

Call to Action: Improving Knowledge to Manage Climate Risk Through Citizen and Community Science

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Climate Assessments for Climate Action

With climate change already here and intensifying, states and local communities are looking for ways to help limit future changes and to prepare and keep their communities safe. Data on community impacts is often missing, and it can also be hard to select usable information on future conditions that fits their situation and to use this knowledge effectively. Monitoring results of action is also challenging. The National Climate Assessments have provided an overview of the best available science about climate change. But they have not provided guidance on how to use what we know about climate impacts and responses to take action – information such as best practices and authoritative data to address practical problems like managing urban flooding or planning resilient and inclusive economic growth.

Members of a discontinued federal science advisory committee and other experts are working to advance a **sustained assessment process**. The goal is to provide flexible access to authoritative knowledge that state/local communities can use flexibly and interactively to find climate action pathways that also support their broader goals. For more information, visit

www.climateassessment.org



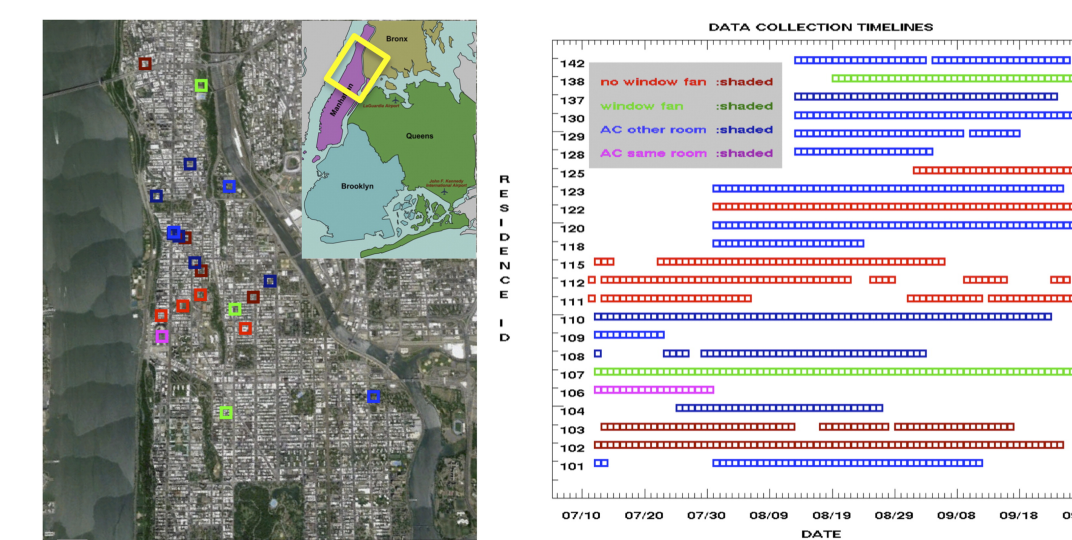
From Science

To Action

A sustained assessment could outline the best practices for moving from research results to impact. The figure in the upper left shows typical research results in the form of climate projections; the figure on the right is of Mill River Park and Greenway, a landscape designed to mitigate climate-change related flooding and promote social justice.

A sustained assessment could also describe what science could help support local priorities and influence research agendas through a process of knowledge co-creation.

Example: The Harlem Heat Project

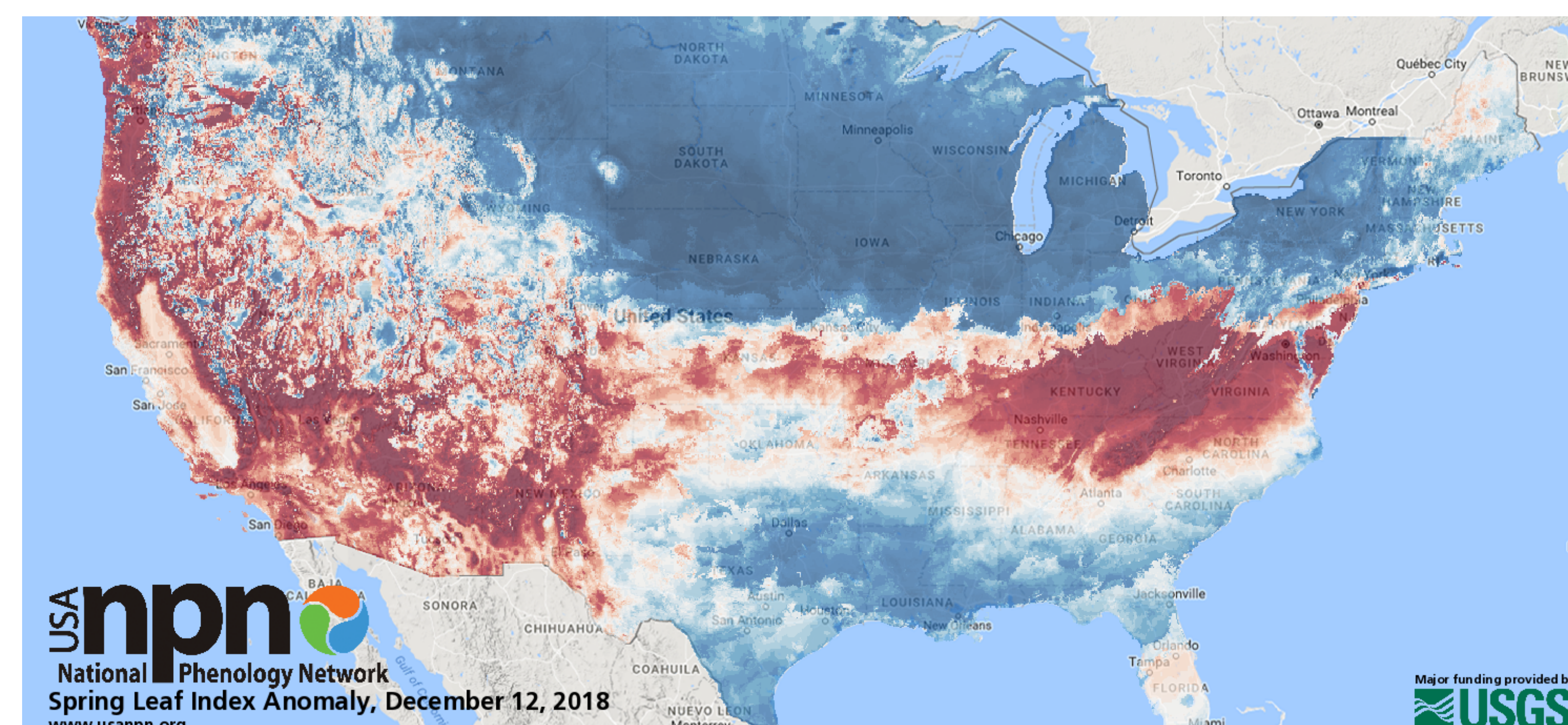


The Harlem Heat Project was a combination of citizen science and citizen journalism. Participants measured temperature, inside and outside, throughout the city along and shared stories and photographs that captured the human impact of heat.

Data from the Harlem Heat Project showed that interior temperatures are often higher than exterior temperatures (in fact, 2/3 of the locations sampled show higher heat index **inside** buildings) and interiors stay dangerously warm long after the outside temperature has dropped. This project not only fills in data gaps—city officials have acknowledged that they don't have good data—it shows how targeted data collection and engagement can ensure mitigation strategies are implemented in equitable ways.

Citizen and community science is currently underused in climate science and assessment... It is essential to co-design projects in a way that encourages broad engagement, advances climate resilience, and delivers robust data and tangible benefits.

Example: The National Phenology Network



The National Phenology Network uses citizen science to understand how species and landscapes are responding to climate change. NPN synthesizes local data and develops protocols that can be used nationally. NPN has developed a national biological observation program with scientifically rigorous monitoring protocols for over 500 plant and animal species. Data has been used to track changes in seasonality (above) and inform changes in agricultural practice and ecological management.

A Role for Citizen and Community Science in Sustained Assessments?

The authors of this poster contributed to an upcoming report that includes ideas to increase the role of citizen and community science in meeting these challenges.

Improve Data: Fill in data gaps (from physical conditions to impacts), extend spatial and temporal coverage, improve resolution, and contextualize remotely-sensed data.

Foster Collaborative or Co-design Approaches: Improve the connection between science and society and reframe how education, outreach, and research support one another.

Address Equity and Social Justice: Climate change impacts fall hardest on communities that have been historically under-represented in science. Citizen and community science offer the potential for those communities to help guide, contribute to, and benefit from engaged research.

Call to Action

You can help apply citizen and community science to this grand challenge. Some next steps and challenges include:

- Assess current use of citizen and community science in climate adaptation and mitigation
- Advance standards and protocols to ensure rigor and consistency in data collection, including harnessing emerging technologies such as AI
- Identify ways that citizen and community science can contextualize and supplement climate and impacts data
- Adapt the participatory methods to focus research so it informs community participation in taking climate action;
- Better connect climate and impacts research to the short and long-term priorities of historically underserved, marginalized, or oppressed communities.

Please talk to us and sign up at www.climateassessment.org and indicate how you would like to become engaged.

