

# The Evaluation of Practice Impacts within the NRCS Ogallala Aquifer Initiative

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## Outline

- Introduction
- Purpose and Objectives
- Methodology
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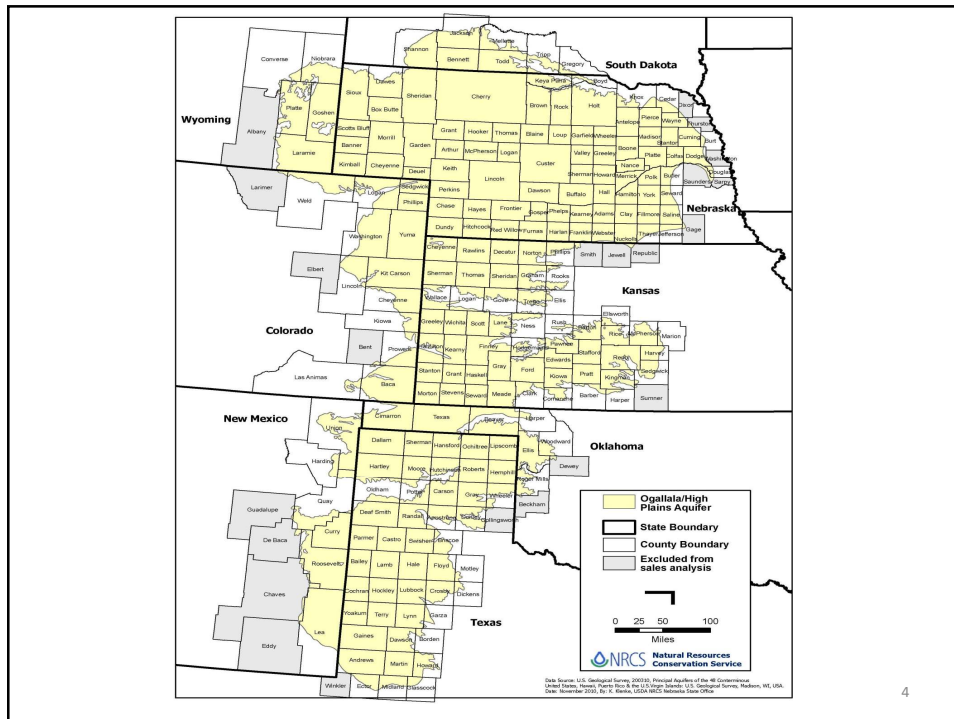
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# Introduction

- The Ogallala Aquifer Initiative (OAI) is a multi-state effort designed to reduce the quantity of water withdrawn from the Ogallala aquifer and to reduce contamination of the water in the aquifer
- Funded through the Environmental Quality Incentives Program (EQIP) administered by NRCS

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## Purpose and Objectives

- This presentation will:
  - Describe practices implemented through the OAI and compare them to practices implemented through general conservation programs
  - Compare the physical effectiveness of OAI and general conservation practices in reducing the quantity of water withdrawn from the aquifer
  - Present information on average practice implementation cost from the Federal standpoint

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## Methodology

- Data Collection and Sources
  - State-level estimates on acres applied and changes in irrigation water applications from practice implementation were made using a common approach (FIRI model)
  - Administrative data for financial obligations by programs and practice
    - USDA NRCS ProTracts database for the 2009-2012 period (October 25, 2013 snapshot ) for Federal obligations
- Data Analysis
  - Administrative Federal costs data were combined with acres and changes in water applications for all counties that participate in the Ogallala Aquifer Initiative (OAI)
    - OAI information was tracked as were other programs (EQIP, AWEP)
    - Four common water conservation practice types: Irrigation Management, Irrigation Technology, Converting to dry cropland, and Converting to pasture

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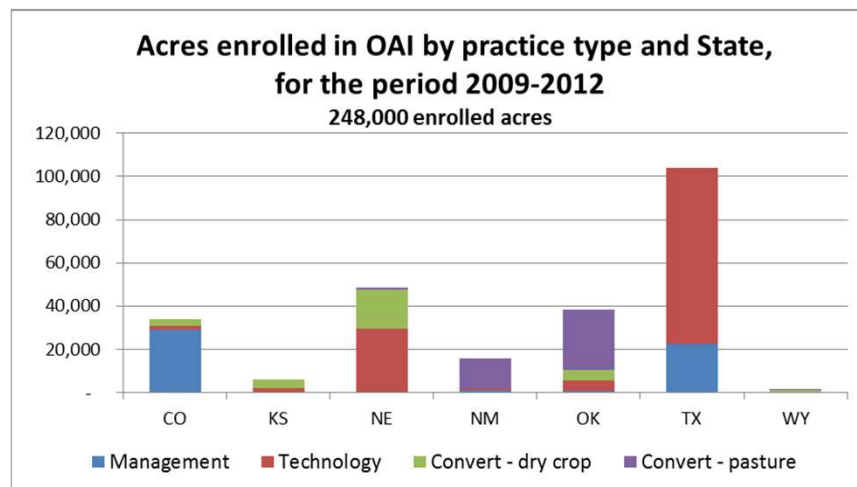
## Practice Types

- Irrigation Management
  - 449: Irrigation Water Management
- Irrigation Technology
  - 441: Irrigation System, Micro irrigation
  - 442: Irrigation System, Sprinkler
- Converting to dry cropping
  - 328: Conservation Crop Rotation
- Converting to pasture
  - 528: Prescribed Grazing
  - 645: Upland Wildlife Habitat Management (New Mexico Only)

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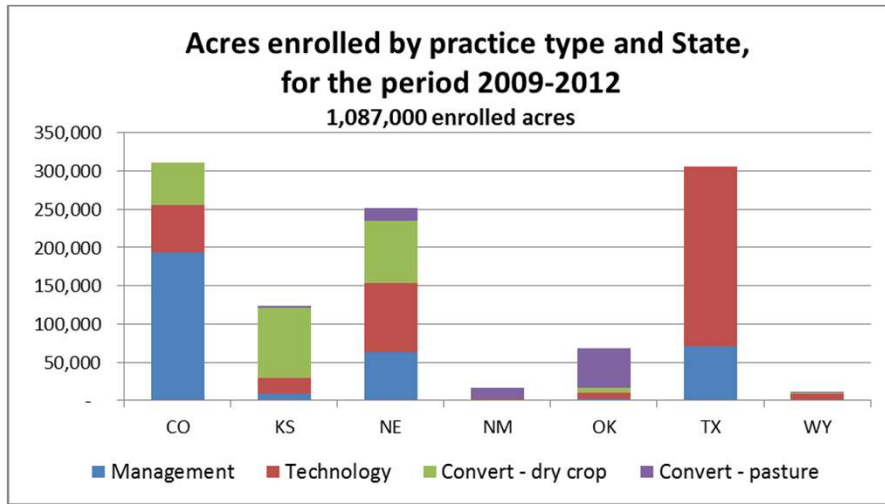
## Results: Acres enrolled OAI



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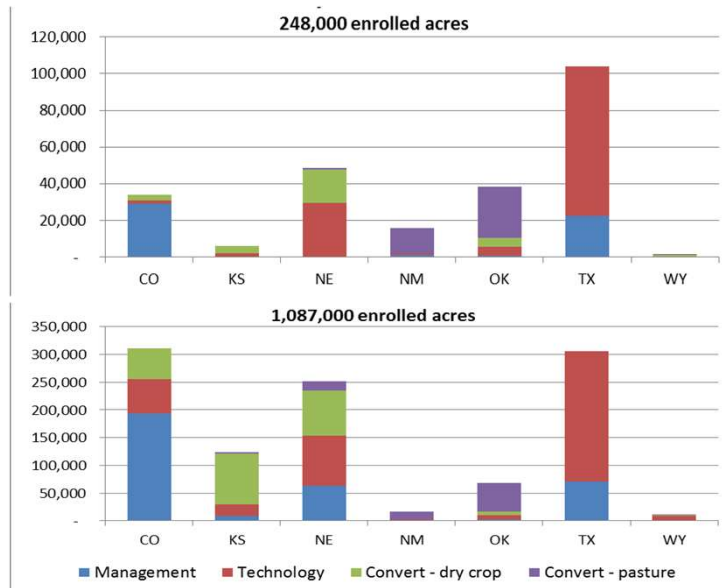
## Results: Acres enrolled other than OAI



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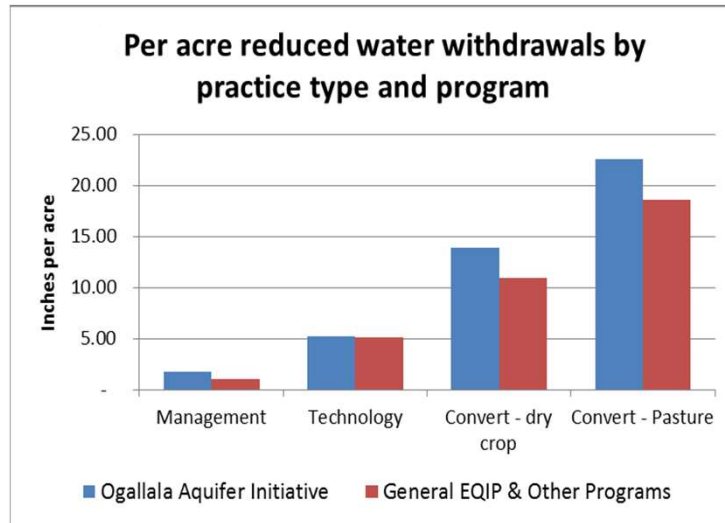
## Results: Acres comparison OAI to all other



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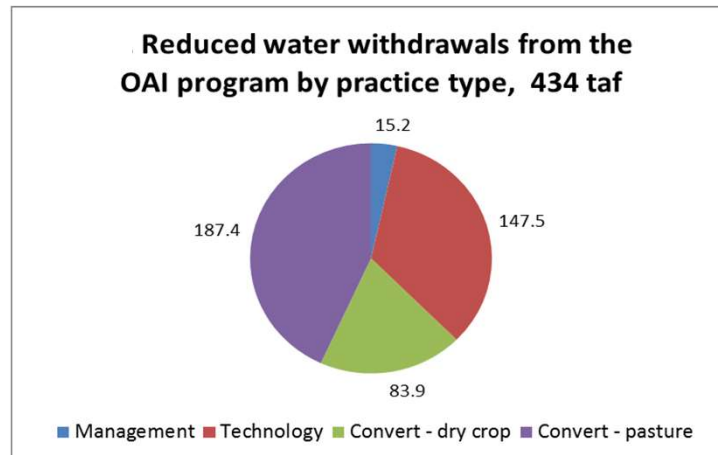
## Results: Per-acre water reductions



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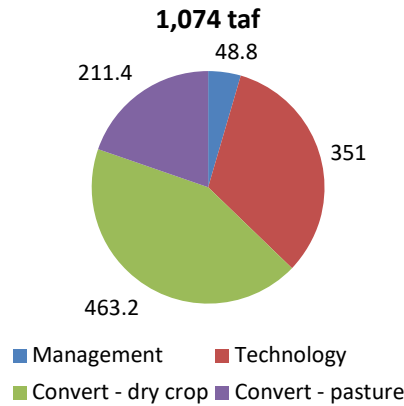
## Results: Water-reductions from OAI



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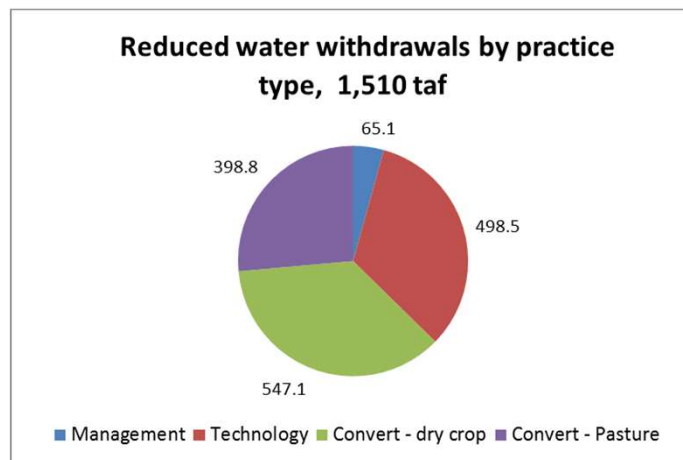
### Results: Water-reductions from all practices other than funded by OAI



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### Results: Water-reductions from all practices, all programs



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## Results: What does it cost?

Acres-weighted Federal cost per-acre inch of reduced withdrawals, OAI and Area

Practice Type	Ogallala Aquifer Initiative		Other NRCS Programs	
	Average	State Range	Average	State Range
Management	\$7.51	4.00 - 28.50	\$3.03	2.24 – 16.85
Technology	\$16.83	3.12 - 58.08	\$17.80	12.53 – 40.62
Covert – Dry crop	\$12.34	4.70 - 13.39	\$12.27	1.17 – 59.20
Convert - Pasture	\$11.39	8.32 - 11.72	\$0.38	0.13 – 5.06

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## Conclusion

- The results showed that for reduced water withdrawals for the period 2009-2012, NRCS provided assistance for conversion systems that reduced the quantity of water withdrawn from the aquifer by an estimated 1.5 million acre feet
  - more than 60% attributable to conversion to nonirrigated land uses
  - about 33% attributable to improved technology
  - about 4% from improving irrigation water management with existing technology

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## Conclusion cont'd

- The OAI practice implementations accounted for more than one-quarter of the reduced water withdrawals, 434,000 acre feet
  - 47% attributable to conversion to grasslands
  - 30% technology
  - 20% improving irrigation water management
- Federal cost per acre inch of reduced withdrawals was
  - greatest for technology practices (both OAI and general programs)
  - For general programs, lowest with conversion to pasture
  - For OAI, lowest for management.

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## Questions?



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