THE FLOW OF... TRASH FREE WATERS

ISSUE 11

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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 EPA, and shall not be used for advertising or product endorsement purposes.

HOW'S IT FLOWING?

Administrator Wheeler's Remarks on Trash Free Waters

U.S. Environmental Protection Agency (EPA) Administrator Andrew Wheeler has been highlighting the issue of marine litter in a series of recent speeches and meetings.

On March 20, 2019, Administrator Wheeler outlined the importance of addressing global water issues during a panel at the Wilson Center called "Implementing the US Global Water Strategy: A First-Year Review." He cited marine litter as the third of his top three global water priorities, which also include clean and safe drinking water and water infrastructure

Citing examples of Trash Free Waters projects in Central America, the Caribbean, and South America, the Administrator said "...we will focus on expanding these efforts with our European and Japanese counterparts to the six Asian countries that contribute nearly 60 percent of the world's marine waste." The EPA and other federal agencies such as the State Department and USAID will be working together to provide technical expertise and support for proper waste management systems around the world.

He further expressed support for the Trash Free Waters program because of its work, "directly with states, municipalities, and businesses to reduce litter, to prevent trash from entering waterways, and to capture trash that is already in our waters." Moving forward, Administrator Wheeler has committed to making marine litter a top priority in his meetings at the G7 in France and the G20 in Japan this year. See his remarks at: https://www.epa.gov/ newsreleases/epa-administrator-wheelers-wilson-center-remarks-global-water-issues.

Earth Day with a Trash Free Focus

Administrator Wheeler participated in an Earth Day event on the Anacostia River in Washington, D.C. with Japan's Ambassador to the United States, Mr. Shinsuke J. Sugiyama. During the April 22 event, which was hosted by D.C. Water, Administrator Wheeler and Ambassador Sugiyama rode aboard D.C. Water's recently upgraded skimmer boat, which removes hundreds of tons of trash per year from the Anacostia and Potomac Rivers. The Anacostia River also happens to be one of the nineteen designated Urban Waters Federal Partnership locations.

"EPA supports domestic and international projects to reduce marine litter," said Administrator Wheeler, "and we join Japan in making it a priority issue during Japan's leadership of the G20 Summit in June."









Ambassador Sugiyama noted that marine plastic litter will be an important item on the agenda at the G20 Summit.

Read the news release here: https://www.epa.gov/newsreleases/epa-celebrates-earthday-2019-video-and-events; https://twitter.com/EPAA-Wheeler/status/1120455825447948288

2019 G7 Summit

As part of the G7 Environmental Ministers' meeting in Metz, France on May 5-6, 2019, EPA Administrator Wheeler hosted U.S. stakeholders in a discussion about how government, non-governmental organizations, and the private sector can work to curb marine litter and waste. He said, "To be most effective, nations around the world must address the problem before it gets to our oceans, which means improving waste management and recycling." During a session with G7 ministers on Innovative Solutions to Fight Plastic Waste, Administrator Wheeler highlighted the Agency's Trash Free Waters Program.

In June, Administrator Wheeler is expected to attend the G20



Administrator Wheeler (3rd from left) at the G7 Summit.

Environmental Ministers meeting in Japan to continue the constructive dialogue on marine litter and plastic waste. Romell Nandi,U.S. EPA Office of Water,nandi.romell@epa.gov

Call for Abstracts for SETAC 2019: Micro- and Nano-Plastic Methods Research: Harmonizing Methods & Addressing Challenges

Nanoplastics and microplastics are recognized as emerging contaminants and are being studied globally and across ecosystems. However, the current diversity in methods used for sampling, quantifying and reporting has made comparisons across studies difficult. New approaches are needed to quantify microplastics in environmental matrices; to modify existing methods with respect to higher throughput, more precision and smaller particles; and to develop appropriate QA/QC for those methods

For the November 3-7 SETAC 2019 conference (Toronto, Ontario), Samantha N. Athey (University of Toronto), Susanne M. Brander (University of Oregon), Robert M. Burgess (USEPA), and Kay T. Ho (USEPA) are organizing a session with a focus on methods used to sample and measure microand nano-plastics. They seek to provide a platform to discuss harmonization, address challenges and share best practices.

The objectives of the proposed session are (1) to discuss challenges for nanoplastic and microplastic research, (2) to share QA/QC best practices, and (3) to highlight methods of visualization, isolation, extraction and identification for micro- and nano-plastic

particles and fibers from different environmental media (e.g., sediment, tissues, water). The aim of this session will be to emphasize challenges of nanoplastic and microplastic research, as well as to encourage collaboration among different sectors in addressing these challenges, harmonizing methods, and standardizing solutions. Addressing these broad research areas will ultimately provide the information needed to determine whether regulations relating to the fate and effect of micro- and nano-plastics are necessary. This session welcomes contributions focusing on work to establish robust, harmonized

methods for detecting, quantifying or testing the toxicity of nanoplastics and microplastics in the environment, and overcoming common challenges in detecting and characterizing nanoplastics and microplastics. The deadline for abstract submissions is June 5, 2019.

To submit an abstract: https://toronto.setac.org/scientif-ic-program/abstract-submission/

—Kay Ho, USEPA Office of Research and Development, <u>ho.kay@epa.gov</u>

Two Rules to Keep Waste from Entering Waterways and Oceans



Let's put a lid on it! Did you know that improper disposal of trash is the same as littering? Many people don't realize that trash can escape from bins if the lids on the bins aren't attached or closed correctly, or if the trash is placed on top of full bins. Keep trash out of storm drains, nearby waterways and the ocean by making sure that trash and recycled items are put inside the correct bins and that lids are securely attached.



Let's recycle right! Did you know that, according to the Ocean Conservancv. six out of ten of the most commonly found items in waterways and oceans are fully recyclable? Creating a strong recycling culture will not only prevent waste from entering our waterways but will help people understand that recyclables are truly valuable materials that must be put in the proper bin so manufacturers can effectively reuse them. The nonprofit organization Recycle Across America has developed a society-wide standardized

labeling system for recycling and trash bins to make it easy for people to recycle correctly wherever they are in the U.S., much like standardized road signs allow people to drive correctly wherever they are in the U.S.

Recognizing our interconnected missions, Recycle Across
America is partnering with
Trash Free Waters to improve the recycling culture. We are working together to encourage the use of standardized labels on bins to make it easy for people to recycle right, and we

are sharing helpful tools for businesses, schools and municipalities to create successful recycling programs. Visit Recycle Across America's website for more information about the Let's Recycle Right® for Trash Free Waters campaign and to learn more about the standardized label solution: https://www.recycleacrossamerica.org/labels

– Emma Maschal,ORISE Research Participant,maschal.emma@epa.gov

Workshop on Microplastics in the Chesapeake Bay

On April 24-25, the Chesapeake Bay Program's Scientific and Technical Advisory Committee (STAC) hosted a two-day workshop titled Microplastics in the Chesapeake Bay and its Watershed at the George Mason University Potomac Science Center. The purpose of the workshop was to determine the state of microplastics research in the Bay, data needs, field and laboratory research methodology, and associated policy and management needs. Structured to reflect an ecological risk

assessment framework to support potential management actions, the workshop provided an opportunity for attendees to collaborate, leverage ideas and discuss the challenges of managing plastic pollution.

Based on a limited number of studies, plastics appear to be ubiquitous in Chesapeake Bay and are likely being ingested by fish and shellfish

Managers and researchers discussed microplastic methodology, effects, sources and prevention approaches. They identified issues typical of an emerging area of science such as lack of consistency in how micro-particle size classes are defined, lack of consistency among analytical methods, and lack of analytical capability in area laboratories. Information shared at the workshop will help the STAC guide and allocate resources to protect and understand microplastics in Chesapeake Bay

The STAC will submit a written

workshop report to the Chesapeake Bay Program Management Board to determine next steps. Agenda and presentations are now available at https://www.chesapeake.org/stac/work-shop.php?activity_id=292.

—Kay Ho,
USEPA Office of Research and
Development,
ho.kay@epa.gov, and
Kelly Somers,
USEPA Region 3,
somers.kelly@epa.gov

Trash Free Waters Project Updates: Three Mile Creek (AL) and Proctor Creek (GA)





Three Mile Creek

A year ago, the EPA Gulf of Mexico Program provided funding to the Mobile Bay National Estuary Program (MBNEP) for the installation of Litter Gitter trash collection devices in the Three Mile Creek Watershed in downtown Mobile. As of February 2019, 2,248 pounds of trash had been removed, 68 pounds of which were recyclable. Reductions in litter in this watershed will require a comprehensive approach that includes changes to business practices to reduce waste streams: increases in community awareness to change personal behaviors; a concerted effort to remove legacy trash from streambanks, wetlands, and creek beds; and affordable installation and maintenance of devices. These measures will have the greatest impact on Three Mile Creek's downstream area, home to a large percentage of low-income, underserved, minority neighborhoods.

On March 21, 2019, EPA Region

4 staff and management, along with representatives from the MBNEP, the City of Atlanta, the West Atlanta Watershed Alliance, and Groundworks Atlanta, toured several TFW projects in Mobile, including installation of a Litter Gitter on the campus of the University of South Alabama. The tour included the observation of a Bandalong trash-collection system and how it operates in comparison to the Litter Gitter system, and demonstrations on how to use the Escaped Trash Assessment Protocol tool.

Proctor Creek

On Thursday, April 18, 2019, the EPA Regional Urban Waters and TFW Coordinators met with representatives from Coca Cola, the City of Atlanta, the West Atlanta Watershed Alliance, Groundworks Atlanta, the Osprey Initiative, and Stormwater Systems. Discussions focused on the \$300,000 already pledged for an Urban Waters-Trash Free Waters Initiative for Atlanta's Proctor Creek and the Proctor Creek

Watershed. Participants heard from donors as well as the technical minds that will put trash trap technologies to use, and reviewed progress on other project concepts that need private sector, public sector and/or philanthropic funding to launch.

Outreach and education, operation and maintenance of the technologies, and plans to better control illegal dumping are all necessary to make the project a success. All partners want to meet the goal of improving the water quality of the creek and assisting in providing safe, clean, livable places where residents and businesses can thrive, enjoy and take prideful ownership of their communities. Many other Urban Waters Federal Partnership locations are working with Trash Free Waters to address the sources of trash pollution in their communities.

—Chris Plymale, EPA Region 4, plymale.christopher@epa.gov



Top Photos: Litter Gitter installed in the Three Mile Creek watershed.

Bottom Photo: Daryl Haddock of the West Atlanta Watershed Alliance.

Marine Debris Research and Removal in the Mississippi Sound

The EPA Gulf of Mexico Program has recently funded a collaborative team from Mississippi State University Extension Service, Mississippi-Alabama Sea Grant, Mississippi Commercial Fisheries United, Mississippi Coalition for Vietnamese-American Fisher Folks & Families, and the NOAA Marine Debris Program to create a year-round marine debris removal and research program for the Mississippi Sound involving derelict crab traps.

Derelict crab traps are those that have been lost in the water in a variety of ways. Over time, these traps become battered, bent, broken, heavily fouled, and covered in marine wildlife. They can cause many environmental and economic problems. Catching just one derelict crab trap can result in costly net repairs and decreased fishing income. The number of derelict crab traps in the Gulf of Mexico is currently unknown and estimates of commercial trap loss vary among the Gulf States.



Derelict crab traps being removed from one collection site.

As participating shrimpers encounter derelict traps at sea, they will remove the traps and deposit them at specified docks and harbors. Over thirty Mississippi shrimpers have signed up to participate, and the project team is still recruiting participants. The clean-up project kicked off January 1, 2019 and will continue through 2020. Hundreds of traps had already been collected before

the spring shrimping season got started. The spring season is also when the twenty contracted shrimping vessels will begin collecting data (i.e., photos and logbook documentation of every marine debris occurrence) that will be used to improve the understanding of the distribution and economic impact of marine debris on the commercial shrimping industry. The team will use this informa-

tion to educate both participants and the public about the impacts of marine debris, and hopefully change their behavior to improve stewardship of Mississippi Sound.

For more information, please visit http://coastal.msstate.edu/crab-traps or contact Eric Sparks at eric.sparks@msstate.edu or Calista Mills at mills.calista@epa.gov.

Marine Debris Study Counts Trash from Texas to Florida

Researchers from the Dauphin Island Sea Lab and the Mission-Aransas National Estuarine Research Reserve teamed up for a two-year study to document the trash problem along the Gulf of Mexico shoreline. Their findings are documented in the study Accumulation and distribution of marine debris on barrier islands across the northern Gulf of Mexico, in ScienceDirect's Marine Pollution Bulletin 139 (14-22).

From February 2015 to August 2017, the researchers kept tabs on marine debris that

washed up on the shoreline every month at 12 different sites on nine barrier islands from North Padre Island, Texas to Santa Rosa, Florida. The trash was sorted by type, frequency, and location. The most shocking discovery was that, throughout the year, ten times more trash washed up on the coast of Texas than any of the other Gulf states. Most of the trash, between 69 to 95 percent, was plastic and included bottles and bottle caps, straws, and broken pieces of plastic. Researchers also noted that more trash washed ashore during the spring and

summer months. This could be because more people are outside and on the water during this time. There is also evidence that the distance from a high-influx watershed can be used to predict debris accumulation on beaches, which could assist groups in targeting specific areas for cleanups.

For more information, please contact Caitlin Wessel at caitlin.wessel@noaa.gov or Katie Swanson at Katie.swanson@utexas.edu.

—Doug Jacobson, EPA Region 6, <u>jacobson.doug@epa.gov</u>

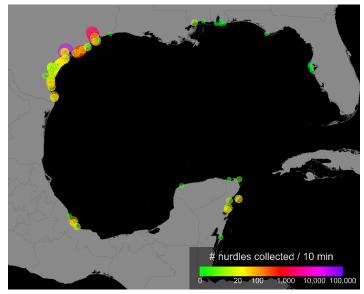
Nurdles Washing Up on Gulf of Mexico Beaches

Texas has the largest concentration of petrochemical plants in the nation, and some of those plants produce nurdles - small plastic beads that are melted and used to make plastic products such as cups, bottles, bags, and sunglasses. Nurdles can enter the environment at many points along the process of being transferred, either by land or sea, from the manufacturer to the factory. They readily absorb toxic pollutants including PCBs and DDT; when consumed by turtles, birds, fish, and other wildlife, they contaminate them and can also give the animals a false sense of fullness, causing them to starve.

The Mission-Aransas National Estuarine Research Reserve (The Reserve) at the University of Texas Marine Science Institute is analyzing the source of nurdles washing up on the beaches of the Gulf of Mexico with a new citizen science project called Nurdle Patrol. Since November 2018, over 200 volunteers from around the Gulf have been conducting 10-minute surveys at their local beaches to help identify concentrations of nurdles. These data are then mapped. Not unexpectedly, the highest concentrations are in the bays near the plants where they are made; however, they have been reported across the entire Gulf of Mexico and into the Caribbean Sea. More information on the Nurdle Patrol, with the latest maps, news and how one can become involved, can be found at www.MissionAransas.org.

—Jace Tunnell, Mission-Aransas National Estuarine Research Reserve, and Doug Jacobson, EPA Region 6,

jacobson.doug@epa.gov





Map of Nurdle Patrol data showing concentrations of nurdles in the Gulf of Mexico from November 2018 to March 2019.

Image created in R by Dr. Lindsay Scheef. Nurdle photo courtesy of Jace Tunnel.

Updated Guidance on Making a Waste Plan Before a Natural Disaster

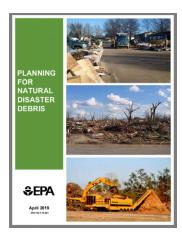
Natural disasters happen, and in addition to their impacts on people, property, and the environment, they create a lot of debris. FEMA has a Public Assistance Debris Management Guide and EPA recently published the updated guidance Planning for Natural **Disaster Debris** to help communities create debris management plans that prioritize safety, as well as efficient collection and disposal of debris. By taking a proactive approach to debris management, communities are better equipped to restore public services and protect public health in the event of a disaster.

The case studies in the EPA guidance are great tools for communities as they develop Zero Waste goals, negotiate contracts for municipal waste services, or coordinate with emergency managers before a natural disaster. Lessons learned from the 2017 hurricane season are included in the 2019 guidance document. On June 20, 2019, EPA will host a webinar that will provide an overview of the guidance and highlight lessons learned and best practices, with time for stakeholder questions.

Another source of valuable information for state and community managers is the

Disaster Debris Recovery Tool (DDRT) developed by EPA Region 5. The DDRT is an interactive mapping tool that provides the locations of over 6,000 facilities capable of managing different types of disaster debris. By including 12 different types of recyclers and landfills, emergency managers in Region 5 and the surrounding states can efficiently coordinate debris removal in a way that complies with regulations, conserves disposal capacity, and minimizes long-term environmental impacts.

Check out the NOAA Marine
Debris Emergency Response
website to find out if your state



has completed a debris emergency response plan.

–Emma Maschal,ORISE Research Participant,maschal.emma@epa.gov

What's Your Favorite Trash Data App?

Now that there are a variety of Mobile Device Web Applications (apps) designed to track trash, here is a review to help you if you are considering using an app in your trash prevention and removal efforts

- Marine Debris Tracker http://www.marinedebris.engr.uga.edu/. Created by Jenna
 Jambeck's lab at the University of Georgia, this app can aggregate and make accessible all itemized litter data collected by users. This data helps the Jambeck lab with modeling and analysis related to plastic inputs from land-based sources.
- Clean Swell https://coastal-cleanupdata.org/. The Ocean Conservancy's Clean Swell app feeds into their larger coastal cleanup database, making for robust analysis. It uses the same item categories as their paper datacard.
- Litterati https://www.litterati. org/. All data are not publicly downloadable yet, but with pictures required for every item, this dataset is the most robust when it comes to quality control. Analysts can look at multiple characteristics like item type, material type, and brand.
- Global Alert <a href="https://www.oceanrecov.org/global-ocean-o

alert-system/solution.html.

Ocean Recovery Alliance has created Global Alert as an online tool that allows users to report, rate and map trash hot-spots in their waterways and coastlines via mobile devices and a web-based platform.

- Open Litter Map https://openlittermap.com/en. This effort out of The Netherlands compares different countries based on litter collection. Any user can conduct their own analyses. The use of pictures to capture landscape views helps provide quality control.
- Schuylkill CleanSweep https://schuylkillcleansweep.org/.
 Supported in 2018 by a grant from the EPA Urban Waters and Trash Free Waters programs and the Partnership for the Delaware Estuary, CleanSweep promotes upcoming cleanup events and aggregates data by past event to track litter and illegal dumping activities. Although specific to the Schuylkill River Watershed, it is a model worth considering.
- PG County LitterTRAK https://www.princegeorgescoun-tymd.gov/2607/PGCLitter-TRAK. In support of requirements of the Anacostia River Trash TMDL, Prince Georges



County, MD developed this reporting tool to catalog litter collection in real-time.

Because users have to register for the app, there is quality control and the ability to conduct hotspot analyses.

 Crowd-sourced information platforms, like **Twitter** and **Instagram**. By integrating crowd-sourced information from popular social media platforms, using keywords (#) or mentions (@), maps and other analysis tools can display information in real-time, so individuals can track both the spread of information and the content. One popular social media campaign that went viral is the #TrashTag challenge, which prompts users to post before and after pictures when they participate in litter cleanups. Because this campaign happened on platforms that aren't designated for trash pollution, the engagement and volunteer activation opportunities are more significant than promotions/advertising for a separate trash app.

Recycling apps also exist.

RUBICONConnect and Recycle

Track Systems offer users the opportunity to connect waste streams with waste haulers efficiently and effectively, so that there is less chance that material will be mis-managed or escape from the system and become litter. These tools allow community members to access rules, restrictions, and best practices for material management.

If you know of other apps that have been useful for your efforts to prevent, monitor, and remediate trash pollution, please contact maschal. emma@epa.gov.

Partnership for the Delaware Estuary Science and Environment Summit

Every two years, the Partnership for the Delaware Estuary (PDE) brings together experts who share a common cause and a passion for environmental preservation. The most recent Science and Environmental Summit took place on January 27-30th with the theme 2029: Saving Our System Through Collaboration. A panel titled Marine Debris and Plastic Pollution included a presentation on the Trash Free Waters program by Kelly Somers of EPA Region 3.

Capitalizing on opportunities to share TFW information through conferences and existing partnerships with estuary programs like the PDE is one of the reasons the Trash Free Waters Program has been so successful.

Emma Maschal,
 ORISE Research Participant,
 maschal.emma@epa.gov

The Rapids: News Drops

CONFERENCES AND WEBINARS

Webinar: Introduction to EPA's Planning for Natural Disaster Debris guidance

Thu, Jun 20, 2019 1:00 PM - 2:00 PM EDT

To assist communities (including cities, counties, states, tribes) in planning for debris management before a natural disaster occurs, EPA's Office of Resource Conservation and Recovery updated its Planning for Natural Disaster Debris guidance. This webinar will provide an overview of the guidance and highlight lessons learned and best practices, with time for stakeholder questions. To register, visit: https://register.gotowebinar.com/register/679295174037404163

Lower Columbia River Estuary Partnership's Science-to-Policy Summit — Plastics and the Columbia River

June 21, Vancouver, WA

The Estuary Partnership will gather local business representatives, scientists, and policymakers to discuss what is known, what is being done, and what remains to be done to reduce single-use plastics. For more information, visit: https://www.estuarypartnership.org/event/2019/science-policy-summit-plastics-columbia-river.

American Shore and Beach Preservation Association's (ASBPA) 2019 National Coastal Conference

October 22-25, 2019; Myrtle Beach, SC

This year's theme is "Where Coasts & Rivers Meet." In addition to the regular program of science, engineering and policy on beaches, dunes, coastal restoration, living shorelines, sediment dynamics and more, there will be a special track of sessions on coast and floodplain management looking at risk and resilience in tidally influenced watersheds. Poster abstracts are being accepted through September 6, 2019. For more information, visit: http://asbpa.org/conferences/

GRANTS

Ocean Plastic Innovation Challenge, National Geographic

Deadline: June 11, 2019

The Ocean Plastic Innovation Challenge will focus on three strategic ways to address this growing crisis: designing alternatives to single-use plastic, identifying opportunities for industries to address plastic waste throughout supply chains, and effectively communicating the need for action through data visualization. Teams will compete for aggregate prize purses of up to \$500,000, and qualified participating teams may have the opportunity to receive a minimum of \$1 million in aggregate investment from Sky Ocean Ventures. For more information, visit: https://www.nationalgeographic.org/funding-opportunities/innovation-challenges/plastic/

Reducing Ocean Plastic Pollution, National Geographic

Deadline: July 10, 2019

The goal of this RFP is to measurably reduce plastic pollution before it reaches the ocean. This can be done by 1) informing and advancing national or subnational policies or management plans to reduce plastic source pollution, or 2) innovative behavior change approaches with the potential to inspire large numbers of people to dramatically reduce their consumption of single-use plastics and/or improve the recycling of plastic. Geographic priorities include known hot spots that contribute most to the ocean plastic pollution problem or which fill key gaps in geography. Proposals will be evaluated based on alignment to the focus of this RFP, expected impact, and cost-effectiveness. Preference will be given to projects with higher potential for scaling and impact. For more information, visit: https://www.nationalgeographic.org/funding-opportunities/grants/what-we-fund/reducing-ocean-plastic-pollution/

USDA Water & Waste Disposal Loan & Grant Program

Deadline: Rolling

States, municipalities, nonprofits, and federally recognized tribes may apply for assistance with improvement of 1) drinking water sourcing, treatment, storage and distribution, 2) sewer collection, transmission, treatment and disposal, 3) solid waste collection, disposal, and closure, and 4) stormwater collection, transmission, and disposal. For more information, visit: https://www.rd.usda.gov/programs-ser-vices/water-waste-disposal-loan-grant-program

Oceans 5, Leonardo DiCaprio Foundation, Plastic Solutions Fund

Deadline: Rolling

The Plastic Solutions Fund is a funders' collaborative focused on reducing single use disposable plastics with a goal of phasing out all non-essential uses by 2035. It focuses on countries most vulnerable to pollution, seeking to build a global movement to eliminate plastic packaging waste and stem the flow into the world's oceans. Grant-making priorities for the coming year include projects to secure new policies to reduce single use disposable plastics, to reduce demand in the United States, and to continue to build the global movement. Ongoing priorities include projects to hold consumer product companies accountable to reduce plastic waste, as well as grants to demonstrate "zero waste" cities, particularly in Asia. For more information, visit: https://oceans5.org/contact/

11th Hour Racing Grants

Deadline: September 1, 2019

Focused on the main pillars of 1) reducing ocean pollution, 2) fostering ocean literacy and stewardship, 3) advancing clean technologies and best practices, and 4) tackling the effects of climate change and water quality issues, 11th Hour Racing supports a variety of innovative efforts. Priority will be given to projects that incorporate communication campaigns, citizen science, and have a measurable impact on the environment. For more information, visit: http://11thhourracing.org/apply/

David and Lucile Packard Foundation Grants

Deadline: Rolling

The David and Lucile Packard Foundation offers over \$40 million annually through their Ocean program grants. This program aims to eliminate illegal, unreported and unregulated (IUU) fishing, ensure fisheries are sustainable, and protect shorebird and seabird habitat – none of which is possible without addressing trash pollution in our environment. New project proposals could build off their research from last year, "American Millennials: Plastic Pollution as a Gateway to Engaging the Next Generation of Ocean Conservationists." For more information, visit: https://www.packard.org/what-we-fund/ocean/.

Fred A. and Barbara M. Erb Family Foundation Grants

Deadline: Rolling

Geographic focus: Metropolitan Detroit Area

Non-profits in the Great Lakes area are encouraged to submit Letters of Intent to the Fred A. and Barbara M. Erb Family Foundation for funding related to improving water quality in the Great Lakes Ecosystem. Projects may focus on environmental justice, green infrastructure for stormwater management, engagement and education through watershed-wide activities, and/or supporting binational cooperation between U.S. and Canadian policy efforts to improve water quality. For more information, visit: https://www.erbff.org/how-to-apply/

Oak Foundation Grants

Deadline: Rolling

Focusing on the three priority areas -- Plastic Waste, Small-scale Fisheries, and Industrial Fisheries -- Oak Foundation supports grants that will promote marine conservation strategies. The Foundation commits its resources to address issues of global, social and environmental concern, particularly those that have a major impact on the lives of the disadvantaged. The Foundation makes grants to organizations based in Europe, the Arctic, East Asia and Africa. For more information, visit: http://www.oakfnd.org/env-strategies---ma-rine.html

2019 Residential Curbside Recycling Cart Grant

Deadline: Rolling

The purpose of the Residential Curbside Recycling Cart Grant Program is to advance recycling in communities across the U.S. by offering financial and technical assistance to support the implementation of cart-based curbside recycling. The applicant must be a local government, solid waste authority, or federally recognized tribe. The 2019 curbside grant RFP also presents the opportunity for communi-

ties to apply for grant funding to convert bin or bag-based curbside recycling programs to carts or to implement new cart-based curbside recycling programs. For more information, visit: https://recyclingpart-nership.org/recycling-cart-grant/

OTHER GRANT OPPORTUNITIES

For inspiration on what others have done and what other opportunities are available, check out FundingTheOcean.org. http://fundingthe-ocean.org/funding-map/

STUDENT CONTESTS

Bow Seat 2018 Ocean Awareness Student Contest

Deadline: June 17, 2019

Middle and high school students from around the world are invited to create works of art, poetry, prose, or film that speak to this year's theme – Presence of Future. Students need an adult sponsor to submit to the Contest, and the Contest is completely free to enter. Students can earn awards up to \$1,500 in each category, and Bow Seat also grants Sponsor Recognition awards of \$750 for outstanding teachers, parents, and mentors who help a student submit to the Contest. For more information, please visit: https://bowseat.org/programs/ocean-awareness-contest/overview/

Bow Seat 2018 Marine Debris Creative Advocacy Competition

Deadline: June 17, 2019

This competition challenges middle and high school students from the U.S. to implement real-world advocacy projects in their schools and communities, with the goals of educating the public about marine debris, inspiring people to change their behavior, and engaging them in activities that reduce or prevent marine debris. Students need an adult sponsor to participate in the competition, and the competition is free to enter. Students can earn awards up to \$5,000. For more information, please visit: https://bowseat.org/programs/advocacy-competition/overview/

Become an Ocean Leader

Deadline: Rolling

The Sustainable Ocean Alliance is looking for leaders to develop projects and campaigns to inspire their communities about ocean sustainability. Leaders will interact with a global community of experts, mentors, and other young leaders through the development of awareness campaigns/solution initiatives, and through high-level conferences around the world. For more information, visit: https://soalliance.org/leadership/

Have a TFW Story to Share?

The Flow is always looking for TFW articles, news and event information. Contact the editor at mayio.alice@epa.gov for submission deadlines.