Long-term Regional Monitoring Network for Wetlands in Regions 2 and 3

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Regional Problem

- Reference sites are the standard
- Need to understand “shifting baselines”
- Lack long-term continuous data to detect impacts on wetlands
- Understanding hydrologic change is particularly important in wetlands
- Measuring trends in reference quality sites removes confounding factors

- **Project fills this gap by**:
  - creating a framework for collection of robust, consistent, long-term data
  - Tracking how baseline conditions shift over time

Regional Importance

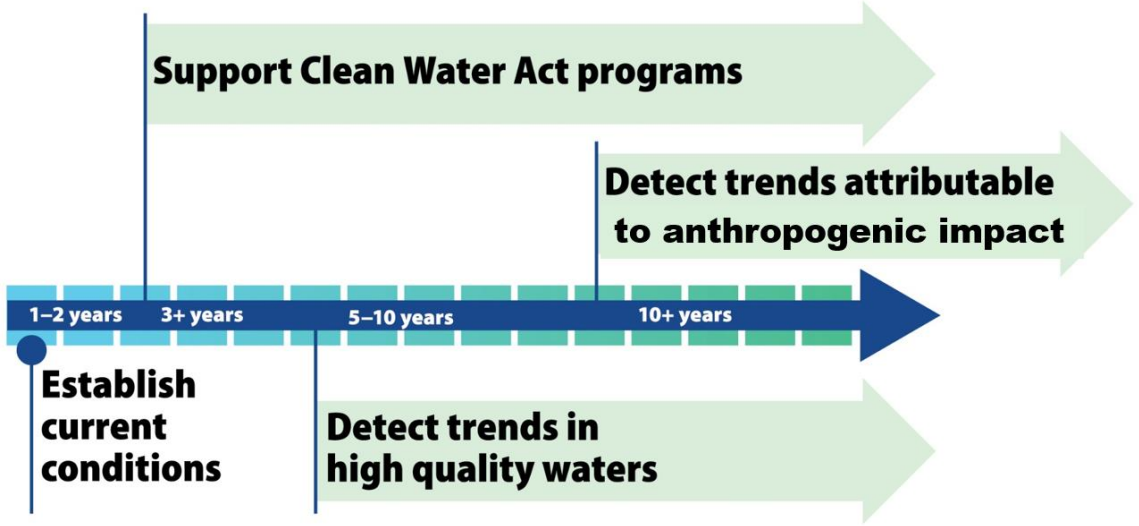
- **Regional importance – filling the gap:**
  - There is no comprehensive wetland monitoring program in Regions 2 or 3
  - Regional Monitoring Networks (RMN) are a collaborative effort between EPA and states, tribes, and other entities to collect baseline data from freshwater systems
  - A RMN allows state bioassessment programs to detect & account for long-term changes in conditions of reference-quality ecosystems
  - Detection of these changes can inform criteria and indicator development
- **National importance**: will be 1st Wetland RMN in US, will serve as template for other Regions

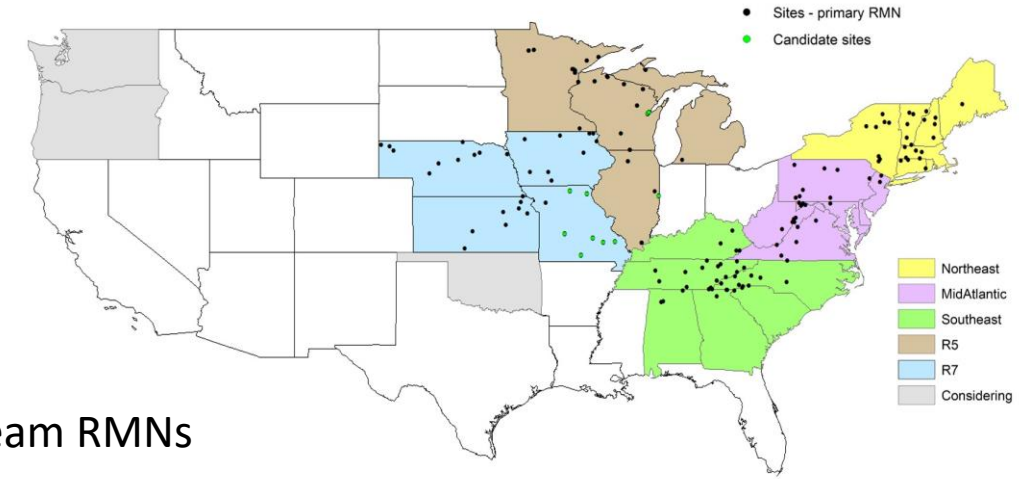
Research Objectives

- **Goal**: create framework for Wetland RMN, setting foundation for robust, long-term data collection & trend analysis
- **Builds upon**:
  - National Wetland Condition Assessment classification
  - 2017 expert workshop with state partners in R2 & R3 on indicators & site selection considerations
  - Established Stream & Lake RMNs: networks of long-term monitoring sites

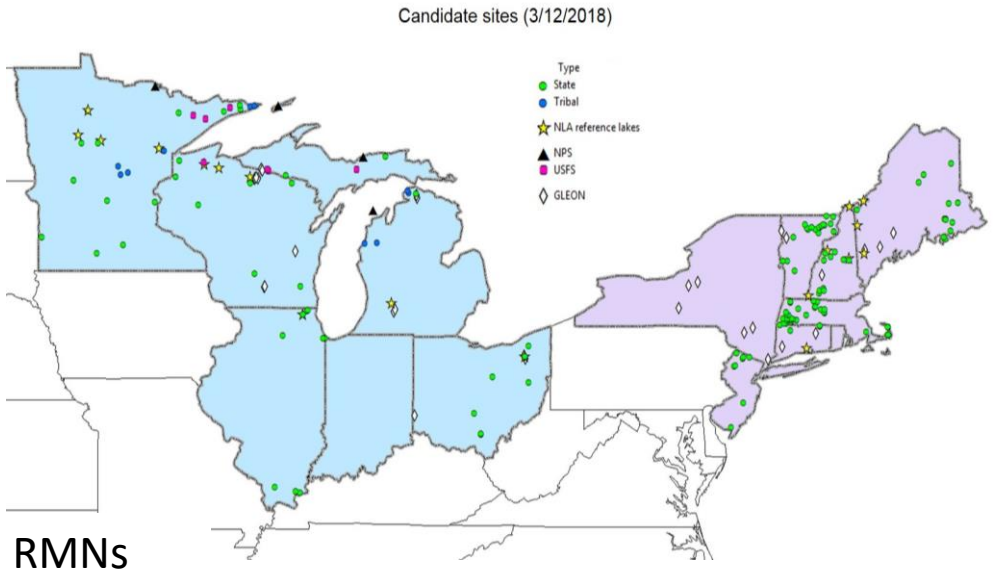
Context

- Stream and Lake RMNs in EPA Regions 1, 2, 3, 4, 5, 7, 10 with state and tribal partners
- Voluntary, incorporated into existing monitoring efforts when possible
- EPA assists partners with peer-to-peer learning: methods, equipment, data management, data analysis
- QAPPs, best practices documents, protocols, R-based tools for data analysis





Stream RMNs

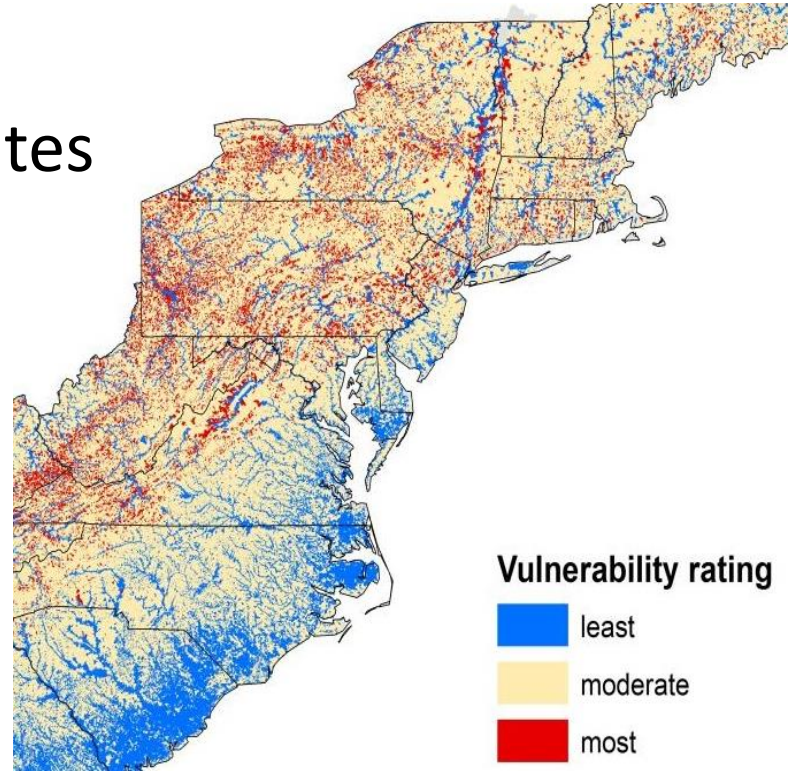


Lake RMNs

Research Approach

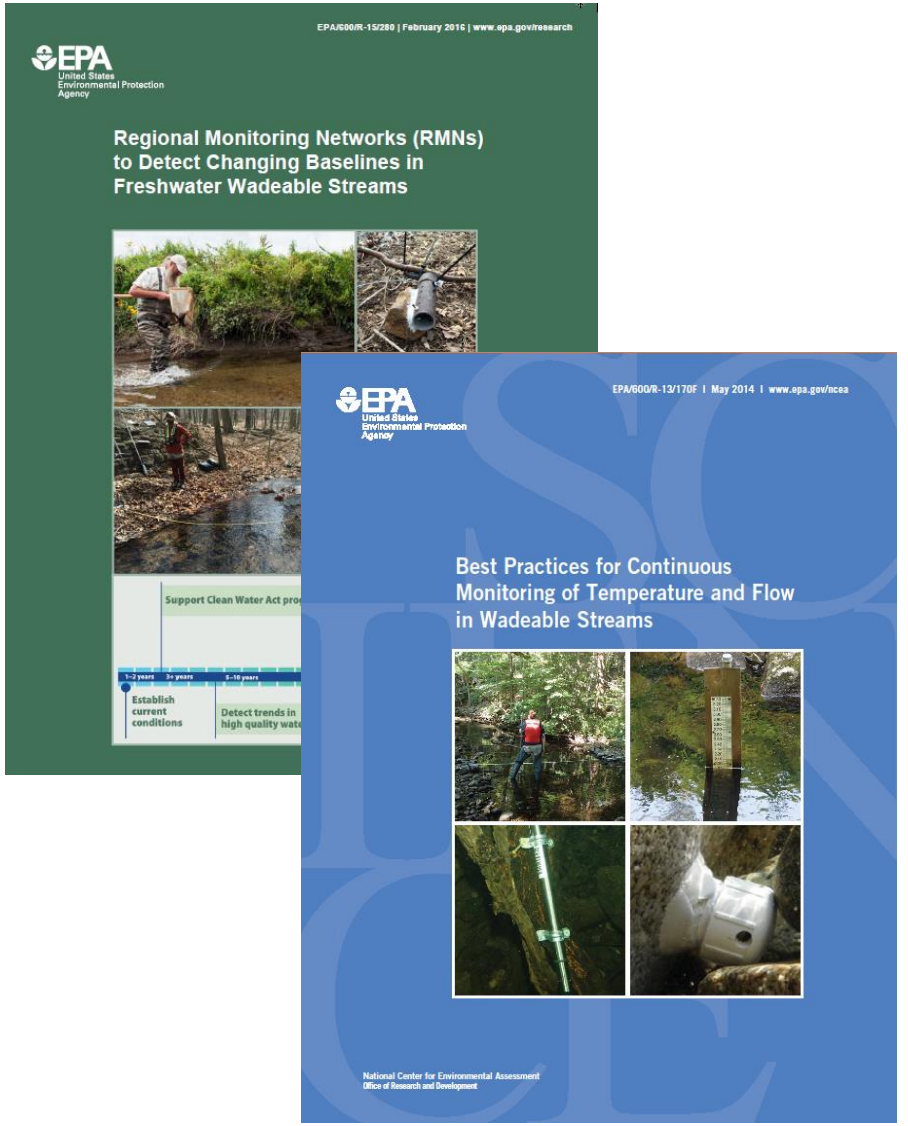
To develop a framework for consistent, long-term data collection:

- Develop screening criteria
  - Consider vulnerability to hydrologic changes, location of monitoring sites, opportunity for collaboration, level of disturbance, & representation of wetland class
- Screen NWCA wetland classes to identify candidate sites
- Develop refined indicator list & prioritized list of data collection protocols
- Engage state partners
- Build protocol documents & QAPP
- Produce map & list of proposed sites



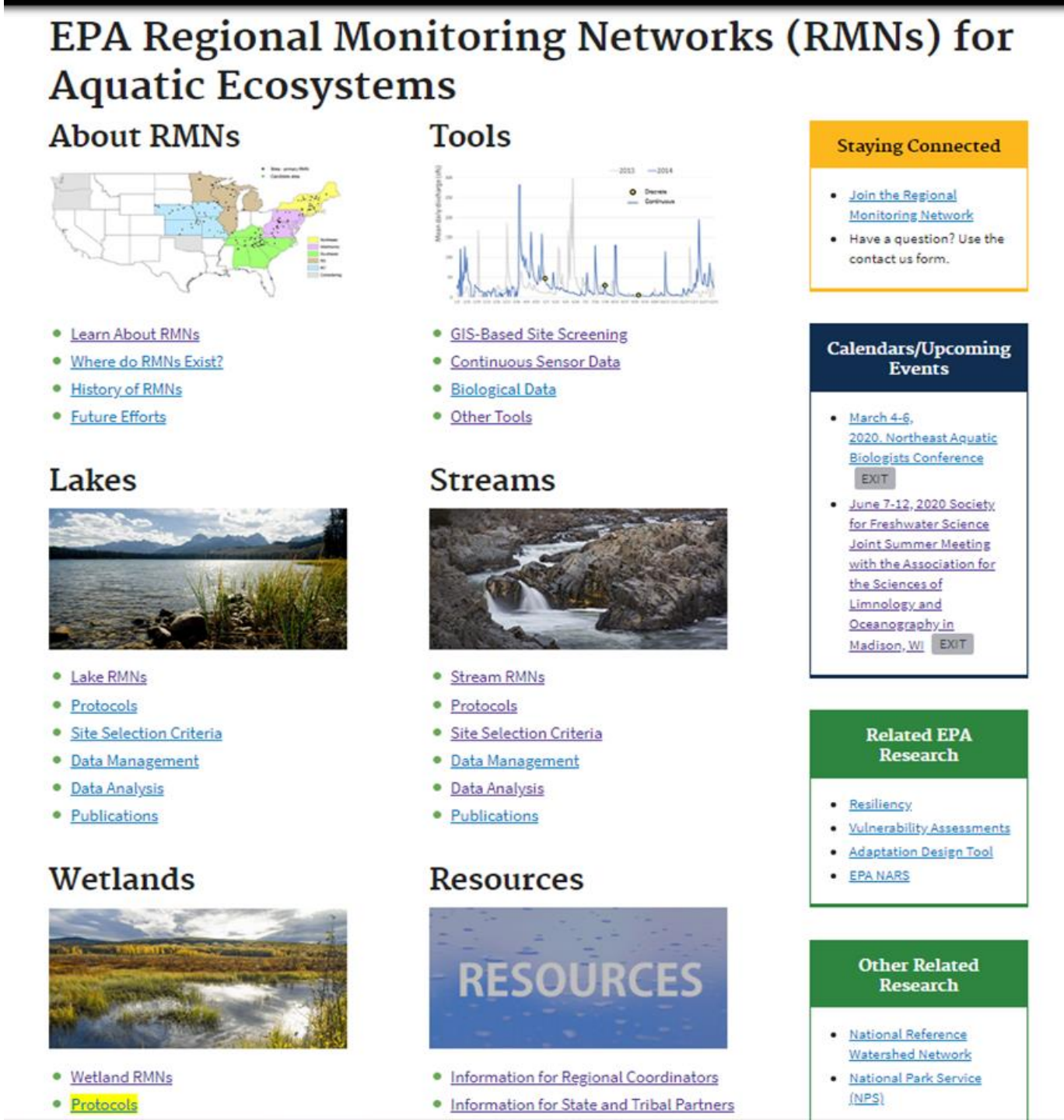
Anticipated Results

- Protocols for data collection (e.g. continuous water level)
- Long-term data collected by Regional/state partners in high-quality wetlands
- Baseline values established for surface & ground water hydrology, soils, & biotic communities
- Capacity to monitor wetlands & inform future wetland restoration/resilience efforts
- Trend analysis to identify resilient sites & detect changes relative to baseline conditions



Anticipated Results

- Wetlands RMN information, protocols, & results will be added to the RMN website
- Will serve as a template for other programs:
  - To develop RMNs in other Regions
  - To inform development & enhancement of state wetland monitoring programs



Example Data Uses from RMNs

- Refine ecologically relevant classifications
- Use data to inform criteria refinement or development
- Develop biological indicators for protection planning
- Track variability in thermal and hydrological regimes and biological communities across sites and over time
- Evaluate and refine metrics and indicators for long-term trend detection
- Improve or validate stream temperature and flow models

Project Management

- **Jen Fulton** (Region 3 Primary Technical Contact) will coordinate Regional activities through the Field Services Branch in Region 3
- **Todd Lutte** (field biologist) will provide technical support for Region 3
- **Britta Bierwagen** (ORD PI/PO) will be responsible for management, coordination, communication, and products for the project, as well as collaboration with contractors on site screening, protocol and QAPP development, and proposed monitoring sites.

Questions?