CLEAN WATER ACT AND THE INTEGRATED REPORT

• Section 305(b) requires a biennial COMPREHENSIVE review of water quality

• Section 303(d) requires a listing of all impaired waters of the state

• Combined, the deliverables from state environmental agencies on water quality in each state is called the Integrated Report
## “ALL EXISTING AND READILY AVAILABLE DATA”

<table>
<thead>
<tr>
<th><strong>Federal Government</strong></th>
<th><strong>State Government</strong></th>
<th><strong>County Government</strong></th>
<th><strong>Interstate/Regional Agency</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA</td>
<td>NJDEP</td>
<td>Monmouth County Health Department</td>
<td>DRBC</td>
</tr>
<tr>
<td>USGS</td>
<td>Americorps Watershed Ambassadors</td>
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<td>IEC</td>
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<tr>
<td>National Park Service</td>
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<td>Pinelands Commission</td>
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<thead>
<tr>
<th><strong>Municipal Authority</strong></th>
<th><strong>Academia</strong></th>
<th><strong>Volunteer Monitoring Groups</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick Township Utilities</td>
<td>Rutgers Cooperative Extension</td>
<td>Great Swamp Watershed Assn.</td>
</tr>
</tbody>
</table>

Musconetcong Watershed Assn.
Pequannock River Coalition
Raritan Headwaters
The Watershed Institute
• 760 Sites

• Each site sampled for macroinvertebrates every 5 years

• Focus on one water region each year
112 sites, monitored quarterly for chemical and physical parameters

In the rotating basin approach, 12 additional sites per region are monitored 10x per year during its 2-year focus period.

This cycle is repeated every 10 years.
DATA GAPS IN A COMPREHENSIVE STATEWIDE ASSESSMENT

2014 Integrated Report
Aquatic Life Use Assessment

2014 Integrated Report
Recreational Use Assessment
VOLUNTEER WATER MONITORING PROGRAMS IN NJ

- Musconetcong River Watchers
- Great Swamp Watershed Association Stream Team
- The Watershed Institute StreamWatch Program
- Raritan Headwaters Stream Monitoring Program
- Pompeston Creek Watershed Association Volunteer Water Quality Monitoring Program

New Jersey Volunteer Monitoring Programs

- Alliance for a Living Ocean
- Citizens United to Protect the Maurice River
- Cohansay Area Watershed Association
- Cooper River Watershed Association
- Crafts Creek Spring Brook Watershed Association
- Great Egg Harbor Watershed Association
- Lower Raritan Watershed Partnership
- Musconetcong Watershed Association
- Raritan Valley Watershed Association
- River Road Watershed Association
- Ranocas Nature Preserve
- Raritan Headwaters Association
- Shittik River Clean Up Coalition
- South Jersey Land and Water Trust
- Whole Pond Brook Watershed Association
- Whippany River Watershed Action Committee
- Woodbridge River Watch


New Jersey Department of Environmental Protection Volunteer Monitoring Program Directory
REASONS FOR VOLUNTEER MONITORING

• Environmental Education
• Citizen Engagement
• Advocacy for Local Decision Making
• Identifying a Problem
• Is the Water Safe to Swim? Boat? Fish?
• Baseline Monitoring
• Restoration Effectiveness
• Regulatory Action
TIERED SYSTEM OF DATA QUALITY

**Tier A: Environmental Education**
Used primarily in schools
Wide variety of study designs
QAPP Unnecessary

**Tier B: Stewardship**
Used for advocacy
Low-Medium Level of Rigor
QAPP Suggested

**Tier C: Community Assessment**
Used to guide further monitoring efforts
Medium-High Level of Rigor
QAPP Required, On File with Intended Data User

**Tier D: Regulatory Response**
Used to supplement agency data collection
High Level of Rigor
QAPP Required, with Approval from NJDEP
Annual Audits of Volunteer Methods

Increasing Tiers Mean Increasing Rigor, Time, and Funding
Izaak Walton League conducted research on a national level in 2016 to determine how well state agencies engaged with the volunteer monitoring community. Grades were calculated for each state according to how well they engaged with the volunteer monitoring community, according to the following metrics:

- Willingness of the state to use volunteer-collected data in the Integrated Report
- Barriers to data use, including excessive quality assurance protocols
- Technical and financial support for volunteer groups from the state

Part of larger study into data age, transparency of assessment methods, site-specific information, frequency of sampling, and rigorousness of water quality standards.
STATES AND VOLUNTEER-COLLECTED DATA

<table>
<thead>
<tr>
<th>Alabama</th>
<th>California</th>
<th>Colorado</th>
<th>Florida</th>
<th>Georgia</th>
<th>Maine</th>
<th>Missouri</th>
<th>New Hampshire</th>
<th>New Jersey</th>
<th>Oklahoma</th>
<th>Oregon</th>
<th>Rhode Island</th>
<th>Wisconsin</th>
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<tr>
<td>36%</td>
<td>26%</td>
<td>14%</td>
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HOW DOES NJ COMPARE?
IWLA.ORG/RIGHTTOKNOW

THE GOOD TIMES
HISTORY OF NJDEP AND VOLUNTEER MONITORING

- 2002: Development of Watershed Watch Network
- 2013: NJDEP Stops Funding Volunteer Programs
- 2014-2015: NJDEP Volunteer Monitoring Staffing Reductions
- 2015: NJ Water Monitoring & Assessment Strategy
NJ 2015 VOLUNTEER MONITORING
GAPS/NEEDS ASSESSMENT

- $$$
  - Funding
  - Mini-Grants
  - Equipment Loan
  - Fee Waiver for Lab Certification

- Technical Expertise
  - Clearinghouse of technical resources, services, and topical experts
  - Assistance in preparation of QAPPs
  - Calibration assistance

- Communication
  - Partnerships/relationships between volunteer groups and agencies
  - Clarity on requirements for QAPPS
  - Map of active volunteer monitoring groups, with coverage areas

- Continuing Education
  - Training on Water Quality Exchange data entry
  - Training on data interpretation and analysis tools
  - Training on source trackdown methods

2016:
Let’s Re-Start a Network!
STATEWIDE VOLUNTEER MONITORING NETWORK GOALS

• Translate between Volunteer Monitoring Community and NJDEP
  • Clarify requirements for agency-accepted data
  • QAPP review, feedback, and acceptance

• Monitor Volunteer Monitoring Activities in New Jersey
  • Establish a listserve, social media accounts, and website to reconnect us
  • Develop a list of topical experts in the state to help answer questions
  • Fill data gaps temporally, geographically, and by parameter
STATEWIDE VOLUNTEER MONITORING NETWORK GOALS

• Provide a clearinghouse of technical resources, services, and trainings
  • Program startup and study design assistance
  • Assistance with Quality Assurance Project Plan development
  • Semi-Annual volunteer monitoring organization meetings and workshops
  • Offer Stream School to train new volunteers
  • Annual New Jersey Water Monitoring Conference
  • Equipment Calibration Assistance
NJ 2015 VOLUNTEER MONITORING GAPS/NEEDS ASSESSMENT

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### Fishable, Swimmable, Drinkable Waters

<table>
<thead>
<tr>
<th>Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Technical Assistance</td>
<td>• Water Quality Monitoring</td>
<td>• Water Quality Report Cards</td>
<td>• Stream Protections</td>
</tr>
<tr>
<td>• Volunteer Recruitment and Training</td>
<td></td>
<td>• Integrated Report</td>
<td>• Establishment of TMDLs</td>
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<td></td>
<td></td>
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<td>• Category 1 Designation</td>
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</tbody>
</table>

**Statewide Network Logic Model**
NETWORK BENEFITS

Volunteer Monitors

- Clearly defined pathway for data use and acceptance
- Information sharing between volunteer organizations
- Training and workshops for continuing education

NJDEP

- Additional data to be used in the Integrated Report
- Cohesive monitoring protocols for ease of use
- Highly trained partners to engage in targeted projects
3-YEAR PROJECT TIMELINE

Phase 1: What’s Going On?
In Progress

Phase 2: Establish Infrastructure
Beginning 2019

Phase 3: Connect Volunteer Groups
Mid-2019
PHASE 1: WHERE ARE WE NOW?

• Survey of Existing Volunteer Programs

• Updated Map of Volunteer Programs
  • Coverage Areas - with Monitoring Sites
  • Parameters Studied - with Methods
SURVEY OF NJ MONITORING GROUPS

• What do you monitor and where?
• What methods do you use?
• How many volunteers do you have?
• How do you train your volunteers?
• For what purpose do you use your data?
• How do you store and manage your data?
• Do you share your data with the public? How so?
• How do you fund your program?
• In what emerging topics of concern would you like to be trained?
• What are your needs and concerns?
NATIONAL SURVEY RESULTS: MAIN PROGRAM CONCERNS

1. Funding Stability
2. Funding Amount
3. Overworked Staff
4. Use of Program’s Data
5. Volunteer Retention
6. Data Analysis
7. Data Sharing
8. Volunteer Support
9. Understaffing

PHASES 2 AND 3: CAPACITY-BUILDING RESOURCES

Listserve
Website and Social Media
Standardized QAPP and study design worksheets
Biannual Meetings
Semi-Annual Workshops
Stream School
STREAM SCHOOL

- Offered 2x per year, in spring and fall
- 2 day intensive training session for new volunteers
- Streamside sorting and identification to Order/Family
- Habitat/Physical assessment, based on EPA Rapid Bioassessment Protocols

NEXT WORKSHOP:
April 27-28 OR May 4-5 in South Jersey
BEYOND THE THREE YEAR INITIAL PROJECT

Equipment Loan Services
Discounted Lab Analyses
Monitoring Mini-Grants
PROGRAM FUNDING AND ORGANIZATIONAL HEALTH

Watershed Institute Resource Service

- $1,000 – 10,000 grants

- Focus on:
  - Water Quality Science and Education
  - Stormwater Policy
  - Green Infrastructure
  - Climate Change Resilience

- Letters of Inquiry usually due in August
WHAT I NEED FROM YOU

Ideas for a Catchy Network Name

Survey Participation

Open-Mindedness for New Methods
QUESTIONS?

Erin Stretz
estretz@thewatershed.org