which they concluded indicated that depositional material may play a key role in the dispersal and accumulation of MPs.

#### **Continental microplastics: Presence, features, and environmental transport pathways**

*María B. Alfonso, Andrés H.Arias, Ana C.Ronda, María C.Piccolo*

This review examined the current knowledge of the main pathways of MPs in air, soil, and freshwater reservoirs with the goal of providing an understanding of: 1) their behaviors in the continental

environment; 2) their occurrence (as particle counts); 3) sources; and 4) how their features as shape, size, polymer composition, and density could influence their transport and final sink. The authors assessed 141 studies and found that the principal pathways for MP pollution are wind resuspension and atmospheric fallout, groundwater migration, runoff from catchments, and water flow from rivers and effluents. Freshwater systems were the most studied continental MPs reservoirs, with rivers and estuaries discharges as the main MPs' pollution contributors to marine systems. Fibers were found to be the most prevalent type of MPs in samples from all the environments, with PE, PP, PET, and PS being the dominant polymer-types and decreasing sizes with increasing distance from their sources. Another main finding of this review was that MPs' size, shape, polymer composition, and density affect how MPs interact with environmental variables like soil structure and composition, precipitation, wind, relative humidity, water temperature, and salinity. The authors suggested that more research should focus on MPs presence and pathways on soil systems, as one of the main long-term sinks. They also suggested that it is crucial to keep moving forward to get a consensus on MP methodologies, including sampling process, digestion protocols, result expressions, and the nomenclature used to describe them or their behavior in the environment.

## TREATMENT PROCESSES AND REMOVAL

### **Treatment Processes for Microplastics and Nanoplastics in Waters: State-of-the-Art Review**

*M. R. Karimi Estahbanati, Marthe Kiendrebeogo, Ali Khosravanipour Mostafazadeh, Patrick Drogui, R.D.Tyagi*

This article reviewed treatment processes for MPs and nanoplastics (NPs) removal in wastewater and analytical techniques for evaluation of the operation of these processes. The MPs and NPs treatment processes were categorized into the separation and degradation processes and the challenges and opportunities in their performance were analyzed. The evaluation of these processes in this article found that the MPs or NPs removal efficiency of the separation and degradation processes could reach up to 99% and 90%, respectively. Thus, the combination of separation and degradation processes could be a promising approach to mineralize MPs and NPs in water with high efficiency. The authors found that the type and concentration of MPs present in the effluents of different WWTPs are a function of the size of the population served, the rainwater flow that enters WWTP, and the filtration characteristics used in the WWTPs. Their analysis indicated that most of the MPs present in the influent can be eliminated from water during the primary and secondary treatment in the WWTPs. However, tertiary treatment methods (e.g. including rapid granular filtration, disc filtration, membrane filtration, dynamic membrane filtration, air flotation, photocatalytic degradation and electrochemical degradation) were found to be potentially necessary since the treatment processes cause the breaking of MPs and NPs into smaller particles and these treatment processes should be capable of effectively removing MPs smaller than 20 µm and NPs.

### **Biodegradation of microplastics: Better late than never**

*Saba Miria, Rahul Saini, Seyyed Mohammadreza Davoodi, Rama Pulicharla, Satinder Kaur Brar, Sara Magdouli*

This paper reviewed the current studies on the biodegradation of different types of MPs with different levels of biodegradability and summarized the current knowledge available on the biodegradation of MPs. The authors highlighted a 2011 study on the potential for sediment and soil microorganisms in marine and terrestrial ecosystems to biodegrade debris, demonstrating the rate of degradation of plastics is significantly low due to the low available oxygen and light. The authors identified several areas that warrant further research, including that the underlying mechanism of MPs biodegradation in soil and water systems needs to be better understood in order to develop an effective method for MPs removal. The occurrence and distribution of MPs in environmental compartments and the standardized definition and protocols for extraction, characterization, and quantification, also warrants more exploration in their view. Available methods for biodegrading MPs were also discussed and the authors recommended further research and field demonstrations to confirm the applicability of technologies to degrade MPs effectively.

## IMPACTS ON ECOSYSTEMS AND ORGANISMS

### Interactions between microplastics/nanoplastics and vascular plants

*Lingshi Yin, Xiaofeng Wen, Danlian Huang, Chunyan Du, Rui Deng, Zhenyu Zhou, Jiaxi Tao, Ruijin Li, Wei Zhou, Zeyu Wang, Haojie Chen*

This review focused on two topics: 1) the effect of vascular plants on the fate of MPs and NPs; and 2) the effects of MPs and NPs on vascular plants. The authors noted that vascular plants in the environment can influence the movement of air and water through their body shape or influence the soil microenvironment through their roots. Their results indicated that vascular plants (e.g., reeds, mangroves) can act as sinks for MPs and NPs as their surfaces can adsorb these plastics; moreover, NPs can be internalized by plants. MPs were also found to accumulate in underwater vascular plants, which was attributed to their large size and rough surfaces. Larger vascular plants were thought to intercept MPs transported by water currents while their rough surfaces can absorb MPs more easily than smaller plants. The size of NPs was identified as another key factor in determining whether they can be absorbed by vascular plants; the plant epidermis and cell wall make it difficult for larger MPs to penetrate the tissues of vascular plants. Plastics on the surfaces and in the interiors of vascular plants were found to cause various phytotoxicity effects, including impacts on growth, photosynthesis, and oxidative stress.

### Bivalves with potential for monitoring microplastics in South America

*Gabriel Staichak, Augusto Luiz Ferreira-Jr, Andressa Carla Moreschi Silva, Pierre Girard, Claudia Tasso Callil, Susete Wambier Christo*

Filter organisms were thought to be the organisms most susceptible to negative effects from MPs. As a result, the authors suggested they have the potential to be an environmental sentinel. They noted that there is still a lack of information about the impacts of consuming MP-associated bivalves on human health. This study investigated the filtration and prevalence of MPs in 140 adult *Perna perna*, *Mytella guyanensis* and *Anodontite trapesialis* mussels. The animals were divided into a control and an experimental (“treatment”) group. The treatment organisms were exposed to MP pellets and microfibers for 48 hours. Microplastic (microparticles and microfibers) prevalence in the evaluated species ranged from 0.0% to 100%: *M. guyanensis* recorded the highest MP prevalence values, whereas *P. perna* recorded the lowest ones. The authors concluded that these differences indicate that the filtration capacity, condition and purification time may be different between species. Additionally, they concluded that these bivalves have the potential to be used as bioindicators associated with this contaminant in environments.

## MICROPLASTICS POLLUTION AND PUBLIC POLICY STRATEGIES

### The invisible enemy. Public knowledge of microplastics is needed to face the current microplastics crisis

*Eva Garcia-Vazquez, Cristina Garcia-Ael*

This review article analyzed existing literature to identify possible psychosocial solutions to support addressing MP pollution. Consumer knowledge about MPs was found to be directly connected with the willingness to adopt a pro-environmental behavior, while risk perception and perceived control were less important. For example, the review found that better informed people would pay more for cleaning the environment and would purchase a device to filter microfibers and sustainable clothes. Based on their analysis of the literature, the authors’ recommendations included: 1) the creation of baseline of knowledge about MPs; 2) the exploration of the role of environmental values as mediators between knowledge and behavior against MPs; 3) conducting studies in a wider range of geographic areas; 4) undertaking intercultural studies to determine the scale of interventions for public awareness about the problem; 5) improving scientific communication; and 6) including MP pollution as a subject in formal and non-formal education settings.

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

EPA Trash Free Waters Program | [nandi.romell@epa.gov](mailto:nandi.romell@epa.gov) | <https://www.epa.gov/trash-free-waters>

