

Dickinson College's Alliance for Aquatic Resource Monitoring

Combining the power of science and the power of communities.



Dickinson



Who is ALLARM?

Founded in 1986, Dickinson College's Alliance for Aquatic Resource Monitoring (ALLARM) builds the capacity of communities to use science as a tool to investigate the health of their streams and to use those data for local change.

- Hybrid staff with full and part time staff and 10-13 Dickinson College Students
- 30% supported by the college, 70% funded by federal, state, family foundation grants

What is C-science?

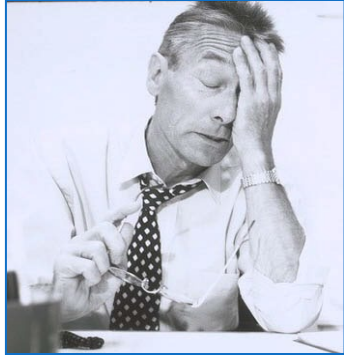
Definition: Science that engages individuals or communities in participatory research.

Why do we love C-science?

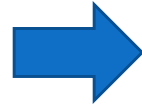
- All data of known quality have value
- Expands breadth of research able to be accomplished by filling existing data gaps
- Helps address local concerns
- Strengthens sense-of-place and engagement with the environment
- Accessible science
- Many more!



Community Driven Philosophy



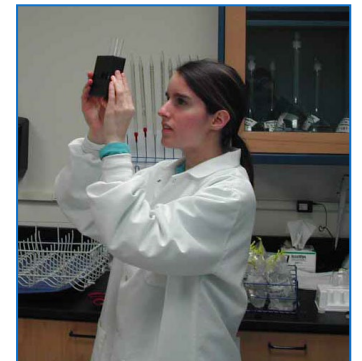
Community Concern



Technical Assistance
(ALLARM)



Monitoring trainings



Data collection &
quality
verification



Data interpretation



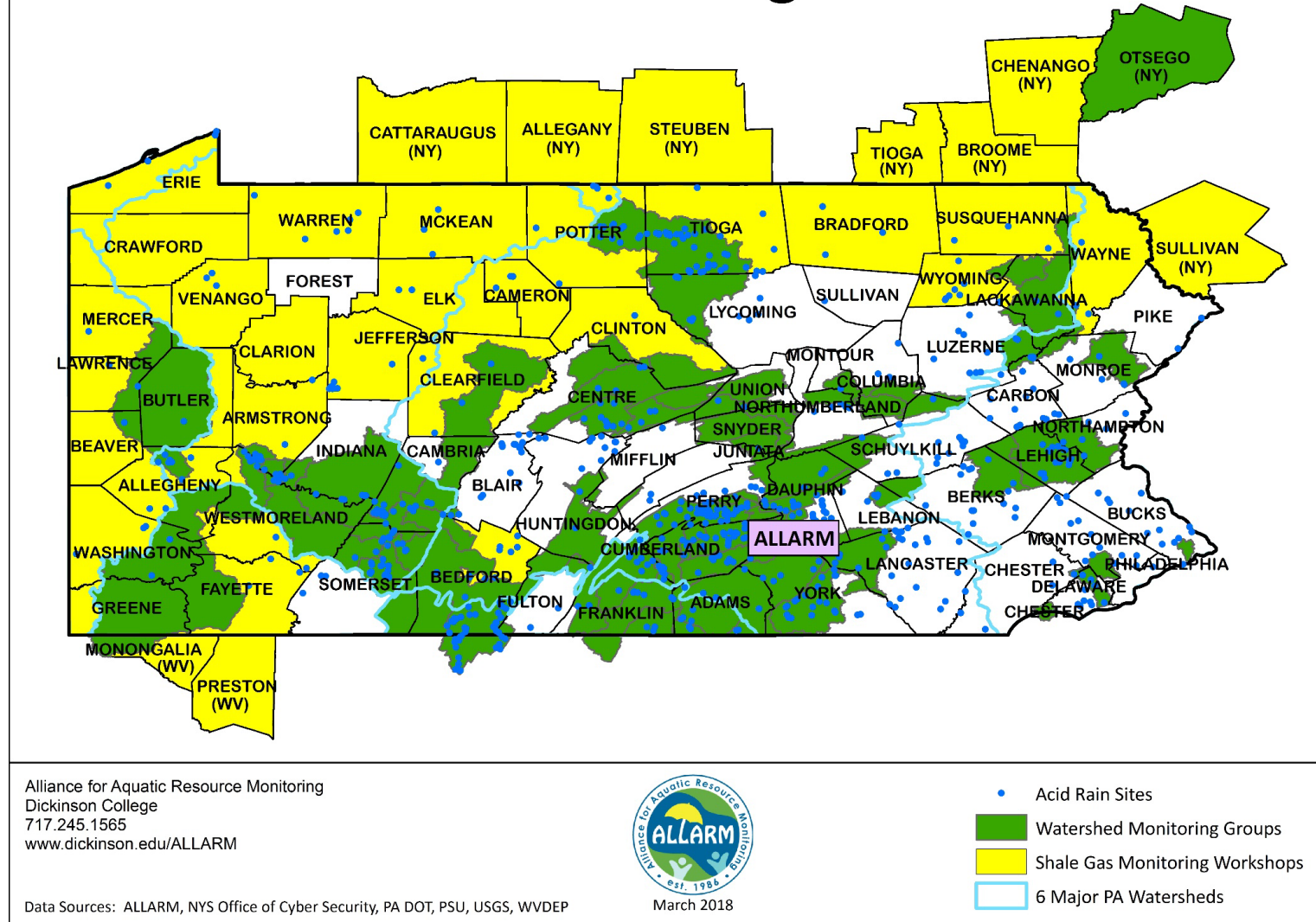
Communities use data to
protect and restore streams



ALLARM Monitoring Assistance

This map illustrates some of ALLARM's historic programs and geographic spread.

- Acid Rain Monitoring
 - (1986-1998)
- Shale Gas Monitoring
 - (2010-2020)





ALLARM Major Partnerships

The Consortium for Scientific Assistance to Watersheds (C-SAW)



- The Consortium for Scientific Assistance to Watersheds (C-SAW) is a team of specialists who provide free organizational and scientific technical assistance to PA-based watershed and conservation organizations.
- Some services provided:
 - Watershed specific technical assistance (e.g. study design, equipment support, methods training)
 - Quality control for water quality and macroinvertebrate monitoring
 - Mentoring assistance
 - <https://www.c-saw.info/>



Chesapeake Monitoring Cooperative

A partnership that aims to connect water quality monitoring initiatives across the region in order to amplify voices and enhance our understanding of the Chesapeake Bay Watershed. The CMC provides technical, logistical and outreach support for the integration of water quality and macroinvertebrate monitoring data from volunteer scientists and other nontraditional sources to fill spatial and temporal gaps.

Cooperative Agreement



CMC development team partners & service providers



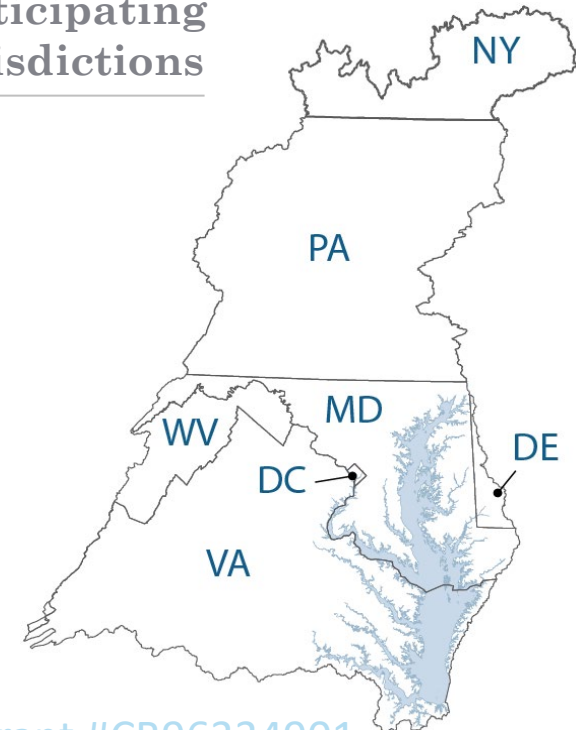
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University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE



Participating Jurisdictions

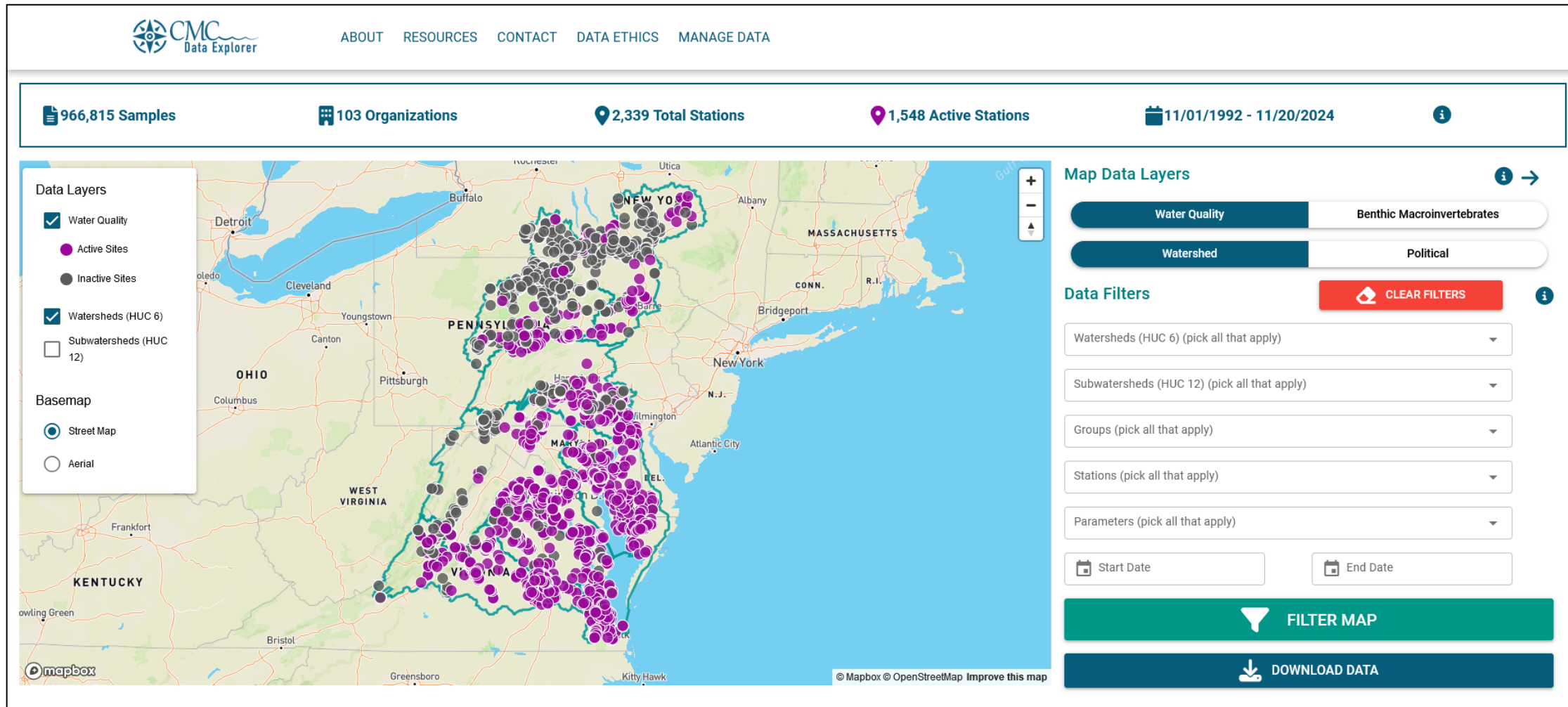


USEPA Grant #CB96334901

CMC Data Explorer

- Regional database for nontraditional and volunteer-collected data of a known quality.

<https://cmc.vims.edu/#/home>





ALLARM Programs



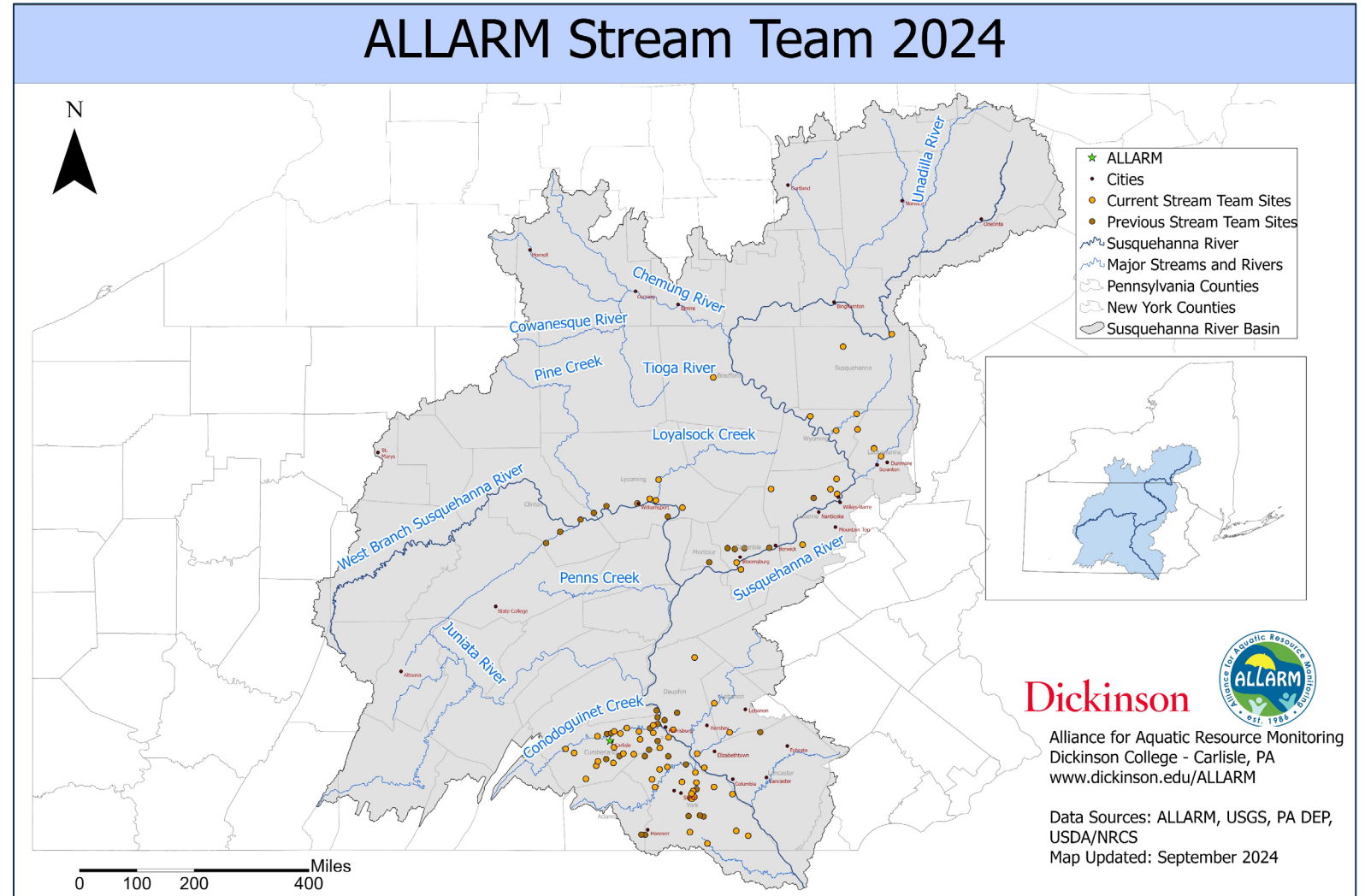
ALLARM Technical Assistance Strengths

- Monitoring plan/program development (study design)
- Chemical, macroinvertebrate, and visual monitoring trainings
- Facilitated data interpretation and communication
- Quality Assurance/Quality Control (QA/QC)
- Equipment recommendations and loans
- Watershed specific resources and information



ALLARM's Stream Team

- **Monitoring Goal:** Develop baseline water quality data of a known quality that examines the relationship between land use, geology, and watershed health.
- 130+ volunteers in 13 Pennsylvania counties
- Monthly chemical monitoring
 - Water temperature
 - Water clarity
 - Stage
 - Conductivity
 - pH
 - Nitrate-nitrogen
 - Visual site characteristics





Community-Based Restoration Monitoring Protocol

- The CMC partnered with the National Fish and Wildlife Foundation (NFWF) to develop a community-based restoration monitoring protocol.
- This protocol aims to track NFWF-funded restoration projects over time to determine whether the practices are working as intended.
- This protocol is in the pilot phase and will be engaging volunteers in Spring 2025

Contact us:

Alliance for Aquatic Resource Monitoring

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