

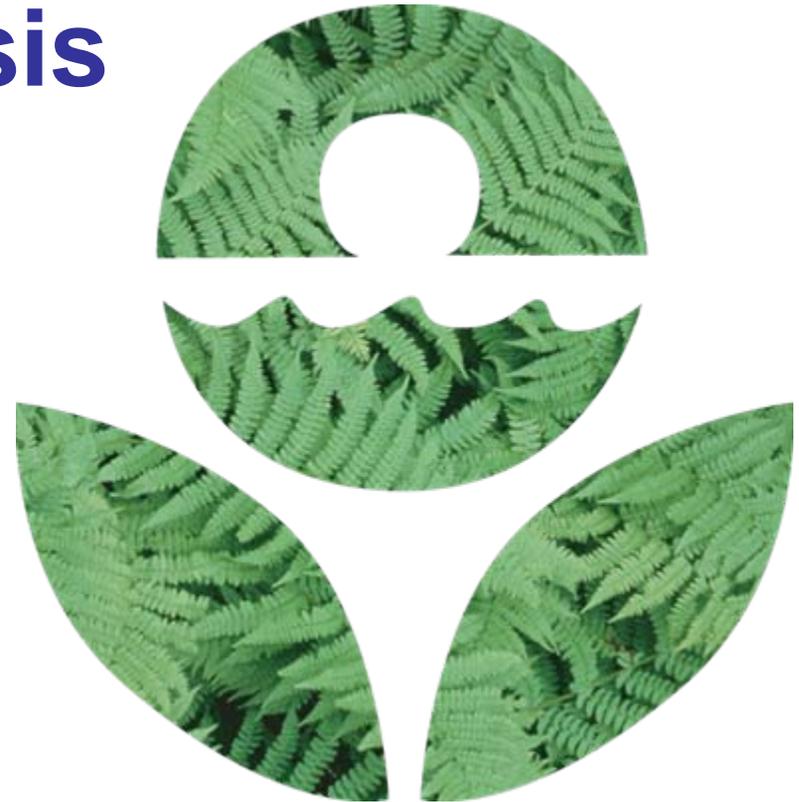


Data Assessment/Analysis Exercise

PRESENTED BY:

*Gretchen Watkins, Lac Du Flambeau Band
of Lake Superior Chippewa Indians*

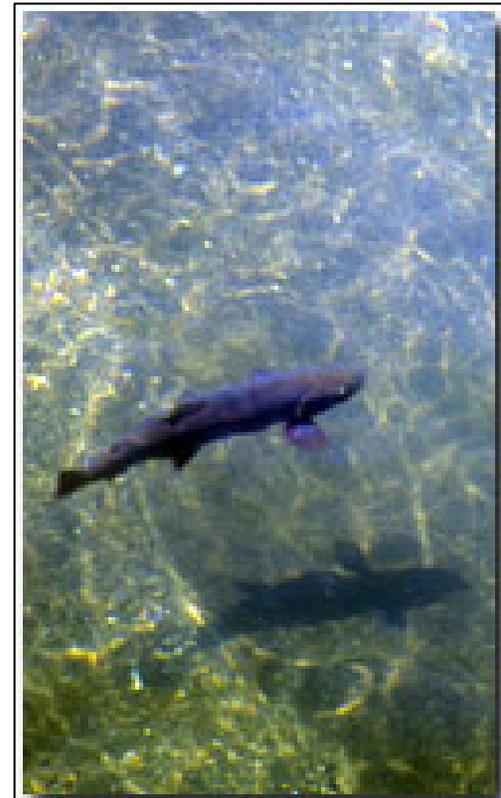
*Jennifer Ousley, EPA R7 and
Carol Russell, EPA R8*





Why assess data?

- To answer questions
- To determine if the water is safe to drink or if the fish are safe to eat





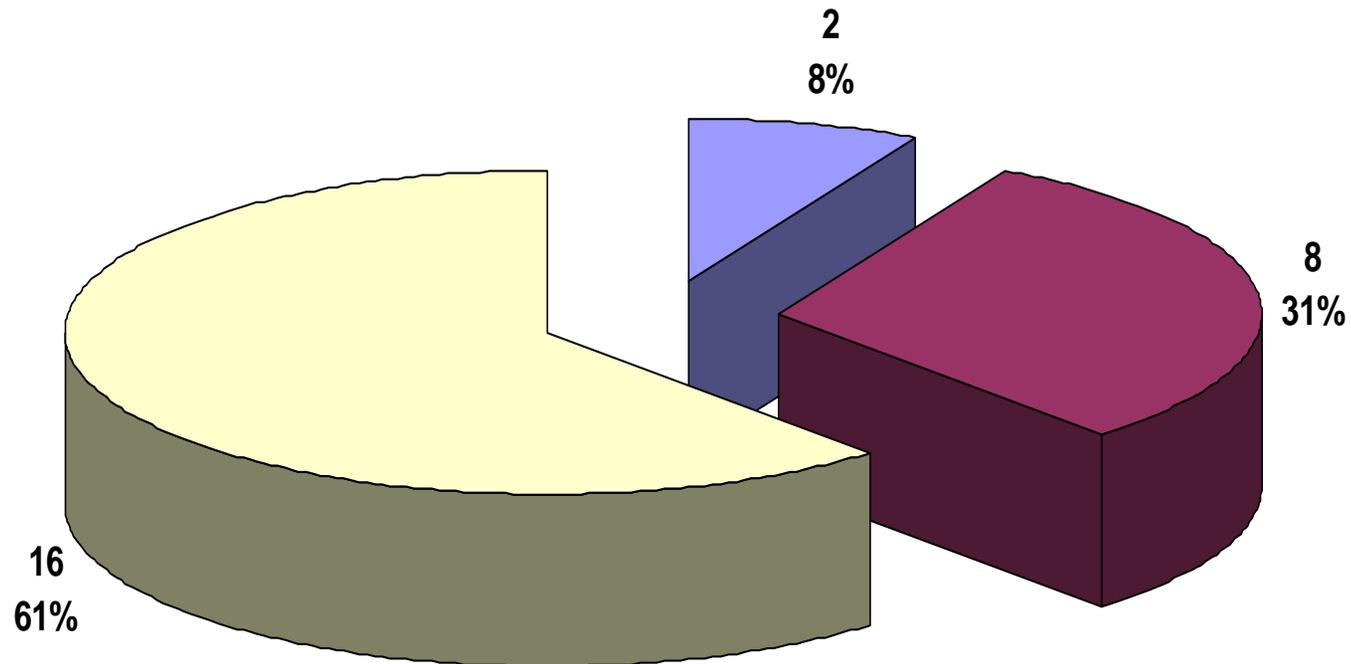
What are we trying to protect?

- Designated uses / Tribal elders' knowledge
 - Drinking water
 - Swimming/full body contact
 - Fish and other aquatic species
 - Cultural and spiritual
- Picking your target, what you are comparing data to?
 - National guidelines
 - Similar ecoregions and uses – other State & Tribal
 - Develop site specific standards





Region 8 Tribal Water Quality Standards



■ EPA Approved Standards ■ Tribe Adopted Standards ■ No Standards



What do you monitor to protect these uses?

1. Dissolved Oxygen
2. pH
3. Temperature
4. Turbidity
5. Total Phosphorus
6. Total Nitrogen
7. Macroinvertebrates
8. E. Coli or enterococci
9. Basic habitat information

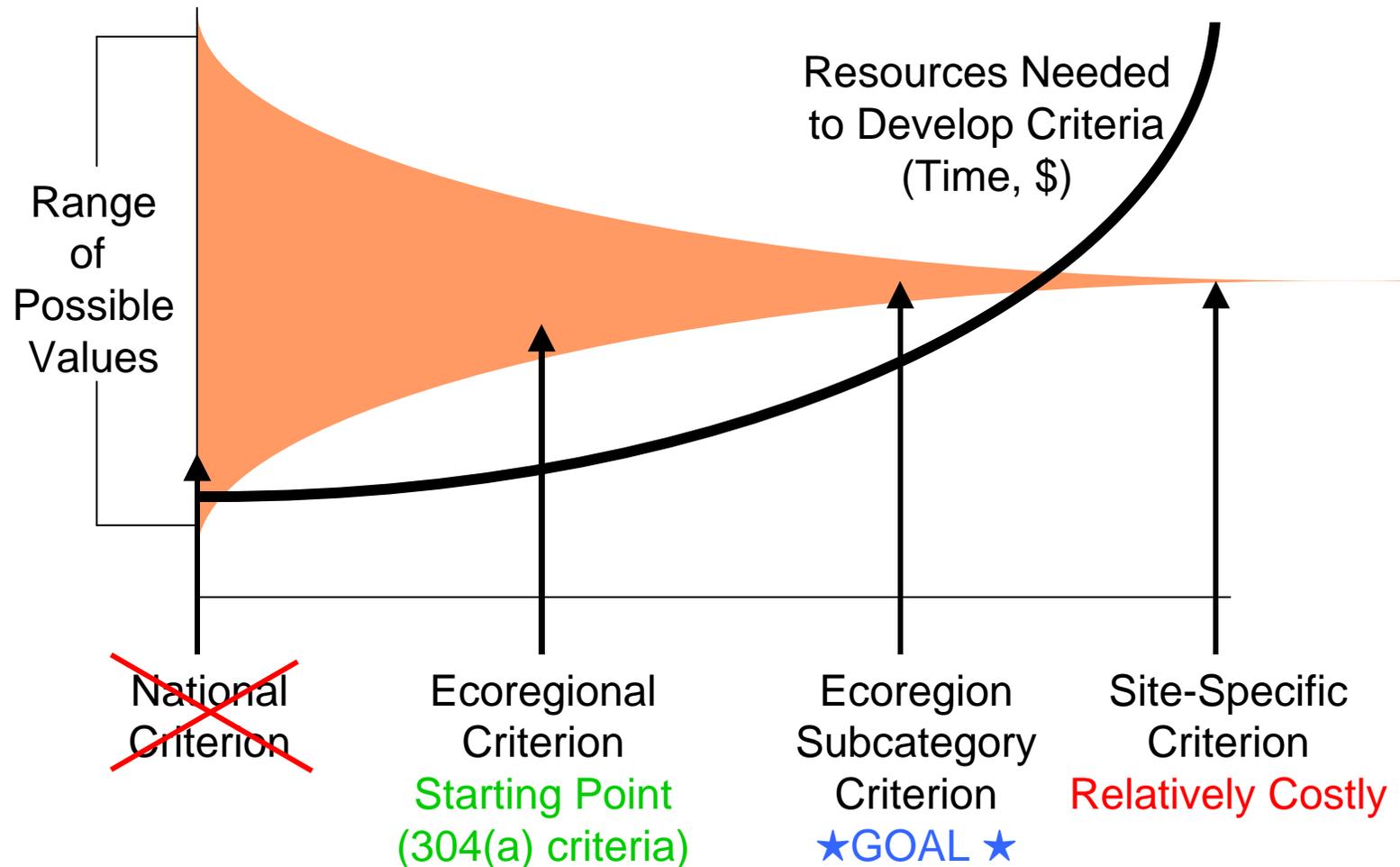




| Aquatic Life | Recreation |
|---------------------|-------------------|
| Dissolved Oxygen | E. coli |
| pH | |
| Temperature | |
| Macroinvertebrates | |



Geographic Scales of Nutrient Criteria Development

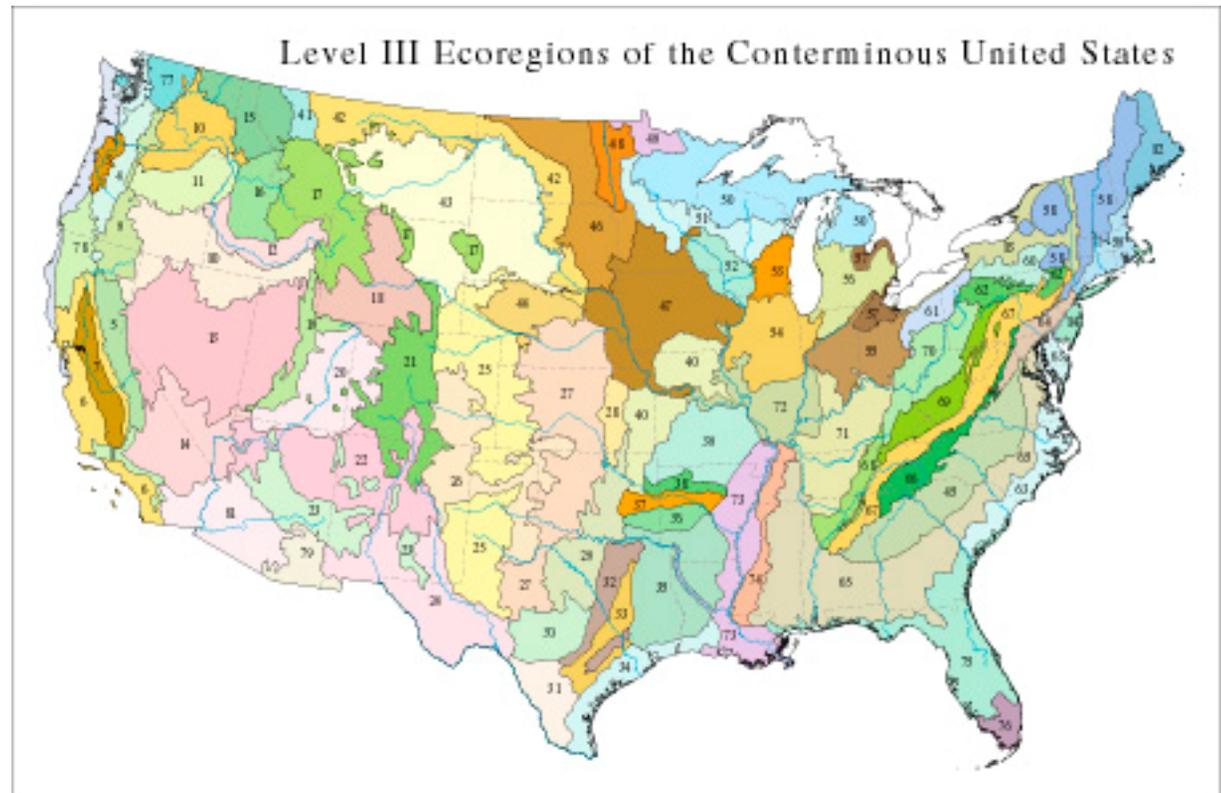




National Nutrient Strategy

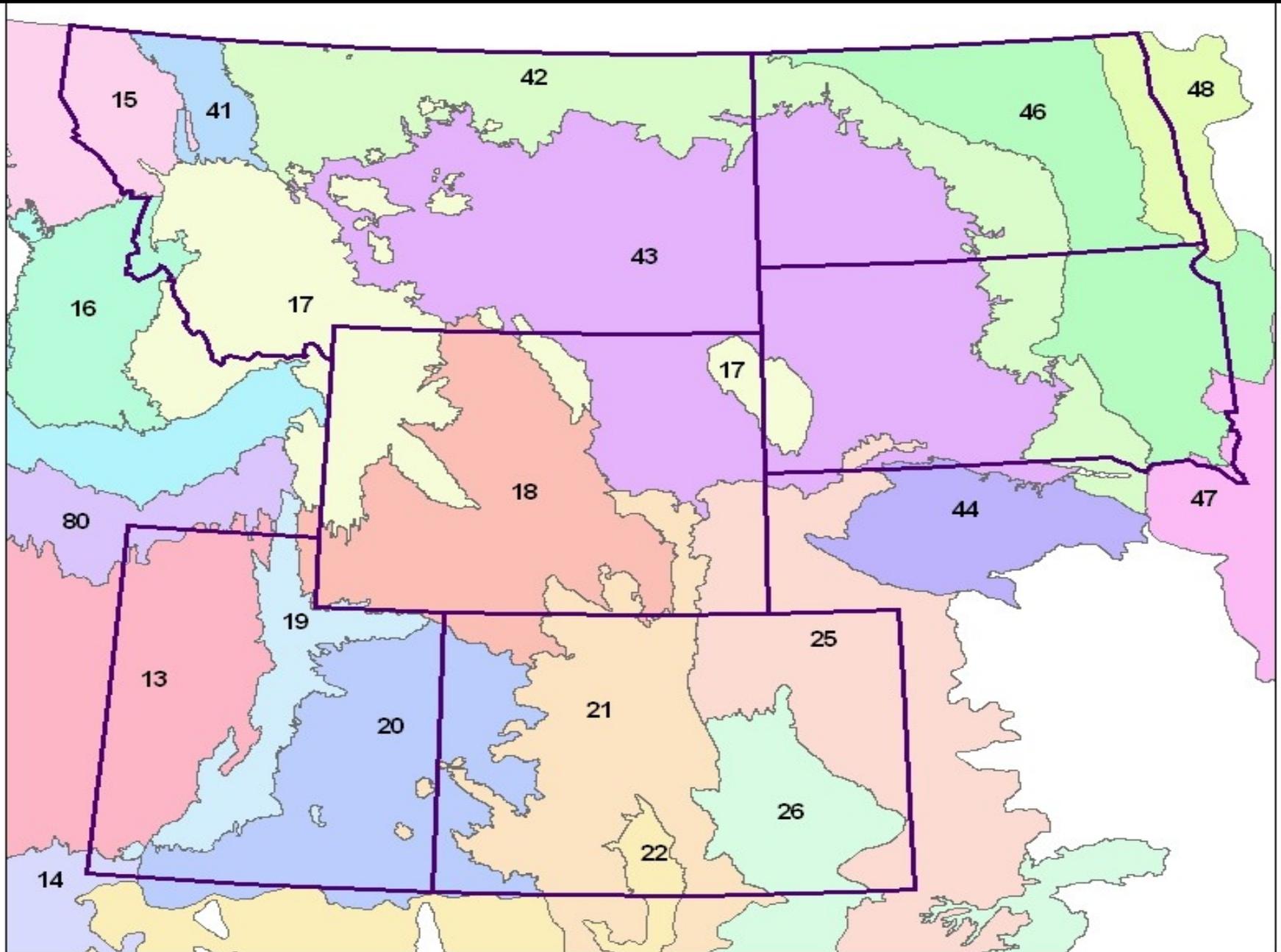
Initial Framework

- 14 “Nutrient Regions”
(US EPA 1998)
- Aggregation of Level III Ecoregions
(Omernik, 1987)





TRIBAL DATA ASSESSMENT AND ANALYSIS





EPA 304(a) Criteria*

www.epa.gov/waterscience/criteria/nutrient/ecoregions/rivers/index

Aggregate Ecoregions Lakes and Reservoirs

| Parameter | Agg Ecor II | Agg Ecor III | Agg Ecor IV | Agg Ecor V | Agg Ecor VI | Agg Ecor VII | Agg Ecor VIII | Agg Ecor IX | Agg Ecor X | Agg Ecor XI | Agg Ecor XII | Agg Ecor XIII | Agg Ecor XIV |
|------------|-------------|--------------|-------------|------------|-------------|--------------|---------------|-------------|------------|-------------|--------------|---------------|--------------|
| TP µg/L | 8.75 | 17.00 | 20.00 | 33.00 | 37.5 | 14.75 | 8.00 | 20.00 | 8.00 | 10.00 | 17.50 | 8.00 | |
| TN mg/L | 0.10 | 0.40 | 0.44 | 0.56 | 0.78 | 0.66 | 0.24 | 0.36 | 0.46 | 0.52 | 1.27 | 0.32 | |
| Chl a µg/L | 1.90 | 3.40 | 2.00 S | 2.30 S | 8.59 S | 2.63 | 2.43 | 4.93 | 2.79 S | 2.60 | 12.35 T | 2.90 | |
| Secchi (m) | 4.50 | 2.70 | 2.00 | 1.30 | 1.36 | 3.33 | 4.93 | 1.53 | 2.86 | 2.10 | 0.79 | 4.50 | |

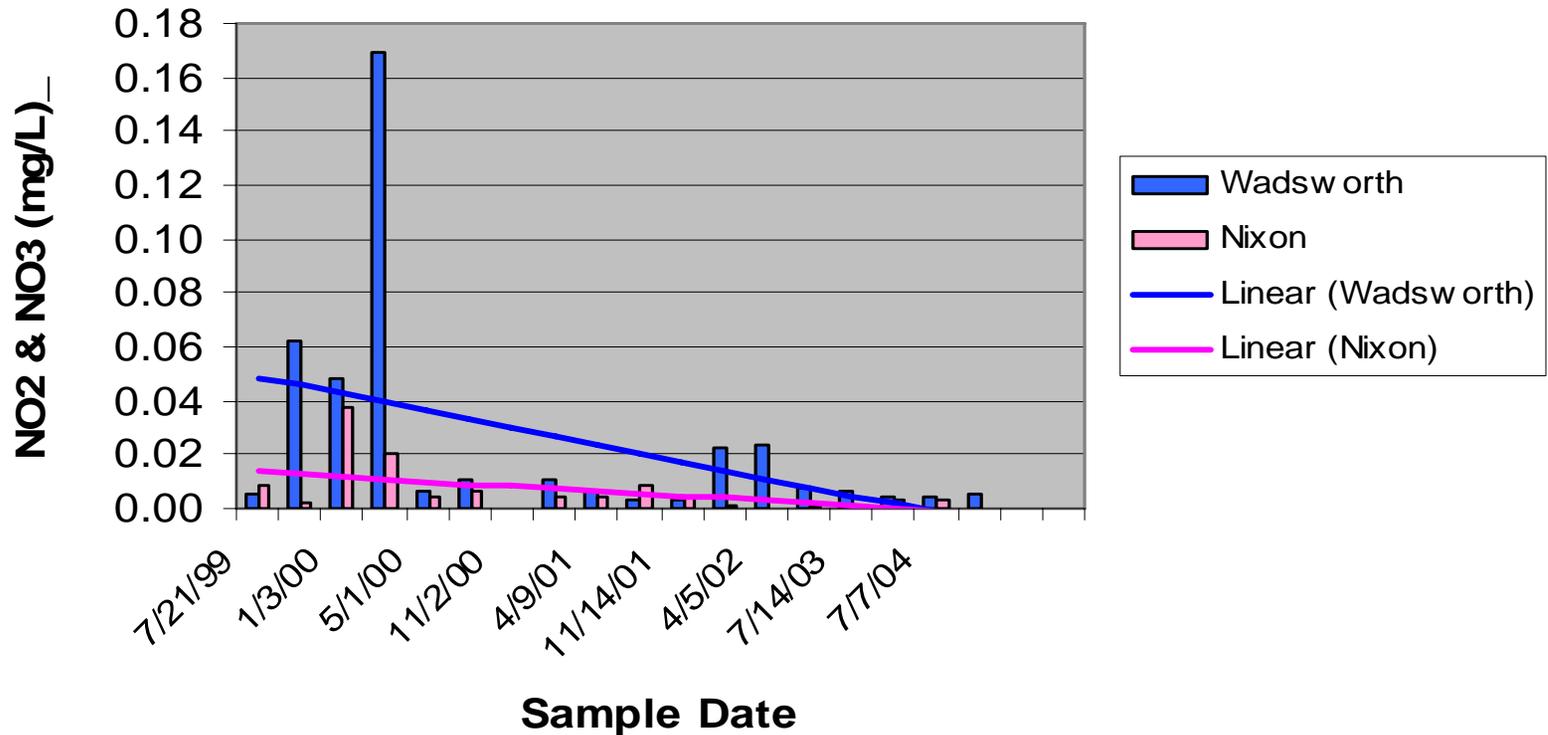
Aggregate Ecoregions for Rivers and Streams

| Parameter | Agg Ecor I | Agg Ecor II | Agg Ecor III | Agg Ecor IV | Agg Ecor V | Agg Ecor VI | Agg Ecor VII | Agg Ecor VIII | Agg Ecor IX | Agg Ecor X | Agg Ecor XI | Agg Ecor XII | Agg Ecor XIV |
|------------------|------------|-------------|--------------|-------------|------------|-------------|--------------|---------------|-------------|------------|-------------|--------------|--------------|
| TP µg/L | 47.00 | 10.00 | 21.88 | 23.00 | 67.00 | 76.25 | 33.00 | 10.00 | 36.56 | 128 * | 10.00 | 40.00 | 31.25 |
| TN mg/L | 0.31 | 0.12 | 0.38 | 0.56 | 0.88 | 2.18 | 0.54 | 0.38 | 0.69 | 0.76 | 0.31 | 0.90 | 0.71 |
| Chl a µg/L | 1.80 | 1.08 | 1.78 | 2.40 | 3.00 | 2.70 | 1.50 | 0.63 | 0.93 S | 2.10 S | 1.61 S | 0.40 S | 3.75 S |
| Turb FTU/ NTU | 4.25 | 1.30 N | 2.34 | 4.21 | 7.83 | 6.36 | 1.70 N | 1.30 | 5.70 | 17.50 | 2.30 N | 1.90 N | 3.04 |



Pyramid Lake Paiute

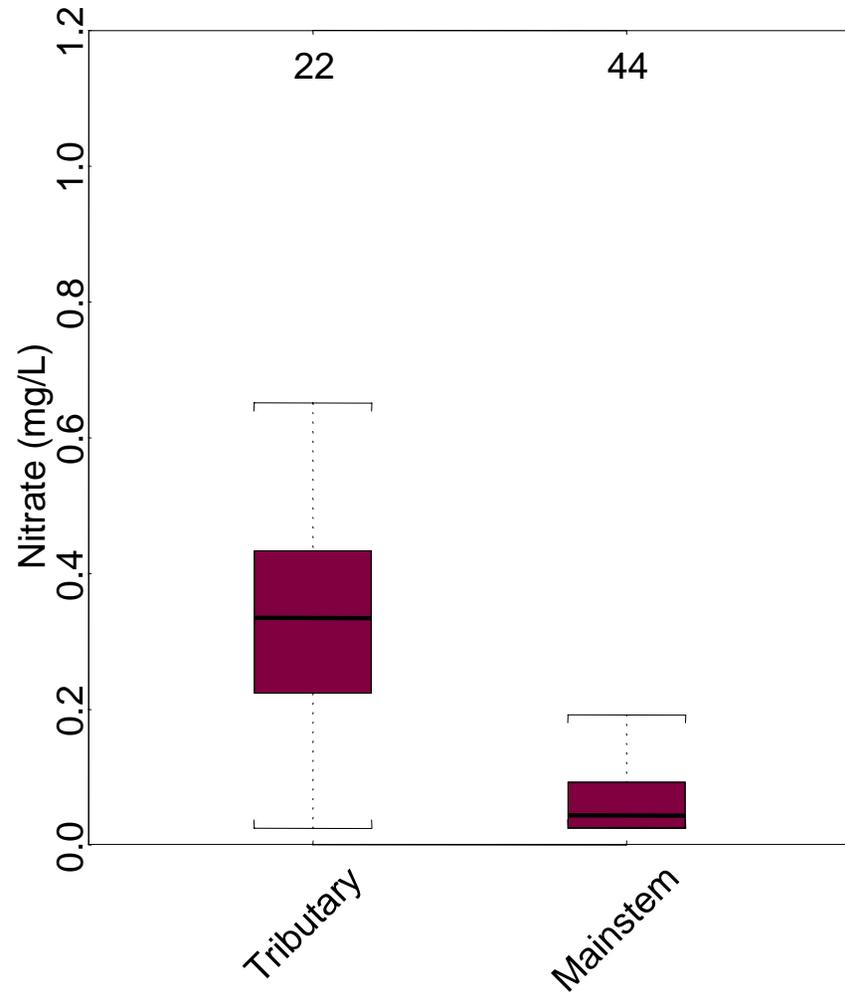
Nitrate & Nitrite: 1999 2004
Lower Truckee River
PLPT Data



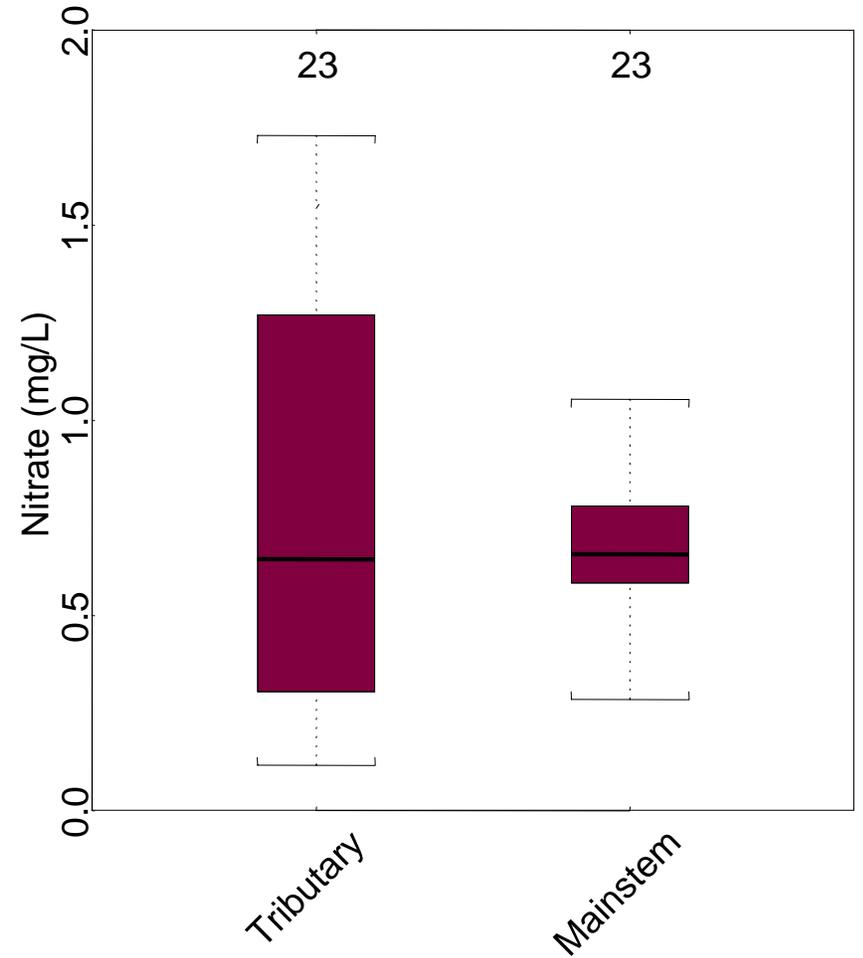


Nitrate

Los Pinos River Watershed



Vallecito Creek Watershed





Internet Resources

- Volunteer Stream Monitoring: A Methods Manual
 - www.epa.gov/owow/monitoring/volunteer/stream/
- Listening to Watersheds - A Community-Based Approach to Watershed Protection
 - www.rivernetnetwork.org/lw/

