NISE Net Online Workshop

Increasing Community Resilience to Extreme Weather & Environmental Hazards - The Citizen Science, Civics, & Resilient Communities (CSCRC) Project

February 15, 2022

Today's Presenters:

Sara Benson, Museum of Science, Boston
Katie Baur, Museum of Science, Boston
Mirka Zapletal, McAuliffe-Shepard Discovery Center, Concord, NH
Allison Brody, Explora, Albuquerque, NM
Caroline Nickerson, SciStarter

Welcome!

As we wait to get started with today's discussion, please:
Introduce yourself! Type your name, institution, and location into the Chat Box

Questions? Feel free to type your questions into the Chat Box at any time throughout the webinar or use the raise your hand function in the participants list and we'll unmute your microphone.

Today's discussion will be recorded and shared on nisenet.org at: nisenet.org/events/online-workshop

Future Online Workshops

2pm-3pm Eastern / 11am-12pm Pacific

Tuesday, March 1, 2022
Working with STEM Experts

Tuesday, April 5, 2022
Communicating Climate Change to Diverse Audiences

Tuesday, May 3, 2022
Earth & Space Roundup of NISE Network Resources

Tuesday, June 15, 2022
Reconnect and Re-engage with the NISE Network

Learn more at nisenet.org/events

Earth Day Resources

- Collections of Public Engagement and Professional Resources
- At-Home Friendly Experiences
- Hands-on Activities
- Resources for Planning Programs and Events
- **Posters/Images**
- Finding STEM Experts

nisenet.org/earthday

Citizen Science, Civics, and Resilient Communities

Sara Benson

Museum of Science, Boston

Consortium for Science, Policy & Outcomes at Arizona State University

NISE NETWORK NATIONAL INFORMAL STEM EDUCATION NETWORK

Museum of Science

NOAA

Northeastern University

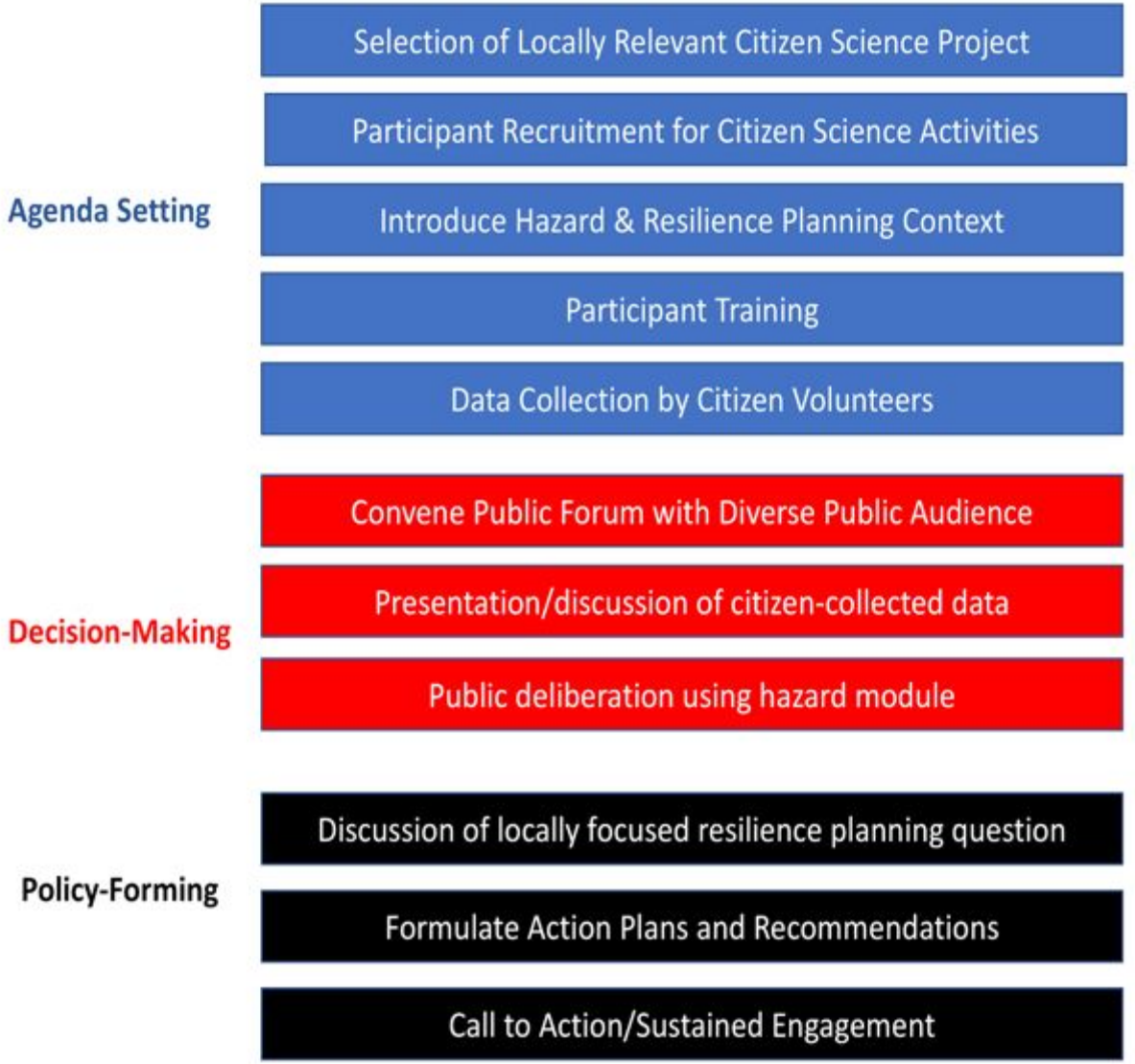
scistarter People-powered science.

Our Strategy: Science-to-Civics

In 2018, NOAA awarded the Museum of Science and its partners a 3-year grant to work with science centers across the U.S. **to engage diverse communities** in projects connecting community science and deliberation to **build community engagement** and **inform local resilience planning** regarding four hazards:

- Extreme Heat
- Sea Level Rise
- Extreme Precipitation
- Drought

The Science-to-Civics Process:



Agenda Setting: Citizen Science

Citizen science is collaborative research done by everyday people, anytime, anywhere, to help answer questions scientists can't answer alone.

Citizen science volunteers are recruited in partnership with civic and community partners, especially those serving vulnerable communities.

SciStarter.org/NOAA

Decision Making: Public Forums

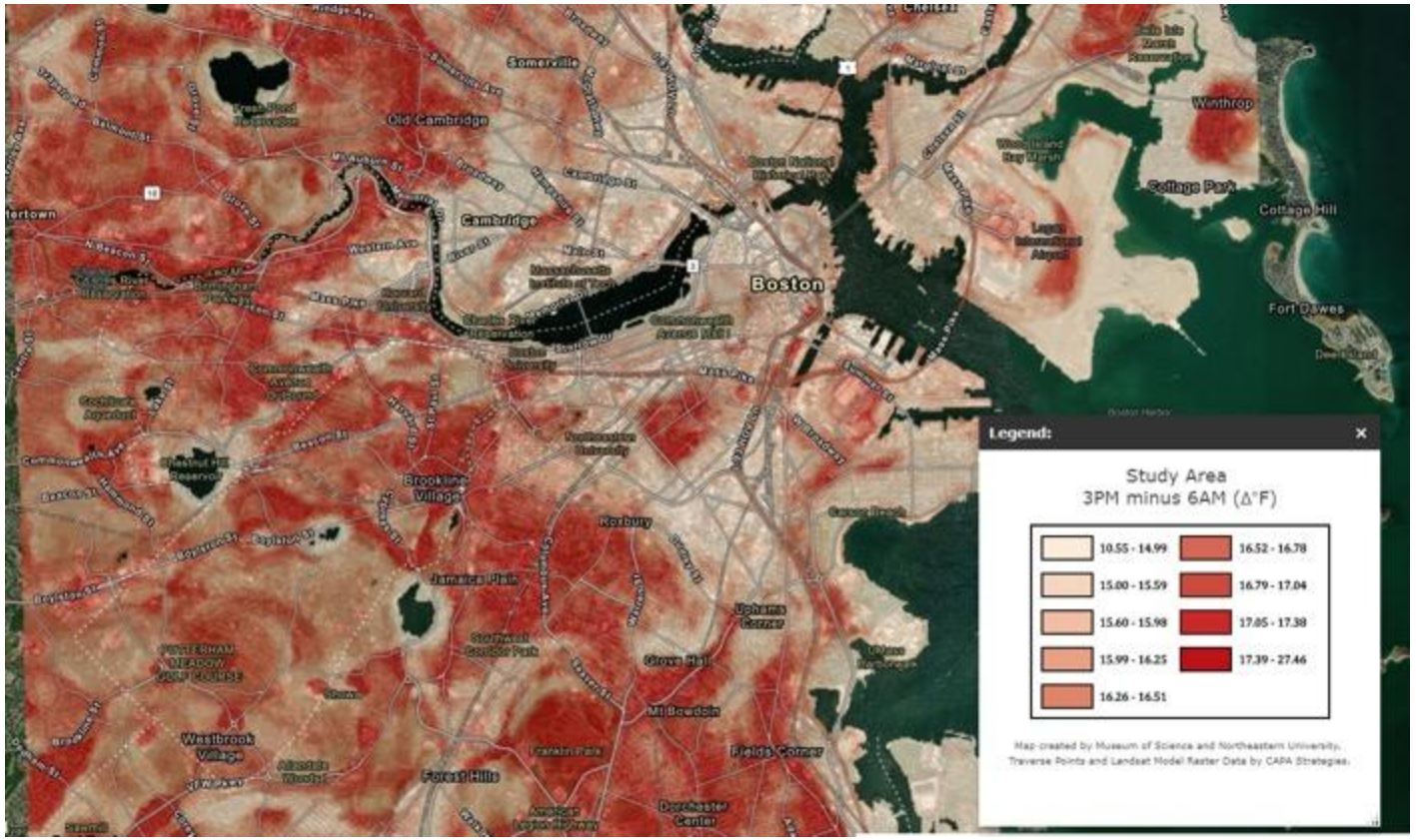
Forums engage participants in **deliberative, inclusive conversations** about climate hazards.

Policy Forming: Resilience Planning & Decision Making

Local climate resilience planners participate in forums to hear diverse community perspectives.

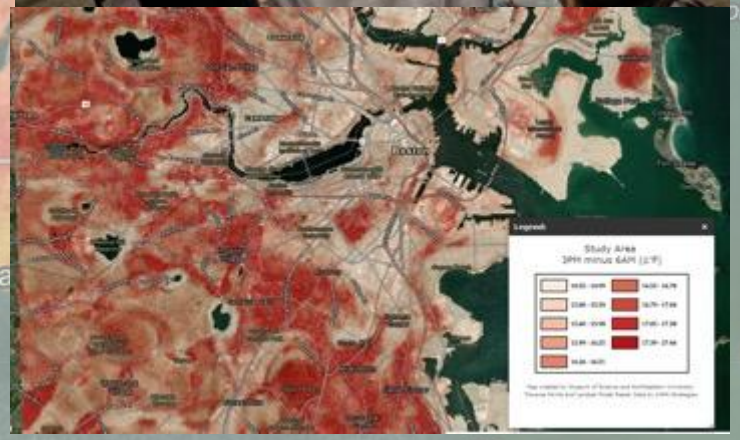
Data is disseminated post-forum

Citizen science data informs locally-focused resilience planning and connects to future citizen science campaigns.



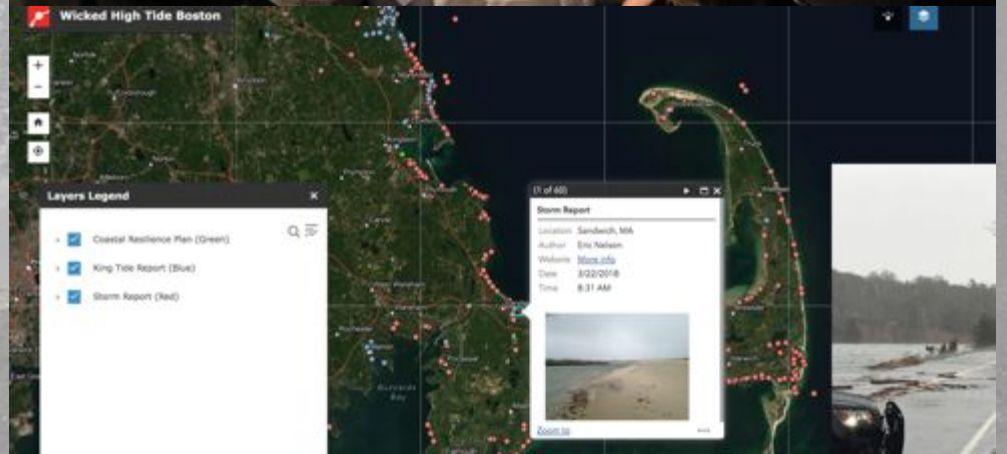
Wicked Hot Boston

Extreme Heat 2019



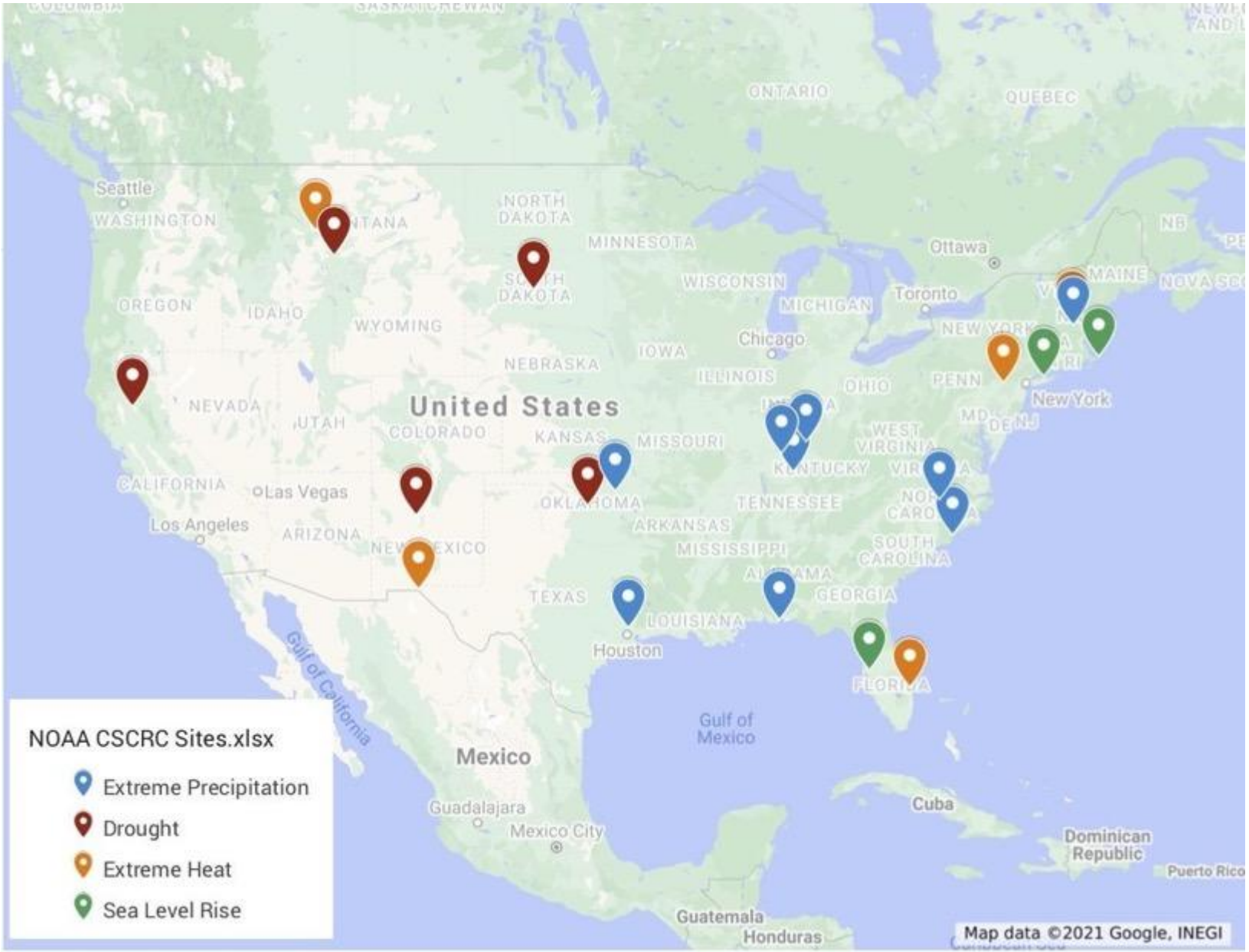
Wicked High Tides

Sea Level Rise 2020



2021 – Project expands

- 22 science centers and museums across the country were chosen to implement this work in their communities
- Project had to pivot due to COVID-19



Citizen Science Project Ideas

Drought

GLOBE Land Cover Adopt a Pixel

Sea Level Rise

MyCoast

Extreme Heat

I SEE CHANGE

Extreme Precipitation

CoCoRaHS

Full list of all citizen science projects here: https://SciStarter.org/affiliates

Online National Forums - Over 200 participants!

Jessica Khaya, US Bureau of Reclamation

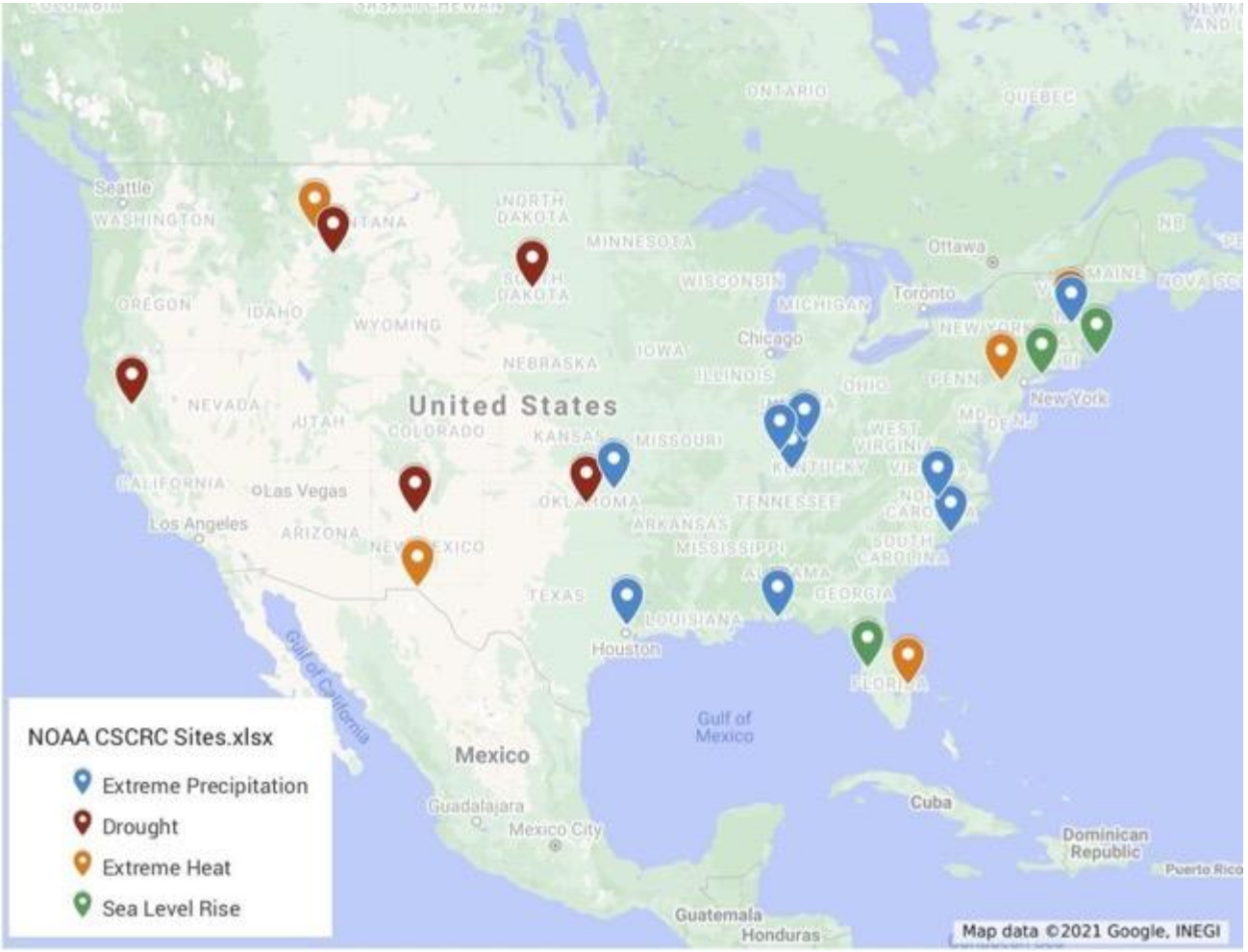
Jeremy Hoffman, Science Museum of Virginia

Gayle Bowness, Gulf of Maine Research Institute

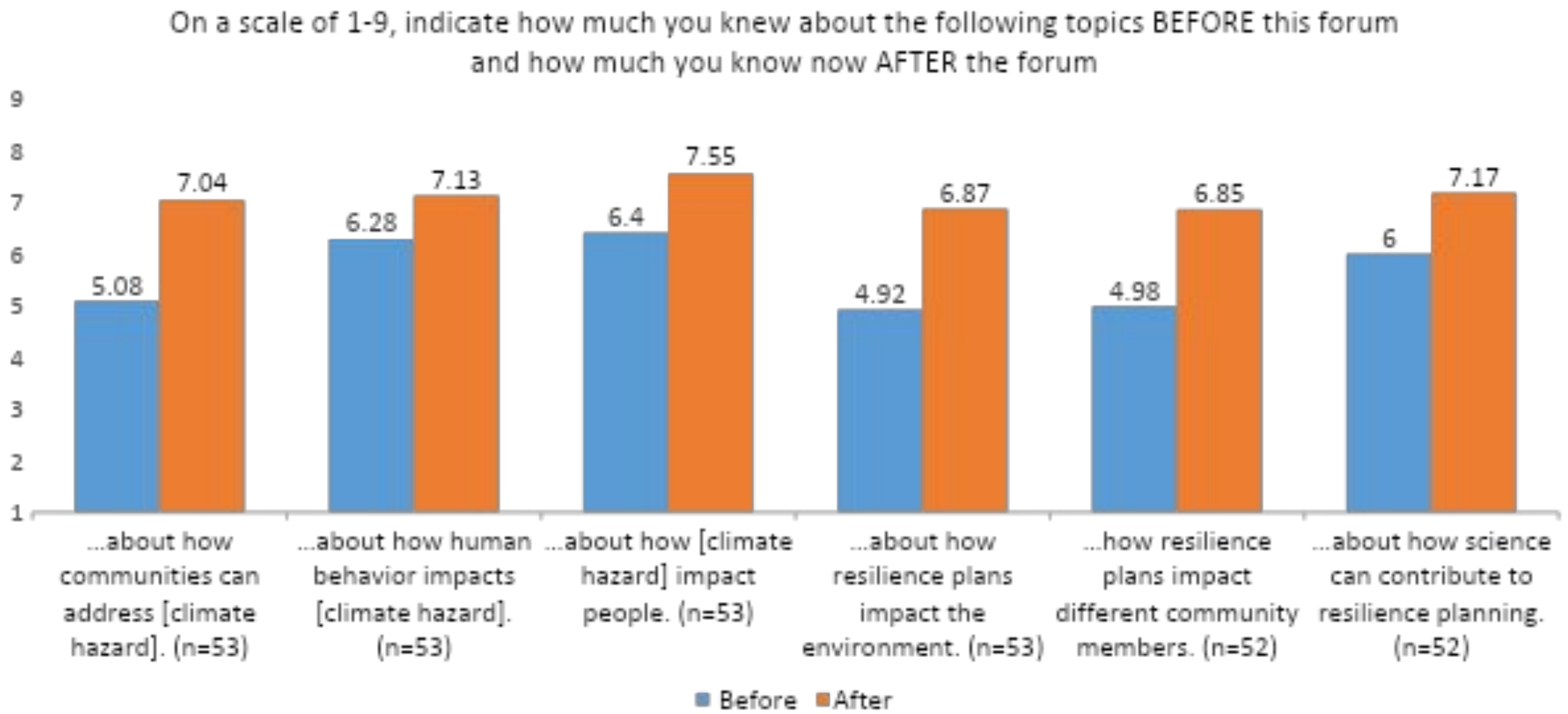
Julia Kumari Drapkin, ISeeChange

Survey data

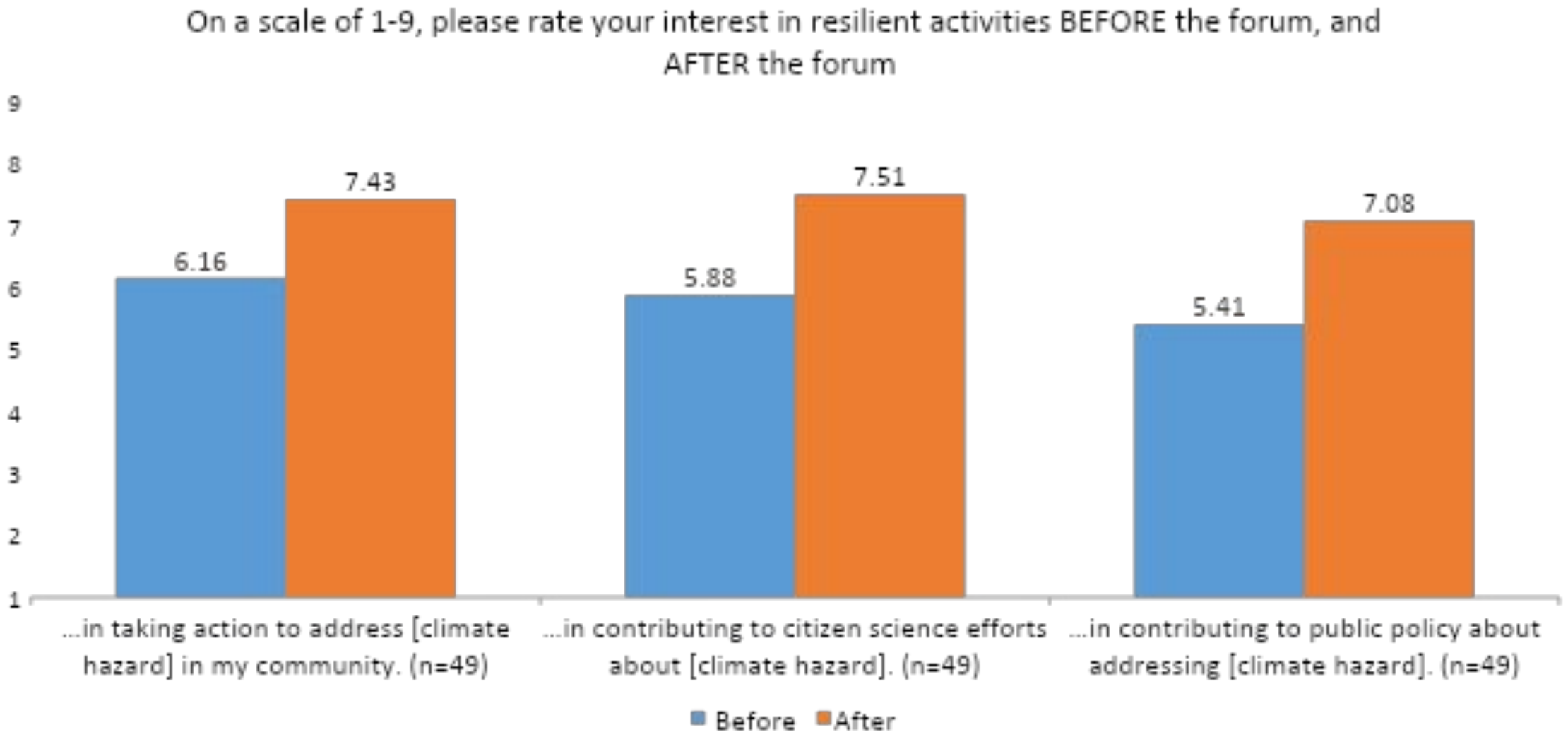
- We asked participants to rate on a scale of 1-9 their knowledge, confidence, and interest before and after the forum and citizen science
- There was a statistically significant increase for each



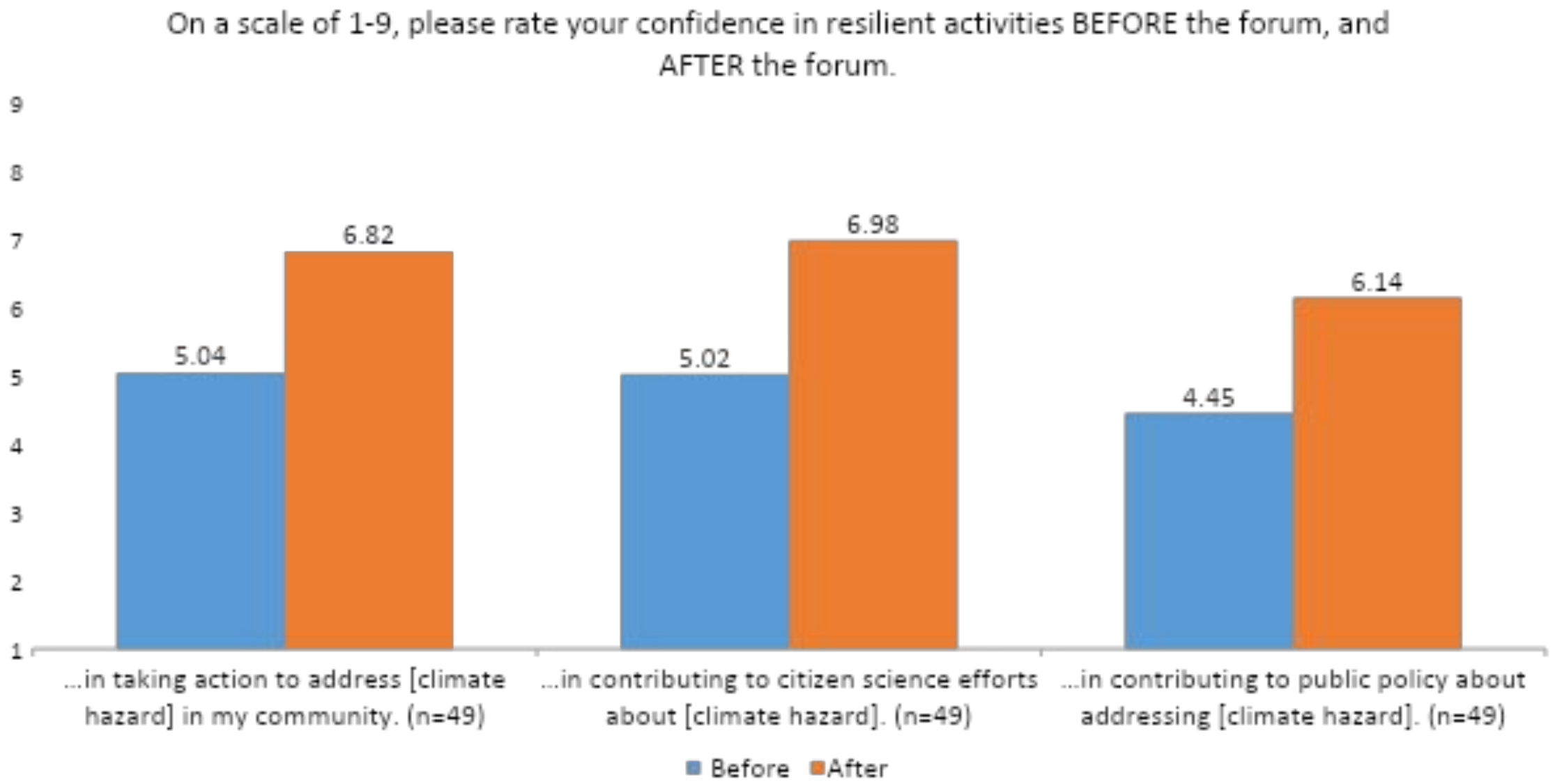
Forum


On a scale of 1-9, indicate how much you knew about the following topics BEFORE this forum and how much you know now AFTER the forum
9
8
7
6
5
4
3
2
1
5.08
7.04
6.28
7.13
6.4
7.55
4.92
6.87
4.98
6.85
6
7.17
...about how communities can address [climate hazard]. (n=53)
...about how human behavior impacts [climate hazard]. (n=53)
...about how [climate hazard] impact people. (n=53)
...about how resilience plans impact the environment. (n=53)
...how resilience plans impact different community members. (n=52)
...about how science can contribute to resilience planning. (n=52)
Before
After

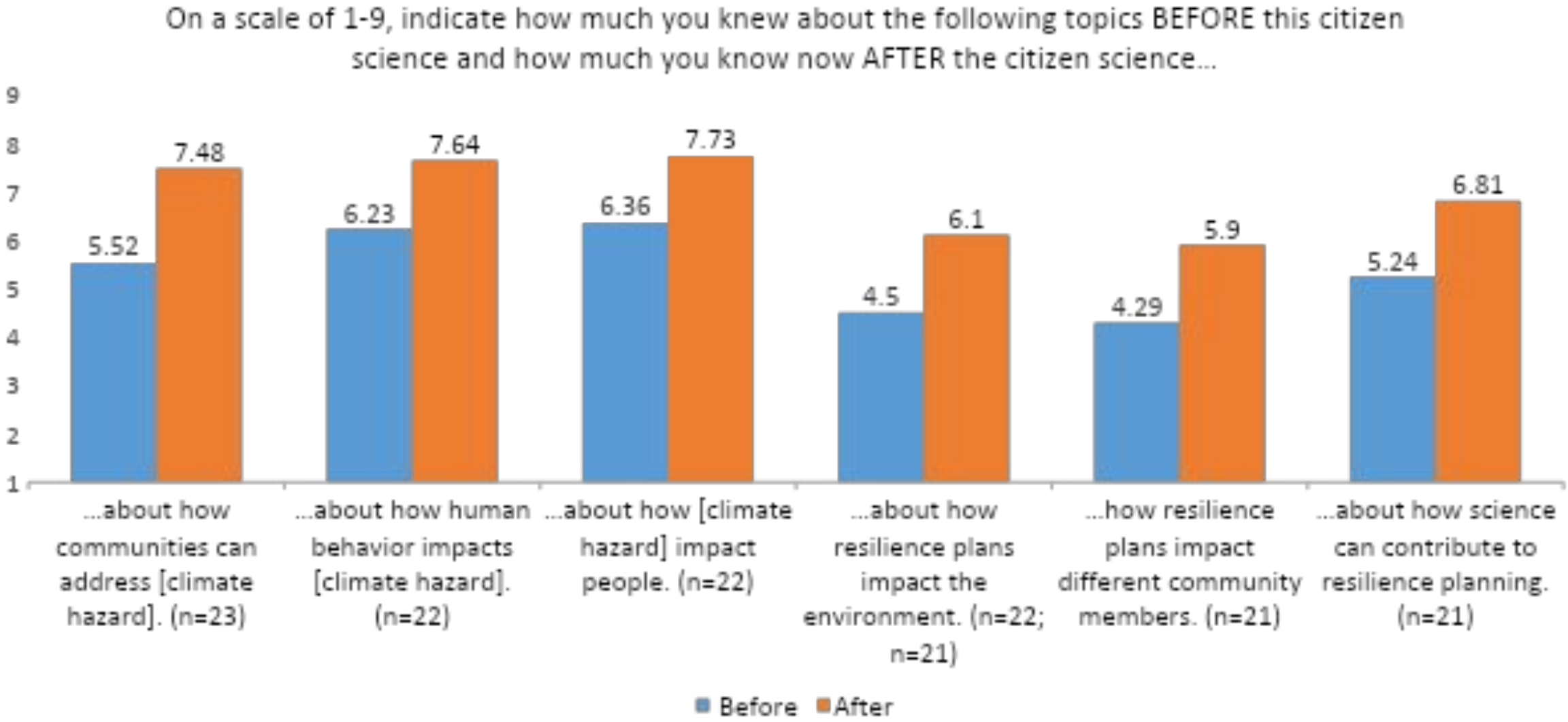
Forum


On a scale of 1-9, please rate your interest in resilient activities BEFORE the forum, and AFTER the forum
9
8
7
6
5
4
3
2
1
6.16
7.43
5.88
7.51
5.41
7.08
...in taking action to address [climate hazard] in my community. (n=49)
...in contributing to citizen science efforts about [climate hazard]. (n=49)
...in contributing to public policy about addressing [climate hazard]. (n=49)
Before
After

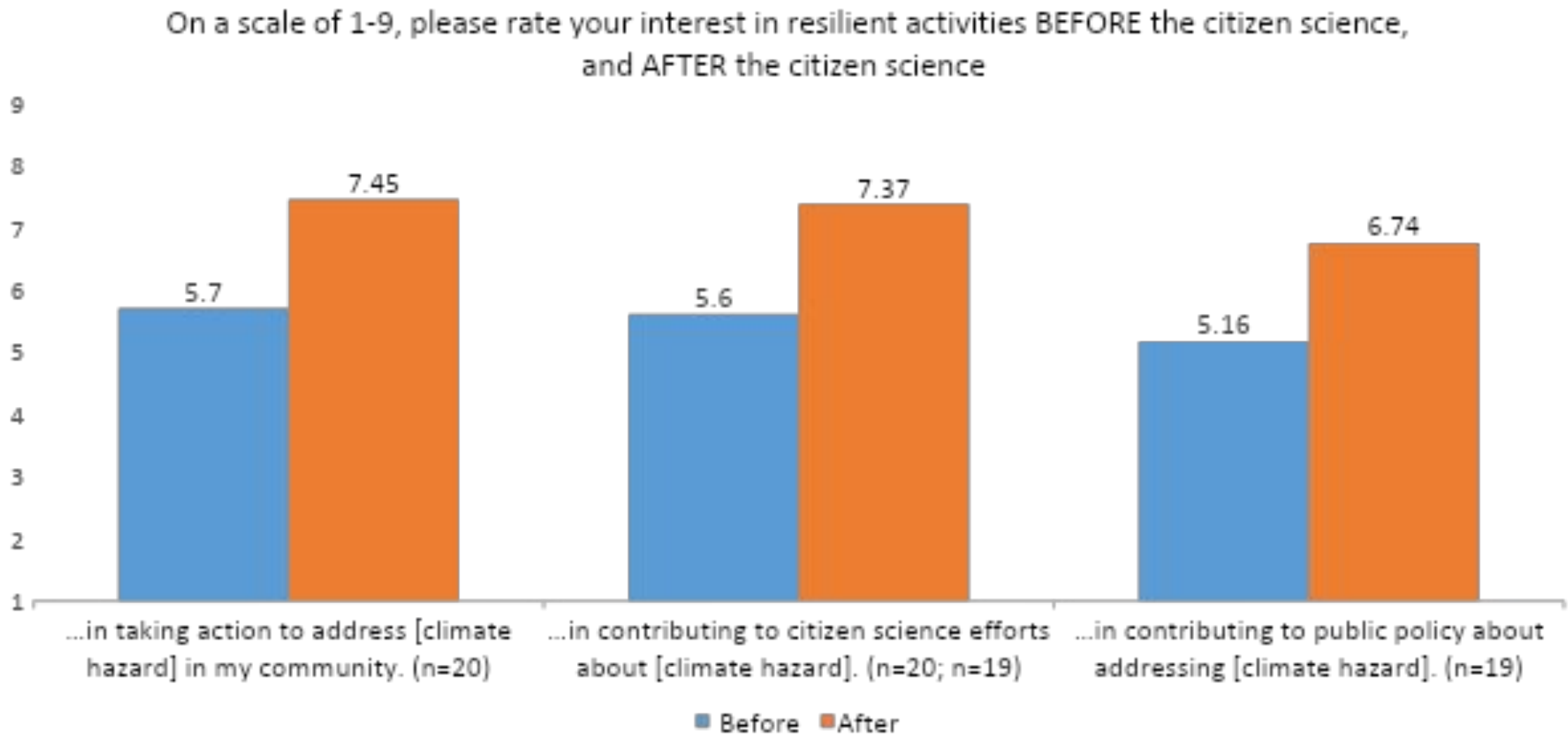
Forum


On a scale of 1-9, please rate your confidence in resilient activities BEFORE the forum, and AFTER the forum.
9
8
7
6
5
4
3
2
1
5.04
6.82
5.02
6.98
4.45
6.14
...in taking action to address [climate hazard] in my community. (n=49)
...in contributing to citizen science efforts about [climate hazard]. (n=49)
...in contributing to public policy about addressing [climate hazard]. (n=49)
Before
After

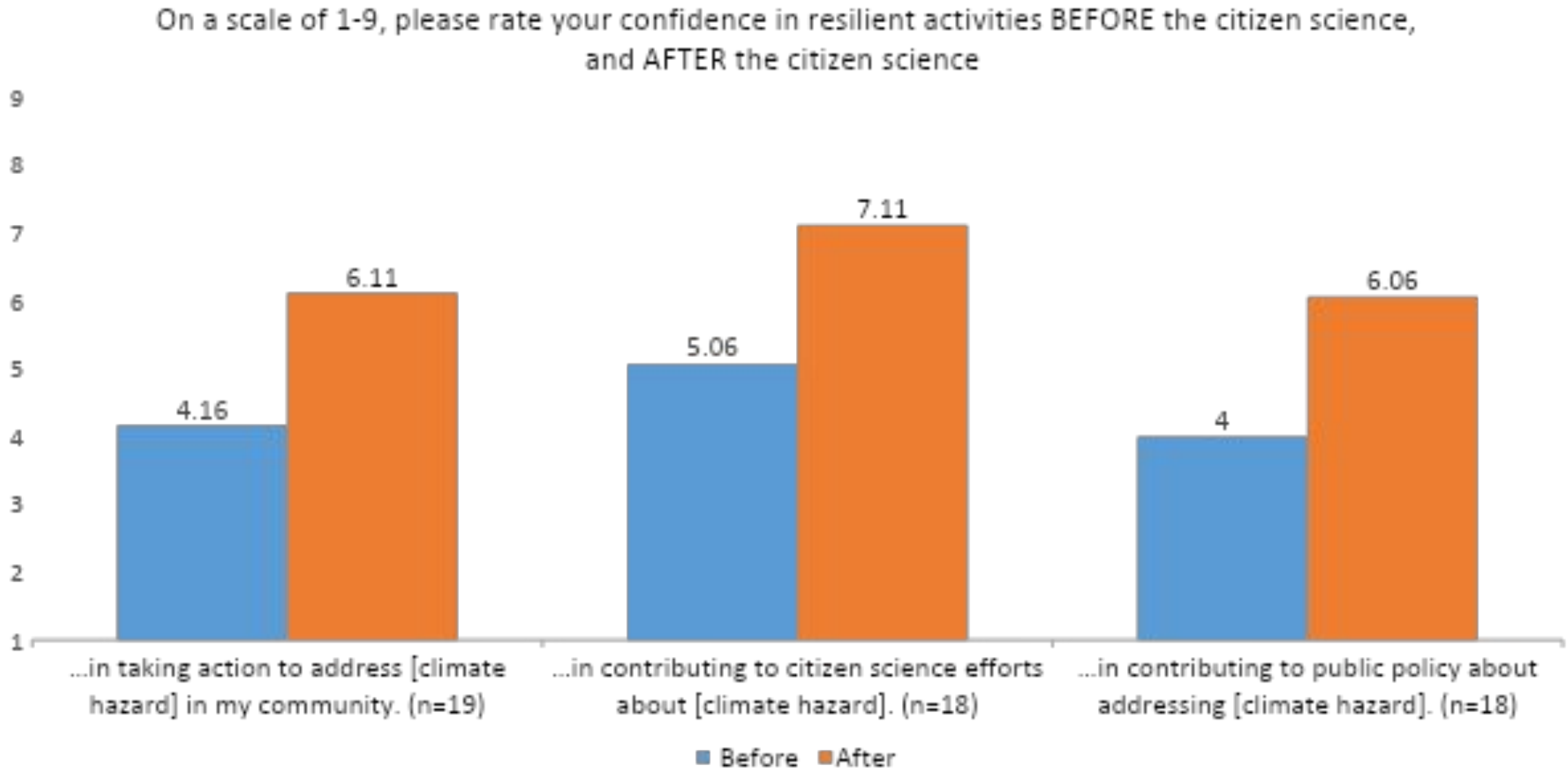
Citizen Science



Citizen Science



Citizen Science

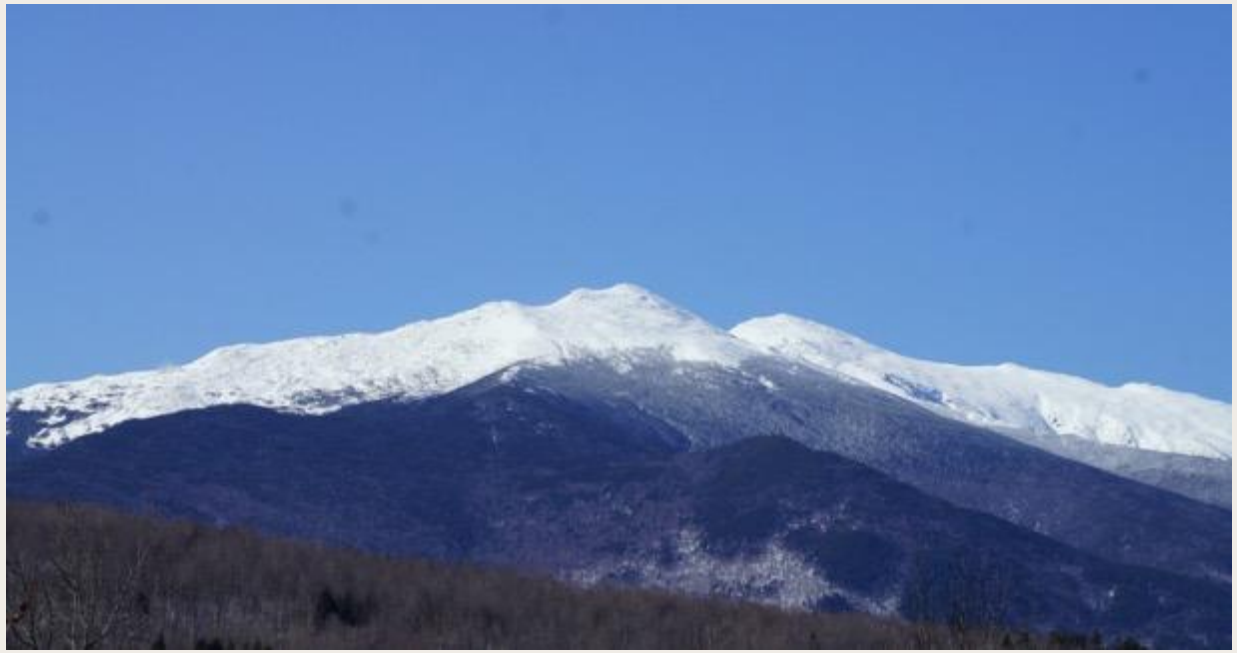


Thank you!

Sara Benson
sbenson@mos.org
Museum of Science, Boston

McAuliffe-Shepard Discovery Center
We bring the universe to you

Extreme Heat in New Hampshire



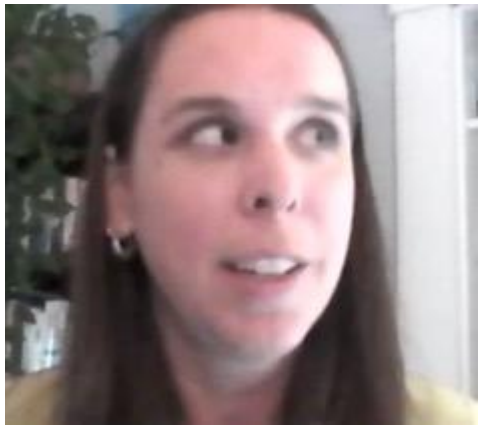

UNITED STATES

Finding Local Partners

- Concord, NH Energy & Environment Advisory Committee
- NH League of Conservation Voters
- Harris Center for Conservation Education

Getting the Conversation Going

- Stories of Climate Change
  - Online event
  - Kick off for data collection
  - Panel representing scientists, educators, policy advisors
  - Conversation between attendees

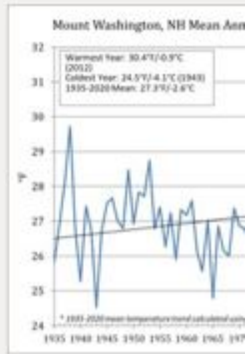


Community Science

We want you to pay attention to the heat!

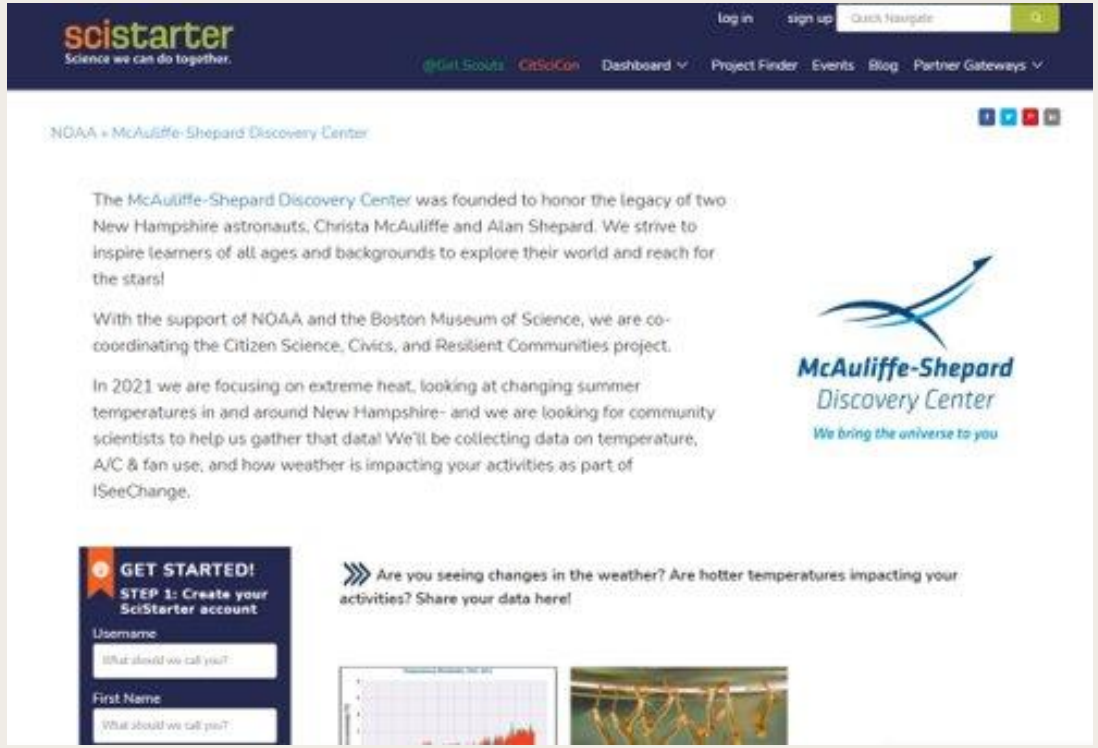
- 2-3 times a week in June and July
- What is the temperature?
- Did you use a fan or A/C?
- Did the heat change your activities?

Every data point is important!



Data Collection: Simple Process, Simple Goals

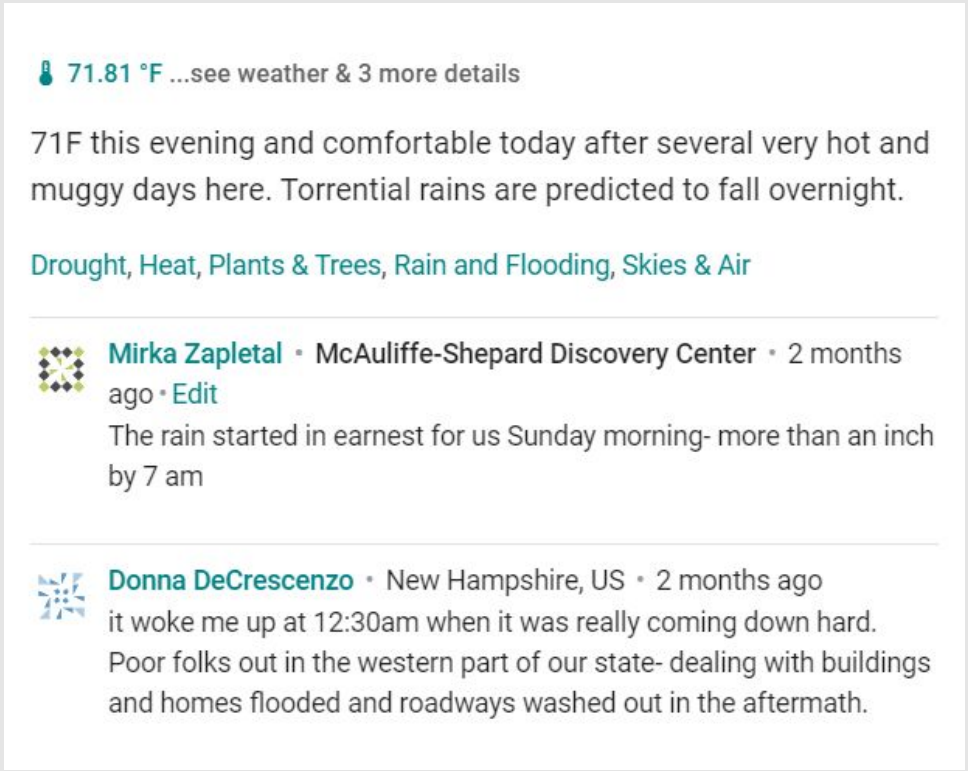
- **Community Scientists were asked to:**
  - **Collect data 2-3 times a week**
  - **Record temperature**
  - **Mention if A/C or fan used**



Results

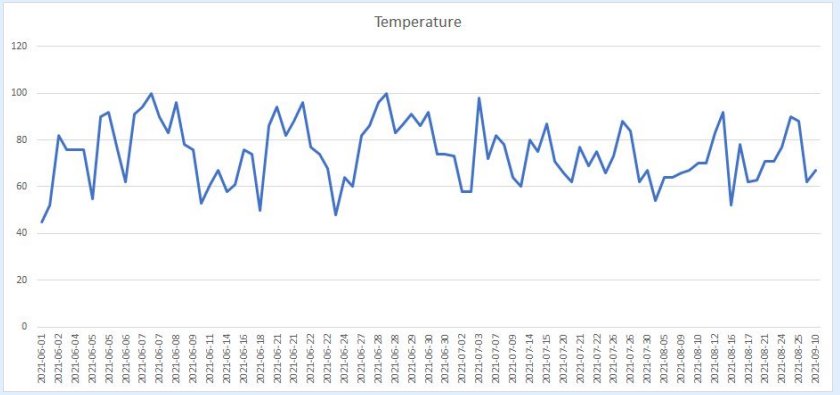
- Core group of contributors in central NH
- 100+ sightings that record temperature
- Opportunity to compare urban/rural and microclimate data
- (Connecting climate change to civic action)

Keeping Them Engaged



- Regular replies to posts
- Participation in National Forum on Extreme Heat
- Direct requests and check-ins
- Bring it back to local data

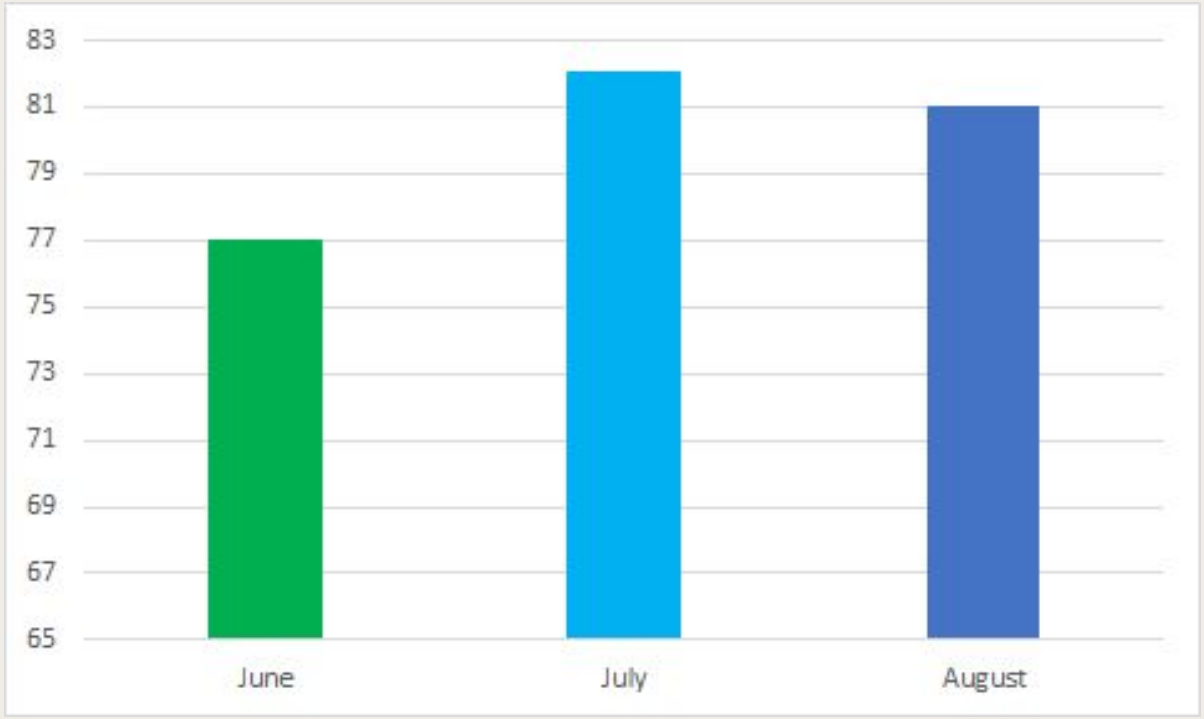
Extreme Heat in New Hampshire: A look at the summer



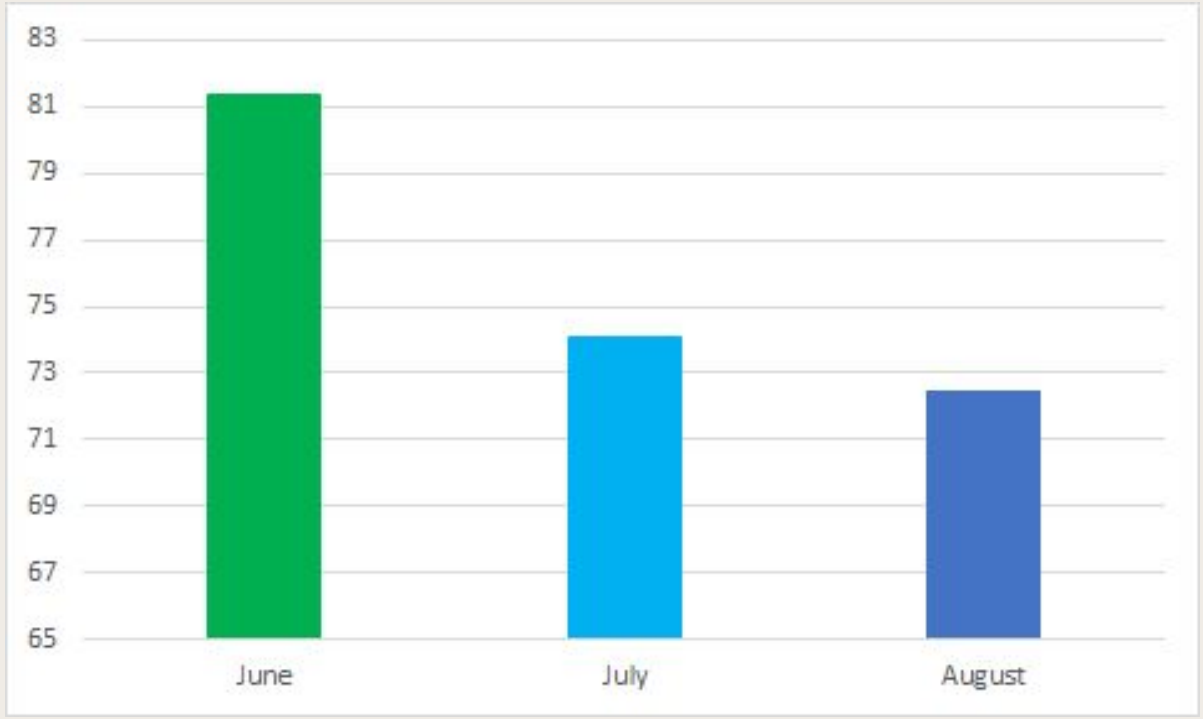
- Online event
- Compiled data
- Compared with historical averages
- Featured Mount Washington Observatory

Monthly Averages

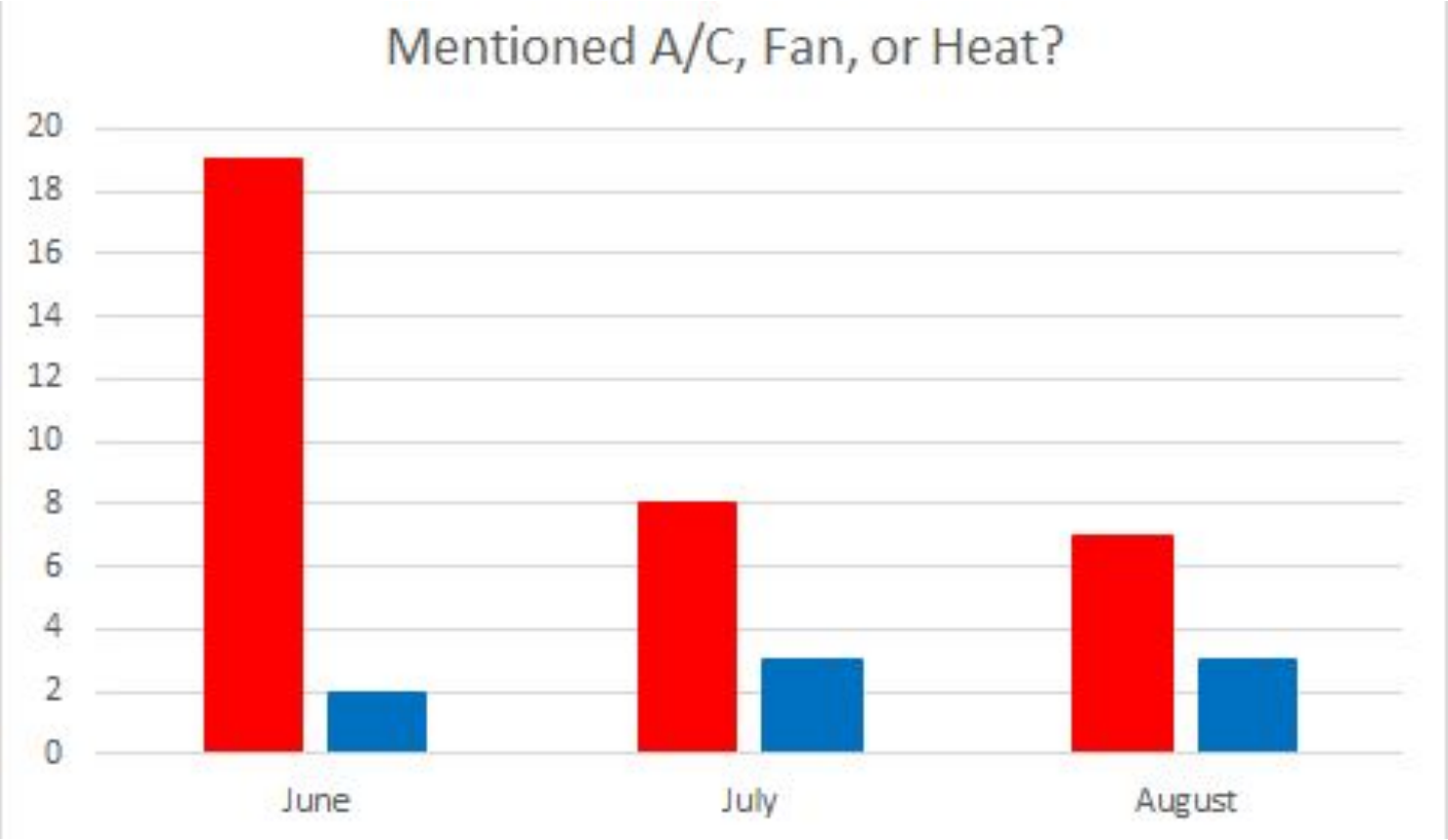
Historical Data



Our Data



Starting a New Baseline



- Most of the mentions were about needing fans or A/C or just how generally hot it felt (Red), but sometimes people remarked about the nice, cool weather (Blue)

Questions?

mzapletal@starhop.com

¡explora!

Citizen Science, Climate Change, and Resilient Communities

A Research-Based Workshop Series for Educators

- Participate in citizen science research.
- Meet local experts in climate change, drought, and sustainability.
- First 15 registrations receive a CoCoRaHS rain gauge (valued at $48).
- Learn how to apply and incorporate these activities in your programming.
- Join a national forum to expand our body of knowledge around climate change.

Registration is free. For more information including registration and workshop dates, please visit the link below:

https://bit.ly/CitizenSciPD

Presented with support from the Environmental Literacy Program of NOAA

x studio

NOAA

¡explora!

Goals of the project

- Introduce educators to citizen science and equip them with the knowledge and skills to implement with their students
- Address resilience and climate change through a variety of strategies, including activities, discussions, Drought Forum, and local experts
- Apply and incorporate

iexplora!

x studio

Workshops

- 18 registrants; 11 participants
  - K-5 (6)
  - MS and HS (3)
  - Community College (2)
  - Museum (1)

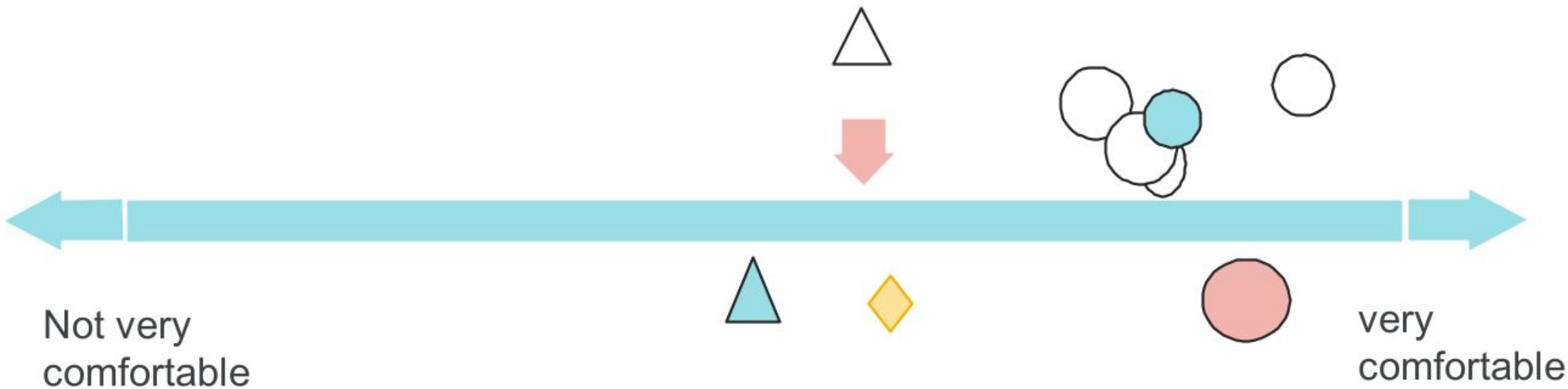
- Virtual
- Incentives

Introductory Prompts

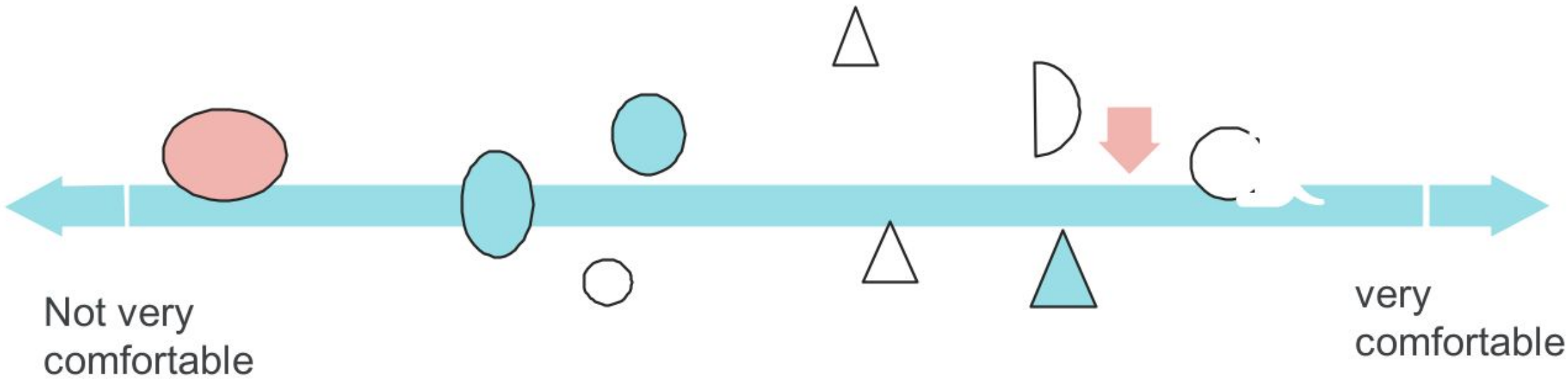
- What are some things you know about or associate with climate change?
- When you hear about climate change, how does the topic make you feel?
- To be honest: 7 billion people can't continue with our present lifestyle. How does the idea of being forced to change some things make you feel?

What are some things you know about or associate with climate change?

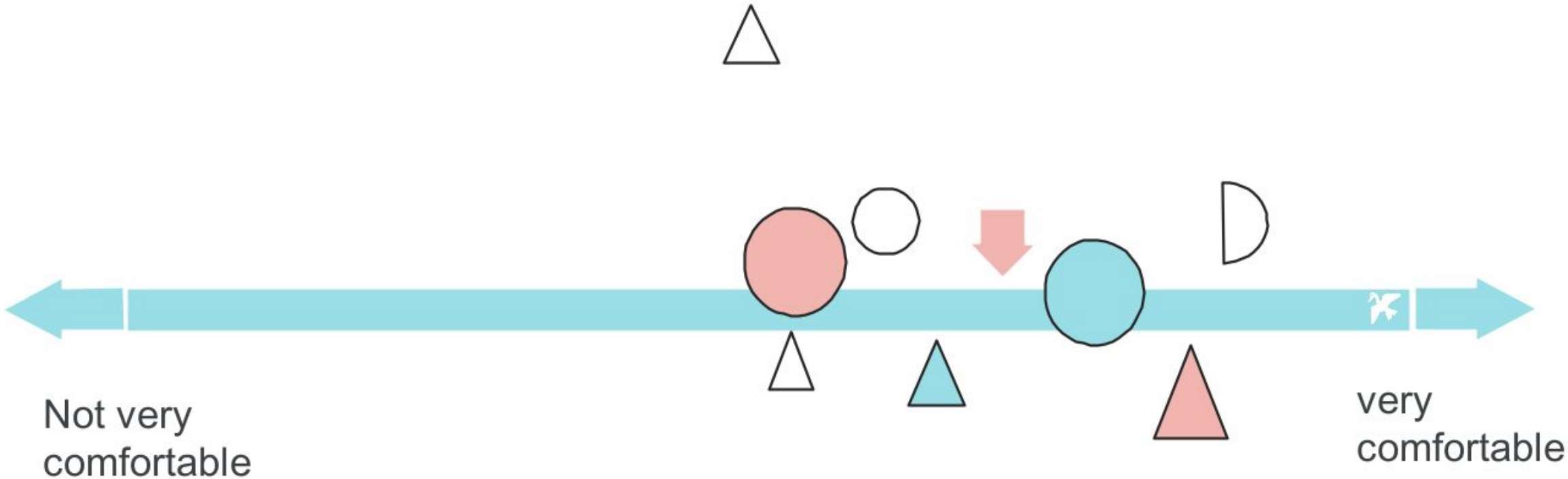
. . . finding and trusting information about climate change?



...talking about climate change with your students?

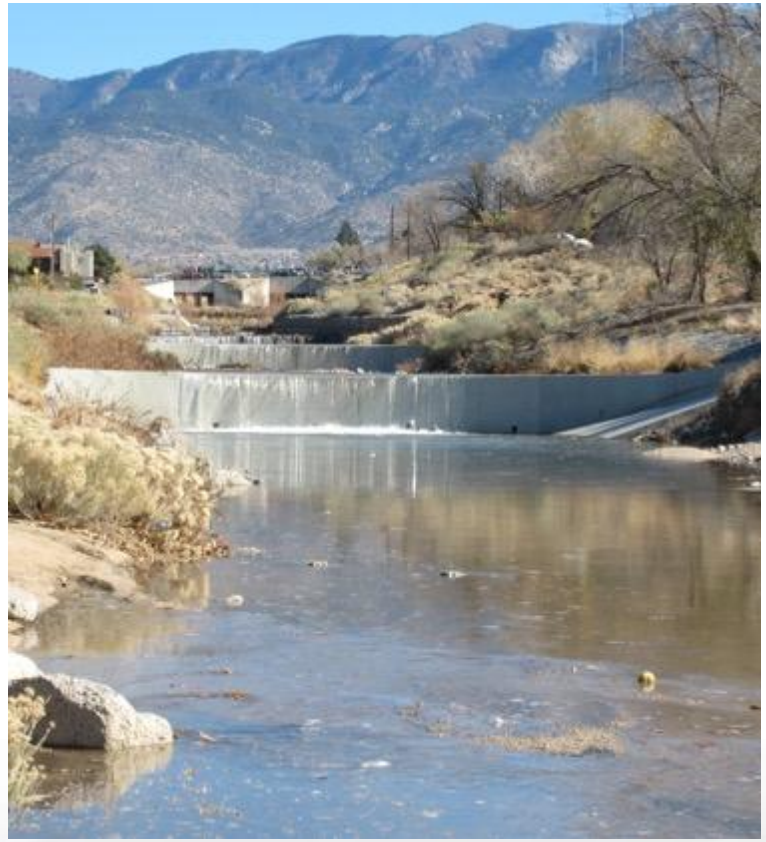


...making connections between climate change and your students' daily lives?



Experts

- How is the issue affecting *our* community? How are officials addressing the problem? What can we do?
  - City of Albuquerque Sustainability
  - Albuquerque Bernalillo County Water Authority
  - NGO



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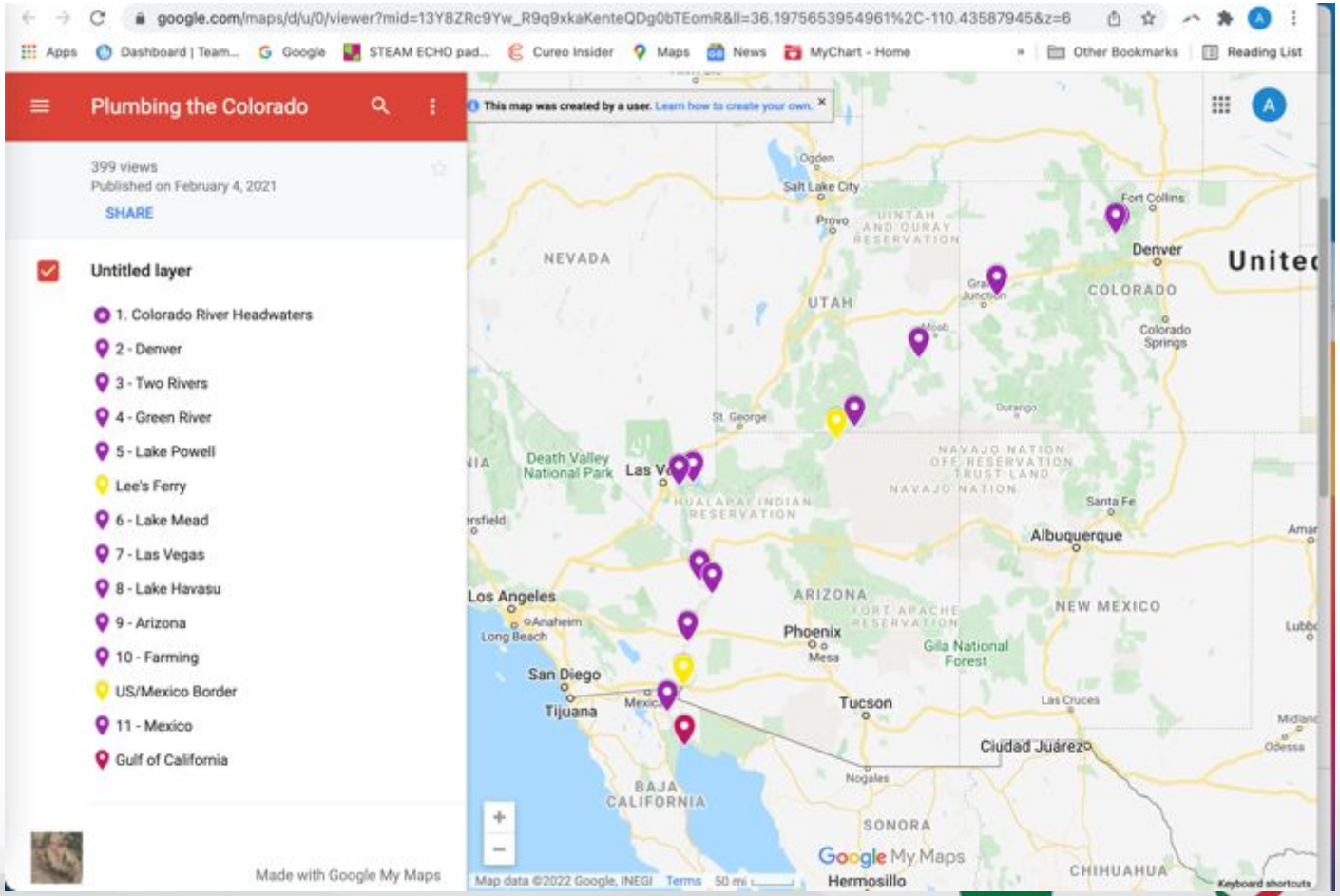
Activities

- Citizen Science projects
- NISE Net Forum on Drought – full activity and adaptations
- Project Wet

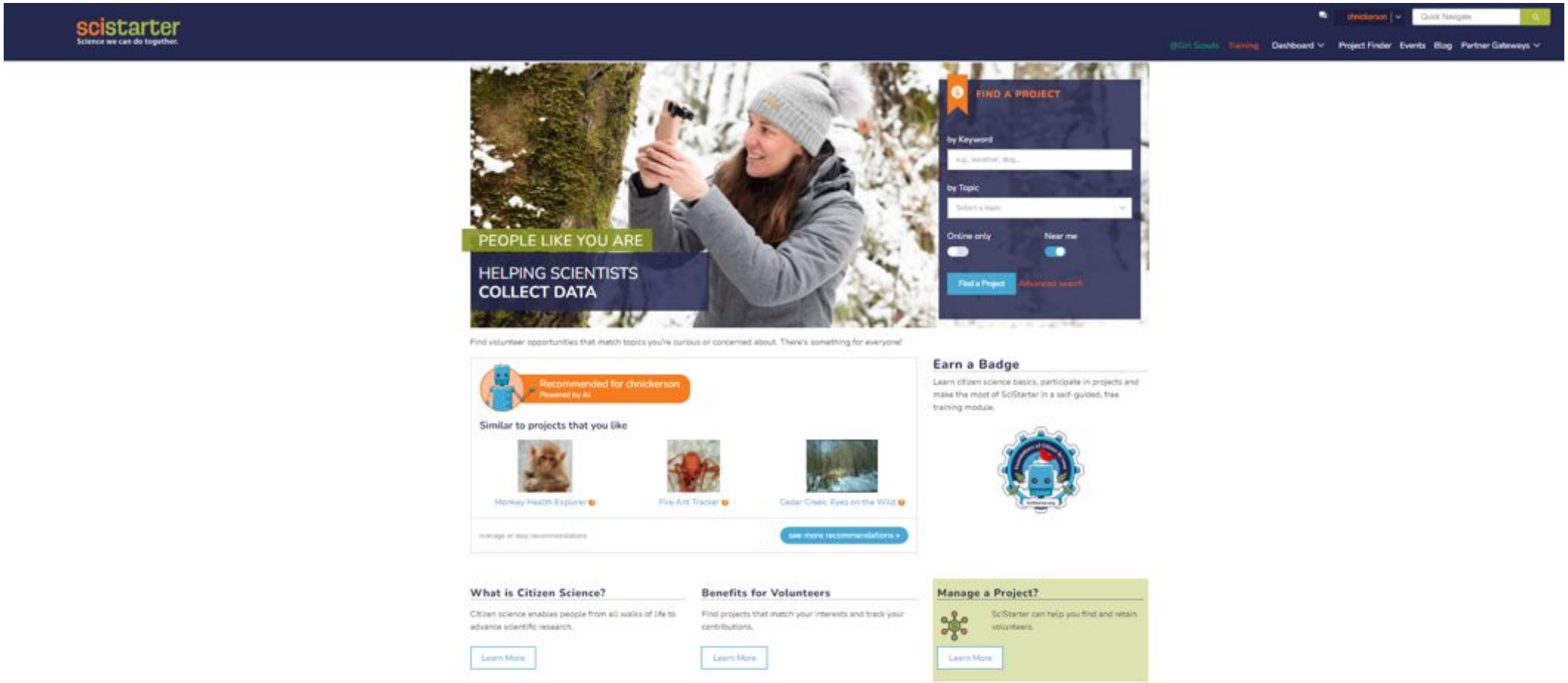


Citizen/Community/Neighborhood/Public Science

A collaboration between scientists and those of us who are curious, concerned, and motivated to make a difference.

It's how people can make an impact on issues they care about...and help science!

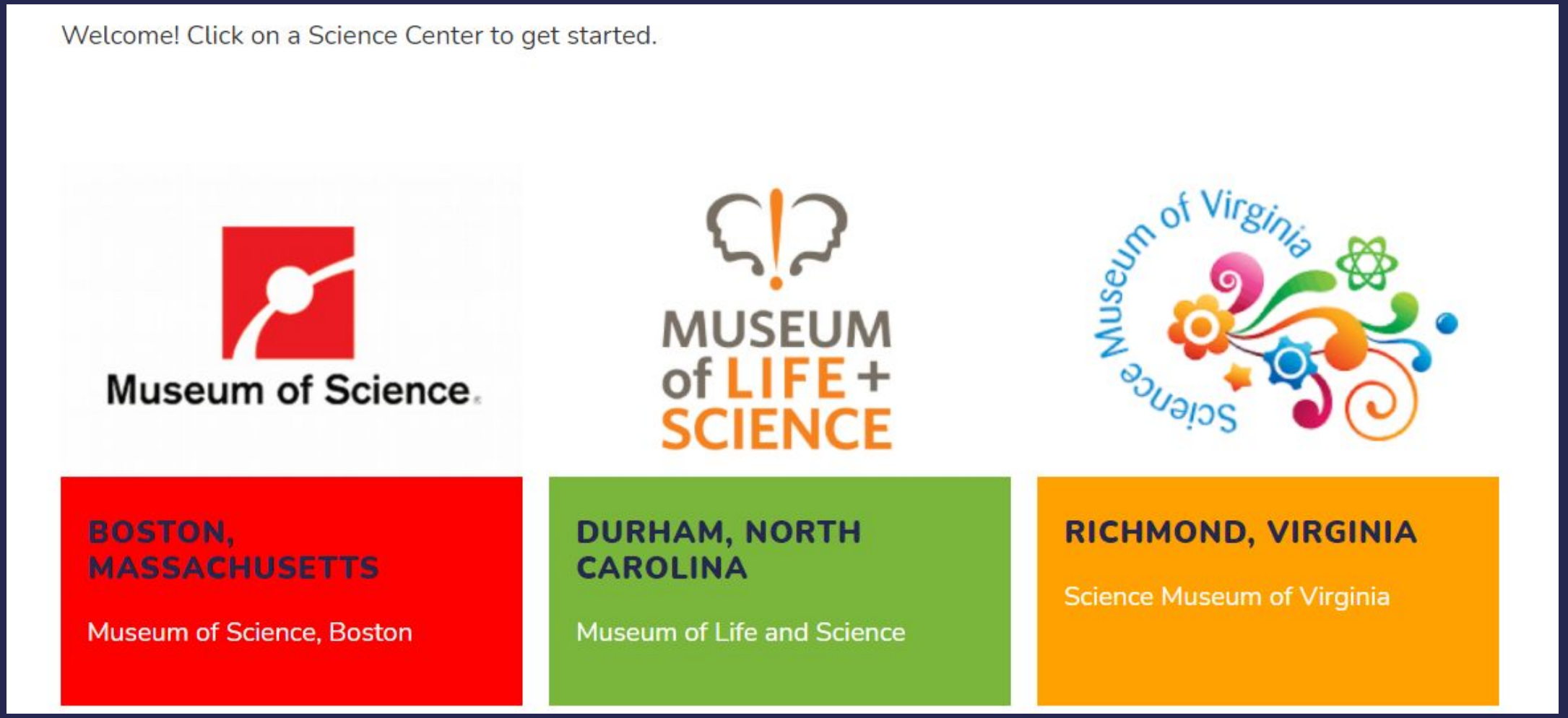
SciStarter connects citizen scientists to over 3,000 projects, events, and tools.



"SciStarter is the Amazon of Citizen Science," Carl Zimmer, Discover and The New York Times

SciStarter.org/NOAA

Easily find and join local forums, events and projects.



Your MicroSite on SciStarter:
Modular webpages to showcase your entire program: events, featured projects, blog posts, outcomes.

Be a Citizen Scientist!
CCMNH is part of the Citizen Science, Civics, and Resilient Communities project with support from NOAA. For this project we are focused on sea-level rise, and we need your help!

Being a citizen scientist is simple! Just take a walk on the museum's John Wing Trail, then snap a cell phone picture from one of the two picture posts along the beach. Follow the directions on the picture post to share your photo.

We will use these photos to document tides, storm damage, beach cleanups, and more. Coastal decision-makers, emergency managers, and others will use your photos to make better decisions.

Find a project
Choose a project from this page or search through thousands more options with our Project Finder.

e.g. birds

Find a Project

Advanced search

This project includes the MyCoast citizen science project. You can get started with the MyCoast citizen science project by clicking on the icon on this page.

Current Events and Projects

MY COAST
Investigate sea level rise by chronicling our changing coast.

ISEECHANGE
Share your experiences and collect data to investigate our environment and help our communities change.

Brewster Natural Resources Department installs a "Picture Post" on Wing Island. This allows Citizen Scientists to help document changes to the coastline.

Together, We Select and Curate Specific Citizen Science Projects

MYCOAST

Investigate sea level rise by chronicling our changing coast.

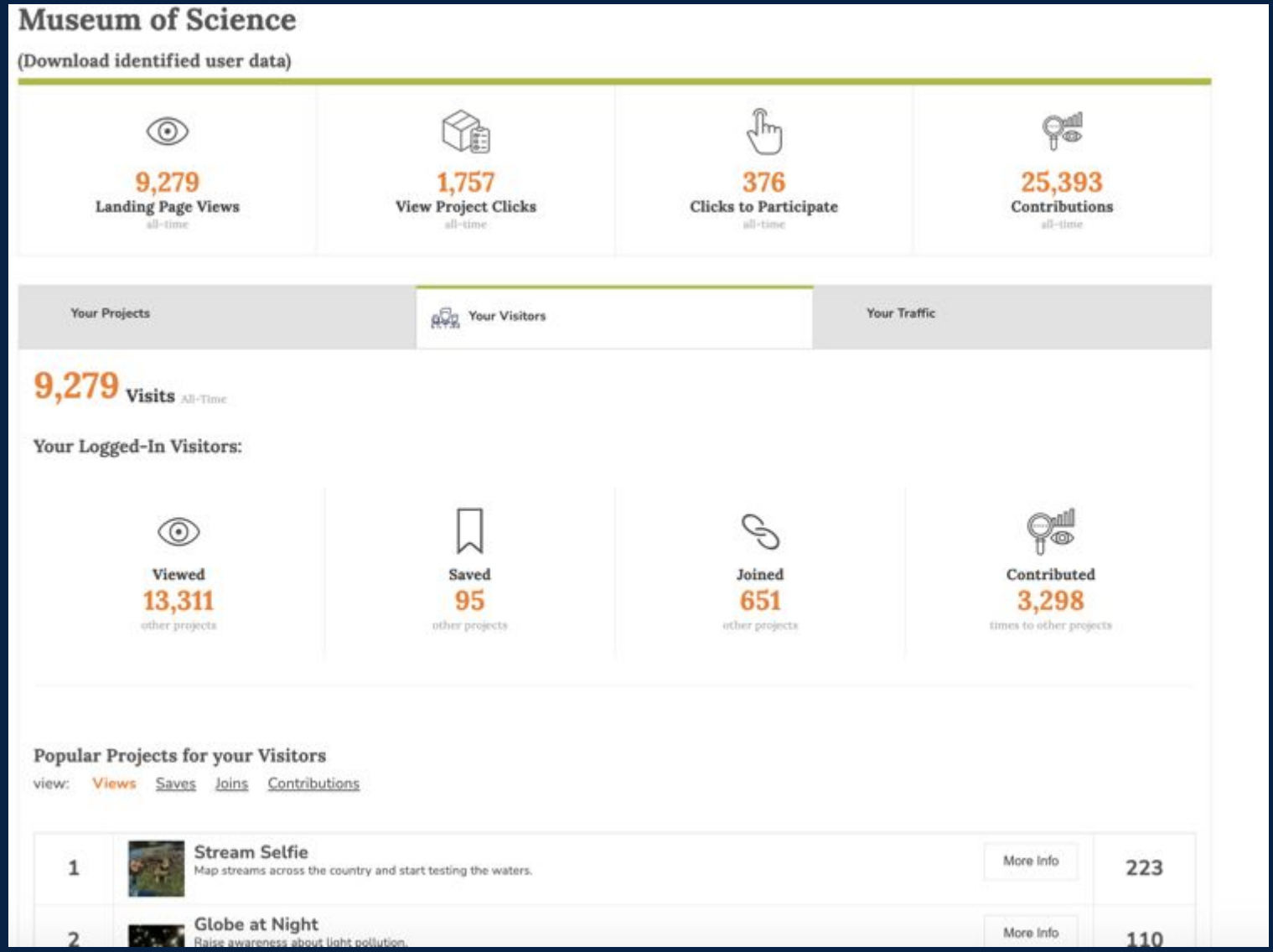
ISEECHANGE

Investigate how weather and climate change impact your life and community by sharing photos and stories.

SciStarter.org/NOAA
On-demand analytics

SciStarter.org/NOAA-MOS

On-demand analytics



Connect with community members, receive program updates, measure collective impact, participate in evaluations.

Wicked Hot Boston

In 2019, the Museum of Science, Boston (MOS) team and local citizen scientists addressed the extreme heat climate hazard.

Learn more:

Wicked Hot Boston blog series

Part One | Part Two | Part Three

Museum of Science, Boston project website

Promotions and Outreach: Reaching people where they are

- DiscoverMagazine.com Blog
- SciStarter Blog
- Social Media
- Citizen Science Podcast

Organize and Promote Related Events

Learn more on the SciStarter Blog.

Learn more on the SciStarter Blog.

South Dakota Discovery Center

For Science Centers

DISCOVER

LOGOUT

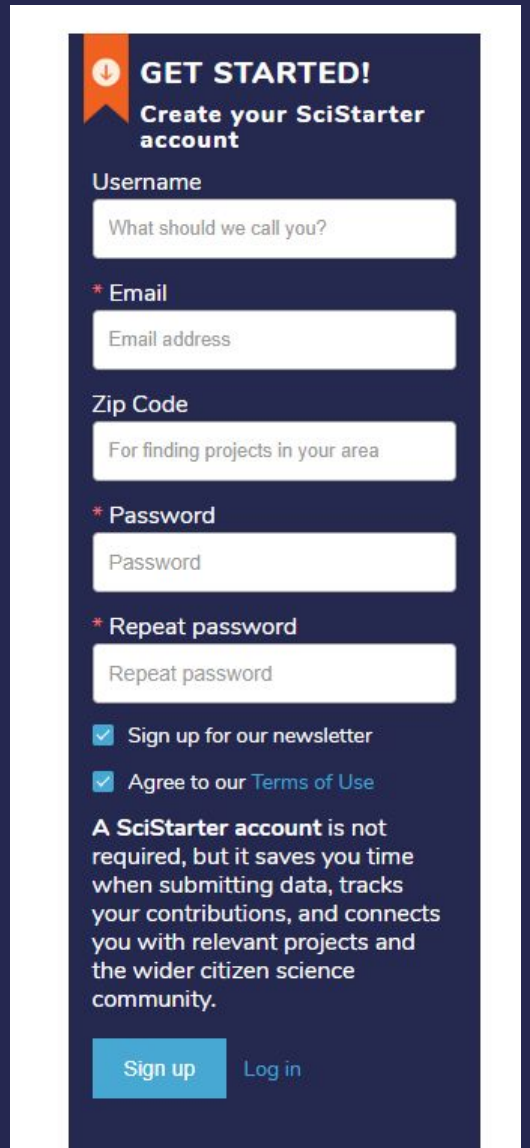
THE SCIENCES | MIND | TECHNOLOGY | HEALTH | ENVIRONMENT | PLANET EARTH

THE SCIENCES

Boston Could Become WICKED Hot. This is What They're Doing About it.

Over the past year, the people of Boston have banded together to address extreme temperatures in their city.

Join the SciStarter Community



scistarter

People-powered science.

Use free SciStarter tools to spark and sustain engagement!

Find a SciStarter affiliate project for your community: SciStarter.org/Affiliates

Make a List to track community participation in SciStarter affiliate projects: blog.scistarter.org/2020/07/new-beta-feature-from-scistarter-lists-makes-it-easy-to-organize-share-and-track-engagement-in-citizen-science-projects/

Use the People Finder to reach out to SciStarter users in your community: SciStarter.org/People-Finder

Tell your story on the SciStarter Blog (Blog.SciStarter.org) or Podcast (SciStarter.org/Podcast).

Q & A

Get Involved

Learn more and access the
NISE Network's online digital resources
nisenet.org

Subscribe to the monthly newsletter
nisenet.org/newsletter

Follow NISE Net on social networking
nisenet.org/social

Next Online Workshop

Working with Experts - If Only There Was A Guide… Now There Is!

Tuesday, March 1, 2022
2pm-3pm Eastern /
11am-12pm Pacific

NISE NETWORK
ONLINE WORKSHOPS

Learn more at nisenet.org/events

Thank You

This material was prepared using federal funds under award NA18SEC0080008 from NOAA. Any opinions, findings, and conclusions expressed in this material are those of the authors and do not necessarily reflect the views of NOAA or the US Department of Commerce.