

NOAA Citizen Science: Responding to Recommendations



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Purpose

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Discuss NOAA's response to recommendations from the Science Advisory Board report on citizen science

Outline

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- Updates since report was issued
- Review of SAB recommendations and NOAA's responses
- Discussion

Updates

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- NAS Report on *Learning Through Citizen Science* (11/18)
- Citizen Science Association meeting record high participation (3/19)
- 1st report to Congress on crowdsourcing, citizen science (6/19)
- Growth in NOAA's citizen science community (ongoing)



“By encouraging everyday Americans to engage in scientific research, our citizen science authorities benefit communities and the country as a whole, as well as advance our science and technology enterprise. This report highlights the Trump Administration’s commitment to unleash Federal resources, strengthen partnerships inside and outside of government, and encourage citizens to tackle great scientific challenges.”

Kelvin Droegemeier, Director, OSTP

Recommendations & Responses

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Rec. 1: Citizen Science is likely an underutilized tool for environmental data collection and monitoring in coastal systems, and well-designed programs have potential to contribute cost-effective information that can be used in scientific investigation.

NOAA Response:

- Data call in progress to identify research projects, programs where citizen science may be integrated
- NOAA directive on R&D revised to bolster inclusion of citizen science
- Planning NOAA “All-Hands” email

Recommendations & Responses

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Rec. 2: Further review of existing programs that already have valuable data for ecosystem monitoring is warranted, and additional support, standardization of data storage and sharing, and enhancement of data collection protocols or trainings in those programs may improve their utility.

NOAA Response:

- Host NOAA citizen science workshop that will address: 1) Best practices; 2) Data management; and 3) Citizen science resources
- Facilitate and ongoing exchange of best practices between NOAA programs

Recommendations & Responses

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Rec. 3: Citizen science doesn't just happen – it **requires intention**, consideration of community and participant needs, interests and abilities, and **careful planning to ensure data quality and control**. For programs to contribute meaningful data for NOAA ecosystem science and management, they need to be built over time and receive ongoing support for multi-entity collaborations.

NOAA Response:

- Stand up an Advisory Committee with representation from across the agency
- Adopt or adapt EPA Handbook for Citizen Science Quality Assurance and Documentation

Recommendations & Responses

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Rec. 4: Commitment of resources and expertise from NOAA Regional and Science Centers can improve the quality and integration of data generated by citizen science and contribute to participatory research that enhances public awareness of science and its value to coastal communities.

NOAA Response:

- Data call in progress to identify funding opportunities that either currently do, or potentially could, call out citizen science as a tool for proposed projects to consider using.

Discussion

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Students make observations in the intertidal zone through the LiMPETS network.

Photo: Jessie Altstatt/NOAA

Backup Slides...

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Definition: Citizen Science

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A form of open collaboration in which individuals or organizations participate voluntarily in the scientific process, including:

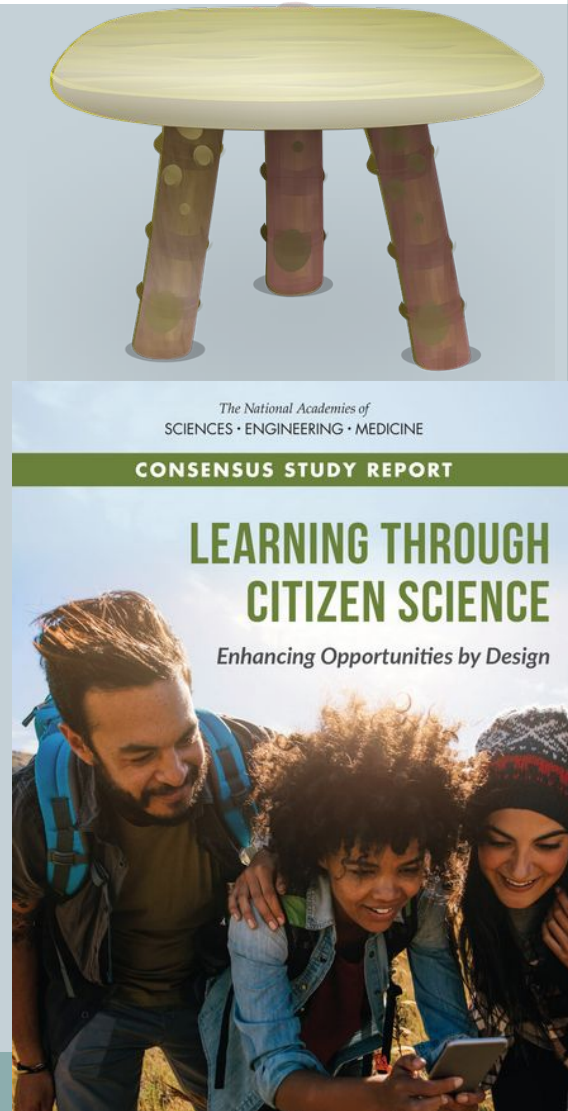
- **Enabling** the formulation of research questions;
- **Creating** and refining project design;
- **Conducting** scientific experiments;
- **Collecting** and analyzing data;
- **Interpreting** the results of data;
- **Developing** technologies and applications;
- **Making** discoveries; and
- **Solving** problems.

Source: Crowdsourcing and Citizen Science Act of 2017 (15 USC 3724)

Multiple, Complementary Impacts

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- Citizen Science can:
 - Enhance scientific research and monitoring
 - Provide hands-on learning and increase STEM literacy
 - Help address societal needs
- 2018 report from National Academies of Science suggest the impacts can complement each other



NOAA Contributions to OSTP CCS Report

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Summary: 11 programs and projects across NOAA
Contributions:

- **#Participants** (8/11): ~ 50K
- **#Submissions** (4/11): ~670K (e.g., hydrographic data points, # images classified)
- **# Volunteer hours** (6/11): ~300K
- **# Staff Required:** < 9 full time staff needed to support 9 programs in FY17 and FY18
- **Scope:** 3/11 apply worldwide