National Park Service
U.S. Department of the Interior

Current Water Quality Monitoring in Maryland NPS Units

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Objectives

- To convey
  - WHO we are
  - WHAT we monitor
  - WHERE, WHEN, & HOW we monitor
  - Importance of our Monitoring

WHO we are…

- The regional Natural Resources & Science division located in NW D.C.

- National Capital Region Network, Inventory & Monitoring (NCRN I&M).
  - One of 32 I&M networks nationwide
  - 11 park units total, 5 in Maryland
  - Report status and trends of water resources
  - Support Park natural resource managers

What we monitor…

Chemistry	Nutrients	Quantity
pH	Nitrate (NO3)	Flow
Dissolved Oxygen	Total Phosphorous (PO4)	Discharge
Specific Conductance		Width
Salinity		Depth
Temperature		
Acid Neutralizing Capacity (ANC)		

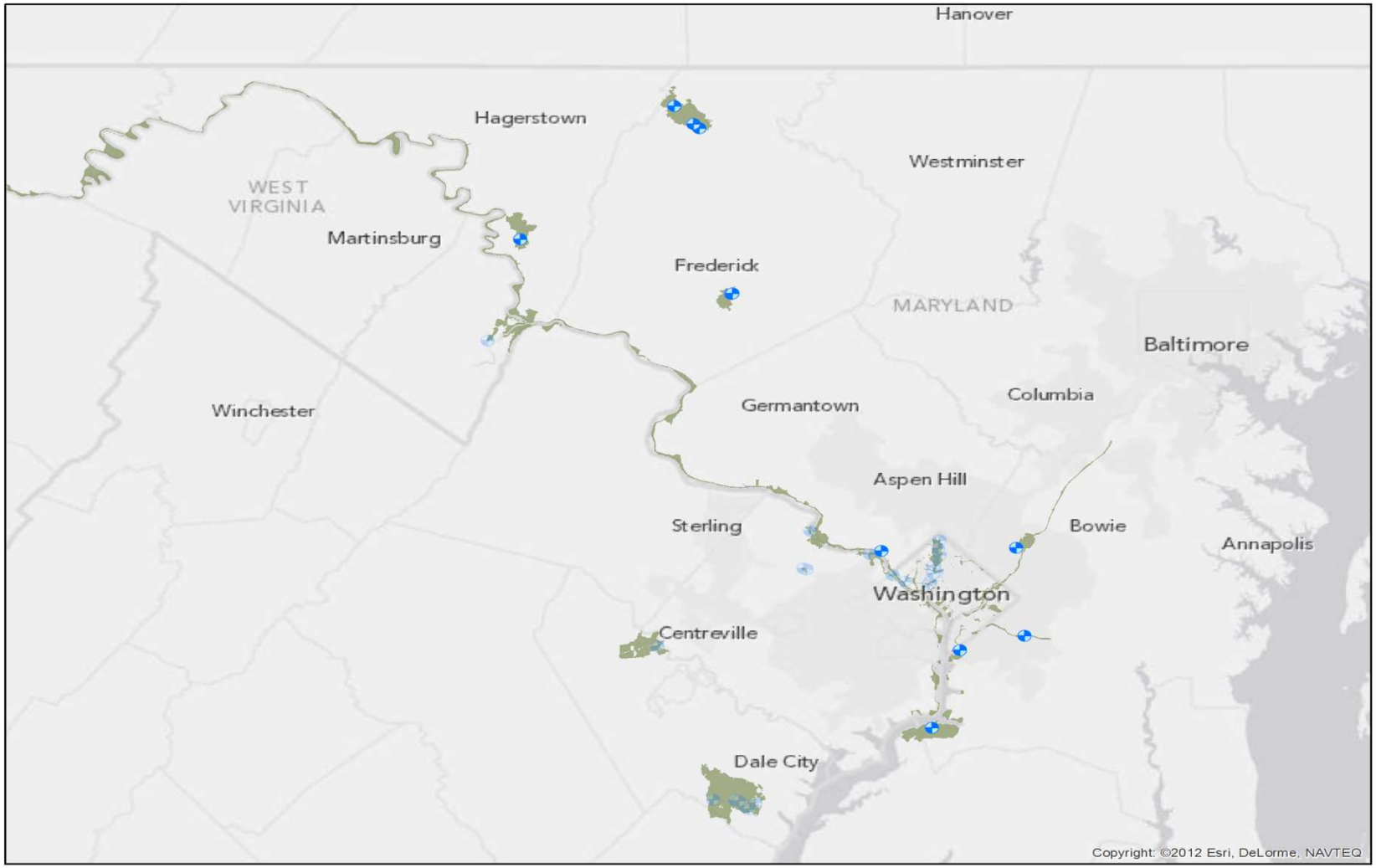
Where we monitor…

PARK	COUNTY	WATERSHED	STREAM
Antietam NB	Washington	Antietam	**Sharpsburg Creek, *Antietam Creek**
Catoctin Mtn	Frederick	Monocacy	***Big Hunting, Blue Blazes, *Owens Creek**
Monocacy NB	Frederick	Monocacy	**Bush Creek, Gambrill Mill**
George Wash. Memorial Pkwy	Montgomery	Cabin John	**Minnehaha Creek**
Greenbelt	Prince George's	Anacostia	***Still Creek**
Suitland Pkwy	Prince George's	Middle Potomac-Tidal	**Henson Creek**
Oxon Cove	Prince George's	Middle Potomac-Tidal	**Oxon Run**
			Perennial, non-tidal streams 1st-3rd order

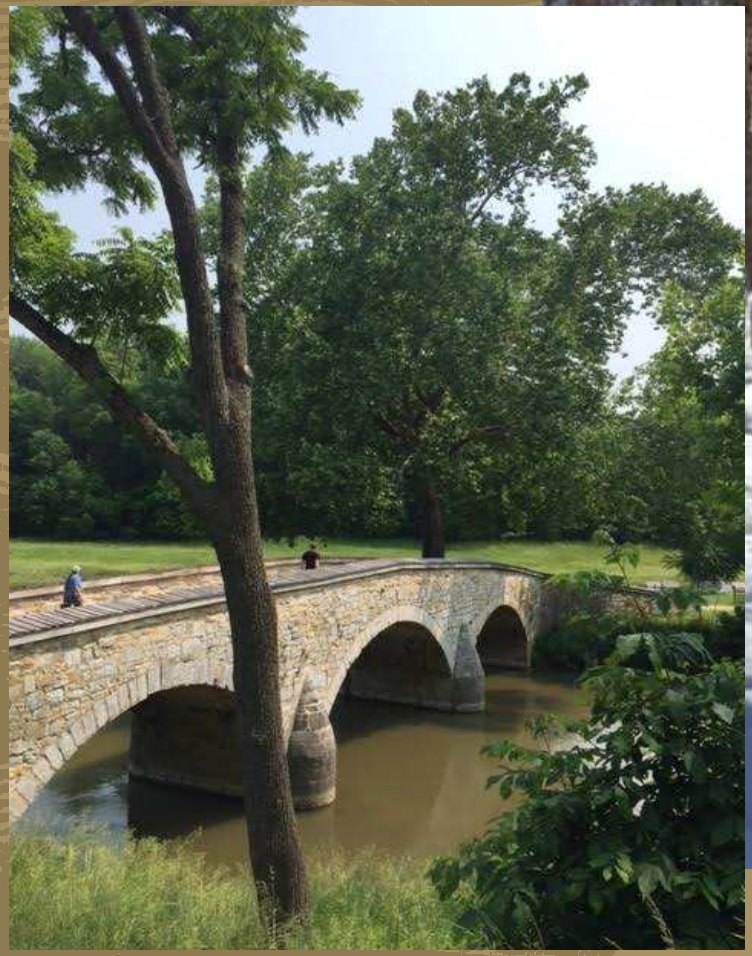
★OUTSIDE MD: Harpers Ferry, Great Falls, Rock Creek, Prince William Forest Park, Manassas Battlefield

*Continuous Monitoring sites

Maryland Water Monitoring Units



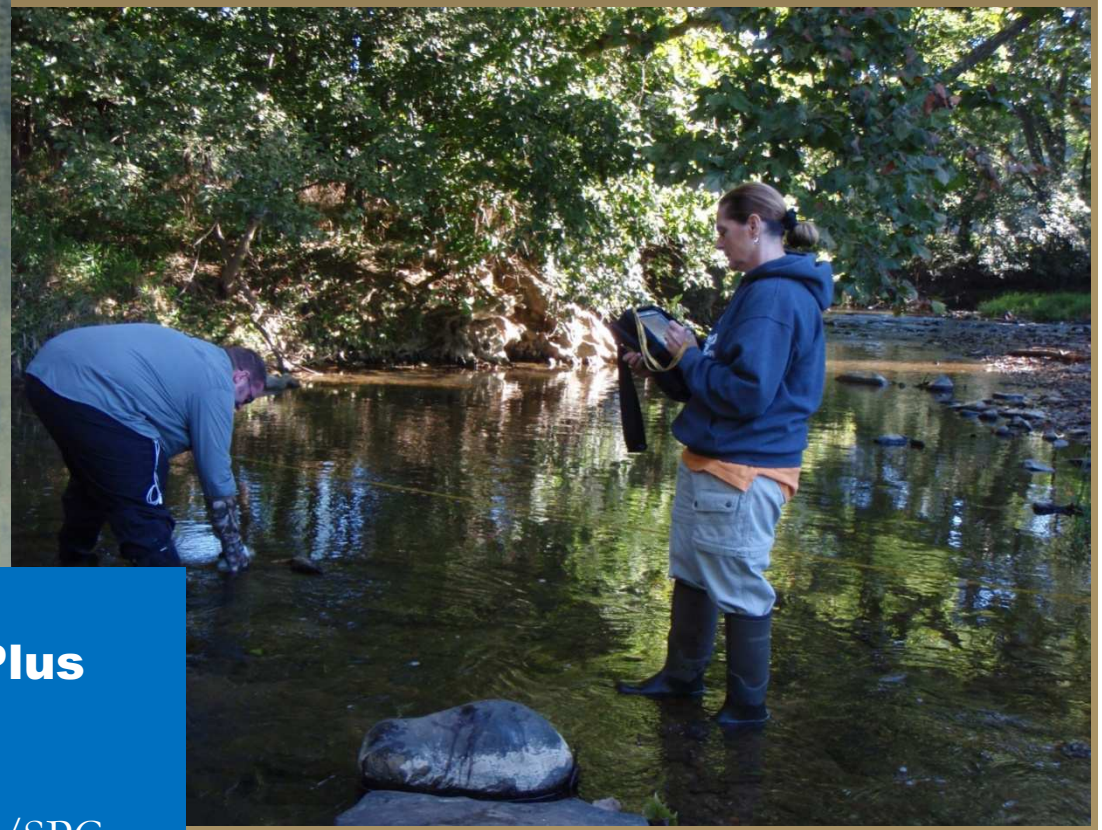
When we monitor…



Monitoring Equipment

YSI ProPlus

pH
Temp
Cond./SPC
DO
Salinity



Monocacy NB, Bush Creek

Discharge:
Sontek FlowTracker

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Laboratory Analysis of NO3 & PO4:

Hach DR3900
TnT method –
for Accuracy & Precision

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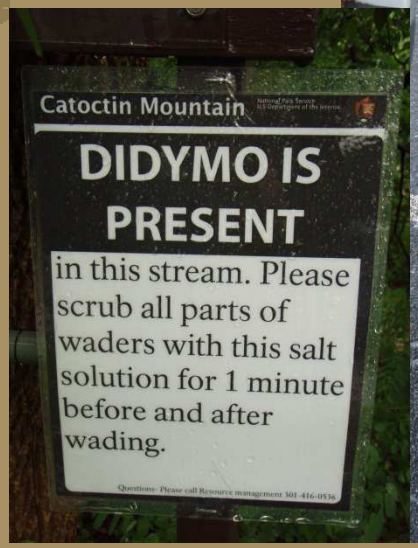
Continuous Monitoring

- Deployed Continuous Data Loggers
  - Catoctin (Big Hunting, Owens Creek)
  - Greenbelt (Still Creek)
  - Antietam (Antietam Creek)
- HOBO devices measure:
  - Dissolved Oxygen
  - Water Level
  - Conductivity
  - Temperature (water & air)
  - Air pressure
- 24/7 every 15 min.

Decontamination

- Didymo present at Catoctin Mountain Park.
- Possibility of spread
- *Best Management Practices*
- Between ALL sites in ALL parks.



Importance of Monitoring

- Evaluates stressors in NCRN streams
  - Complies with
    - Environmental legislation
    - NPS mandates
- Water chemistry, nutrient dynamics, and surface water dynamics effects:
  - Ecosystem productivity
  - Species abundance and distribution
  - Alter nutrient cycles

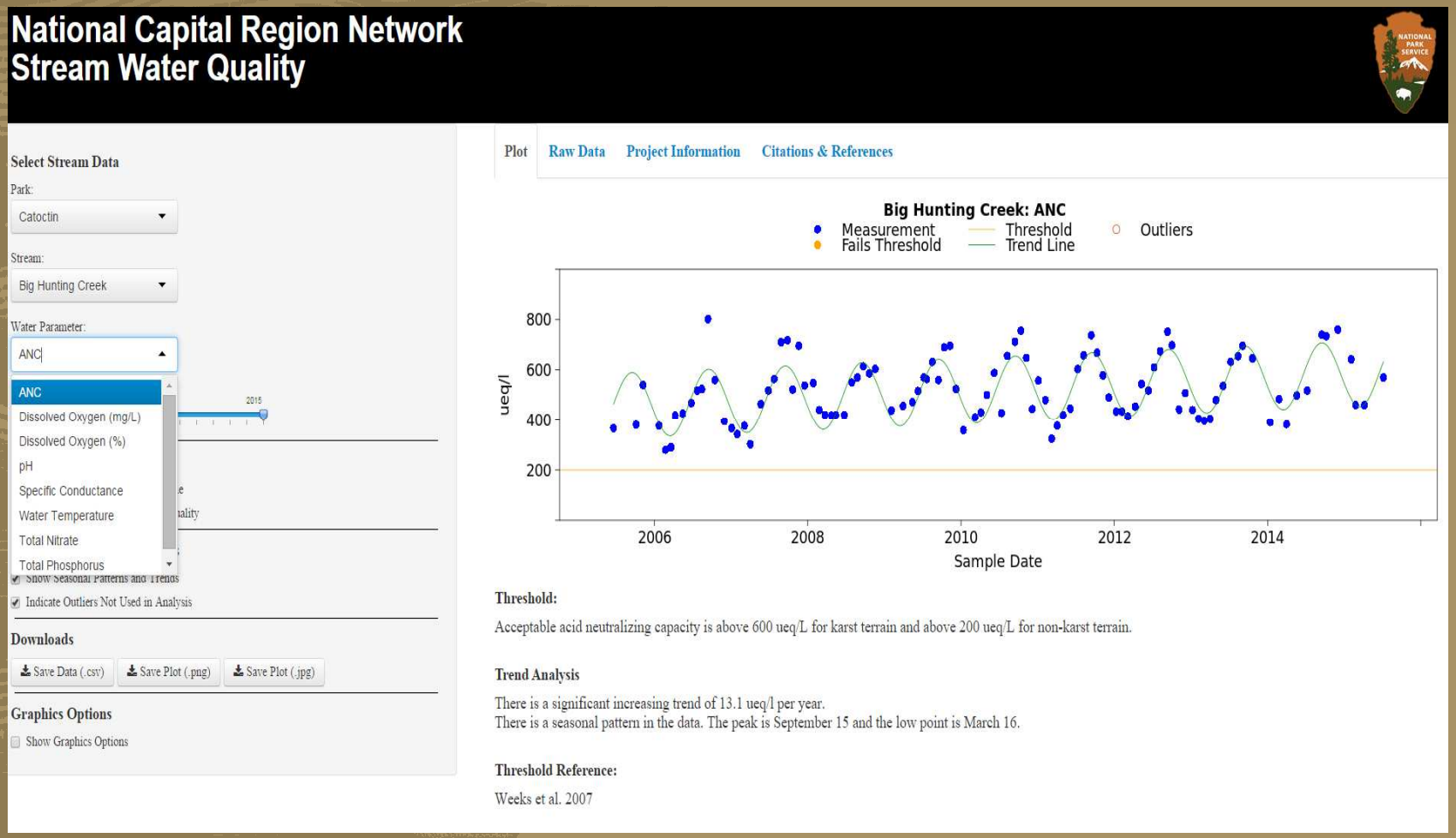
Data available through EPA Storet

http://www.epa.gov/storet/

~2 year turn around after QAQC layers

NCRN Water Quality Visualizer

- Quarterly Stream Data Available at http://irmadev.nps.gov/r-reports/NCRN/Water/



Questions?

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Thank you MWMC!