QUAL2Kw

• Quasi Steady State

  – Boundaries are steady
    • Option of repeating 24 hour time series for each parameter

  – Predicts steady state water quality with diel variation
    • Results apply to periods of relatively stable flows & inputs
    • Periphyton biomass grows until steady state reached and/or runtime is reached

  – Steady state prediction tool aligns with synoptic data from USGS
    • Reasonable data available to fill in gaps for a dynamic model?

  – Scour, a dynamic process, is not included

  – Includes temperature prediction and associated effects on periphyton growth

• Excel VBA code

  – Spreadsheet inputs, underlying mathematical code
  – Ease of use and transparency
QUAL2Kw Example Output
Wenatchee River Water Quality Analysis
Example of Flow and Temperature Prediction

One advantage of QUAL2Kw over AQUATOX
- Temperature prediction
Example of Inorganic Phosphorus Prediction

Wenatchee River (8/26/2002)

- Inorg P (ug/L) data
- Inorg P (ug/L)
- Inorg P (ug/L) Min
- Inorg P (ug/L) Max
Example of Periphyton Prediction

Figure 24. Comparison of QUAL2K simulated periphyton biomass (lines) to observed end-of-season biomass maxima (squares) in the Wenatchee River.