

Creating Partnerships to Promote Citizen Science and Advocacy



Photo: CURB website

Webinar Sponsors



We are a peer-to-peer network of people and organizations working to restore and revitalize urban waterways and neighborhoods that surround them.

Today's Presenters



Ryan Palmer

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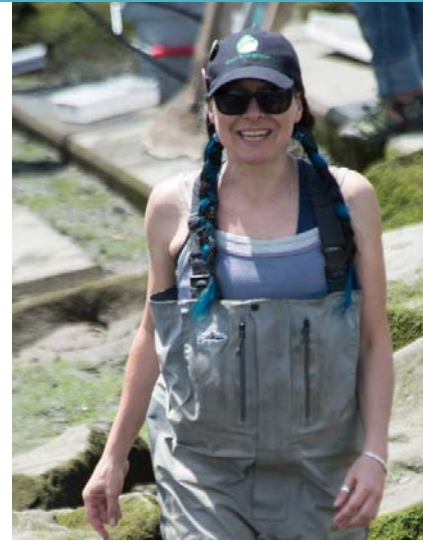


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Water Quality Program Scientist

Riverkeeper

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Director of Environmental Stewardship

Bronx River Alliance

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Executive Director

Hudson River Watershed Alliance

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Agenda

1. Background and Partnership
2. Community Science Program
3. Science to Action

Success Stories and
Lessons Learned



Background - Orgs



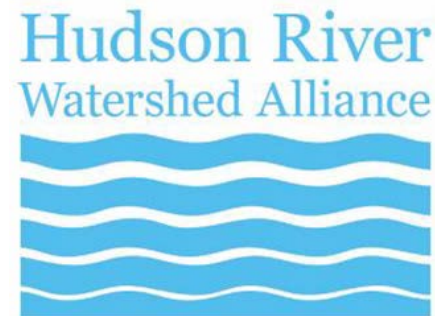
(CURB)



(RK)



(BxRA)



(HRWA)

Background - CURB

Research - Education - Community



Background - CURB

Research - Education - Community



Background - Partnership



**Pocantico River
Watershed Alliance**

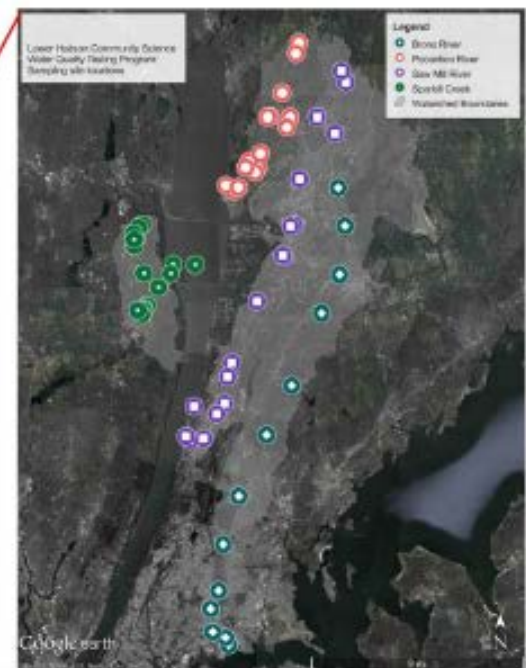


Hudson River Watershed Alliance
Subwatershed Groups

For group contact information, go to:
<http://www.hudsonwatershed.org>



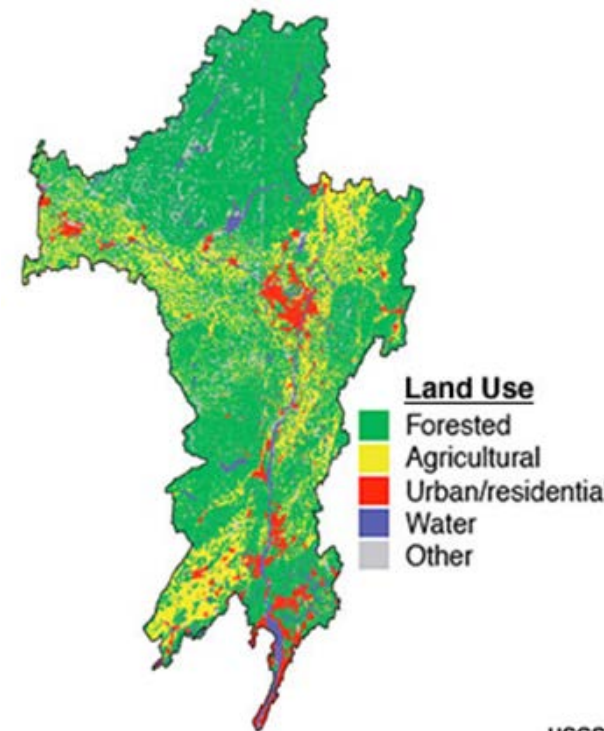
Map notes: The watershed and subwatershed boundaries were created using the online mapping tool: www.dgsos.com, except for Pocantico Creek which is courtesy of Mike & Madeline. National Geographic background from 2004 edition. Stream channels from the USGS National Hydrography Dataset. An subwatershed group is defined as all of the US. Prepared by R. Rosenblyum, Stone College.



Four urban subwatersheds are located in the southern-most portion of the Hudson River Estuary Watershed. Water quality samples are taken at 63 sites within the area. Photos: Hudson River Watershed Alliance and Riverkeeper

Background - Partnership

- Shared Missions
- Some Overlap
- Similar Watersheds and Issues
- Interest in Fecal Bacteria Monitoring
- **Opportunity to Share Resources**
 - RK Boat Capacity
 - CURB Lab (2015)



Background - Partnership

- Partnerships are personal
 - Long time colleagues/friends
 - New beginnings (River Rally!)
 - **Trust**
- 2016 EPA Urban Waters Grant

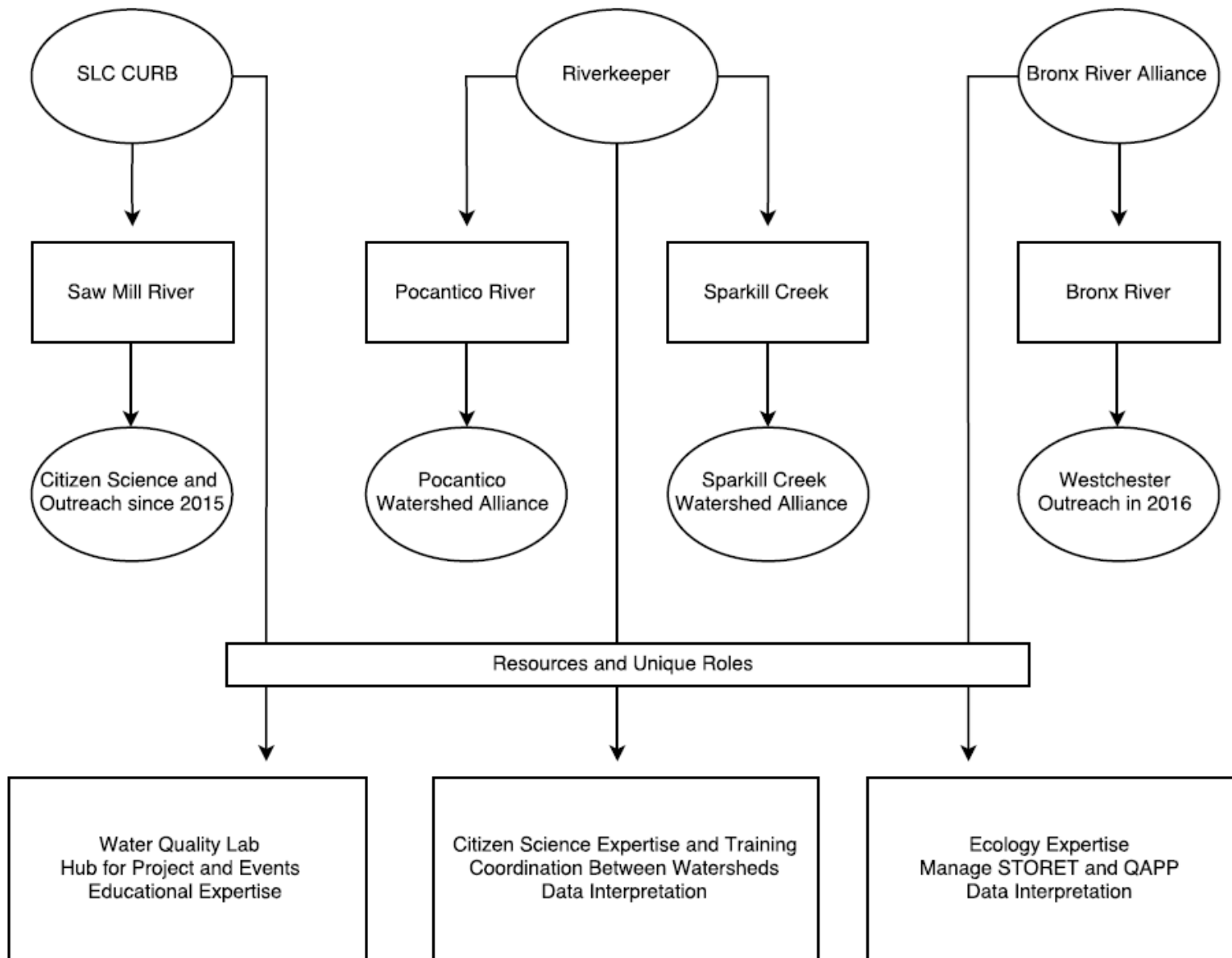


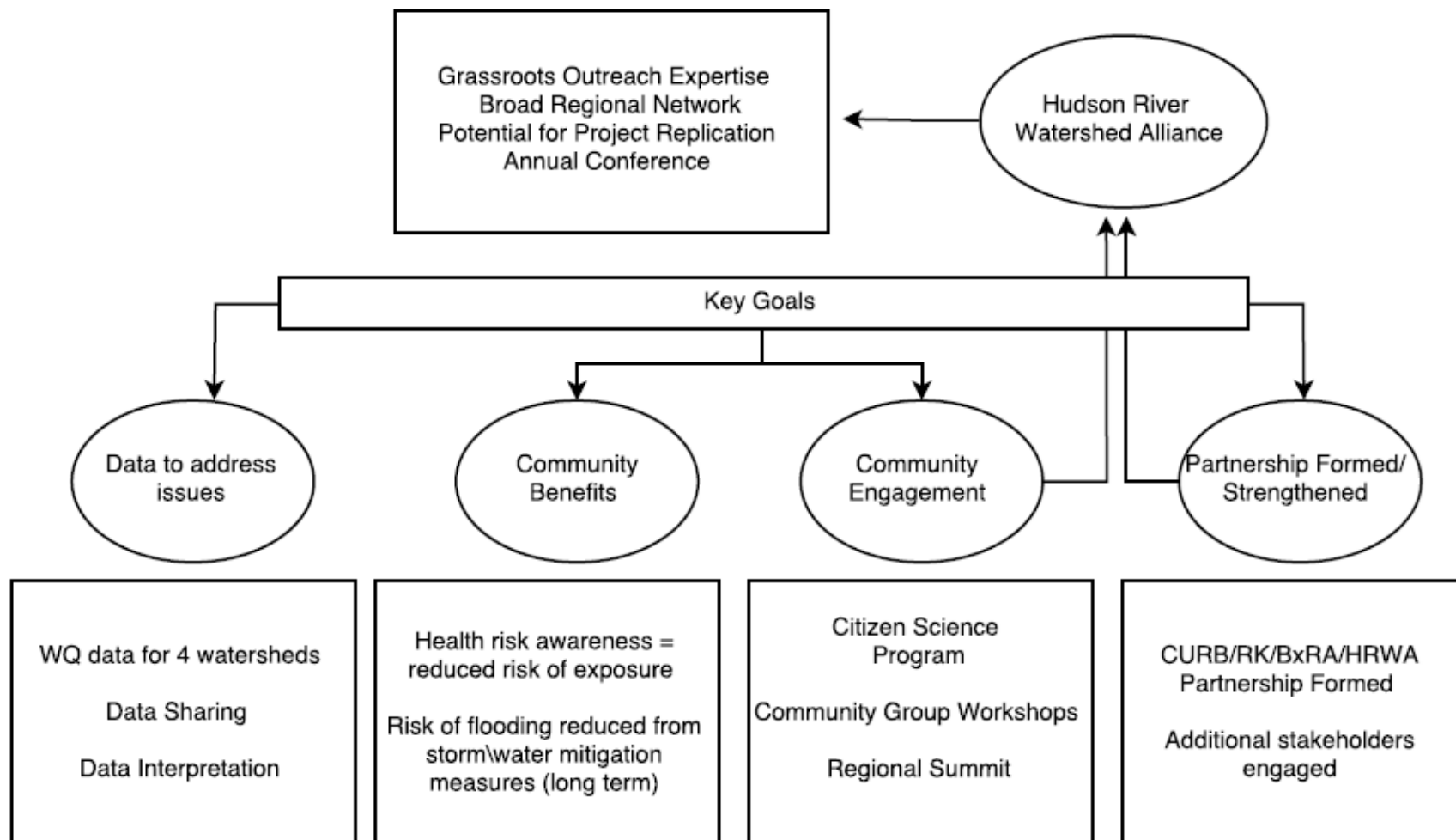
Background - Grant

- “Lower Hudson Urban Waters Collaborative”
 - Coordinated monitoring and outreach
- \$60,000
 - \$12,500 RK
 - \$10,000 BxRA
 - \$2,000 HRWA
 - \$35,500 CURB
 - \$14.5k Lab Tech and Supplies
- Agreements: Subaward contracts



Project Organizational Chart and Summary





Partnership - Difficulties

- Recognition/Media
 - Making sure everyone is credited properly
 - MOU next time
- Outside perceptions
 - BxRA challenge with permits
- Time investment
 - Partnerships are work
 - Funding is uncertain



Partnership - Successes

- Recognition/Media
 - Combined outreach
- Expanded our reach
 - HRWA: Lower Hudson
 - BxRA: Westchester
 - CURB action-oriented w/ RK
- Bigger community for volunteers
- Led to new partners and initiatives





RIVERKEEPER®

NY's clean water advocate



Vision:

Clean, swimmable waters

A Hudson River teeming with life

Safe and abundant drinking water supplies



EPA recommends *Enterococcus* as a fecal contamination indicator

- EPA 2012 Recreational Water Quality Criteria
- Can be used in fresh & salt water
- Found in warm-blooded animals
- Not usually harmful, but indicates harmful pathogens may be present
- Not NYS standard



How do we use *Enterococcus* to assess water quality?

EPA Recreational Water Quality Criteria

Long term average

**Geometric Mean
30 Entero/100 mL**

**Not necessarily representative of...
the conditions at any
single point in time**

How do we use *Enterococcus* to assess water quality?

EPA Recreational Water Quality Criteria

Long term average

**Geometric Mean
30 Entero/100 mL**

Single point in time

**Beach Advisory Value
60 Entero/100 mL**

Not necessarily representative of...

**the conditions at any
single point in time**

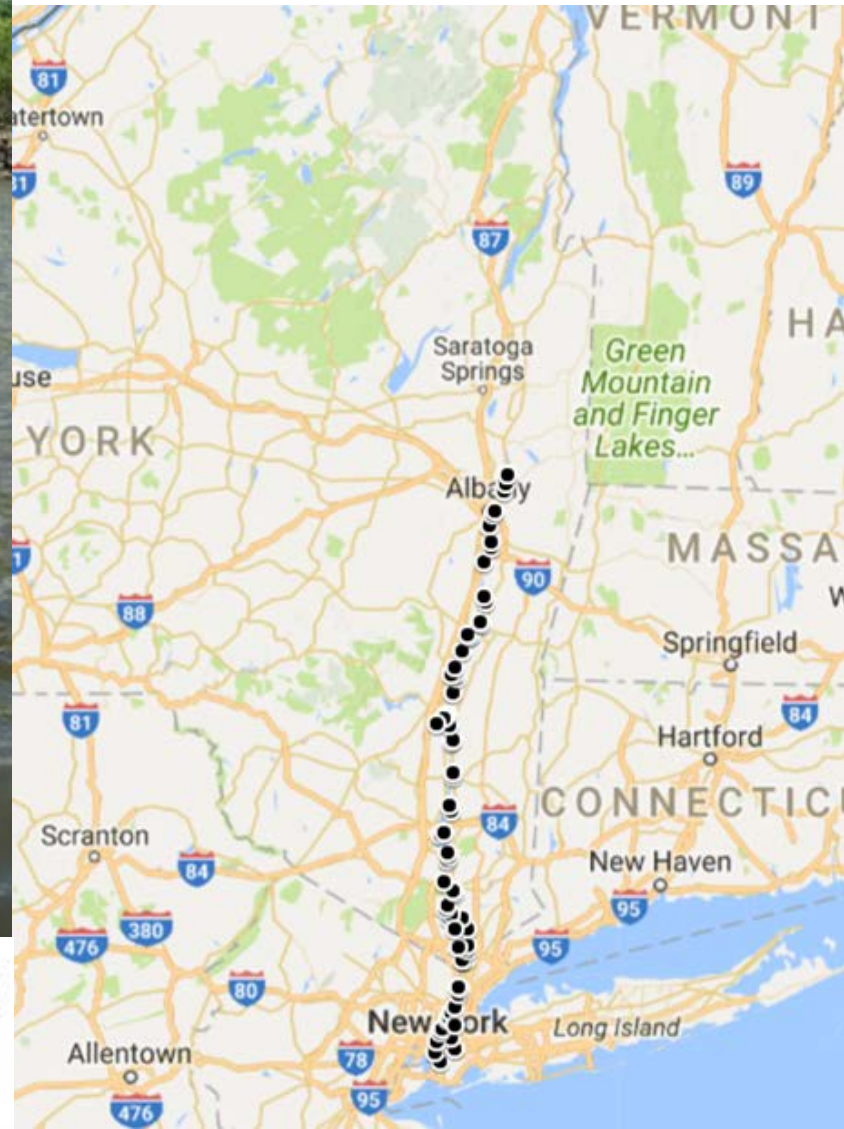
**the conditions most of
the time**

How do we test for fecal contamination?



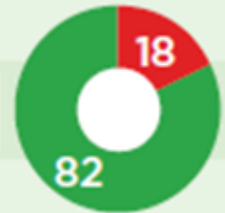


Riverkeeper Hudson River Estuary
Sampling
Began in 2008
NY Harbor to Waterford

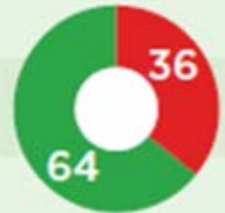


Hudson River
Estuary sampling
results showed
tributary water
quality poorer
than mid -channel

Near Shore & Mid-channel



Tidal Tributaries



(Results from samples collected 2008-2015)



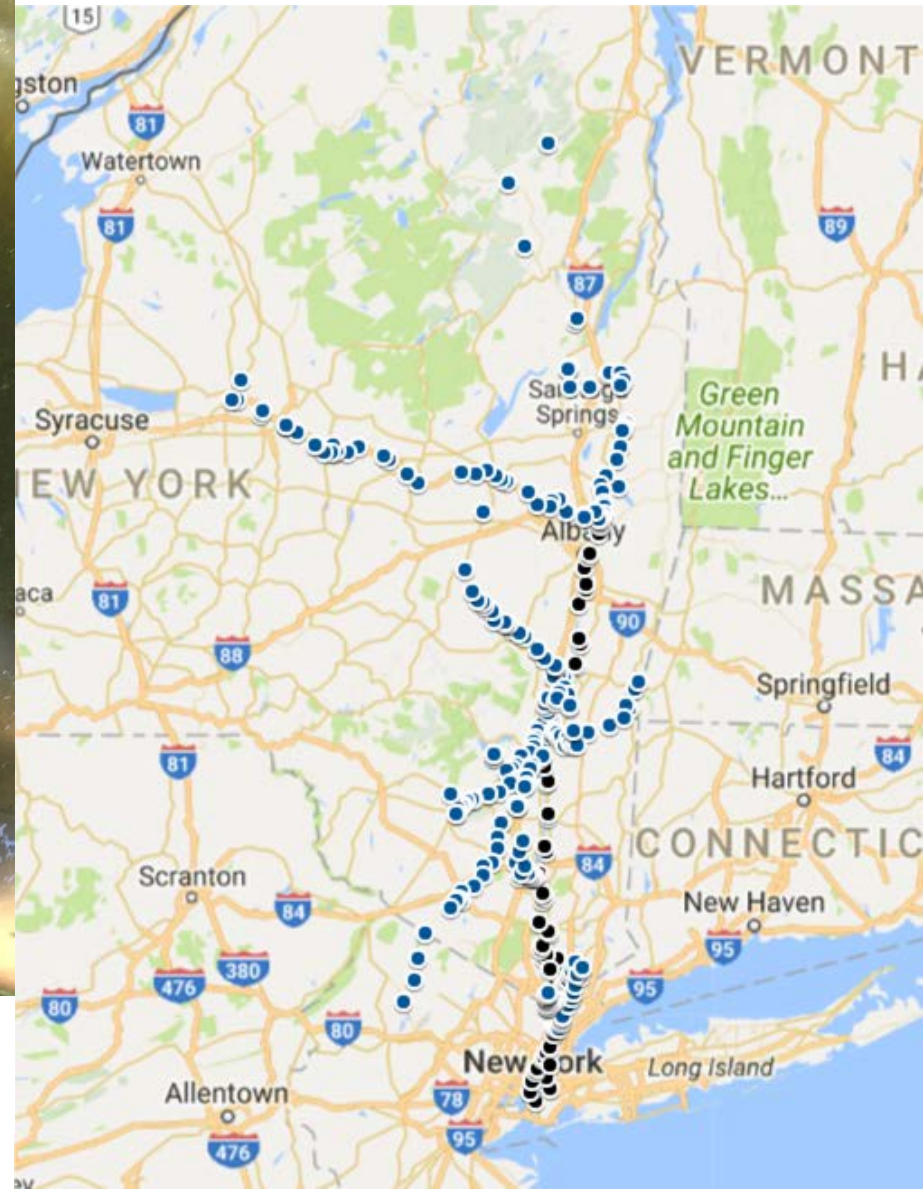
160+
community scientists

40+
organizations/labs

Community Science Program

400+ locations

NYC to Adirondacks & Rome



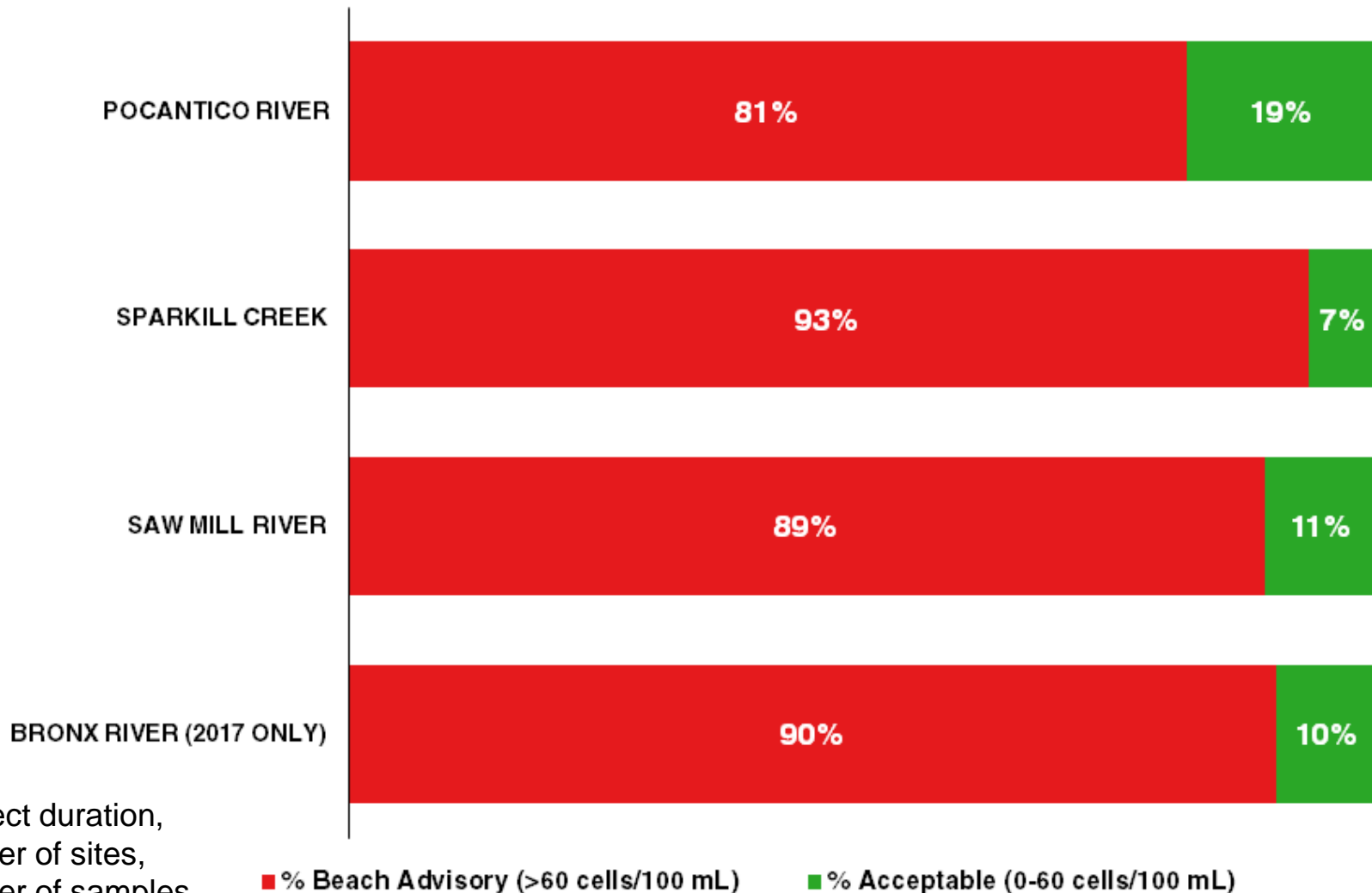
How does community science work?



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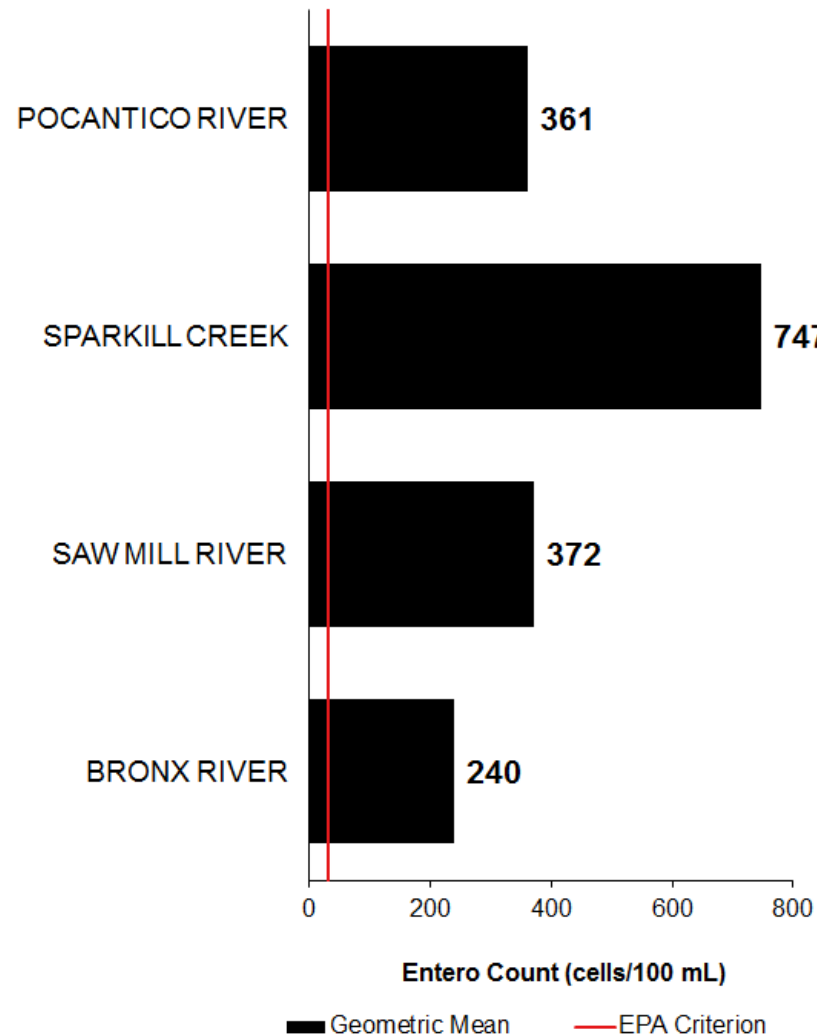


What do the data show?



*Project duration,
number of sites,
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vary

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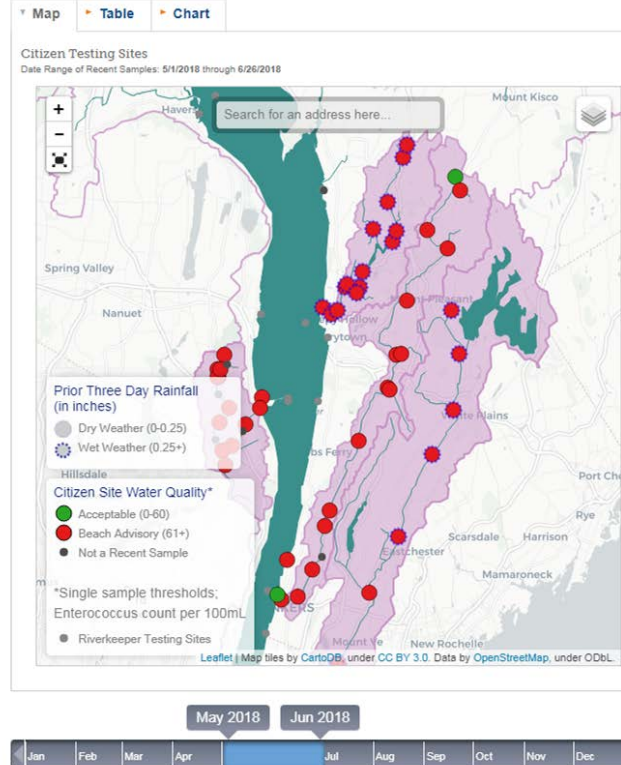


- Data to:
- Websites
 - Email
 - Presentations
 - Reports
 - Advocacy: letters, lobbying

Science to Action

riverkeeper.org/
water-quality/citizen-data/

Water Quality > Tributary and Waterfront Data > Saw Mill River



Water Quality

Water Quality Program
Hudson River Estuary Data
Tributary and Waterfront Data
Bronx River
Catskill Creek
East River
Esopus Creek
Mill Creek
Mohawk River

bronxriverwater.org



Community scientist survey

- Administered by Riverkeeper in tributary project areas throughout Hudson River Watershed
- Including Saw Mill River, Pocantico River, Sparkill Creek and Bronx River, and also many others
- Variety of partner organizations and program structures

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Participants are:

- Confident in the program and their ability to address environmental concerns
- Highly likely to participate again (76% would return, 4% would not)

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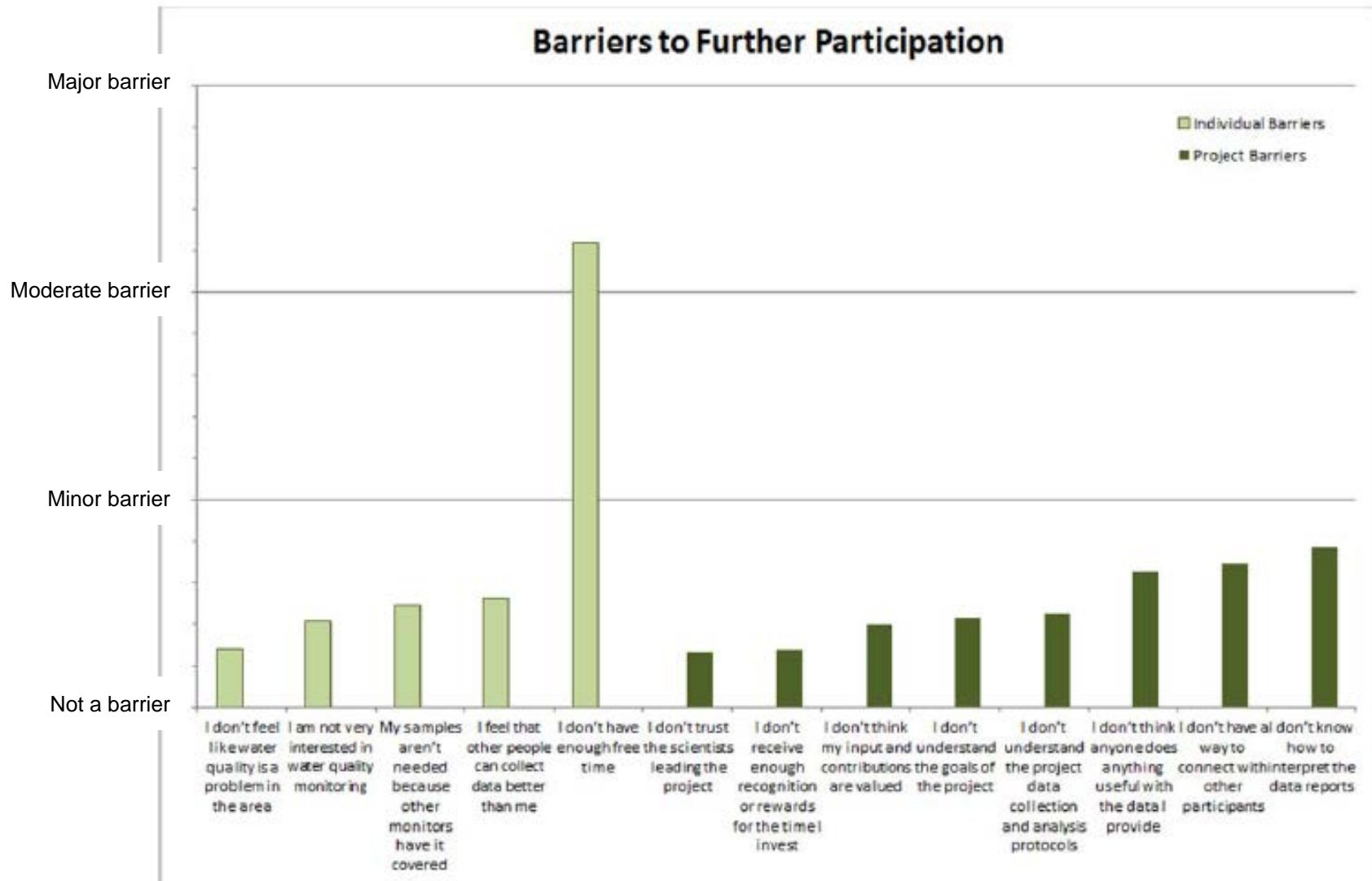
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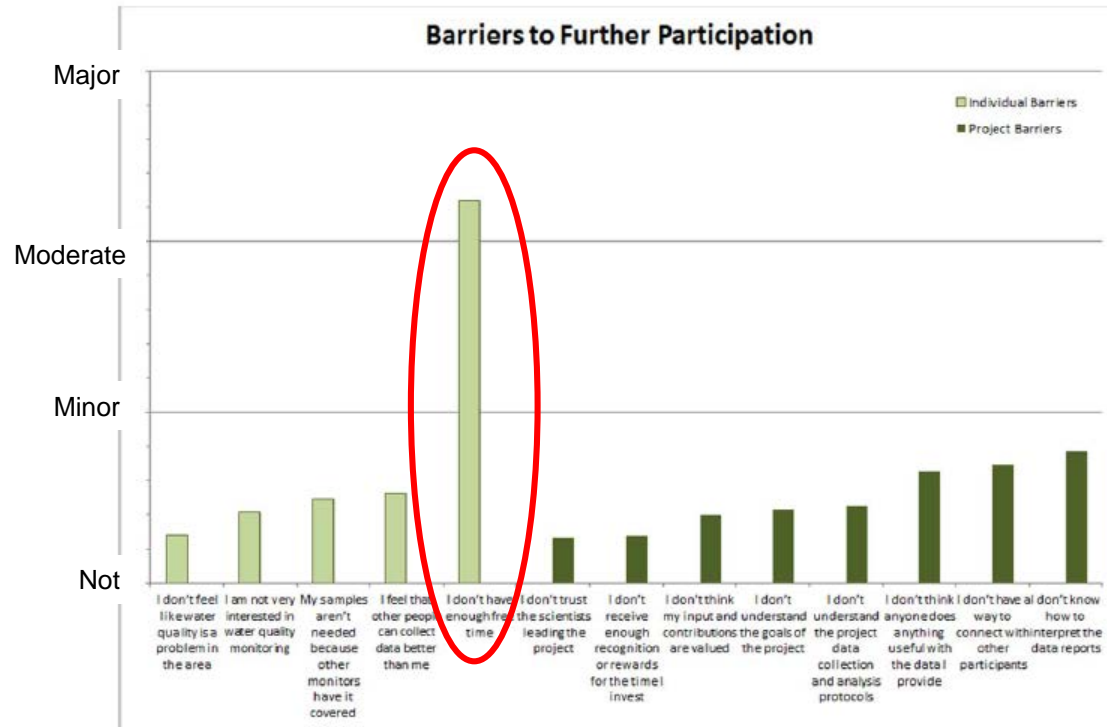
Participants want to:

- Gather more data
- Utilize data better

Survey results: barriers to participation



Survey results: barriers to participation



“I don't have enough free time”

To promote effective action based on the data, we must...

- **Identify good opportunities (beyond sampling) for community scientists to speak up**
- **Factor follow-up into our program planning & budgeting**
- **Remember/recognize that volunteers already commit significant time to sampling. Perhaps look to others?**

Background - BxRA



Ecology &
Restoration



Education



Recreation

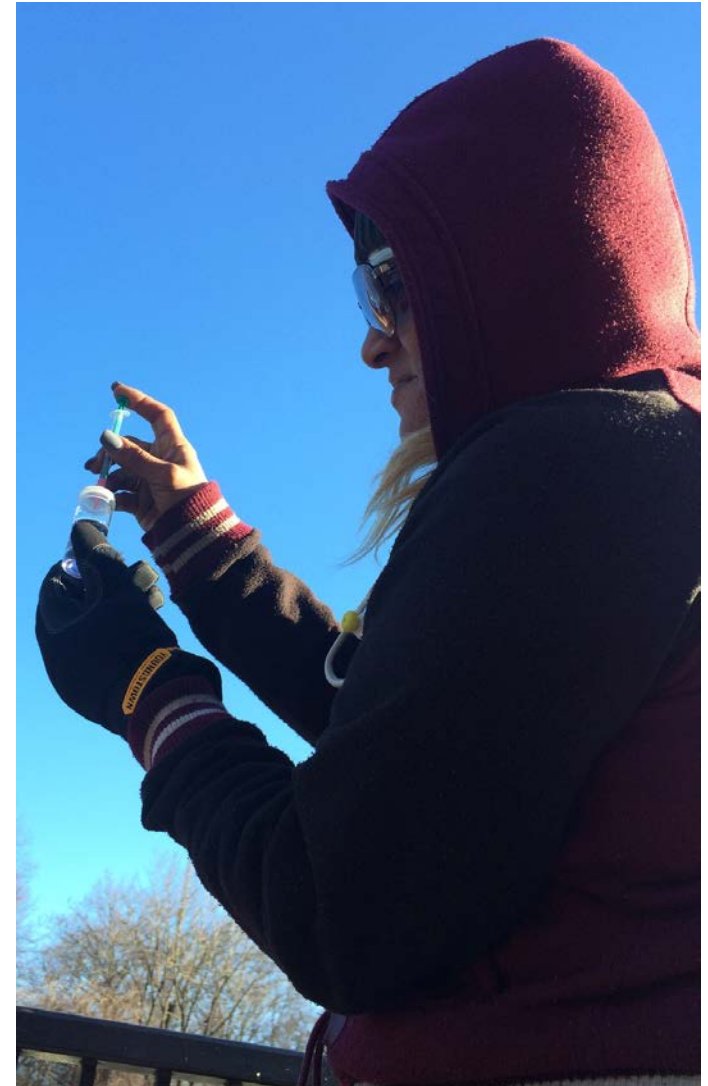
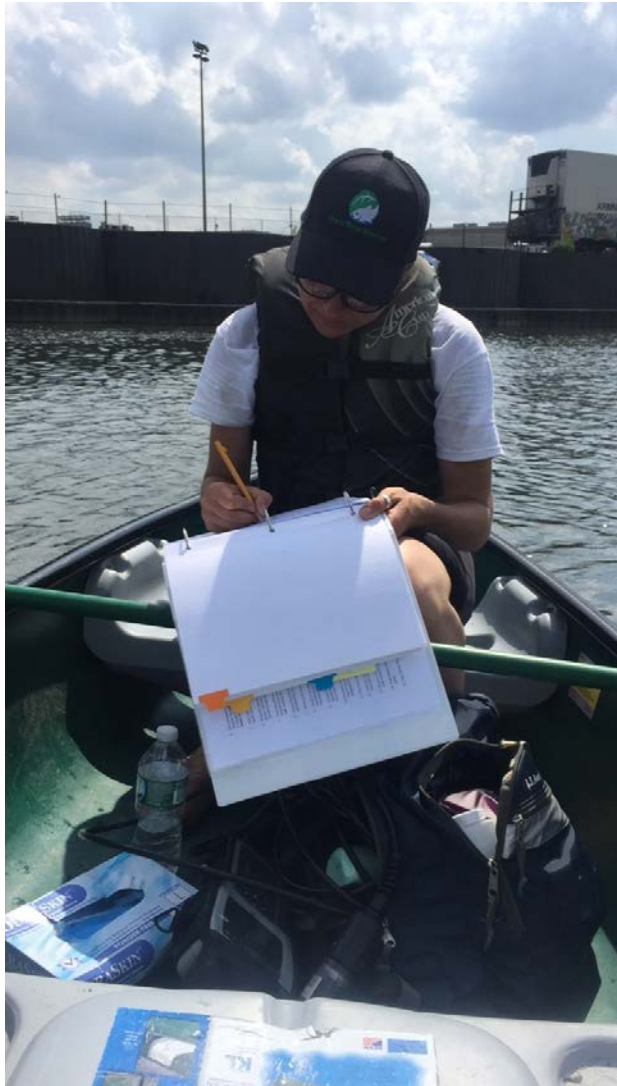
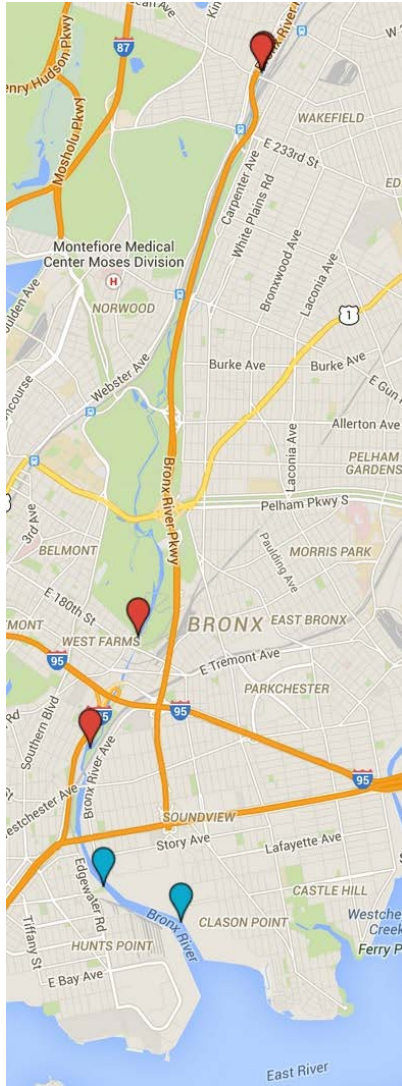


Greenway



Outreach

Background - BxRA

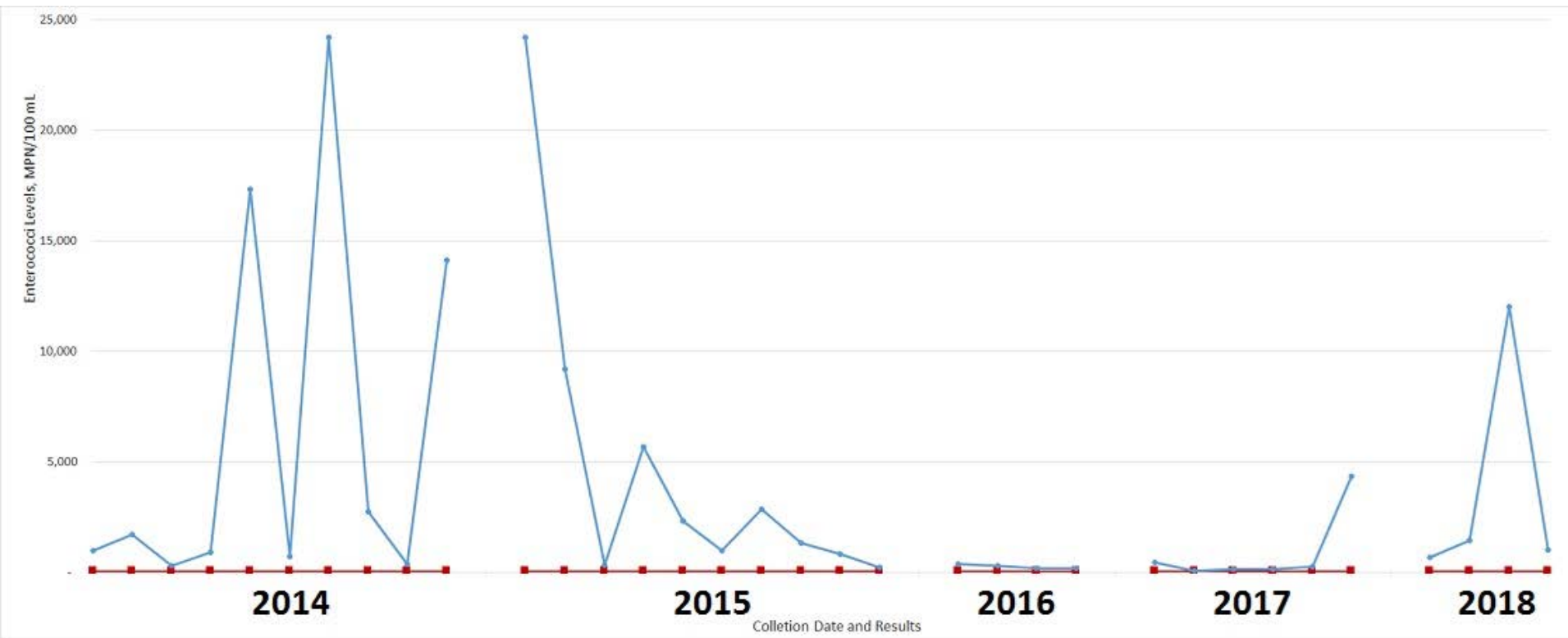


Science to Action - Success (BxRA)

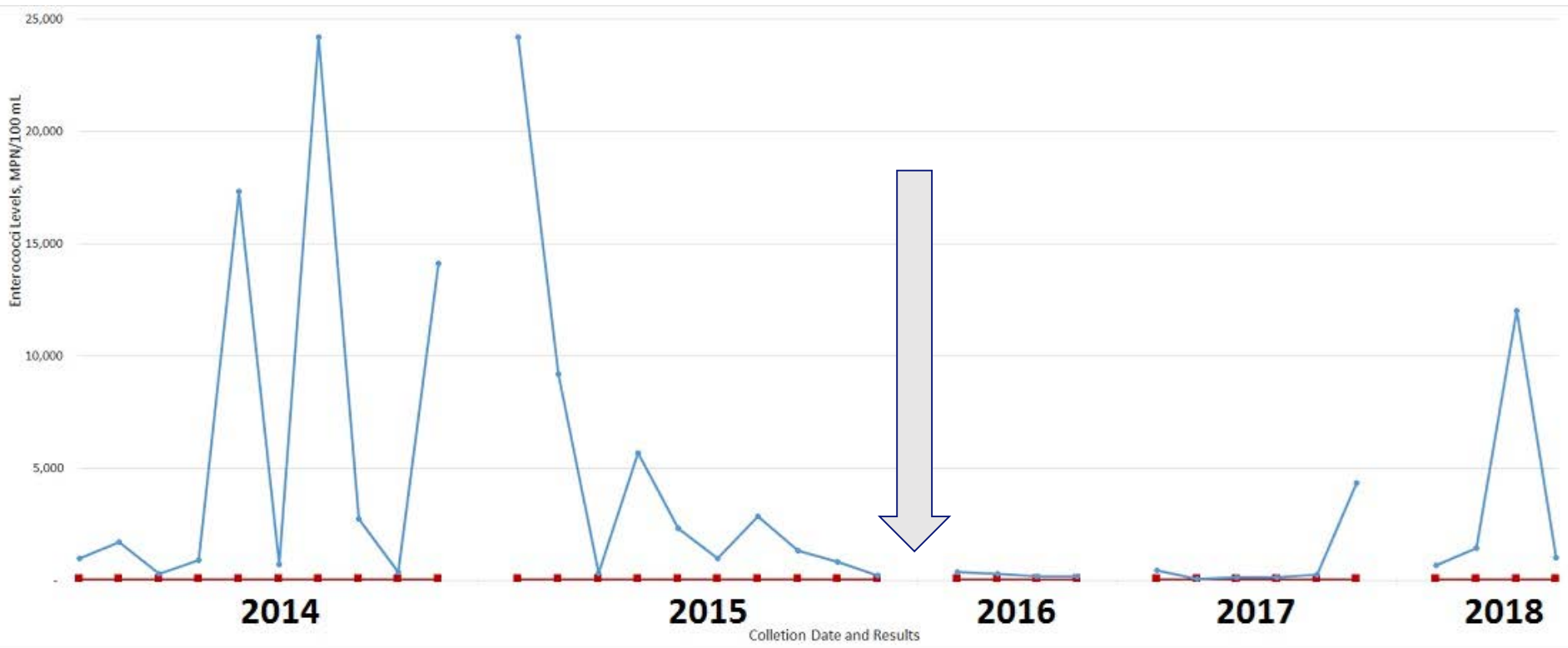


- Stormwater outfall releasing sewage directly to Bronx River
- Discovered in 2014
- Yonkers found sanitary clog from a diner and a multiunit apartment building, fixed it!

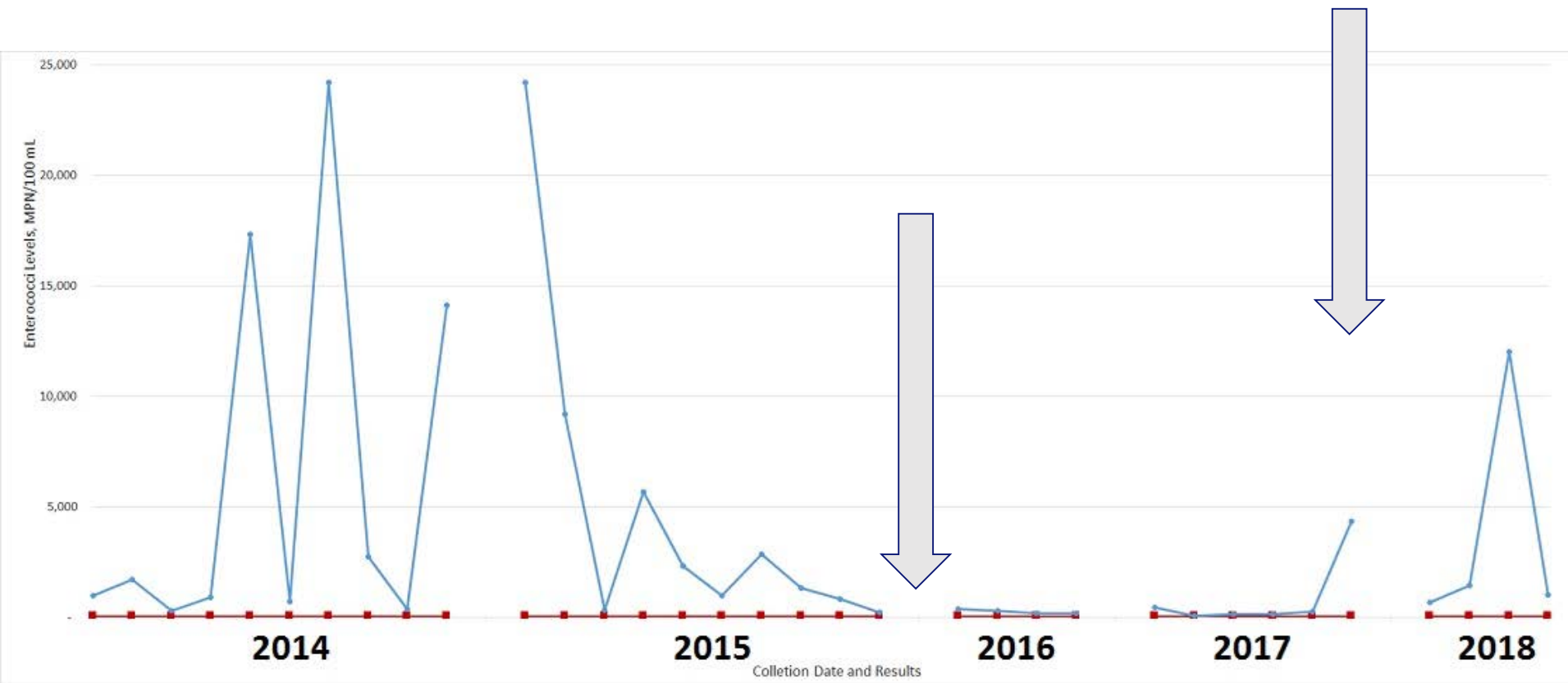
Science to Action - Data-driven advocacy



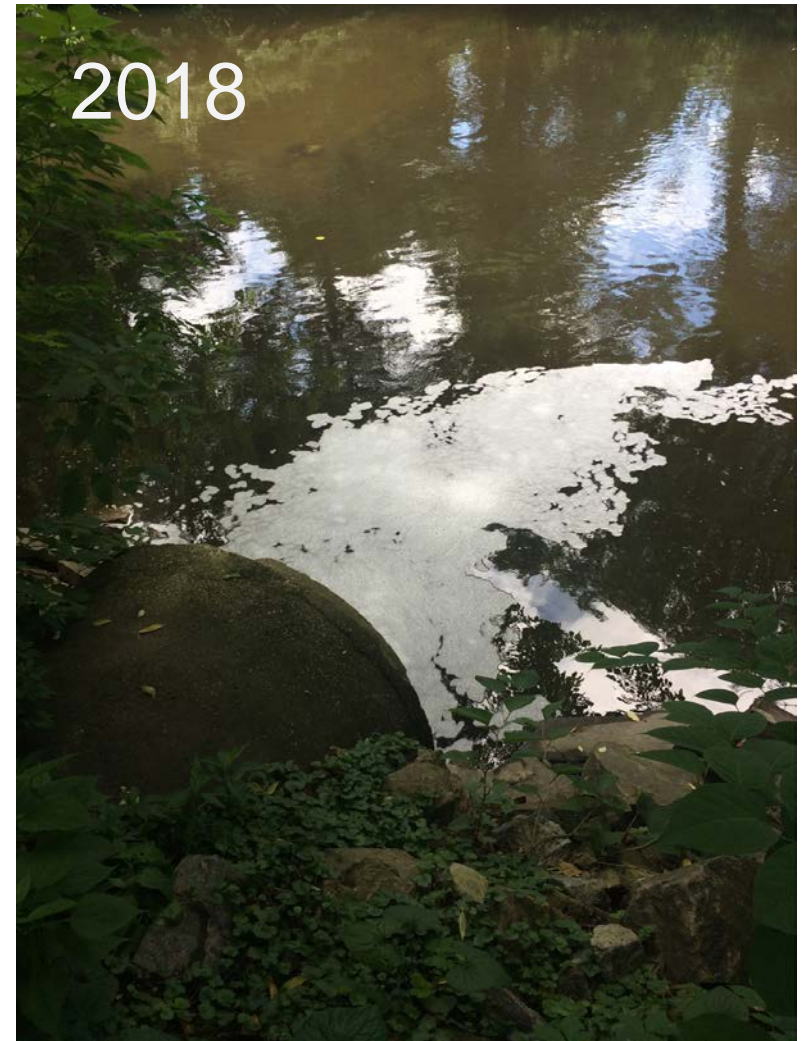
Science to Action - Data-driven advocacy



Science to Action - Data-driven advocacy



Science to Action - Success (BxRA)

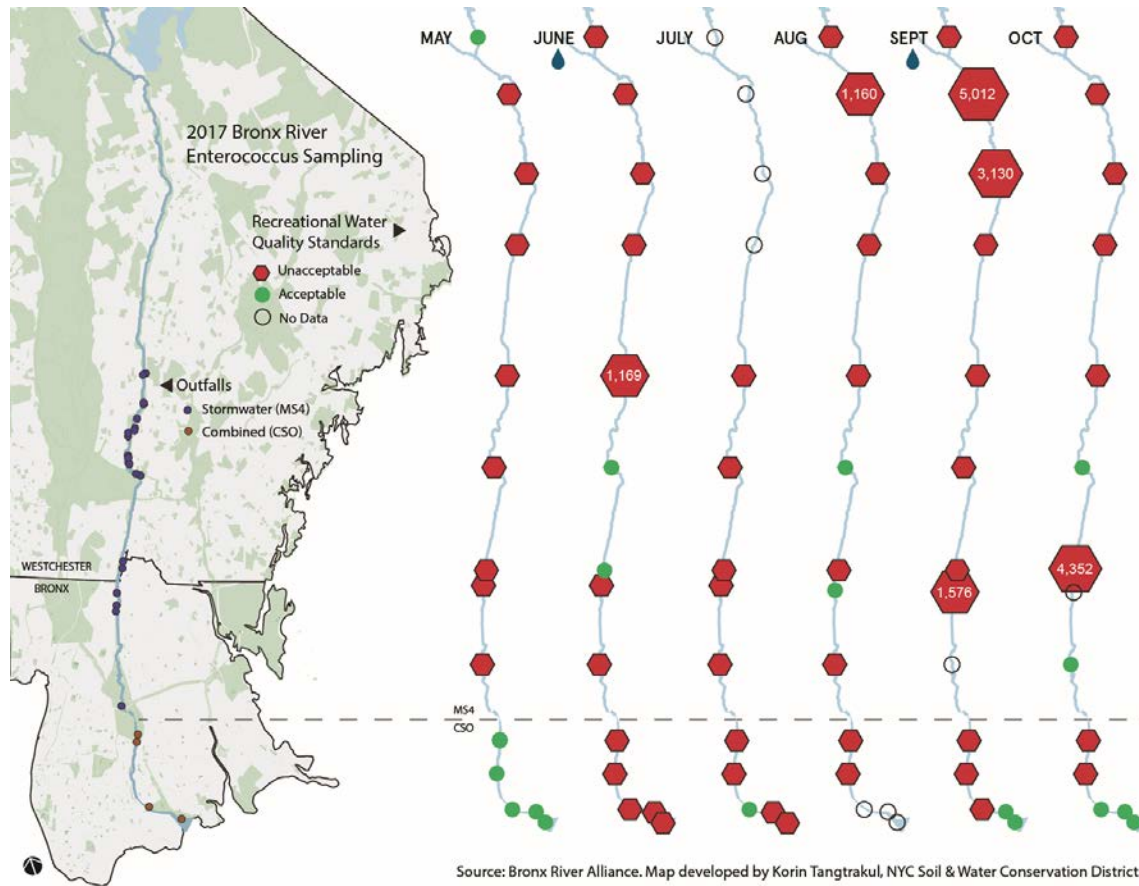


Science to Action - Success (CURB)



- Sewage pipe direct to stormwater
- 4 story mixed use building
- Yonkers TVed line, found issue, fixed it!

Science to Action - Communication of results

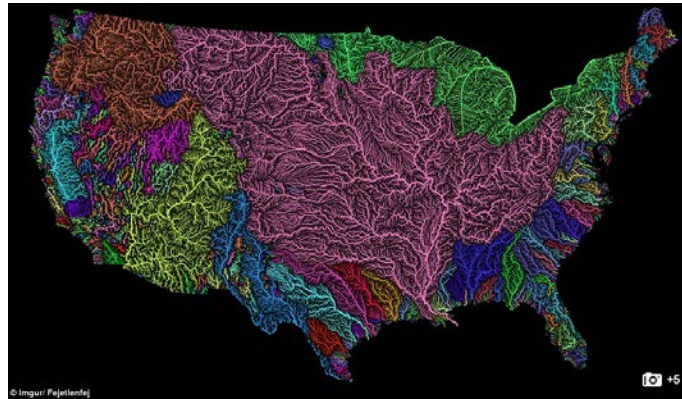
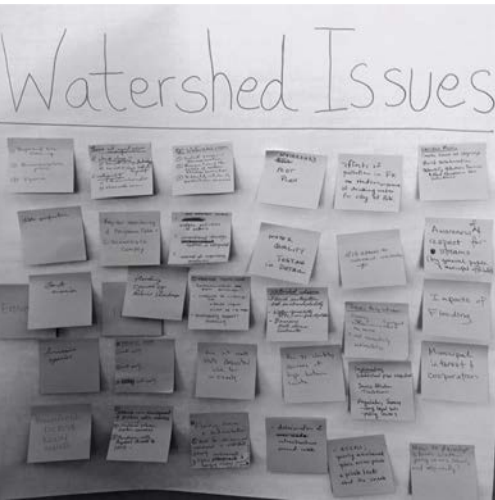


- E-blasts to participants, officials, scientists, etc.
- Community-based outreach
- Municipalities under MS4 permit
- Local and State agencies
- Enforcement officials
- Local electeds

Science to Action - Advocating for change



Importance of alliances



Photos: M. Cunningham
Map: Created by Imgur user Fejetlenfej

- Water protection crosses boundaries and is complicated!
- Support people and communities at the forefront of water protection (New York State = Home Rule state)
- Citizen science as gateway to watershed organizing
- Celebrate successes and highlight success stories

Summit



*On March 1, more than 100 environmental and political leaders attended the 2018 Lower Hudson Urban Waters Summit that was organized by CURB.
Photos: Ryan Palmer*

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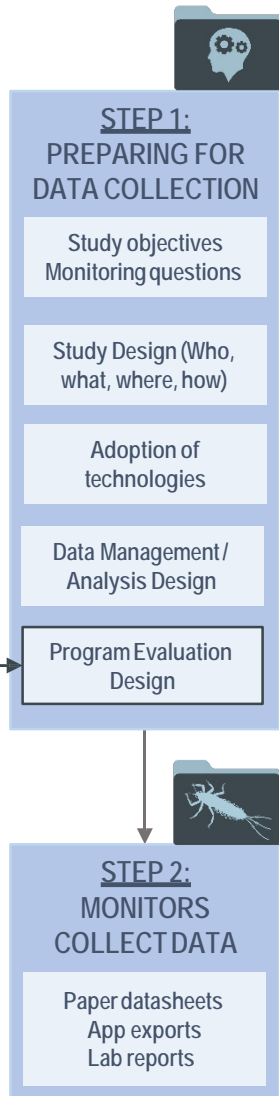
Closing Thoughts

- Critical need for more significant agency action/leadership
- Lots more work to do!

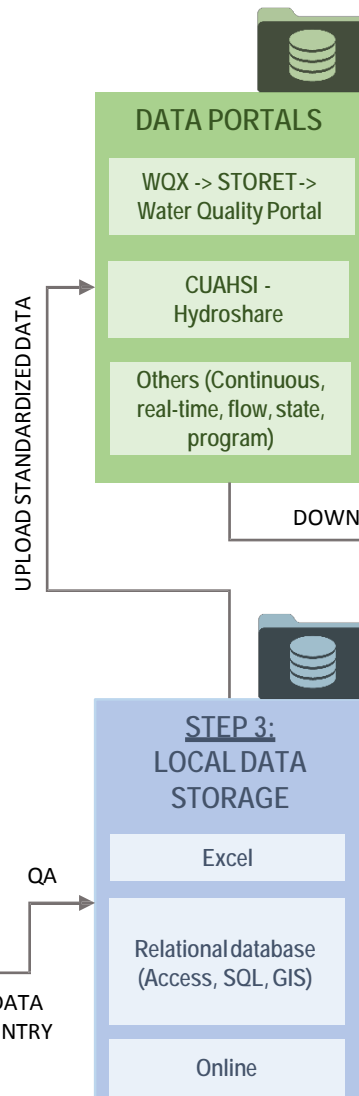


A Citizen Water Science Framework: *Powered with Open Data and Technologies*

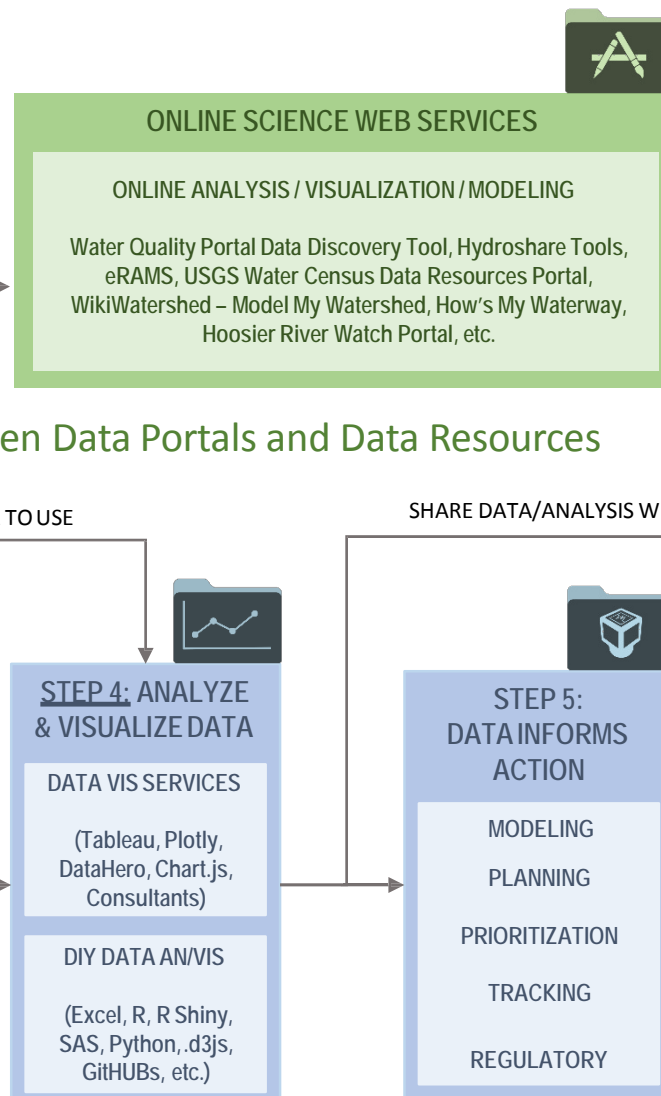
Data Production



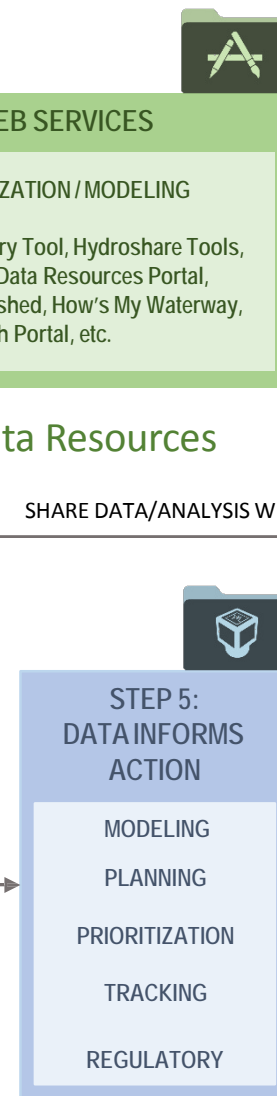
Data Management



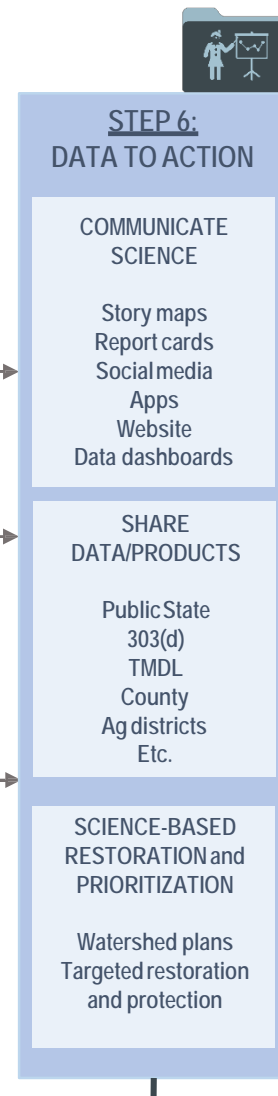
Data Analysis, Visualization



Modeling, Planning



Data to Action



Open Data Portals and Data Resources

Evaluation and Adaptive Management

Before You Go...

Additional Resources: www.urbanwaterslearningnetwork.org

Upcoming Webinars:

- Using Mapping and Decision-Making Tools to Ensure Climate Equity - August 21
- Parks with Purpose: Community-Driven Green Infrastructure - September 6
- Water Trails 101: Preserving natural and cultural heritage, health, and vibrant economy - September 11
- Communicating the State of Your River: Basin Report Cards and the Swim Guide - September 18

Other Announcements:

- Link to today's webinar recording will be sent by email
- Please complete the brief evaluation survey coming your way!



Questions & Thanks

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Photo: CURB

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