

The Rathdrum Prairie Aquifer – Current Status of IDWR's Ground Water Monitoring Program



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May 2012

Main Points

- **Baseline data collection, 2004**
- **Ground water flow model, 2007**
- **First recognition of thermal signatures, 2008**
- **Enhanced monitoring, 2008-Present**
- **First attempt at thermal modeling in Farragut, 2010**

1. Baseline Data Collections, 2004

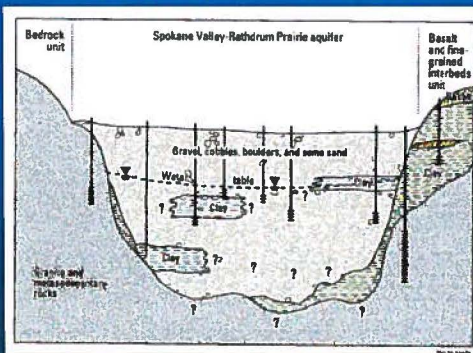


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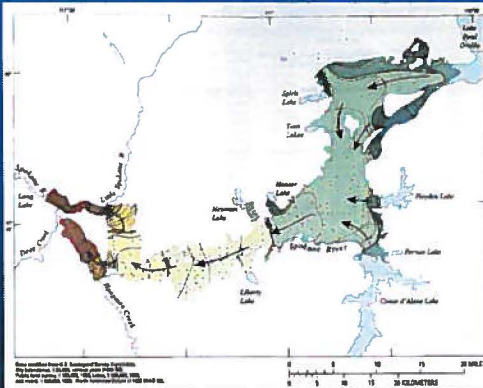
Ice Age, Glacial Lakes, Catastrophic Floods

A map of Washington State showing aquifer thickness. The map includes labels for several counties: PEND D'ERIE COUNTY, GARFIELD COUNTY, KENNERLY COUNTY, SPOKANE COUNTY, WASHINGTON COUNTY, and COCKER COUNTY. It also shows major rivers like the Snake River and the Columbia River. A legend in the bottom left corner indicates 'Spring' and 'Spring-fed Aquifer'. The map is overlaid with a grid of latitude and longitude lines.

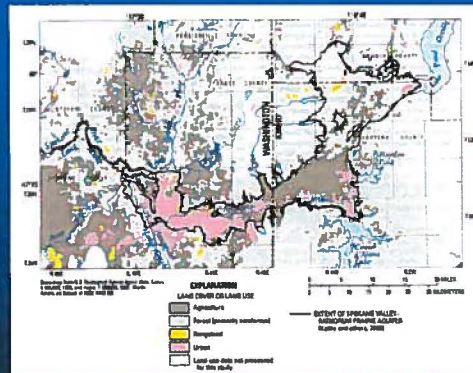
Hydrogeologic Cross Section



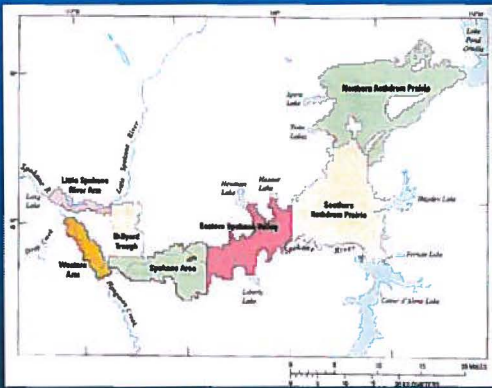
Ground Water Levels and Flow Direction, 2004



Land Cover



2. Ground Water Flow Model, 2007



-What we learned from the modeling-

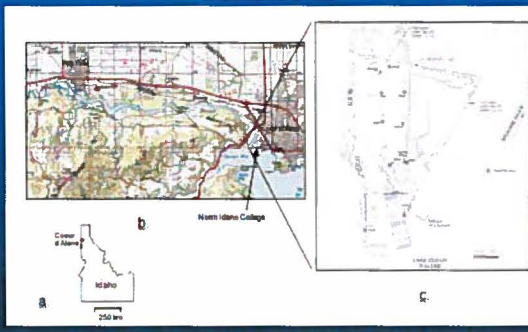
The model was constructed and successfully calibrated.

Simulated and modeled streamflow gains & losses and aquifer head were generally in agreement.

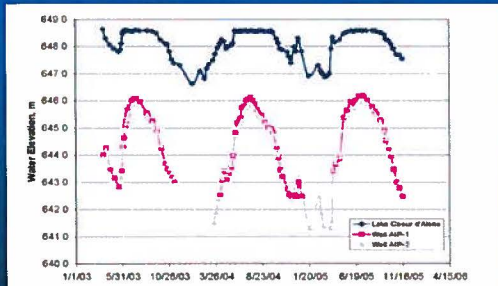
Spreadsheet tools were created to simulate various scenarios. These indicate that withdrawals from Idaho will affect the streamflow in the Lower Spokane River in Washington.

The model has some uncertainties concerning the fluxes from Lake Coeur d'Alene and Pend Oreille.

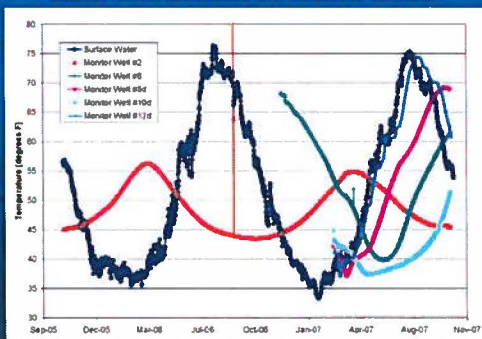
3. Nimmer and Ralston (2008) Recognition of Thermal Signature in the Coeur d'Alene Outlet Area



Water levels for Coeur d'Alene Lake and two NIC wells



Water temperatures for Coeur d'Alene Lake and Blackwell Island wells

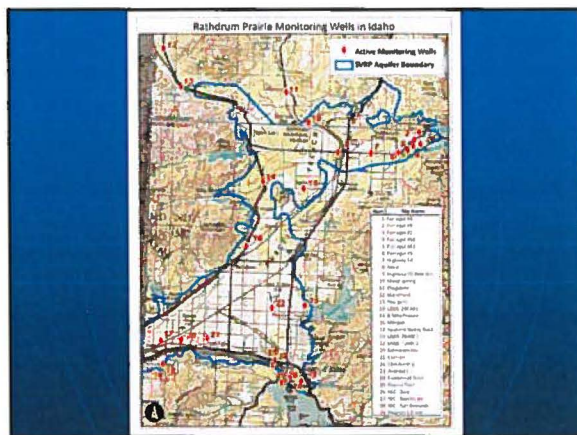


4. Monitoring, 2006 - Present

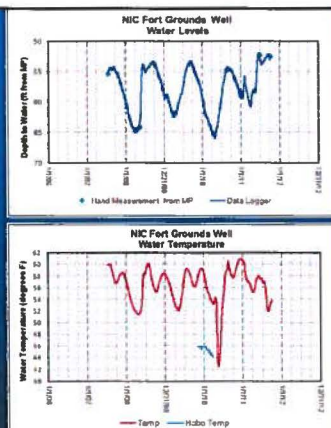


Insitu Troll 300 Water Level and Temperature Transducers & Hobo Temperature Transducers

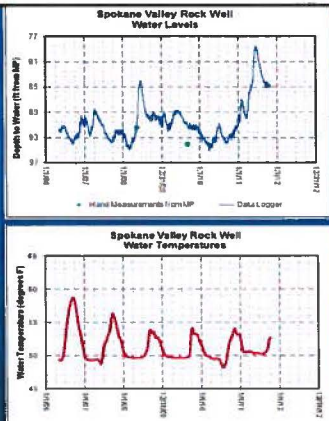




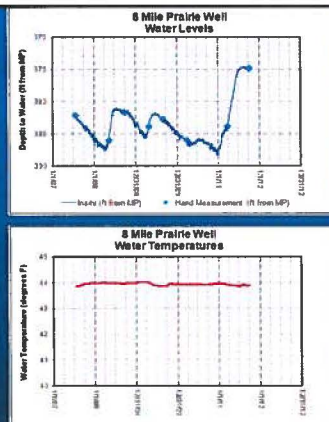
Lake Coeur d'Alene Outlet Area



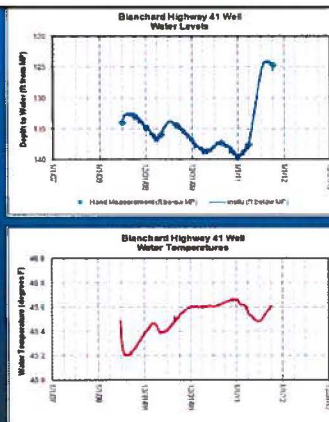
State Line Area

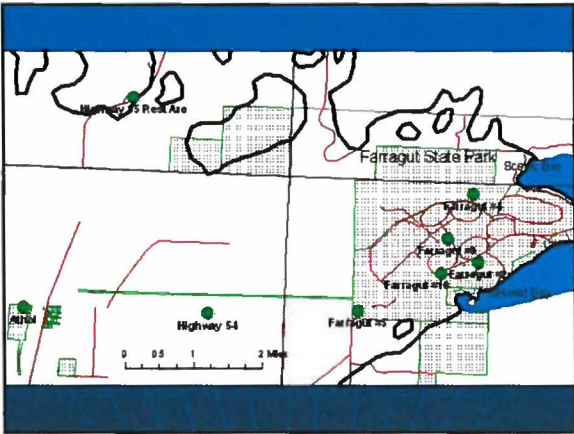


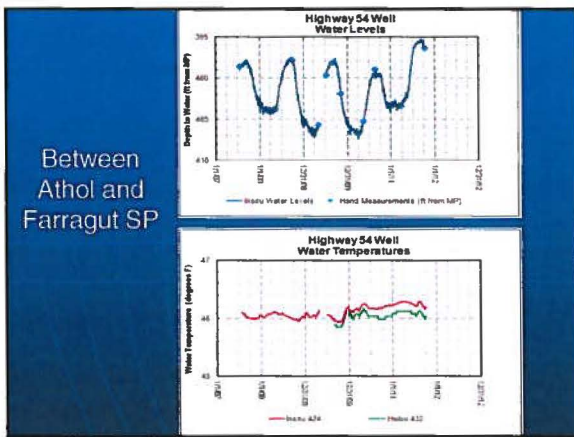
Central Area

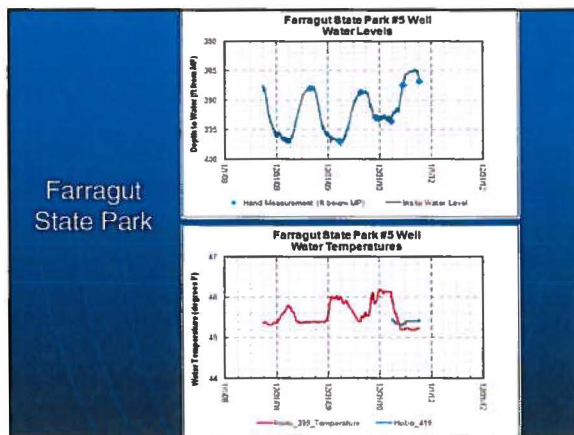


Blanchard Arm Area

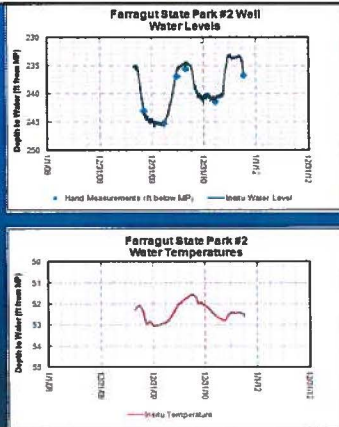




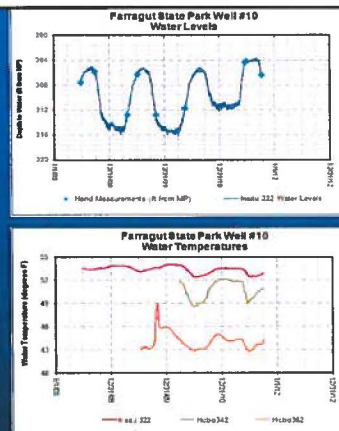




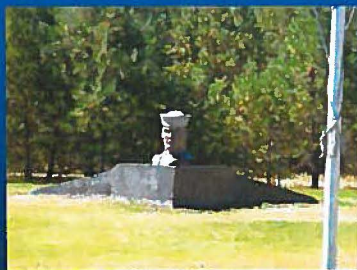
Farragut State Park

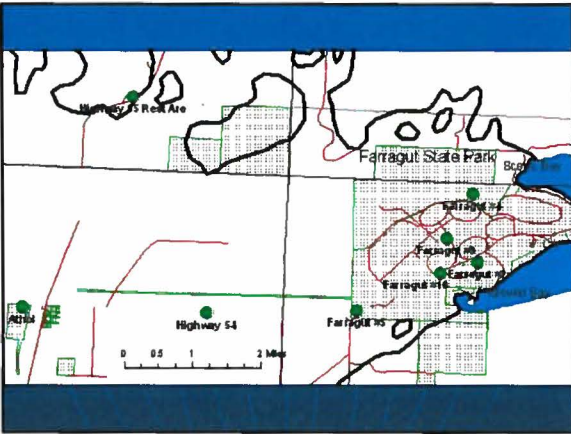


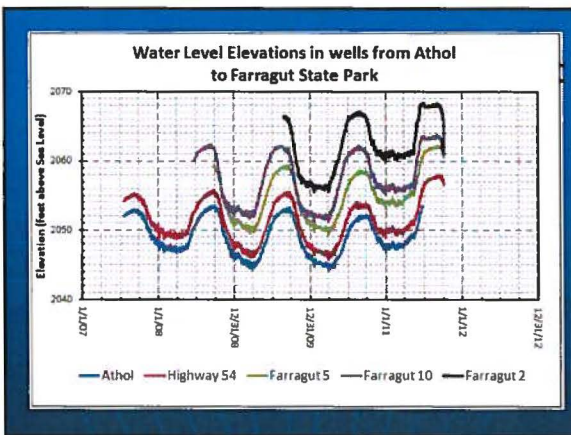
Farragut State Park

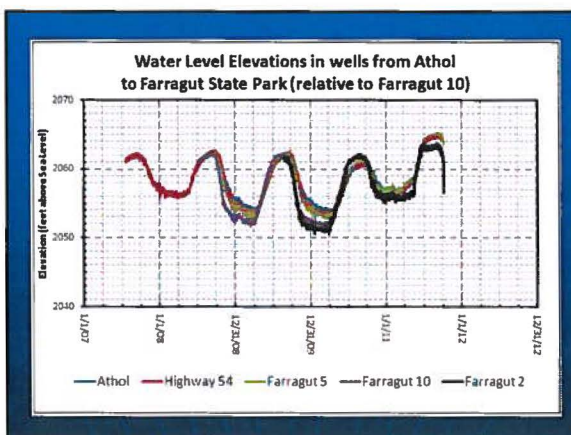


5. First Attempts at Thermal Monitoring in the Farragut State Park Area



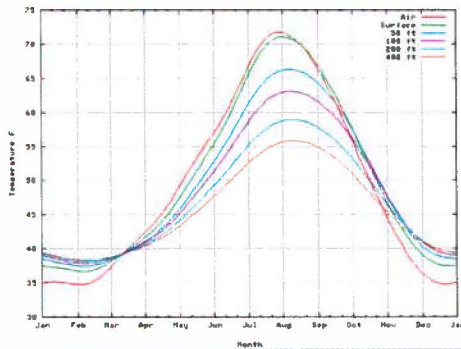




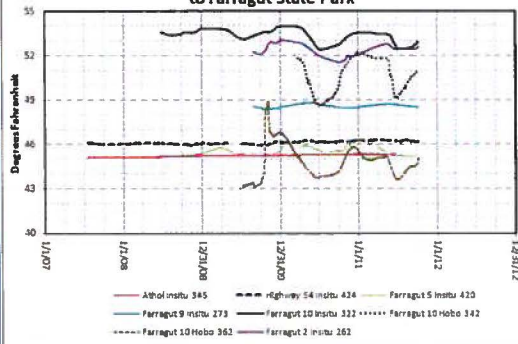


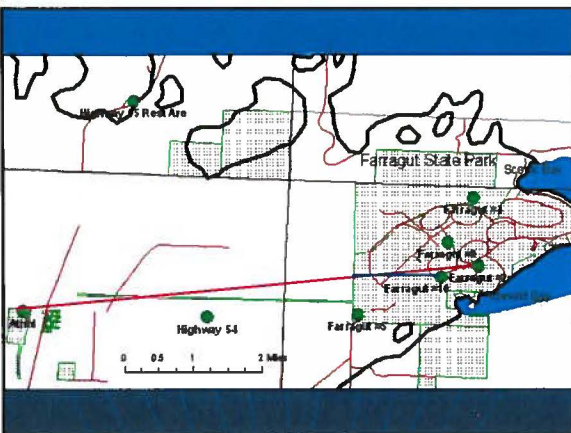
Lake Pend Oreille Water Temperatures

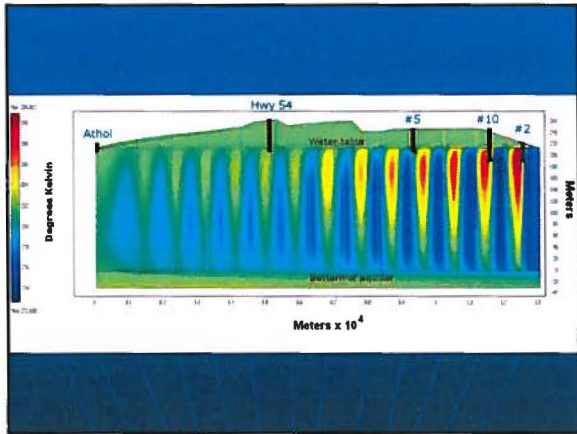
Monthly Average Temperatures



Water Temperatures in wells from Athol to Farragut State Park



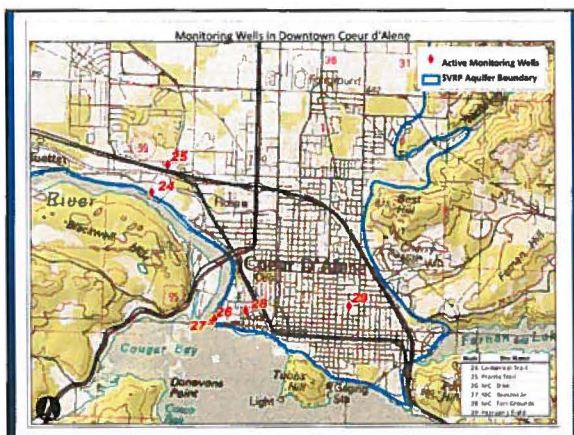


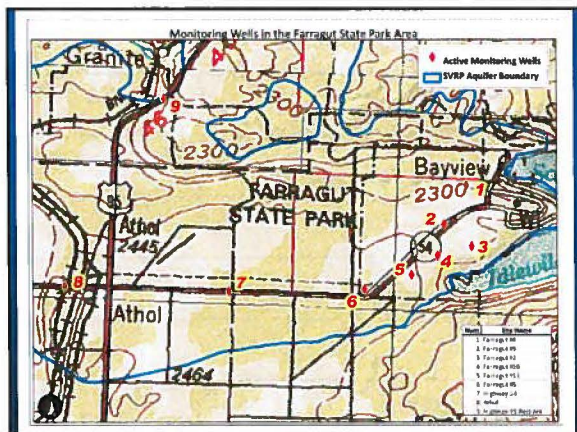


Recent Accomplishments & Into the Future...

Dec 2010 – Prairie Trail and Centennial Trail wells completed.

June 2011 – Farragut 11 completed.





More Technical Work Needed

Enhanced data collection

Thermal modeling

Update ground water model and spreadsheet tools

Model impacts of future withdrawals to protect Idaho's water interests

Funding

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