

# 2015 Ogallala Aquifer Program Workshop Manhattan Kansas

David Brauer



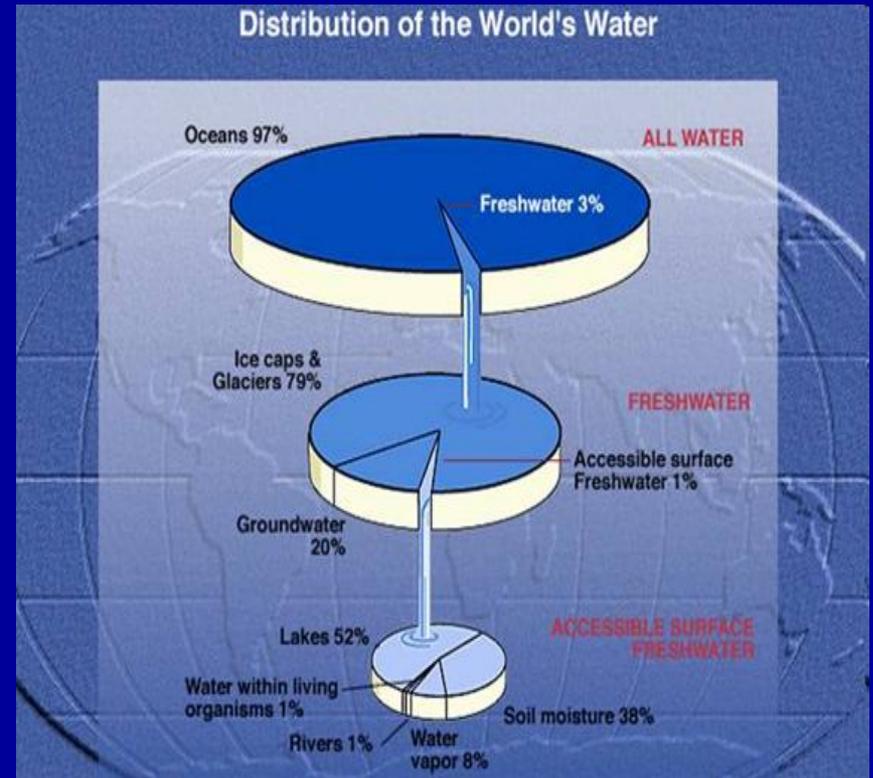
United States Department of Agriculture  
Agricultural Research Service

Conservation and Production Research Laboratory  
Bushland, Texas

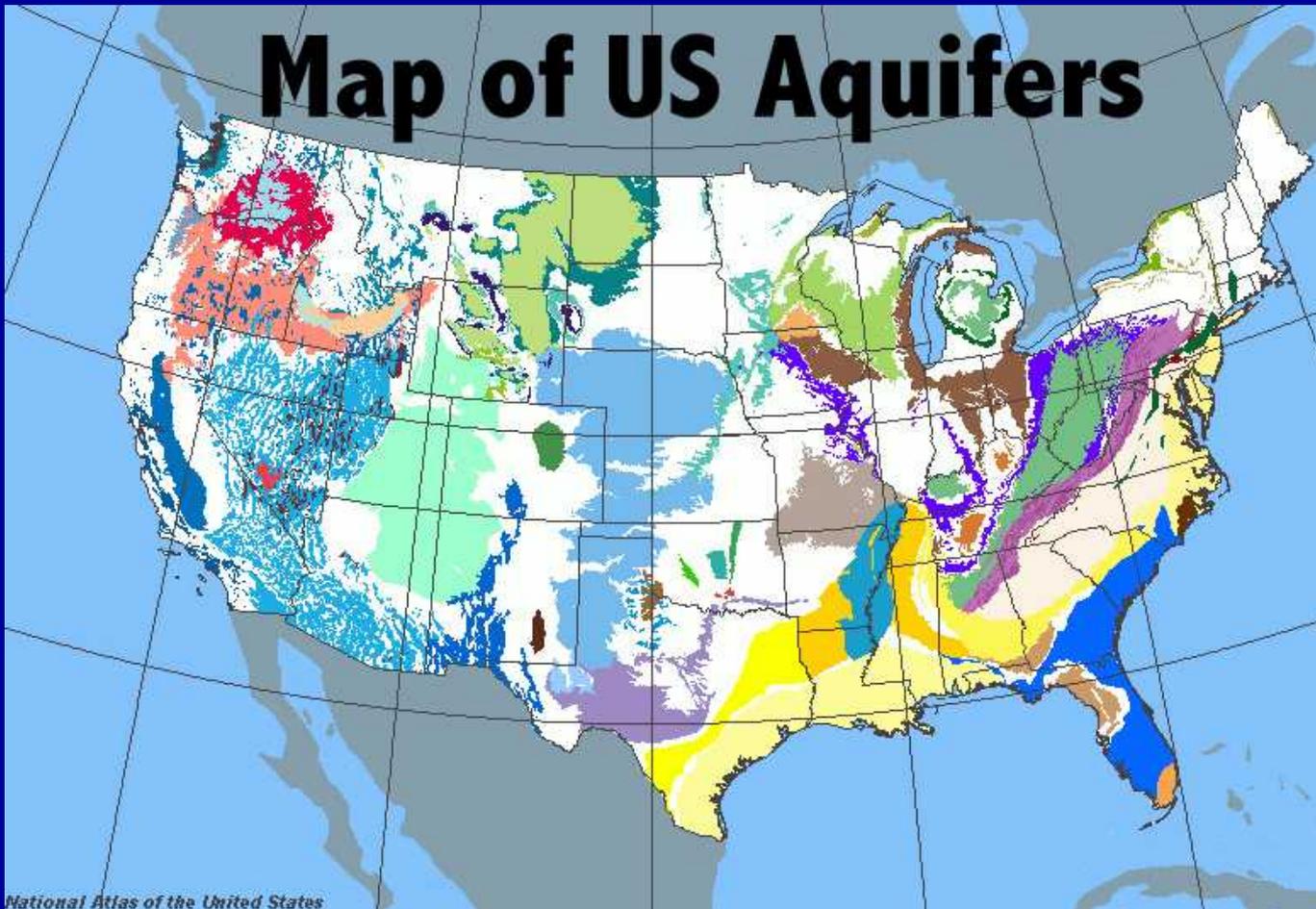
*Innovation in Soil, Water and Environmental Management Since 1938*



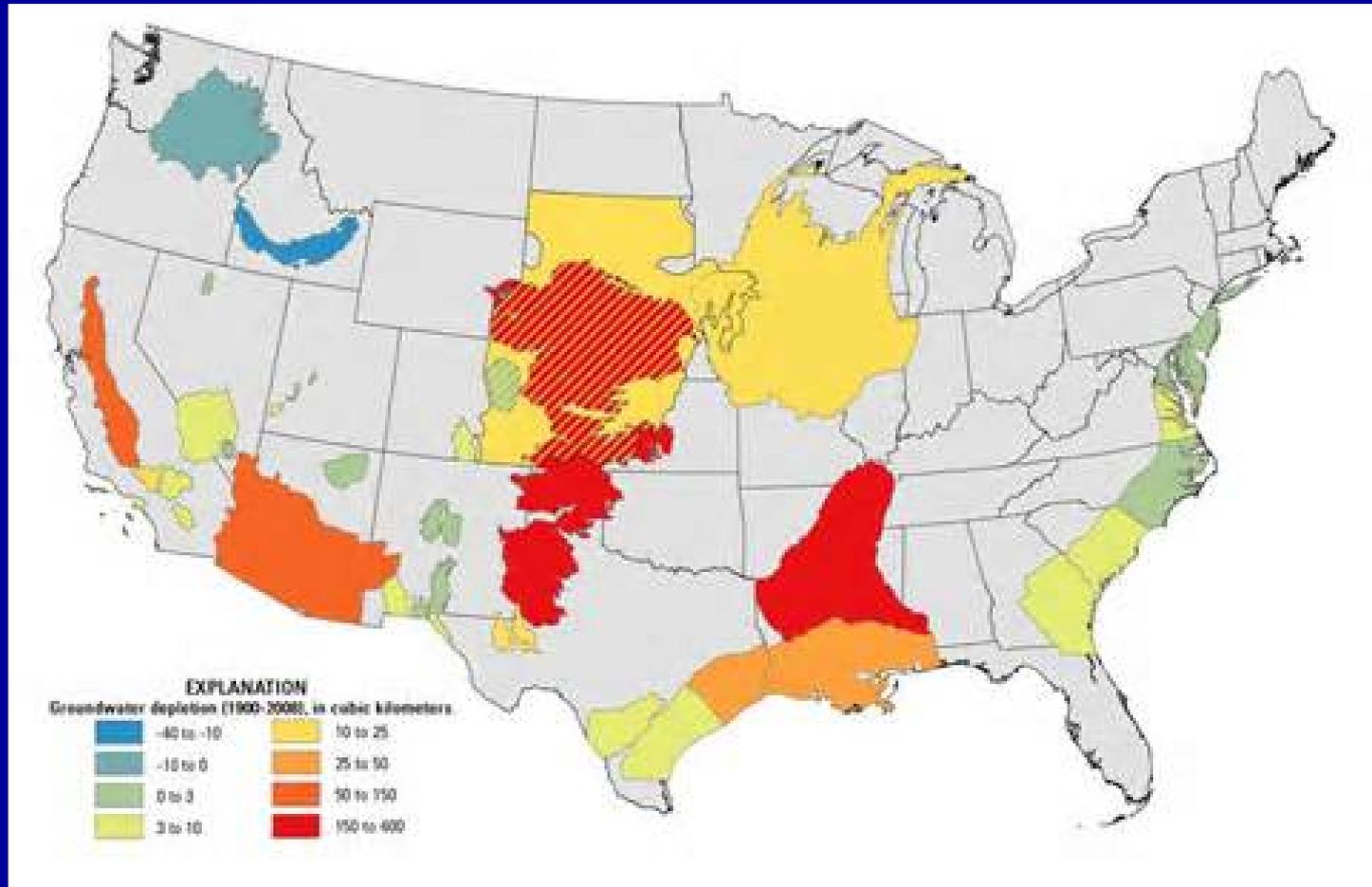
# Earth as a water planet?



# Ogallala Aquifer



# Groundwater depletion 1900-2008



# Ogallala Aquifer

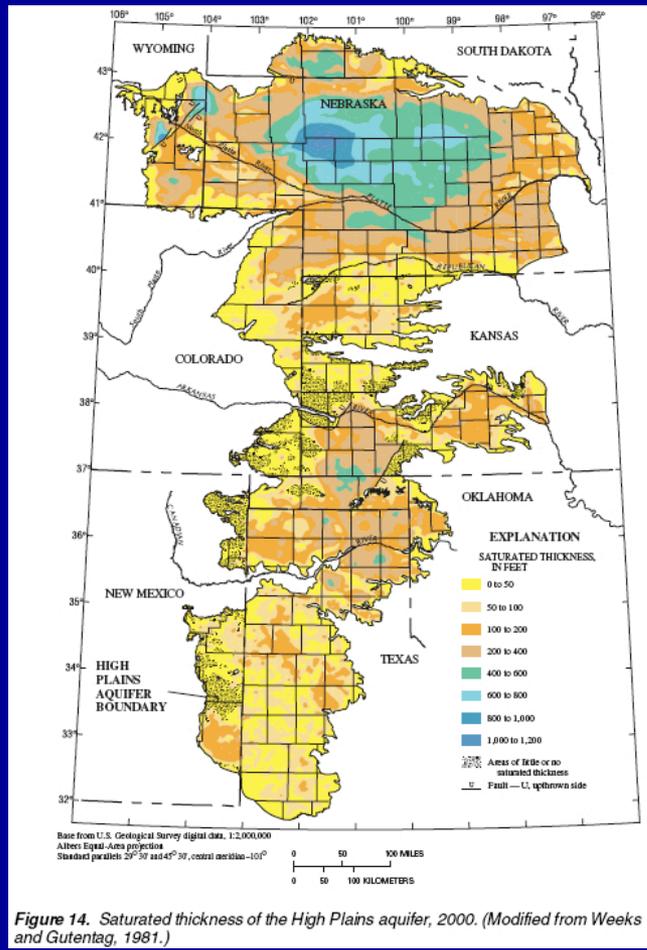
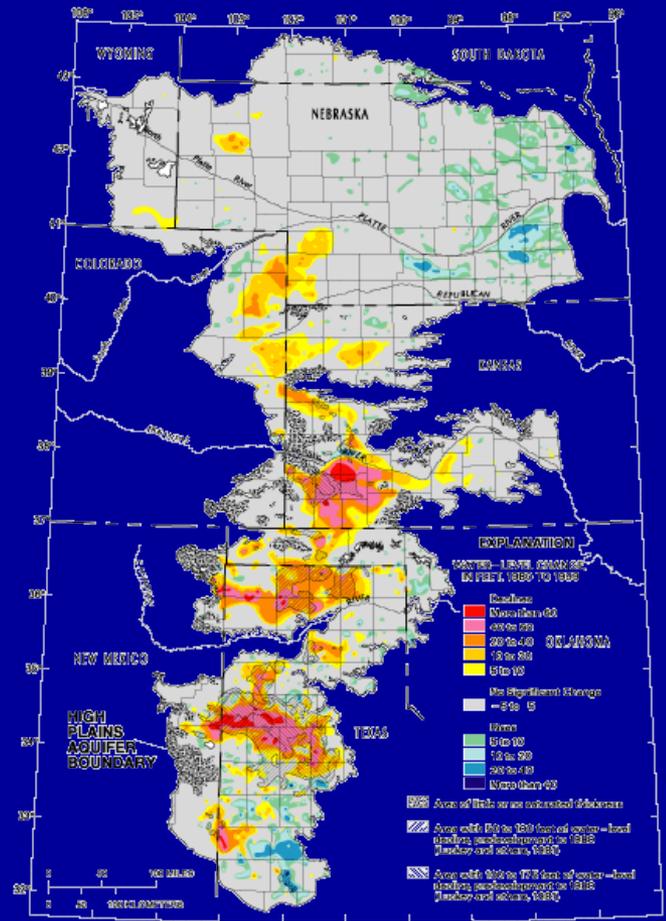
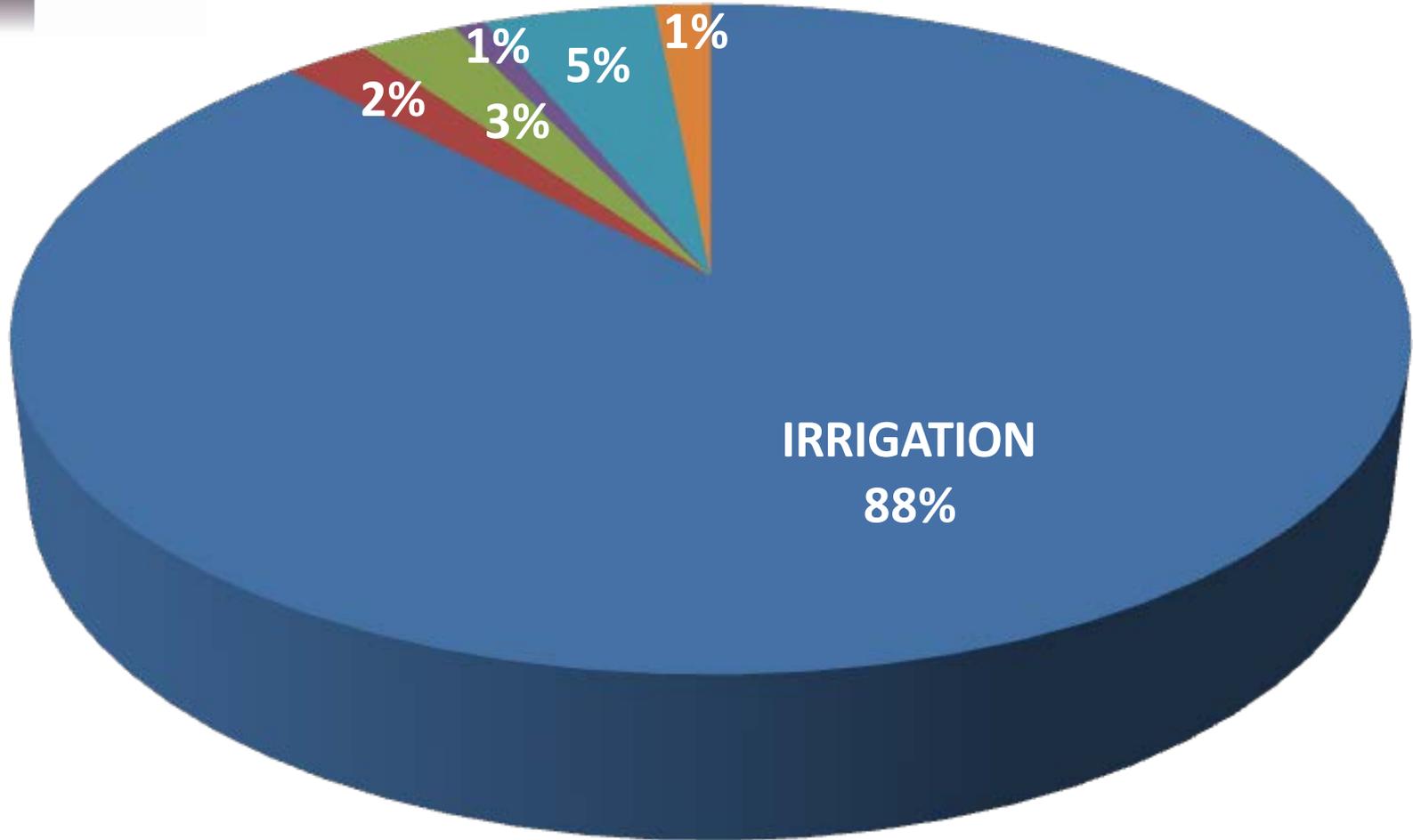


Figure 14. Saturated thickness of the High Plains aquifer, 2000. (Modified from Weeks and Gutentag, 1981.)



# 2010 Water Demand by Use Type



■ IRRIGATION

■ LIVESTOCK

■ MANUFACTURING

■ MINING

■ MUNICIPAL

■ STEAM ELECTRIC



# FY2003 Appropriation

*Ogallala Aquifer*- Surface water in the Central High Plains region is severely limited and the Ogallala Aquifer, which underlies this area, has provided water for the development of a highly significant agricultural economy. However, the Ogallala Aquifer is a finite resource. The Committee provides the Agricultural Research Service an increase of \$900,000 from the fiscal year 2002 level for research into the complex nature of water availability, potential uses, and costs which will help determine future water policy in this region. This research is to be based in Texas but coordinated with other affected States, including Kansas.



# OAP Objectives Since November 2013

- 1) Develop and evaluate water management strategies and technologies that could reduce water withdrawals for irrigation by 20% in 2020
- 2) Develop and evaluate management strategies and technologies that could increase the productivity and profitability of dryland cropping systems
- 3) Improve the understanding of hydrological and climatic factors that affects water use and economic profitability
- 4) Determine the impacts of alternative water withdrawal/use policies

# 2015 OAP Workshop Objectives and Agenda

- Thursday
  - Feature Kansas Water Issues / Stakeholders
  - Poster Session features recent OAP Results
- Friday
  - Research Planning

# In 2012 which states had the most irrigated acres?

State	Ranking	Acres
Arkansas	?	
California	?	
Kansas	?	
Nebraska	?	
Texas	?	

# In 2012 which states had the most irrigated acres?

State	Ranking	Acres
Nebraska	1	8.2 million
California	2	7.8 million
Arkansas	3	4.8 million
Texas	4	4.4 million
Kansas		2.8 million

# Your Ogallala Aquifer IQ

- Withdrawals from CA Central Valley are greater or less than the Ogallala Aquifer?
- What percentage of U.S. irrigated acres are over the Ogallala? 1, 10, 30, 50 or 100%
- What % of Ogallala Aquifer's water is under Nebraska?
  - X = 1%, 10%, 25%, 50% or 90%
- In 2010, USGS estimated x % of the Ogallala Aquifer water had been removed.
  - X = 1%, 10%, 25%, 50% and 70%
- Withdrawals from the Ogallala would fill Lake Erie:
  - X = 1%, 10%, 25%, 50%, 70%