

RECLAMATION

Managing Water in the West

Odessa Subarea Special Study Groundwater Conditions

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October 23, 2007

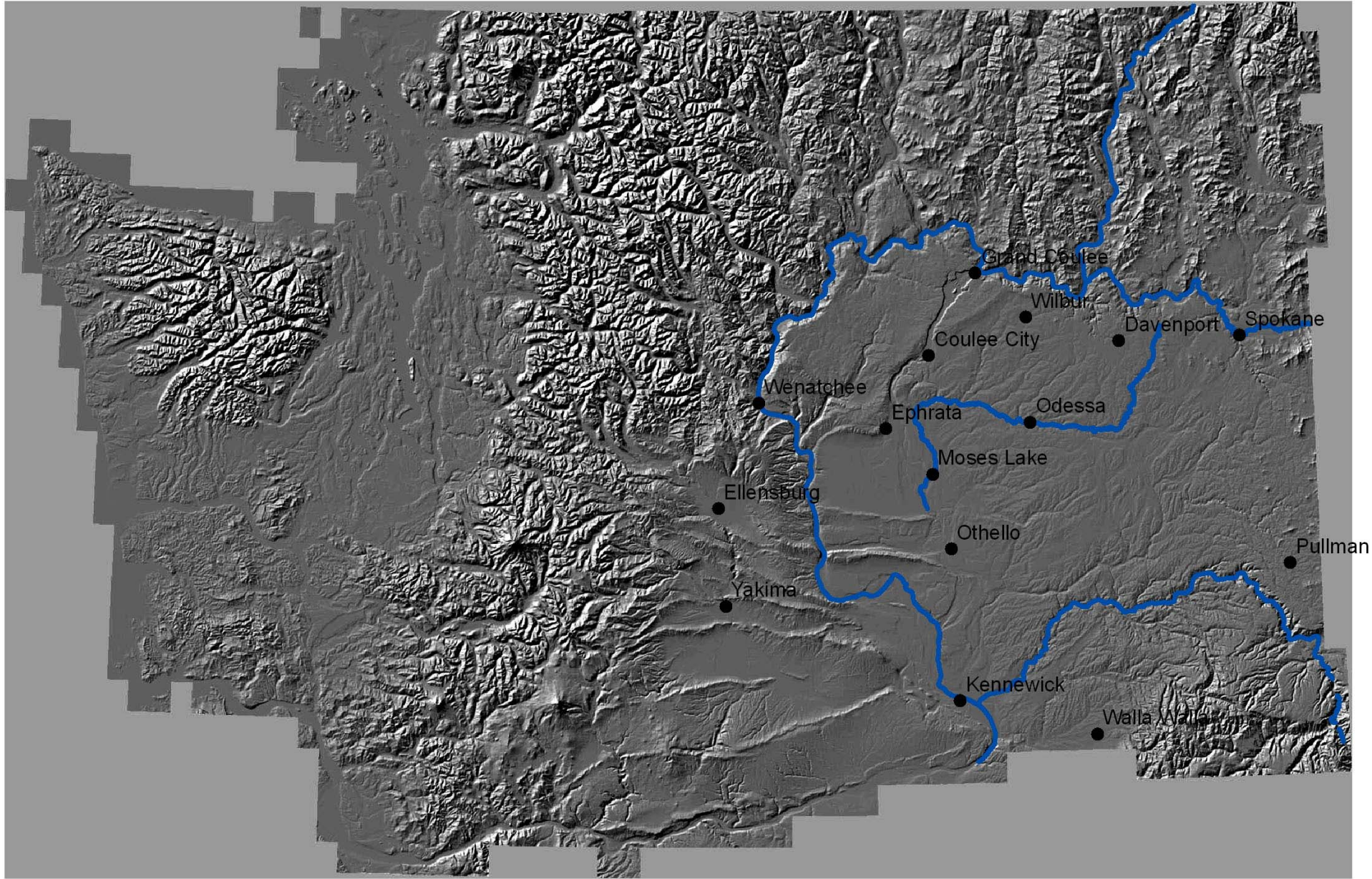


U.S. Department of the Interior
Bureau of Reclamation

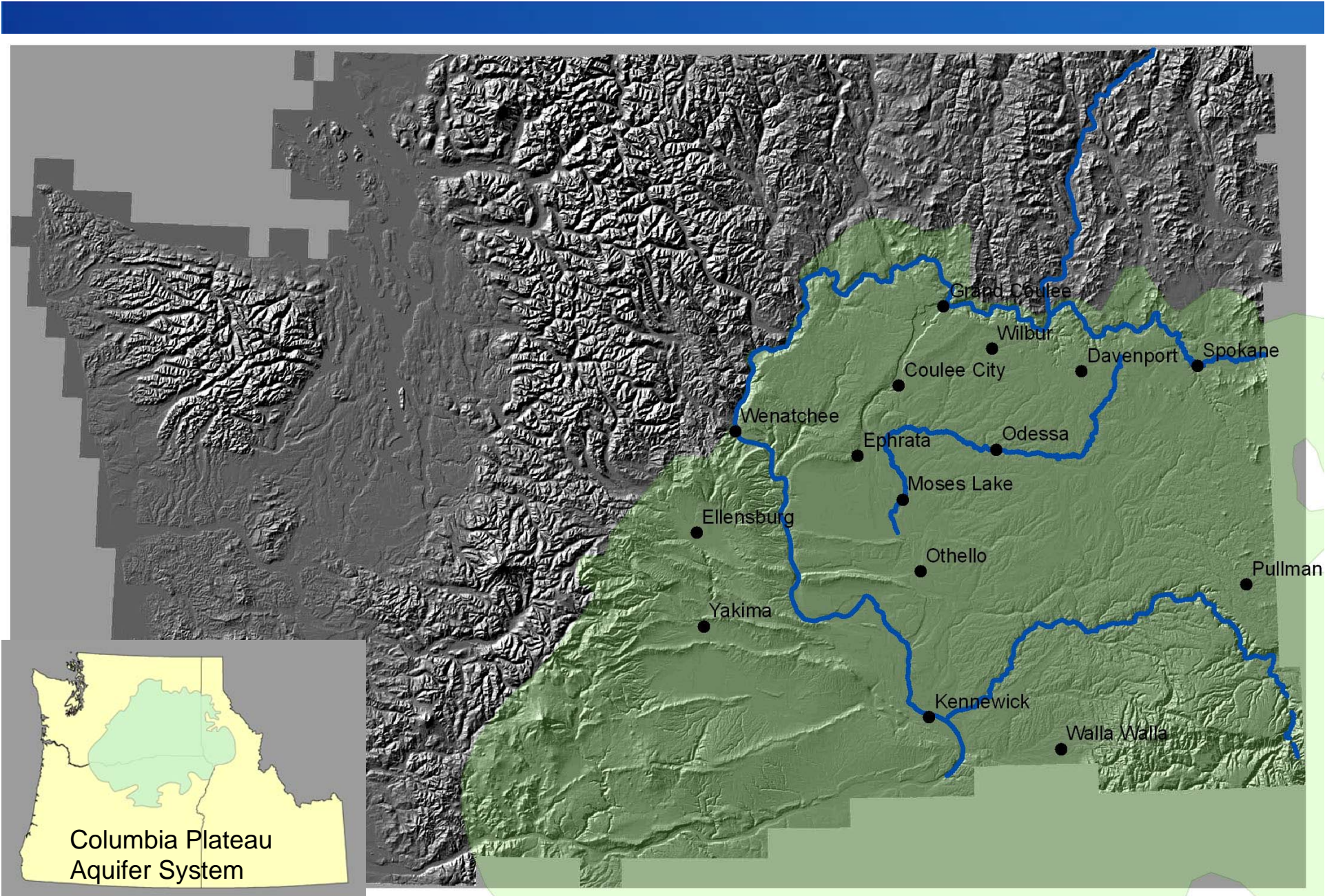
Odessa Special Study - Groundwater

- Concern about declining water levels and long-term groundwater availability
- Who's studying the groundwater?
- What do we know about the aquifers?
- Where are the water level declines (and where are there no declines?)

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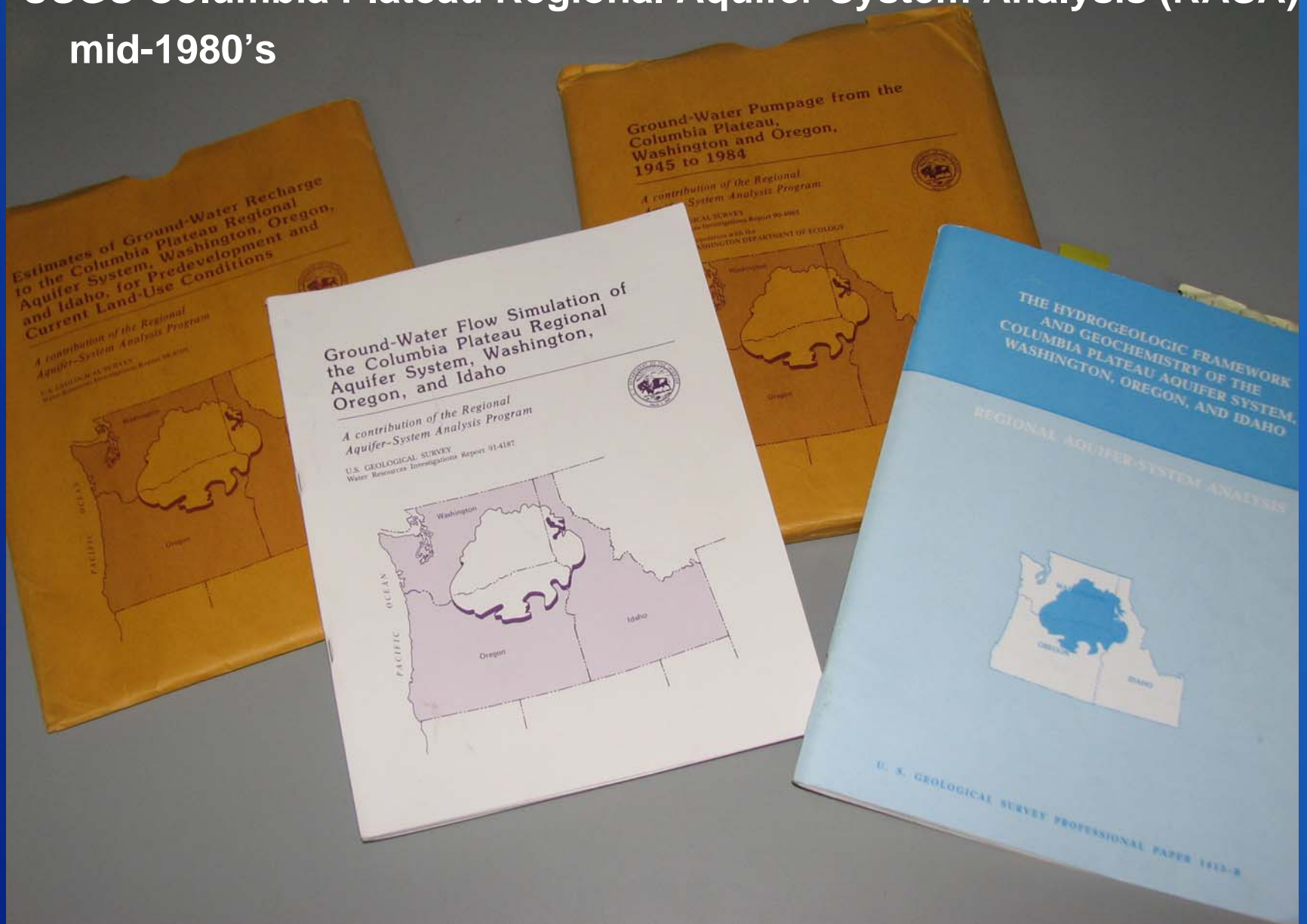
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Columbia Plateau
Aquifer System

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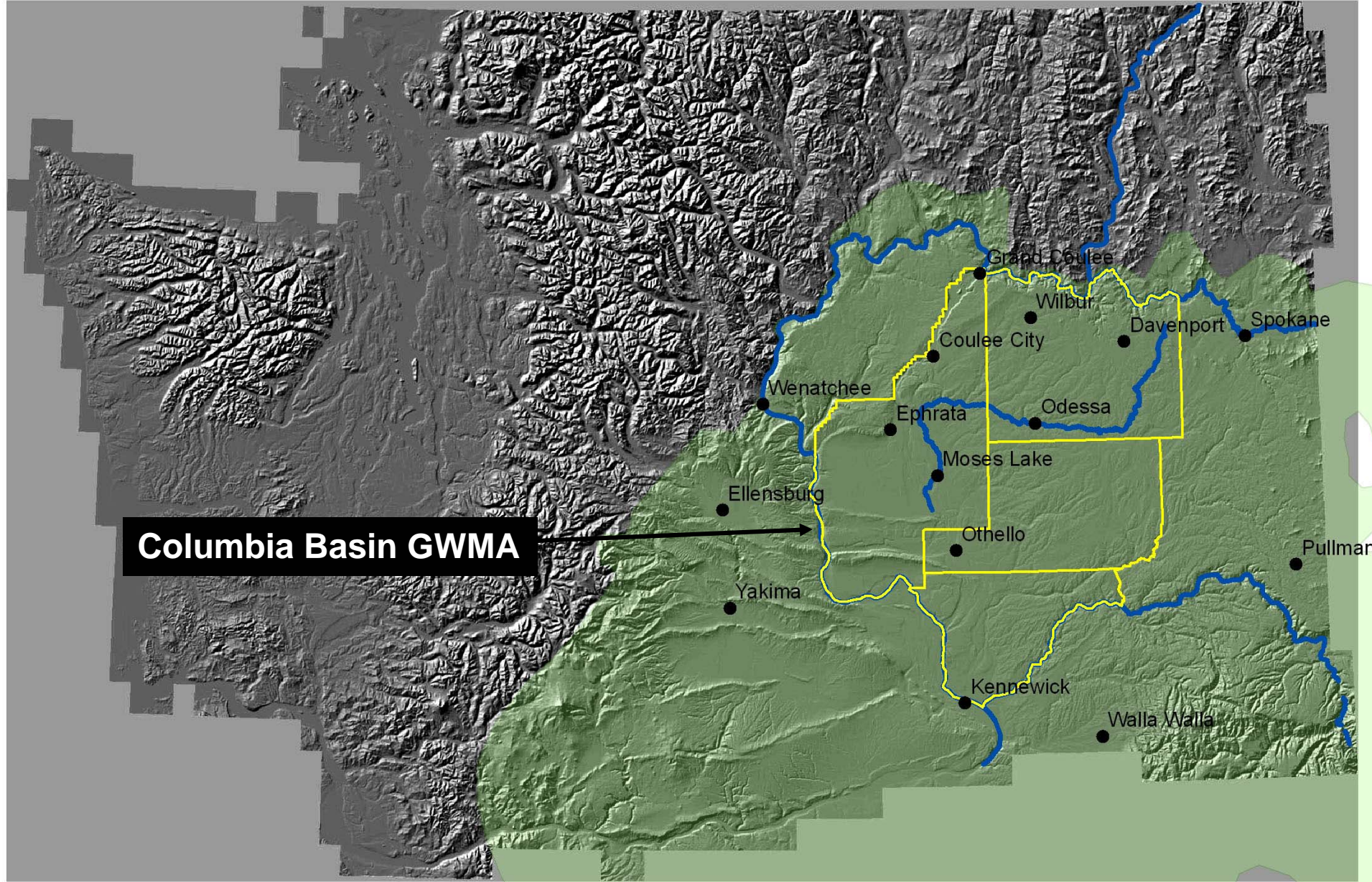
USGS Columbia Plateau Regional Aquifer System Analysis (RASA) mid-1980's



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USGS – Groundwater Availability Study

- Update water budget
 - groundwater recharge
 - water use
- Update groundwater flow model
 - new modeling tools available
 - regional scale with localized detail
- Look at climate variability effects



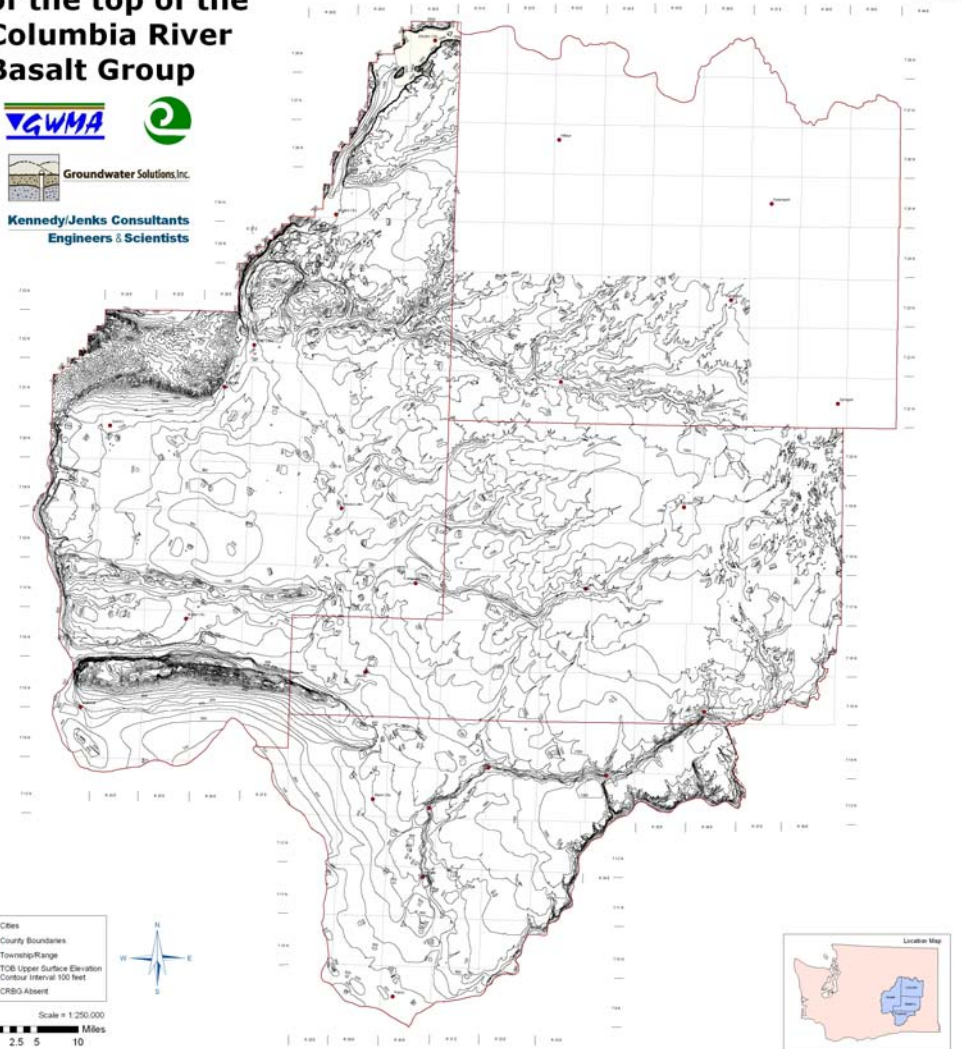
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Structure Contour Map of the top of the Columbia River Basalt Group

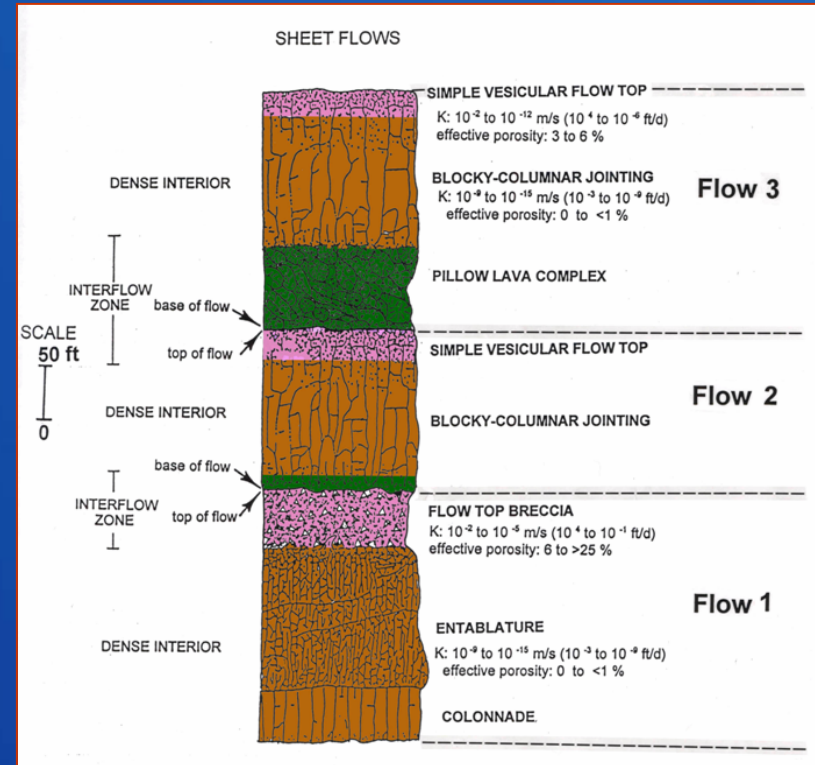


Kennedy/Jenks Consultants
Engineers & Scientists

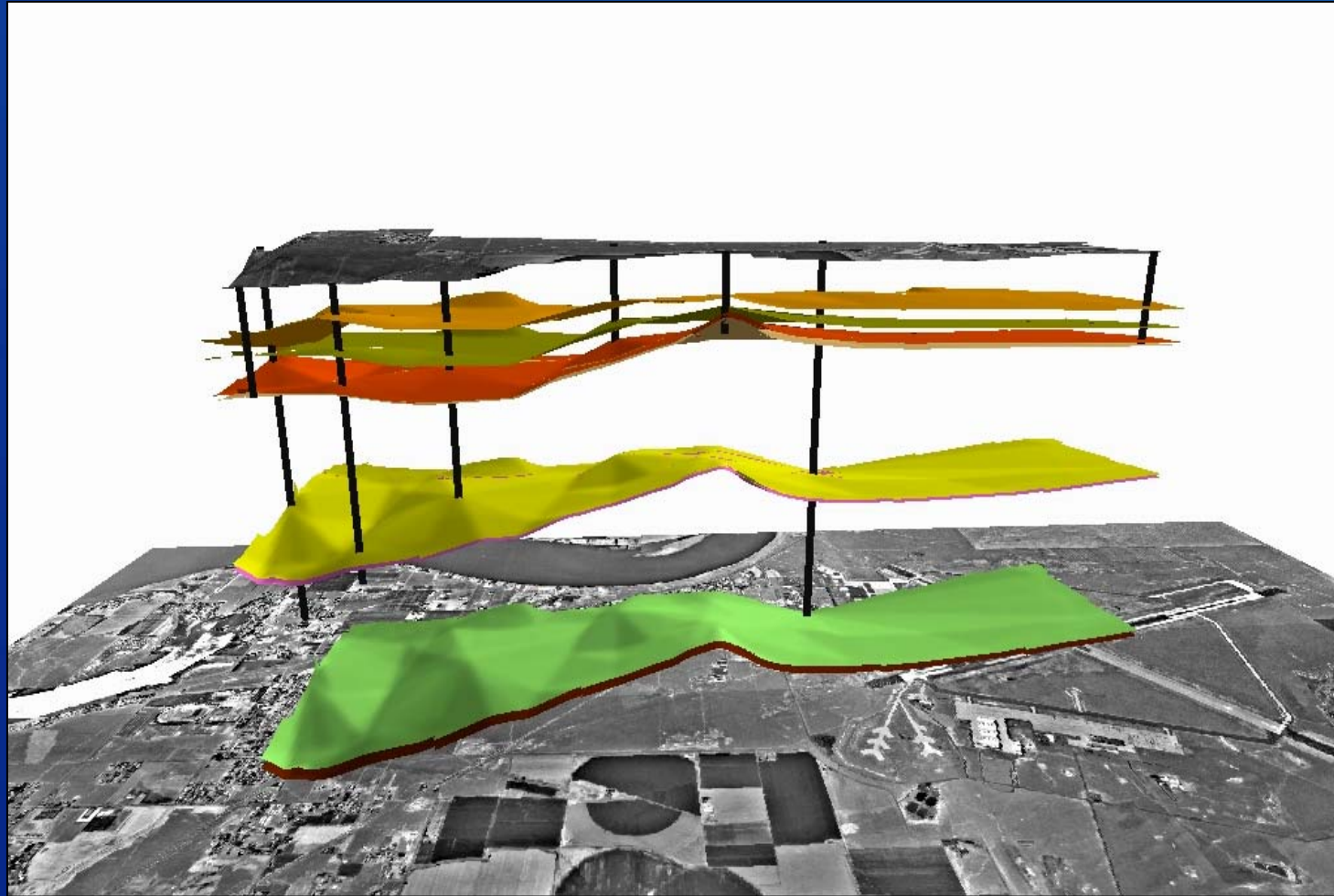
Produced by the Franklin Conservation District
for the Geologic Framework Project of the
Columbia Basin Groundwater Management Area
Groundwater Solutions, Inc., and
Kennedy/Jenks Consultants
Plate 3 of 41



Basalt Aquifers



City of Moses Lake Skyline Well

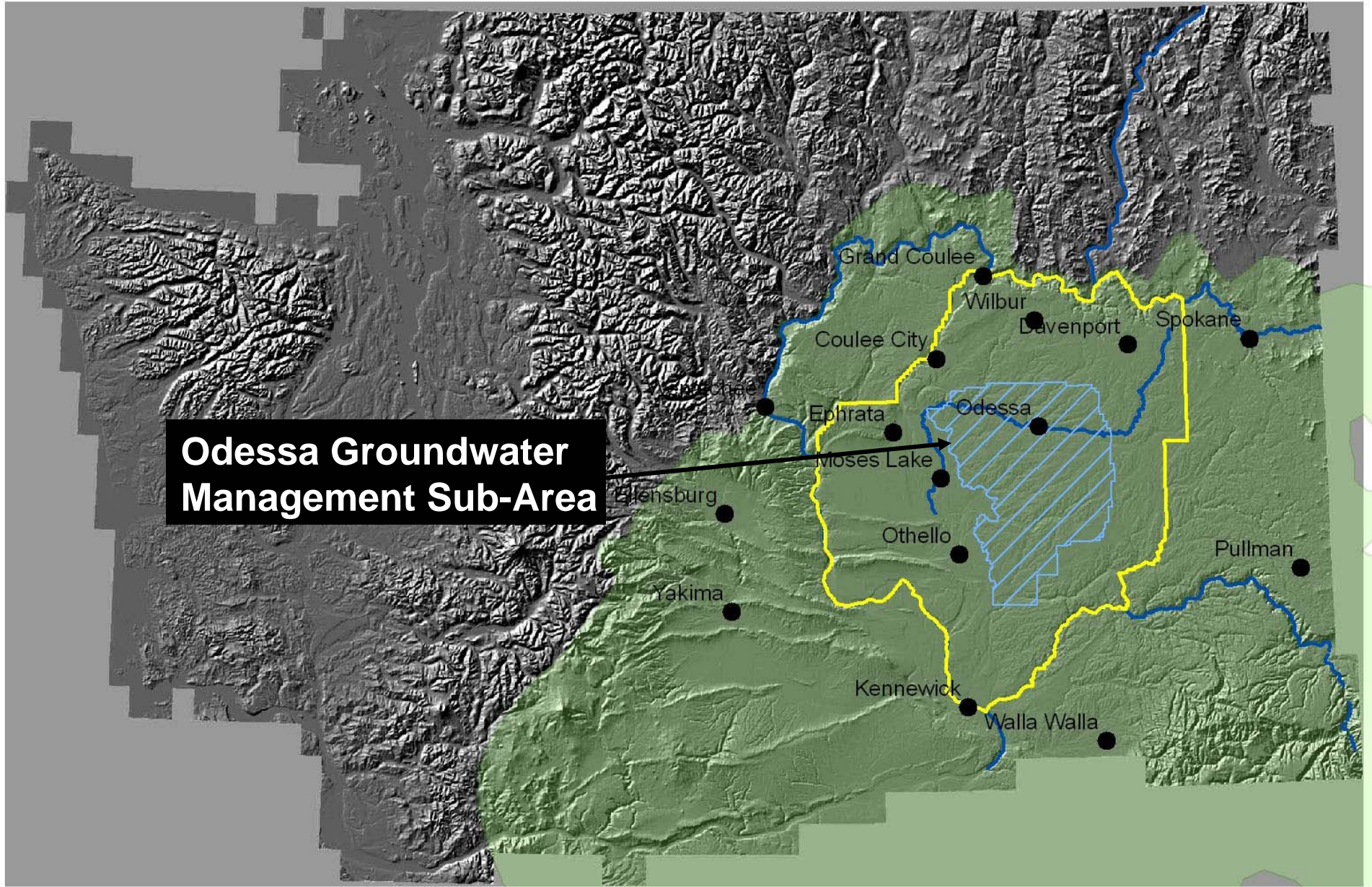


Columbia Basin

GWMA

Hydro-Stratigraphic Project

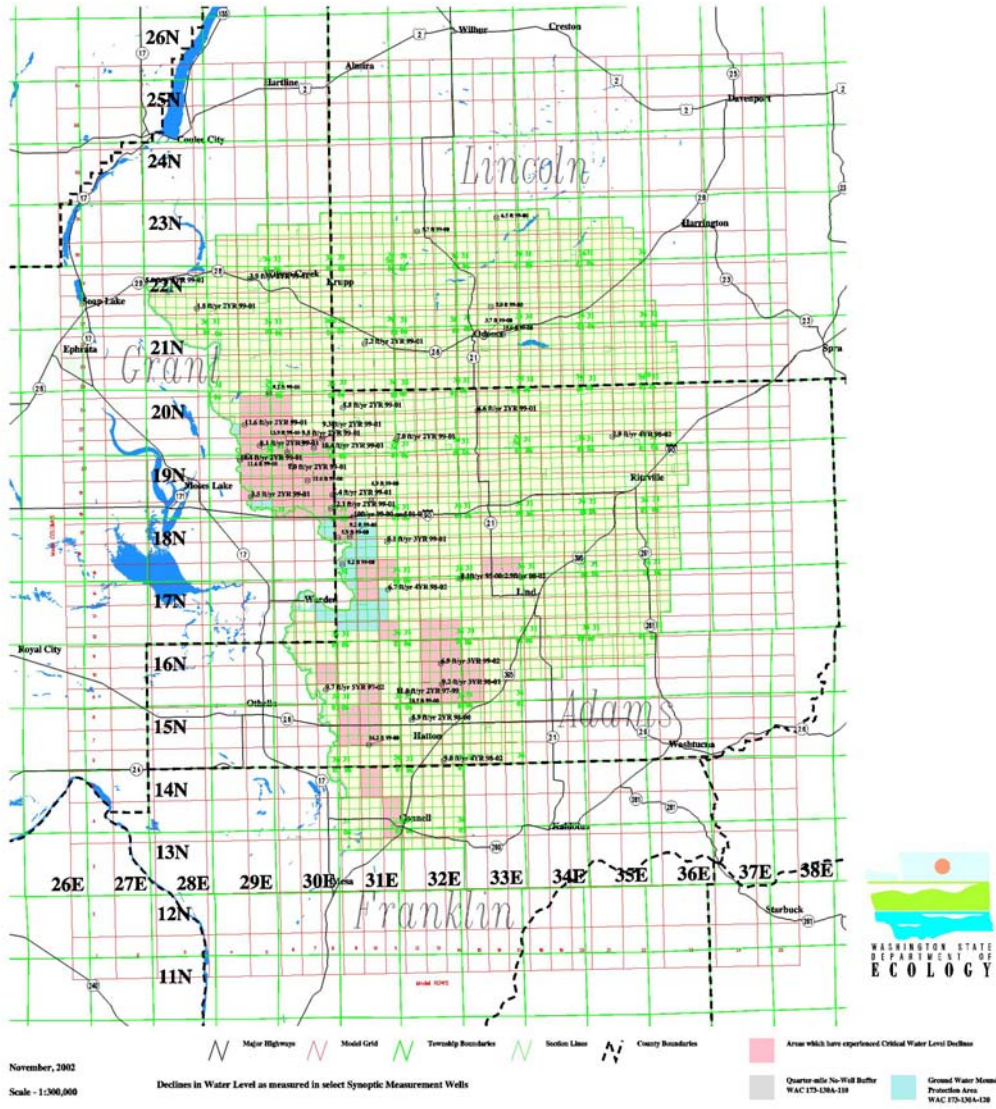
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Odessa Subarea

Recent Measured Declines in Water Levels



Department of Ecology

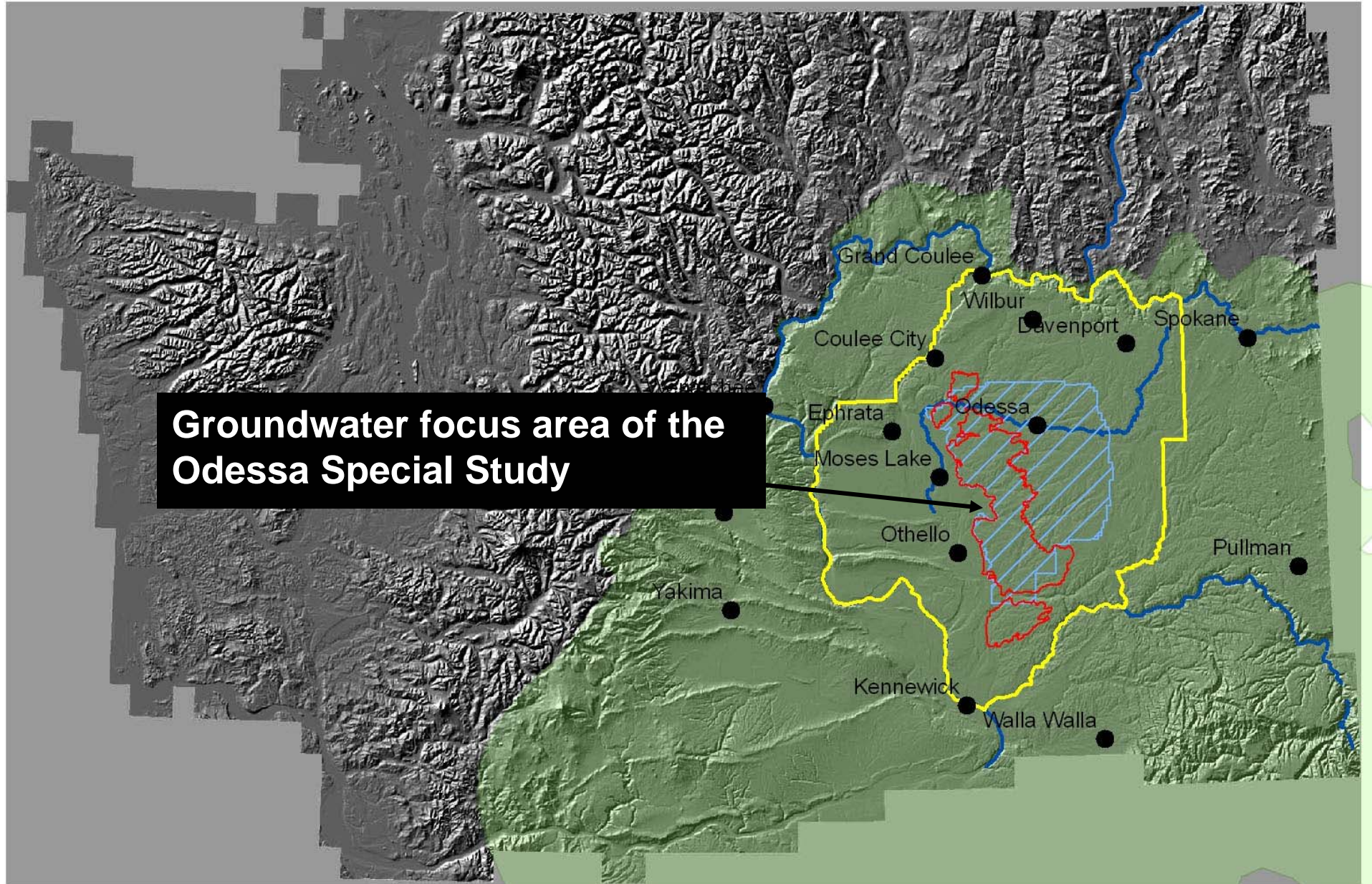
Responsible for management of State water resources

Measures about 100 water levels annually

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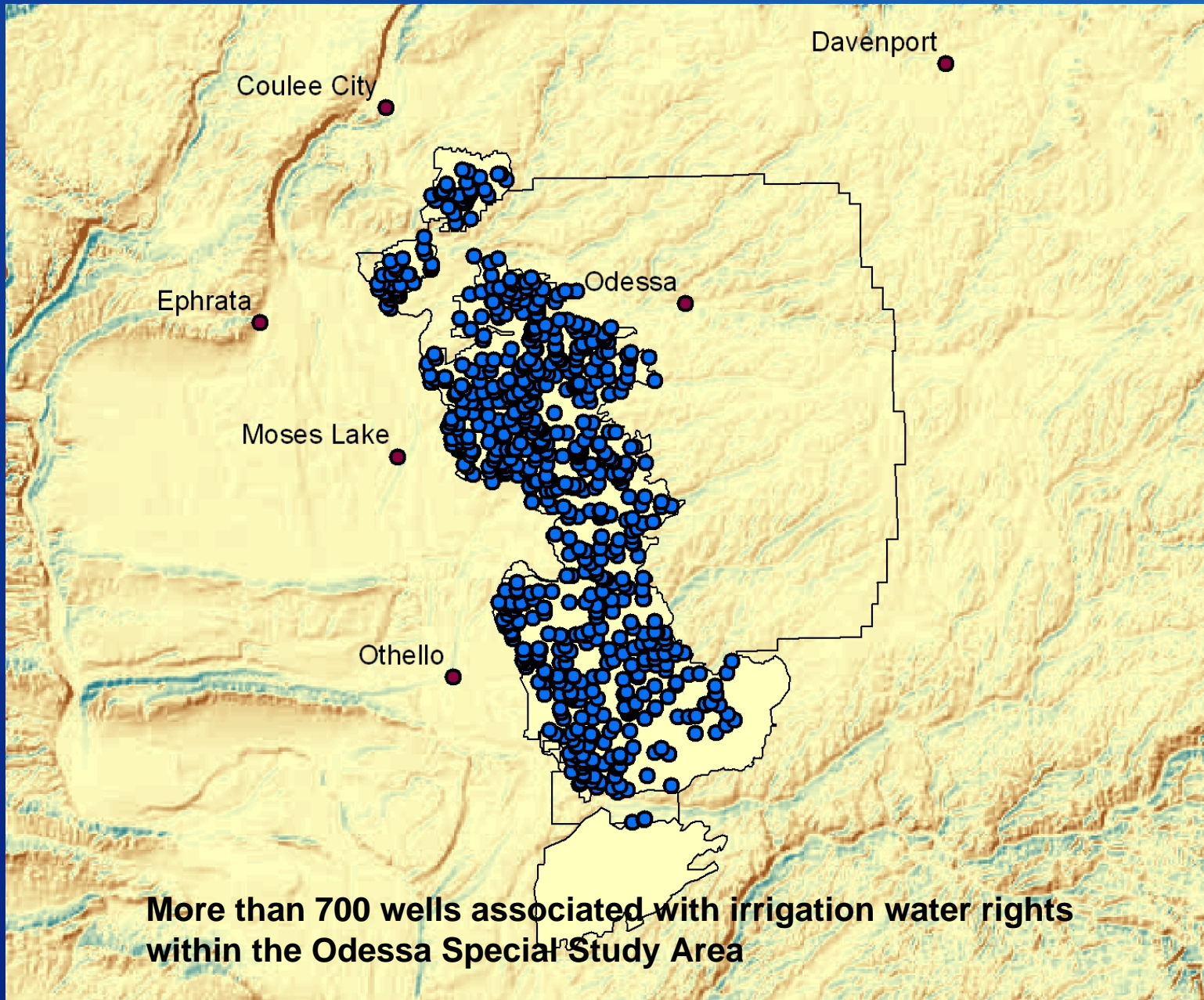
**Groundwater focus area of the
Odessa Special Study**

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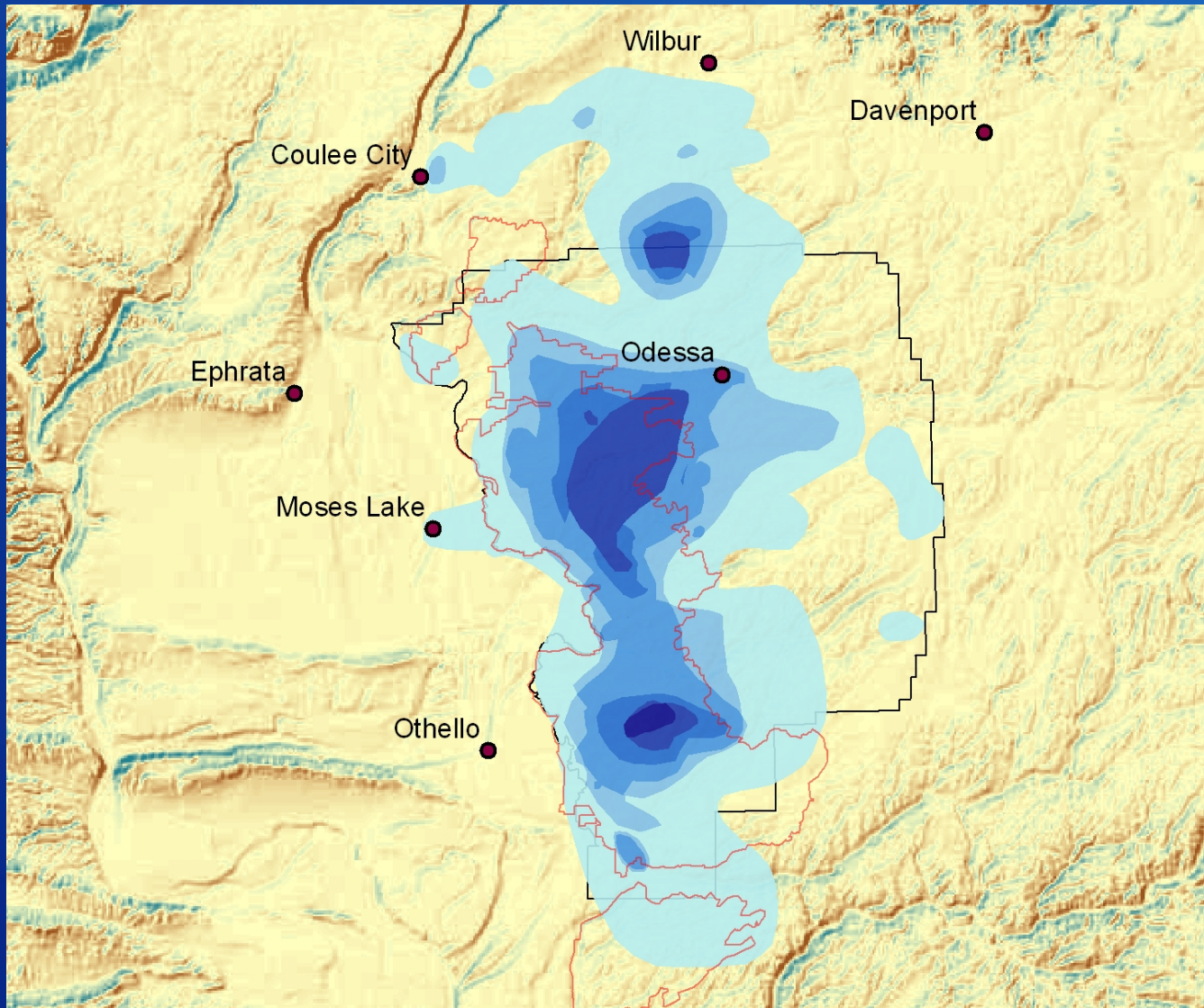
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**More than 700 wells associated with irrigation water rights
within the Odessa Special Study Area**

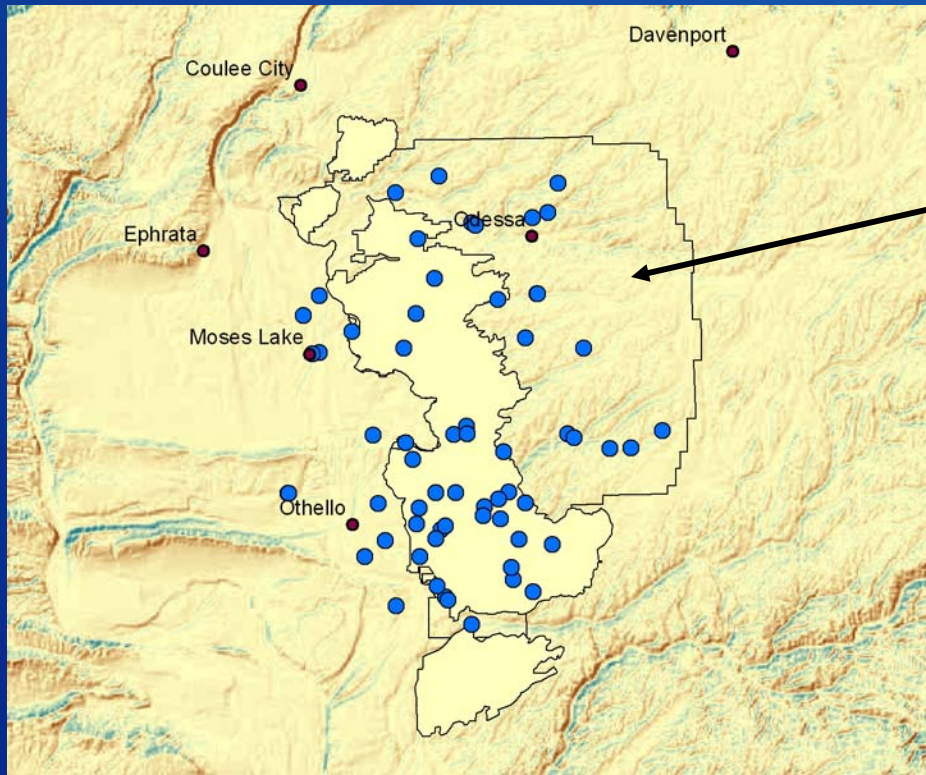
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Average Water Level Decline 1968 – 1981 in wells tapping Wanapum and Grande Ronde



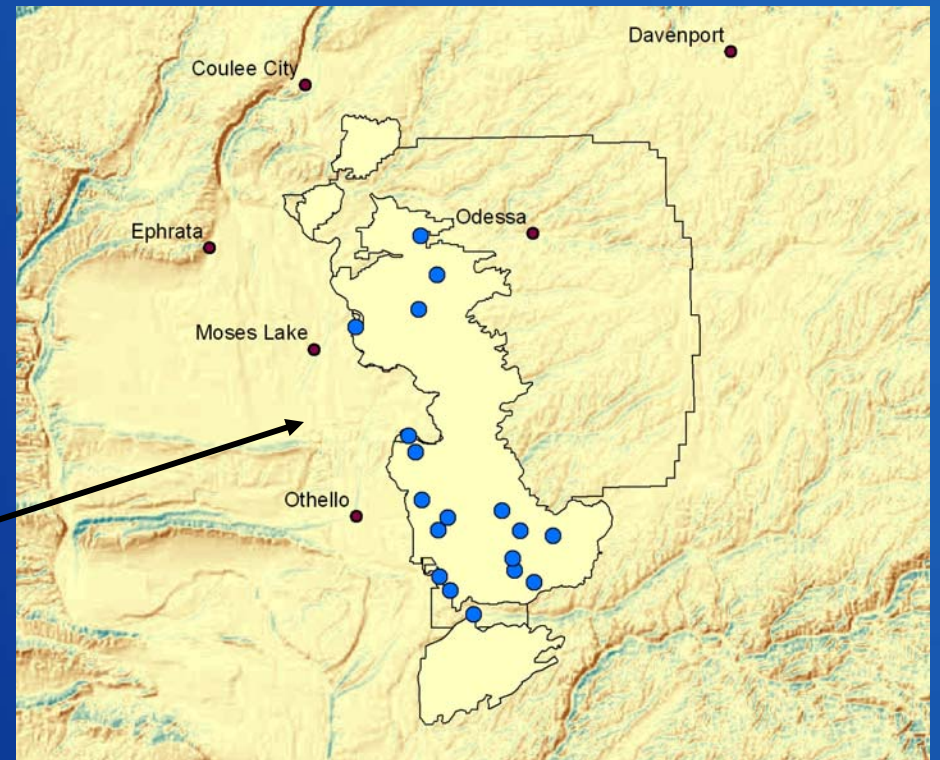
(data from Cline, 1984)

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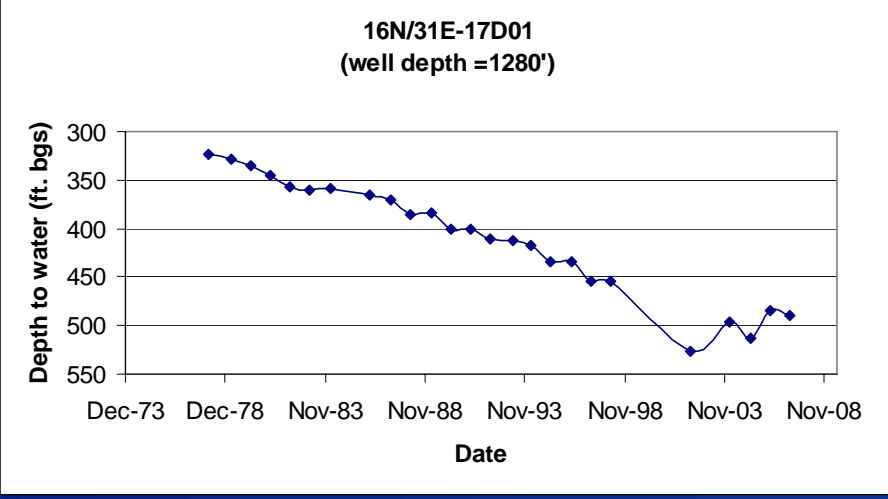
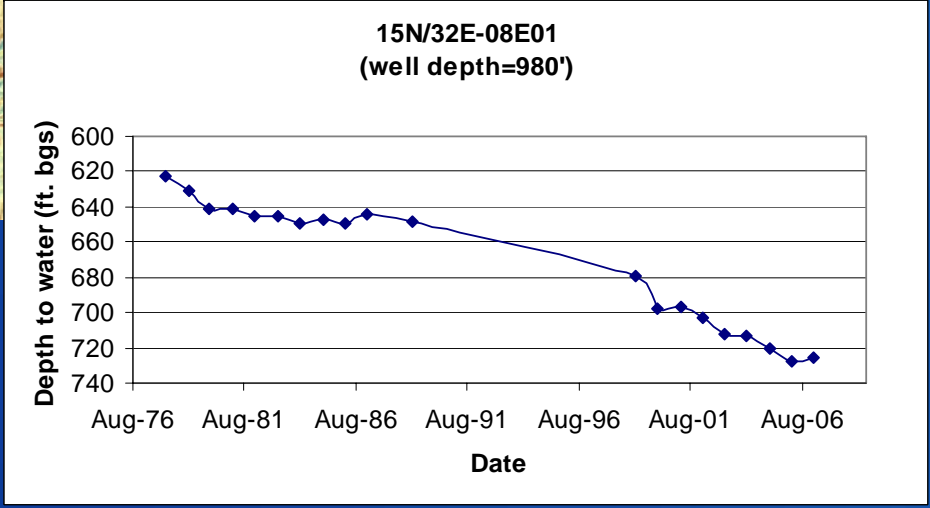
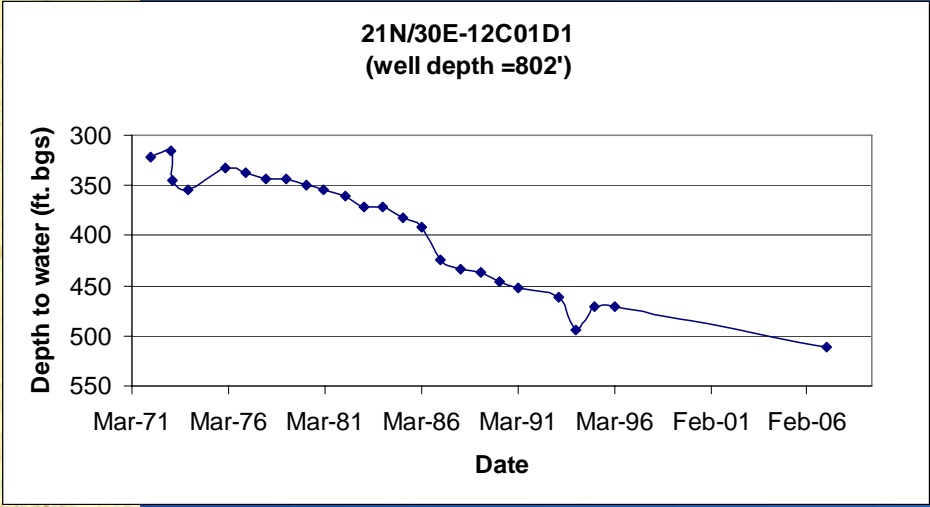
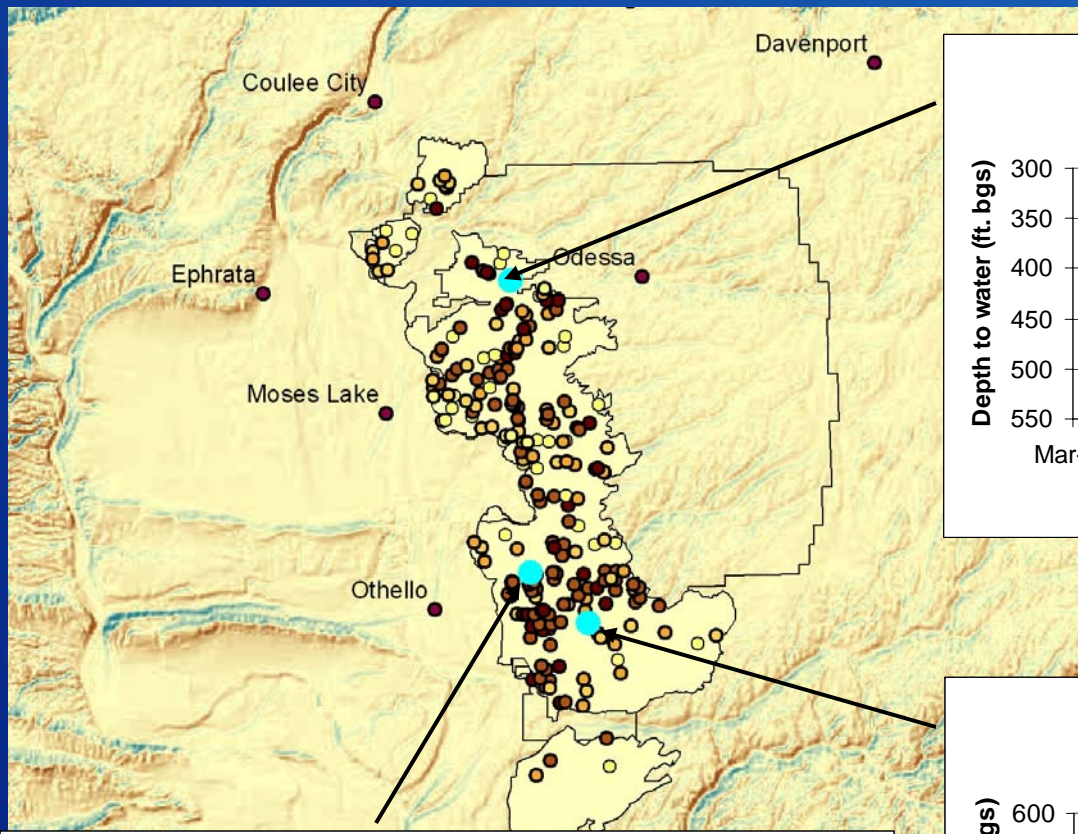


**Contracted with USGS for
Well monitoring – 2006
Measured about 180 wells**

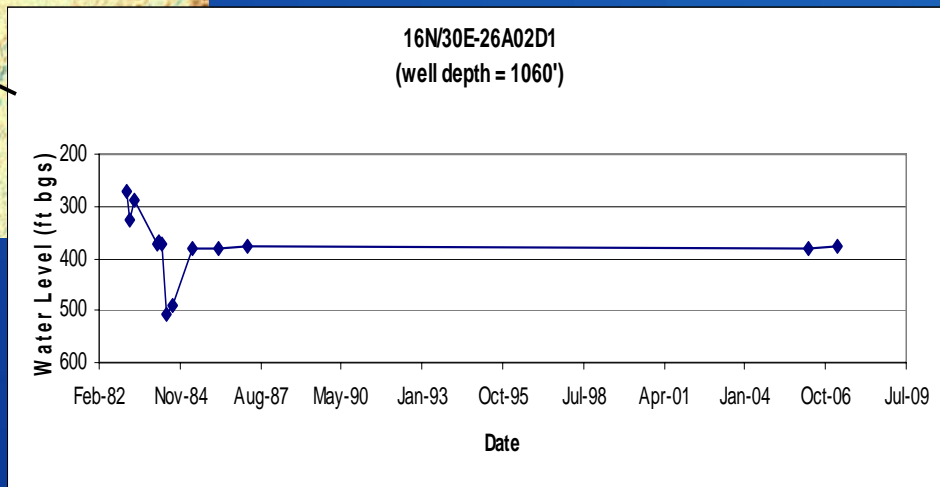
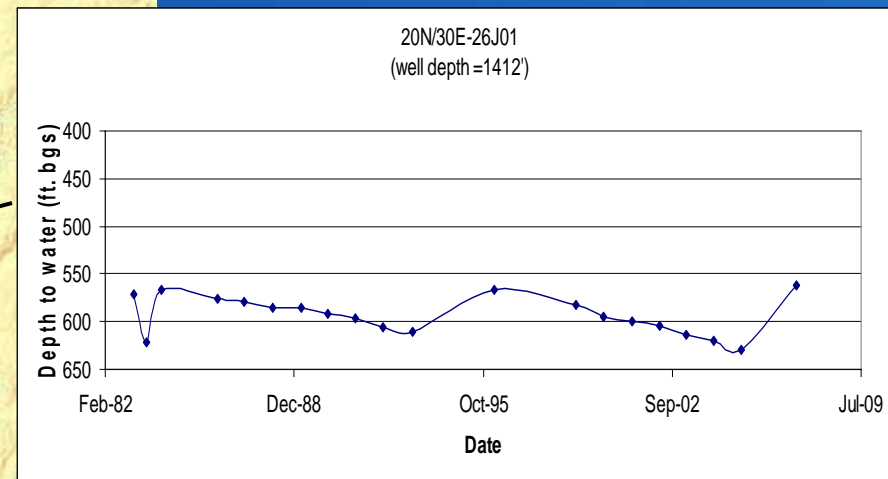
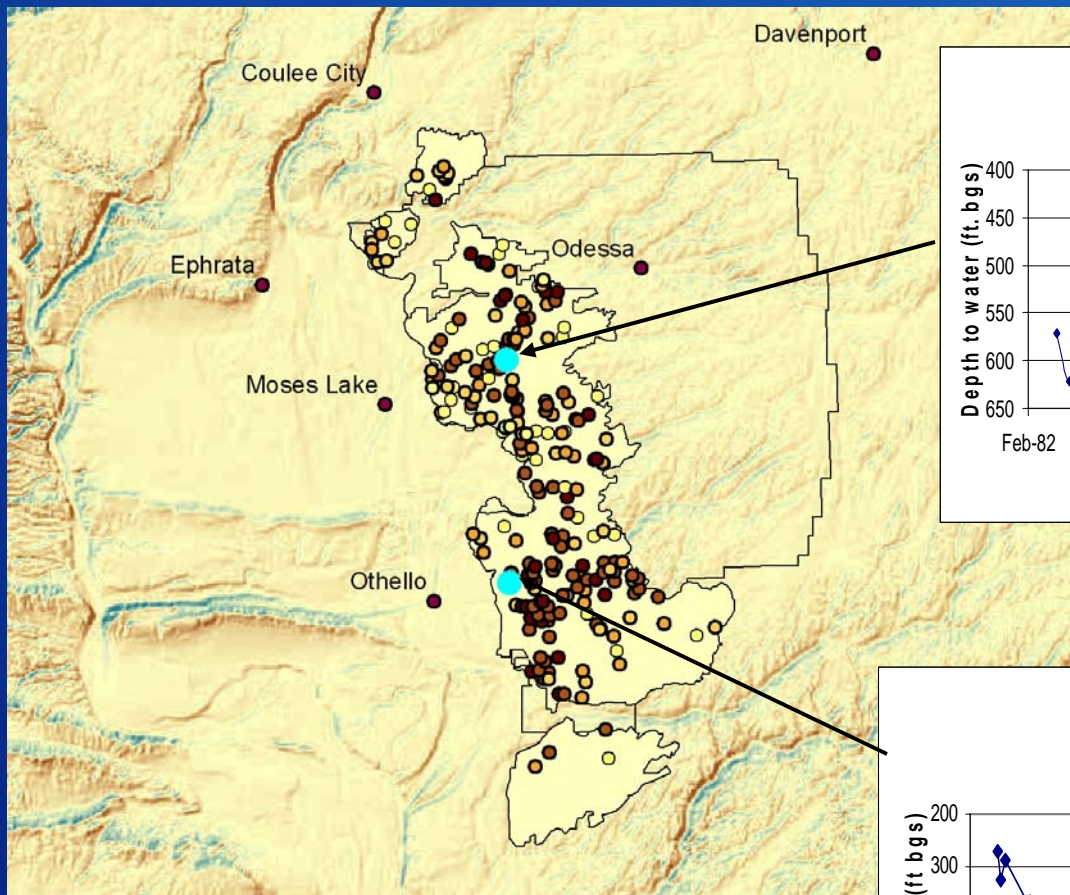
**USBR returned to measure
20 wells in 2007**



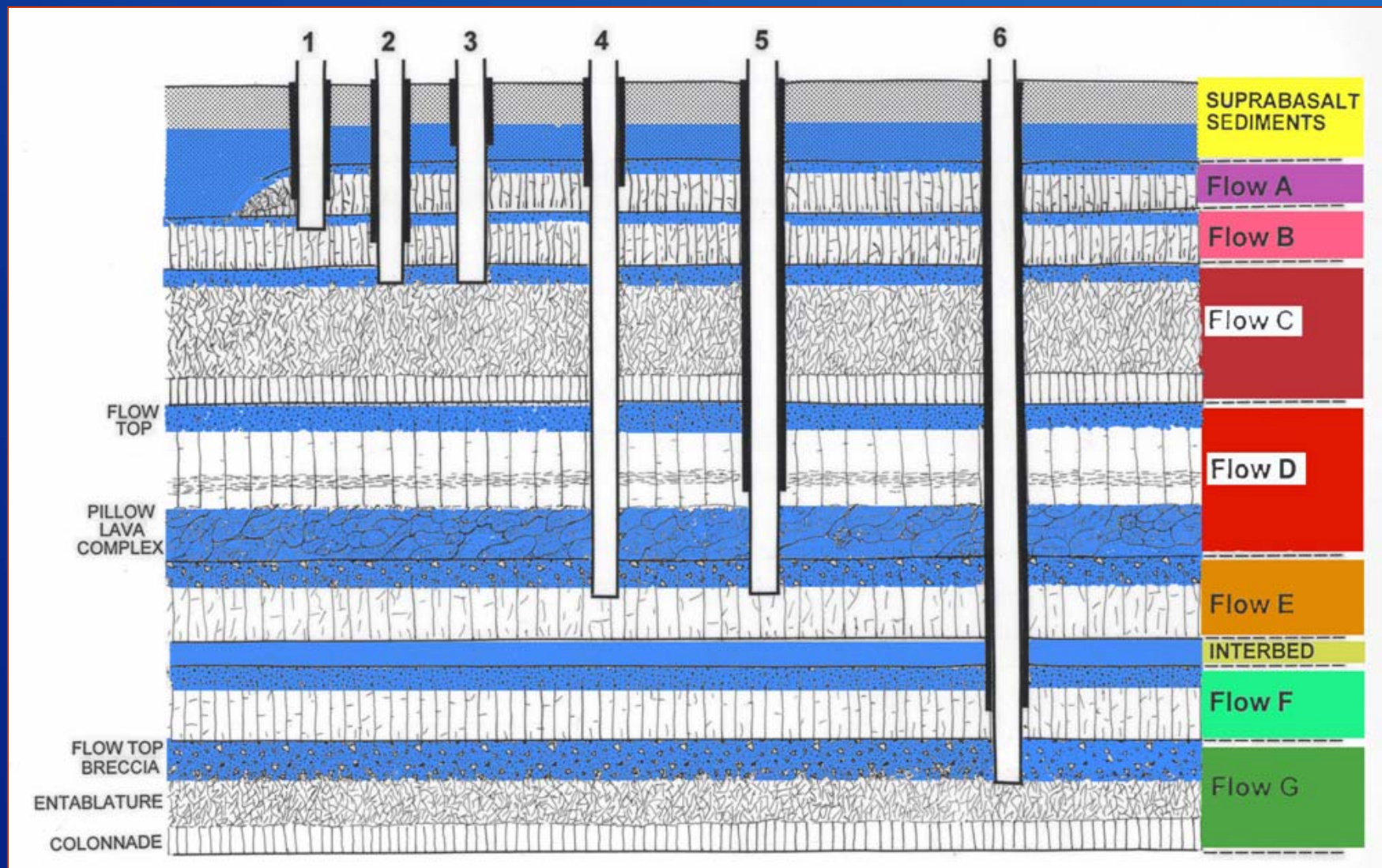
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Well Construction



Next Steps:

- **Continue to monitor water level trends**
- **Collaborate with Ecology, USGS, GWMA and others to improve our understanding of the groundwater system**
- **Use best science to make water resource and project management decisions**