

Oklahoma Water Resources Board Program Update

EPA Groundwater Summit
February 4-5, 2009
Dallas, Texas



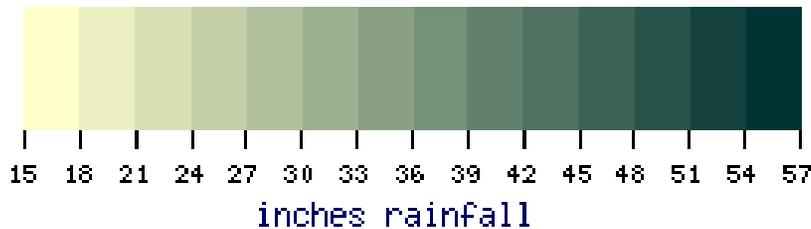
Duane A. Smith
Executive Director
Oklahoma Water Resources Board

Oklahoma's Water Resources

Normal Precipitation (1971-2000)

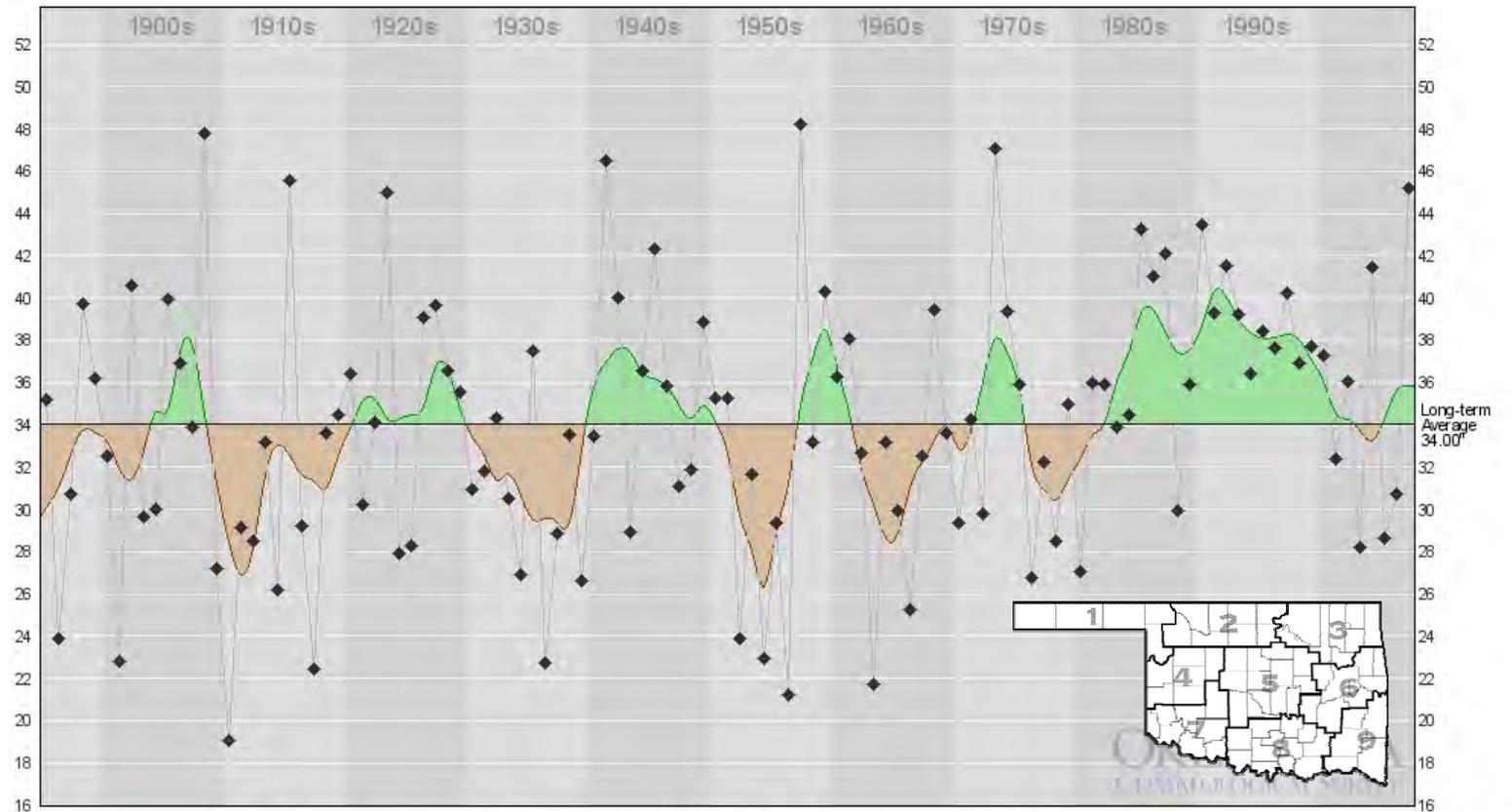


Annual rainfall varies from less than ~15 inches in the west to ~57 inches in the east.



Oklahoma's Water Resources

Annual Rainfall (1895-2007)



USDA Annual Precipitation History with 5-year Tendencies
Oklahoma Statewide: 1895-2007

- Wetter historical periods
- Drier historical periods
- Individual Annual precipitation value

Oklahoma's Water Resources

- 34 major reservoirs store 13 million acre-feet of water
- 4,300 public/private & watershed protection lakes

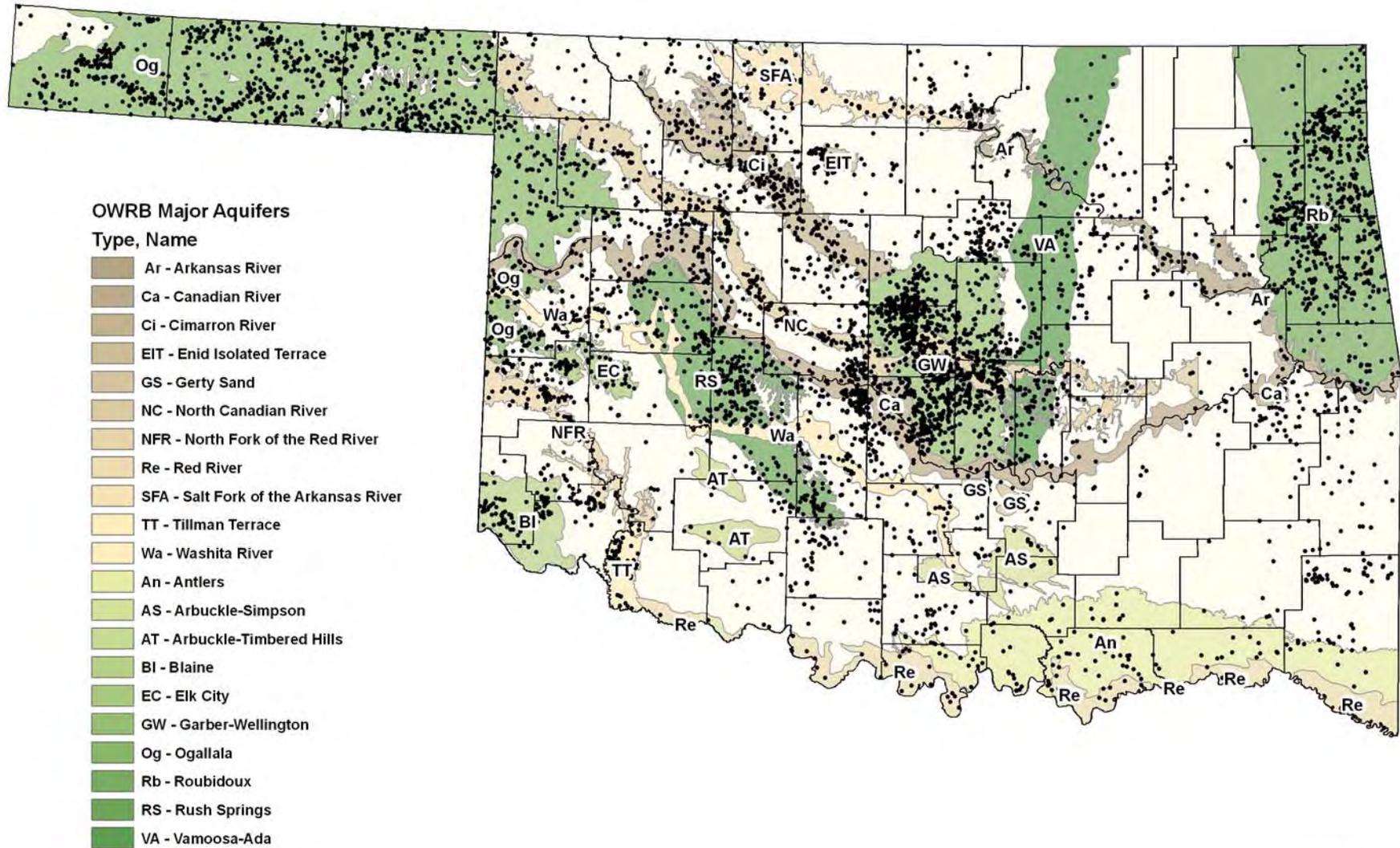


Lake Eufaula:
Oklahoma's largest lake in surface area (105,000 acres)

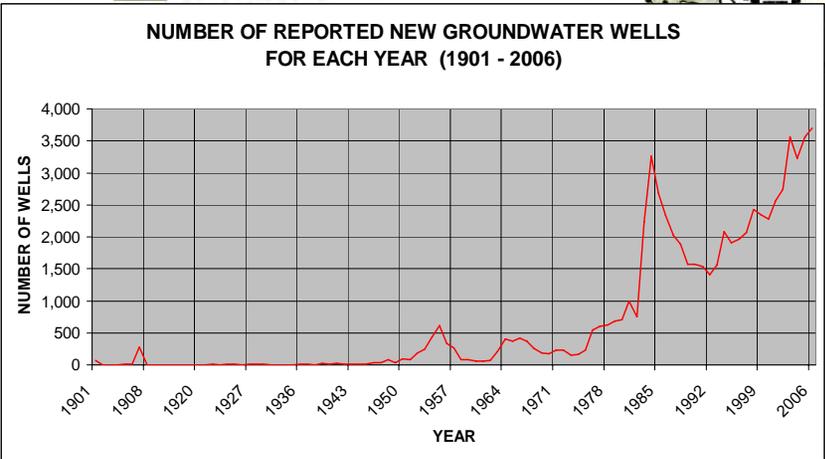
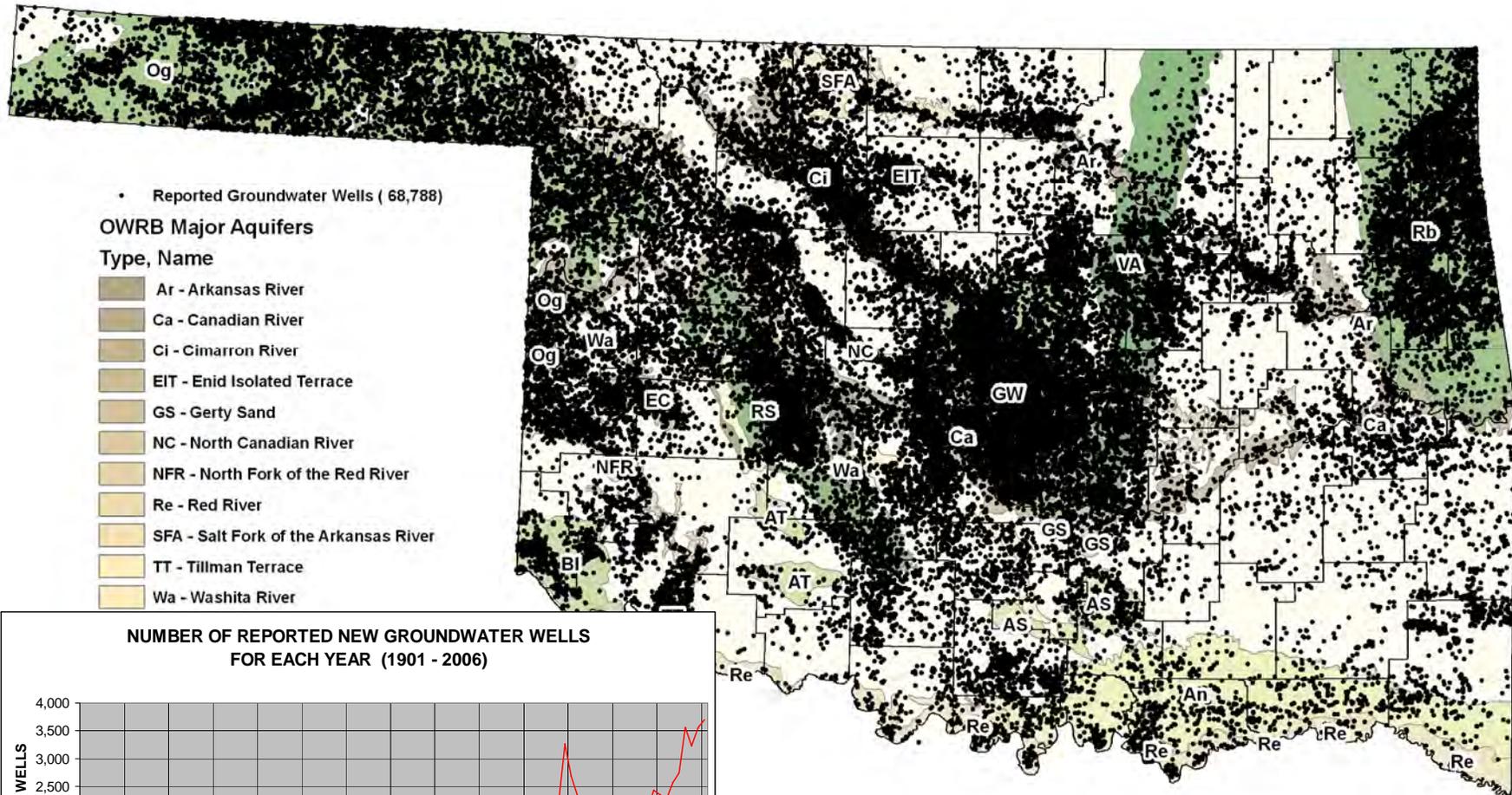
Lake Texoma:
Oklahoma's largest lake in storage (2.6 million acre-feet)

Locations of Reported Groundwater Wells

Prior to 1972 - (6,035 Wells)



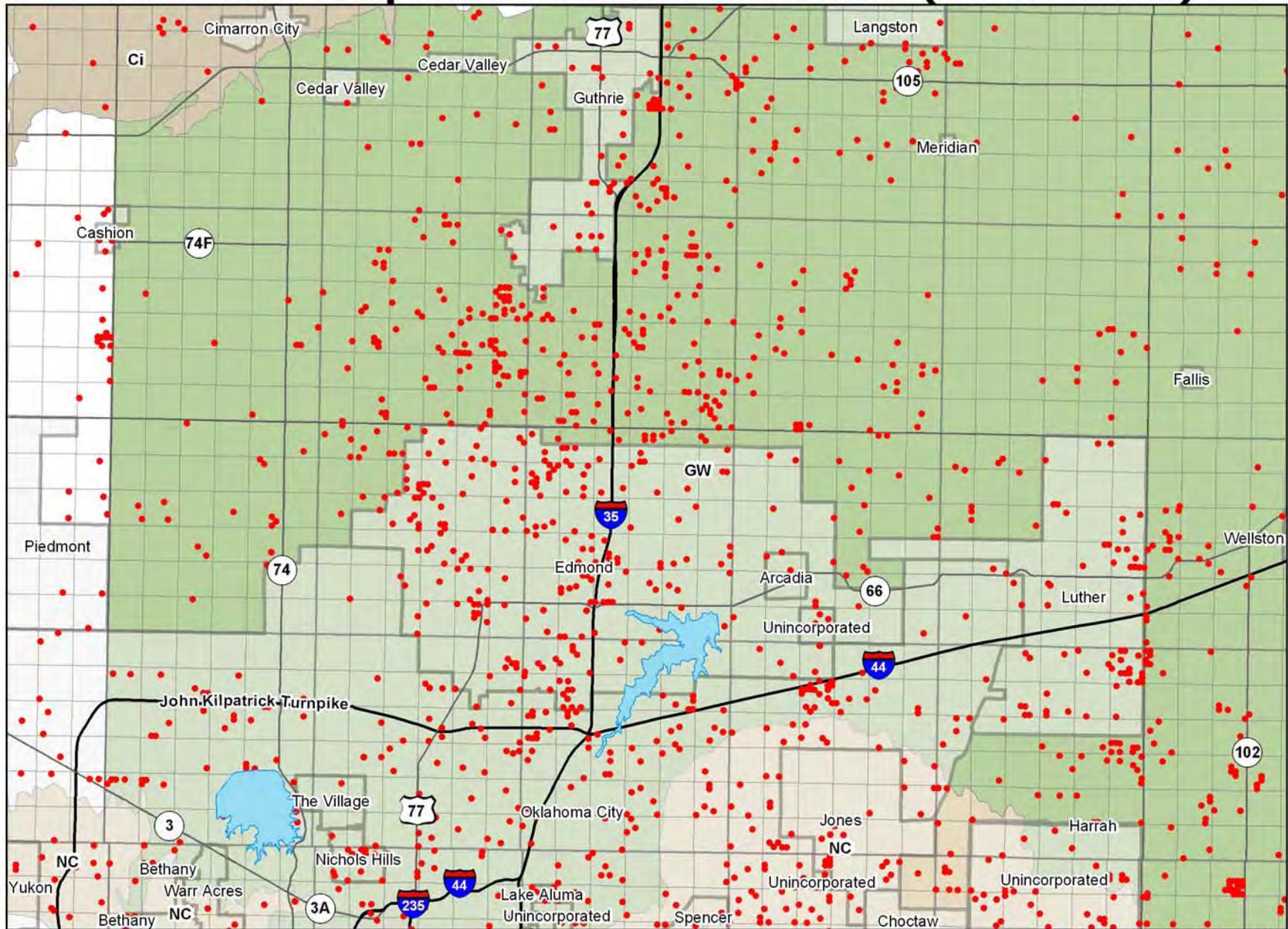
Locations of Reported Groundwater Wells



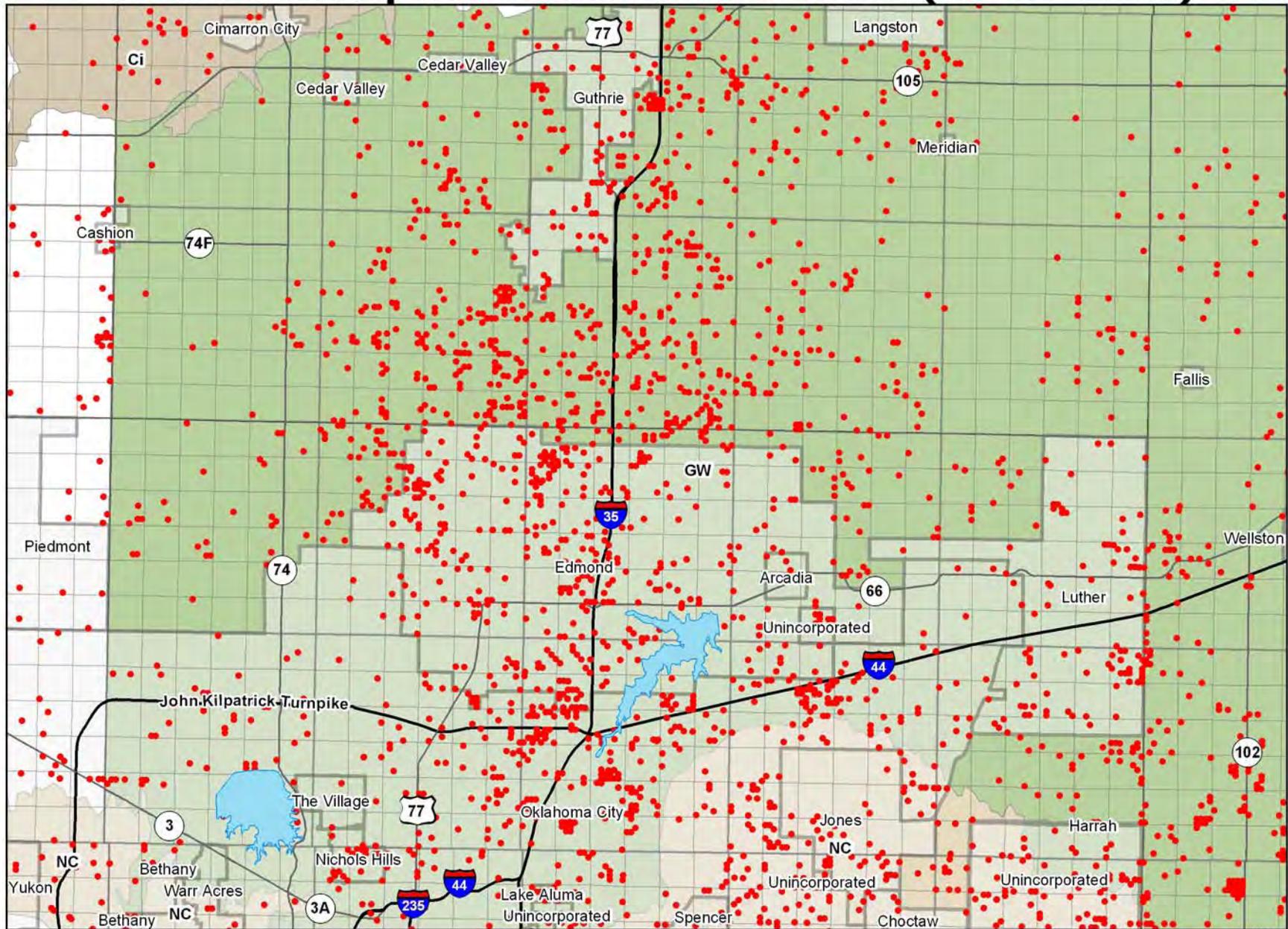
As of April 2007:

- 69,921 total wells (49,038 domestic)

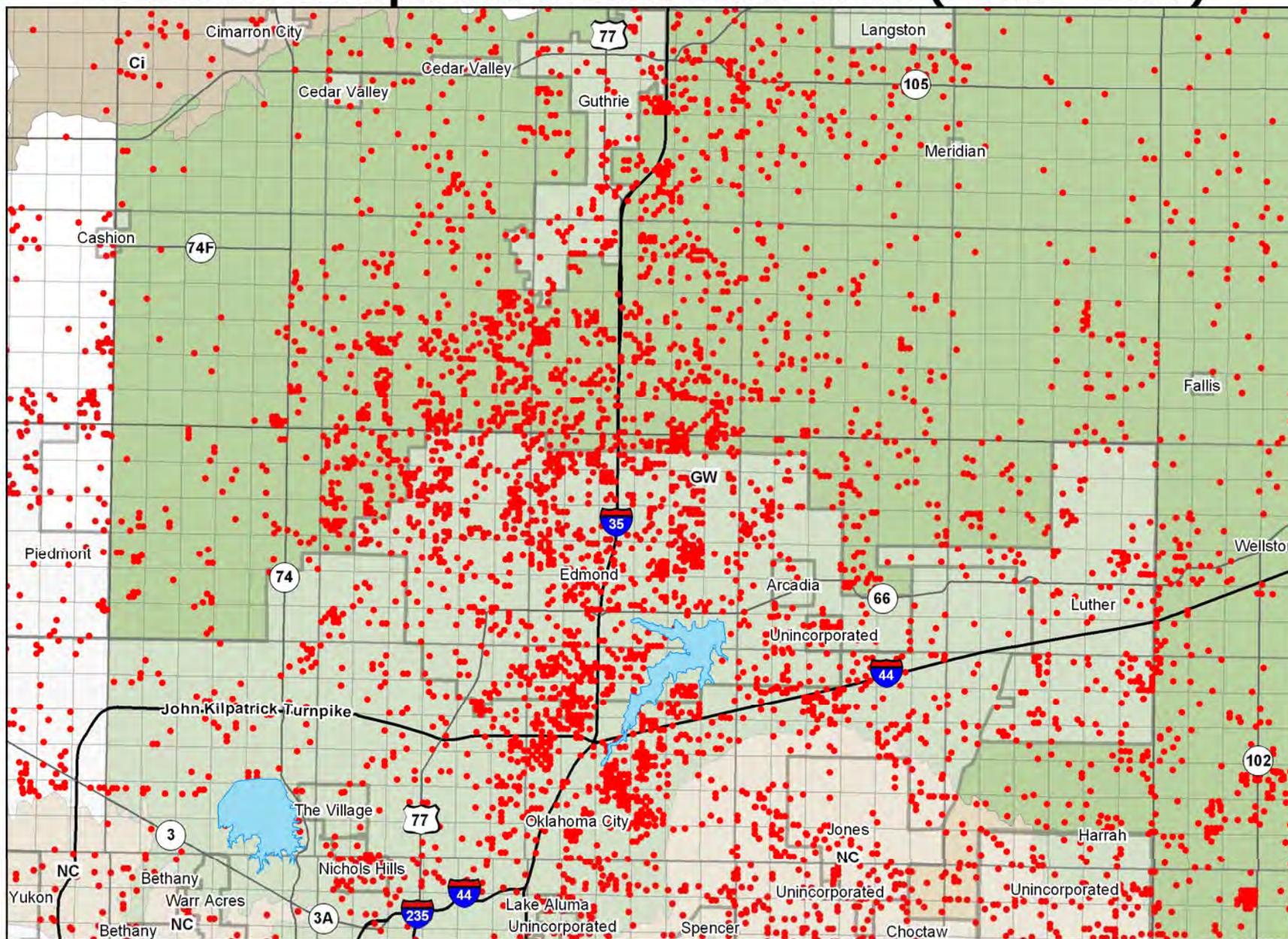
Locations of Reported Groundwater Wells (1900 - 1989)



Locations of Reported Groundwater Wells (1900 - 1999)

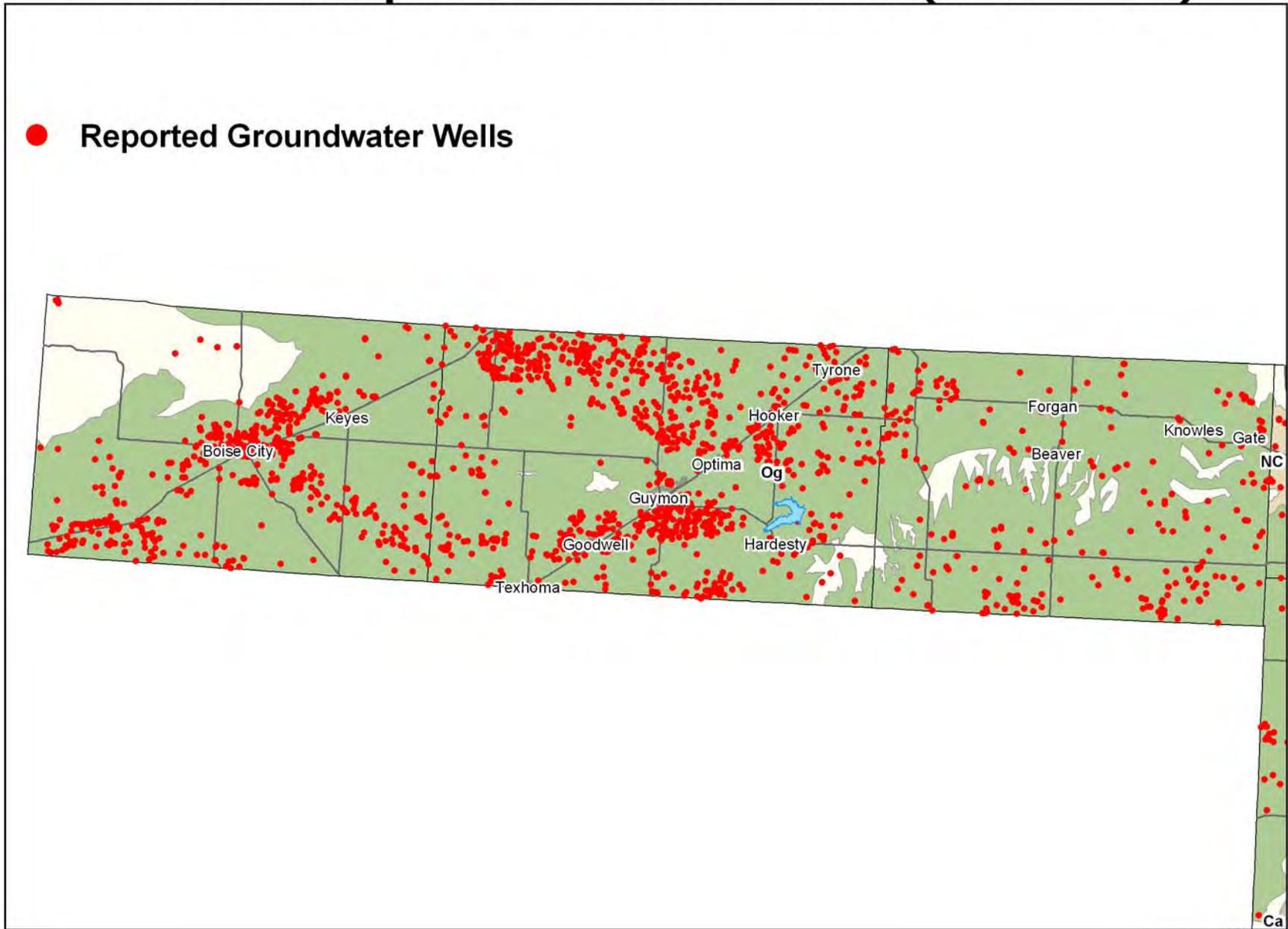


Locations of Reported Groundwater Wells (1900 - 2007)



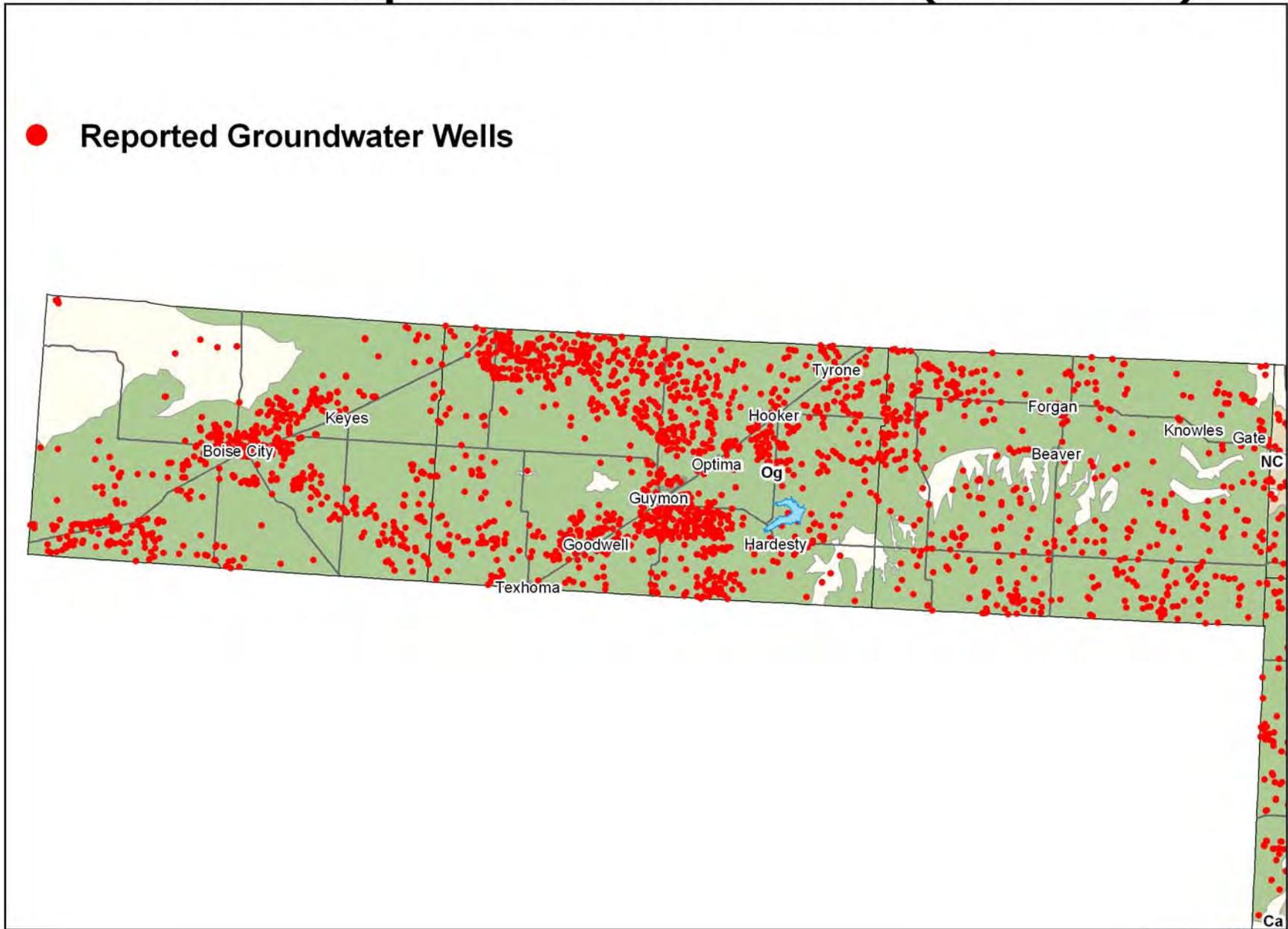
Locations of Reported Groundwater Wells (1900 - 1971)

● Reported Groundwater Wells



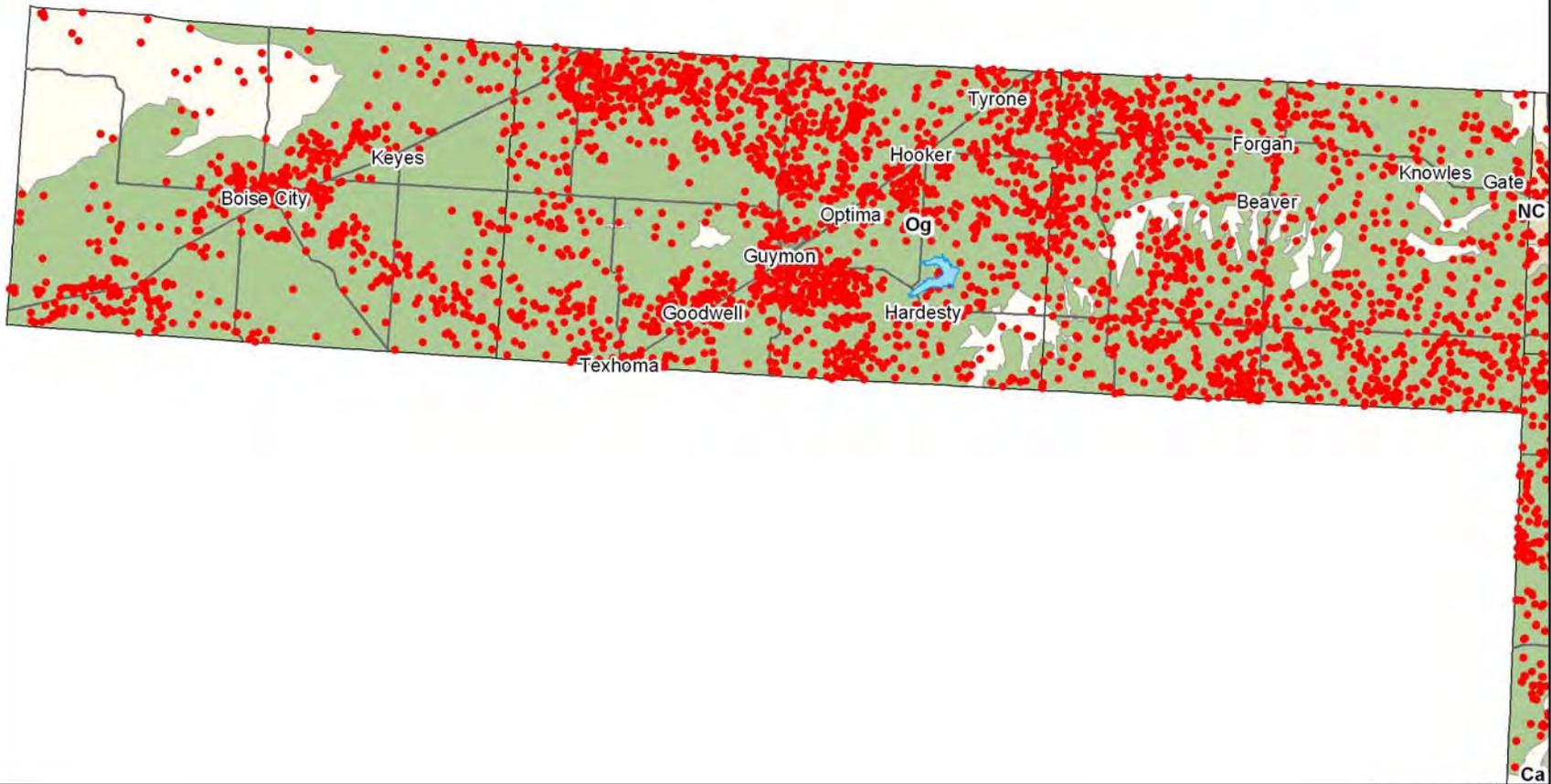
Locations of Reported Groundwater Wells (1900 - 1979)

● Reported Groundwater Wells



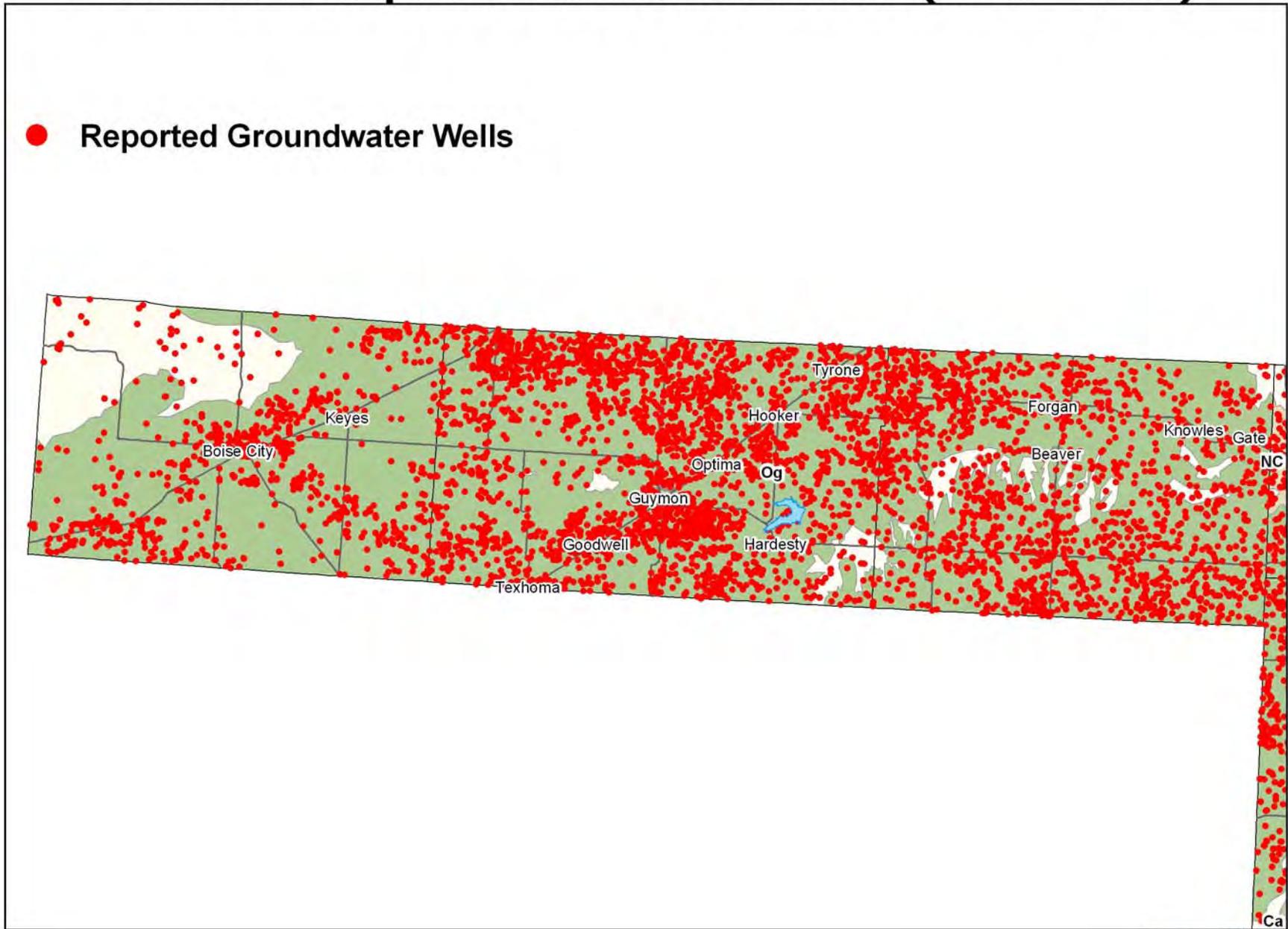
Locations of Reported Groundwater Wells (1900 - 1989)

● Reported Groundwater Wells



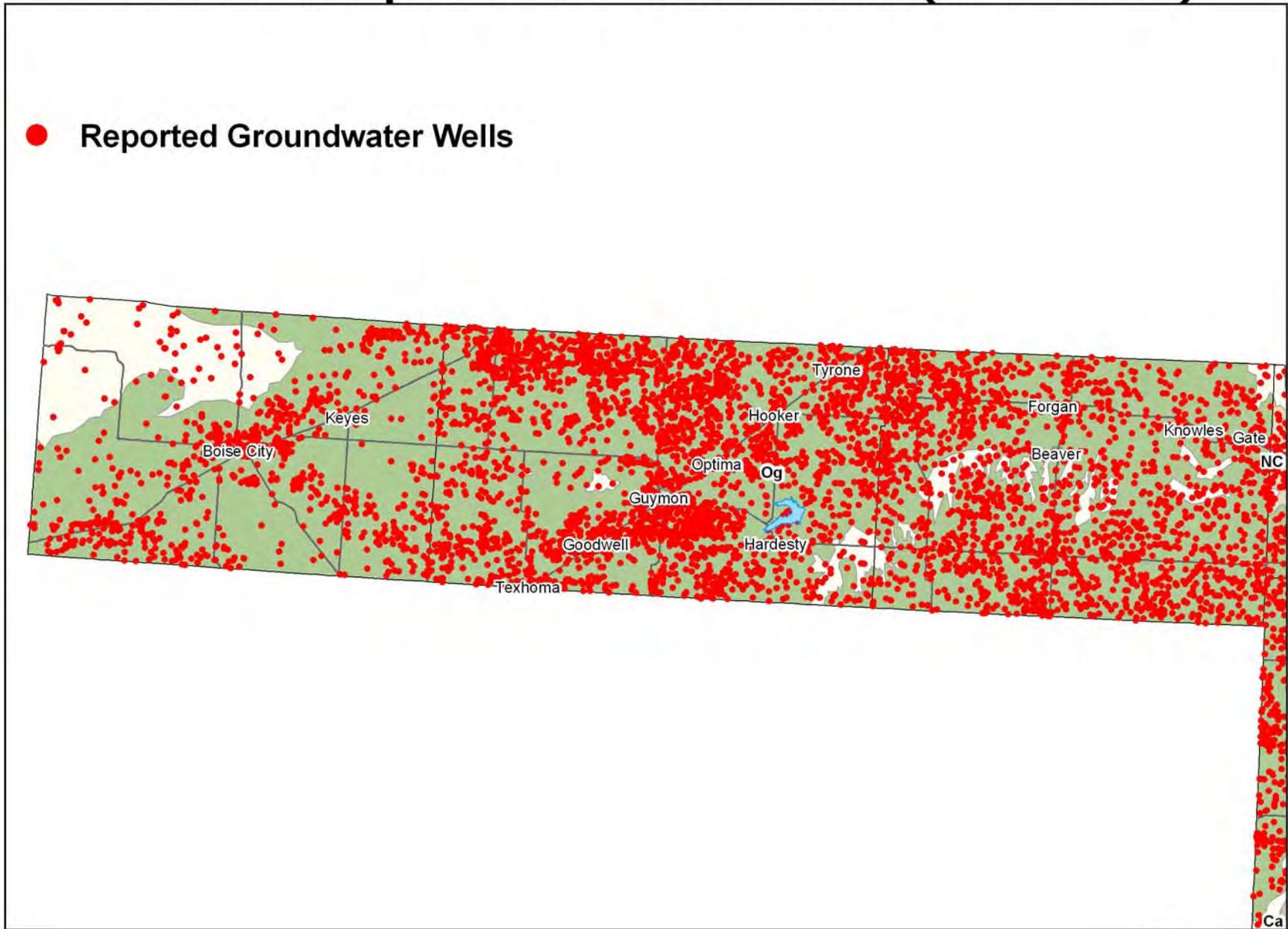
Locations of Reported Groundwater Wells (1900 - 1999)

● Reported Groundwater Wells



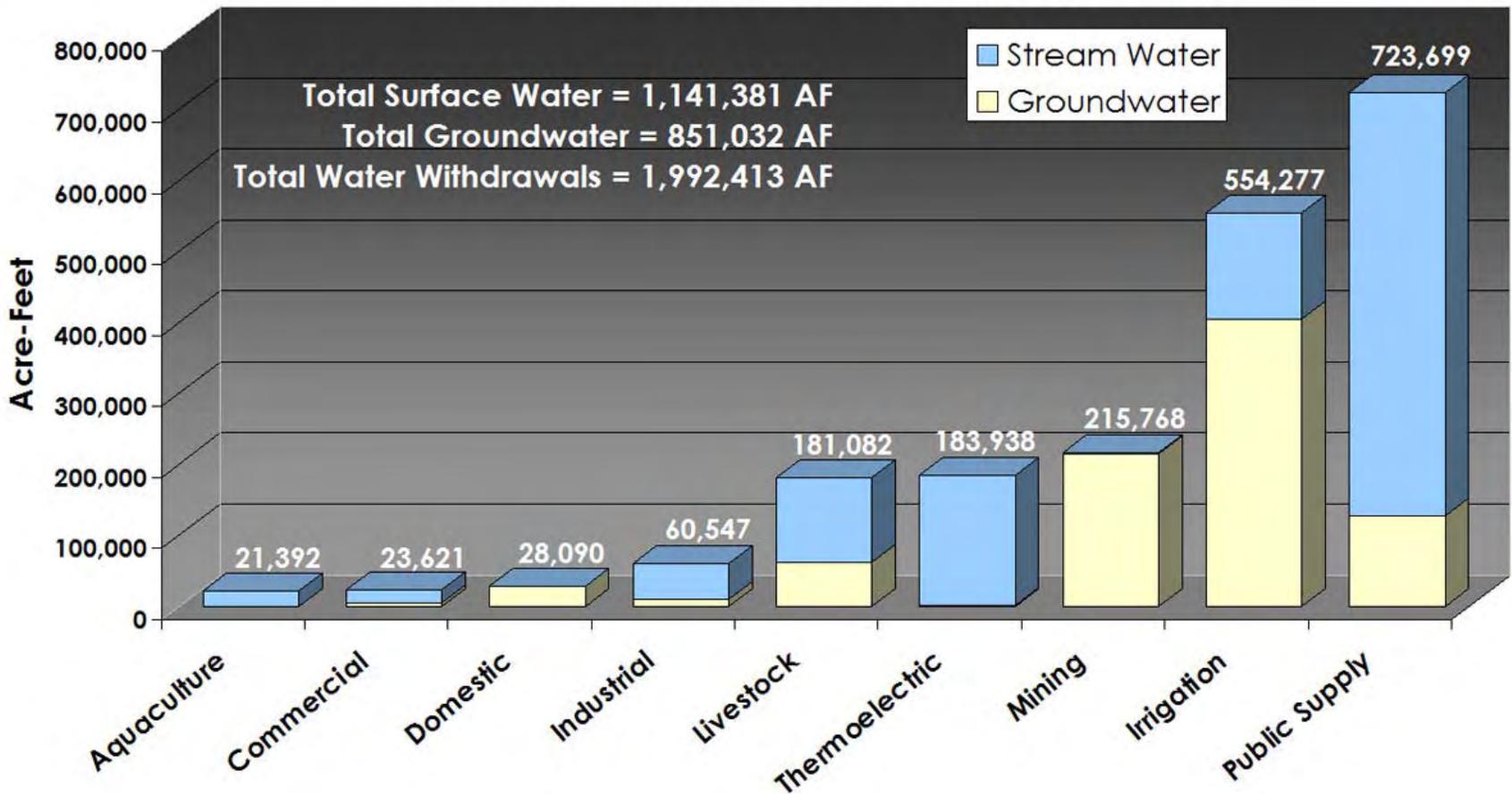
Locations of Reported Groundwater Wells (1900 - 2007)

● Reported Groundwater Wells



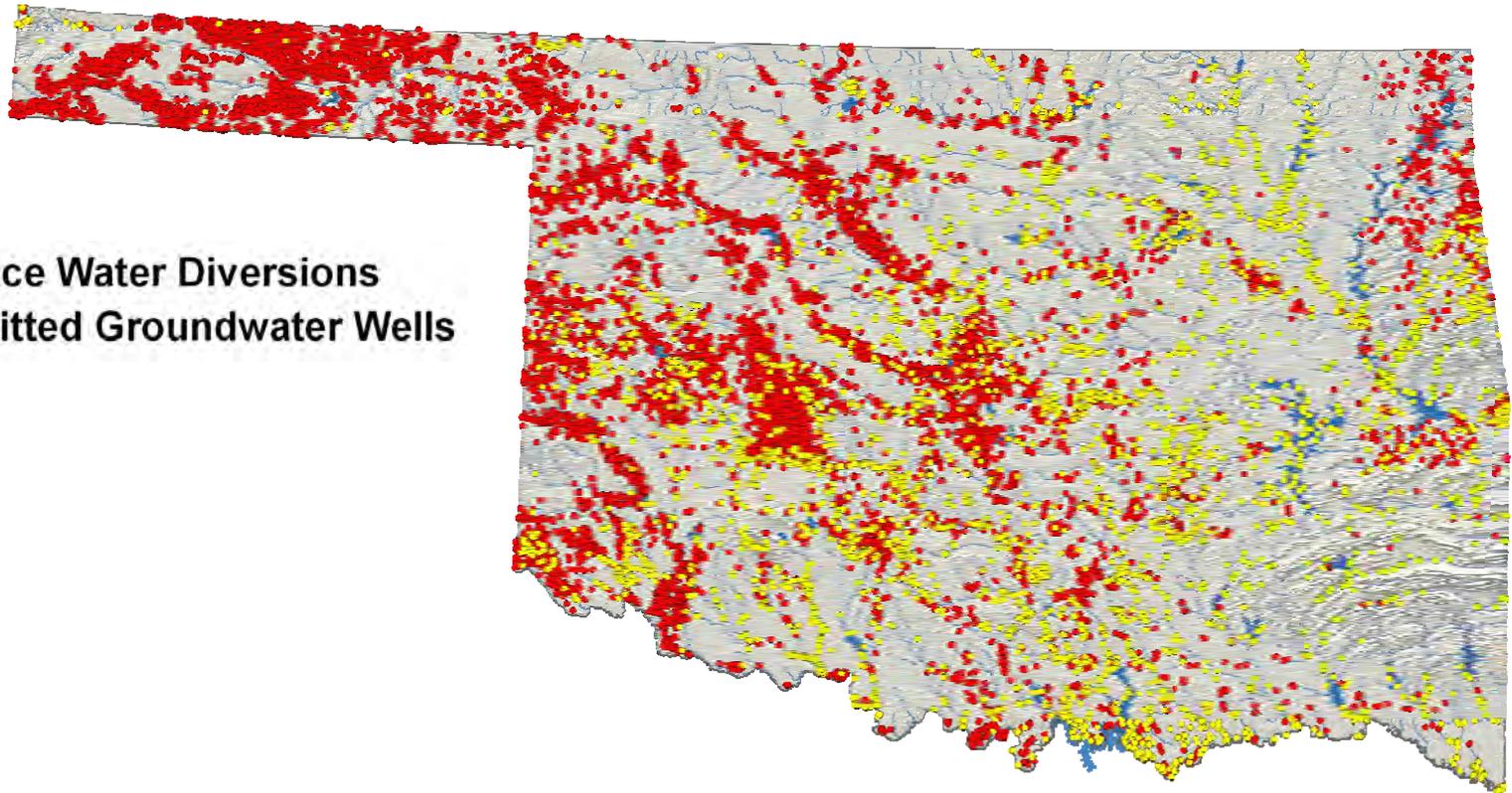
Oklahoma's Water Resources

Oklahoma Water Withdrawals by Use - 2005



Water Use Permitting

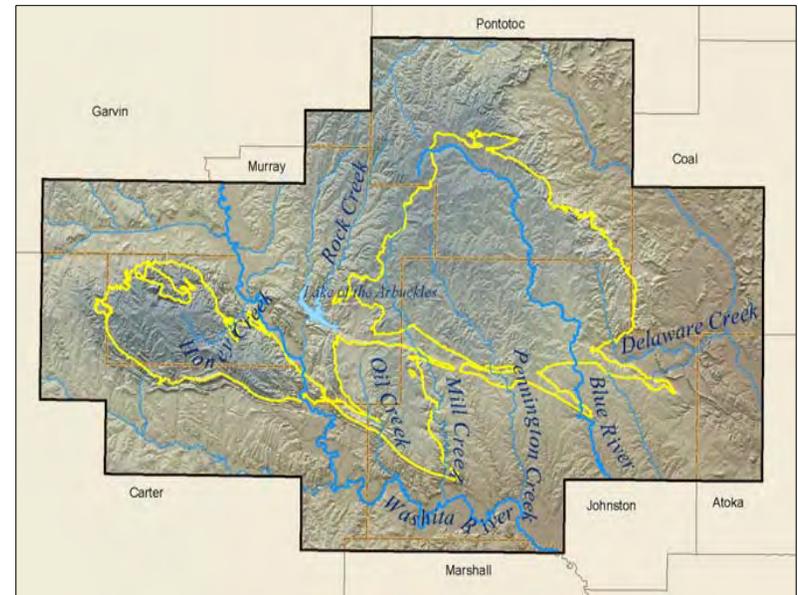
- 2,536 stream water use permits on file:
 - appropriate 2.7 million ac-ft/year
- 10,612 groundwater permits:
 - allocate 3.5 million ac-ft/year



- Surface Water Diversions
- Permitted Groundwater Wells

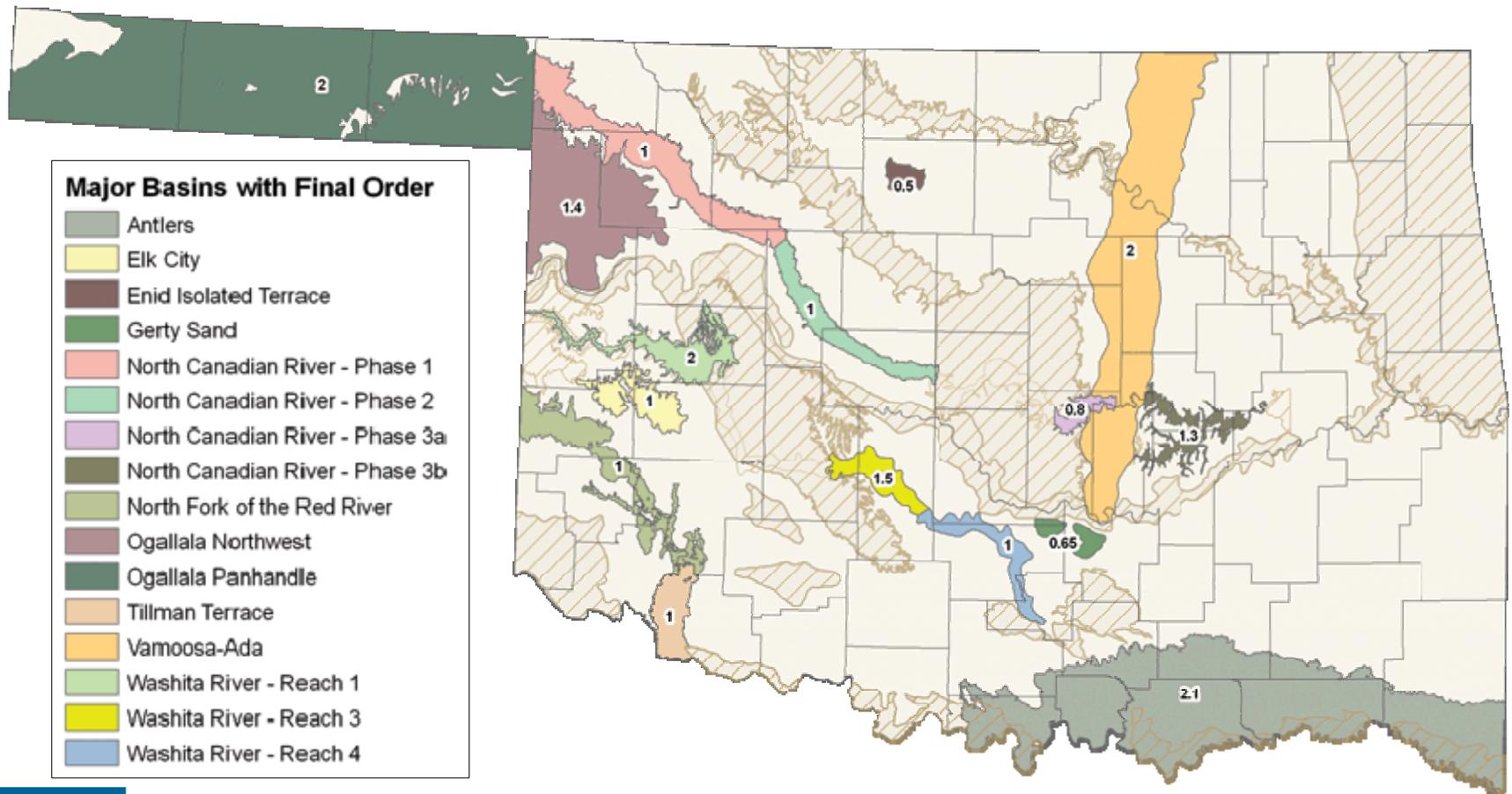
Hydrologic Studies

- Determine amounts of water available for appropriation through technical studies of surface and groundwater basins
 - Arbuckle-Simpson Hydrology Study
 - Garber-Wellington Aquifer Study



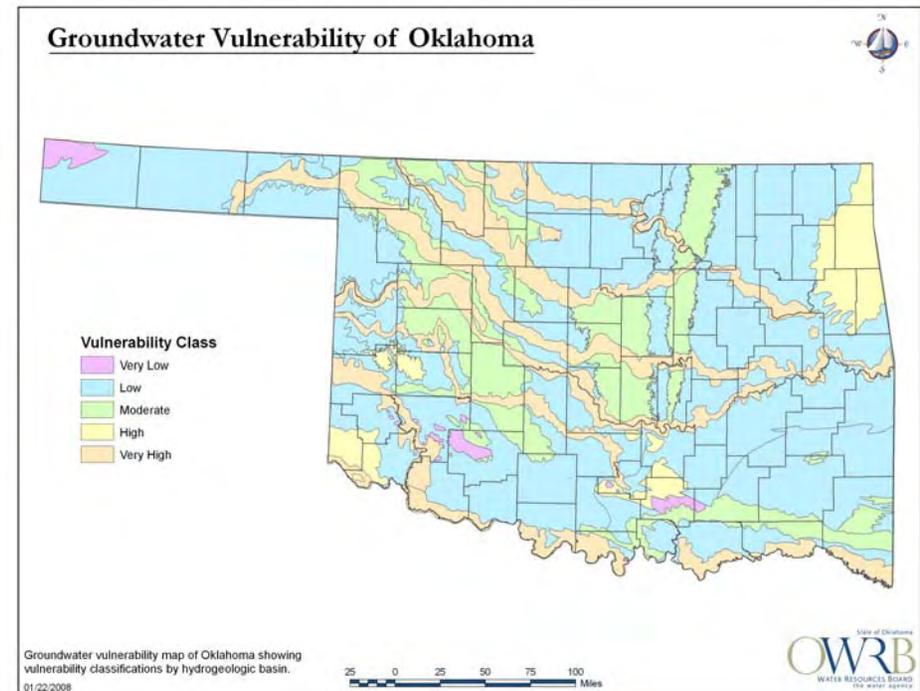
Hydrologic Studies

- Maximum Annual Yield Studies



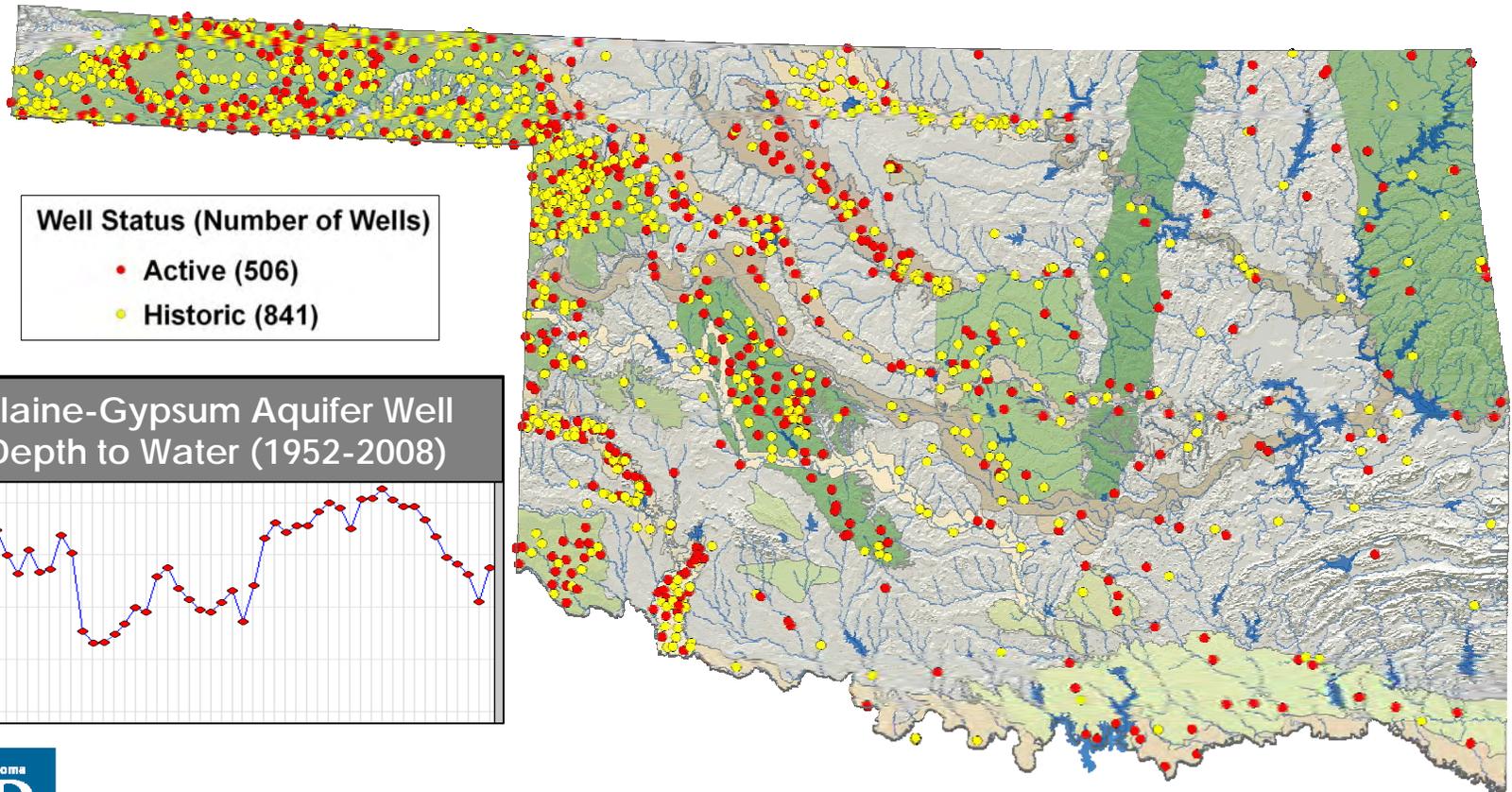
Groundwater Quality

- GROUNDWATER QUALITY STANDARDS
 - Vulnerability mapping
 - Protect background quality



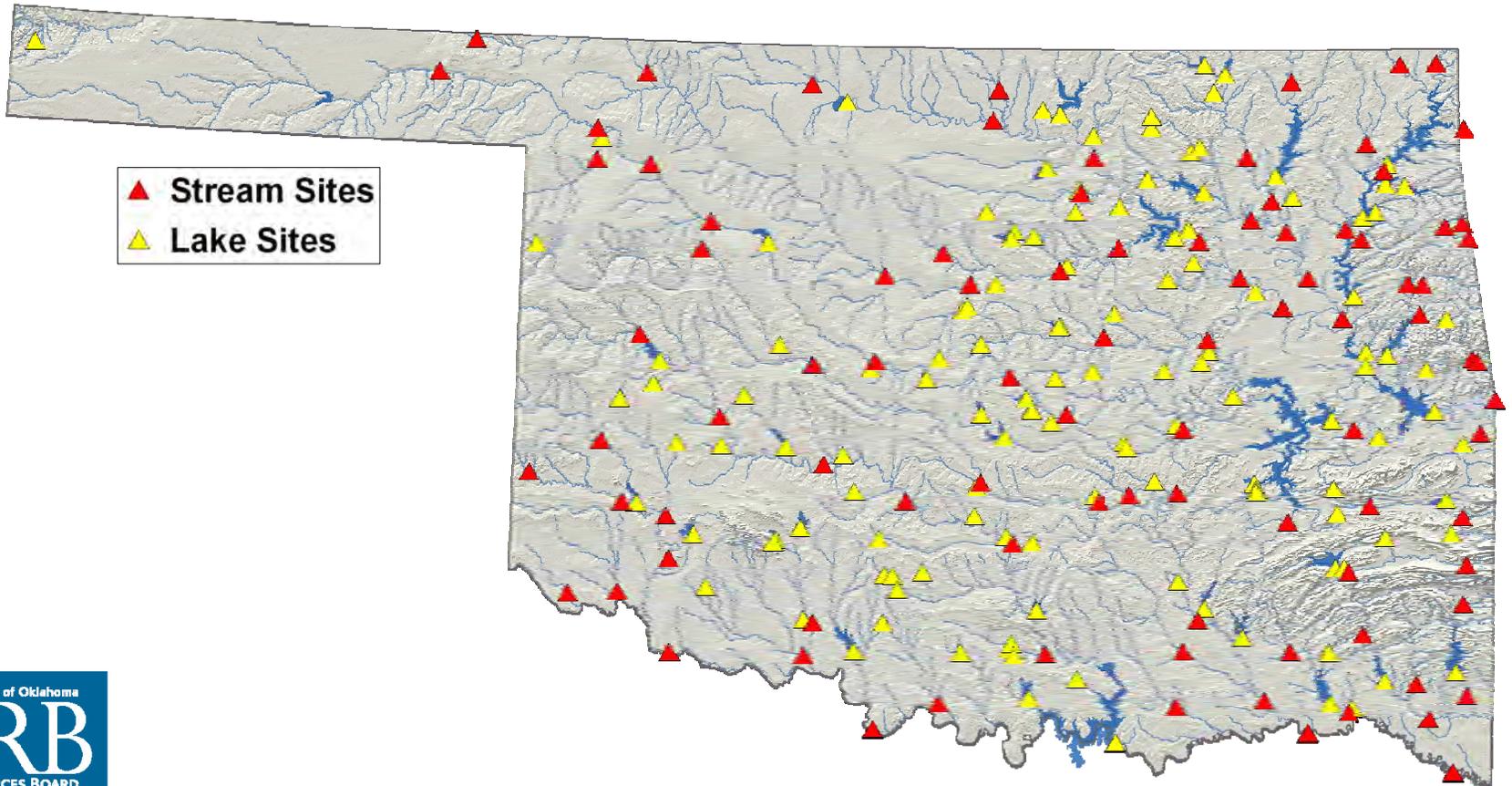
Water Quantity Monitoring

- Statewide Mass Measurement Program:
 - annual water well measurement



Water Quality Monitoring

- Beneficial Use Monitoring Program:
 - statewide surface water quality monitoring
 - **groundwater component envisioned**



Water Resource Planning

- Plan for and encourage the use of water resources in a manner that best serves the people of Oklahoma
- Maintain the Oklahoma Comprehensive Water Plan, a long-range strategy for managing and developing the state's water resources:
 - Update due in 2012:
 - Primary goal is to establish reliable water supply for all Oklahomans

State of Oklahoma

OWRB

WATER RESOURCES BOARD
the water agency