Earth Challenge — Earth Day 2020

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This is the third in a series of six articles about Earth Day Network's five campaigns for the 50th anniversary of Earth Day. The first of these is [EARTHRISE](#), a global call to political action.

On the first Earth Day in 1970, 20 million Americans took to the streets to protest environmental degradation. They launched the modern environmental movement. For the 50th Earth Day on April 22, 2020, Earth Day Network wants to activate at least a billion people worldwide. The pandemic has forced the cancellation of many physical events, but many moved into the digital sphere, where one campaign — [Earth Challenge](#) — is already at home.

Earth Challenge

Four years ago, Earth Day Network president Kathleen Rogers struck up a conversation with Landon Van Dyke, the State Department's senior adviser for environmental performance and sustainability. The idea for Earth Challenge, the world's most accessible and transparent citizen science database portal, was born from their conversation about the importance of [citizen science](#).

They brought in a third partner, the Wilson Center, a quasi-governmental, nonpartisan think tank with a science and technology program. "We are making sure that citizen science through Earth Challenge 2020 is actually authentic scientific research," said Anne Bowser, director of innovation at Wilson Center. The effort combines with Earth Day Network's expertise in education and activism and the State Department's technological resources.

"The State Department is making sure that technologies are developed in ways that meet all requirements for privacy and security. There is a sophisticated machine learning system in the back end as well as an open data platform so the research and policy community can access the information," said Bowser.

The Earth Challenge initiative combines data from existing citizen science projects with citizen-collected information from a new mobile app. The project aims to increase the amount of open-source data available to scientists and policymakers. But it goes beyond data collection to empower people around the world to understand and act on the data collected.

"Our goal is not just to create a love of science and get people engaged with it. But also, give them an opportunity to take specific action," said Kathleen Rogers, Earth Day Network president.

Six Areas of Study

After gathering input from academic researchers, educators, public policy experts, and citizen science volunteers, they developed six environmental research questions.

The app is currently able to collect data from users to help answer the first two questions:

- What is the extent of plastics pollution?
- How does air quality vary locally?

On June 5 (World Environment Day), they will launch two new questions:

- Is my food supply sustainable?
- How are insect populations changing?

The final two programs, still in development, will ask the questions:

- What's in my drinking water?
- What are the local impacts of climate change?

How Does it Work?

"Right now, we have the patches for the patchwork quilt, but they're not coordinated. That's a huge value-add that Challenge 2020 brings. We're pulling together existing data sets," said Bowser. All citizen science data will be shared with a Creative Commons No Rights Reserved (CC0) license.

For all the study questions, the app will offer a pair of activities. For example, for plastics, users can document plastics pollution they see and track the results of Global Cleanup events. These activities can change over time in response to the needs of researchers.

Besides collecting data, citizen scientists can take civic action. When users add a data point, "You'll get a pop-up and go to an action that is appropriate for your location," said Rogers. "I think our proudest achievement was reaching out to governments and interest groups around the world to create a "What You Can Do" in multiple languages for every country on earth."

To participate, download the Earth Challenge 2020 app for Android or iOS.

Science Learning and Pandemic Response

Earth Day Network is working to develop new teaching materials that home-schooling families can use to make Earth Challenge 2020 a learning experience. Some materials are already available for teaching kids about plastic pollution and air quality. Expect more to come online over time.

"You're still able to participate in this project whether you're stuck at home or whether you have full access to the world," said Rogers. "Take a photo, take an action."

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