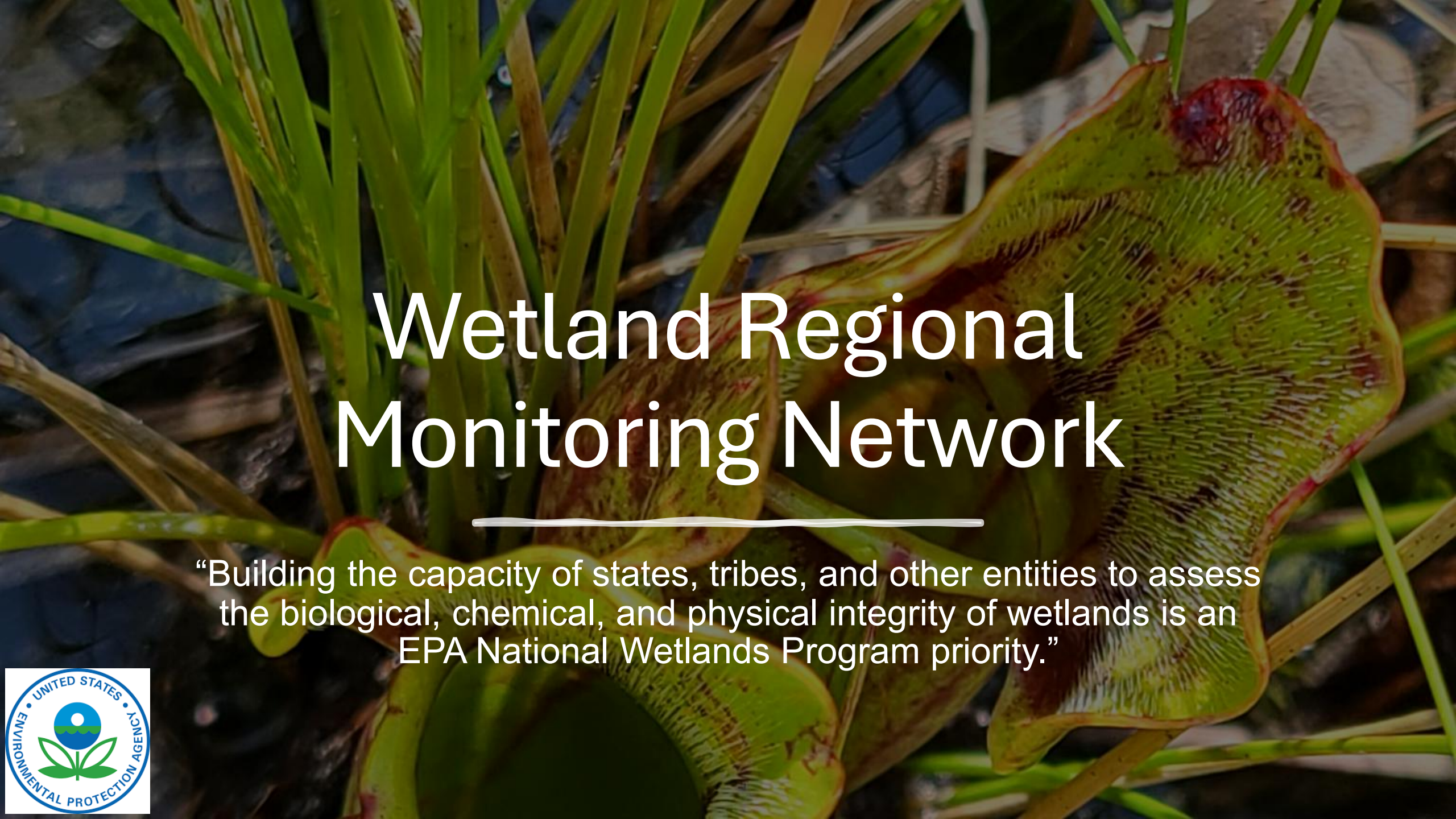
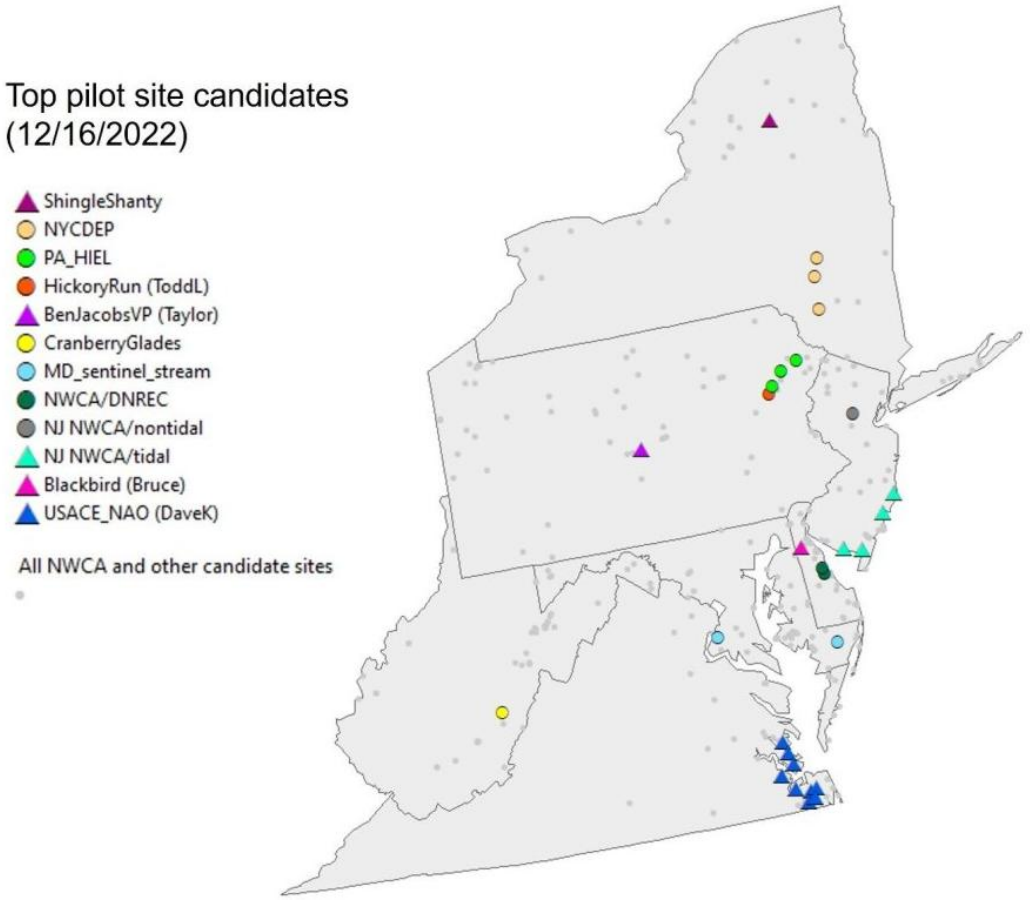


Wetland Regional Monitoring Network

"Building the capacity of states, tribes, and other entities to assess the biological, chemical, and physical integrity of wetlands is an EPA National Wetlands Program priority."

Existing RMNs



Regional Monitoring Network

- The U.S. Environmental Protection Agency (EPA) is working with its regional offices and with states, tribes, and other entities to establish Regional Monitoring Networks (RMNs) for freshwater wadeable streams, freshwater inland lakes, and wetlands.
- Fill in data Gaps
- RMN surveys build on existing state and tribal bioassessment efforts with annual sampling of a limited number of sites that can be evaluated at a regional level. Regional analyses improve the ability to detect trends over shorter time periods.

What Are We Monitoring?

- Understanding current (“baseline”) conditions
- Detecting and tracking trends (wetlands change over time and what drives the changes)
- Distinguishing year-to-year variability from long-term changes
- Understanding ecosystem responses and recovery from extreme weather events
- Detecting and tracking effects of regional phenomena such as climate variability, atmospheric deposition, and spread of invasive species
- Enhancing the resilience of lakes, streams, and wetlands to environmental stressors

What Can We Do With the Data?

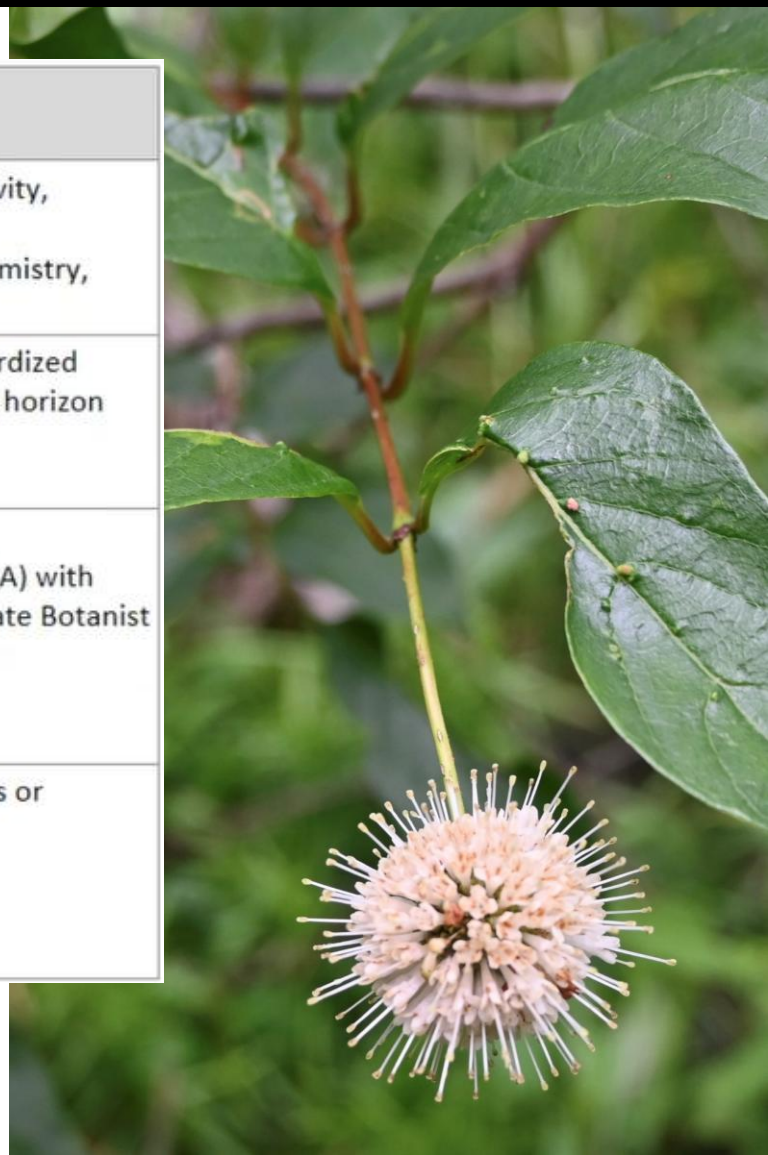
- Informing water quality criteria and biological criteria development
- Prioritizing areas for protection
- Refining lists of biological and hydrological indicators
- Detecting trends in biological indicators over time
- Enhancing the resilience of lakes, streams, and wetlands to environmental stressors

Site Selection Considerations

Consideration	Desired characteristics
Existing Monitoring	Existing Monitoring Network/ lengthy historical data
Disturbance	Low level of anthropogenic disturbance • Understand natural variability • Fill in data gaps • Isolate changes over time • Wetlands that are protected from future disturbance are preferred.
Accessibility	Able to make multiple site visits a year to access camera
Equipment	• Co-locating with existing equipment • Proximity to USGS surface water gages, wells, and other RMN sites • Protection from freeze thaw, bears
Shared workload	• Looking for opportunities to work with outside agencies and organizations, especially hydrology, soil, and botany experts
Significance	• Ecological and cultural reasons
Dream Sites	peat fens, saltwater marshes, mineral flats

Tiered Approach to Methodology

Data Component	Minimum (Tier 1)	Ideal (Tier 2)	Optional (Tier 3)
Hydrology	• Water level using HOBO data loggers	• Hydroperiod using game camera photos	• In-situ WQ readings (specific conductivity, dissolved oxygen, pH) • NWCA prescribed samples (Water chemistry, chlorophyll-A, & microcystin)
Soils	• Soil Profile Characterization & identification of hydric indicators	• Soil profile Characterization & identification of hydric indicators with an NRCS soil scientist	• NWCA Soil samples including a standardized depth soil core, soil isotope sample, & horizon bulk density and chemistry samples
Vegetation	• Wetland delineation plot	• Documentation of T&E Species presence • Documentation of Invasive Species presence • Leaf on/off & bloom dates using game camera photos	• NWCA Veg Plot • Rapid Floristic Quality Assessment (FQA) with qualified professional and/or other State Botanist recommended protocol
Fauna			• Taxa counts & presence of T&E species or Invasive species • Macroinvertebrate surveys • Amphibian surveys • Avian surveys



Estimated Costs***

Estimated Costs

Wells

Hobo U20 freshwater- $600
Hobo U20 saltwater - $740
Hobo Shuttle - $325
Sand - $15
Bentonite - $15
Well screen - $45
Piezometer - $45
Riser - $25
Point/flat bottom - $15
Filter fabric - $35
Pipe cutter- $27
Barometer Holder - $20

Camera

Hyperfire 2 - $400
Hyperfire enclosure - $50
Strap lock - $15
Batteries (12 lithium-ion) - $45
Large SD card and reader - $50

Additional Equipment

Auger/shovel/Munsell/Soils pit equipment
Monofilament or stainless-steel wire
Black trash bags
100/50 M Tapes
Tape measure
Rite in Rain pen and book
GPS unit
GPS Camera
iPad
Screws
Straps
Drill with bits
Staff gauge

Site with 1 well, barometer and camera
Wells/Barometer = approximate cost $1725
Camera – approximate cost $560
Total = $2,285

*** USEPA has some of equipment available

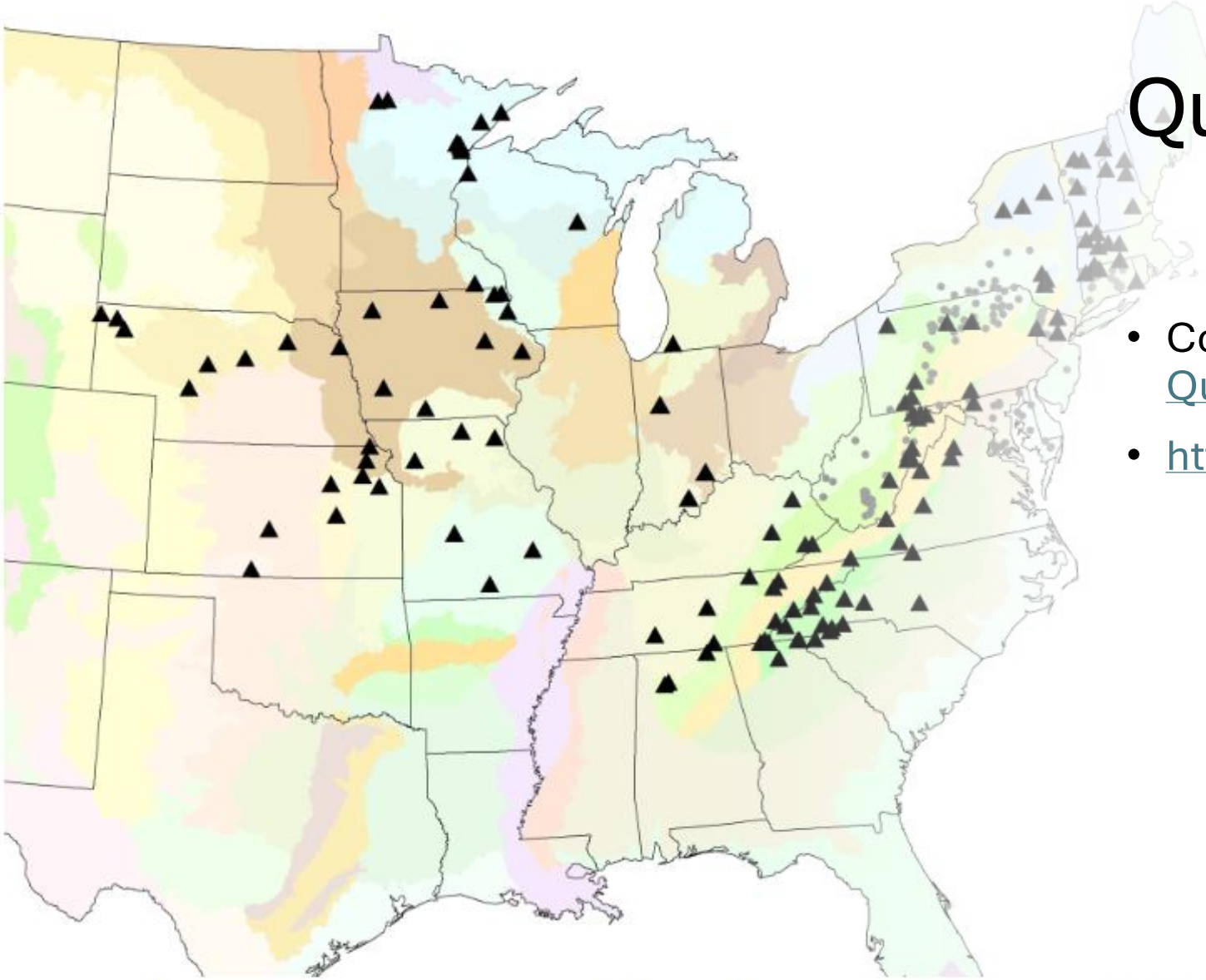


Figure 1. The black triangles show locations of primary Stream RMN sites and grey circles show secondary sites as of 5/31/2024. Stream RMN sampling efforts began in EPA Region 1 in the Northeast in 2012, followed by EPA Region 4 in the Southeast in 2013, EPA Regions 2 and 3 in the Mid-Atlantic in 2014, and EPA Region 5 in the Midwest in 2016-2017.

Questions?

- Contact: Quesnell.kathryn@epa.gov
- https://www.epa.gov/rmn/