Citizen Science in Meteorology and the Atmospheric Sciences & Information Sources

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A Comprehensive List of Citizen Science Projects

Citations retrieved from the *Web of Science* Database, 2004-2020

Search: “citizen science”
Added Search Terms

Search: “citizen science” OR “community Science” OR “citizen volunteer*”)
In the Literature

Citizen Science to track weather and climate change

Sterling Silver Small Flex Bracelet...
...And beyond—Enhanced Links!
What is Citizen Science?

A form of simultaneous **learning and knowledge** making,

Enables people to enhance their **scientific literacy** in personal and relevant areas of study,

Citizens gain a **greater say** in and commitment to scientific and research,

Individuals collecting otherwise unreported data and **sharing** data and information,

Data collected is not only relevant to local issues

When coordinated and managed well, citizen science can also be used on a **global scale** to tackle problems like climate change.

Earth Day Network Citizen Scientist
What is Community Based Science?

• A process that fosters and supports environmental monitoring by volunteers in order to educate the public about natural resources and environmental conditions by and to collecting scientifically credible data for use in protecting the environment and the sustainable management of natural resources.

• The unique partnership between our lab and volunteer programs allows citizens to engage in monitoring programs that produce reliable, high-quality data that can be used by researchers and government agencies to manage water resources.
Best Known Citizen Science Project: 
Audubon Society Annual Bird Count

Benefits & Uses

- Population Trends
- Species Diversity
- Health status
- Habitat Changes
- Conservation Policies
- Regulatory Actions
- Biodiversity & Conservation Research
- Supplement Environment Government Surveys and Data Collection
April 22, 2020 marked the 50th anniversary of Earth Day.

To continue building on the world’s largest environmental movement, we need citizen scientists engaged and empowered.

That’s why Earth Day Network partnered with the Wilson Center and the U.S. State Department to launch the world’s largest coordinated citizen science campaign:

**Earth Challenge 2020**


*Earth Day Network* Citizen Scientist
Network Connections & Outreach: Citizen Science Association

The power of citizen science

Citizen science is the involvement of the public in scientific research – whether community-driven research or global investigations. The Citizen Science Association unites expertise from educators, scientists, data managers, and others to power citizen science. Join us, and help speed innovation by sharing insights across disciplines.
Formal Opportunity to Engage

https://www.citizenscience.org/events/citizen-science-month/

In just a couple of years, Global Citizen Science Month (April) has grown from a single day of events, to a coordinated effort supported by SciStarter, the National Library of Medicine, Arizona State University, the Citizen Science Association, Science Friday, National Geographic and many other collaborators from around the world. Global Citizen Science Month encompasses online events and opportunities to contribute to projects from home. And April 2021 is just around the corner! It’s time to prepare. Learn more about this in a recent blog post and in the Citizen Science Month Welcome Letter.
Climate Science Alliance

WHAT IS THE CITIZEN SCIENCE ALLIANCE?

The CSA is a collaboration of scientists, software developers and educators who collectively develop, manage and utilise internet-based citizen science projects in order to further science itself, and the public understanding of both science and of the scientific process. These projects use the time, abilities and energies of a distributed community of citizen scientists who are our collaborators.

SOME OF OUR FEATURED PROJECTS

https://www.citizensciencealliance.org/

Galaxy Zoo  Old Weather  Planet Hunters

Our projects live within the ‘Zooniverse’, the home of Citizen Science on the web. Each is inspired by a science team who provide the initial ideas, the reassurance that what we’re doing can make a real contribution and an audience who are willing to use the end result. We are working with a wide variety of partners, from classicists to climate scientists and ecologists to planetary scientists. VIEW ALL PROJECTS.

TAKE PART

If you’re looking to take part as a citizen scientist you can find our collection of projects over at the ZOONIVERSE.
GLOBE Weather Curriculum

Explore GLOBE Weather with a FREE NGSS aligned five-week curriculum unit designed to help middle school students understand weather at local, regional, and global scales.

Teachers
Resources, programs, workshops, and other events for educators

Aspiring Scientists
Games, activities, research programs, and background info for students of all ages

https://scied.ucar.edu/
Local Level Initiatives—Ithaca, NY

http://www.communityscience.org/
Getting It Funded

Resources from Federal Agencies and Departments—EXPLORE THEM

https://www.citizenscience.gov/#

Helping federal agencies accelerate innovation through public participation.

Explore Projects
This searchable database provides a government wide listing of citizen science and crowdsourcing projects designed to improve cross-agency

Join Us
There are two primary groups within the federal government working collaboratively to advance the use of these tools, namely the Federal

Plan Your Projects
The Toolkit provides five basic process steps for planning, designing and carrying out a crowdsourcing or citizen science project to help federal
Resources, Outreach, Networking

https://www.weather.gov/education/citizen
NOAA Resources

https://www.noaa.gov/topic-tags/citizen-science

citizen science

GLOBE International Virtual Science Symposium
September 25, 2020

Old Weather 'time machine' opens a treasure trove for researchers and citizen scientists alike
October 9, 2019

White House report showcases NOAA citizen science efforts
July 23, 2019

Citizen scientists take to the streets to map the hottest spots in 10 U.S. cities
July 24, 2019

Science and education partners reveal the hottest places in Washington, D.C., and Baltimore
May 24, 2019
Draft NOAA Citizen Science Strategy
Applying the Power of the Crowd

Public Comments Ended 9/8/19: Forth Coming in 2021
NASA Has a Treasure Trove...

https://science.nasa.gov/citizenscience
NASA continued...

Do GLOBE Observer

https://observer.globe.gov/do-globe-observer

What is GLOBE Observer?

When you download the GLOBE Observer app, you join the community of the GLOBE Program - citizen scientists, students, and teachers in 120+ countries around the world contributing to Earth system science research.

Your observations:
NASA continued...

http://communitysnowobs.org/
National Library of Medicine Resources for Citizen Scientists

Citizen science is happening all around you! Citizen scientists in your community are participating in bird and butterfly counts, contributing to Alzheimer’s research, monitoring air quality, and collecting genetic information—all furthering and advancing our greater scientific knowledge. Citizen science is an amazing way to participate in research efforts, and it can often be done from a mobile device, from one’s home, or from a library. Libraries are ideal partners for citizen scientists! In this class, participants can expect to learn how to support citizen science in their communities and how libraries can partner with citizen science initiatives.

https://nnlm.gov/classes/national-library-medicine-resources-citizen-scientists
State Agencies continued...

COVID-19 Updates

COVID-19 is still spreading, even as the vaccine is here. Wear a mask, social distance and stay up to date on New York State’s vaccination program.

[Image of Atmospheric Science Librarians International]

[Website Link: https://www.dec.ny.gov/animals/1155.html]
Scientists aim to use crowdsourced data to improve flood predictions

With new NSF funding, researchers will work to integrate citizen science data into the National Water Model.
“Between 1983 and 1985, the Acid Rain Monitoring (ARM) Project used as many as 1000 citizen volunteers to collect and help analyze more than 40,000 samples from 2444 lakes and 1670 streams.”

“Monthly acidity in Massachusetts waters is recorded by scientifically accepted procedures and evaluated by reputable laboratories, project results will begin providing information that, if collected 30 years ago, or even five years ago, would have pushed acid rain research further than it is today.”
This was one of the first, large sale citizen volunteer monitoring projects and we invested a large amount of quality control effort documenting that **volunteers can produce data quality** which is more than adequate for most purposes. Such large scale sampling is usually prohibitively expensive for most surveys employing private researchers or government personnel. With the use of citizen volunteers sampling **costs are low** and thus the size of the survey can be expanded greatly. The combination of **good data quality** with a very large sample size greatly increases the power to detect trends in environmental science.”
Resources: There are MANY LibGuides Local to International

https://guides.lib.umich.edu/cit-comm-science
Explore LibGuides—MAKE ONE!!

https://libguides.asu.edu/citizenscience
What You Can Do...

**Public Libraries:** Reach out, Network, Collaborate with nonprofits and educators and county and municipal programs

**Academic Libraries:** Give Presentations, Collaborate with on-campus students and faculty and off-campus groups, work with your library associations and iSchools

**Government Agency Libraries:** Work with Public and Academic Libraries and Librarians, Promote you agency resources, programs, and events

If not a member of ASLI—JOIN!!
