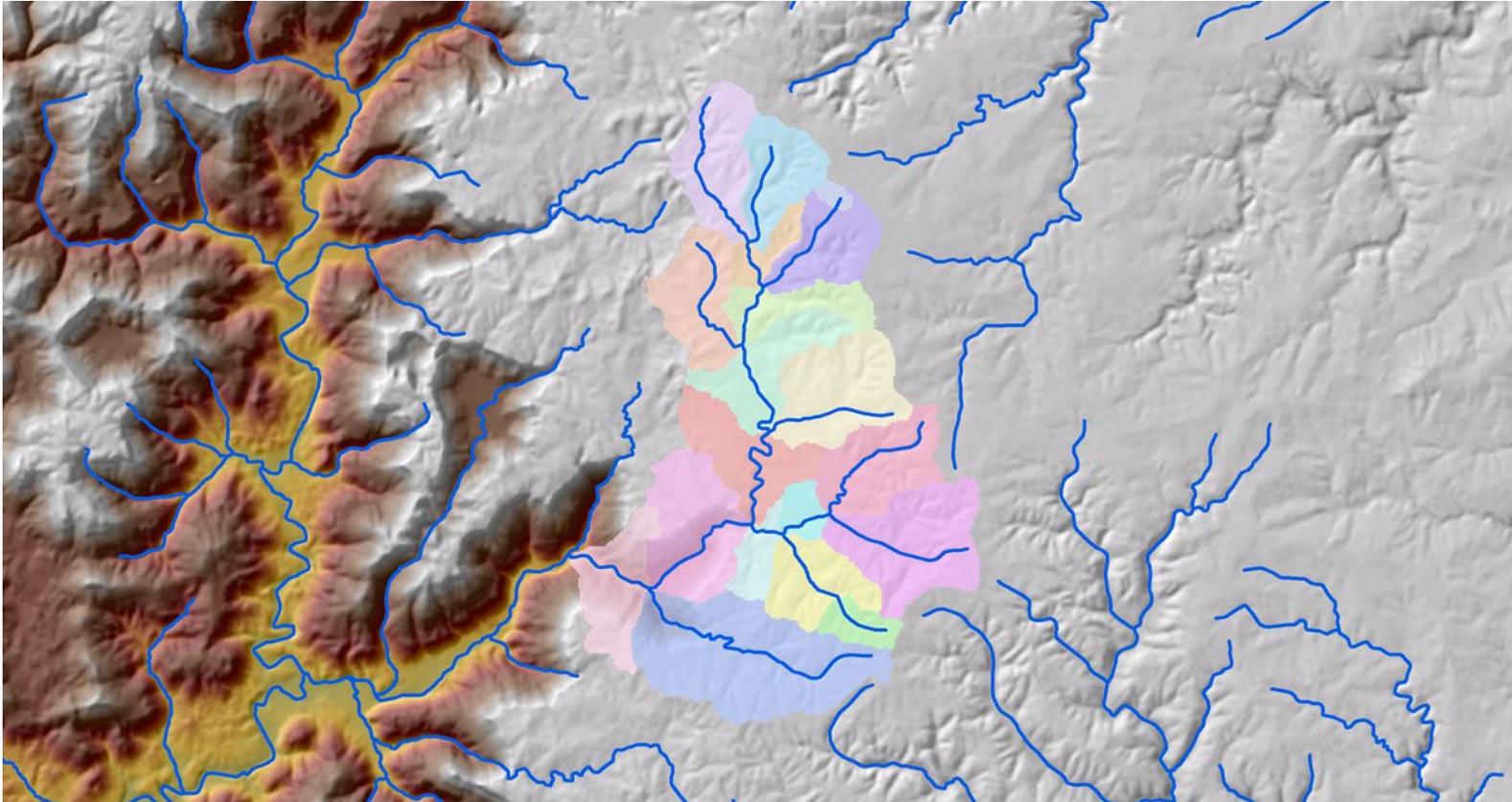




# Supporting an Improved Modeling Framework

Dwane Young, US EPA  
Office of Water

# NHDPlus



Hydrography (NHD)

+

Watersheds (WBD)

+

Elevation (3DEP)

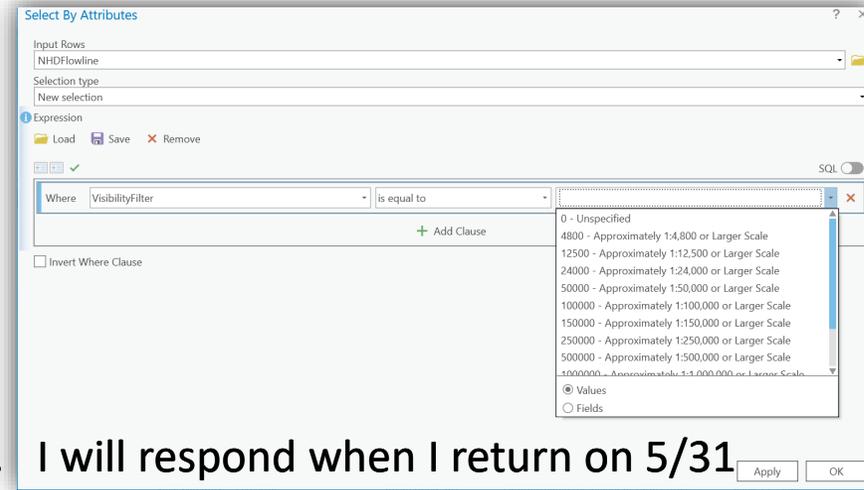
...*PLUS* numerous pre-calculated **Value Added Attributes (VAAs)** used to analyze upstream and downstream effects and to characterize individual catchments.

# NHDPlusVFGen: Visibility Filter and Generalization

1. **Visibility Filter:** an NHD attribute that can be used to filter for spatial resolution

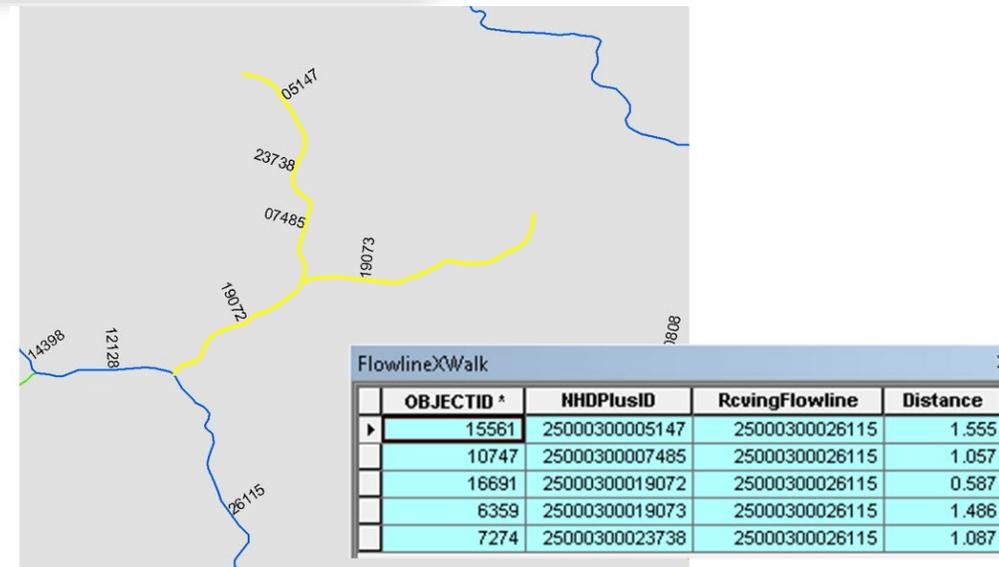


2. **Generalization:** a tool to recreate a navigable NHDPlus network including regenerated Value Added Attributes (VAAs) in the office.



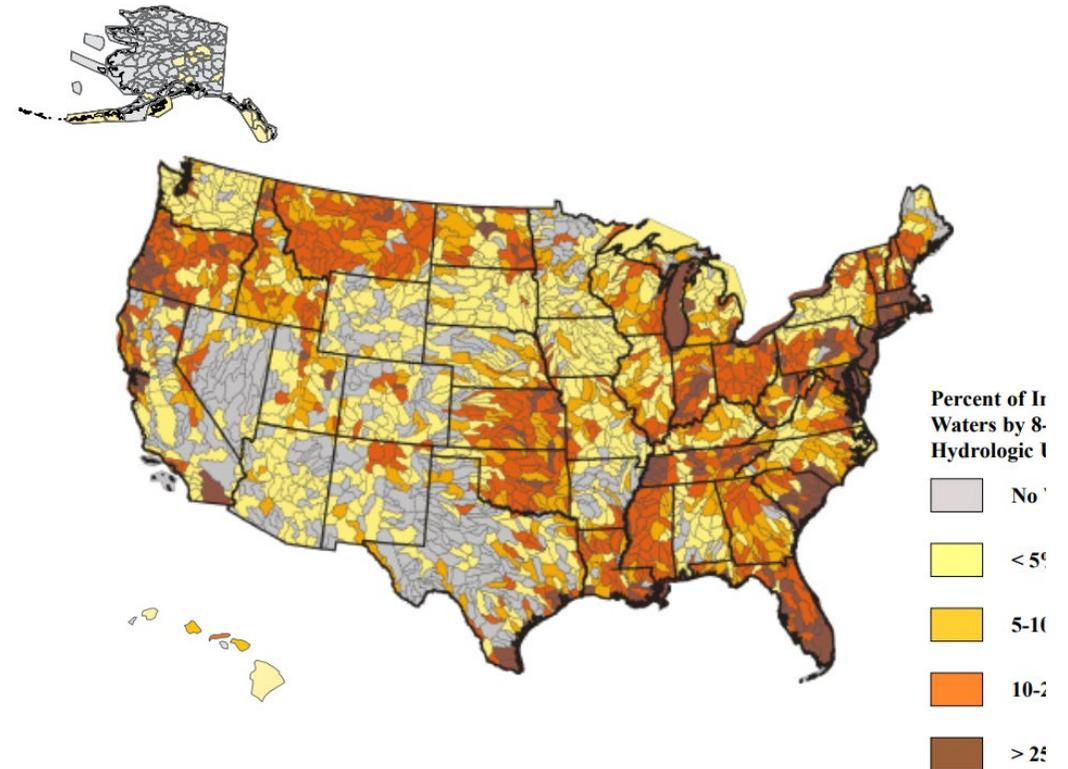
## NHDPlusVFGen

- Visibility Filter @ 1:100,000 scale, generalized
- Common hydrography solution for Medium Resolution users
- An additional crosswalk table provides a direct link to NHDPlusHR



# Value of Common Hydrofabric Since 2000

- EPA embraced the value of having hydrologically connected data back in 2000, by referencing impaired waters to the Reach File 3 (RF3) and saw the value in using the HUCs as 'reporting units' to summarize data
- Re-indexed all of these data to NHD when it became available and added: Assessed Waters, Water Quality Standards, Permitted Facilities, Fish Consumption Advisories, and others
- Migrated to NHDPlus when it became available
- **Making maps for visualization was the initial use case**



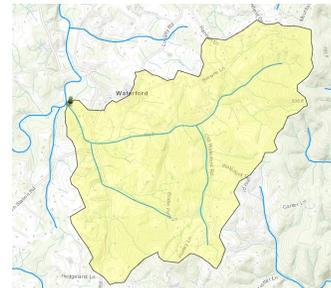
# Creating “Value Added Attributes”

Spatial data layers can be incorporated into the hydrography network using special tools.

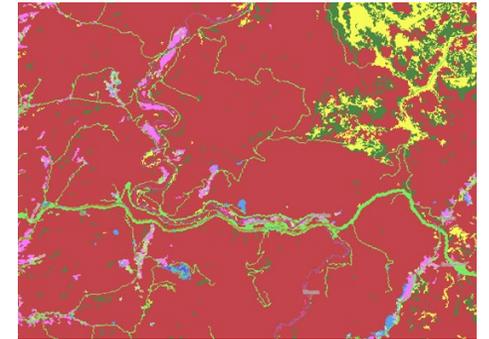
1. Summarize the input layer for each individual catchment



2. Summarize the total upstream contribution



Land Cover



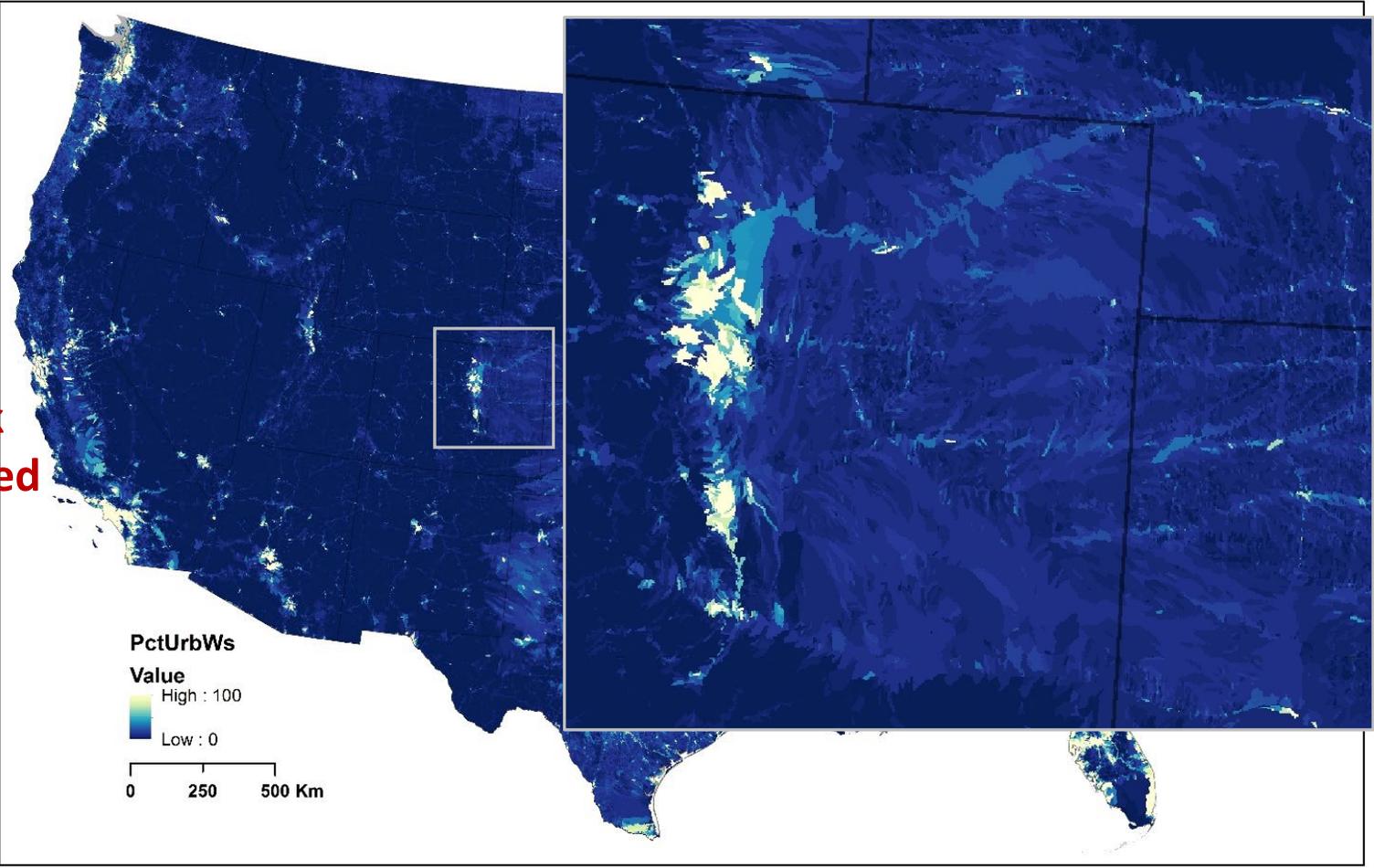
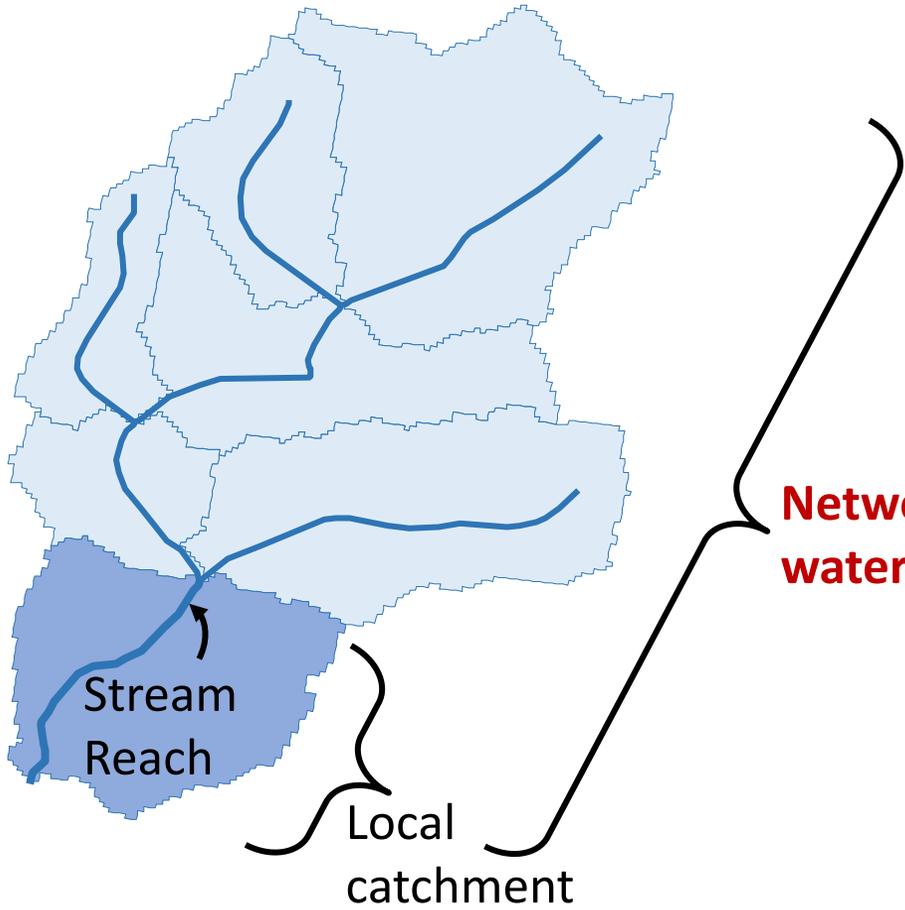
Catchments



## Value Added Attribute Table

Watershed ID	Catchment Residential %	Total Upstream Residential %	Catchment Forest %	Total Upstream Forest %
123	0.28	0.15	0.15	0.03
124	0.45	0.1	0.34	0.56
125	0.11	0.35	0.22	0.31

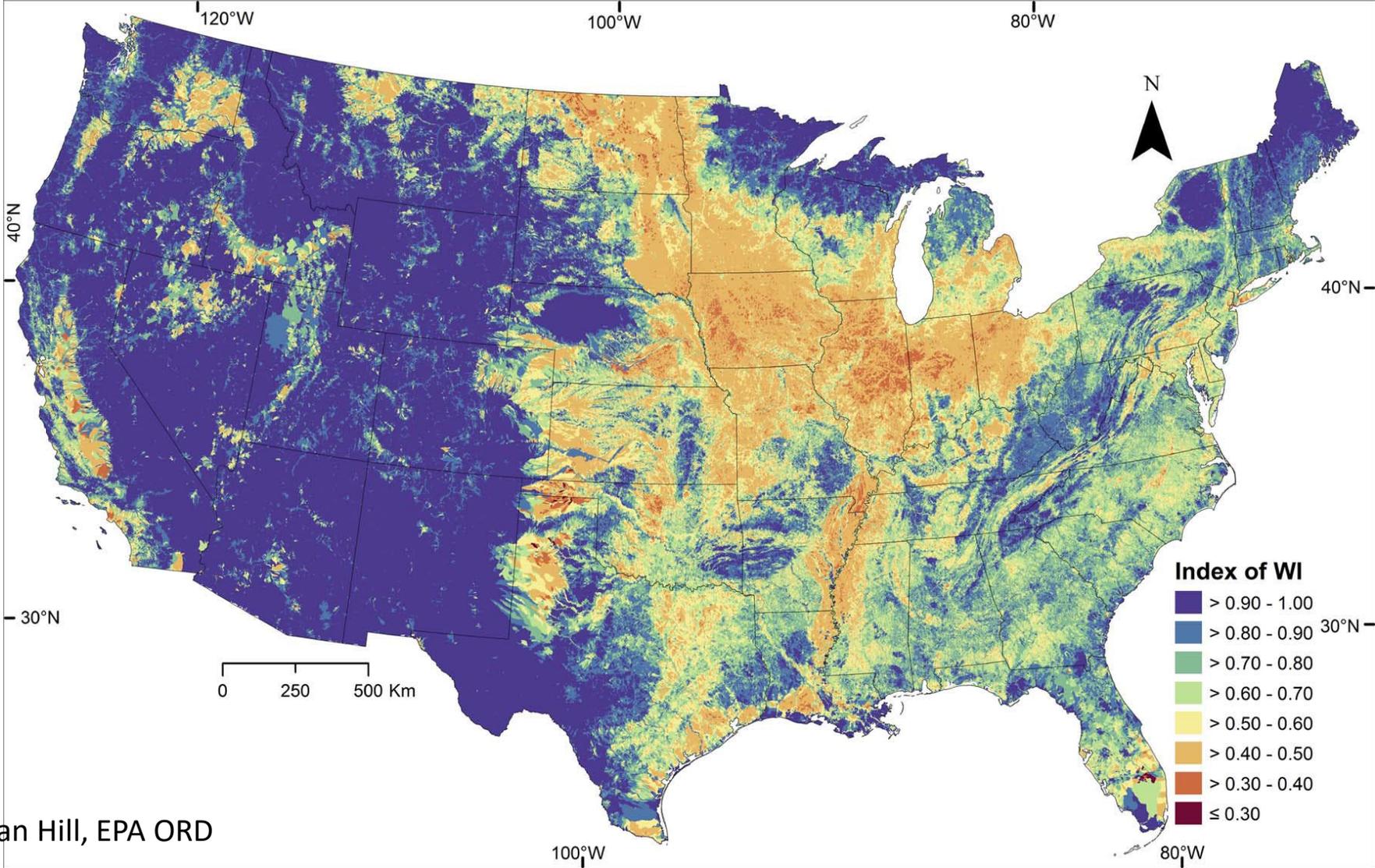
# Overview of Data – StreamCat



Slide courtesy of Ryan Hill, EPA ORD

# Overview of Data – Watershed Integrity

## Index of Watershed Integrity (IWI)



Slide courtesy of Ryan Hill, EPA ORD

## The Idea

- Could we/Should we attribute our data to the NHDPlus Catchments in a way similar to StreamCat that would support modeling?
- What would those attributes and data be?



# DEMO

Summarize Water  
Quality Monitoring  
Data



# Other Considerations

- This is purely a 'possibility'
- This could be the 'next step' in data interoperability
- What are the most critical data sets to summarize?
- Would states/tribes be interested in exploring this further?

