

Review of Four County LEMA data for 2023-24

Focus: Lane County

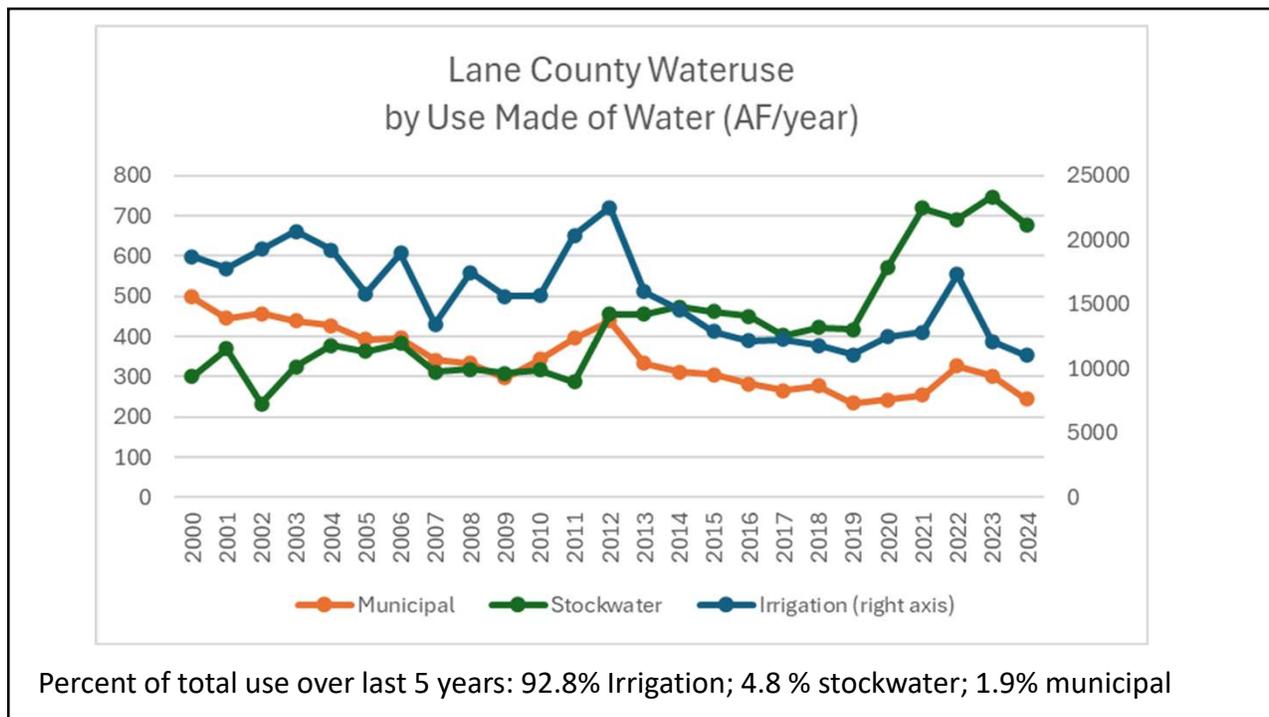
David Barfield, Consultant

Presented at GMD 1 County Meetings
December 2025

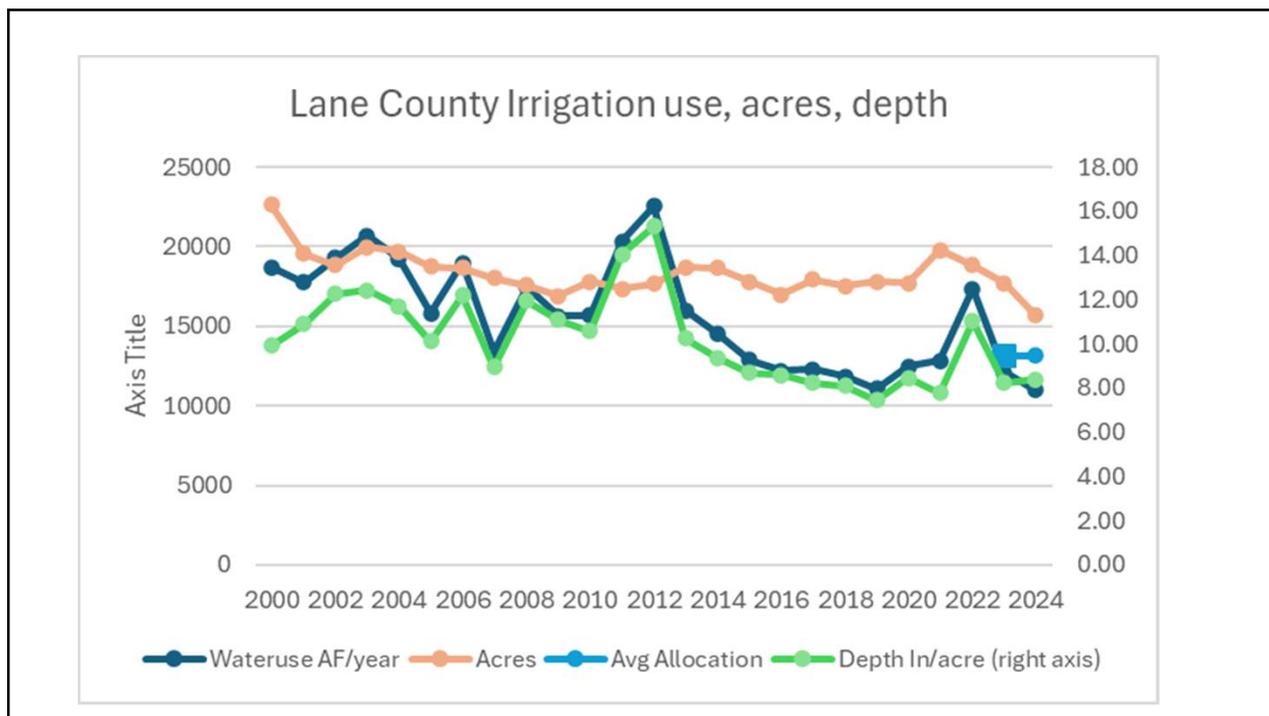
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Lane County data review

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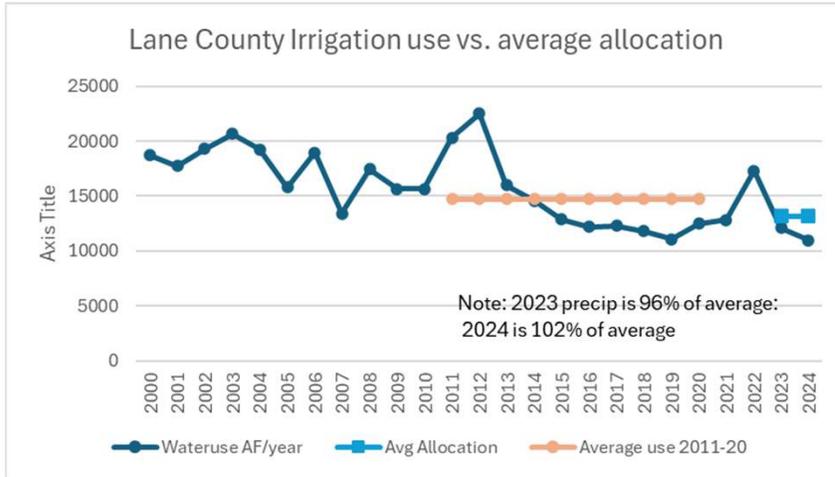


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Lane County LEMA performance, 2023-24

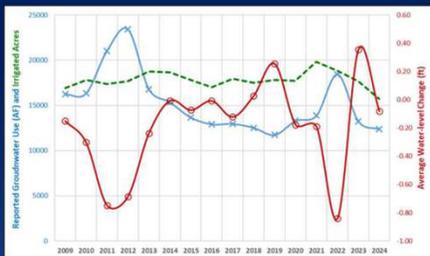


- 2023 precip was 4% less than average; 2024 was 2% more.
- Average 2023-24 irrigation wateruse was 88% of the average annual LEMA allocation (12% less)
- Average 2023-24 irrigation wateruse was 79% of the 2011-20 average use (a 21% reduction).

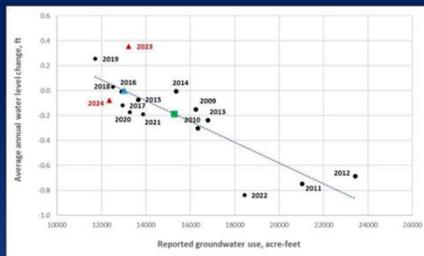
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Lane County, 2009 to 2024

Water-level change and water use trends

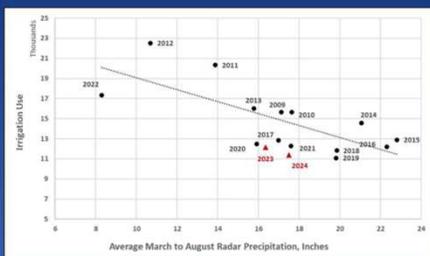


Water-level change vs water use (Q Stable)

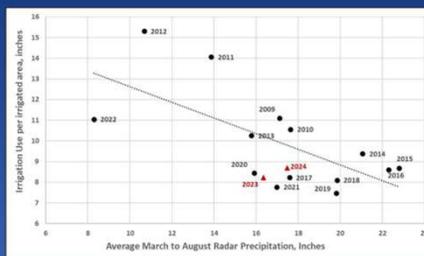


- R-squared = 0.71, P < 0.00005
- Net Inflows = 13,00 AF
- Percent reduction to achieve stabilized water levels:
 - Average conditions = 15%
 - 2020-2024 = 6%

Irrigation Use and Precipitation (Mar to Aug)



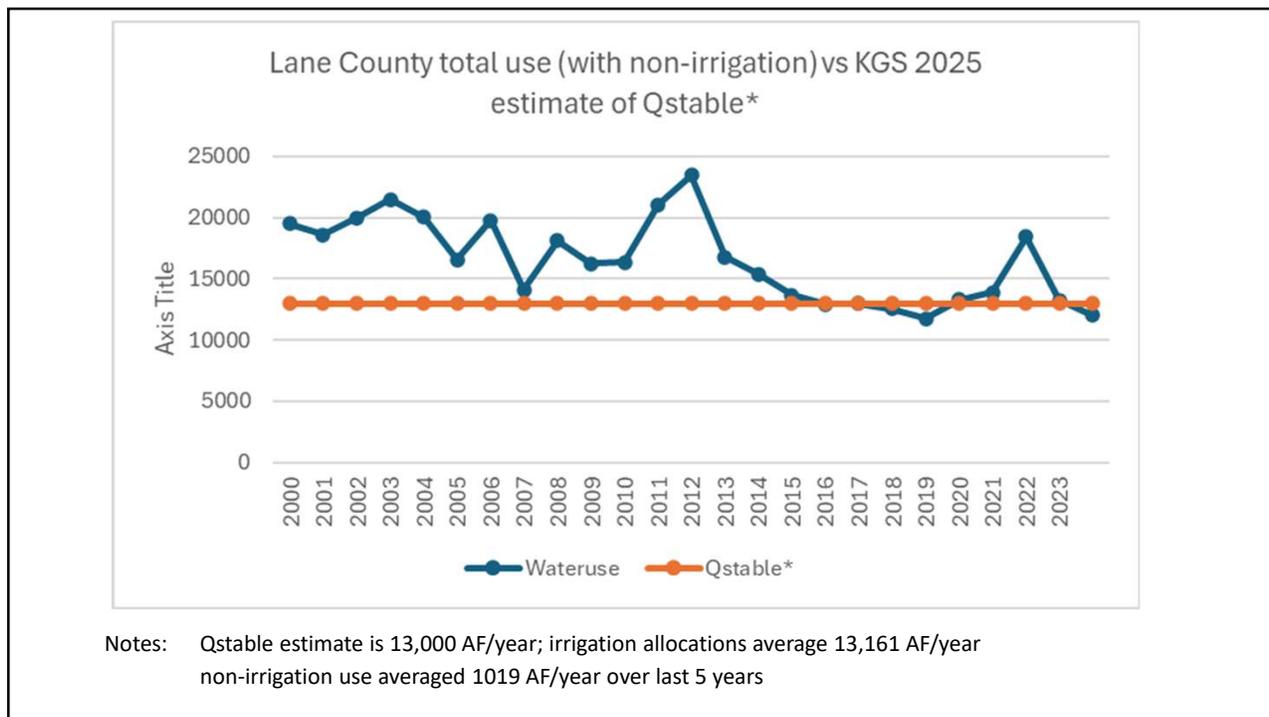
Irrigation AF/A and Precipitation (Mar to Aug)



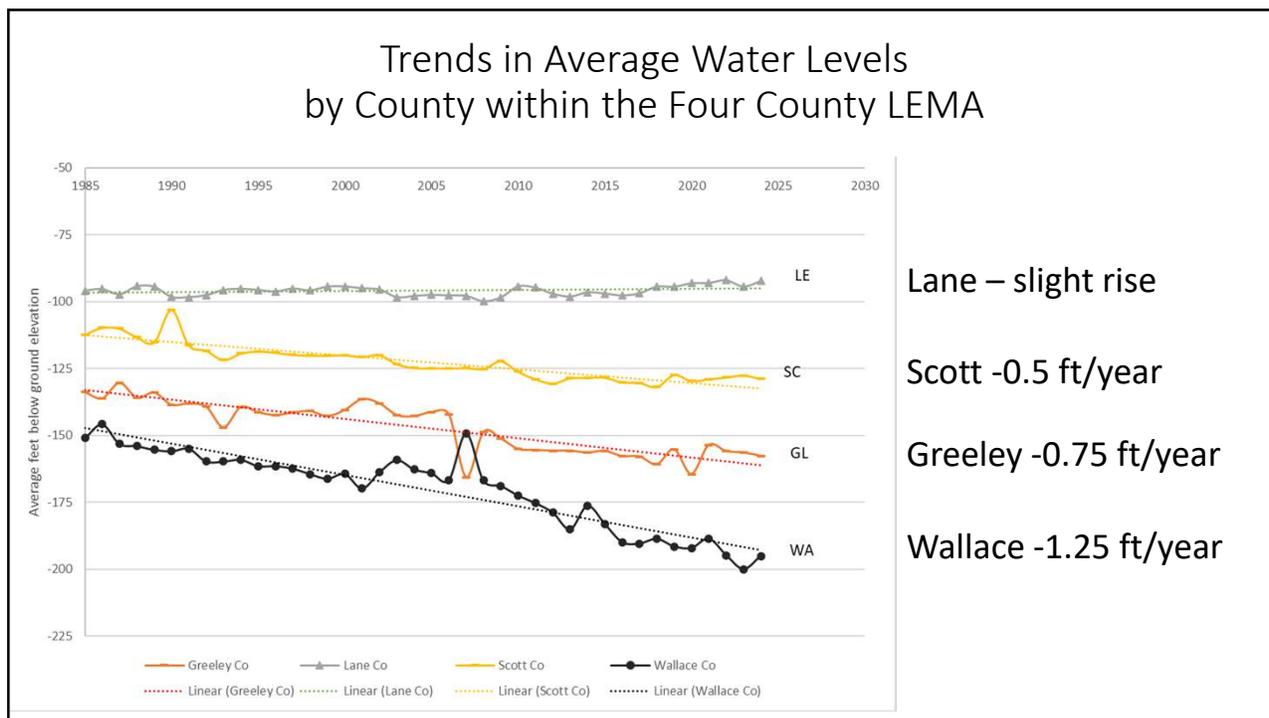
David Barfield addition		Lane County		
year	predicted pumping from 2011-20	actual pumping	Difference	% diff
	AF	AF	AF	
2023	15,891	12,128	(3,763)	-23.7%
2024	14,989	11,362	(3,627)	-24.2%

Kansas Geological Survey

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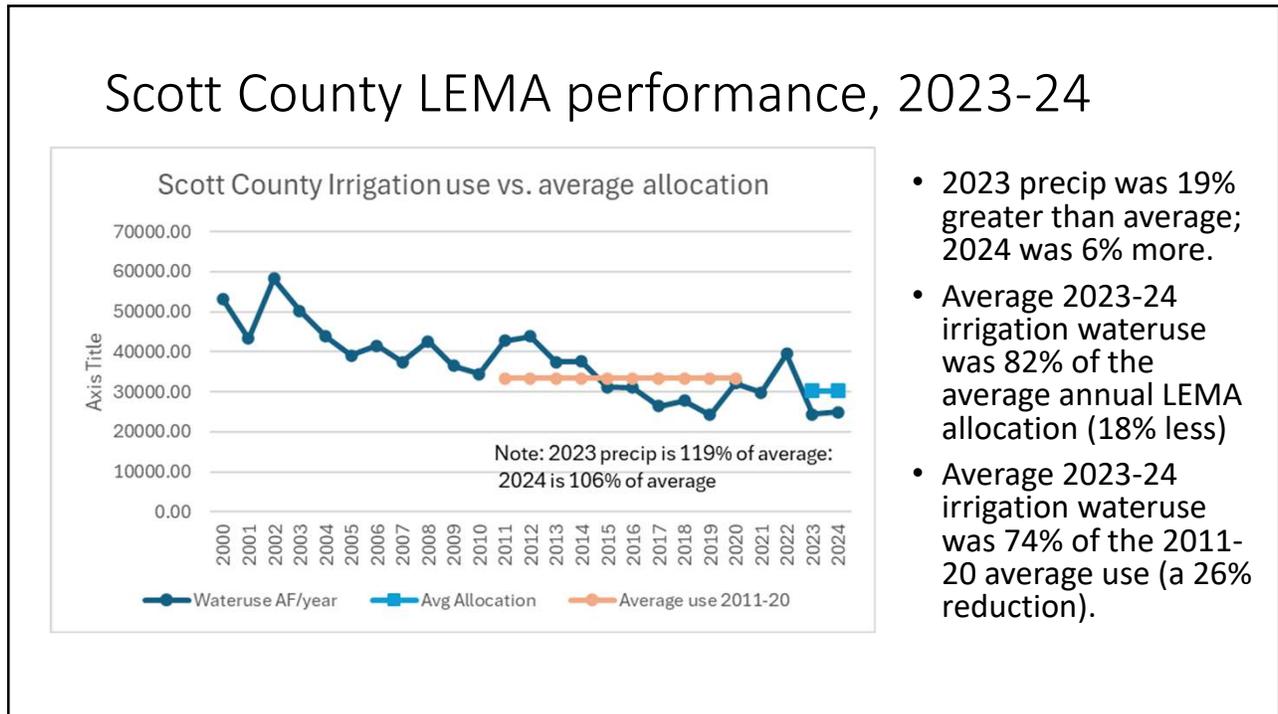
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Other County results

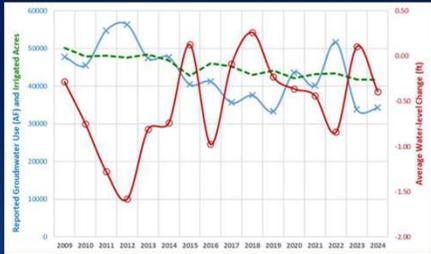
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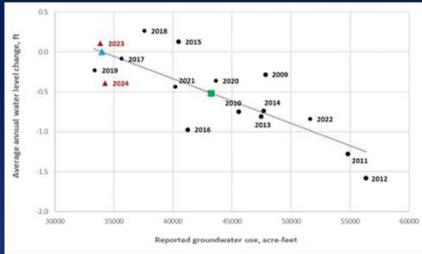
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Scott County, 2009 to 2024

Water-level change and water use trends

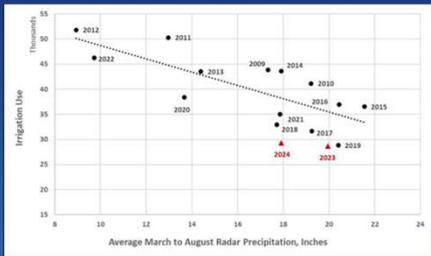


Water-level change vs water use (Q Stable)

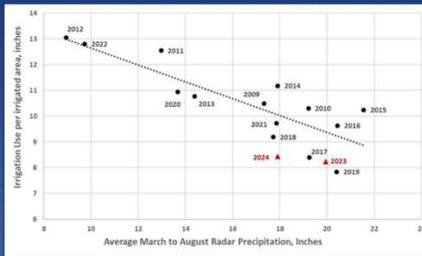


- R-squared = 0.64, P < 0.0003
- Net Inflows = 34,000 AF
- Percent reduction to achieve stabilized water levels:
 - Average conditions = 21%
 - 2020-2024 = 16%

Irrigation Use and Precipitation (Mar to Aug)

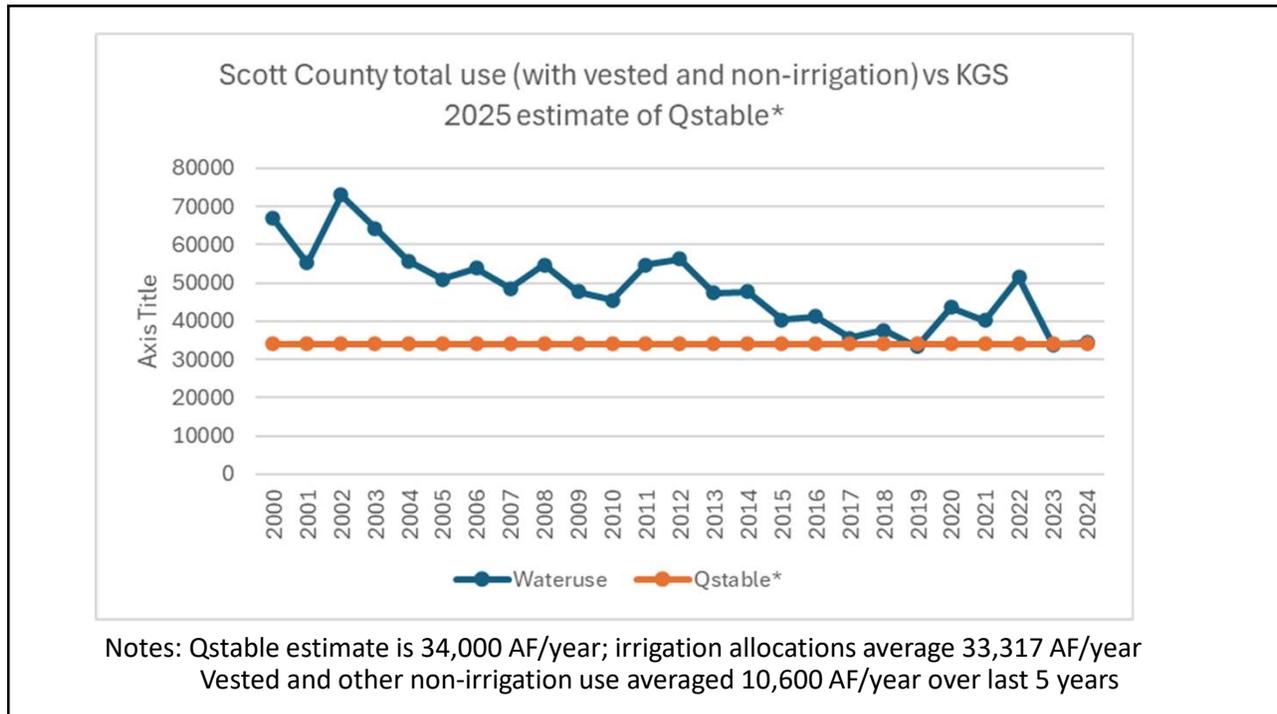


Irrigation AF/A and Precipitation (Mar to Aug)



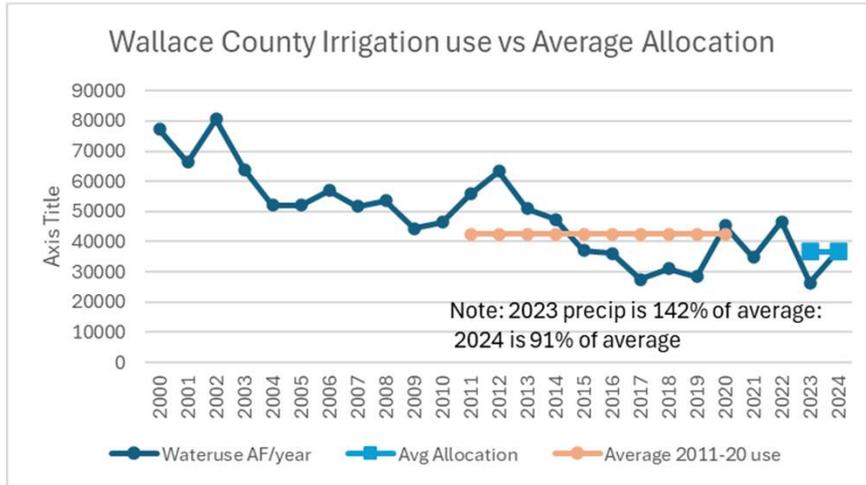
David Barfield addition		Scott County		
year	predicted pumping	actual pumping	Difference	% diff
	AF	AF	AF	
2023	34,543	28,658	(5,886)	-17.0%
2024	37,648	29,299	(8,349)	-22.2%

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Wallace County LEMA performance, 2023-24



- 2023 precip was 42% greater than average; 2024 was 9% less.
- Average 2023-24 irrigation wateruse was 87% of the average annual LEMA allocation (13% less)
- Average 2023-24 irrigation wateruse was 74% of the 2011-20 average use (a 26% reduction).

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Wallace County, 2009 to 2024

Water-level change and water use trends

Water-level change vs water use (Q Stable)

- R-squared = 0.66, P < 0.0002
- Net Inflows = 17,000 AF
- Percent reduction to achieve stabilized water levels:
 - Average conditions = 59%
 - 2020-2024 = 54%

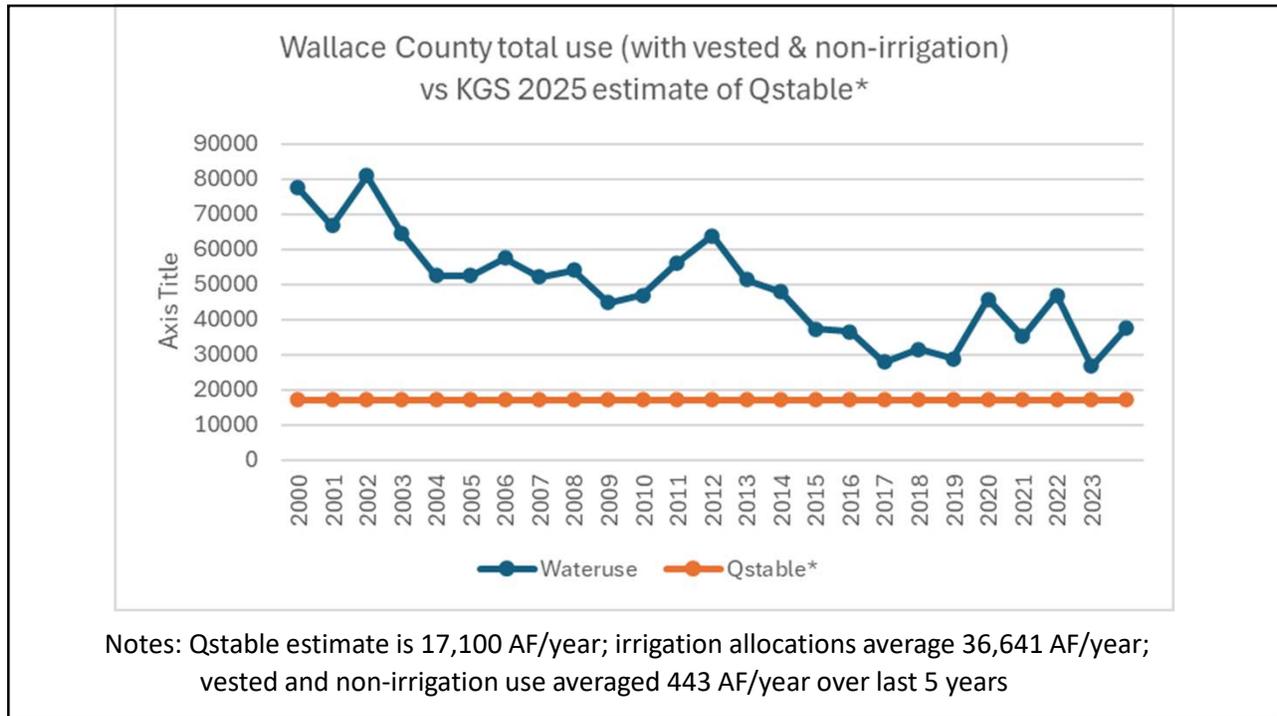
Irrigation Use and Precipitation (Mar to Aug)

Irrigation AF/A and Precipitation (Mar to Aug)

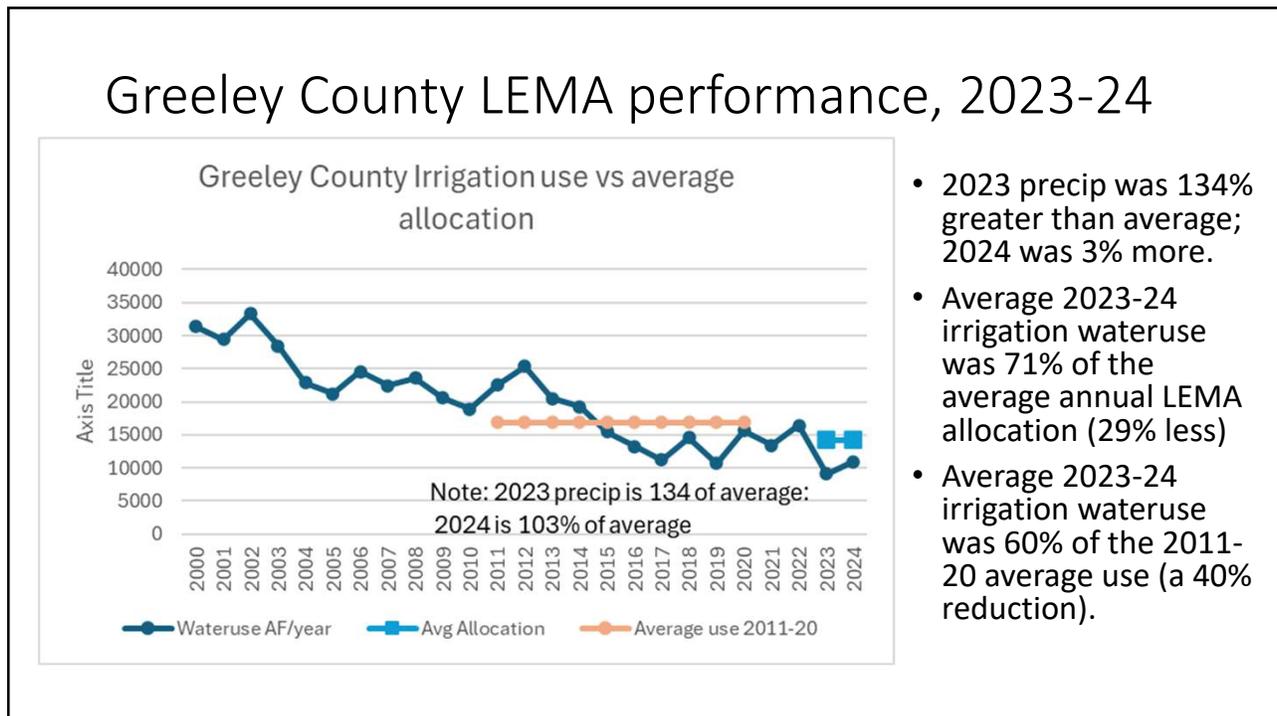
David Barfield addition		Wallace County		
year	predicted pumping from 2011-20	actual pumping	Difference	% diff
	AF	AF	AF	
2023	28,406	26,612	(1,793)	-6.3%
2024	44,941	37,174	(7,767)	-17.3%

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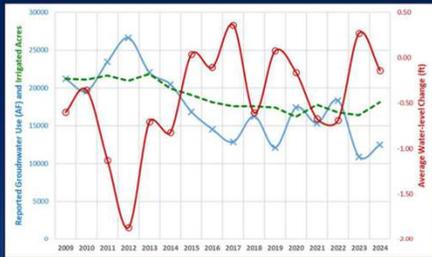
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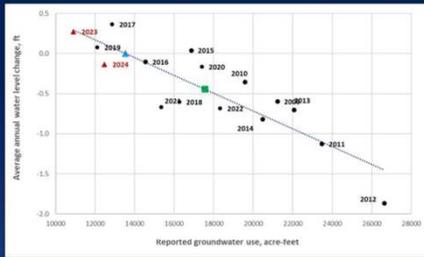
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Greeley County, 2009 to 2024

Water-level change and water use trends

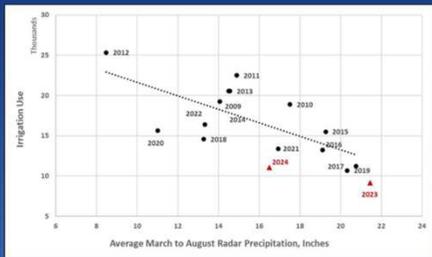


Water-level change vs water use (Q Stable)

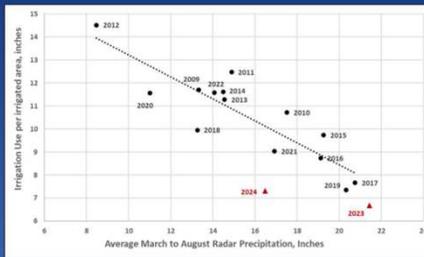


- R-squared = 0.77, P < 0.000009
- Net Inflows = 13,500 AF
- Percent reduction to achieve stabilized water levels:
 - Average conditions = 23%
 - 2020-2024 = 6%

Irrigation Use and Precipitation (Mar to Aug)

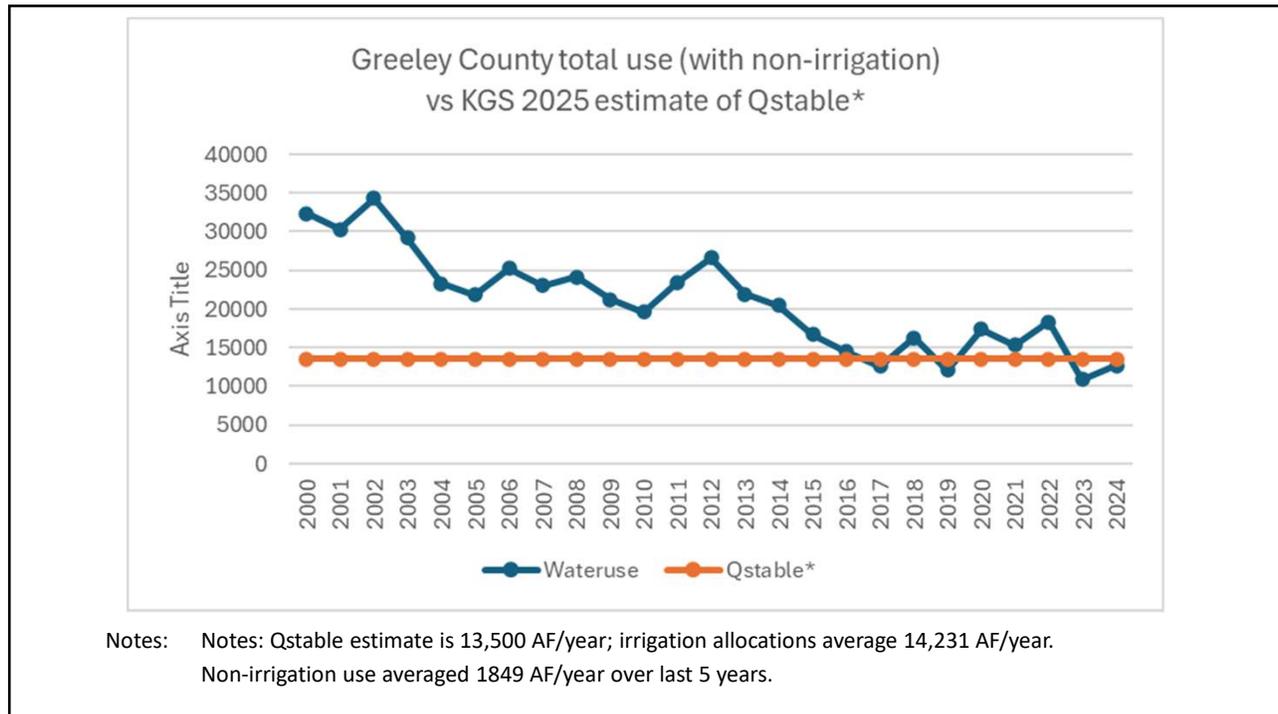


Irrigation AF/A and Precipitation (Mar to Aug)



David Barfield addition		Greeley County		
year	predicted pumping	actual pumping	Difference	% diff
	AF	AF	AF	
2023	11,669	9,127	(2,541)	-21.8%
2024	16,023	11,049	(4,974)	-31.0%

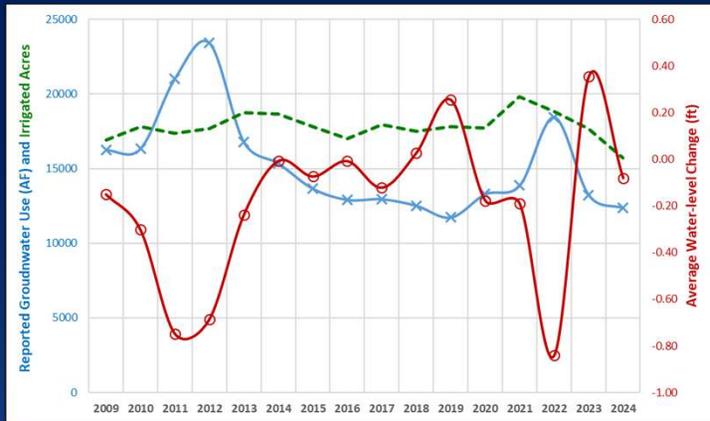
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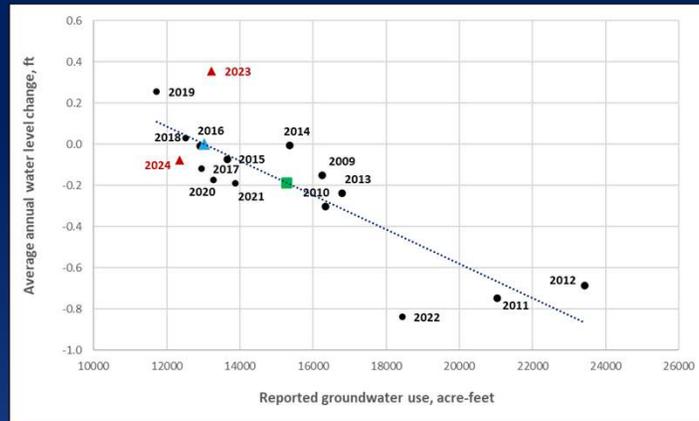
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Lane County, 2009 to 2024

Water-level change and water use trends

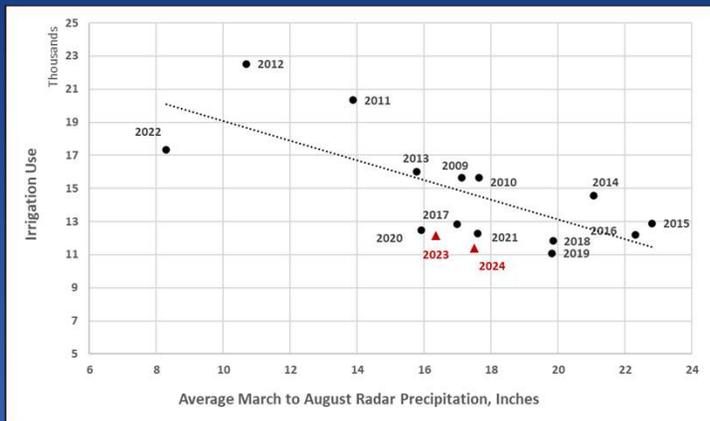


Water-level change vs water use (Q Stable)

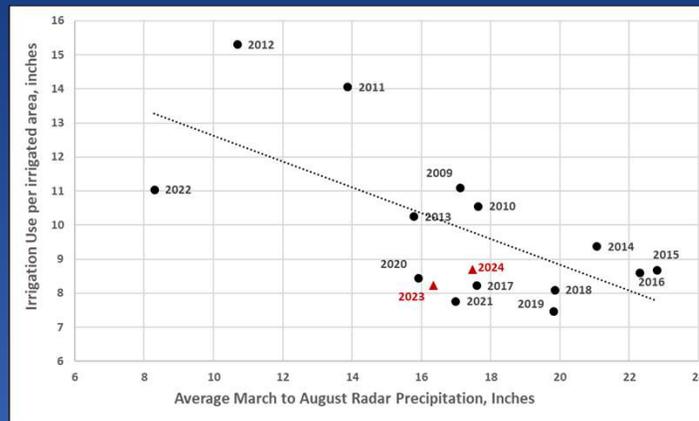


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- Net Inflows = 13,00 AF
- Percent reduction to achieve stabilized water levels:
 - Average conditions = 15%
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Irrigation Use and Precipitation (Mar to Aug)



Irrigation AF/A and Precipitation (Mar to Aug)



	David Barfield addition	Lane County		
year	predicted pumping	actual pumping	Difference	% diff
	from 2011-20	from 2011-20		
	AF	AF	AF	
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2024	14,989	11,362	(3,627)	-24.2%