The Opportunity Project

2020 Earth Sprints

University Sprint

September - November, 2020

Census Open Innovation Labs

U.S. Census Bureau

Reducing Plastic Pollution in Oceans
U.S. Department of State & <u>The Wilson Center</u>

Challenge: Create open data sets and engaging digital tools that complement existing citizen science plastics data, to help the public understand the amount of plastic on local beaches and in the ocean, where such plastic comes from, and actions that can be taken to alleviate the problem.

Executive champions:
- Landon Van Dyke, Acting Deputy Director of the Center for Analytics & Senior Advisor for Energy, Environment and Sustainability, U.S Department of State
- Anne Bowser, Director of Innovation, The Wilson Center

Problem: Plastic Pollution is a pervasive and global issue. 8.3 billion tonnes of plastics are estimated to have been produced since the 1950s. While the production of plastic products has grown exponentially, today only 9% is recycled. Inefficient recycling systems and chemical compositions that limit decomposition create new problems for our planet and our health — we see plastics on our beaches, in our oceans, and in the stomachs of animals and people (UN Environment). While many agencies and citizen scientists collect data through activities including beach clean-ups, there is a need for coordination between different data sources to understand plastic pollution at local, national and global scales. Further, different stakeholders, including the general public and federal agencies, need to more easily understand how pollution quantity and type varies by location and where different types of pollution might come from. On the citizen level, such accessible information is important for education and behavior change. On the government level, information is needed to manage resources, set policies, and contribute to our international agreements, like reporting America's progress against the Sustainable Development Goals (SDGs).

Why this problem matters: Ocean plastics directly impact more than 800 species world-wide. Further, because plastics never completely degrade, microplastics in the environment threaten human as well as environmental health. Participation in citizen science shows that the public clearly cares. Citizen scientists do not always stay engaged and keep sharing data over time. In addition, citizen science volunteers do not always have access to contextual information on why plastic might be there and what they can do. The lack of data on plastics pollution and related information prevents citizen scientists and the public policy community from fully understanding the extent of the problem and making informed choices to reduce the growing threat of plastic pollution to human and environmental health.

Vision for sprint outcomes: Engaging digital tools and open data enable members of the public, as well as governments to understand both the extent of plastic pollution locally and globally, and how they can help create solutions to make a difference.

Target end users: Engaged citizens passionate about reducing plastic pollution, as well as policymakers, advocates, and researchers.

Initial open data sets:
- **Earth Challenge 2020** Data through the Citizen Science Cloud (link)
- **NOAA** Marine Debris Monitoring and Assessment Project information (link) and Citizen Science Data (link)
- Ocean Conservancy **TIDES** Coastal Cleanup Data (link) and Citizen Science Data (link)
- **Commonwealth Scientific and Industrial Research Organization's** Marine Debris List (link) and Database (link)
- **OGC SensorThings API** (link)
- **Marine Litter Watch**, European Environment Agency (link)
  - Citizen Science Data (link)
- **Additional Citizen Science Plastics Program datasets**
  - Project Aware - Divers Against Debris (link)
  - Global Alert - Floating Trash (link)

Lead POCs:
- Stephanie Christel, Eco-Management Analyst, U.S Department of State
- Metis Meloche, Product Manager, Science Technology Innovation Program, Wilson Center
- Elizabeth Newbury, Director of the Serious Games Initiative, Science Technology Innovation Program, Wilson Center

University Sprint Timeline *(Dates Subject to Change)*

Week	Milestone	Activity
Sept 7–11	**Kick Off Call** Friday, Sept 11	TOP team launches sprint with all participants Slack channel launches
Sept 14–18		Teams connect with user advocates to conduct user research and better understand the challenge they are working on
Sept 21–25	**User Research Milestone** Friday, Sept 25	Teams share learning from user research that will inform design of their product, and connect with user advocates for more feedback
Sept 28–Oct 2		Teams continue user research and begin data exploration
Oct 5–9	**Data Q&A** Friday, Oct 9	Data dive Q&A with data stewards to answer questions on federal data sets
October 12–16		Teams continue exploring data and developing products
Oct 19–23	**Concept Pitch** Friday, Oct 23	Participants come together for a virtual demo of the tools in progress. Teams share concepts, wireframes, and works in progress, with wide variation in product maturity. Sprint participants provide feedback on the tools in development
Oct 26–30		Teams continue building products and conduct user testing
Nov 2–6	**Beta Demos** Friday, Nov 6	Teams come together to showcase and share feedback on more mature versions of their products. Typically, tools have reached at least wireframes and have some functioning features by this stage
Nov 9–13		Teams continue building prototypes/products
Nov 16–20	**MVP Demos** Dates TBD	Teams share MVP with TOP team prior to collective rollout
December	**TOP Demo Day**	Teams present their sprint products to government, industry, media, and other stakeholders at open press Demo Day event