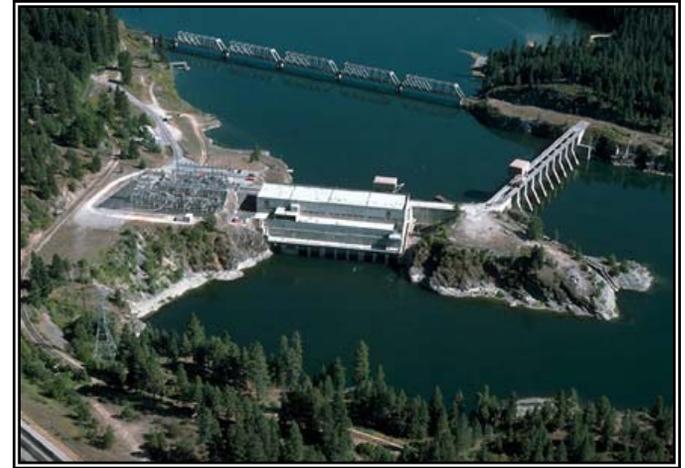


**Pend Oreille River TMDL
Watershed Advisory Group:
Temperature Modeling Update**



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Environmental Assessment Program
Washington State Dept. of Ecology**

March 20, 2007



Overview of the Pend Oreille River Temperature and TDG TMDL Studies



➤ Introduction

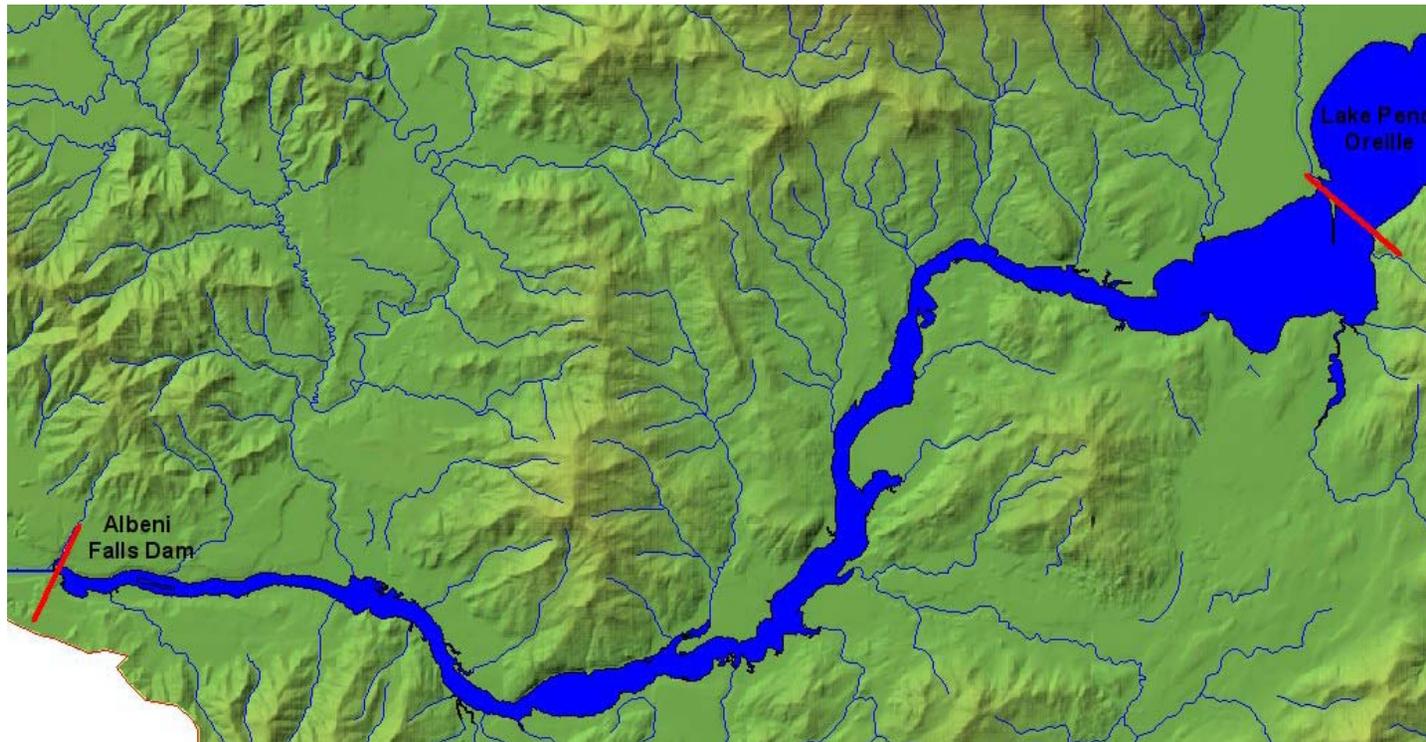
- *In our last episode...*
 - We discussed calibration of the 3 models
 - Idaho presented their compliance approach
- *In this episode...*
 - Rob Annear of PSU and the Idaho model scenarios
 - Update on progress with WA modeling
 - WA compliance approach
- *An important point...*
 - We have to work upstream to downstream



Overview of the Pend Oreille River Temperature and TDG TMDL Studies



Idaho!





***Overview of the Pend Oreille River
Temperature and TDG TMDL Studies***



Washington!

- PSU activities for Box Canyon reservoir
 - 2004-2005 model of “existing” conditions
 - Included flow and temperature for 15 tributaries
 - 2004-2005 unimpounded scenario
 - Mainstem vegetation will be included when complete
 - Other TMDL scenarios



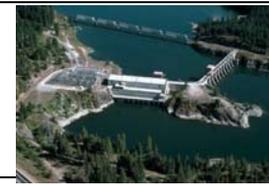
Overview of the Pend Oreille River Temperature and TDG TMDL Studies



- PNL activities for Boundary reservoir
 - Included flow and temperature for 15 tributaries
 - Mainstem vegetation will be included
 - Rechecking calibration
 - Developing “existing w/ no Boundary” scenario
 - Ecology will develop TMDL scenarios



Overview of the Pend Oreille River Temperature and TDG TMDL Studies

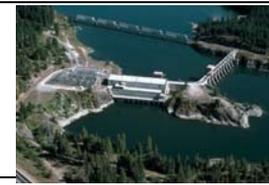


➤ TMDL Modeling Scenarios

- “Existing” conditions (2004-05 observed)
- Existing with no impoundment
- Existing no NPDES point sources (PNP, Mine, Cities)
- Existing with tribs at Potential Natural Vegetation (PNV) or TMDL temperatures
- Existing with mainstem PNV
- “Natural background” (natural upstream, unimpounded, no NPDES, tribs and mainstem PNV)
- Natural background with impoundment



Overview of the Pend Oreille River Temperature and TDG TMDL Studies

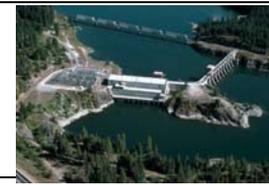


➤ TMDL Scenarios Comparisons

- Existing vs natural - total change due to people
- Existing vs existing with no impoundment; and Natural vs natural with downstream impoundment
 - Impact of downstream dam
- Existing vs existing with no NPDES point sources
- Existing vs existing with with tribs at PNV/TMDL
- Existing vs existing with mainstem PNV



Overview of the Pend Oreille River Temperature and TDG TMDL Studies



➤ Analysis of TMDL Comparisons

- Temperature over time at critical locations
 - Nine calibration locations for Box Canyon reach
 - Four calibration locations for Boundary reach
 - Hottest location, and location with largest impairment
 - Daily maximum and daily average
- Temperature vs river mile at critical times
 - Daily maximum
 - Hottest day, and day with largest impairment