

The Future of Oklahoma's Water Resources



***Oklahoma Farmers Union
Annual Convention
Oklahoma City, Oklahoma
February 4, 2005***

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The Future of Oklahoma's Water Resources Oklahoma's Major Water Issues

- Use and Protection of the Arbuckle-Simpson Aquifer
- Excessive Nutrients in Oklahoma's Scenic Rivers
- Tribal Water Claims
- Declining Water Levels in the Ogallala Aquifer
- Augmenting Water Supply for the Lugert-Altus Irrigation District
- Federal Water Treatment Standards
- Water Planning
- Water/Wastewater Infrastructure Financing

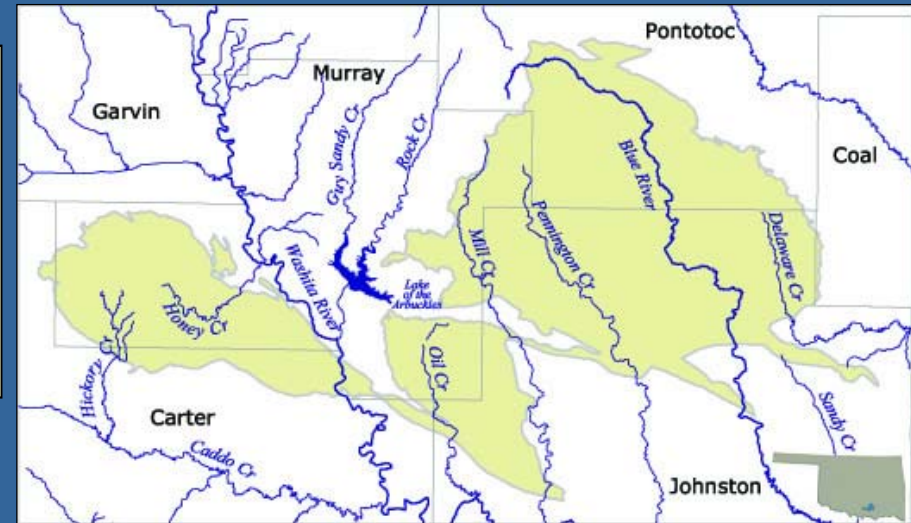
Oklahoma's Major Water Issues

Use and Protection of the Arbuckle-Simpson Aquifer

- Arbuckle-Simpson Hydrology Study:
 - Comprehensive multi-year study
 - Characterize the region's geology and hydrology
 - Identify future management options that protect area springs and streams
 - \$5.7 million cost-share (OWRB/Bureau of Reclamation)

Current Activities:

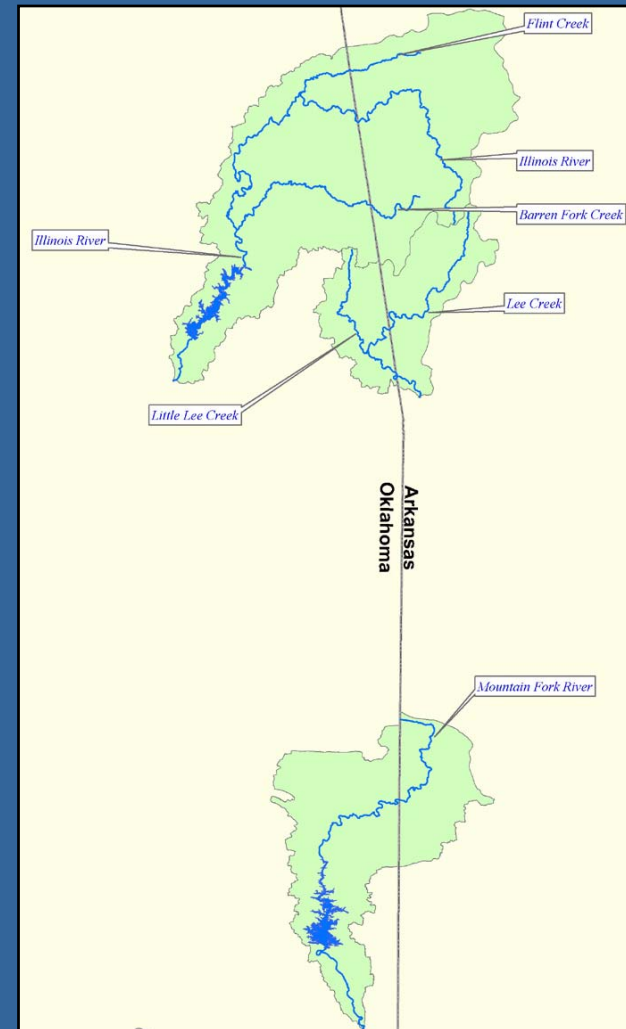
- Stream water/groundwater monitoring (data collection)
- Preliminary groundwater flow modeling (USGS)



Oklahoma's Major Water Issues

Excessive Nutrients in Oklahoma's Scenic Rivers

- Oklahoma's first numeric Water Quality Standard for phosphorus (0.037 mg/L) enacted in 2002:
 - applies to Illinois River and the other five designated Scenic Rivers in the state
 - fully implemented in 10 years
- Oklahoma and Arkansas will coordinate watershed monitoring and develop joint watershed plans to reduce phosphorus in the watershed by 2012



Oklahoma's Major Water Issues

Tribal Water Claims

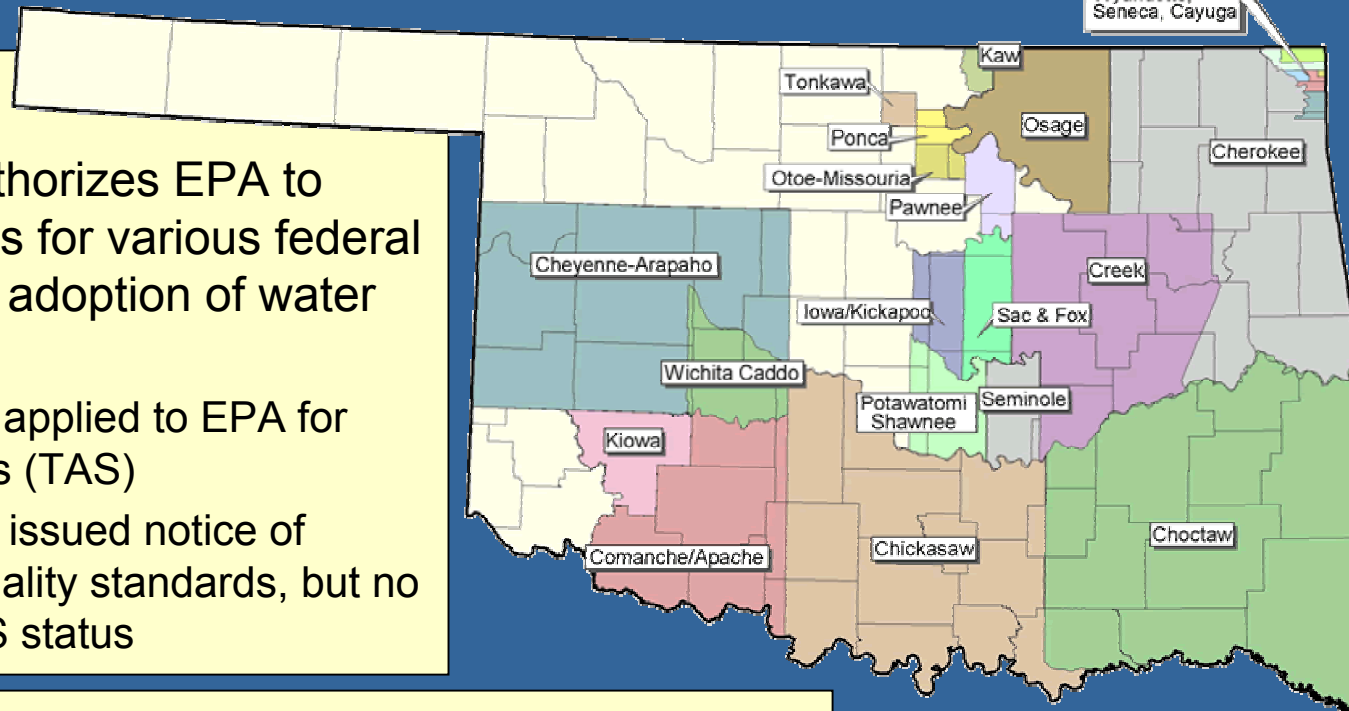
■ 39 federally recognized tribes in Oklahoma

Quality:

- Clean Water Act authorizes EPA to treat Tribes as states for various federal programs, including adoption of water quality standards:
 - Pawnee Tribe has applied to EPA for treatment as states (TAS)
 - Quapaw Tribe has issued notice of proposed water quality standards, but no application for TAS status

Quantity:

- Winter's Rights "reservations" (U.S. Supreme Court, 1908):
 - Tribes have implied right to use water

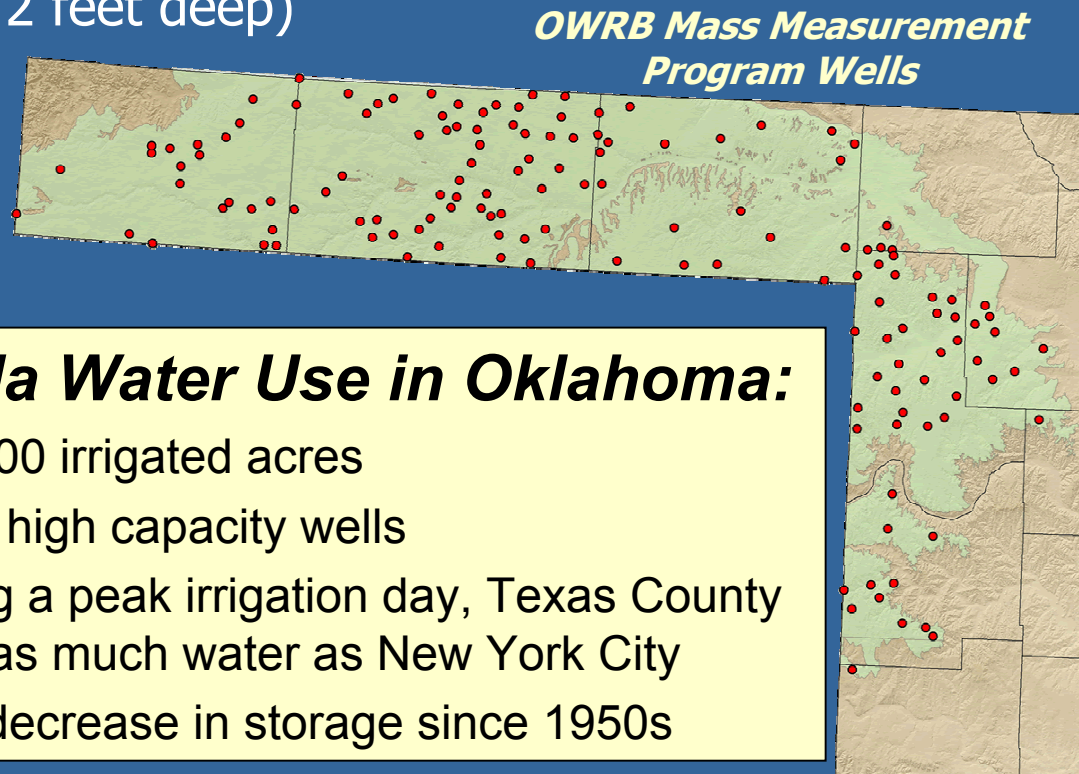


Oklahoma's Major Water Issues

Declining Water Levels in the Ogallala Aquifer

■ Ogallala Aquifer:

- state's largest groundwater basin
 - 86.6 million acre-feet in storage (enough to cover the entire state 2 feet deep)



Ogallala Water Use in Oklahoma:

- 206,000 irrigated acres
- 3,200 high capacity wells
- During a peak irrigation day, Texas County uses as much water as New York City
- 11% decrease in storage since 1950s

Oklahoma's Major Water Issues

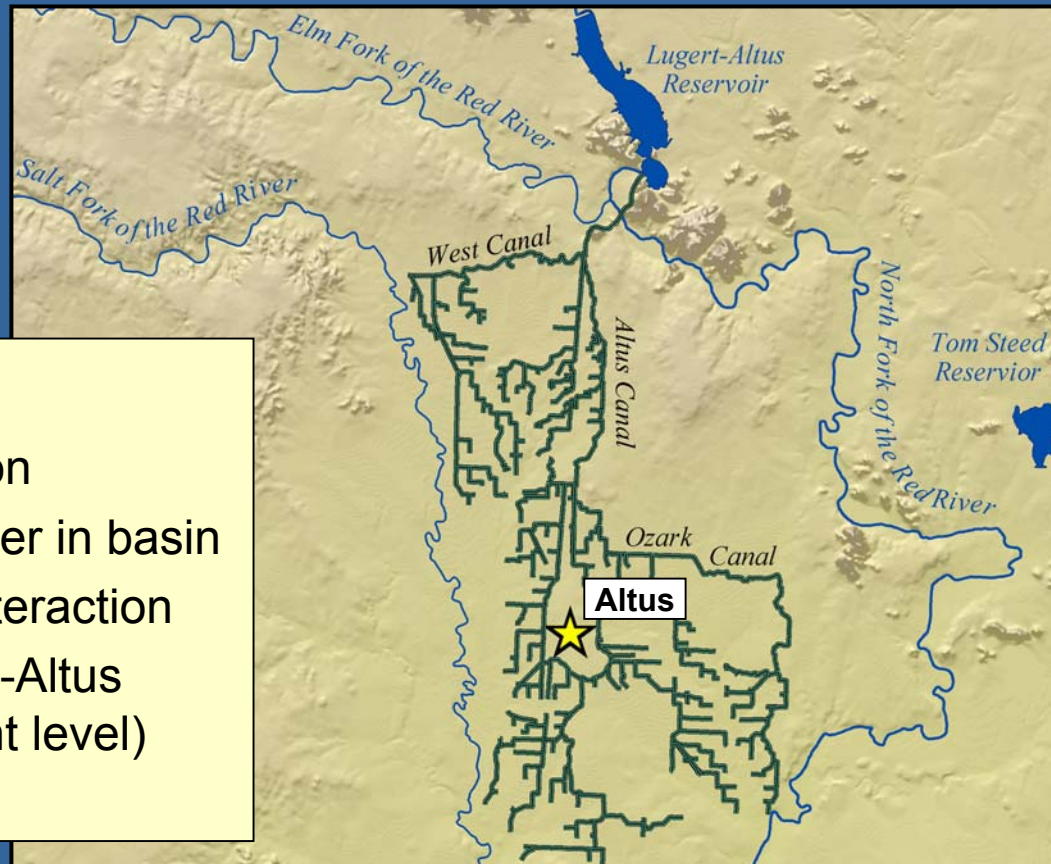
Augmenting Water Supply for the Lugert-Altus Irrigation District

■ Competing Uses:

- District requirements (agriculture) vs. local recreational interests
- Heightened during drought years

North Fork Study:

- OWRB/Bureau of Reclamation
- inventory of appropriated water in basin
- groundwater/stream water interaction
- seasonal pool plan for Lugert-Altus Reservoir (or raise permanent level)
- tributary diversions



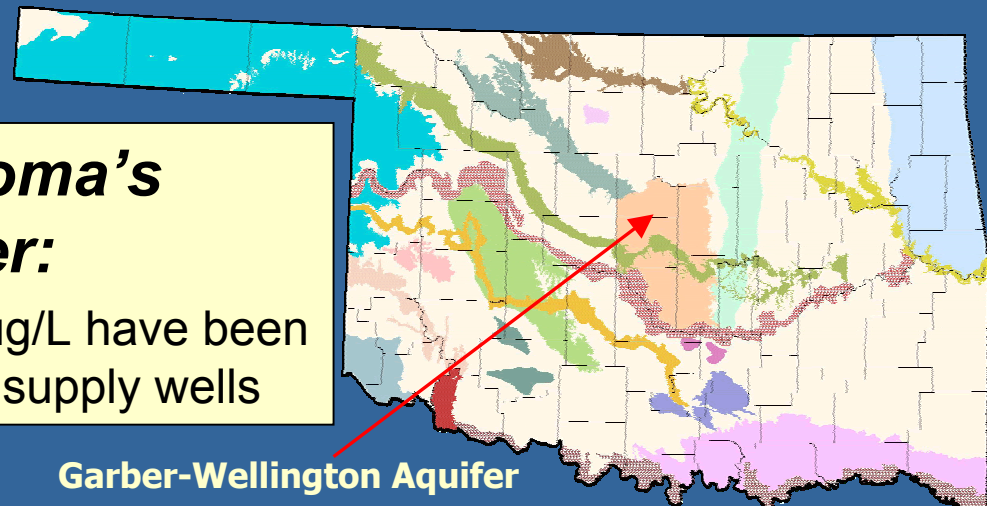
Oklahoma's Major Water Issues

Federal Water Treatment Standards

- New arsenic standard for drinking water:
 - EPA maximum contaminant level (MCL) of 10 micrograms per liter (ug/L); effective 2006
 - Will seriously impact at least 26 water systems in Oklahoma
 - Collective cost of new rule estimated at more than \$4 million per year (more than \$43.2 million in present value)

Arsenic in Central Oklahoma's Garber-Wellington Aquifer:

- Concentrations as high as 230 ug/L have been reported in some drinking water supply wells



Garber-Wellington Aquifer

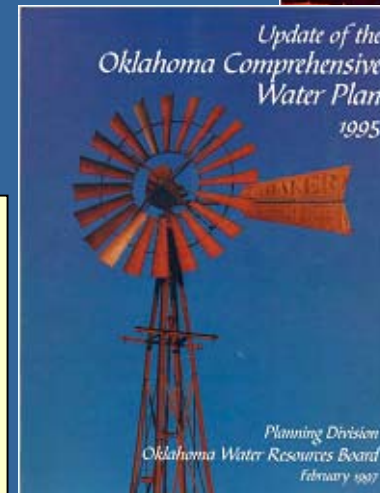
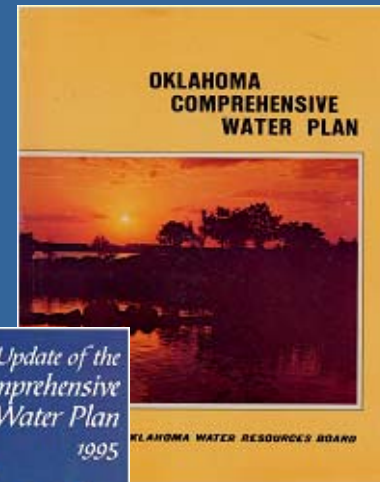
Oklahoma's Major Water Issues

Water Planning

- Oklahoma requires an effective and comprehensive plan to meet future water supply challenges:
 - Growing population
 - Competing interests
 - Balancing economic development and the environment
 - Financing

Oklahoma Comprehensive Water Plan:

- Original plan created in 1980
- Last updated in 1995
- 10-year updates mandated by State Legislature



Oklahoma's Major Water Issues

Water/Wastewater Infrastructure Financing

- Oklahoma has a \$4 billion water/wastewater infrastructure financing need over next 20 years:
 - OWRB Statewide Financial Assistance Program Revolving Fund is rapidly dwindling
 - Potential revenue through statewide capital improvement bond issue

State Financial Assistance Program:

Original Investment(s) = \$39 million

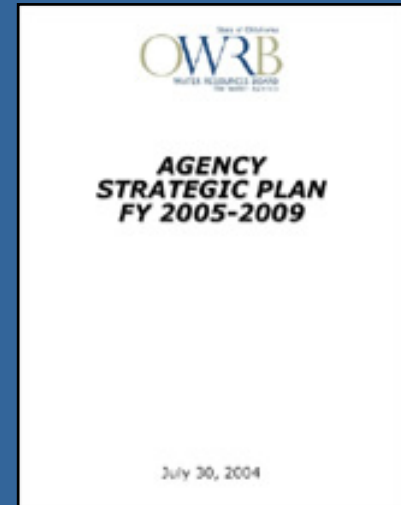
Total Loans/Grants = \$1.35 billion



The Future of Oklahoma's Water Resources OWRB Strategic Plan (2005-2009)

High Priority Programs:

- Comprehensive Water Plan
- Special Water Resource Studies
- Statewide Water Development Revolving Fund Capitalization
- Water Quality/Quantity Monitoring
- Water Quality Standards and Implementation
- Data Management and Dissemination
- Public Outreach
- Resolution of Tribal Water Claims
- Review of Oklahoma Water Law





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