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 90th 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
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**

![Graph showing periphyton levels in November](chart)

**July-November TP**

- 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

**Total Phosphorus; Jul - Nov**

![Graph showing total phosphorus levels](chart)

**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/m2)?
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/m2