

# Engaging Monitoring Programs

In 303(d) Vision Prioritization Discussions

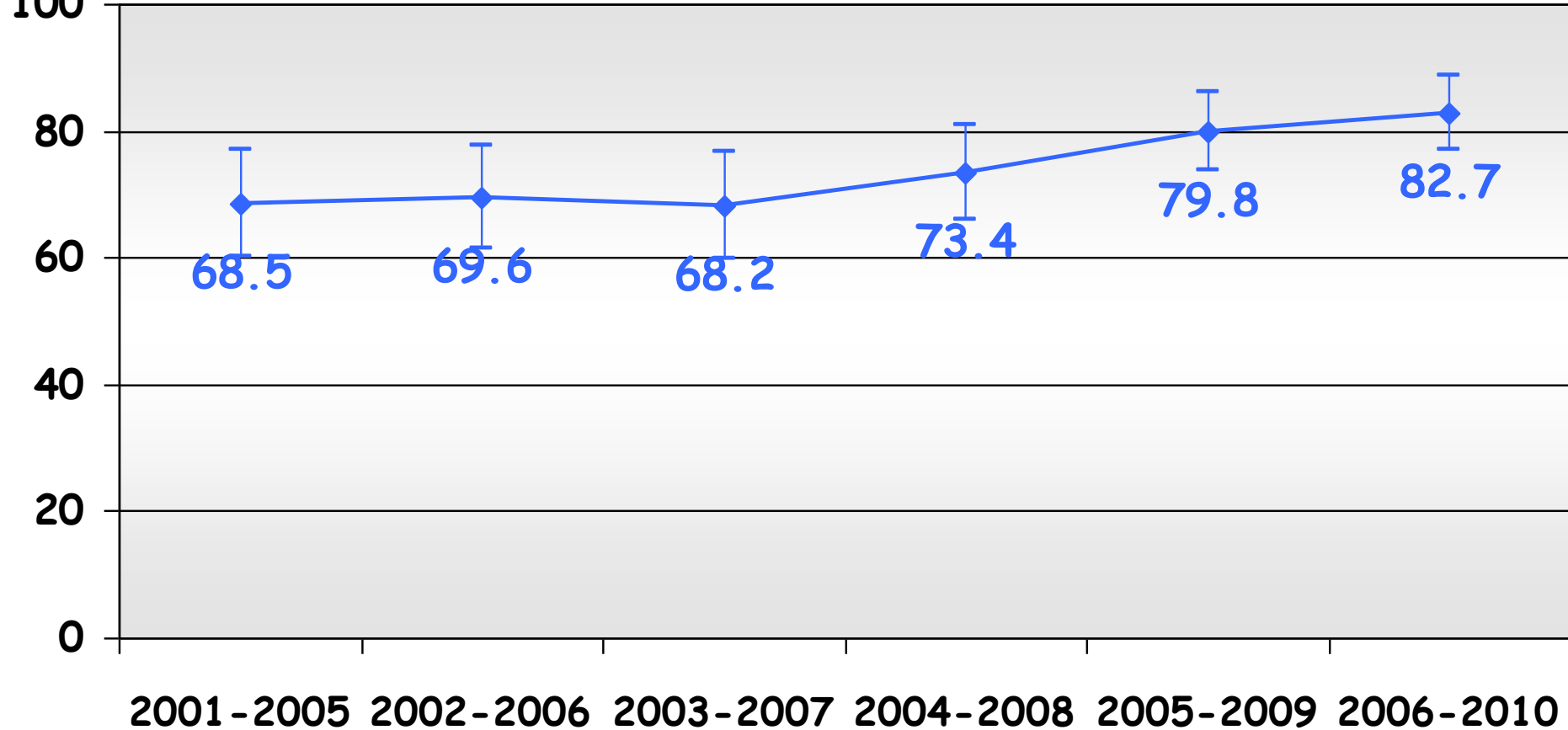
# State Monitoring Strategies

- Objectives
- Design
- Indicators
- Field and lab SOPs, QA
- Data Management
- Analysis and interpretation
- Reporting
- Gaps
- Feedback

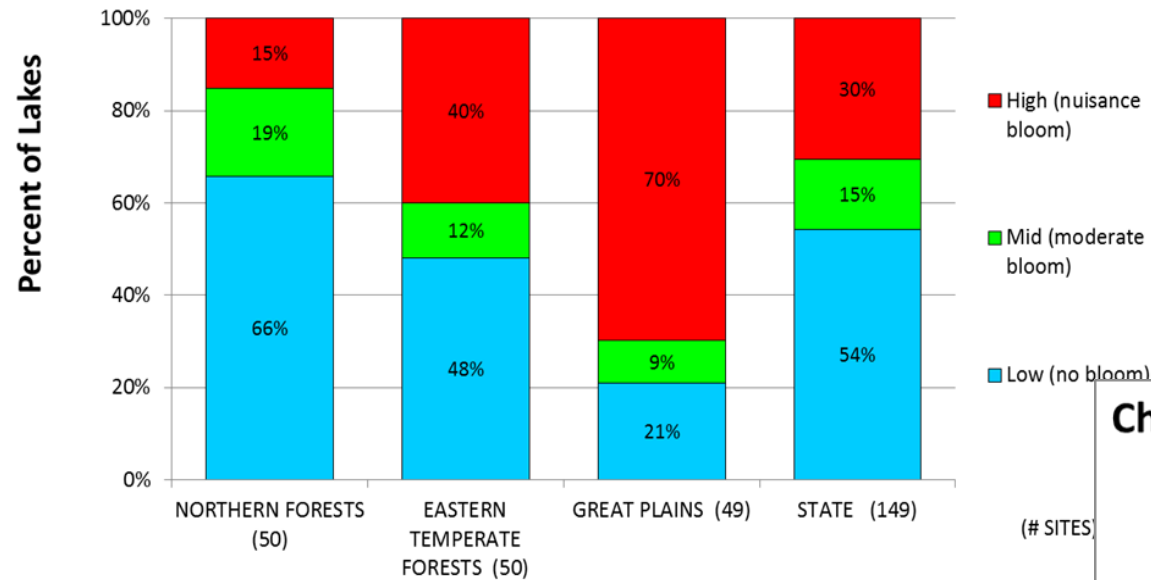
# Monitoring Design Components

- Fixed site network – trends at individual stations over time, frequently at pour point of a HUC or tributary
- Targeted site selection – examine condition at areas of concern/interest, frequently upstream/downstream of discharge or BMP
- Statistical survey design – unbiased estimates of resource condition
  - Extent of waters across the population that support aquatic life, recreation
  - Distribution of key stressors
- Rotating basin – planning area and implementation schedule for all or some design components
- Others...

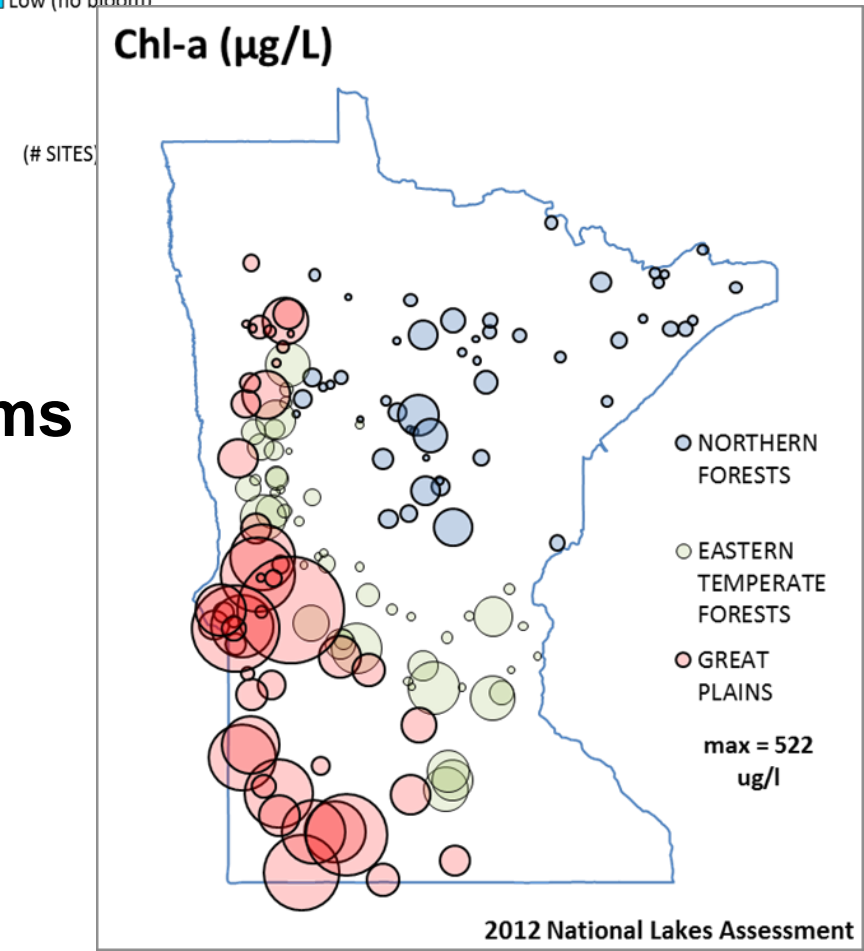
# Using State-scale Survey to Track Trends SC Streams – Fully Supporting Aquatic Life Use



◆ Aquatic Life Use — Lower 95% — Upper 95%



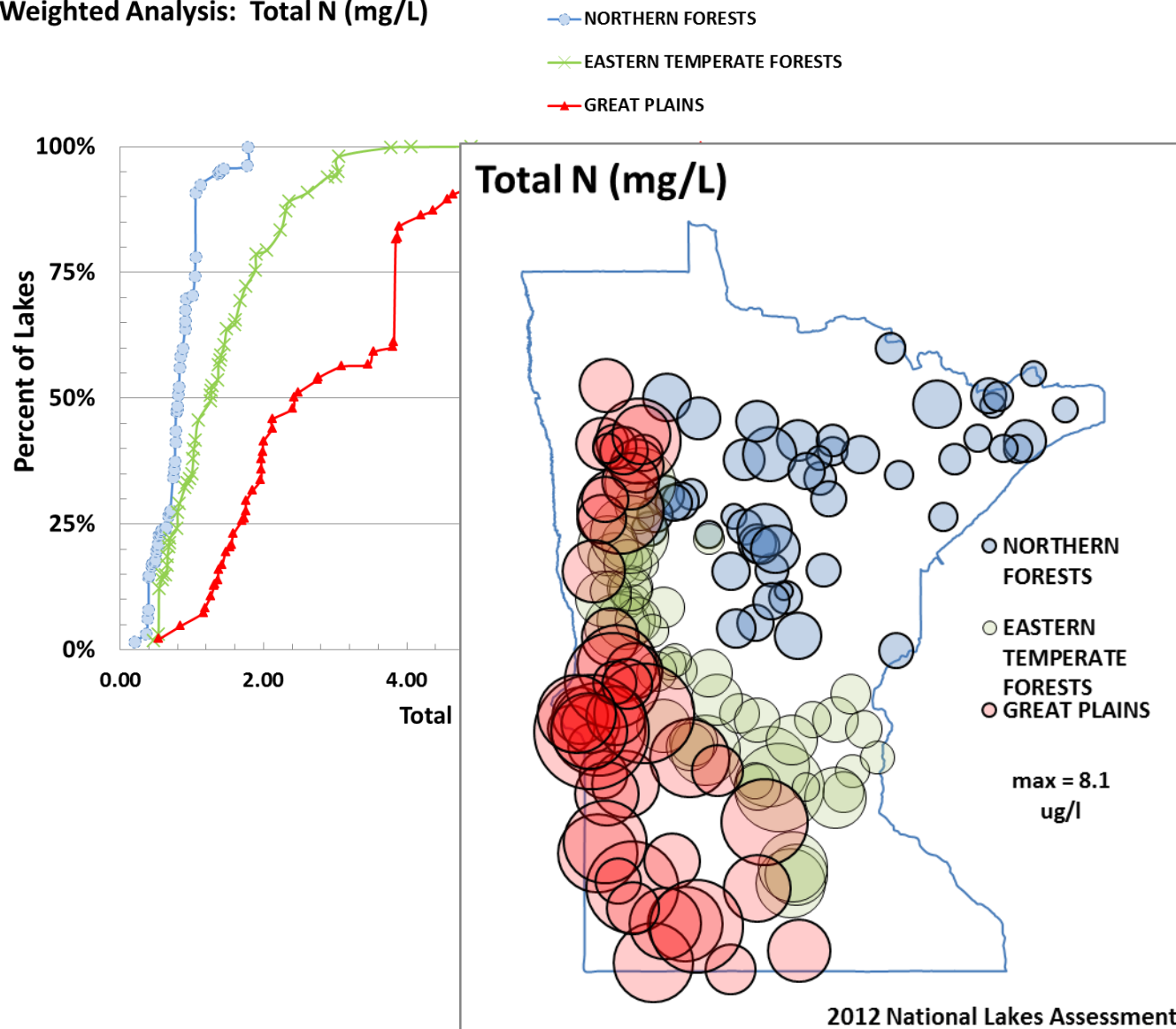
**Extent & regional patterns in frequency of nuisance algal blooms (Chl-a >20 ppb)**  
*[Data viewer based on weighted samples]*



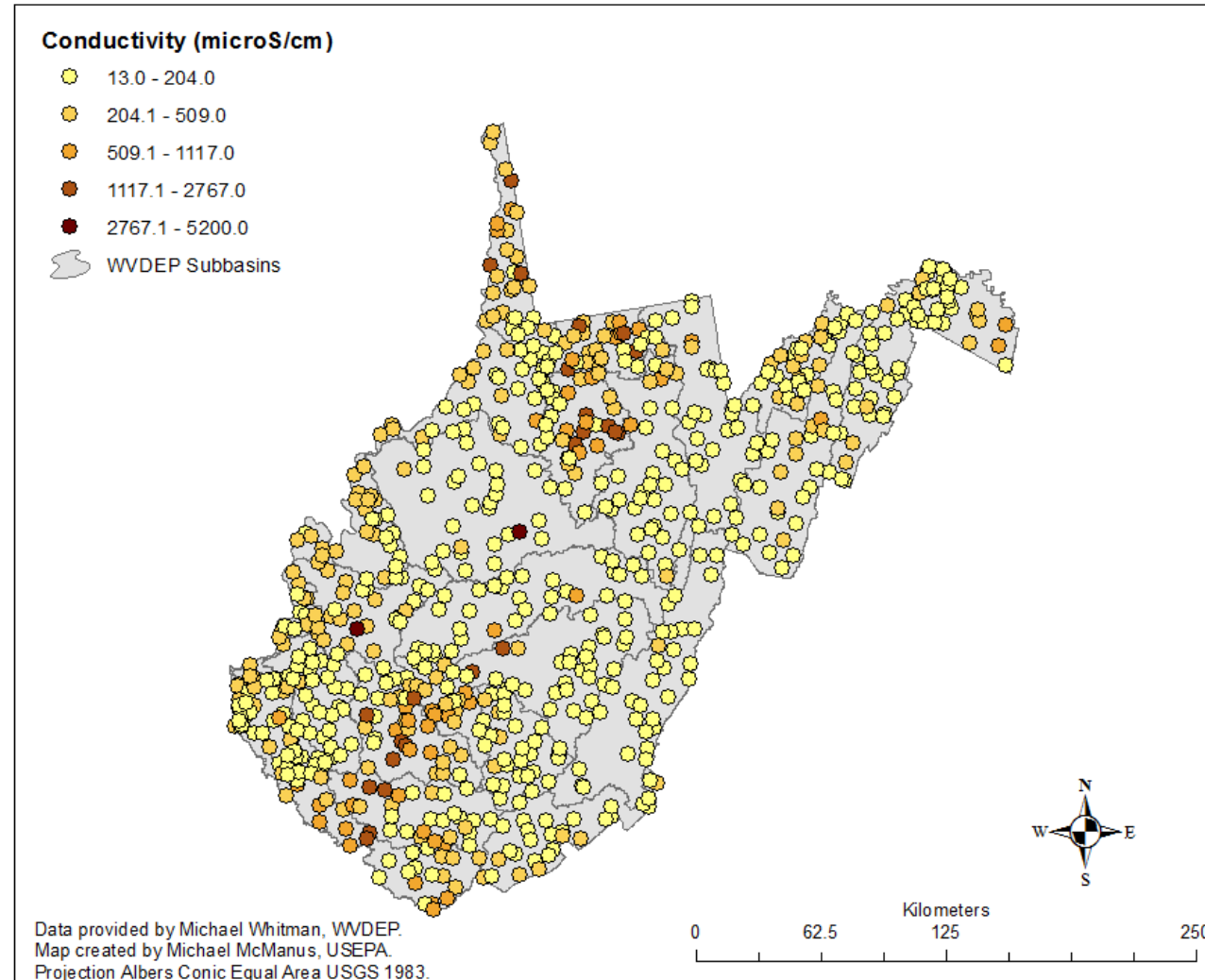
# What are the regional patterns in TN?

## (Data viewer CDF & bubble plots)

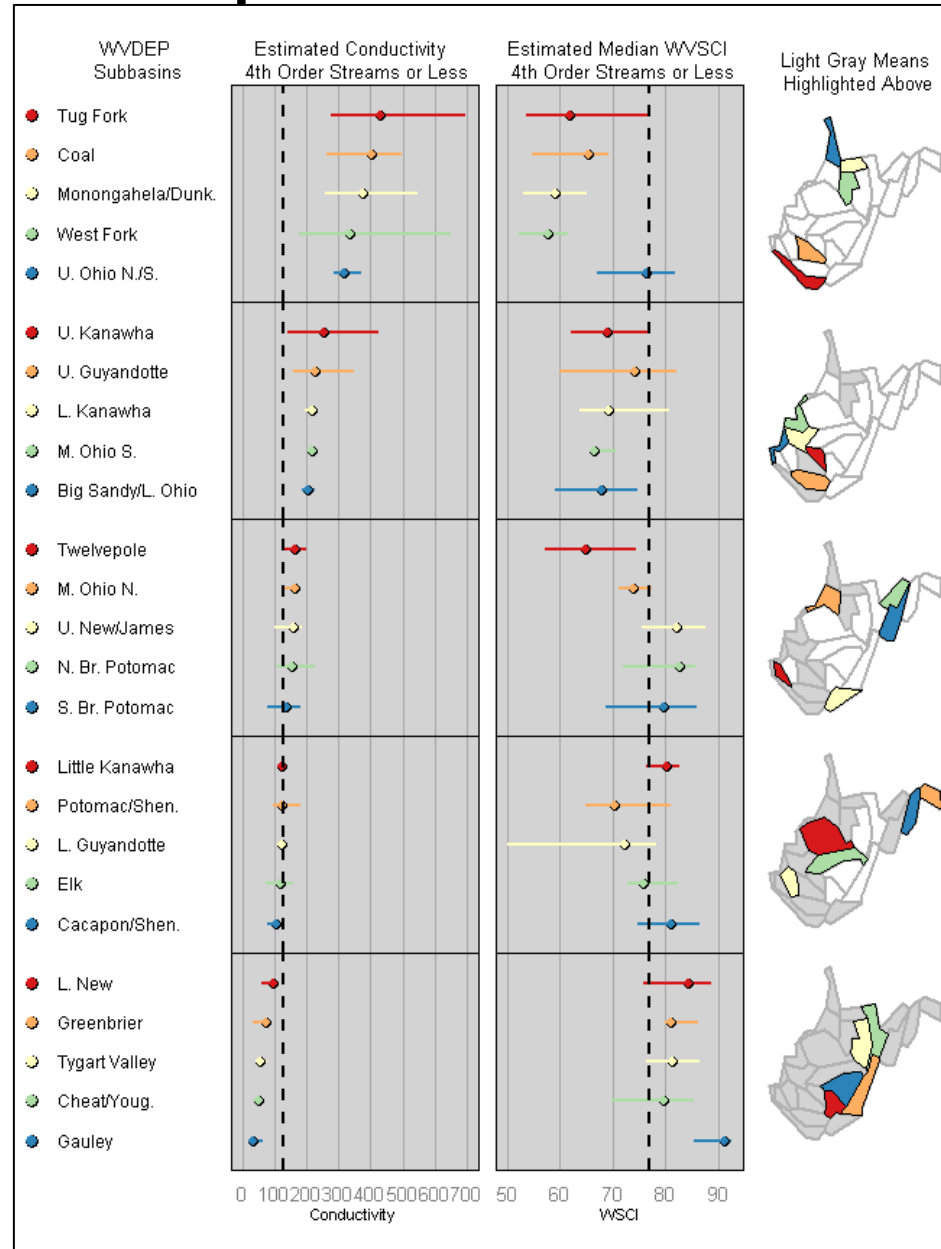
Weighted Analysis: Total N (mg/L)



# WVDEP Stream Survey

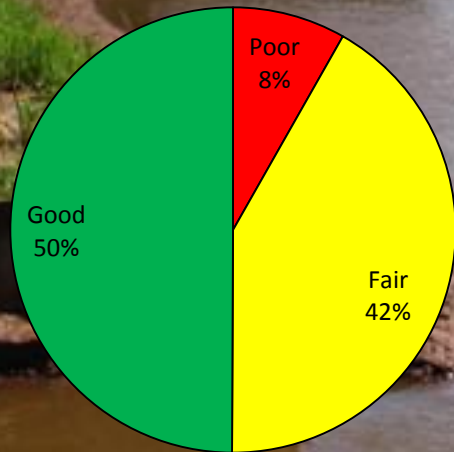
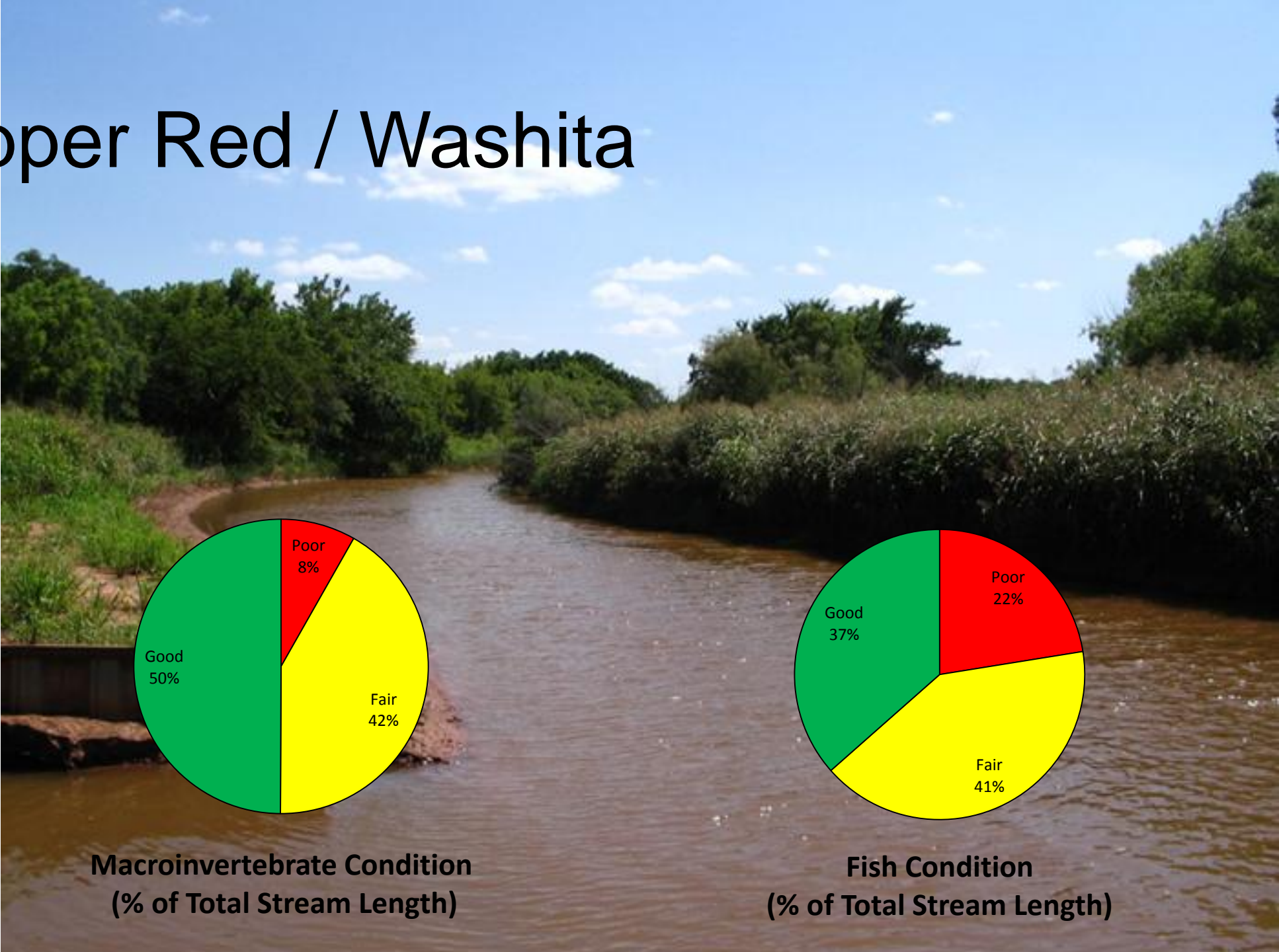


# Example of Reference Line

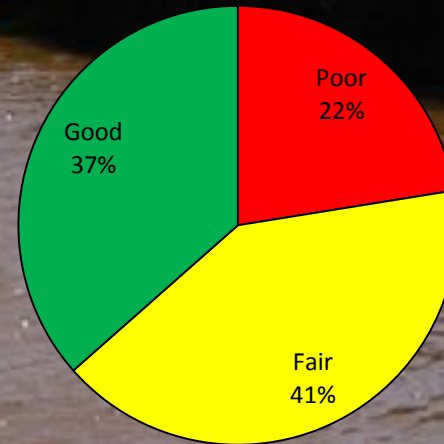




# Upper Red / Washita



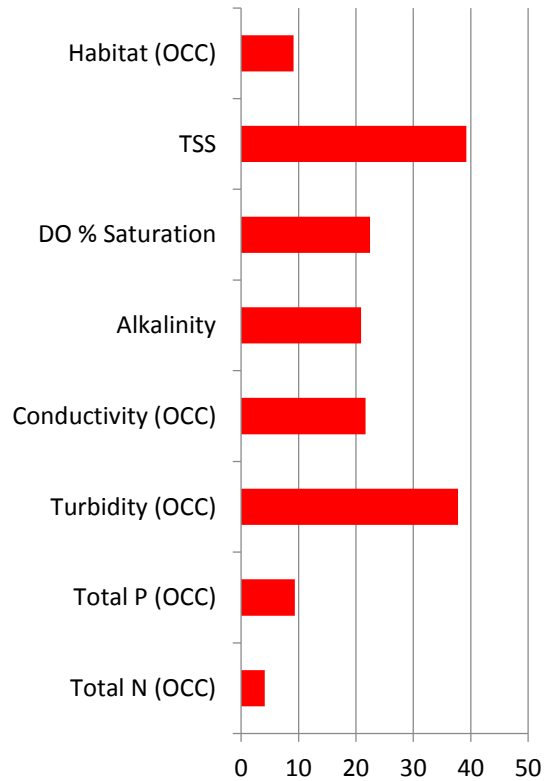
**Macroinvertebrate Condition**  
(% of Total Stream Length)



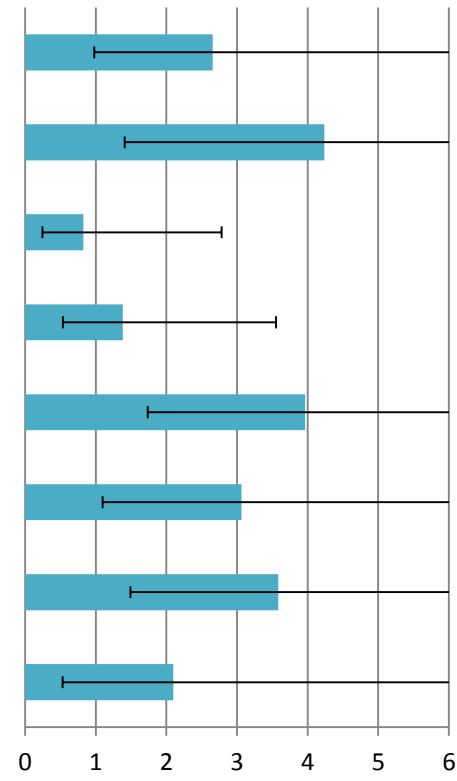
**Fish Condition**  
(% of Total Stream Length)

# Upper Red/Washita

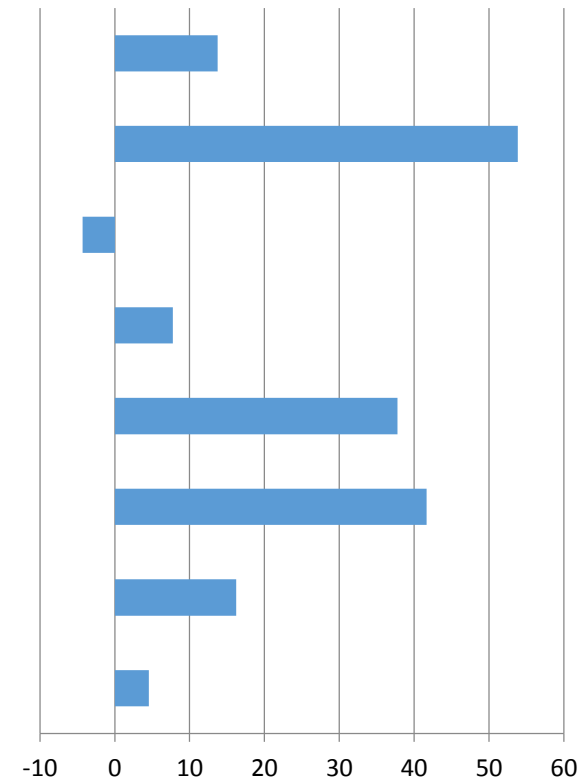
## Extent Estimates



## Relative Risk



## Attributable Risk



Fish IBI

(Extent stream length in Poor condition = 22.5%)