Water Quality Framework

Water Quality Framework Building Blocks

- The Water Quality Framework is built upon the existing OWOW data systems:
  - Water Quality Monitoring: STORET/WQX
  - Assessment/TMDL Tracking/Restoration: ATTAINS
  - Actions: 319 Non-Point Source Grants Tracking System (GRTS)
  - Geospatial Fabric: NHD*Plus*
- **The Water Quality Framework Goal:** to streamline water quality assessment and reporting while providing a more complete picture of the nation's water quality.

The Framework will evaluate how these systems can support one another, while providing users access to information in a seamless way that doesn't require them to know which system contains which data.

EPA Air Trends Reports as Example

https://gispub.epa.gov/air/trendsreport/2016/

AIR QUALITY IMPROVES AS AMERICA GROWS

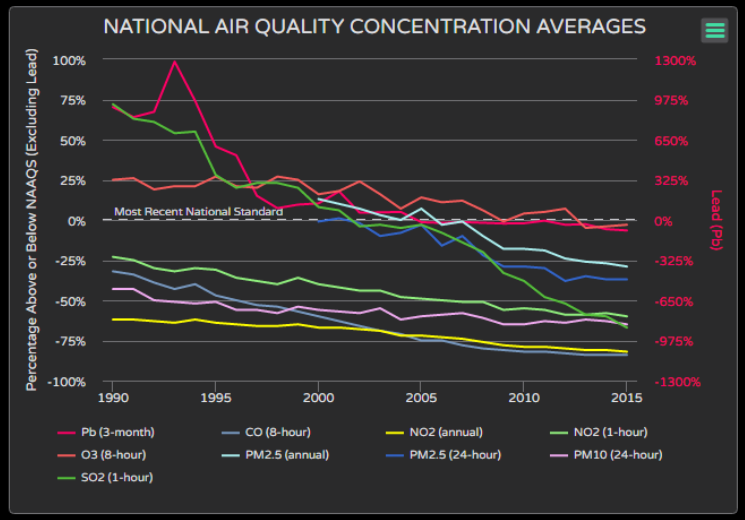
Nationally, concentrations of the criteria air pollutants have dropped significantly since 1990:

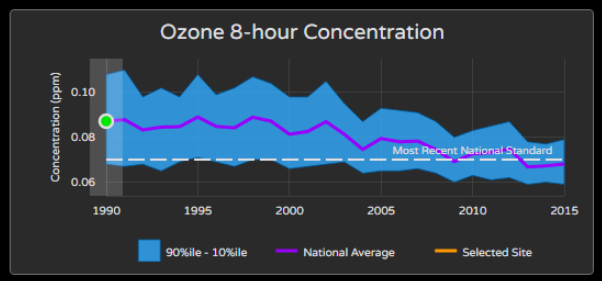
- Carbon Monoxide (CO) 8-Hour, ↓ 77%
- Lead (Pb) 3-Month Average, ↓ 99%
- Nitrogen Dioxide (NO_2) Annual, ↓ 54%
- Nitrogen Dioxide (NO_2) 1-Hour, ↓ 47%
- Ozone (O_3) 8-Hour, ↓ 22%
- Particulate Matter 10 microns (PM_{10}) 24-Hour, ↓ 39%
- Particulate Matter 2.5 microns ($PM_{2.5}$) Annual, ↓ 37%
- Particulate Matter 2.5 microns ($PM_{2.5}$) 24-Hour, ↓ 37%
- Sulfur Dioxide (SO_2) 1-Hour, ↓ 81%

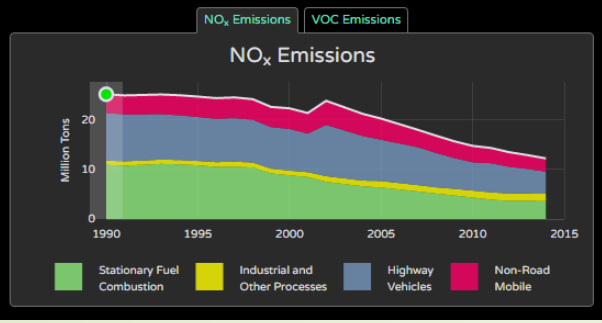
During this same period the U.S. economy continued to grow, Americans drove more miles and population and energy use increased.

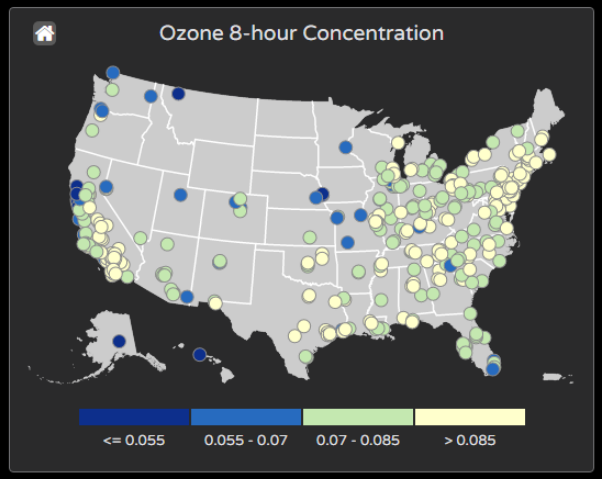
TIP Click pollutant names in the chart legend to hide or include trend lines, and hover over any line to display percentages above or below the most recent standard. Click the Emissions button below to open a popup window.

EMISSIONS









ANIMATION Click the play/pause button to start and pause animation. Click and drag the gray square in the slider to manually change the year.

MAP Click on a monitor to display annual concentration data. Double click to zoom in. Click the home button to reset.

5

What's the impact at the National or state scale?

National Surveys

How's Water Quality Nationwide?

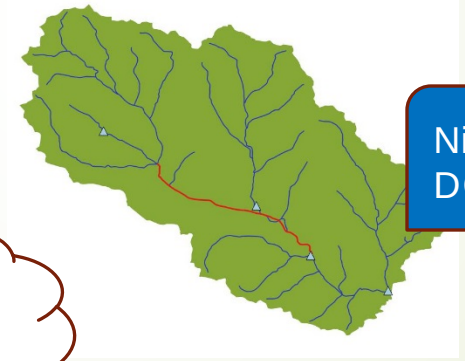
State Scale Surveys

How's Water Quality in my state?

On specific waters?

Site Specific Assessments

How's the Bear River?



Nitrate 1.3 mg/l
DO 3.2 mg/l

ALUS: Not Supporting

What's being done?

Planning Activities

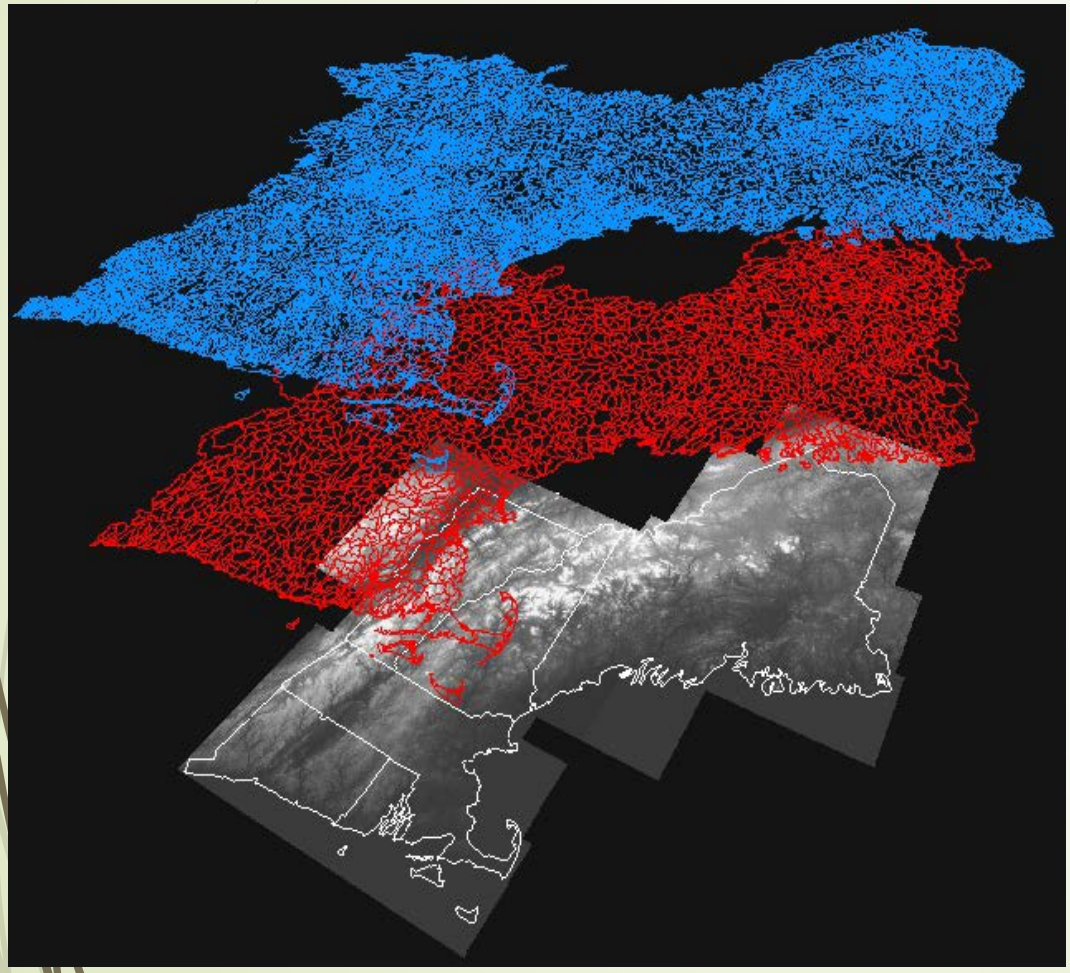
How does this all change over time?

Actions

Some Questions from WQF Retreat

- How is the water in my backyard?
- Where are the healthy waters in the country? How will they stay that way?
- Why are so many waters 'unassessed'?/Why are so few waters 'assessed?
- Why is this information important to me? What can/should I do?
- What is being done/what can I do to protect my local waterway?
- What do we know about which waters need protection and which need restoration?
- How can I give you data?

NHDPlus Concepts: Integration of NHD, WBD, and NED



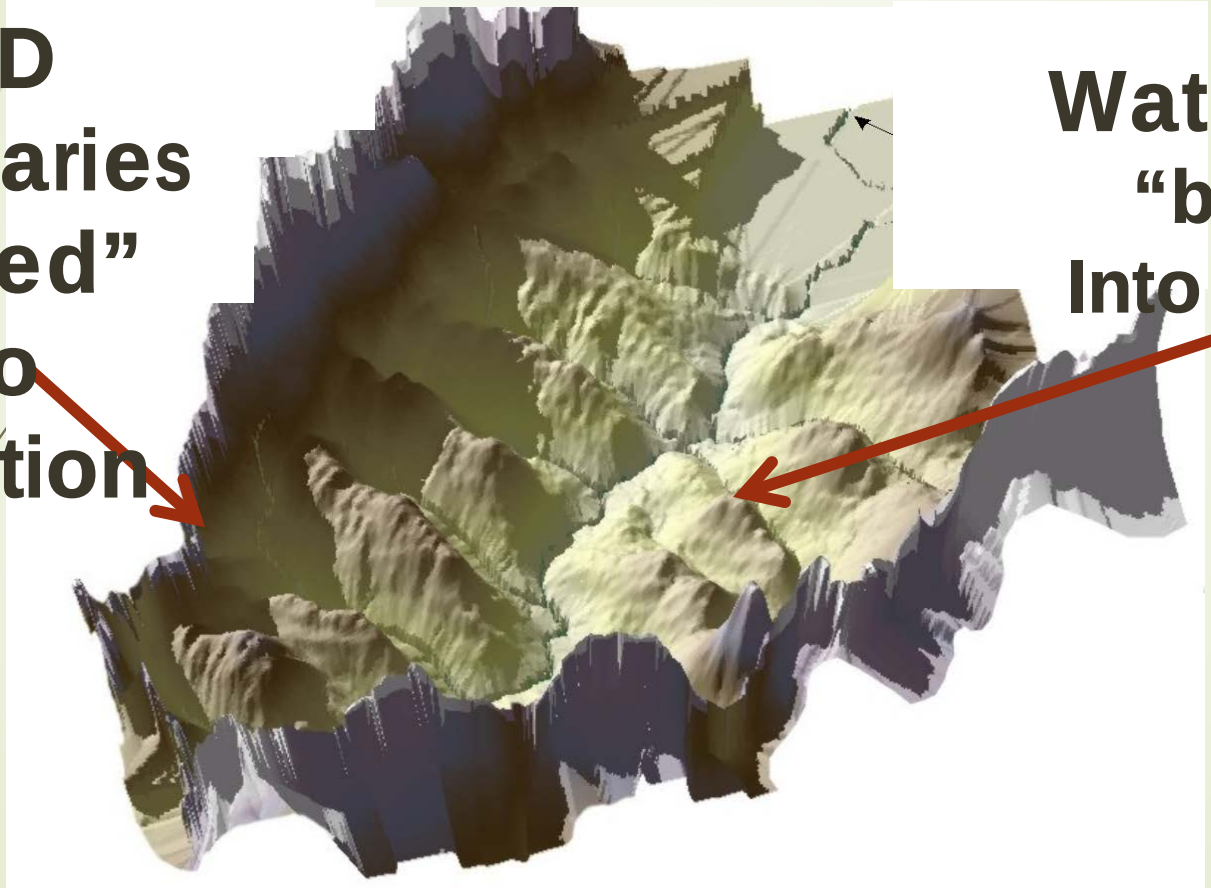
National Hydrography Dataset (NHD)

Watershed Boundary Dataset (WBD)

National Elevation Dataset (NED)

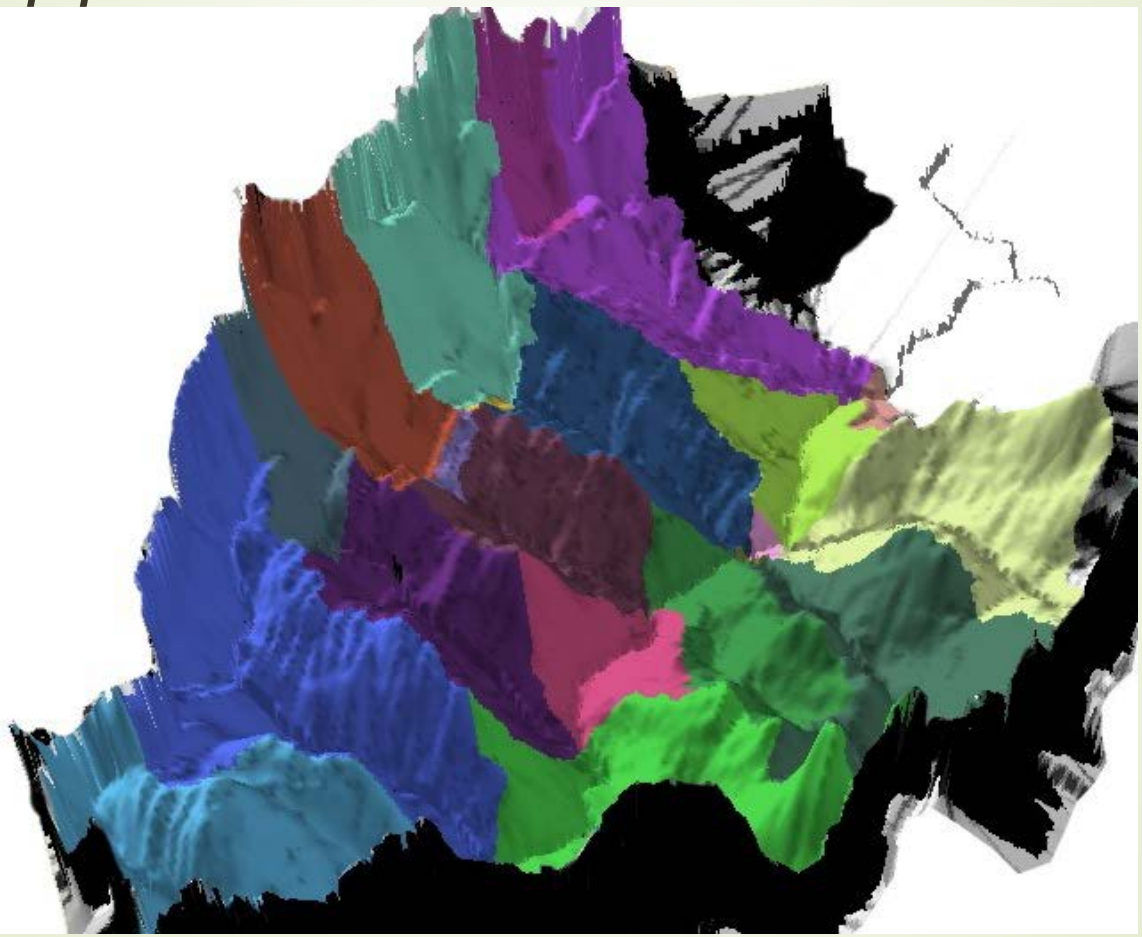
NHDPlus Concepts: Integration of NHD, WBD, and NED

WBD Boundaries "walled" Into Elevation

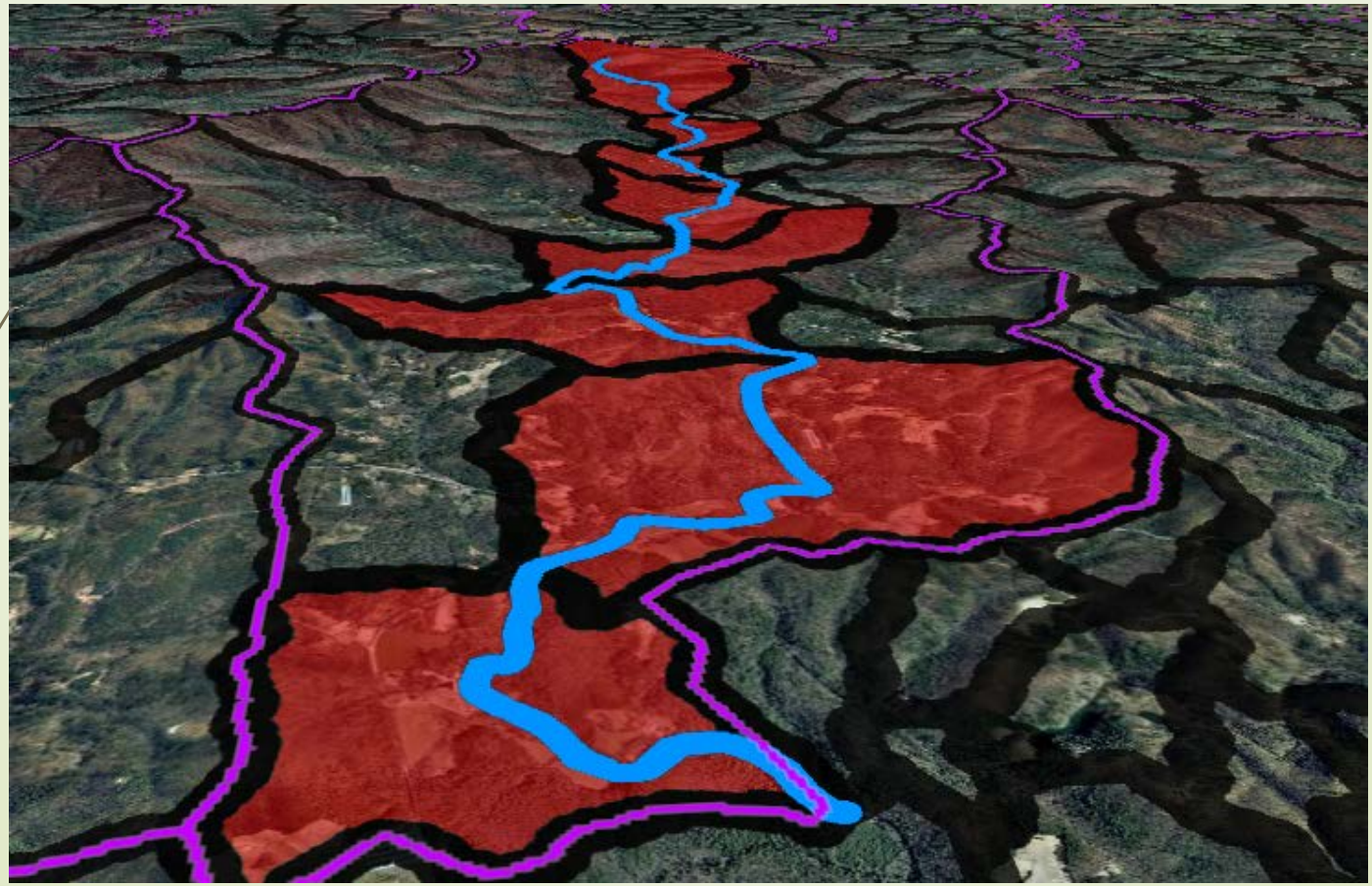


NHD Streams and Waterbodies "burned" Into Elevation

NHDPlus Concepts: *Link the Landscape to the Mapped Stream Network*



Catchment: Land Surface that Drains to Each Stream Segment

Catchment-based Indexing Approach

EPA is implementing a new approach (using the NHD*Plus* catchments) to measure progress under the 303(d) Program Vision, and in the future will use this new approach for tracking water quality restoration, maintenance, and protection