

# General Periphyton Data Questions

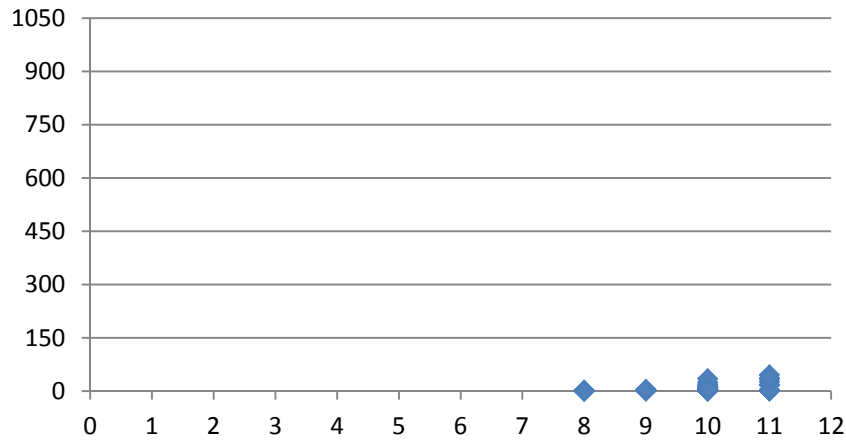
- Why do some dates have single values and others multiple?
  - How should these differences be interpreted?
  - Should multiple samples be lumped into a single value when used with the single sample data?
- Why is there large variation at a given site and date for the multiple-sample data?
- Is periphyton and pebble count data taken from the same location?

# Plots in this file

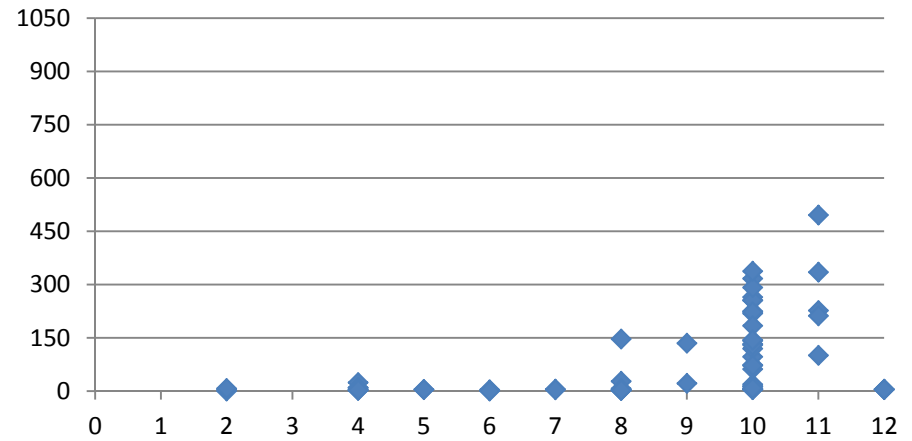
- Periphyton at each sampling site, split into month of sampling
- Periphyton for each site in the peak month (November) ; mean and 90<sup>th</sup> percentile
- Total phosphorus at each site in the “growing season” of July through November.
- XY plot of July-November phosphorus and November periphyton for all sites

# Periphyton by Station, Month

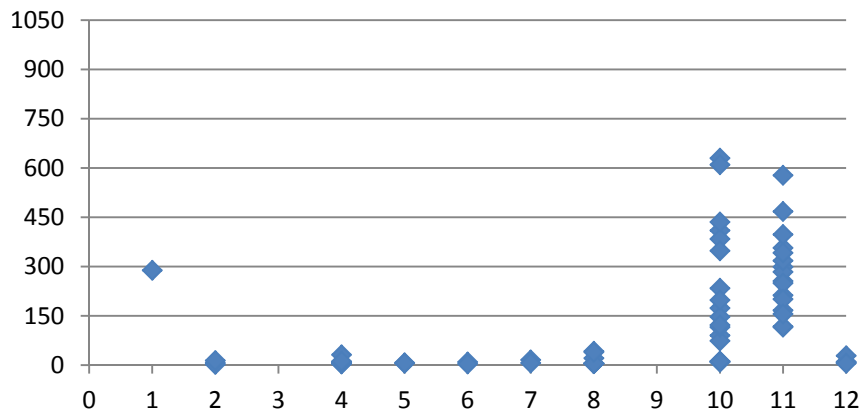
## Eckart by month



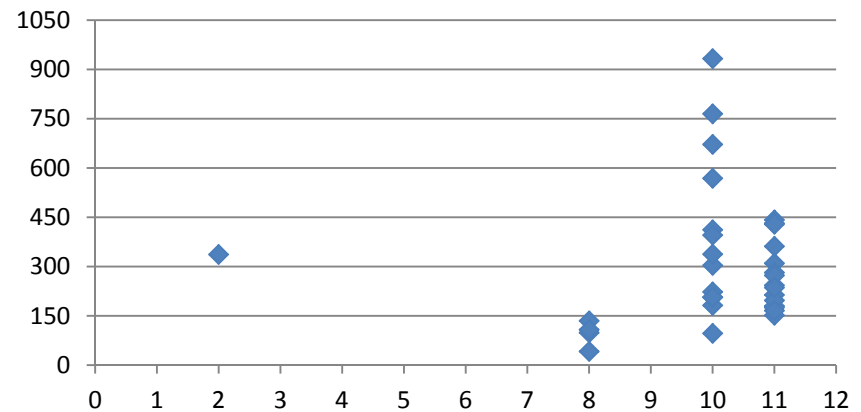
## Glenwood by month



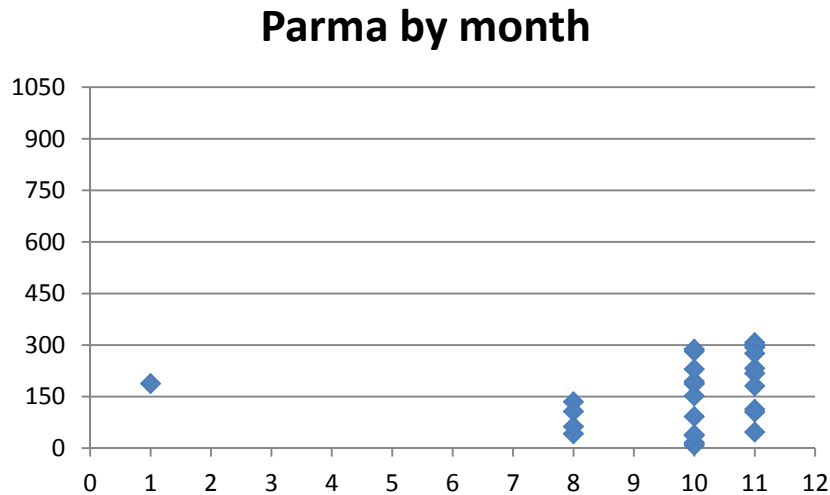
## Middleton by month



## HWY 20 by month



# Periphyton by Station, Month...continued

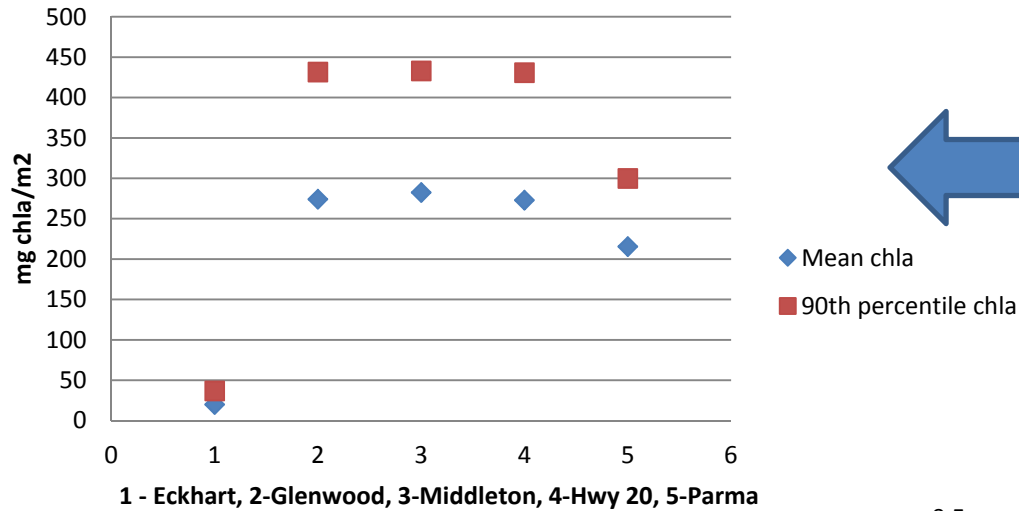


## Observations:

1. If representative, these data show negligible growth from April- July.
2. Note wide range at higher growth sites – near zero to several hundred mg
3. Note significant biomass in the small number of samples for Jan/Feb.
4. Very little data outside Aug-Nov, especially March (zero samples) and Dec-Feb

**Hypothesis: Peak periphyton mass (in November) is associated with phosphorus concentration in growing season (July-November)**

**Periphyton - November**

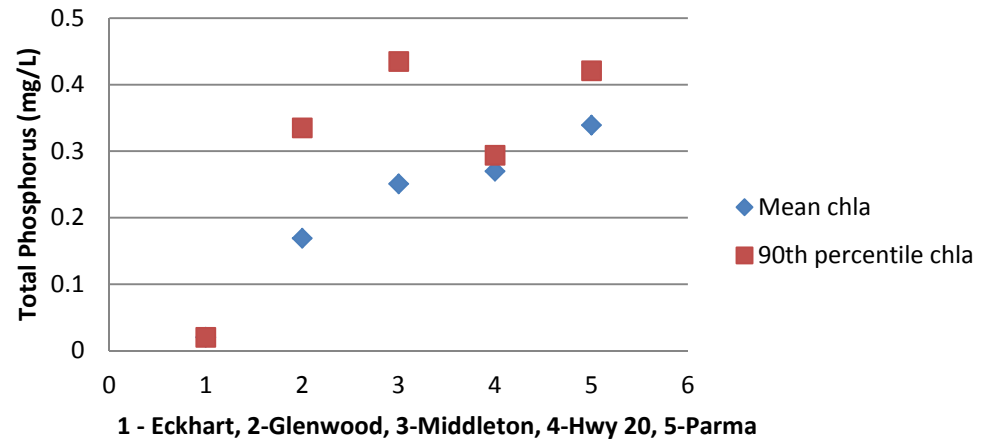


November Periphyton  
ALL YEARS, ALL DATA

July-November TP  
All YEARS, ALL DATA



**Total Phosphorus; Jul - Nov**



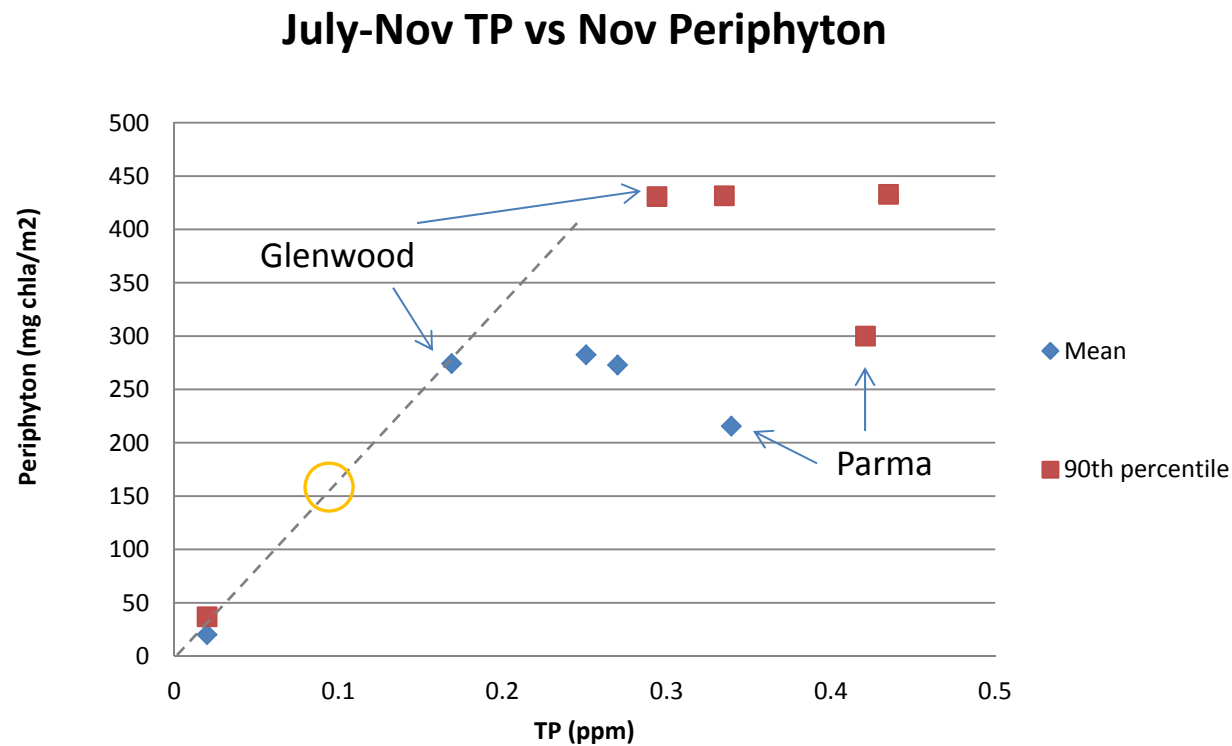
**Observations:**

- Similar november periphyton levels in middle reaches despite variable TP
- Not P-limited at or above Glenwood TP levels?
- Lower Parma periphyton could be due to light limitation

# Questions

- When does peak periphyton occur?
  - Data suggests October/November but almost zero data in Dec-March period
  - Will be interesting to see what AQUATOX predicts and why (factors increasing or reducing biomass)
- Is assumed direct link between July-November TP and November periphyton a reasonable “model”?
- Can a simple empirical model, using conditions at Eckhart (better than target) and Glenwood (worse than target), give us an estimate of TP reduction needed to meet a periphyton target (150 mg chla/m<sup>2</sup>)?

# Summer/Fall TP and November Periphyton



## Notes:

- Reasonable line of evidence to compare to AQUATOX estimates?
- Linear extrapolation → target would be approx. 100 ug/L TP to reduce mean November periphyton density to 150 mg chla/m<sup>2</sup>