THE NEW SCHOOL Tishman Environment and Design Center

TISHMAN CENTER · JANUARY 17, 2017

Searching for a Marine Plastic Pollution Solution

TISHMAN CENTER FACULTY GRANT PROJECT ENTERS DIGITAL PHASE WITH COLLAB COURSE THIS SEMESTER.

 Plastic Pollution collected from the Hudson River in one expedition, NYC by 5Gyres.org - July 2015

 TestingOurWaters.net typical research expeditions - trawling, recording location, documenting pollution

 Recycled Trawl from disposable beverage containers and Ray Trawl, 3D printed prototype of recycled plastic trawl for mass production.

 Current TestingOurWaters.net team - Taina Guarda, Barent Roth, Aishwarya Janwadkar

*By Barent Roth, Tishman Center Affiliated Faculty*When people first learn about the horrific marine plastic pollution problem in our ocean's gyres, they are predictably outraged. Sadly it is often just as predictable that they will be left with only a limited (albeit necessary) suggestion to reduce our use of disposable items or packaging. Motivated to engage in more specific actions, the TestingOurWaters.net project has found resonance by enabling engaged citizens to track and eventually help prevent the accumulation of polymers in our water using simple Do It Yourself (DIY) trawls and crowdsourced

citizen science.Originating as a collaboration with 5Gyres.org when their co-founders temporarily relocated to Brooklyn in early 2015, the TestingOurWaters.net research project recieved its initial funding from a Tishman Environment and Design Center Faculty Grant in Spring 2016. The citizen science crowdsourcing effort now offers a multi-pronged, design-centered approach to reducing the accumulation of plastics in local waterways and international oceans through active community engagement and policy change. Our global societal development as a Linear Economy has created an enormous plastic pollution problem, desperate for more data. The pioneering Non-profit 5Gyres.org has found plastic debris in every ocean around the globe; everywhere they trawled, they found plastic. In December 2014, they published the first worldwide marine polymer detritus estimate: 270,000 metric tons of plastic from 5.25 trillion particles. TestingOurWaters.net now collaborates with 5Gyres and NyNjBayKeeper.org to refine, design and develop low cost trawls (floating nets skimming the water surface) that range in price from $50-$500. These DIY trawls can be built either from readily available hardware components or open source 3D printable files. The project will

include designing instructions for how to build each trawl, making it accessible for everyone from the citizen scientist to the actual scientist. During the Spring 2017 semester students will engage in the last step to making this project publicly possible. In addition to designing more trawls and understanding the environmental context, students from across The New School will design and create a publicly available smartphone mobile application and internet website capable of collecting information from each DIY trawling expedition. (Spaces remain in this Collab course, if you are interested enroll now, Collab: Tracking Marine Pollution to Change Policy - 3404 - PSAM 5550 - A) Once plastic pollution has been collected in a DIY trawl, scientists can upload photographs of their debris and connect the pollution they found to the exact GPS determined location/date/time. The app and online platform will add to the global dataset baseline established by 5Gyres but they will also perform two additional important functions. The app platform will begin to develop a networked community of engaged citizens actively identifying the problem and finally facilitates the direct connection of the problem to the appropriate local official accountable for maintaining that

particular region's healthy marine ecosystems. Grants first from the Tishman Environment and Design Center and later from Autodesk Foundation have allowed the TestingOurWaters.net project to move from an idea to a reality. By allowing funding for outstanding Research Assistants from The New School, Taina Guada (Graduate Student - Environmental Policy and Sustainability Management) and Aishwarya Janwadkar (Undergraduate Student - Product Design), we have already designed and tested eight trawls and used them during five separate expeditions. As expected, every time we trawled we found plastic. Among design failures we have found success - the Recycled Trawl, using reclaimed plastic bottles, performed beautifully and the Ray Trawl prototyped on a 3D printer proved that a small solar rotationally molded version made from recycled plastic would be ideal for mass production. We are tackling this global oceanic problem created by the use of plastic disposables for a Linear Economy by asking the engaged community to start testing their local waters in order to identify the extent and source of plastic pollution. We should all be reducing if not eliminating our use of disposables but we are disconnected from the results of these actions. By

making an unseen problem visible we intend to foment public concern to the point that corrective policy action towards a Circular Economy can be taken literally upstream to the pollution source. The DIY trawl designs empower will local communities all over the world with the ability to identify the trash in their local waterways while the web platform will connect all citizen scientists enabling them to work together and learn from each other's successes and failures.

TO GET INVOLVED OR LEARN MORE:

Enroll in the Spring Collab course Collab: Tracking Marine Pollution to Change Policy - 3404 - PSAM 5550 - AFollow the project's progress online at TestingOurWaters.netExplore the project in person during Earth Week at The New School in AprilContact TestingOurWaters.net founder Barent Roth at rothb@newschool.edu

Comments (0)

Newest First