News in Nutrient Modeling

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EPA Region 10

National News

EPA Water Modeling Workgroup

- New organizing body within EPA to support WQ modeling

- 3 Office Partnership
  - Regions
  - HQ Office of Water
  - Office of Research and Development

- Training, Model Development, and Model Maintenance

- Prioritizing to support "workhorse" models

WQ Modeling Webinars
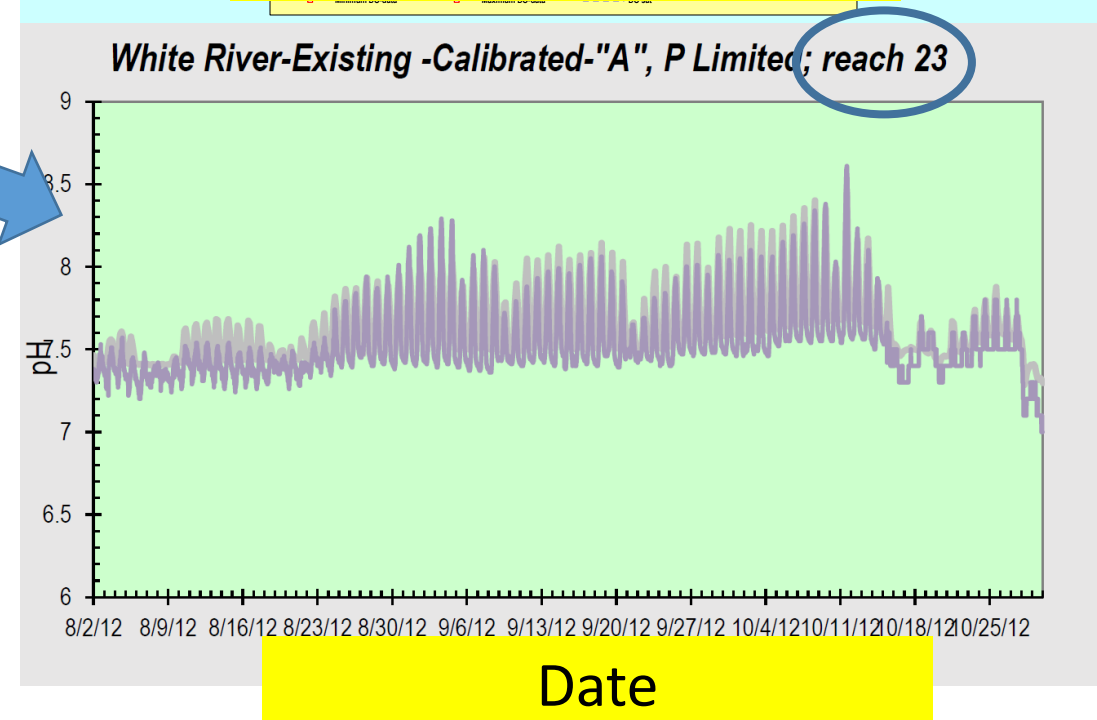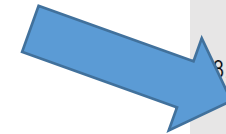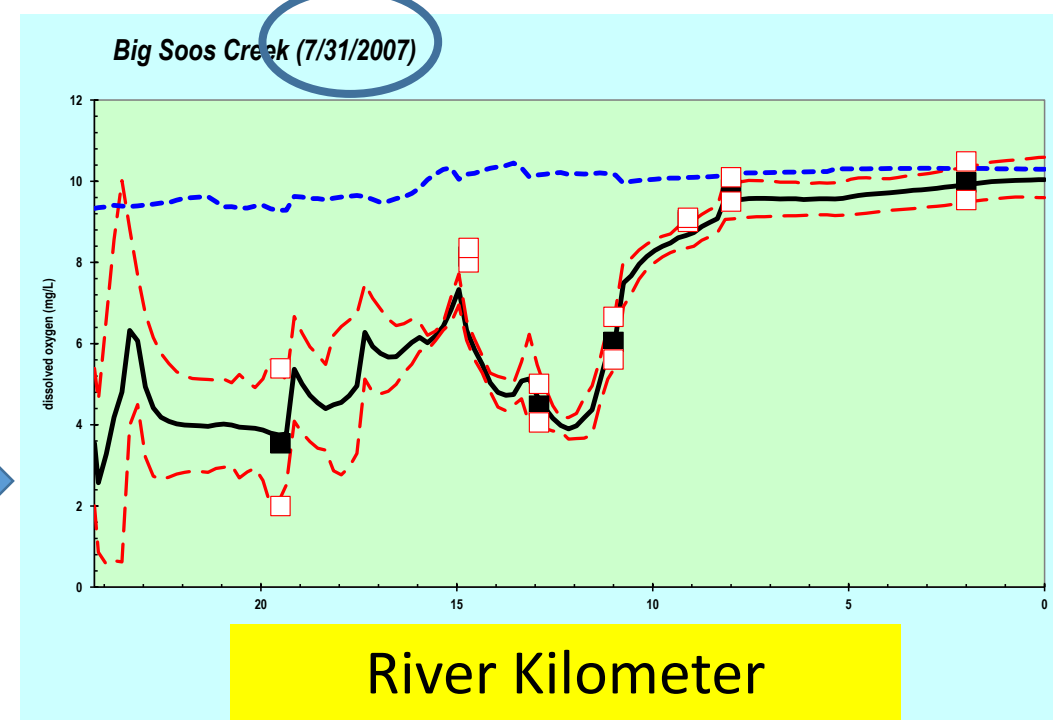
(1) Water Quality Models 101 – What Are These Things?
(2) Brick by Brick: How to Develop a Water Quality Model
(3) Interpreting and Using your Model
(4) Temperature Modeling
(5) Nutrient Modeling
(6) Nutrient Modeling in Rivers, Lakes, Reservoirs & Estuaries
(7) Sediment Modeling
(8) Modeling Dissolved Oxygen
(9) Watershed Modeling Using HSPF
(10) Sediment Modeling Part II

https://www.epa.gov/tmdl/tmdl-modeling

Regional News

- QUAL2Kw model evolution

  - Greg Pelletier, Ecology

  - Previously – steady state simulation

  - Now – dynamic (time varying) simulation

    - Improved understanding of critical conditions
    - More robust test of model accuracy and representativeness

Big Soos Creek (7/31/2007)

River Kilometer

White River-Existing -Calibrated-"A", P Limited; reach 23

Date

Boise River TMDL

Snake River-Hells Canyon May-Sept 0.07 mg/L TP Target

- Quantify current TP loads
- Tools »
  - USGS Mass Balance Model
  - Load Duration Curves

Nuisance Algae Target of 150 mg/m^2

- Chlorophyll a & phosphorus relationships in impaired Assessment Units
- Tools »
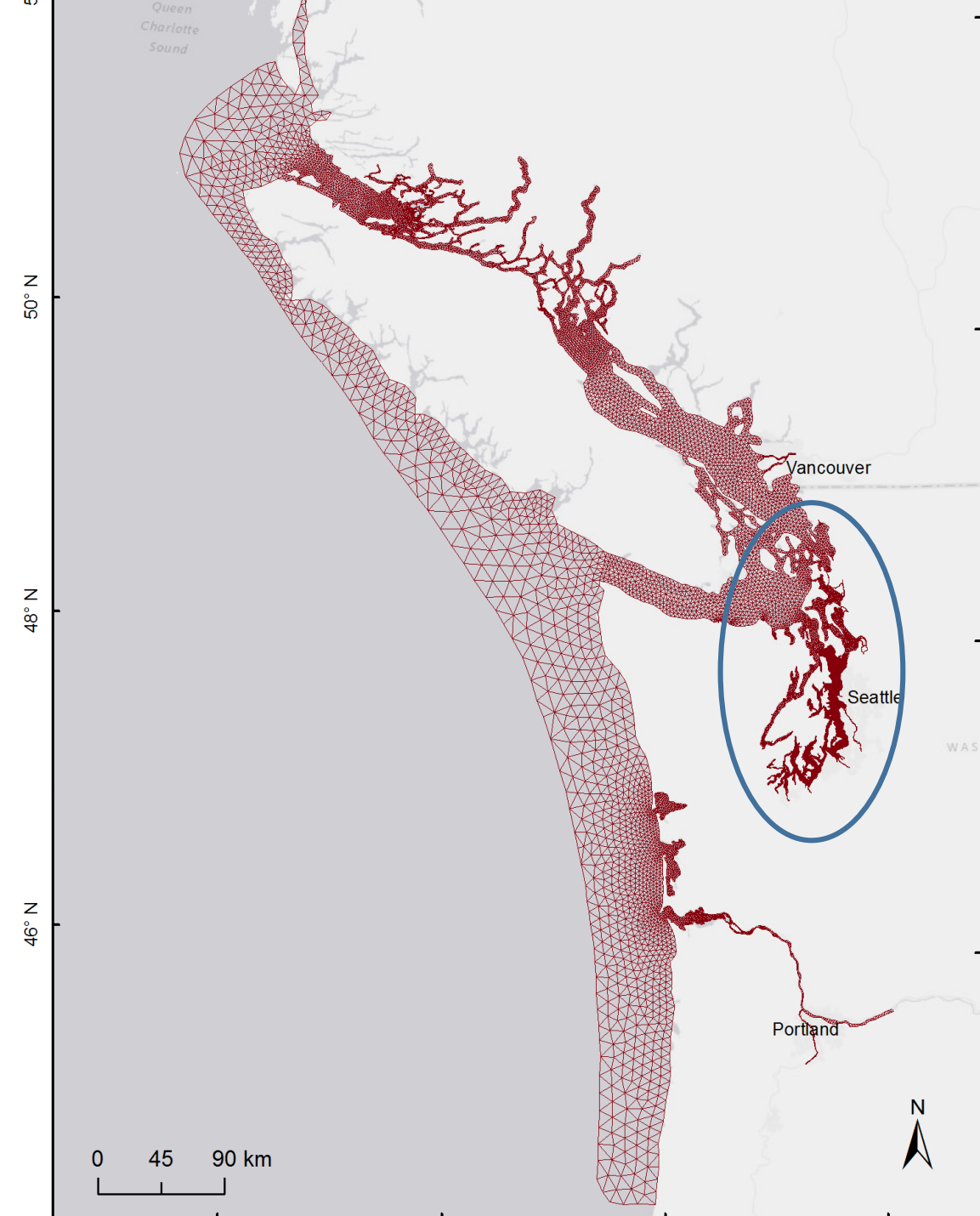 - AQUATOX Model
  - Additional Lines of Evidence

Source: IDEQ

Salish Sea Model

▶ Ecology, PNNL, EPA

▶ Model Framework : FVCOM-ICM

- ■ 18 Major Rivers + all major WWTPs in US and Canada

- ■ Flexible mesh grid allows "zooming"

- ■ pH, DIC and alkalinity → to assess coastal acidification/nutrient linkage

- ■ Nutrient impacts on DO and pH assessed in parallel

Source: PNNL

Questions?