Federal Community of Practice on Crowdsourcing and Citizen Science

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If you had 100,000 or even
1,000,000 people
to help you with your work,
what would you do?

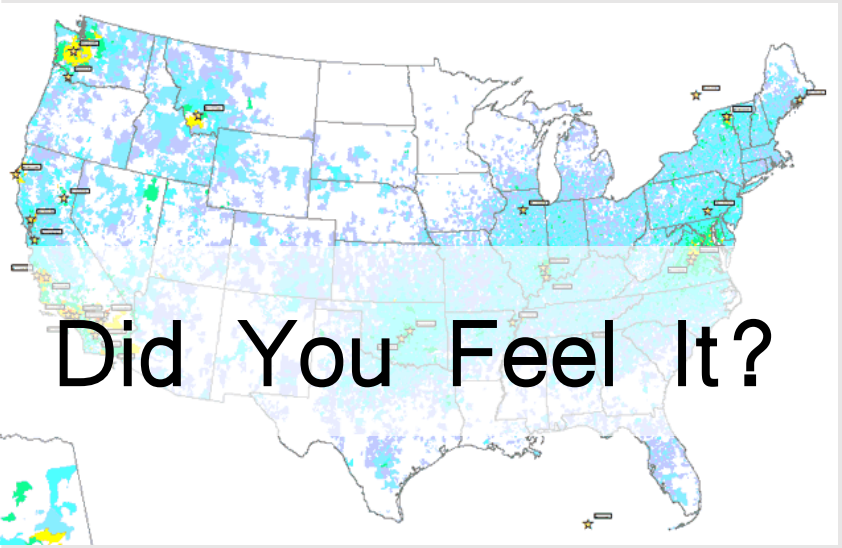
What is citizen science?

Citizen science is a form of open collaboration where members of the public participate in the scientific process to address real-world problems in ways that may include:

- identifying research questions
- collecting and analyzing data
- interpreting results
- making new discoveries
- developing technologies and applications
- solving complex problems

What is crowdsourcing?

Crowdsourcing is the process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, especially from an online community.

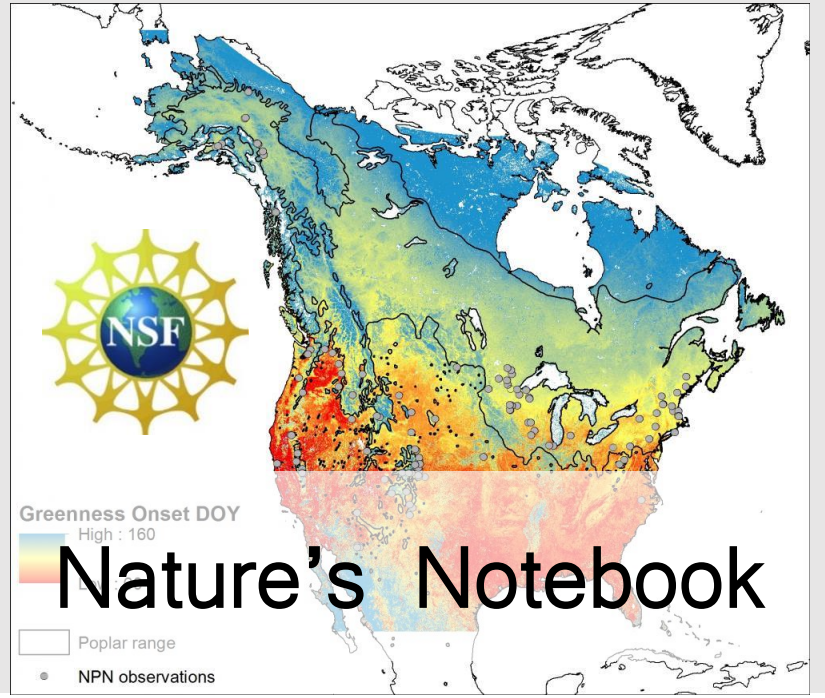


Did You Feel It?

USGS science for a changing world

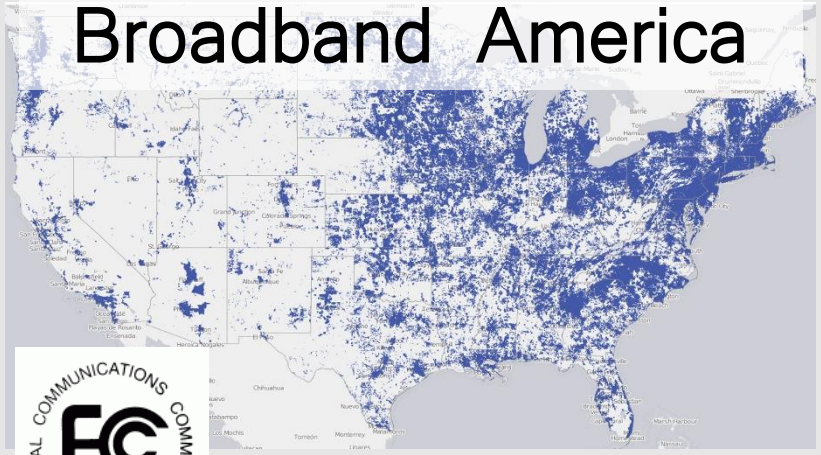
Citizen Archivist Dashboard

NATIONAL ARCHIVES

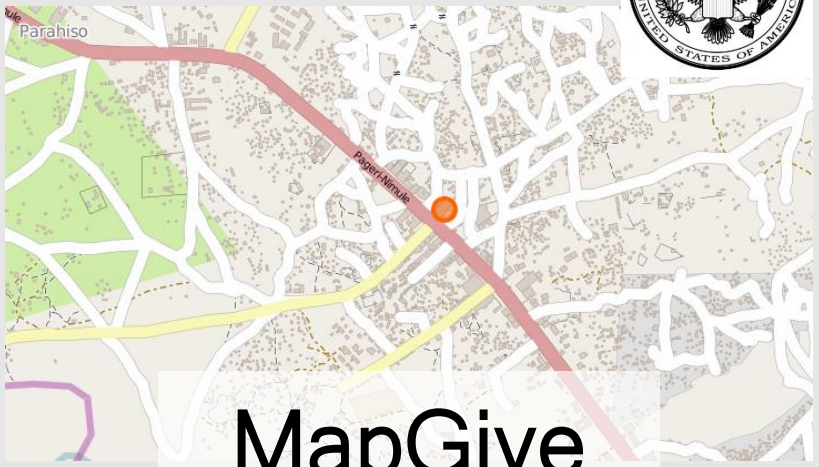


Nature's Notebook

Measuring Broadband America

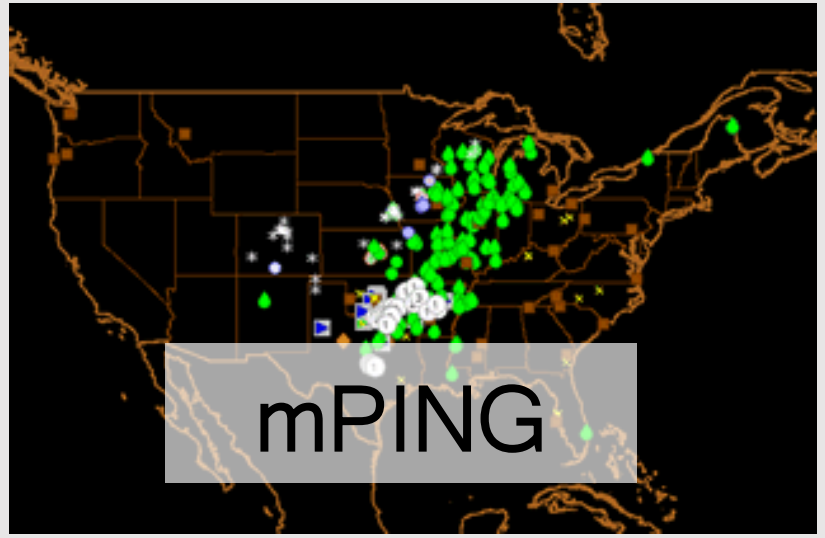


FEDERAL COMMUNICATIONS COMMISSION FCC USA



DEPARTMENT OF STATE UNITED STATES OF AMERICA

MapGive

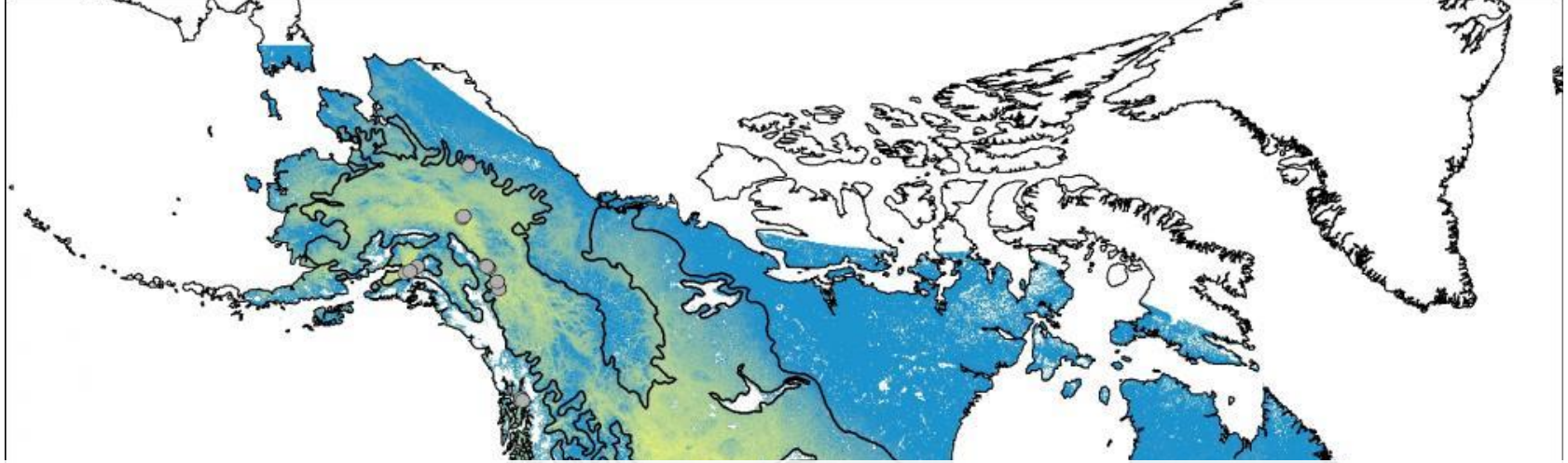


mPING

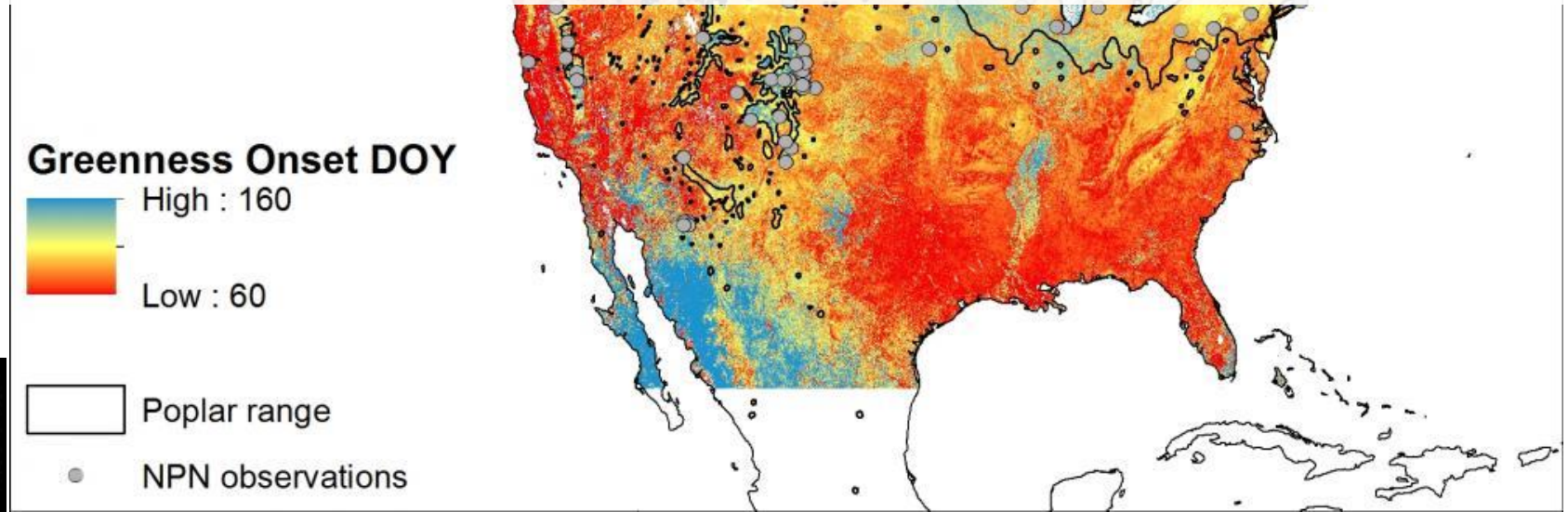
NOAA

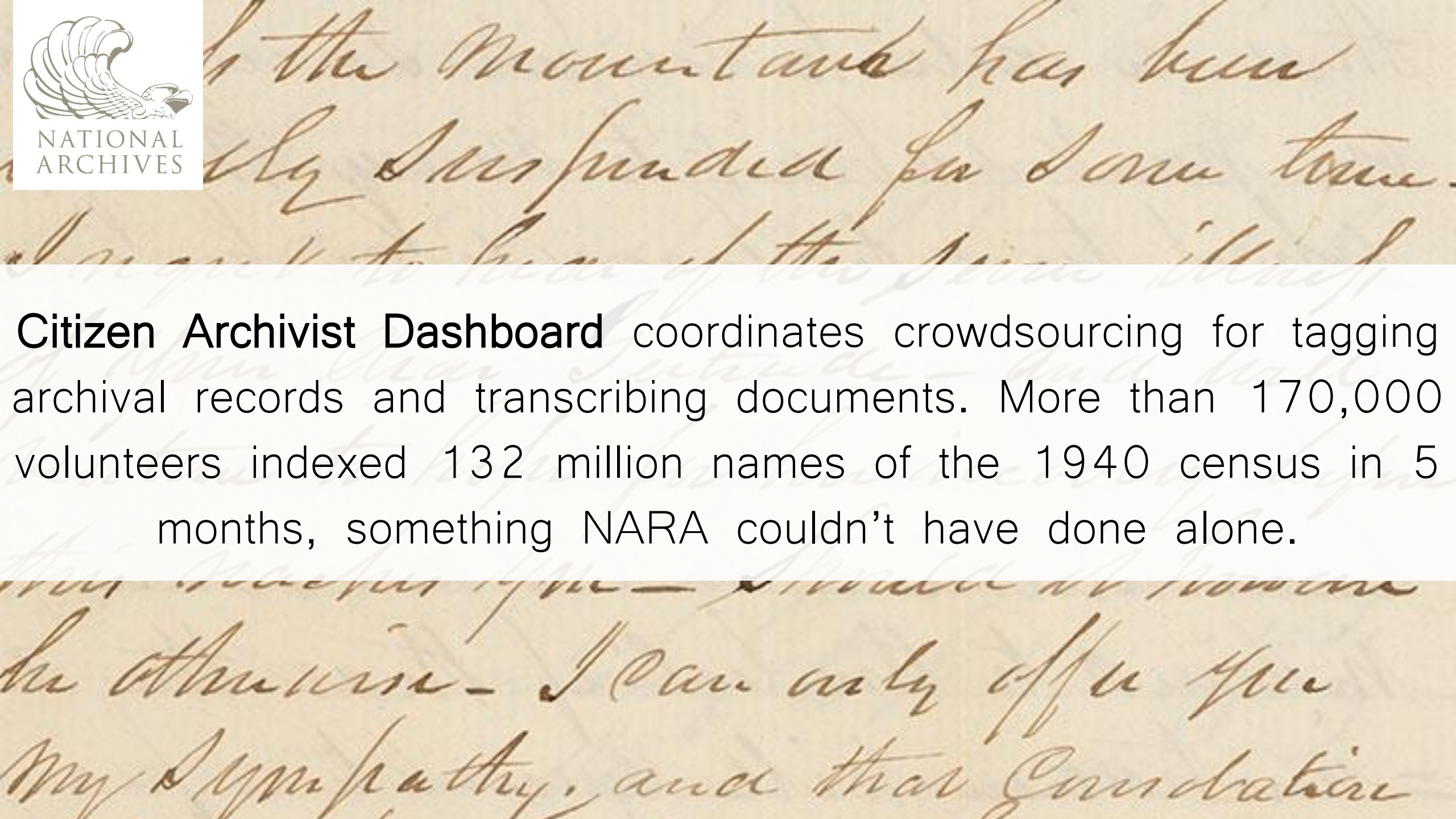
NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

mPING mobile app has collected more than 600,000 ground-based observations that help verify weather models.

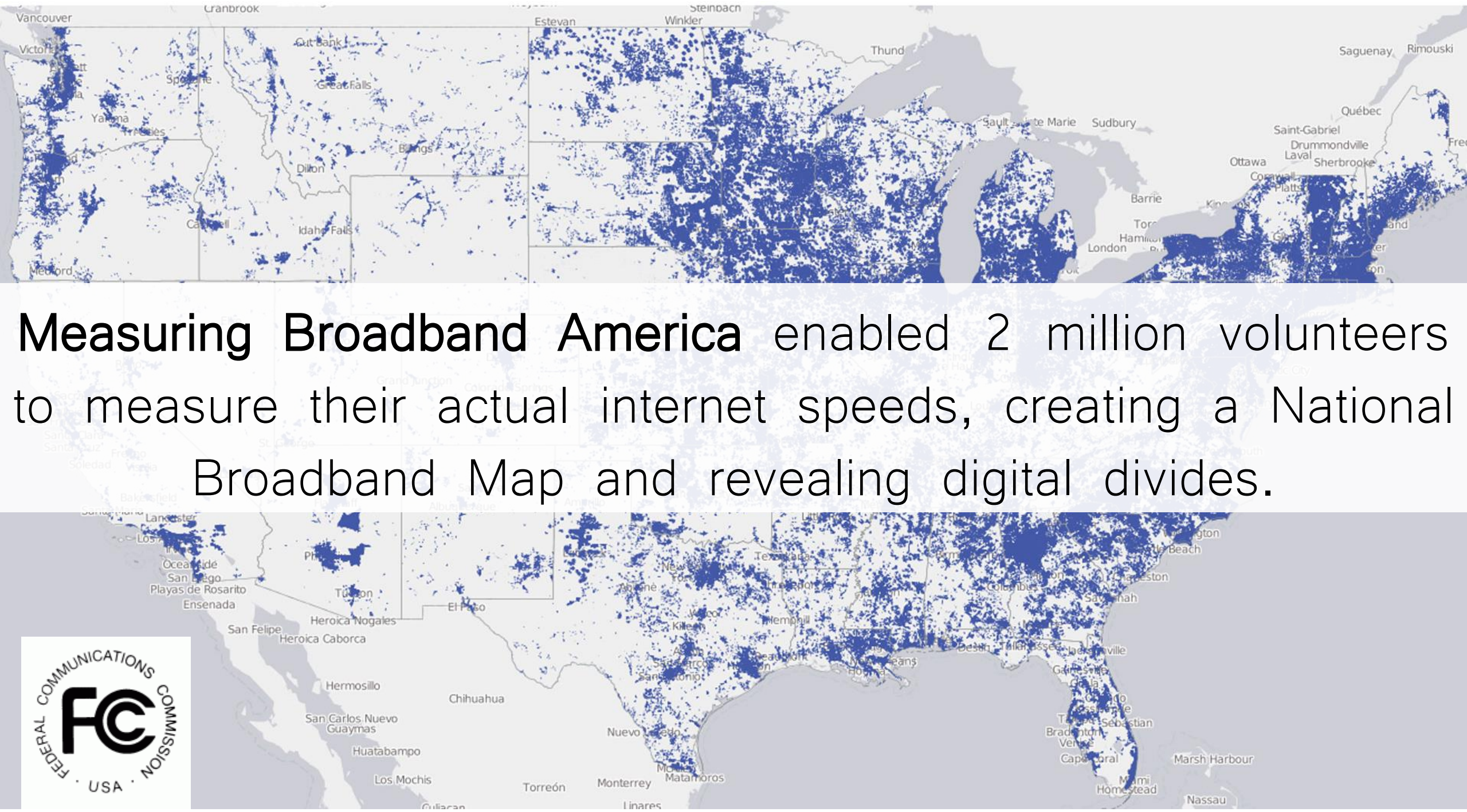


In 2014, **Nature's Notebook** volunteers recorded more than 1 million observations on plants and animals that scientists use to analyze environmental change.

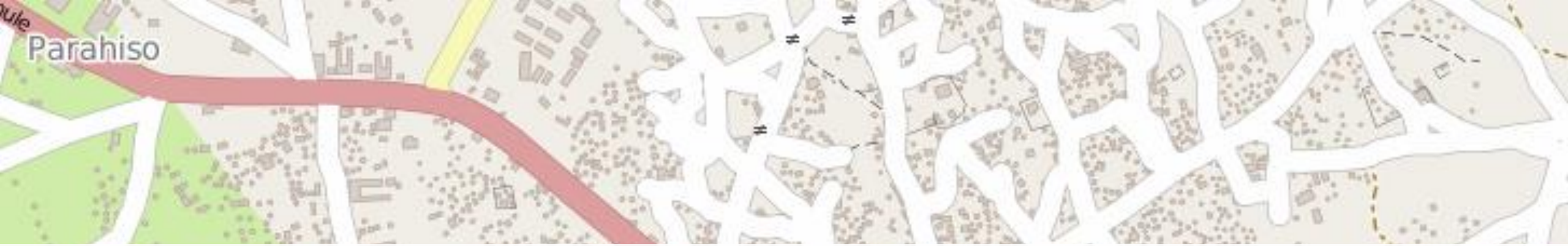




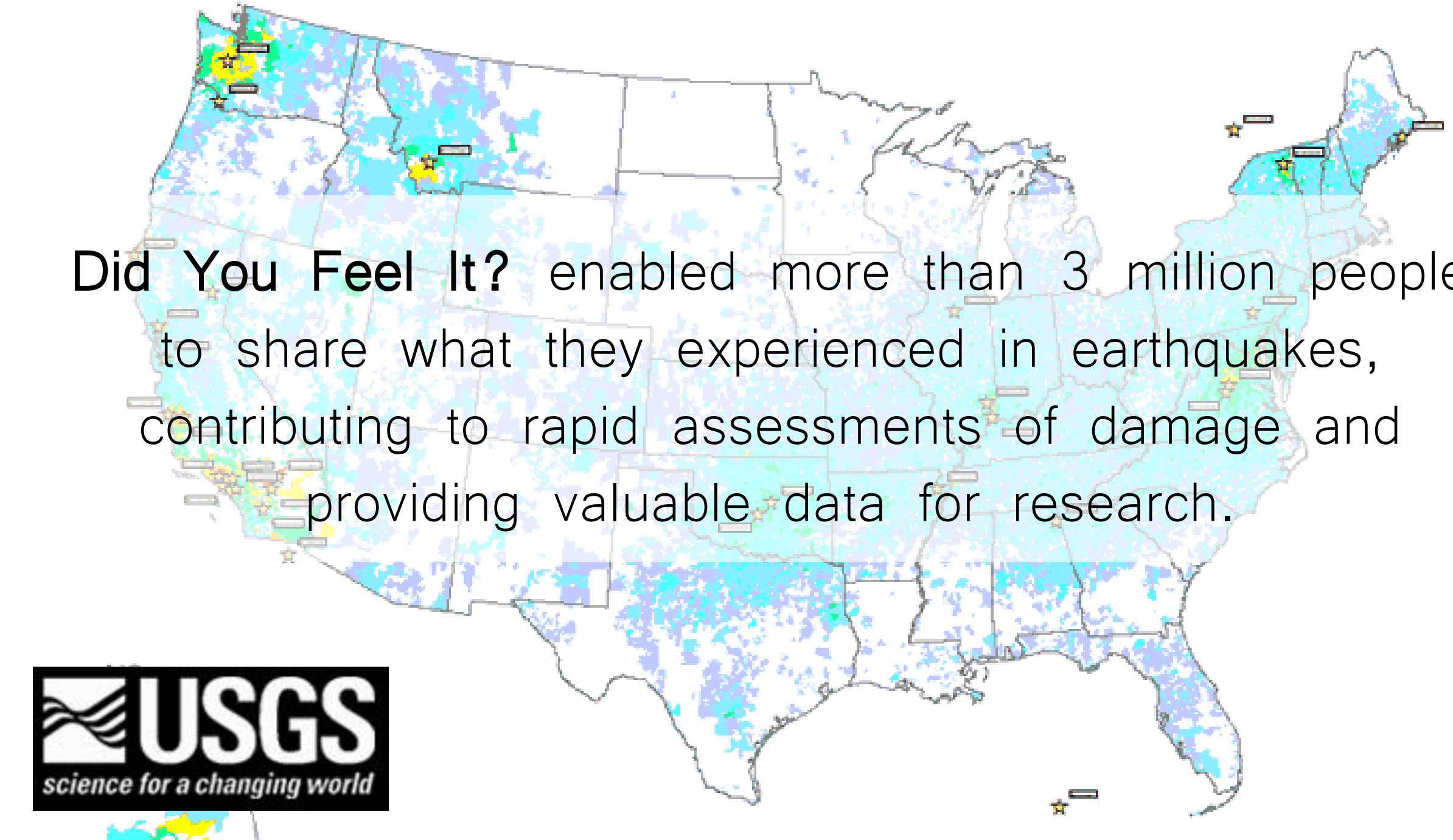
Citizen Archivist Dashboard coordinates crowdsourcing for tagging archival records and transcribing documents. More than 170,000 volunteers indexed 132 million names of the 1940 census in 5 months, something NARA couldn't have done alone.



Measuring Broadband America enabled 2 million volunteers to measure their actual internet speeds, creating a National Broadband Map and revealing digital divides.



MapGive volunteers map landmarks such as roads, buildings, and bodies of water using satellite imagery, to be added to the OpenStreetMap (OSM) database. Volunteers have mapped 25 percent of Nimule, South Sudan.



Did You Feel It? enabled more than 3 million people to share what they experienced in earthquakes, contributing to rapid assessments of damage and providing valuable data for research.

USGS
science for a changing world

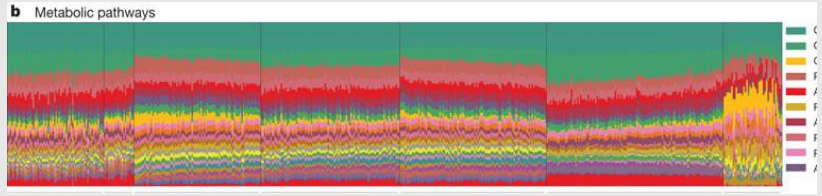
Citizen science at EPA: 1) Work with **communities** to understand local problems; 2) **Monitor** the environment for environmental protection; 3) Engage volunteers in **research** relevant to EPA's mission; 4) **Educate** the public about environmental issues.

Air Sensor Toolbox for Citizen Scientists provides guidance on affordable, next-generation air quality sensors.

Air Sensor Citizen Science Toolbox EPA Measure • Learn • Share

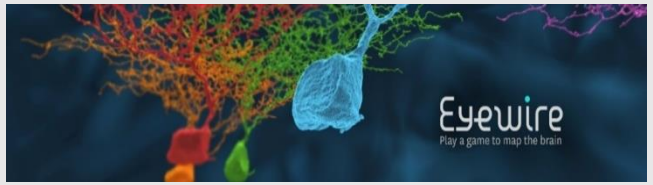
Citizen science and crowdsourcing can.....

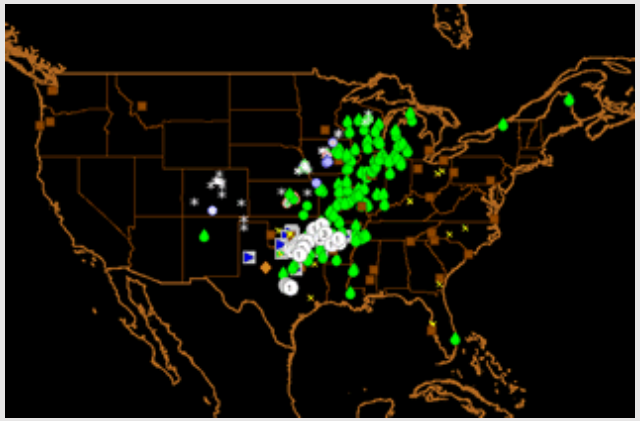
Create new datasets



Increase sample sizes

Solve puzzles where we are still better than computers



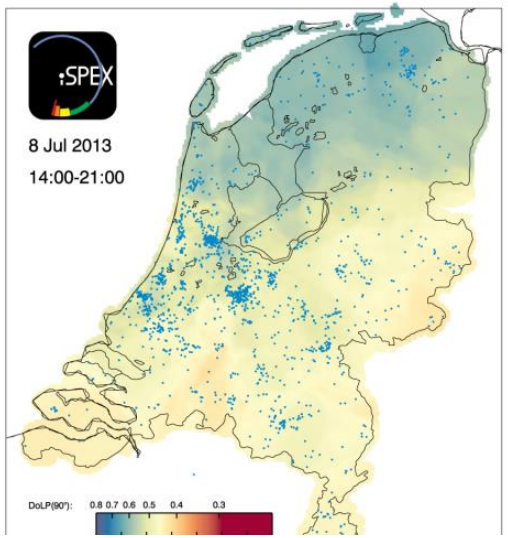


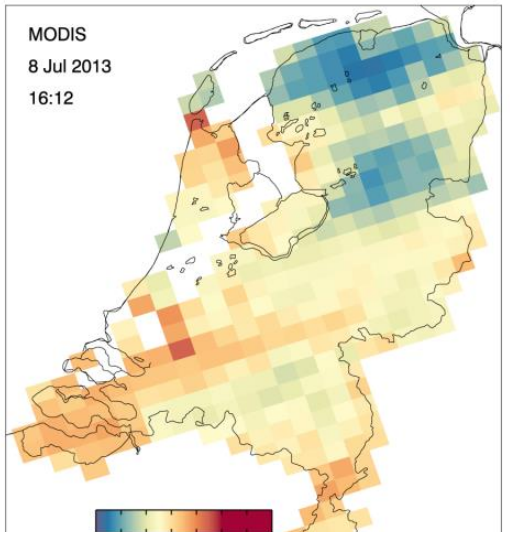
Expand or validate research models

Define research questions and priorities

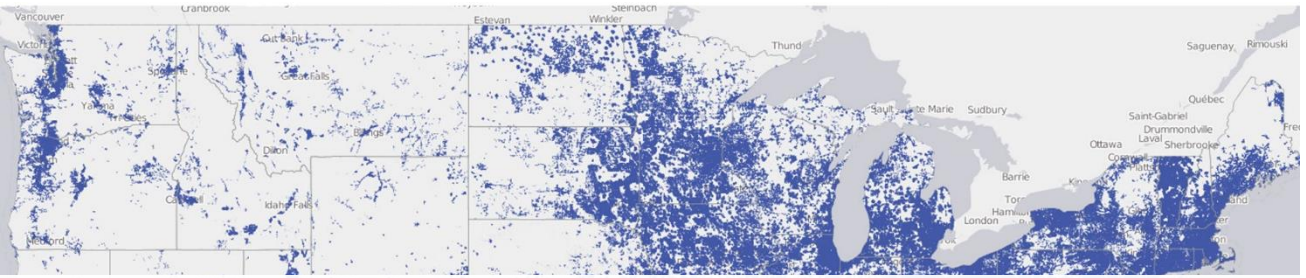
?

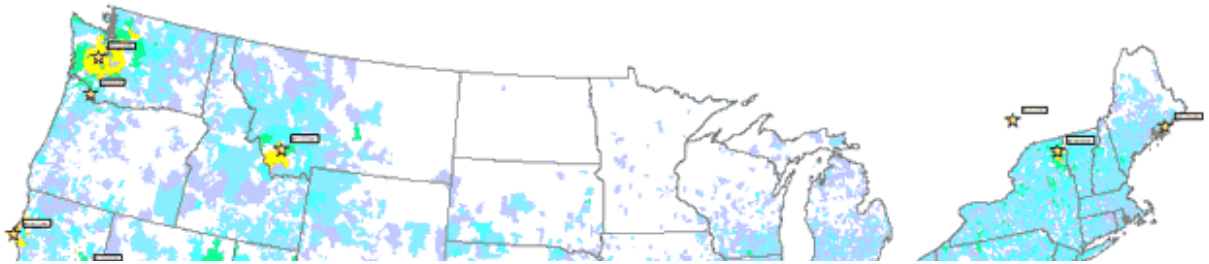
Engage the public!





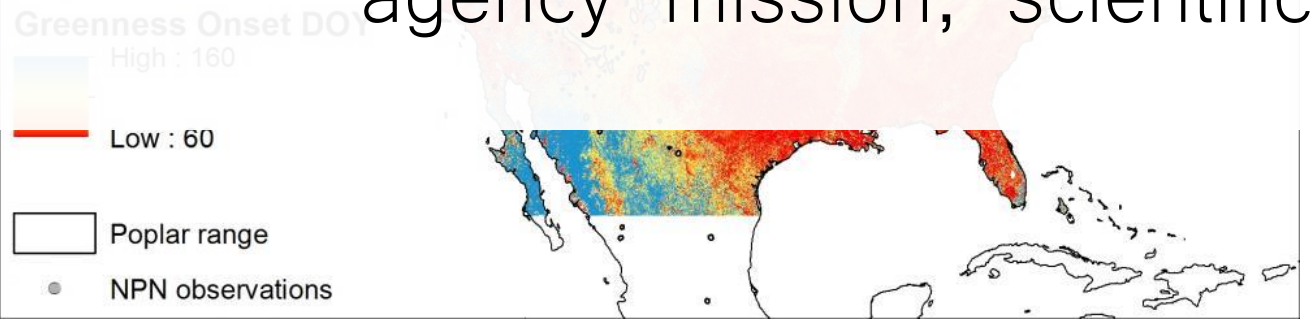
Advances in technology are enabling and enhancing citizen science projects





Federal Community of Practice for Crowdsourcing and Citizen Science

Mission: We seek to expand and improve the U.S. Government's use of crowdsourcing, citizen science and similar public participation techniques for the purpose of enhancing agency mission, scientific and societal outcomes



National Action Plan for Open Government

"Recognizing the value of the American public as a strategic partner in addressing some of the country's most pressing challenges, the Unites States will work to more effectively harness the expertise, ingenuity, and creativity of the American public by enabling, accelerating, and scaling the use of open innovation methods across the Federal Government..."

National Action Plan for Open Government

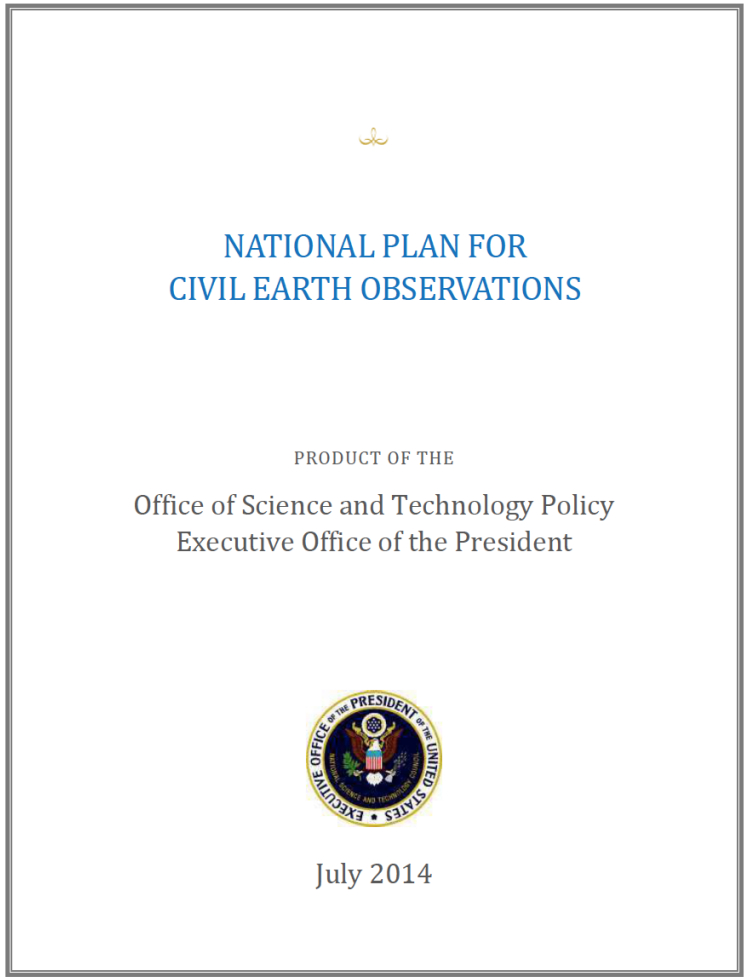
US government makes commitment to citizen science and crowdsourcing

- Create Open Innovation Toolkit
- Increased Crowdsourcing and Citizen Science Agency Programs
- New Incentive Prizes and Challenges on Challenge.gov

US National Plan for Civil Earth Observations

Crowdsourcing and Citizen Science for:

- Improving observational density and sampling of ground truth
- Data analysis
- Increasing efficiency and cost savings
- Expanding availability and use of open data



Civil Earth Observations

Adopt-A-Pixel

- Volunteers collect ground-based reference data to help Landsat scientists better understand landscape changes
- Creating a national archive of geospatially-tagged ground-based land cover

Civil Earth Observations

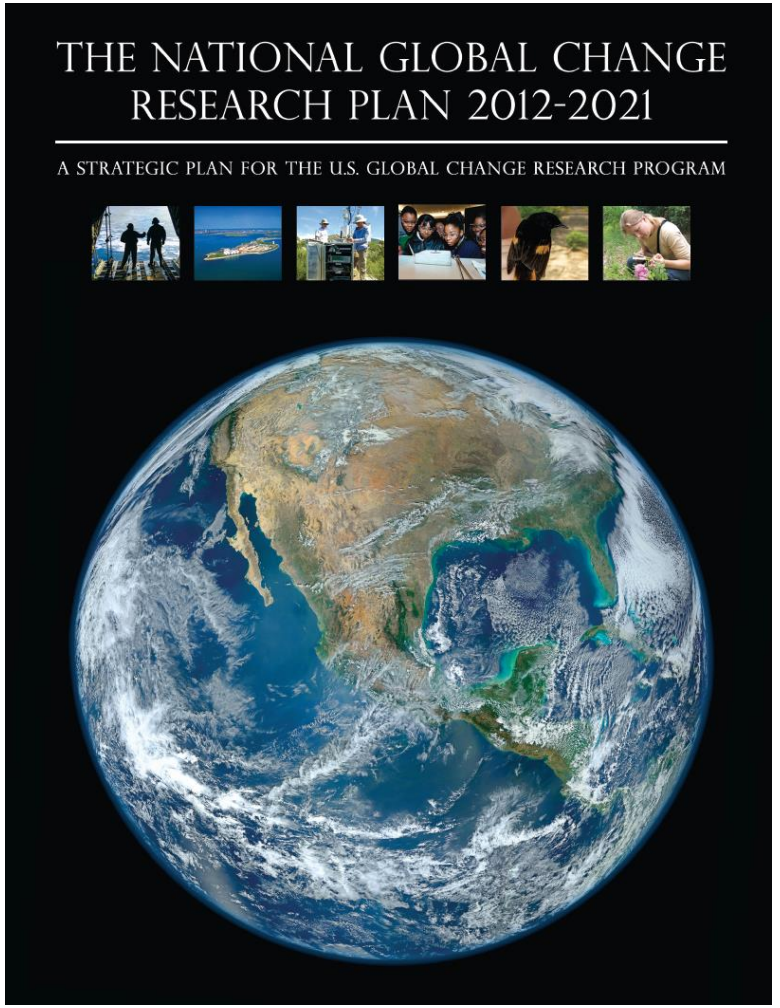
Advanced Rapid Imaging and Analysis （ARIA） Project

- Automated system using radar imagery to detect surface change
- GISCorps volunteers assist with validation

USGCRP Strategic Plan

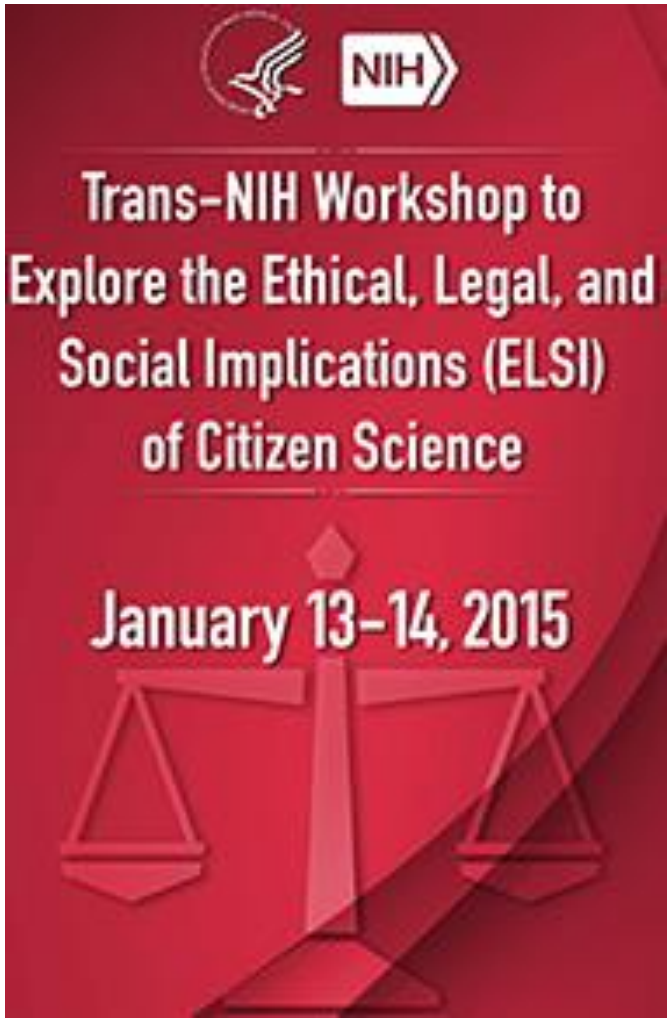
"...observation of ecological and social systems can be dramatically improved by collecting new kinds of data or using new data collection methods, including emerging opportunities to vastly scale-up the use of non-traditional data sources and "citizen science" research programs...however it will be challenging to integrate these measurement networks into broader observational systems."

"Distributed computing, applications for mobile technology, and social networking have the potential to dramatically scale up citizen science where interested members of the public serve as observers, modelers, and analyzers of the Earth system, contributing to the scientific enterprise and broadening the meaning of global change in their own lives."



Legal and Ethical Issues

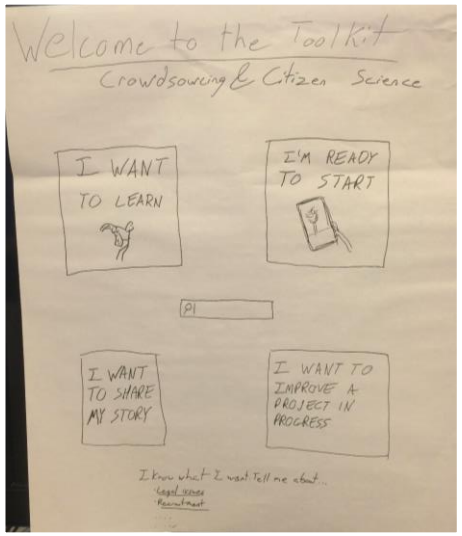
- Paperwork Reduction Act
- Privacy Act
- Anti-deficiency Act/Volunteer contributions
- Information Quality Assurance Act
- Procurement regulations
- Data ownership and licensing
- Freedom of Information
- Liability / risk mitigation
- Human Subjects / IRB



Open Innovation Toolkit

best practices, training, policies, guidance

http://1.usa.gov/1FG3miA



Federal Inventory of Projects

Find Projects:

Search for...

Filter by:

- Project Topic
- Project Status
- Agency Sponsor
- Agency Partner
- Geographic Scope
- Participant Age
- Intended Outcomes

View data and download options

Get involved:

Federal Community of Practice on Crowdsourcing and Citizen Science (CCS)

http://www2.epa.gov/innovation/federal-community-practice-crowdsourcing-and-citizen-science

CCS Co-Chairs:

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