

Volunteer Monitoring Work Group Update

September 9, 2019



National Water Quality Monitoring Council

Working together for clean water



VM Work Group Members:

Chairs: Julie Vastine, PA Dickinson & James Beckley VA DEQ

- Marie DeLorenzo, NOAA
- Eliza Nixon, SC DHEC
- Dave Chestnut, SC DHEC
- Michelle Maier, EPA
- Mike Eberle, USDA Forest Service
- Sammantha Briggs, IWLA
- Tara Muenz, Stroud
- Erin Stretz, NJ Watershed Institute
- Elizabeth Herron, URI
- Kris Stepenuck, UVM
- Chris Belluci, CT DEEP
- Jake Lemon, Trout Unlimited
- Lisa Borre, GLEON & NALMS
- Tim Asplund, WI DNR
- Peggy Compton, U-WI Extension
- Mary Skopec, Ulowa
- Barb Horn, Co P&W
- Meghan Smart, AZ DEQ
- Eric Burres, CA Water Board



Meet the PMN Team:
Jennifer Maucher, Steve Morton,
Elisabeth Laban



Marie DeLorenzo

NOAA, NOS, NCCOS



- Stressor Detection & Impacts Division, Ecotoxicology Branch Chief
- NOAA representative on NWQMC
- Directs research to determine ecotoxicological effects of environmental contaminants on estuarine organisms
- Monitoring within NCCOS:
 - Phytoplankton Monitoring Network
 - Mussel Watch Program

Phytoplankton Monitoring Network

- ❖ national community-based network of volunteers monitoring marine phytoplankton and harmful algal blooms (HABs)
- ❖ provides volunteer citizen scientists with meaningful opportunities for hands-on science engagement
- ❖ enhances Nation's ability to respond to and manage growing threat posed by HABs by collecting important data for species composition and distribution
- ❖ creates working relationships between volunteers and marine biotoxin researchers

Eliza Nixon, SCDHEC
SC Adopt-a-Stream

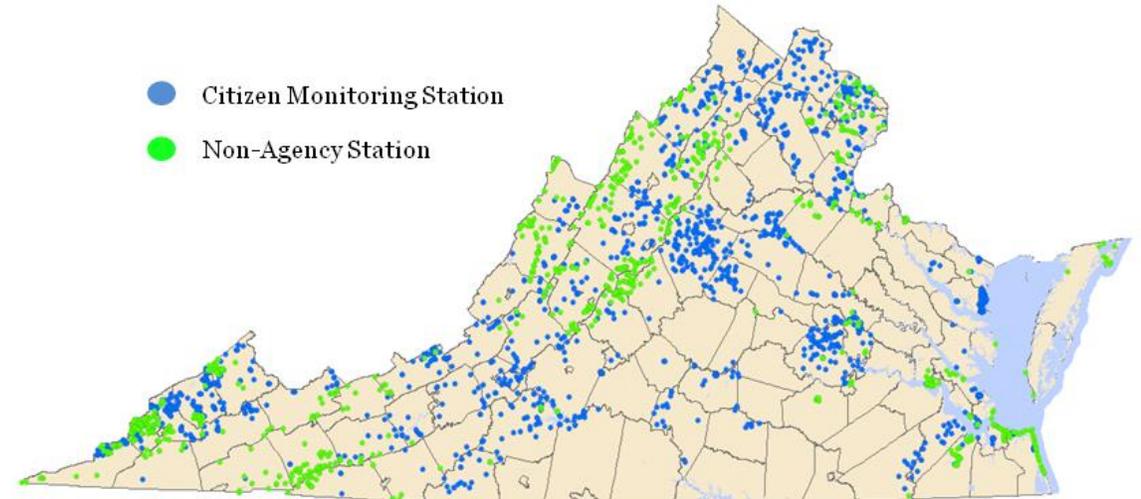


- South Carolina Department of Health and Environmental Control (DHEC)
 - Watershed manager (along the Savannah River)
 - SC Adopt-a-Stream coordination (in conjunction with Clemson University)
 - Volunteer Monitoring for Water Quality
 - > 1300 certifications in two years!



James Beckley, Virginia DEQ

- Quality Assurance Coordinator for Virginia DEQ
- Provide technical support to volunteer monitoring groups and individuals
- Geographic reach: VA
- Number of active volunteers: 1290+
- Number of active volunteer sites: 700+
- Types of monitoring assistance:
 - Study design and coordination
 - Biological, chemical, physical monitoring training
 - Quality Assurance protocols and data review/approval





Michelle Maier, U.S. EPA



- Biologist in the Water Monitoring group at U.S. EPA in Washington, D.C.
- Background in phytoplankton ecology in river and ocean systems
- National Aquatic Resource Surveys Program
 - Rivers/Streams, Lakes, Coastal, and Wetland surveys
 - Data analysis, reporting, and communications
- U.S. EPA Citizen Science workgroup
- Lots of field monitoring experience but a relative newbie to volunteer monitoring
- Excited to learn more and provide support for volunteer monitoring!

Mike Eberle
USDA Forest Service
202-689-5890

- Forest Service representative on:
 - National Water Quality Monitoring Council
 - Sustainable Water Resources Roundtable
- National WQ responsibilities
- Supports National Forests and Grasslands in their Citizen Science WQ monitoring.

Clean Abundant Water





Sam Briggs, Izaak Walton League of America

- Save Our Streams training and support (Bio, Chem, Phys monitoring)
- Crowdsourced campaigns, such as #SaveCleanWater and #saltwatch
- Nationwide effort, 700+ monitors trained over the last 3 years
- Clean Water Hub (www.cleanwaterhub.org)
- 3 regional IWLA Staffpeople:
 - Emily Bialowas, Chesapeake Monitoring Cooperative
 - Rebecca Shoer, Mid-Atlantic Save Our Streams Coordinator
 - Zach Moss, Midwest Save Our Streams Coordinator



Tara Muenz

Stroud Water Research Center

- Non-profit; focused on freshwater research, education and restoration
- Train volunteers and professionals in freshwater monitoring; teacher PD; stream studies programs for students
- Geographic reach: Pennsylvania; International
- Types of monitoring assistance:
 - DIY stream sensor monitoring stations
 - Macroinvertebrate ID trainings
 - Additional training offered: bacterial, chemical, fishes, habitat assessments





Dickinson

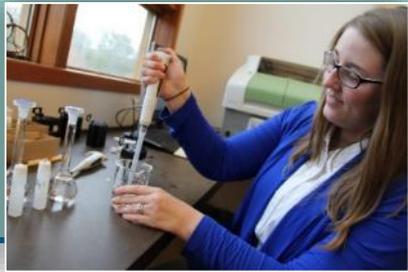
Julie Vastine, ALLARM

- Dickinson College's Alliance for Aquatic Resource Monitoring
- Provide technical support to volunteer monitoring groups and individuals
- Geographic reach: PA & NY
- Number of active volunteers: 212
- Types of monitoring assistance:
 - Study design
 - Biological, chemical, physical monitoring
 - Chemical QC verification
 - Stream Team, Shale Gas

Erin Stretz



thewatershed.org



Project
SEARCH

2008-2009

Coordinated CT high school monitoring program with CT DEEP

2007-2008

Served Americorps term monitoring and teaching with NJDEP

2007

B.S. in Environmental Geography



- **10 years** coordinating volunteer water monitoring programs in the Northeast, 8 of which have been spent at **The Watershed Institute** (formerly the Stony Brook-Millstone Watershed Association)
- Experienced with rapid bioassessment protocols and macroinvertebrate ID to family; IDEXX Quanti-tray/Colilert E. coli quantification; handheld meter, continuous sensor, and basic chemical testing; report card development and AGO data visualization.
- Currently managing the **New Jersey Watershed Watch Network**, in partnership with the NJDEP. The Network provides:
 - technical support and one-on-one assistance
 - trainings and workshops
 - study design and QAPP review
 - a direct pathway of communication between community groups and the Department





Chris Bellucci, CT Department of Energy & Environmental Protection

- 30 years in the field
- Connecticut Department of Energy & Environmental Protection
- Supervise Monitoring and Assessment Program which includes stream macroinvertebrate and water temperature volunteer monitoring program in existence since 1999.
- Geographic reach: CT
- Types of monitoring assistance:
 - Study design
 - Biological, chemical, physical monitoring
 - Macroinvertebrate Taxa QC verification

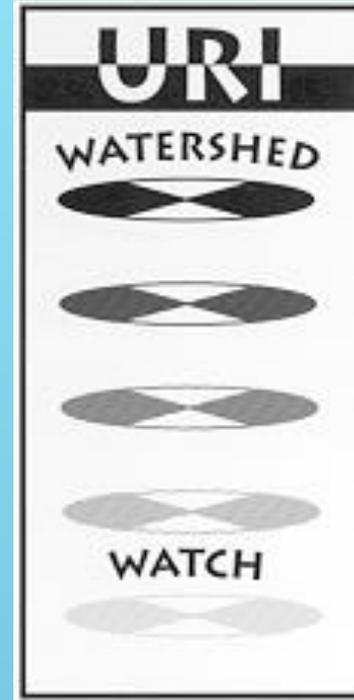


www.ct.gov/deep/volunteer/watermonitoring

ELIZABETH HERRON

URI WATERSHED WATCH

- ▶ Started with URIWW in 1992 as grad research assistant, now program director
- ▶ URIWW began in 1988 on lakes & ponds in 1 watershed, now includes rivers, streams, salt ponds, bays and ocean sites throughout RI, SE coastal CT and now Fishers Island, NY
- ▶ Provide direct services and technical support to organizations and individuals locally and regionally
- ▶ Types of monitoring assistance:
 - ▶ Study design & Implementation
 - ▶ Biological, chemical and physical monitoring using equipment provided by URIWW
 - ▶ Aquatic plant identification and training
 - ▶ QAPP development
 - ▶ Supporting VM regionally and nationally



URI Watershed Watch
<https://web.uri.edu/watershedwatch/>



Vermont Citizen Science
Conference
December 12, 2019
North Branch Nature Center
Montpelier, VT

Kris Stepenuck, University of Vermont

- Lake Champlain Sea Grant
- With graduate students and partners, conduct research about volunteer monitoring, esp. motivations for participation and outcomes
- Support LCSG staff to run Watershed Alliance (educational VM)
- Have a small VM program to assess impacts of road salt in streams
- Geographic reach: Lake Champlain Watershed of Vermont and New York
- Former CSA Board member; helping to reactivate communications committee



www.tu.org/anglerscience



Jake Lemon

Trout Unlimited

Eastern Angler Science Coordinator

- 8 years in the field
- Develops and implements programs that engage volunteers in collecting data that supports coldwater conservation.
- Develops tools that support collection of data by anglers and citizen scientists.
- Geographic reach: Areas with coldwater resources east of the Mississippi River. Focus on the Great Lakes and Central Appalachia.
- Types of monitoring assistance:
 - Water Quality Monitoring
 - Temperature Monitoring
 - Environmental DNA
 - Habitat Assessments
 - Real-Time Monitoring



Lake Observer
A Mobile App For Recording Lake And Water Observations

Home About - Getting Started - Data - [Borre](#) -

Project
Please select a project
[Create or join projects](#)

Country *
United States of America

State/Province *
Maryland

Waterbody *
Deep Creek Lake, Garrett County, MD, USA
[Can't find your waterbody?](#)

Site ID
MD-23-1 [39.492802, -79.302131]
[Can't find your site?](#)

Site Name
Deep Creek Lake

Map Satellite

Water/Ice

- WATER QUALITY
- SECCHI DEPTH
- ICE COVER

Weather

- AIR TEMPERATURE
- CLOUD COVER
- PRECIPITATION
- WIND

Aquatic Vegetation

- ALGAE

Lisa Borre, GLEON

- Senior Research Specialist in Weathers' Lab at Cary Institute of Ecosystem Studies
- Coordinate GLEON Lake Observer app project
- Partner in EPA Exchange Network grant with Gold Systems/AWQMS and OWRB for NALMS Secchi Dip-In database upgrade
- Geographic reach: North America (and Global)
- Number of registered app users: 800+
- Lake Observer is a mobile app and web-based data entry tool for recording field-based observations:
 - Water Quality
 - Secchi depth
 - Weather
 - Algae
 - Recreational Suitability and Physical Condition (based on user's perceptions)



Tim Asplund,
Chief, Water Resources Monitoring Section
Bureau of Water Quality
Wisconsin Department of Natural Resources

- Oversee administration of 2 flagship citizen-based water monitoring programs in conjunction with University of Wisconsin Extension:
 - Citizen Lake Monitoring Network (CLMN)
 - Water Action Volunteers (WAV)
- Geographic reach: Wisconsin
- Number of active volunteers: >2000
- Types of monitoring assistance provided by Section:
 - Funding
 - Quality assurance
 - Protocol development and specialized training
 - Data management and reporting
 - Prioritization of sites and integration with State Monitoring Strategy and Assessment Methodology (i.e. WisCALM)





Peggy Compton

WAV Baseline Monitoring and Outreach

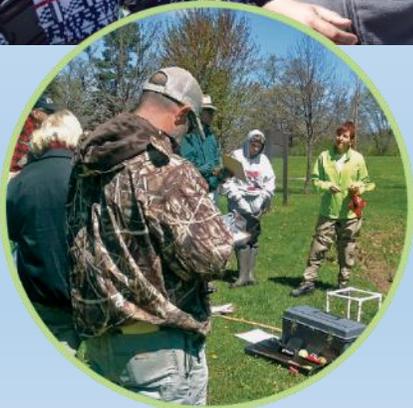


- Water Action Volunteers = Wisconsin's citizen monitoring program for streams and rivers
- Peggy's role =
 - Onboarding of volunteers
 - 600+ active volunteers in 2018
 - Training and supporting baseline monitoring
 - temperature, transparency, dissolved oxygen, streamflow, biotic index, habitat assessment
 - Outreach and education to WAV volunteers and broader audiences



Extension

UNIVERSITY OF WISCONSIN-MADISON





lowalakesidelab.org

Mary Skopec, Iowa Lakeside Lab

- 21 years in the field
- Iowa Lakeside Laboratory's Cooperative Lakes Area Monitoring Program
- Provide technical support to volunteer monitoring individuals
- Geographic reach: IA
- Types of monitoring assistance:
 - Biological, chemical, physical monitoring, microcystin
 - Chemical QC verification
 - Aquatic Invasive Species



Barb Horn, Colorado River Watch

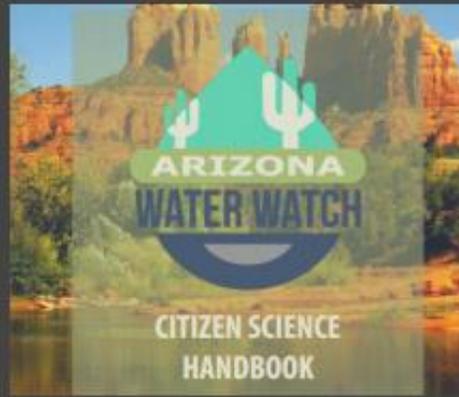
- 31 years as Water Quality Specialist
- Started VM program 1989 to address data gaps in CO CWA
- Dove into VM and database management b4 computers
- Been exposed to wisdom of so many others, give back by serving, teaching and providing support (local to national):
- Types of monitoring assistance:
 - Study or Monitoring design
 - Data Management
 - Program Evaluation
 - Visioning, Leadership and Getting Unstuck
 - Creative Collaborations



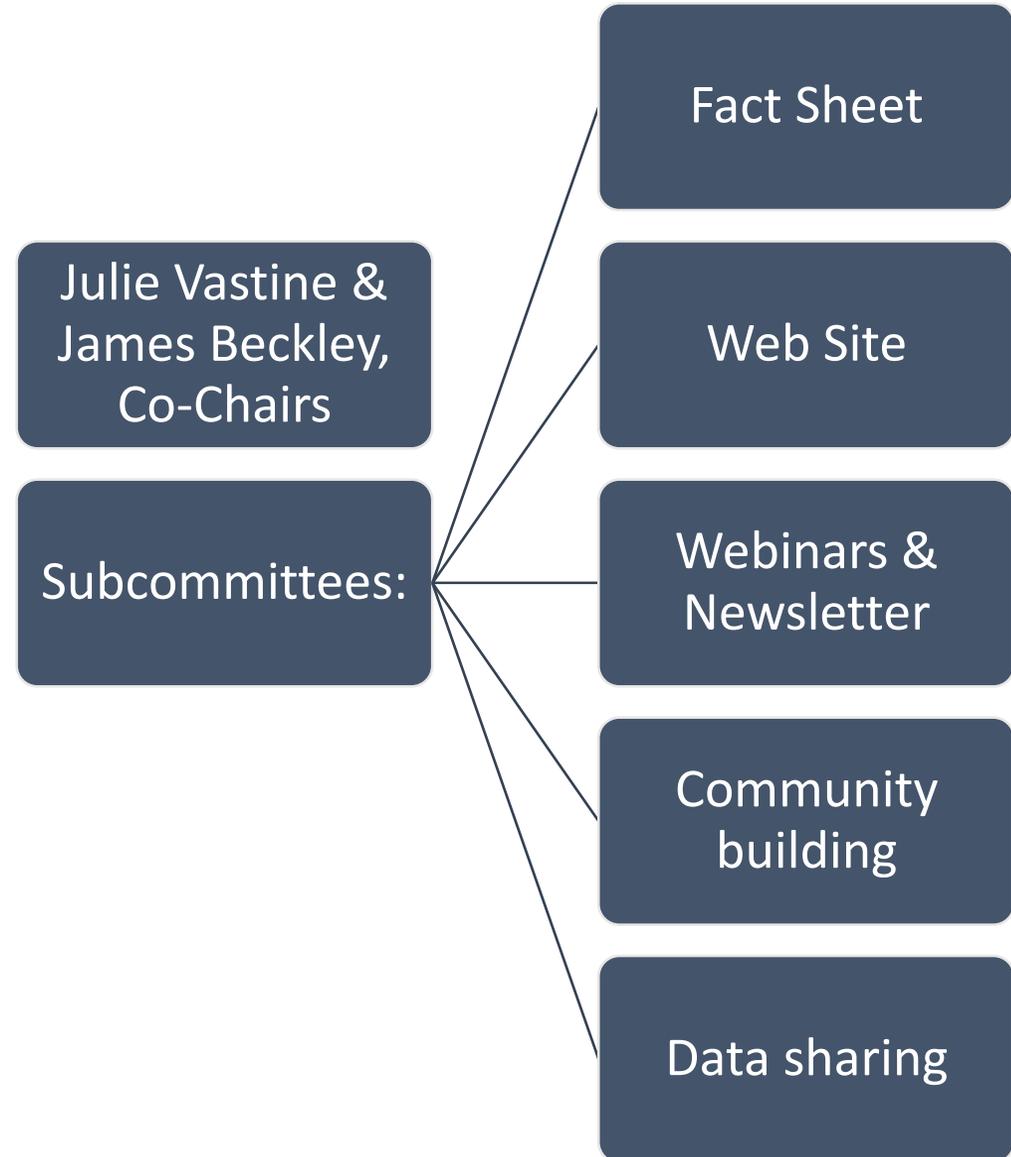
MEGHAN SMART

Senior Scientist, ADEQ

- 13 years at ADEQ (perennial and intermittent stream work)
- Started Citizen Science Program, Arizona Water Watch in 2017
- 30 groups around AZ
- AWW:
 - Loaner Equipment Library
 - Train, Audit, SAP Assistance



Work Group Structure





Work Group Updates

Value of Volunteer Monitoring Data Factsheet Scope

- Factsheet size 2-3 pages including graphics and formatting. About 1-2 pages of text.
- Factsheet oriented to regulatory/professional audience and second to volunteer groups.
- Focus of factsheet to highlight the monitoring value and benefits of volunteer monitoring.

Useful Terminology

Regulatory/Environmental Professional Audience

- **Aquatic or Natural Resource Services** – VM programs can help **protect and restore aquatic habitats** and provide a **force multiplier** for the agency. This is done by filling chemical, physical, biological data gaps to make **informed management decisions**, assist staff with on the ground projects, assisting with crafting regulation or legislation.
- **Partnerships internal and external.** VM provides might help agencies by collaborating and leveraging resources saving time and money. Partnerships with local, state or other federal governments can increase **scale, scope and capacity** for participants **adding revenues and creating other efficiencies**. Partnerships with non-profits and business can increase capacity, public relations and social capital while expanding the network.
- **Organizational efficiencies** that can include **maximizing underutilized equipment or services, reclaiming and reallocating unused equipment**, assist in making informed decisions, strategic plans and prioritization of resources, and provide resources in labor (for any tasks along the study design continuum), equipment, travel, training, documentation, data management and funding.

Fact Sheet Sub Committee

- Met July 9
- James Beckley, Erick Burres, Barb Horn, Elizabeth Herron, & Mary Skopec
- Please fill out doodle poll for next meeting:

New VM Fact Sheet – Value of Volunteer Monitoring

Web Site

- Met July 23
- James Beckley, Sam Briggs, Erick Burren, Barb Horn, Michelle Maier, Erin Stretz, Julie Vastine





National Water Quality
Monitoring Council
Presents

Volunteer Monitoring

Connecting volunteer data to the
water quality portal

July 1, 2019



Webinars

- Macroinvertebrates.org
September 25, 2pm EST
- Volunteer Engagement
Best Practices, October
28, 3pm EST
- Missouri Stream Team
Volunteer management
November 7, 2pm EST
- EPA QA Handbook,
December 10, 2pm EST
- Trout Unlimited Out of
the Box WQ Monitoring
January 14, 2pm EST



Next VM Work
Group Call:
Hopefully last week
of September



Thank you!