

# **Spokane Valley Rathdrum Prairie Aquifer**

## **SVRP Aquifer**

*Lake  
Spokane*

*Lake  
Pend Oreill*

**SPOKANE**

**COEUR D'ALENE**

**WASHINGTON**

**IDAHO**

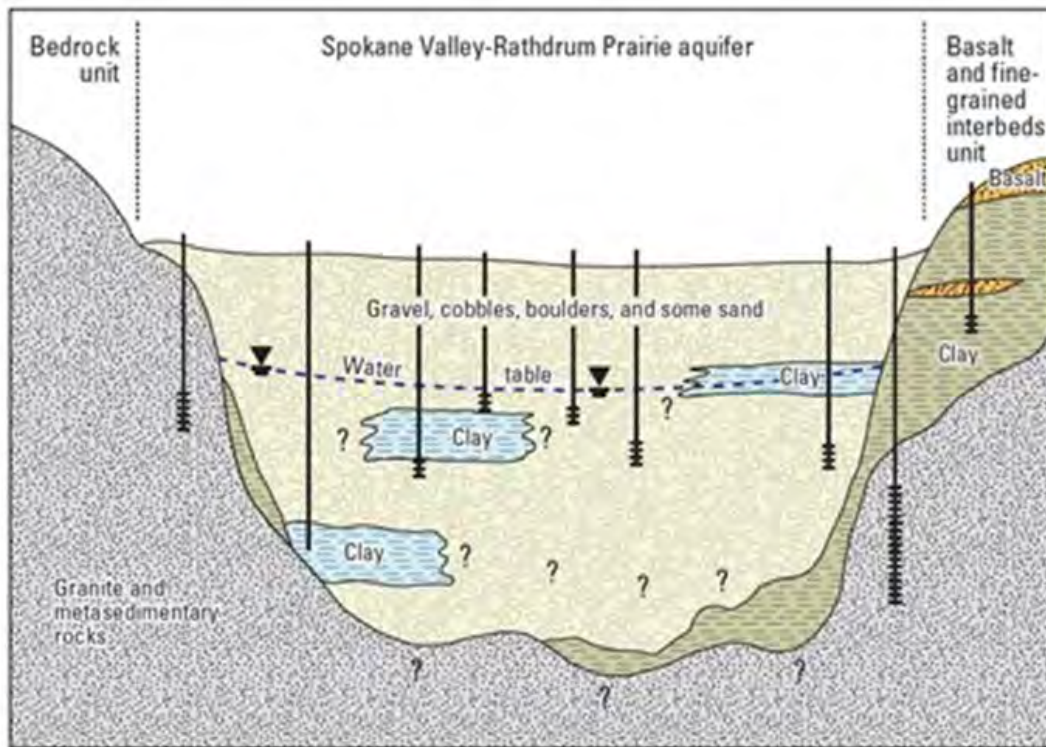


## SVRP Stats:

- Covers roughly 370 square miles in northern Idaho and eastern Washington (250 mi<sup>2</sup> in Idaho)
- Primary source of drinking water for over 500,000 people living in the area
- EPA- designated Sole Source Aquifer (1978)
- Idaho DEQ- designated sensitive resource aquifer (1997)
- Vulnerable to pollution

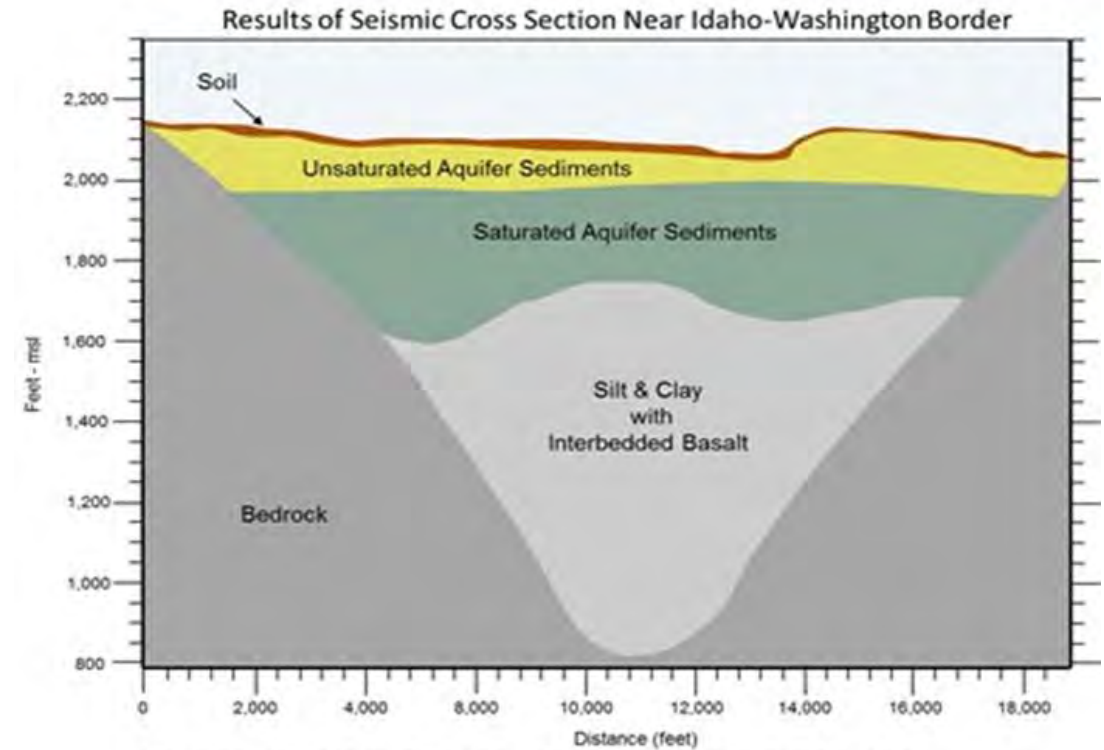


- Composition
- **Aquifer:** Ice Age Flood-deposited gravels, cobbles, and boulders
- **Valley Walls:** rocks and clay
- **Aquifer Edges or Basin:** Bitterroot and Selkirk Mountains



From: USGS 2007

Not to scale



From: Seismic Cross Sections Across the Spokane River Valley and the Hillyard Trough, Idaho and Washington, USGS, 1953



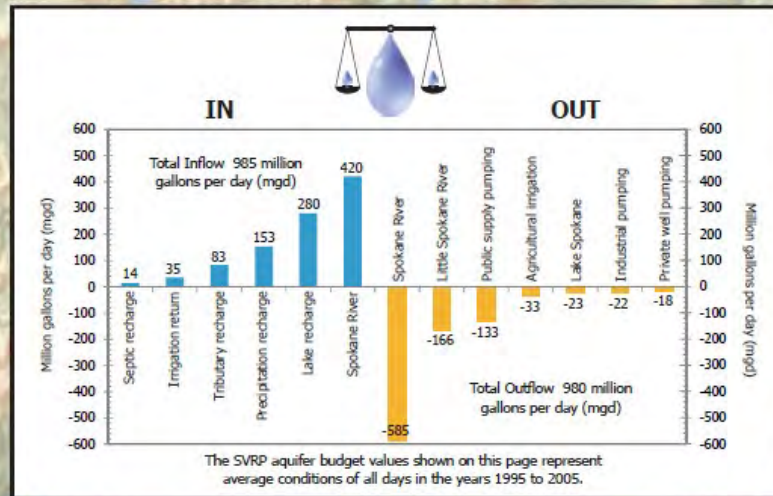






## WATER BUDGET

The Spokane Valley - Rathdrum Prairie (SVRP) aquifer is dynamic with water flowing into and out of the system. Like a household budget, a water budget is an accounting of the amount and source of water recharging the SVRP aquifer, and the amount and destination of water discharging from the SVRP aquifer. This water budget is organized into two categories: inflow (water that recharges or flows IN to the SVRP aquifer) and outflow (water that discharges or flows OUT of the SVRP aquifer). In any successful budget, the IN and OUT numbers should match. More information could narrow the small gap in this budget.

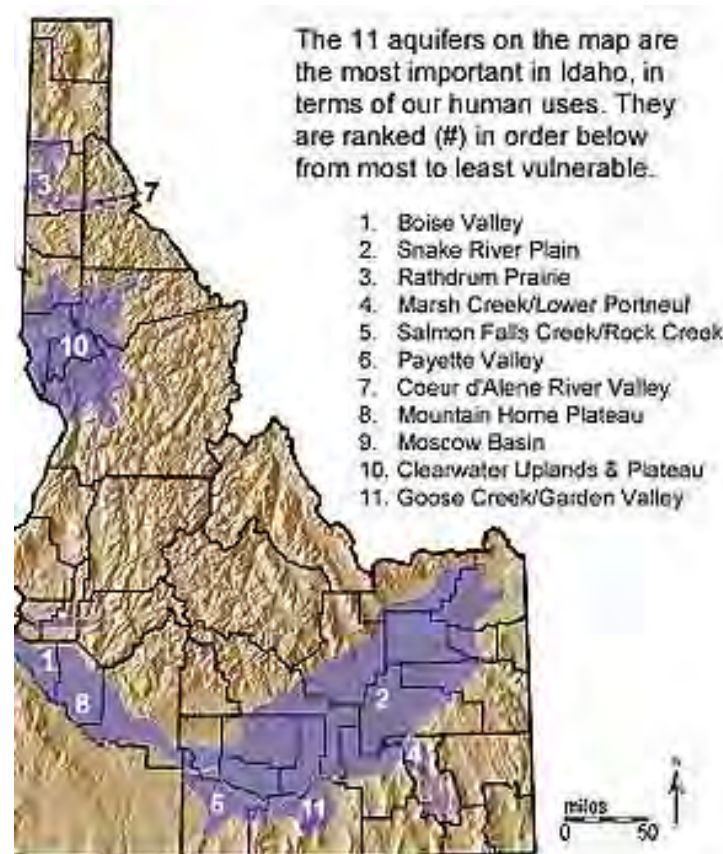
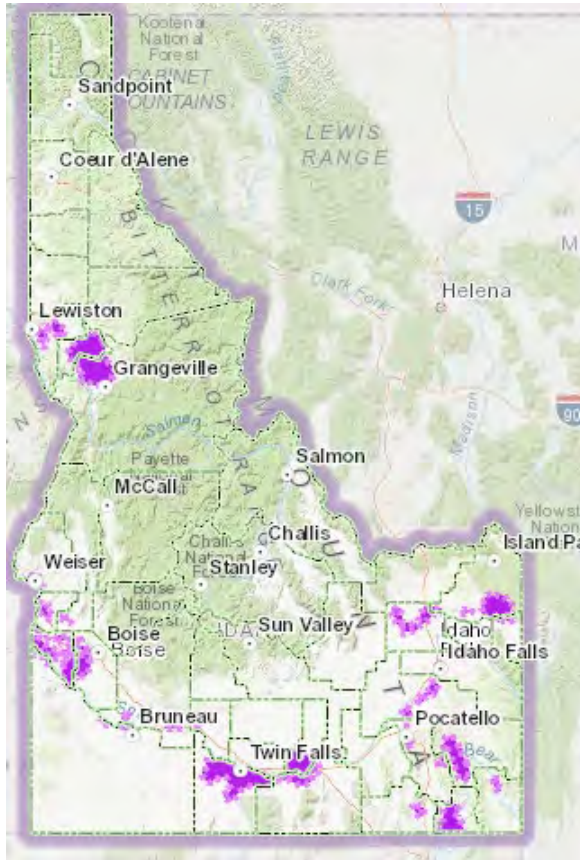








# Aquifer Contamination in Idaho

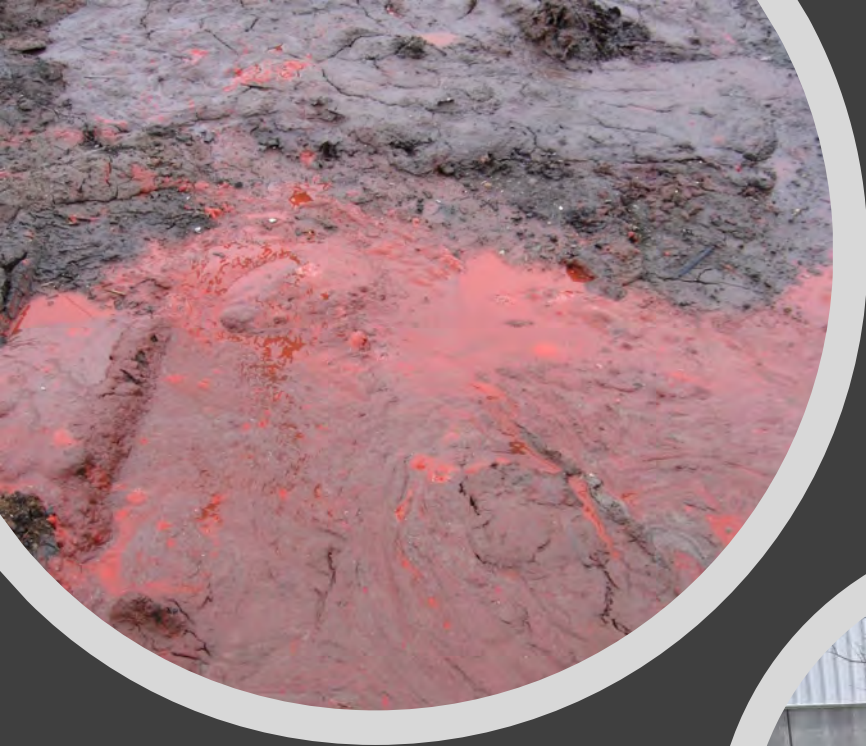


- Other areas of Idaho have aquifers with 5 mg/L or higher of Nitrate
- Very difficult to remediate once contaminated
- Septic systems a factor, but not the only factor
- SVRP Aquifer rules were adopted to limit density of systems over the aquifer
- Critical Materials Program regulates chemicals over the aquifer
- SVRP Aquifer is sampled continuously for contamination
- Decrease in Nitrate concentrations despite ~5X population growth over the last 40 years



# CMR Program Stats

- 900 businesses with critical materials (1,095 sites tracked)
- 392 facilities required to have secondary containment
- 18.2 million gallons of chemicals stored over the RPA
- 7.9 million pounds of chemicals such as fertilizer and road salt stored over the RPA





# Examples of Improper Containment





Before:

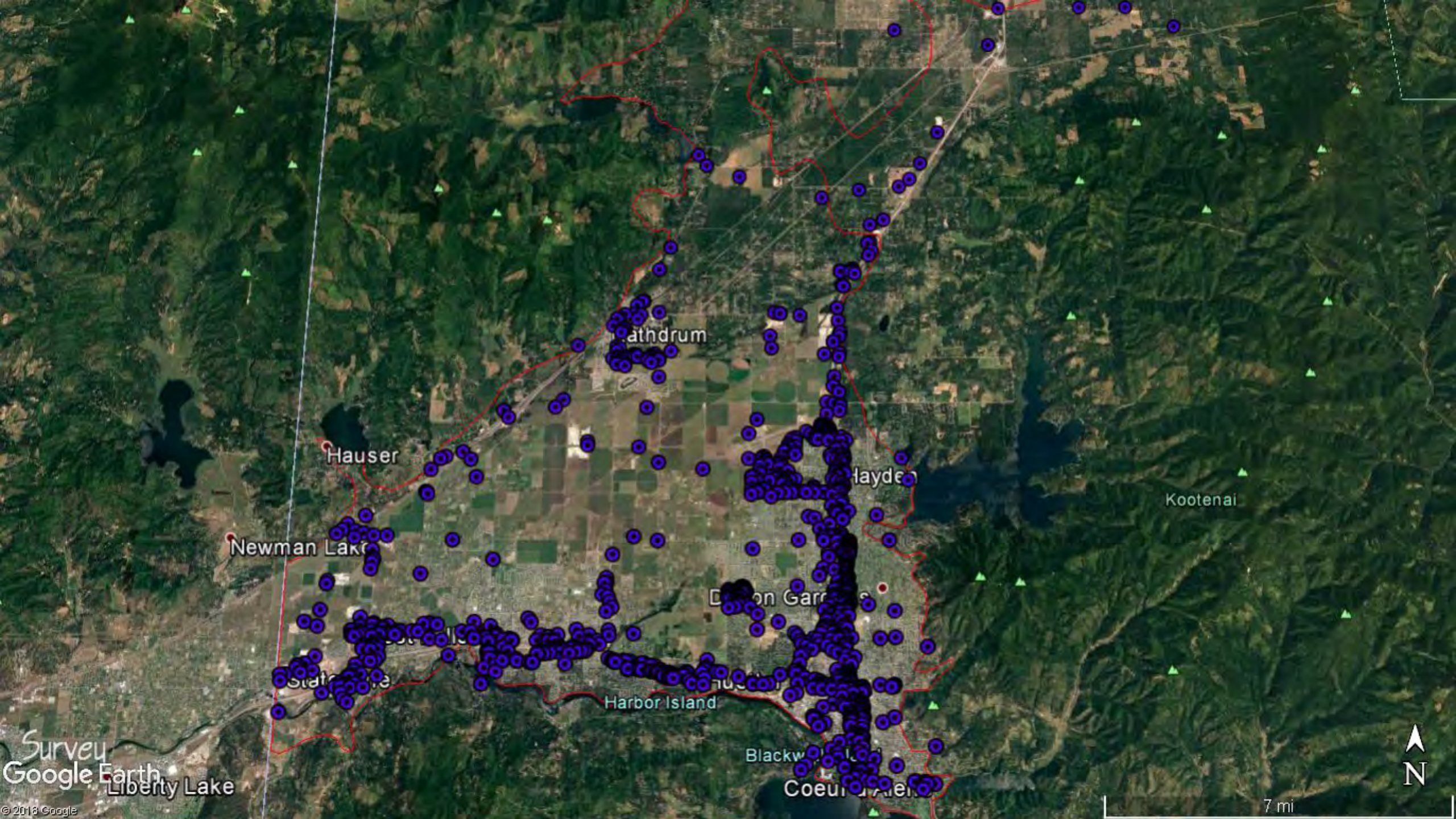




After:







Hauser

Newman Lake

Kootenai

Hayden

Blackfoot

Harbor Island

Blackfoot

Coeur d'Alene

Liberty Lake

Survey  
Google Earth

© 2013 Google

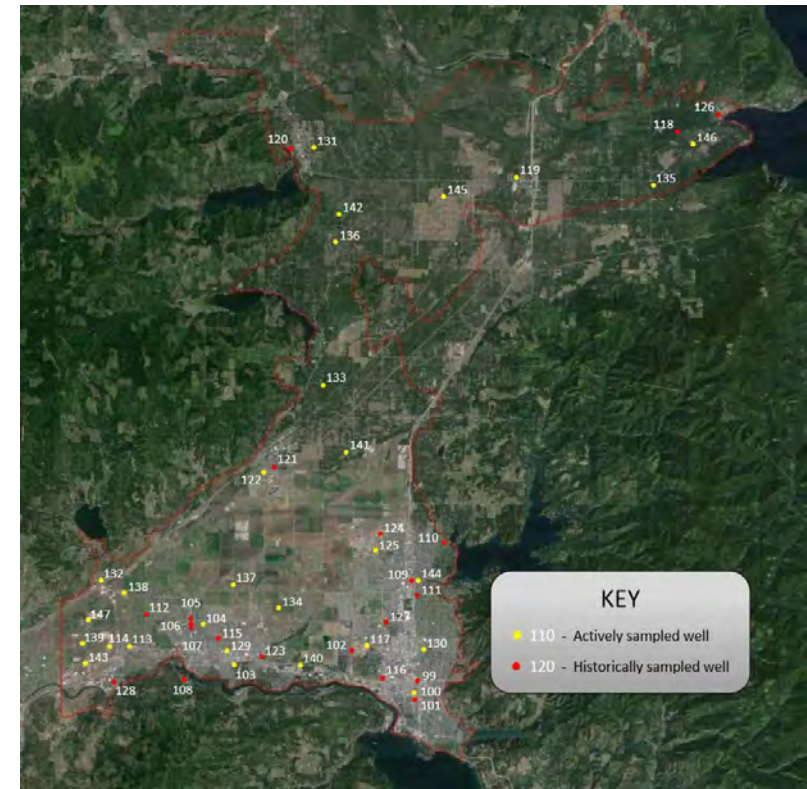


7 mi



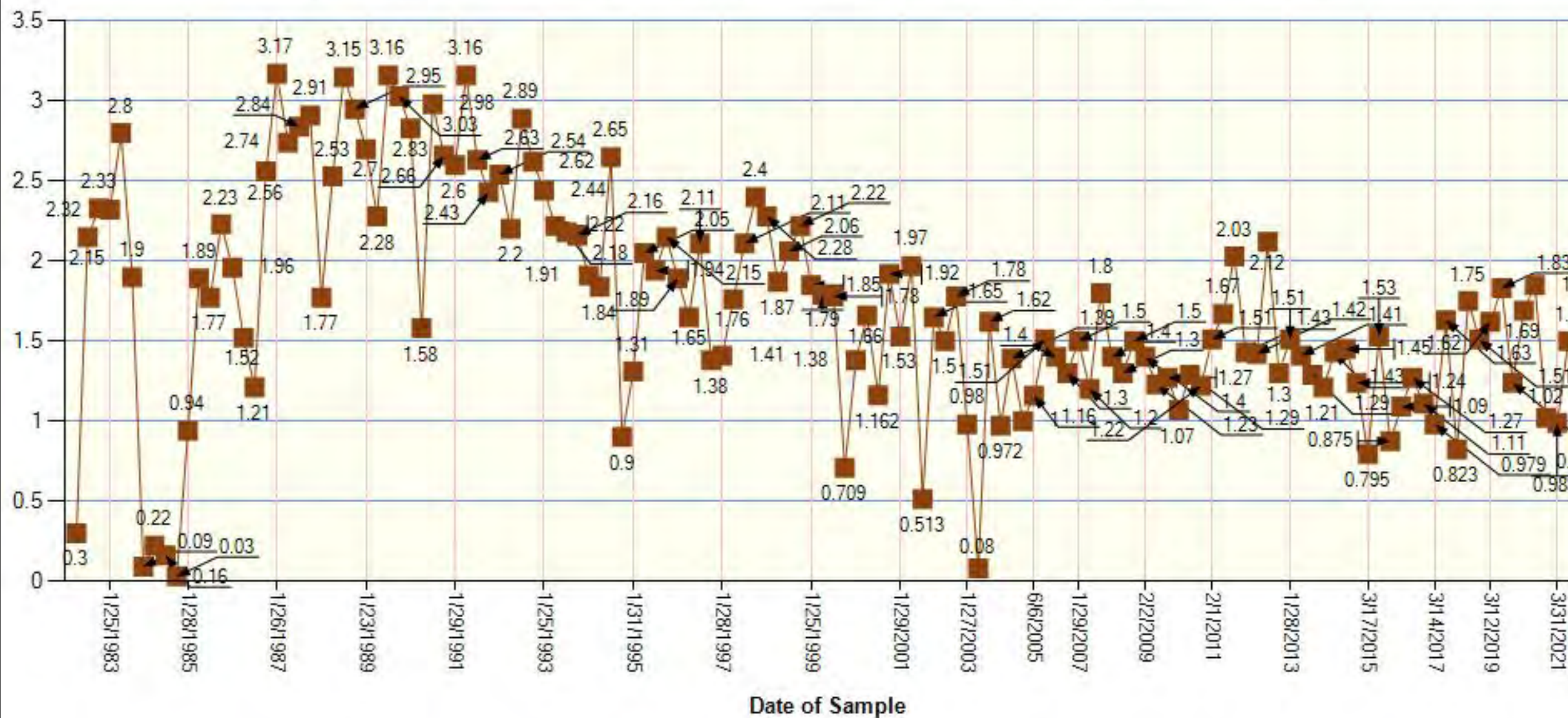
# Aquifer Sampling

- 28 wells sampled 3x/year
- Nitrate, Arsenic, Chloride, Coliform, Lead, VOCs, & SOCs are examples of some of the analytes sampled for





**NO3 as N-mg/L results for well 122 RATHDRUM - GRANGE for 1/1/1978 through 1/1/2022**





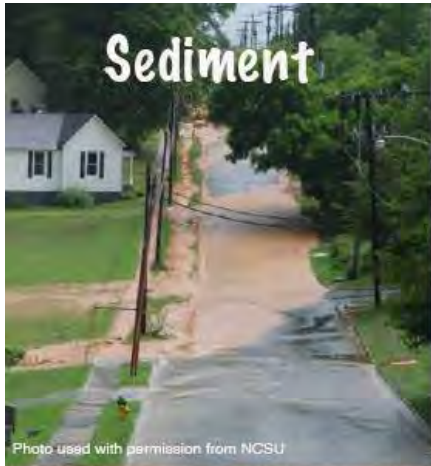
# Stormwater and Pollution Prevention

What is stormwater?

- water that comes from precipitation and ice/snow melt – it either soaks into exposed soil or remains on top of impervious surfaces, like pavement or rooftops
- stormwater will eventually evaporate off a level surface, but most often it flows as runoff to another location
- while runoff is flowing to a storm drain or nearby water body, it picks up pollutants along its path
- this runoff can cause stream impairment, flooding, pollution, fish & wildlife habitat loss, soil erosion, and reduced groundwater levels







- Types of pollutants carried in stormwater:
- Metals
- Pesticides
- Herbicides
- Nitrates (fertilizer, sewage)
- Phosphorus
- Chlorides (road deicers)
- Pathogens (viruses, microorganisms)
- Chemicals (oils, hydrocarbons, grease, etc.)
- Sediment





## • Why should you care?

- We all need clean water to survive
- Plant and wildlife impacts
- Pollution prevention costs significantly less money than restoring polluted water
- Your property directly benefits from stormwater management
- Recreation impacts

