

North Santiam Water Quality Monitoring Year 1 Summary



ERIC ANDERSEN
REGIONAL MONITORING COORDINATOR

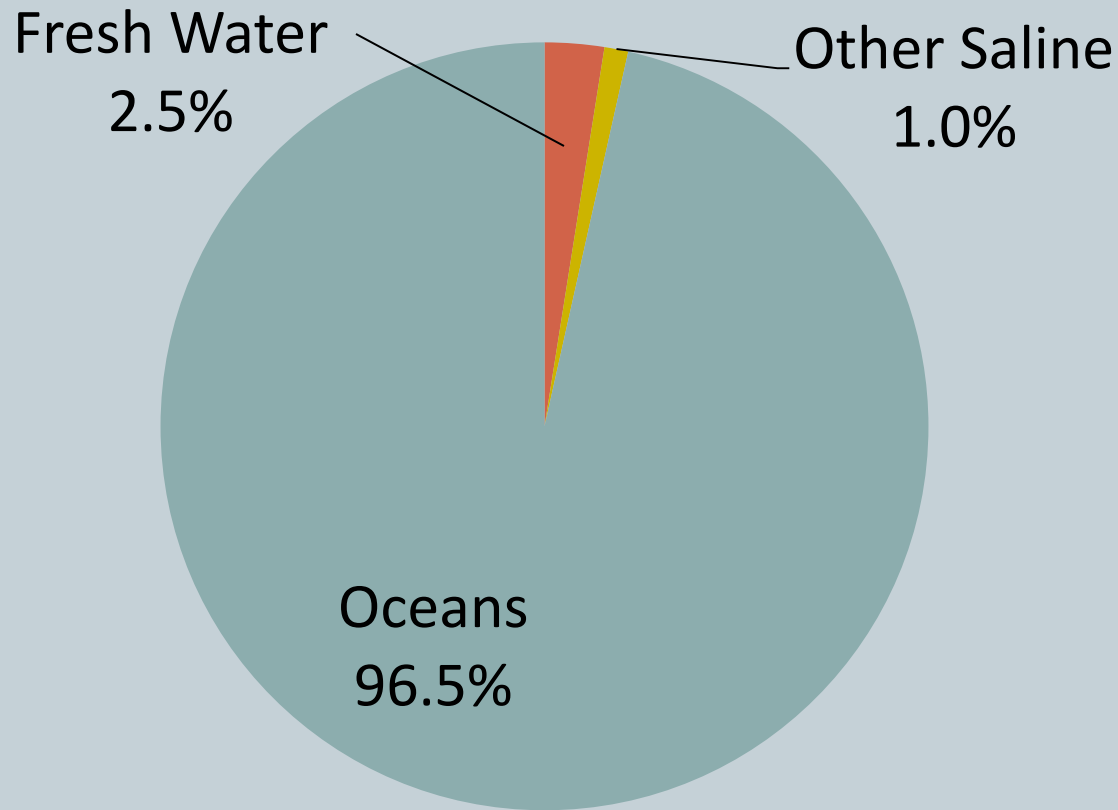


Project Background



- Started Nov 2012. Will end in Oct 2014.
- Paid for through OWEB and OR DEQ 319 grants
- Extensive match from OR DEQ for lab analysis
- Sample 1 time per month
- Measure: *Temperature, dissolved oxygen, pH, conductivity, turbidity, total suspended solids, NO₂+NO₃, total phosphorus, E. coli.*
- Goal: Characterize baseline water quality conditions in 4 subbasins of the North Santiam.

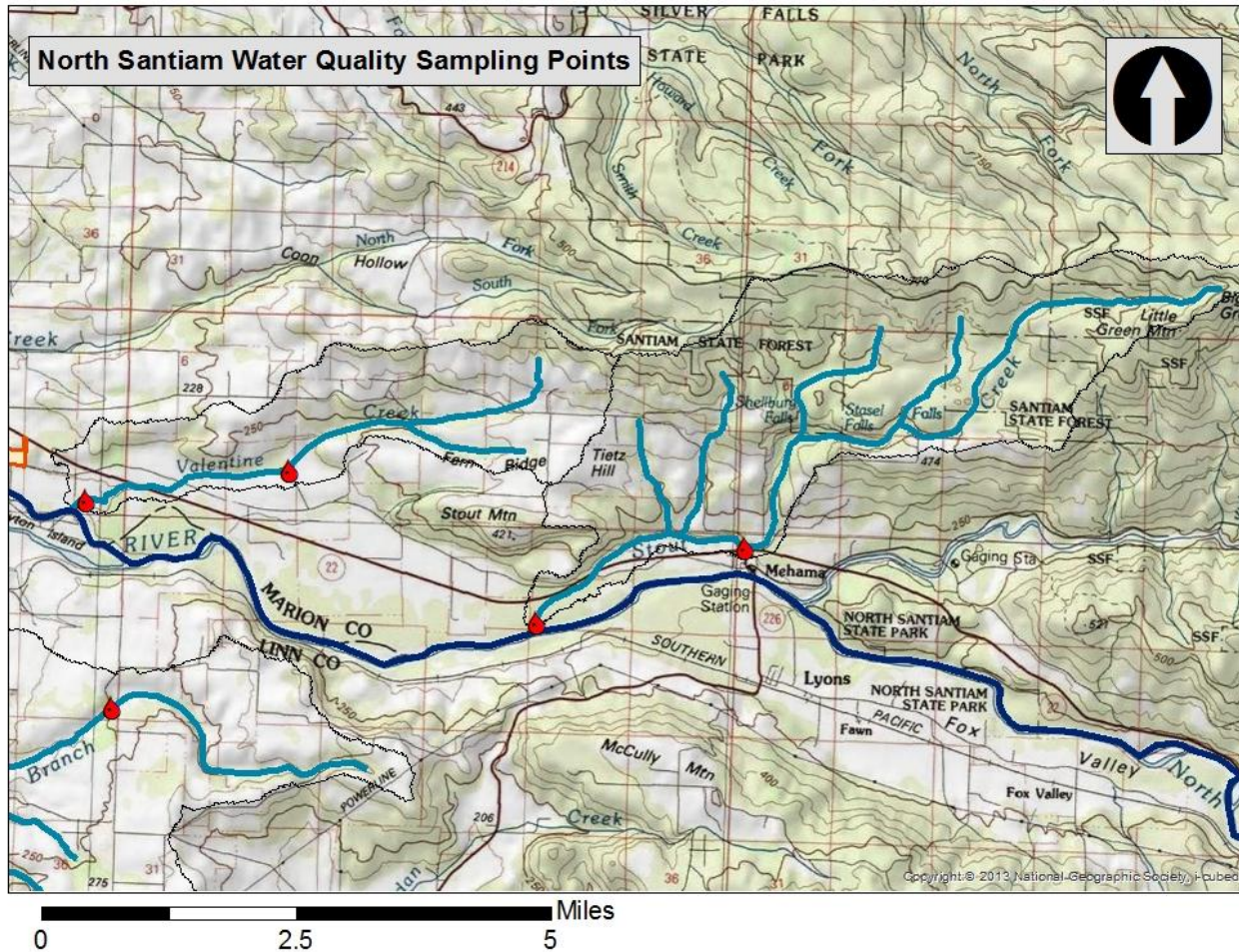
Why is water quality important?



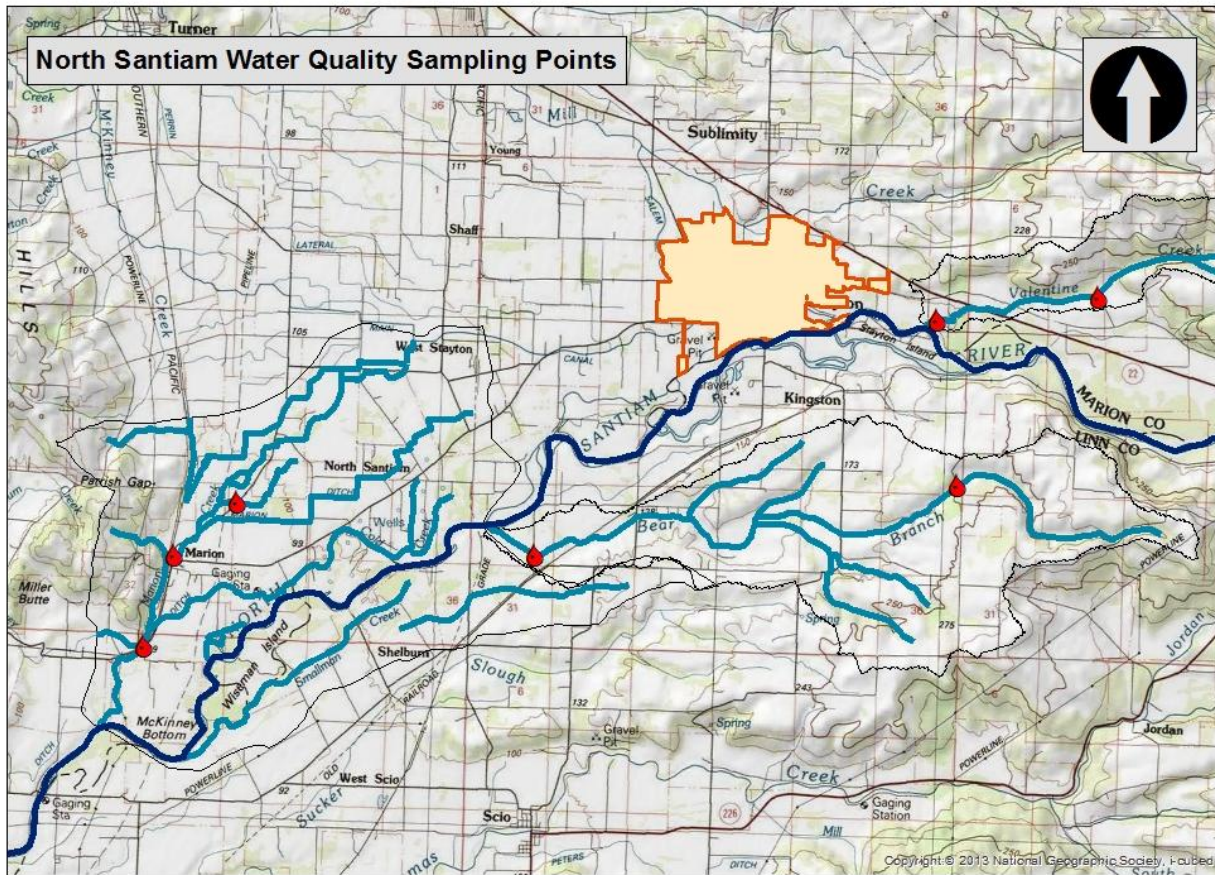
Total Global Water

Source: USGS

Valentine and Stout Creeks



Marion and Bear Branch Creeks

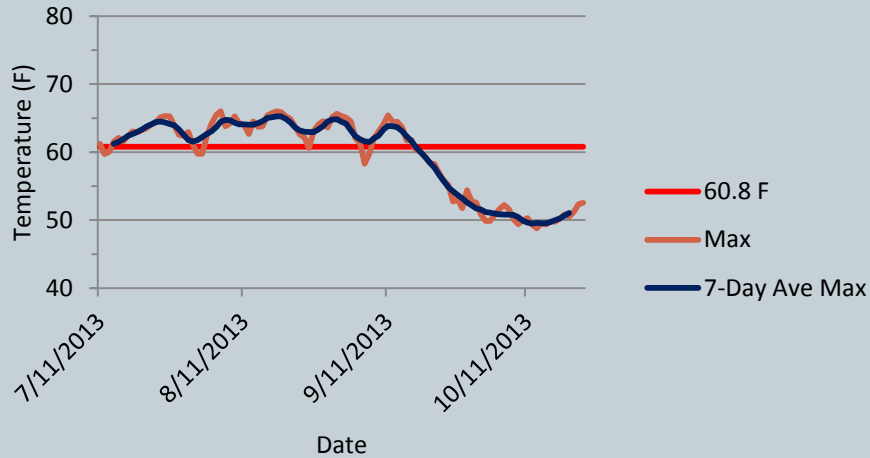


0 3 6 Miles

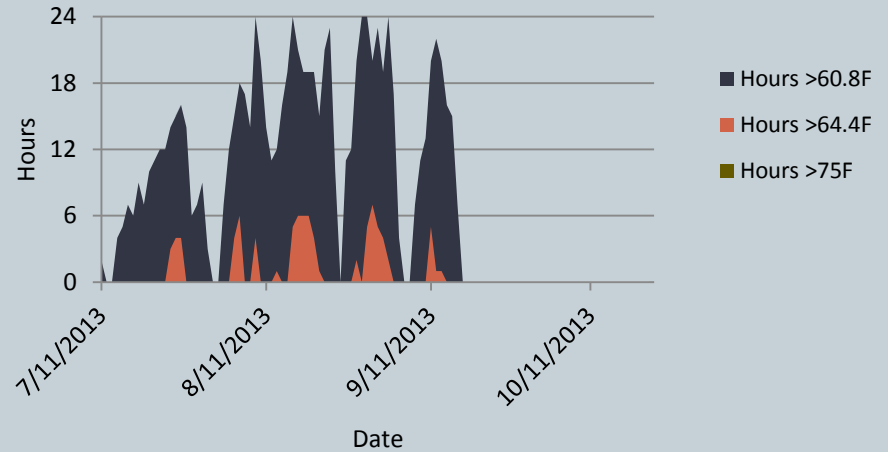
Temperature: Upper vs Lower Stout Creek



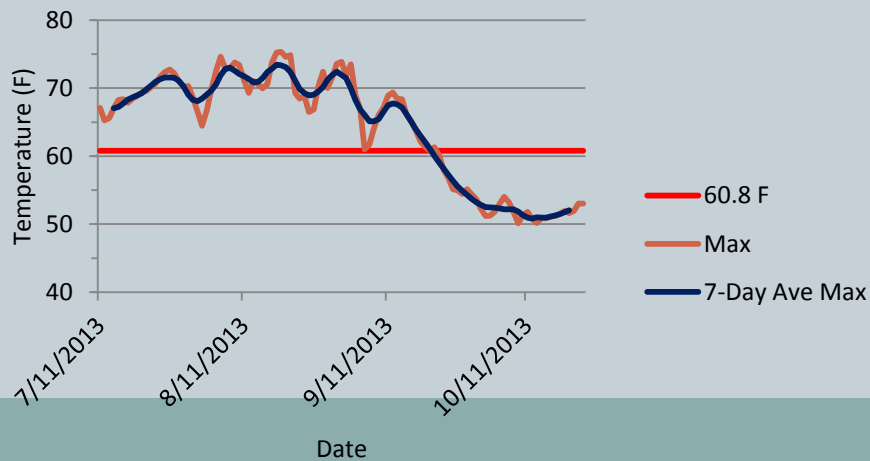
Temperature: 7 Day Ave Max and Daily Max



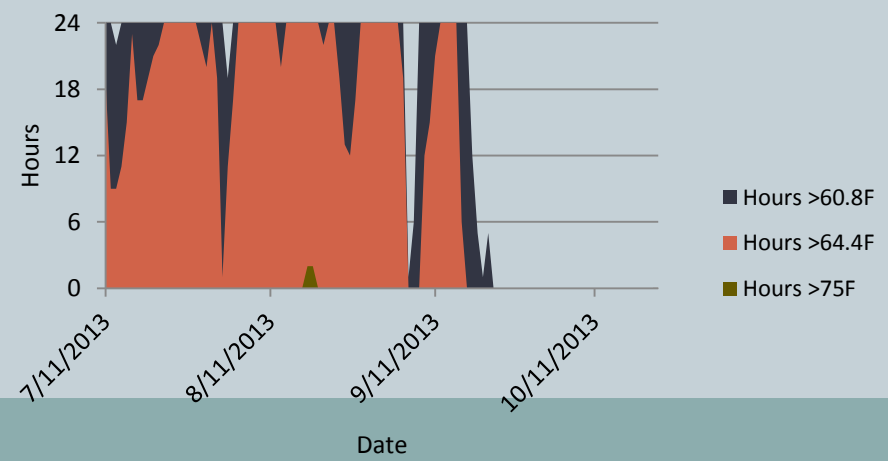
Hours Above Threshold Values



Temperature: 7 Day Ave Max and Daily Max



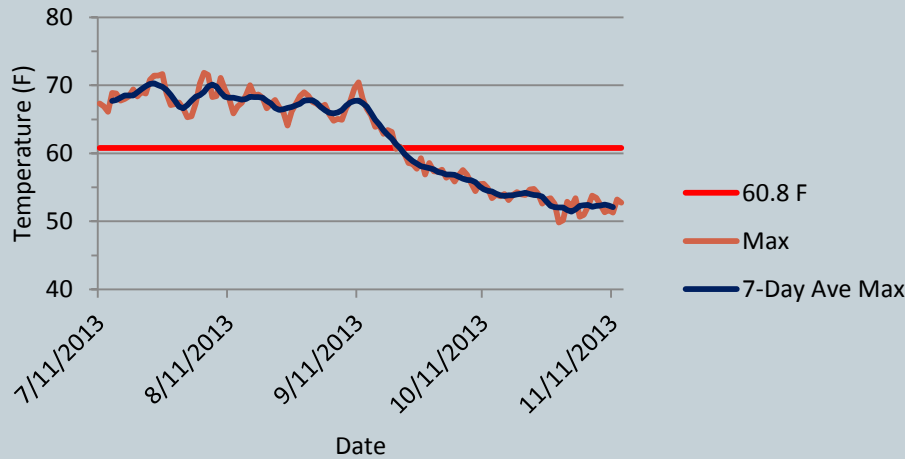
Hours Above Threshold Values



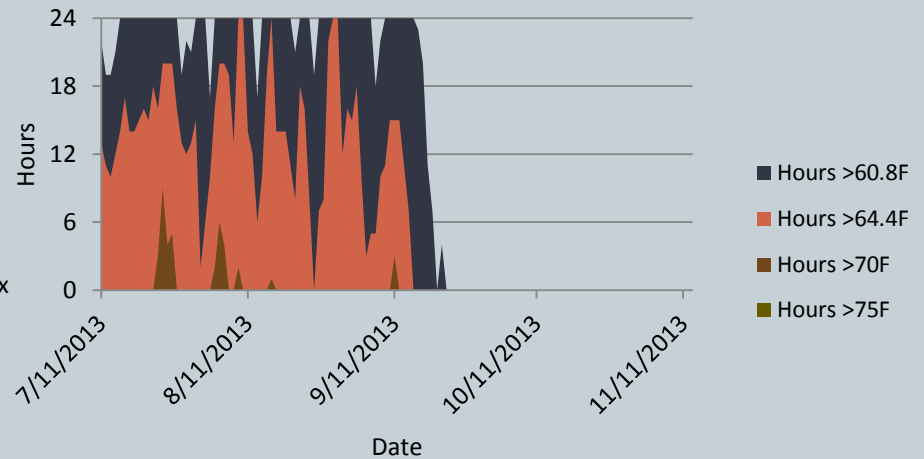
Temperature: Bear Branch and Valentine Creeks



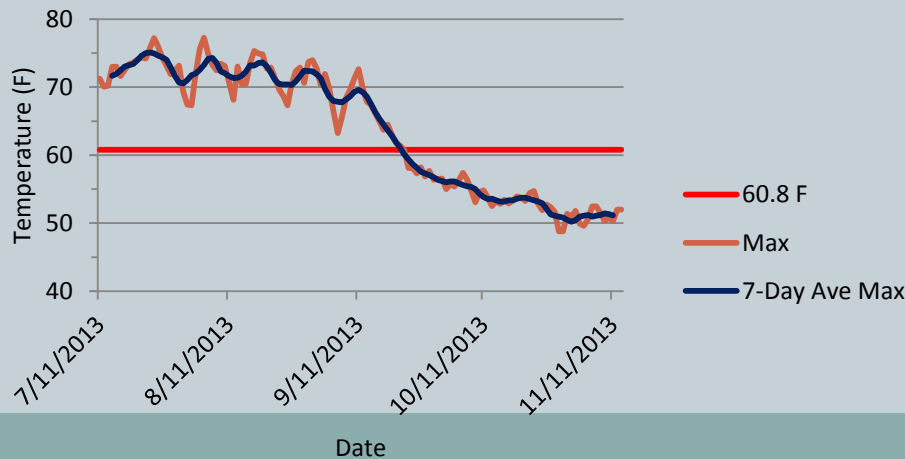
Lower BB Temp: 7 Day Ave Max and Daily Max



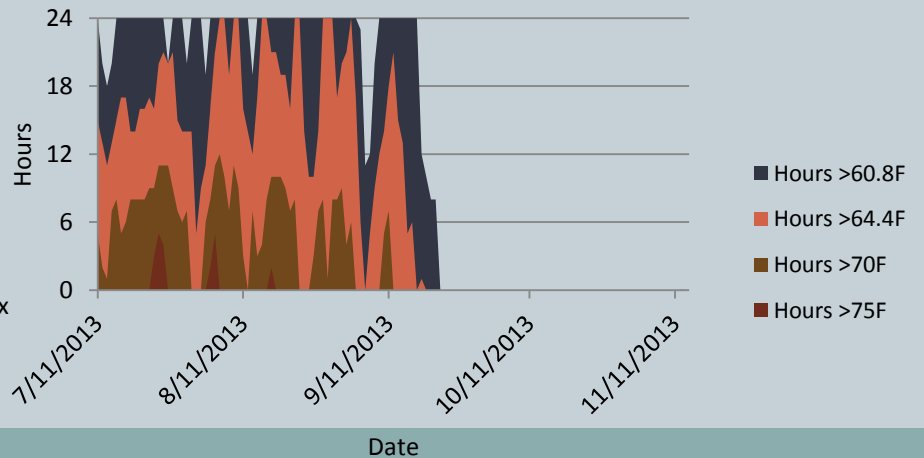
Lower BB: Hours Above Threshold Values



Mouth VT Temp: 7 Day Ave Max and Daily Max



Mouth VT: Hours Above Threshold Values

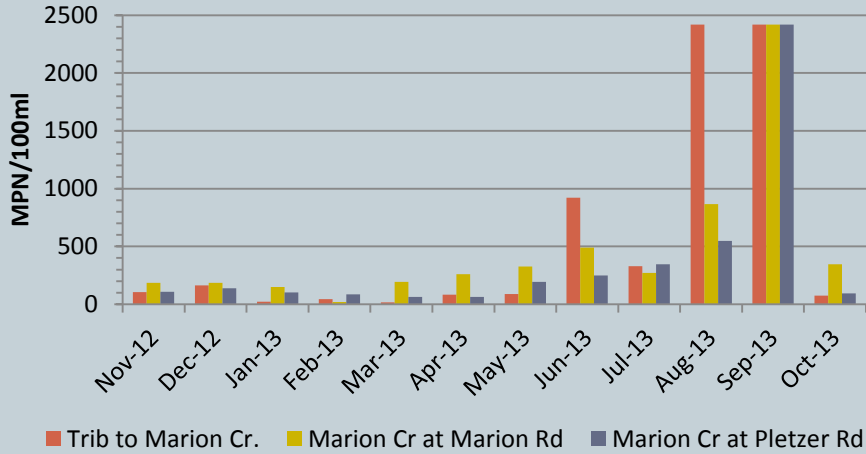


Bacteria *E. Coli*

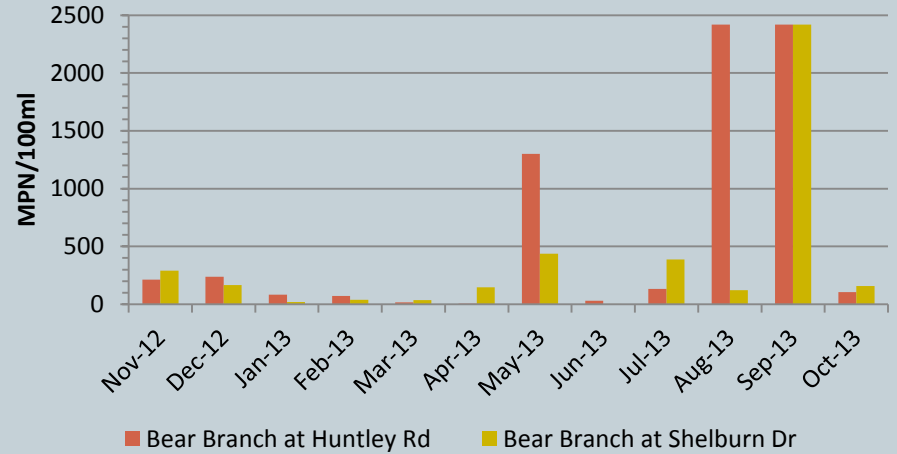
Not to exceed 406mpn/100ml (OR DEQ)



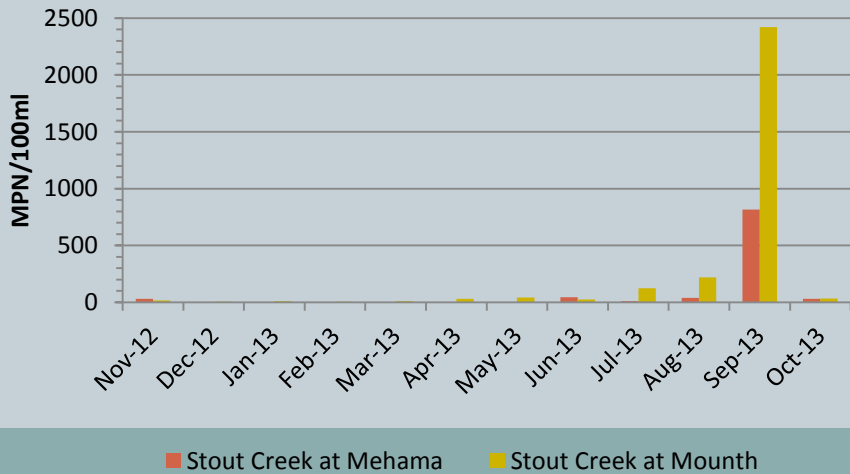
Marion Cr.



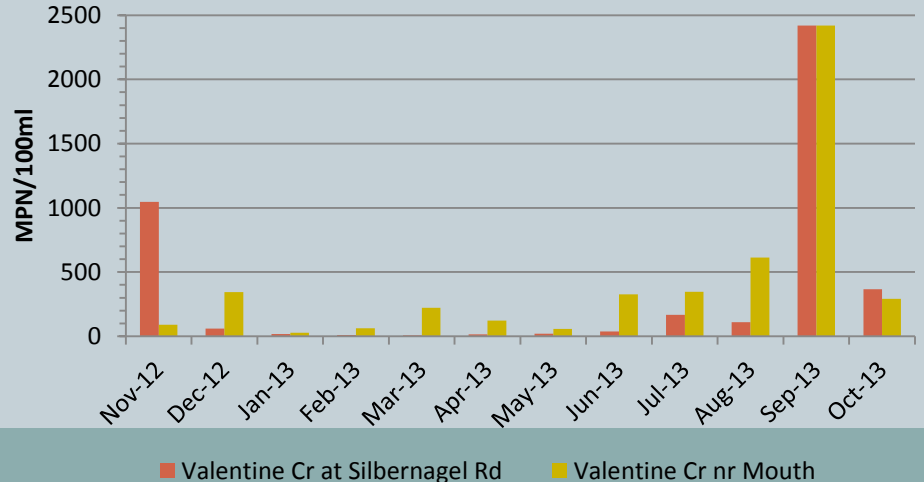
Bear Branch Cr.



Stout Cr.



Valentine Cr.

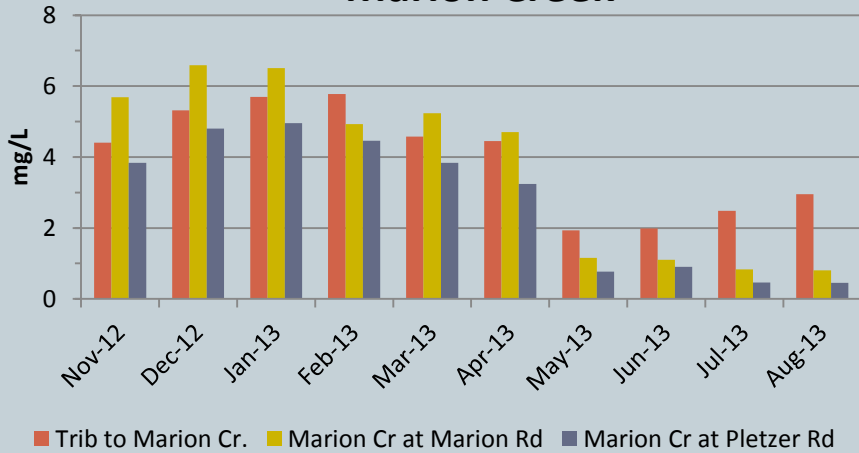


Nitrogen as NO₂+NO₃

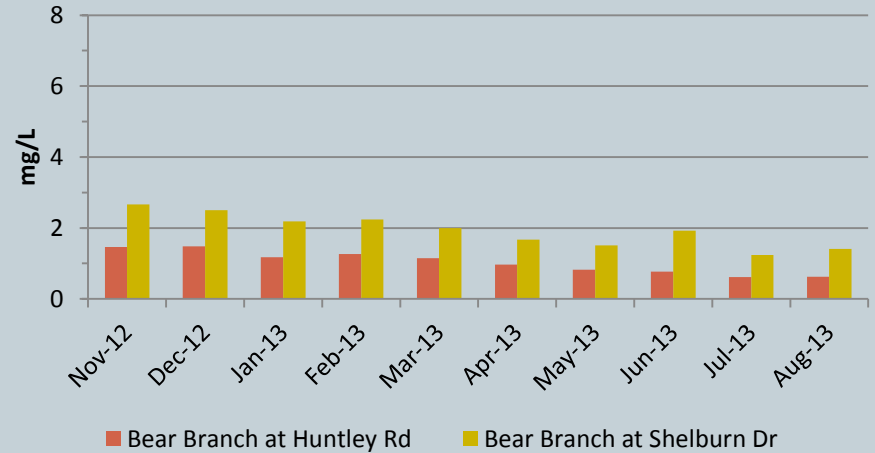
10mg/L limit in drinking water (US EPA)



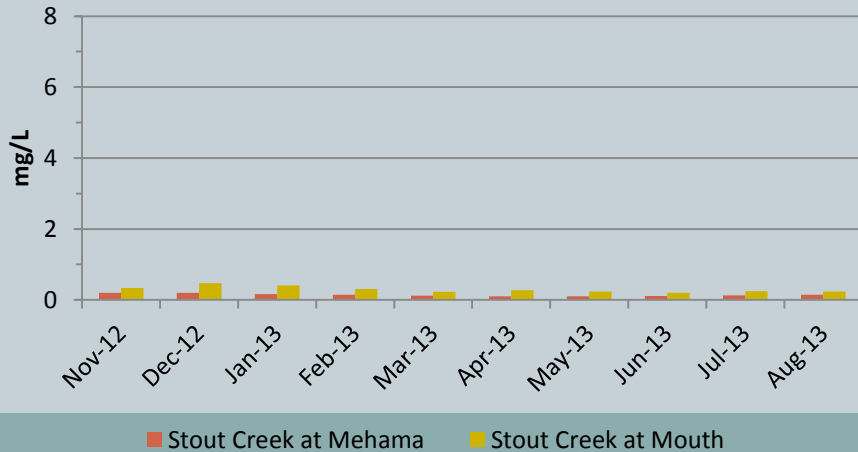
Marion Creek



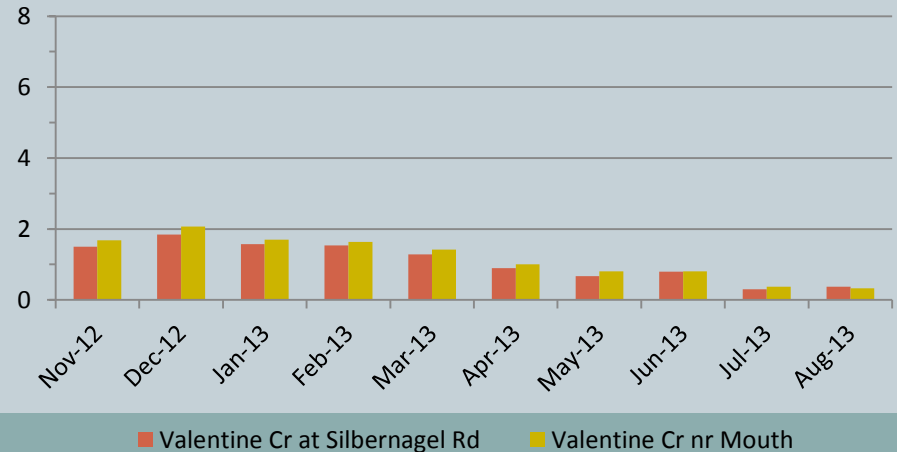
Bear Branch Creek



Stout Creek



Valentine Creek

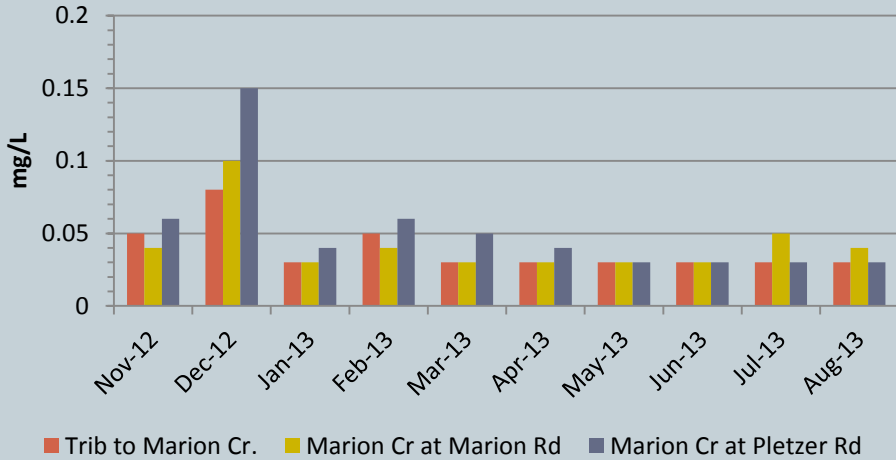


Total Phosphorus

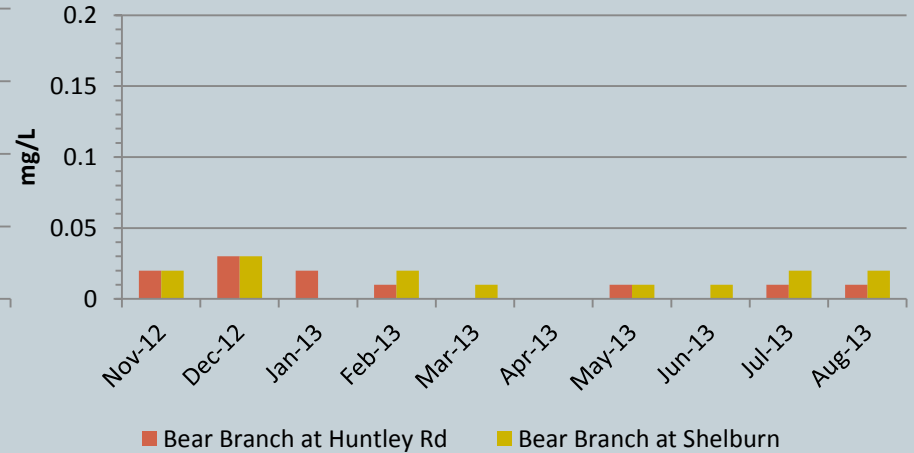
mountain lakes 0.02mg/L, some TMDL list 0.07mg/L, 0.1mg/L for streams not entering reservoir



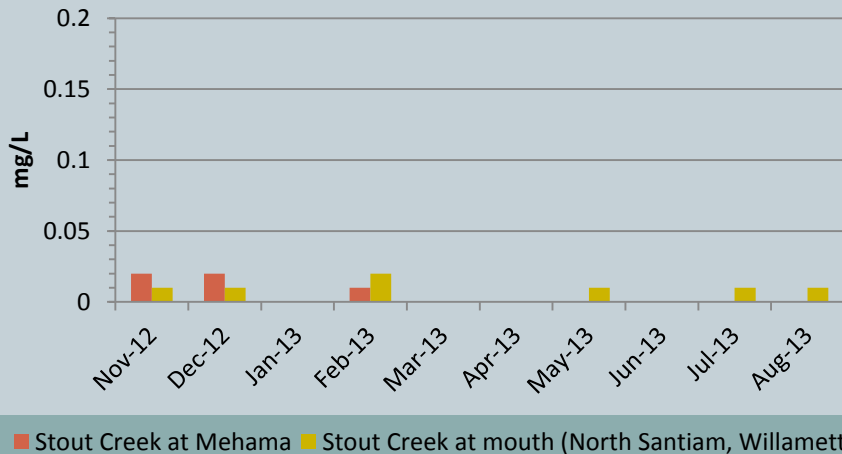
Marion Creek



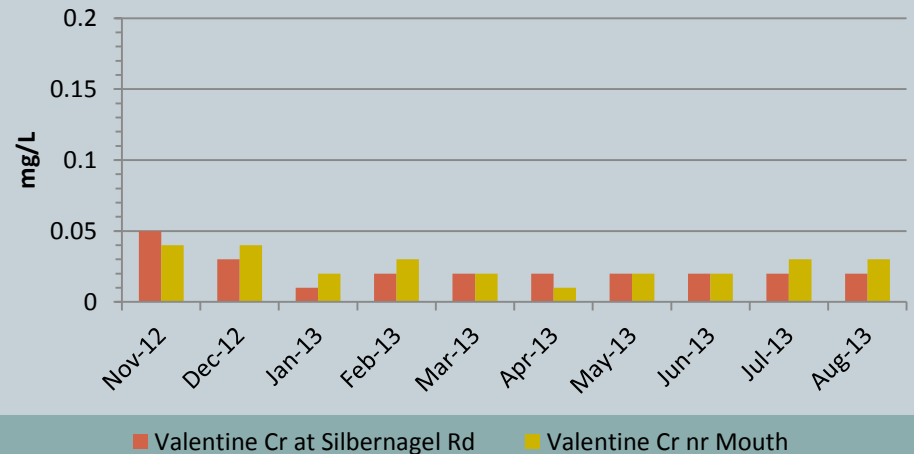
Bear Branch



Stout Creek



Valentine Creek

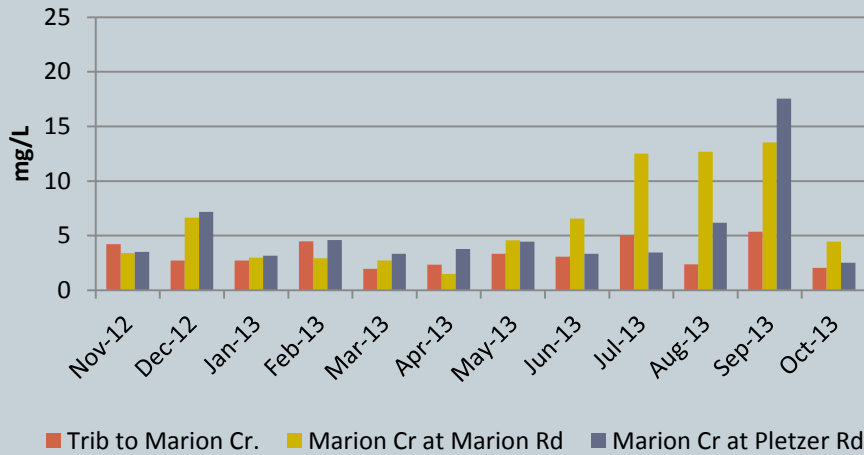


Total Suspended Sediments

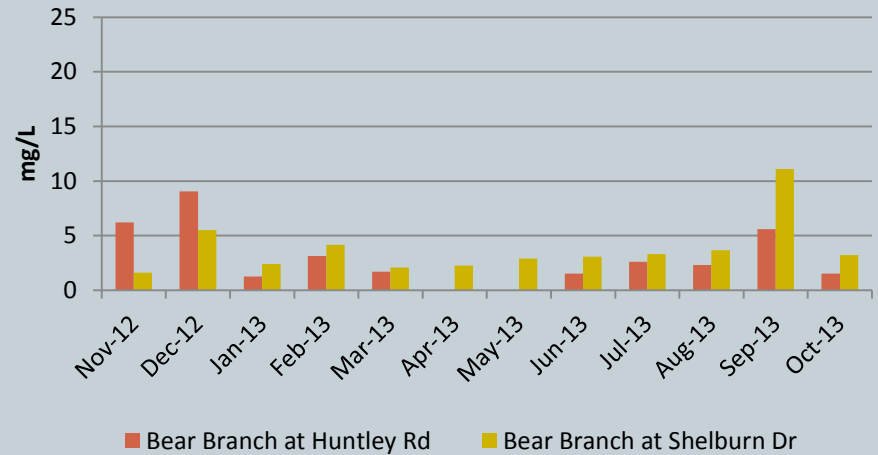
not to exceed 100mg/L (OR DEQ)



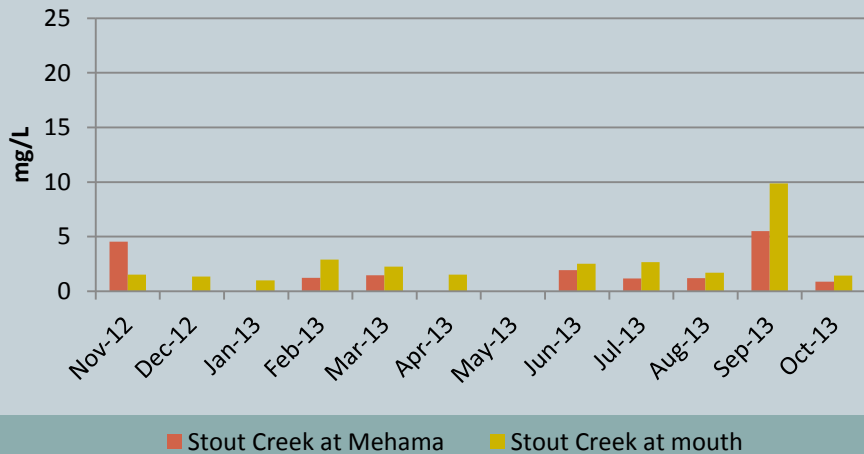
Marion Cr.



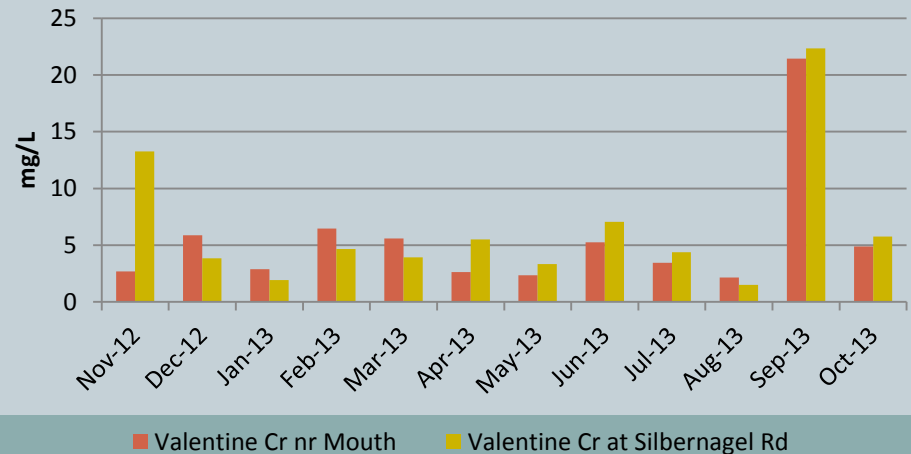
Bear Branch Cr.



Stout Cr.



Valentine Cr.

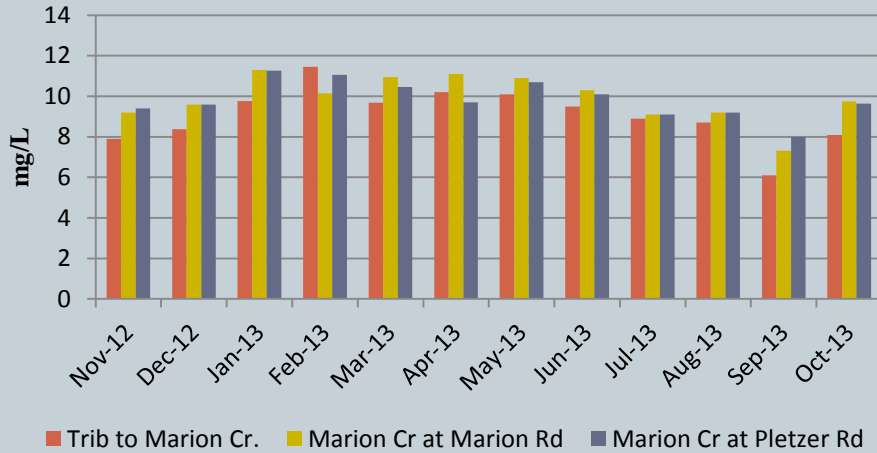


Dissolved Oxygen

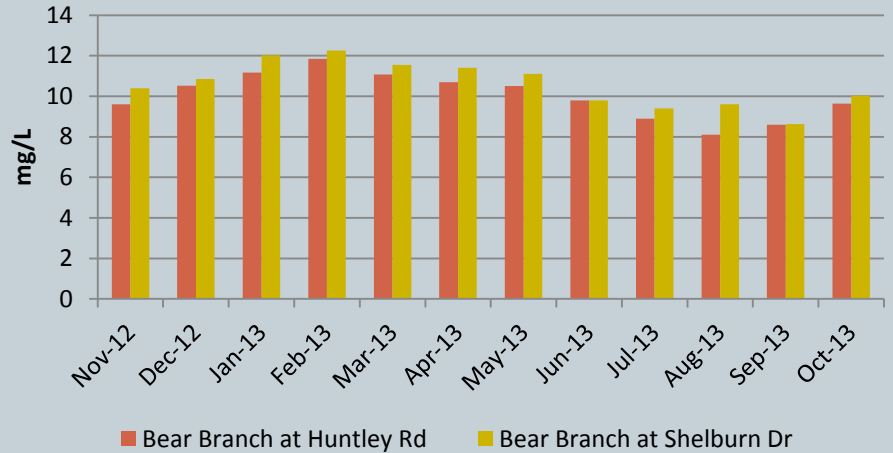
Cold water life 8 mg/L, Stout Cr. 11mg/L Oct-June



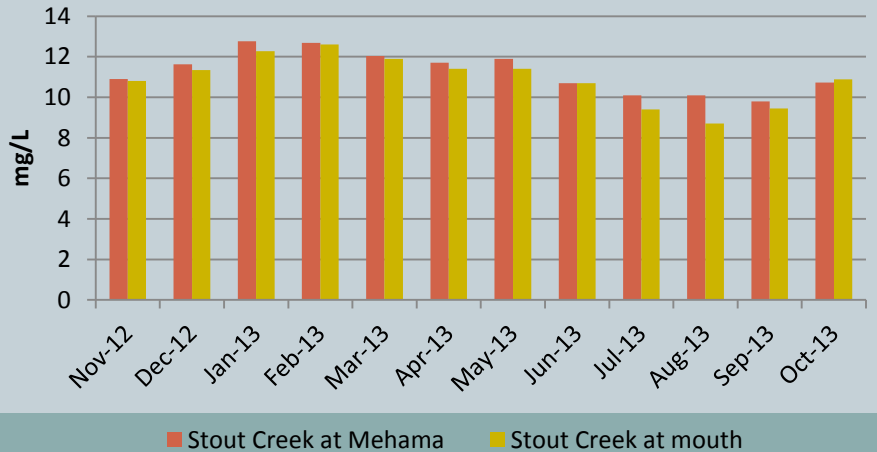
Marion Cr.



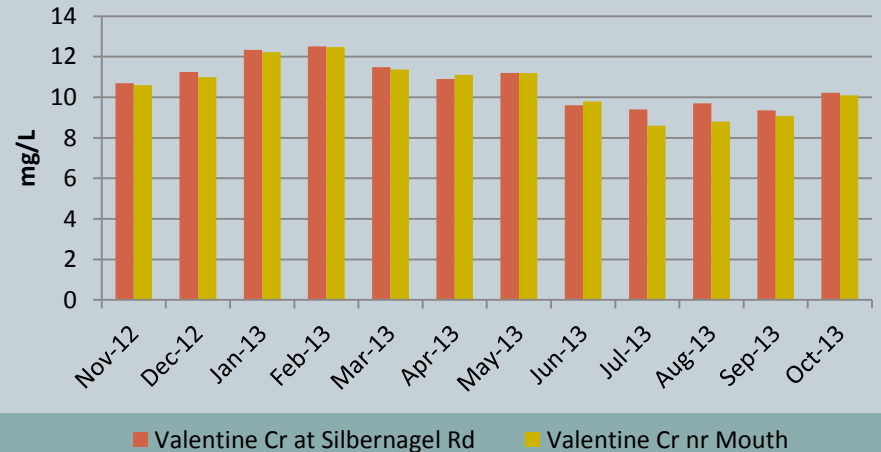
Bear Branch Cr.



Stout Creek Cr.



Valentine Cr.



Other Parameters



- **pH** –All values between 6.5-8.5
- **Conductivity** - all values below 150 $\mu\text{mhos/cm}$ for Stout, Bear Branch and Valentine Creeks
- **Conductivity** – all values below 170 $\mu\text{mhos/cm}$ for Marion Creek and tributary.
- **Turbidity** – all values below 29 ntu, most below 15 ntu

What does it all mean?



Thank You!



- OWEB
- OR DEQ
- Meyer Memorial Trust
- Bonneville Environmental Foundation
- E&S Environmental Chemistry
- Landowners

- monitoring.coordinator@gmail.com