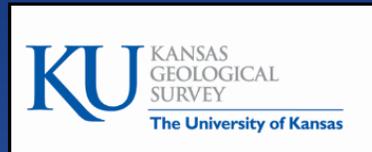


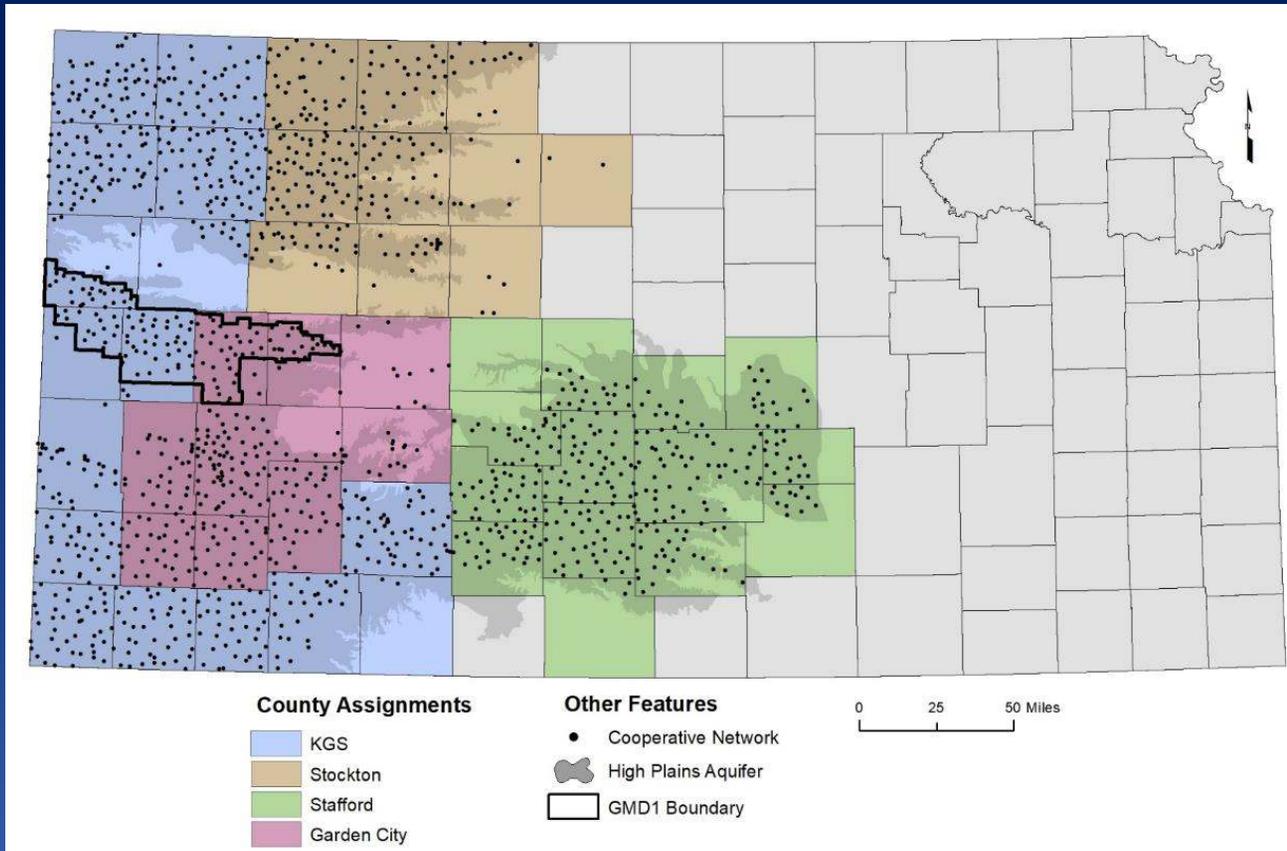
# 2022 Water Level Results and County-based Water Use vs Precipitation Relationships

Western Kansas GMD #1  
Annual Meeting  
February 23, 2022



Kansas Geological Survey  
University of Kansas

# 2022 Cooperative Water Level Program



## Western Kansas GMD 1

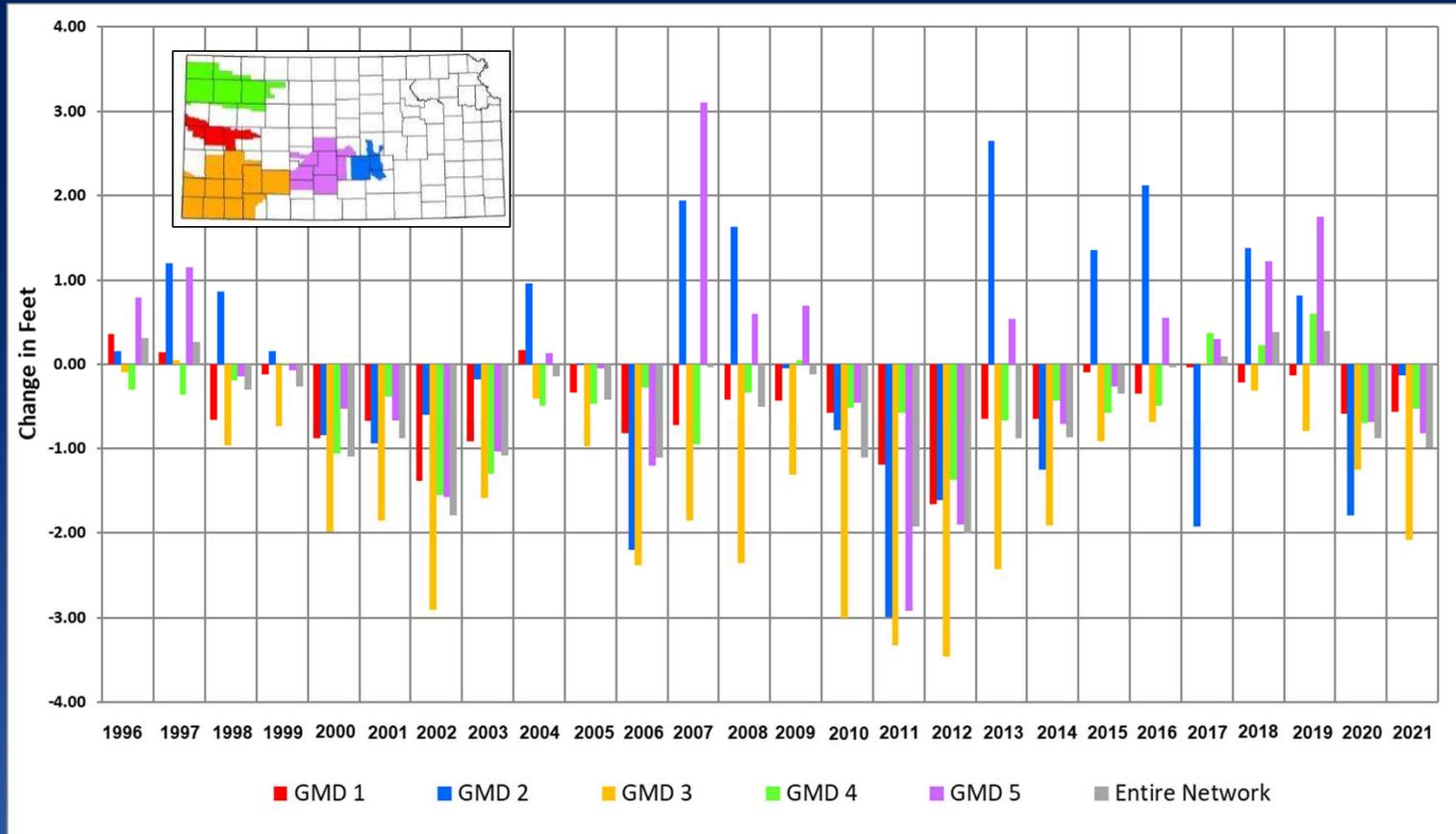
- 136 wells measured
- Average 2021 to 2022 water-level change = -0.55 ft

# Average Change (by Well)

GMD	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
GMD 1	0.37	0.14	-0.66	-0.12	-0.89	-0.68	-1.39	-0.92	0.17	-0.34	-0.83	-0.73	-0.42	-0.42	-0.57	-1.20	-1.67	-0.64	-0.64	-0.10	-0.34	-0.03	-0.22	-0.14	-0.59	-0.55
GMD 2	0.15	1.19	0.86	0.15	-0.85	-0.95	-0.60	-0.18	0.96	0.01	-2.20	1.95	1.63	-0.05	-0.79	-3.00	-1.61	2.65	-1.26	1.35	2.12	-1.93	1.38	0.82	-1.80	-0.13
GMD 3	-0.09	0.05	-0.96	-0.75	-1.99	-1.86	-2.91	-1.60	-0.41	-0.98	-2.38	-1.85	-2.36	-1.32	-3.01	-3.33	-3.46	-2.43	-1.92	-0.92	-0.70	0.02	-0.31	-0.80	-1.25	-2.08
GMD 4	-0.30	-0.36	-0.19	0.00	-1.07	-0.39	-1.56	-1.30	-0.49	-0.46	-0.27	-0.96	-0.34	0.05	-0.51	-0.57	-1.38	-0.67	-0.43	-0.58	-0.49	0.37	0.23	0.60	-0.70	-0.53
GMD 5	0.79	1.15	-0.14	-0.07	-0.52	-0.67	-1.58	-1.04	0.13	-0.05	-1.21	3.11	0.60	0.69	-0.45	-2.92	-1.90	0.54	-0.71	-0.26	0.56	0.30	1.22	1.75	-0.69	-0.82
Entire Network	0.32	0.26	-0.29	-0.26	-1.10	-0.89	-1.80	-1.09	-0.14	-0.41	-1.11	-0.04	-0.50	-0.12	-1.11	-1.93	-2.01	-0.88	-0.87	-0.35	-0.03	0.10	0.39	0.39	-0.89	-1.00

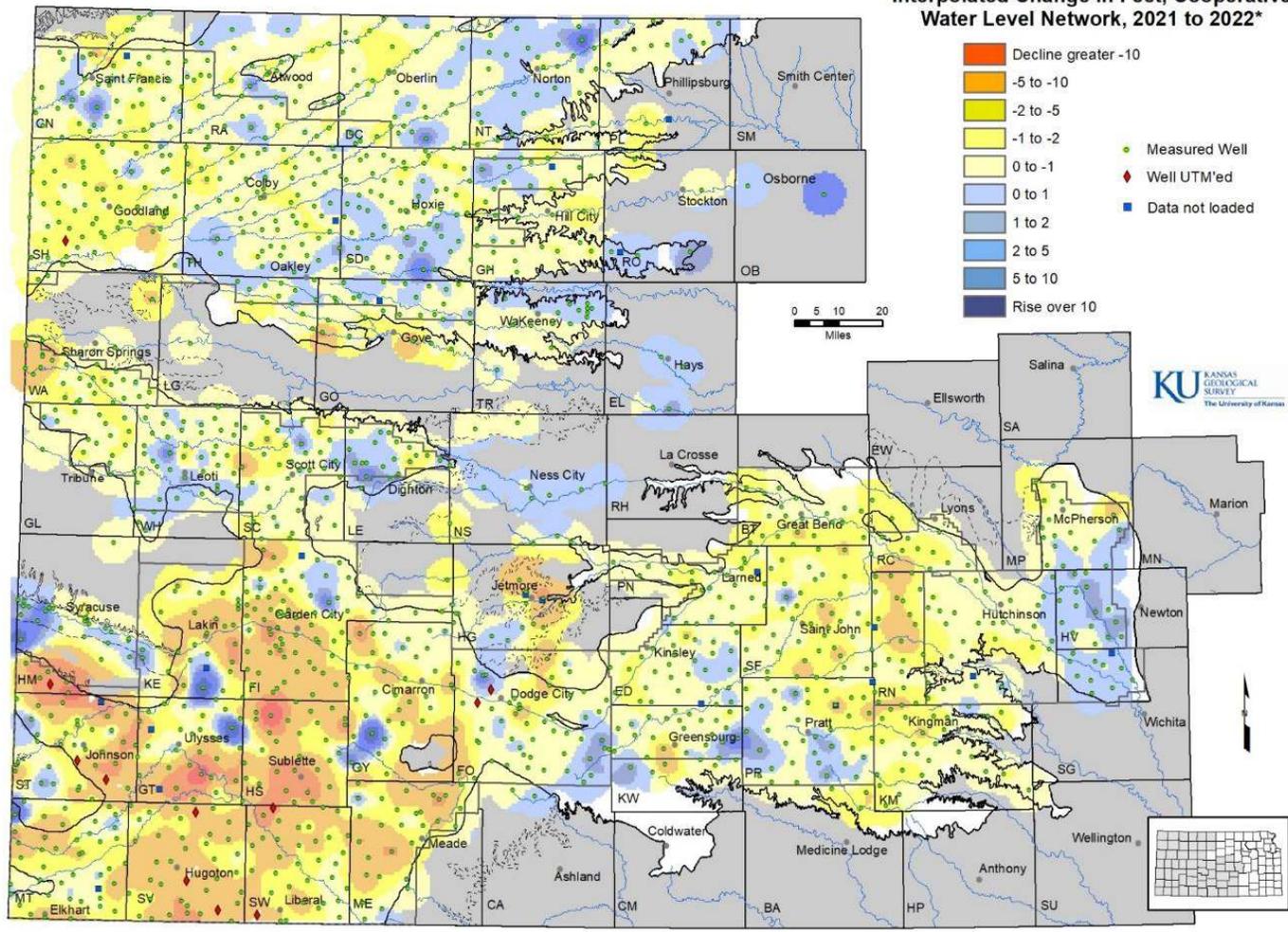
\*Results are based only on the cooperative network (KGS and KDA-DWR) and do not include sub-regional networks from the KDA-DWR, KGS, or local GMDs. 2022 water levels are provisional.

# Average Change (by Well)

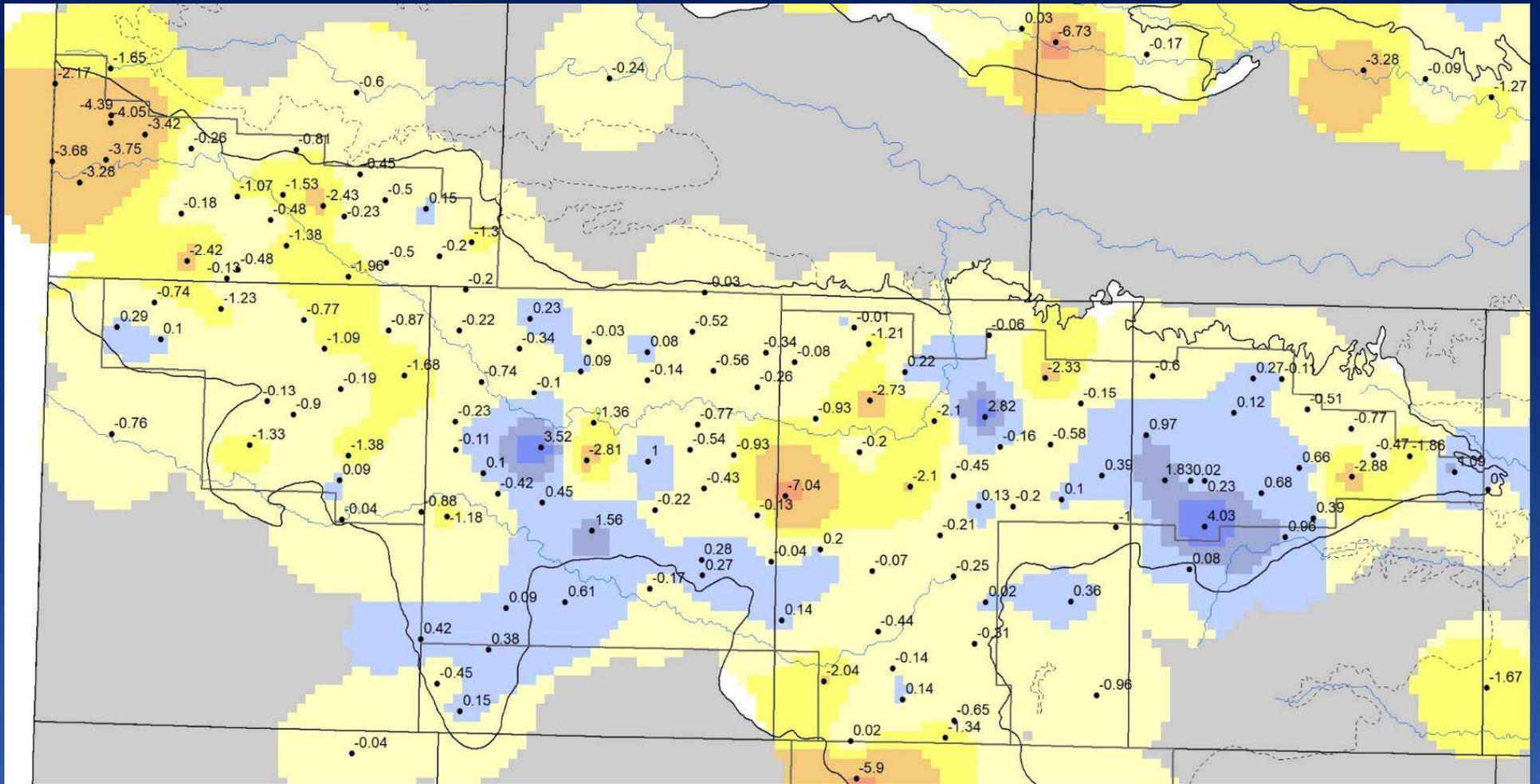


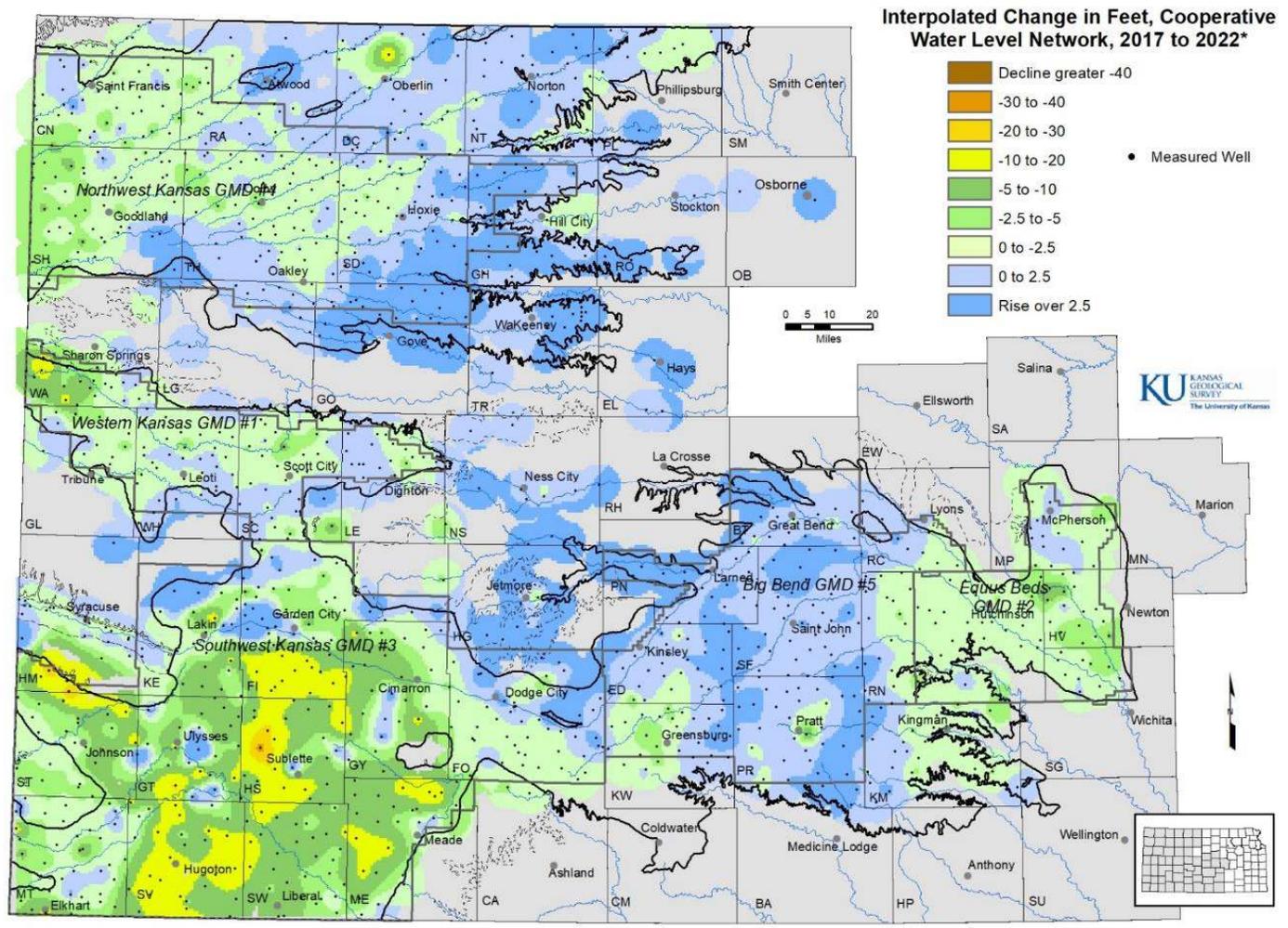
\*Results are based only on the cooperative network (KGS and KDA-DWR) and do not include sub-regional networks from the KDA-DWR, KGS, or local GMDs. 2022 water levels are provisional.

**Interpolated Change in Feet, Cooperative Water Level Network, 2021 to 2022\***



\*Results are based only on the cooperative network (KGS and KDA-DWR) and do not include sub-regional networks from the KGS, KDA-DWR or local GMDs.





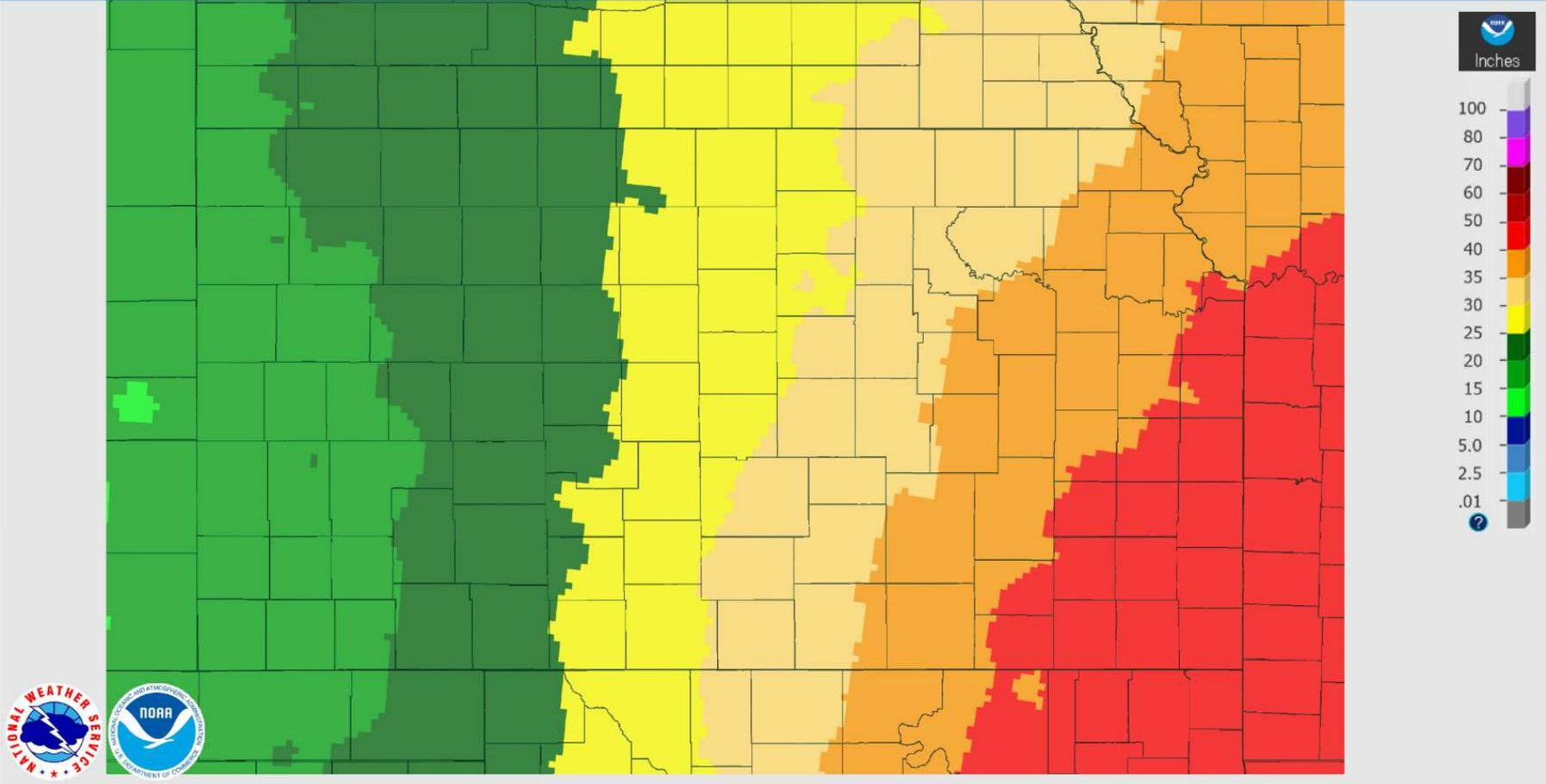
\*Results are based only on the cooperative network (KGS and KDA-DWR) and do not include sub-regional networks from the KGS, KDA-DWR or local GMDs.

# 1991 to 2020 Normal Precipitation

January 01, 2021 Annual Normal Precipitation

Created on: January 28, 2022 - 23:42 UTC

Valid on: January 01, 2022 12:00 UTC

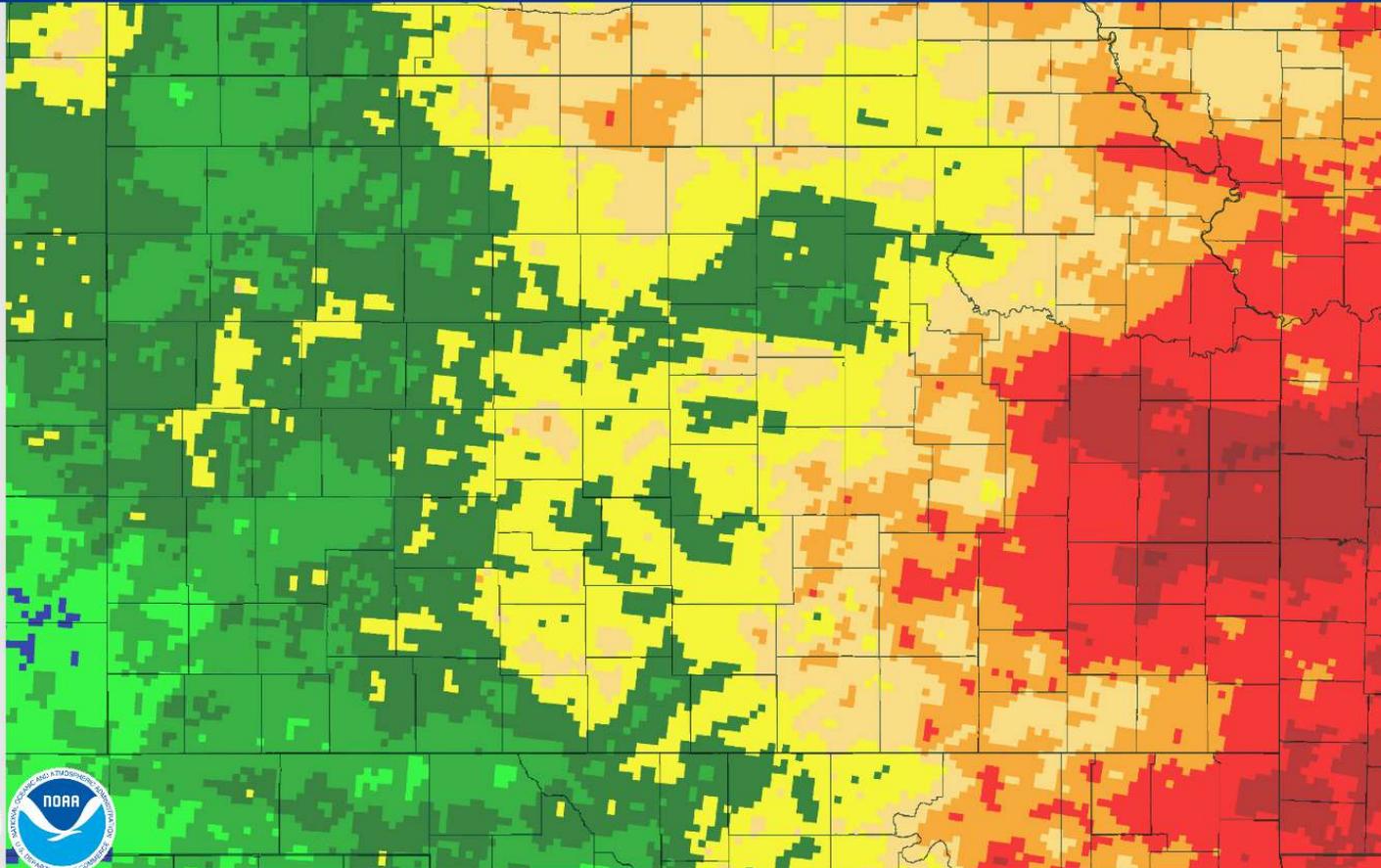


# 2021 Total Precipitation

January 01, 2021 Annual Observed Precipitation

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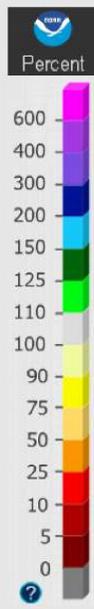
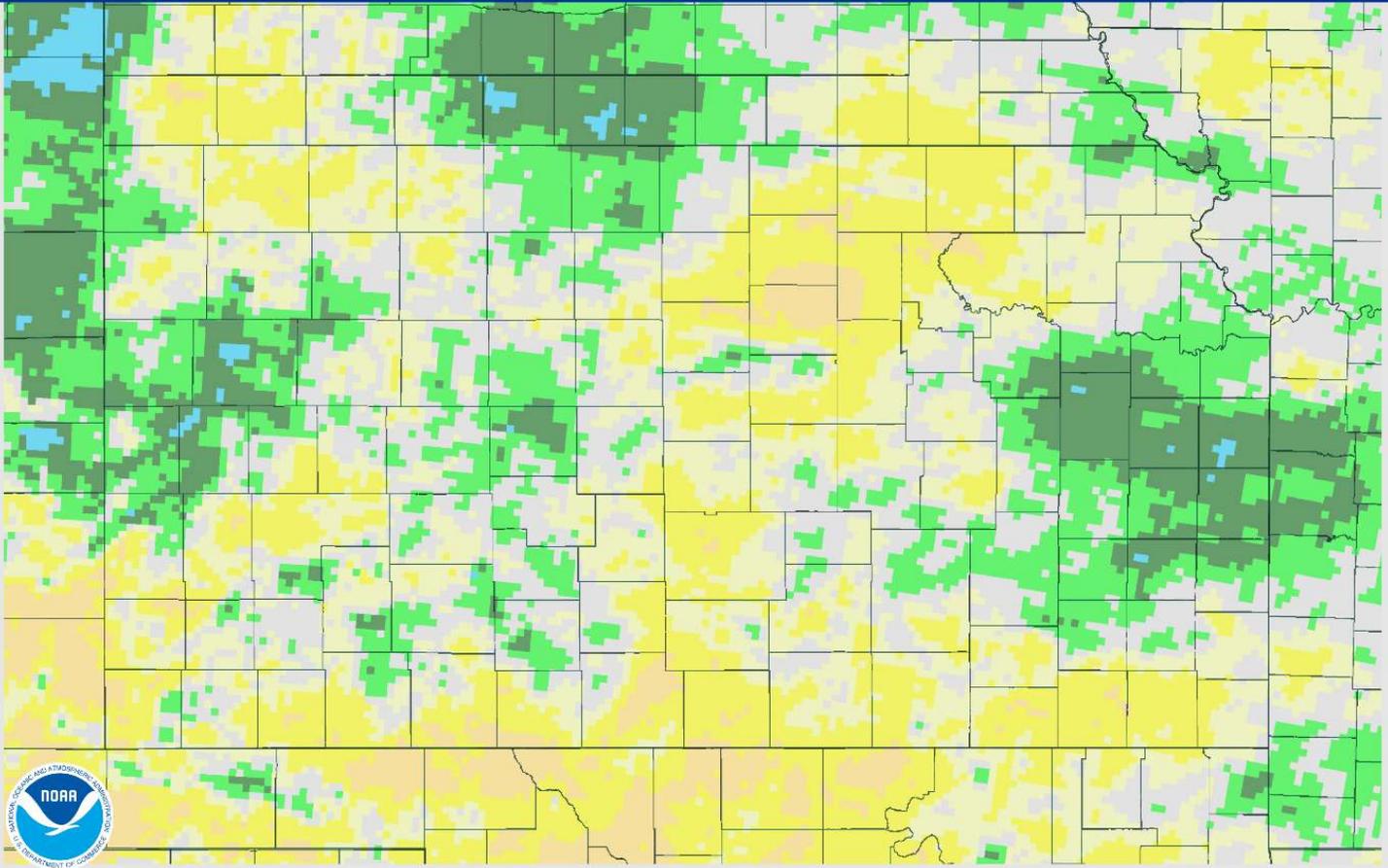


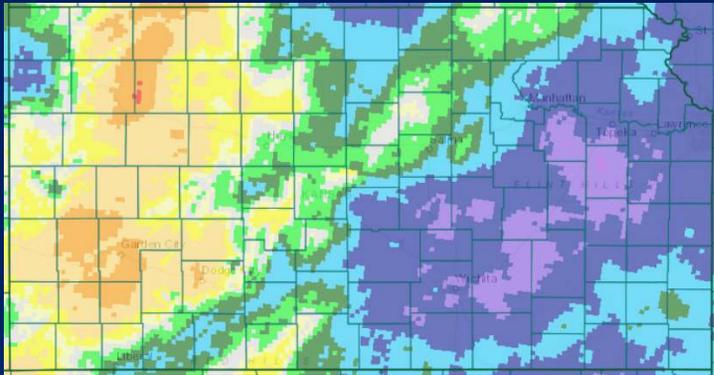
# Percent Departure from Normal Precipitation

January 01, 2021 Annual Percent Precipitation

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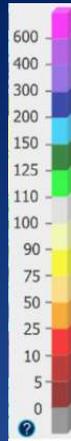
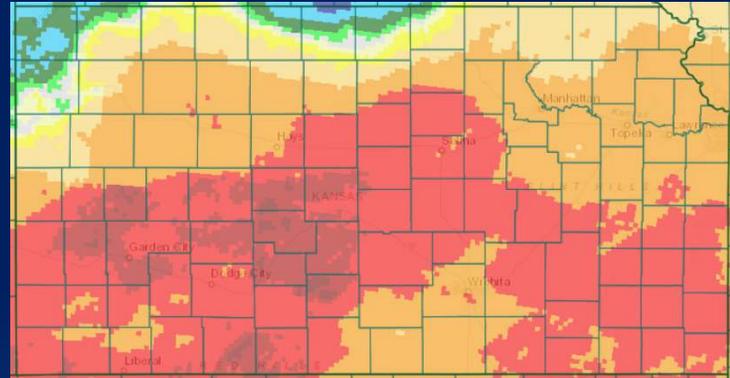
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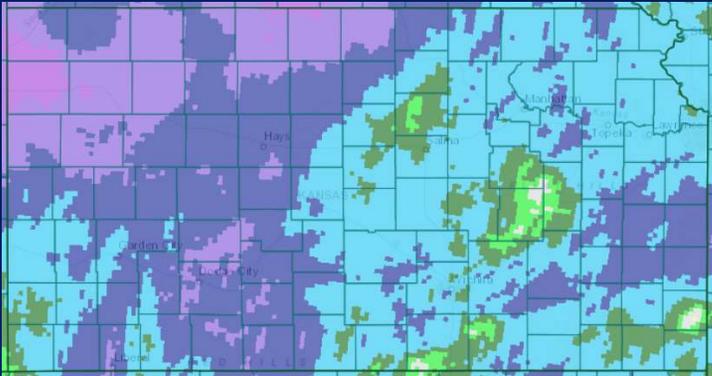




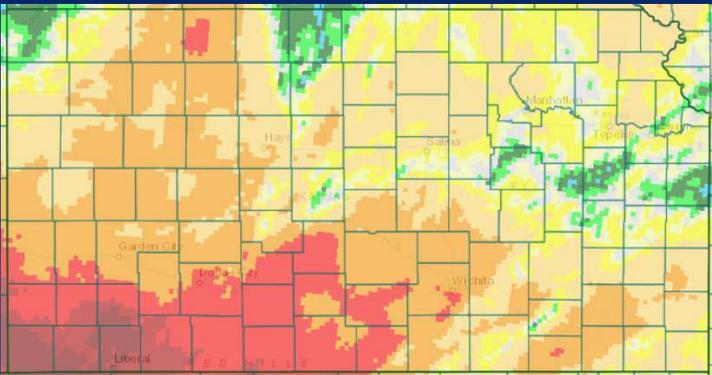
January

February

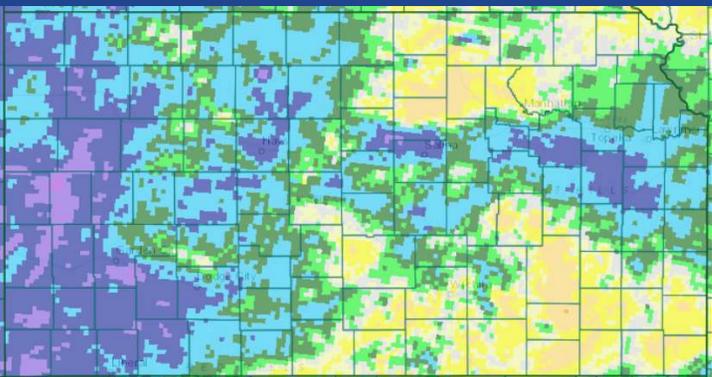




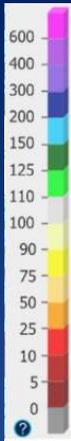
**March**



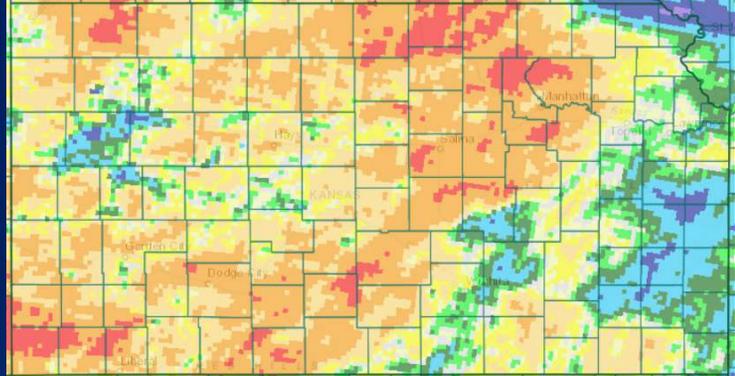
**April**



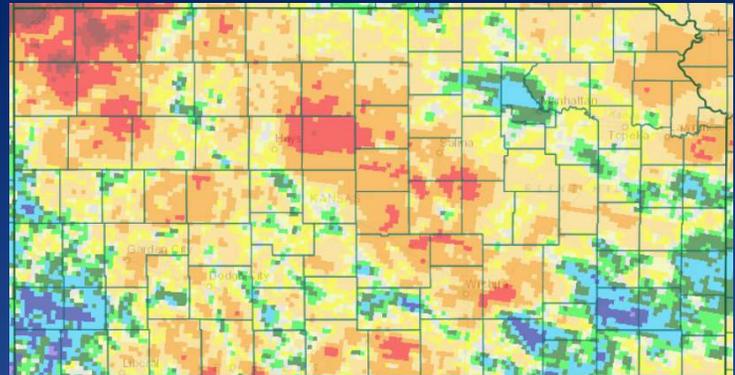
**May**



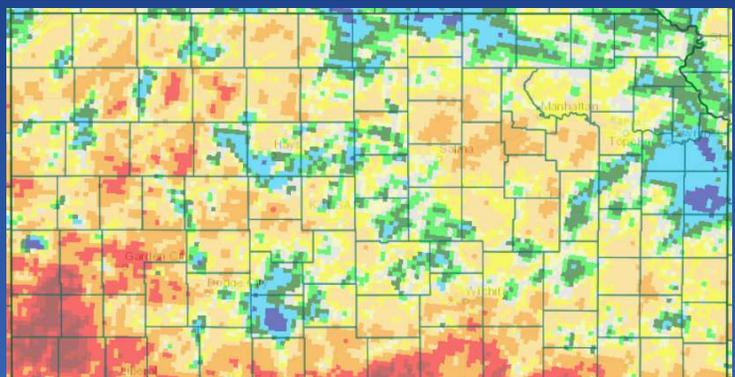
**June**

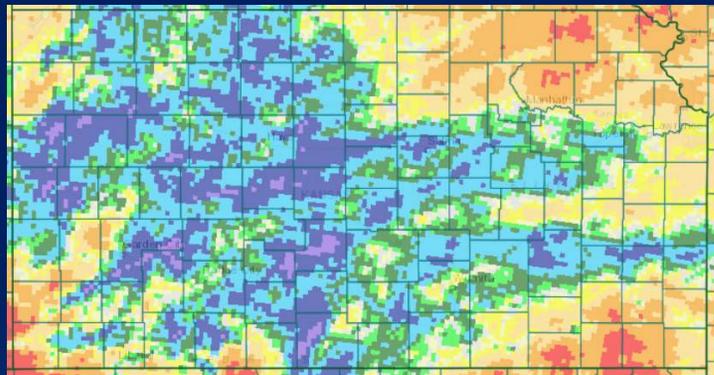


**July**



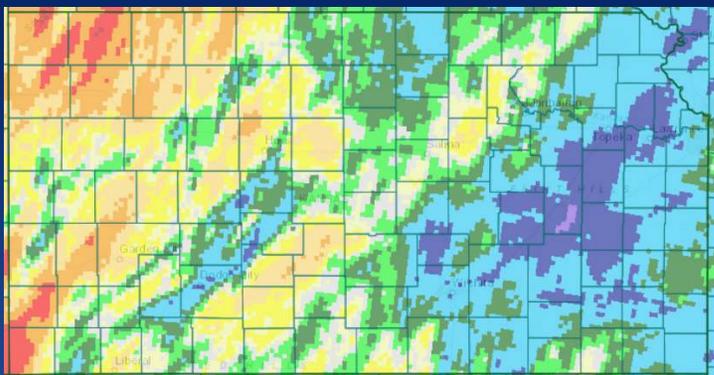
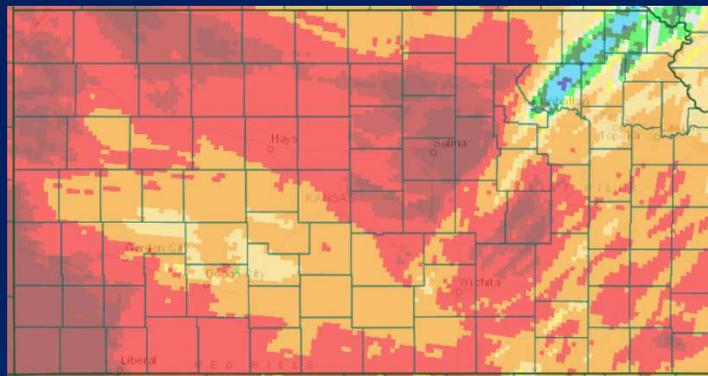
**August**





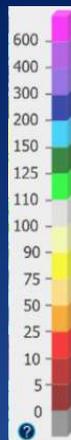
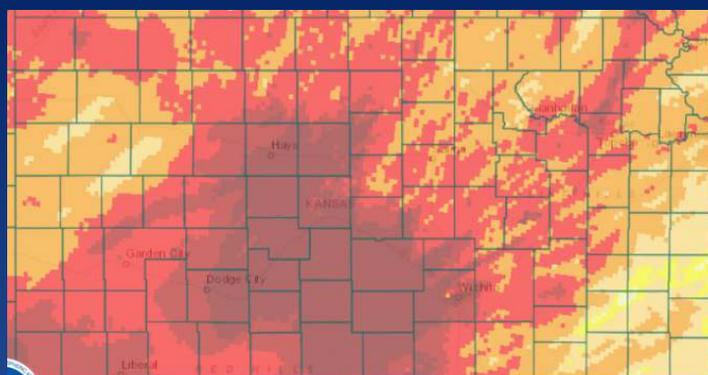
September

November

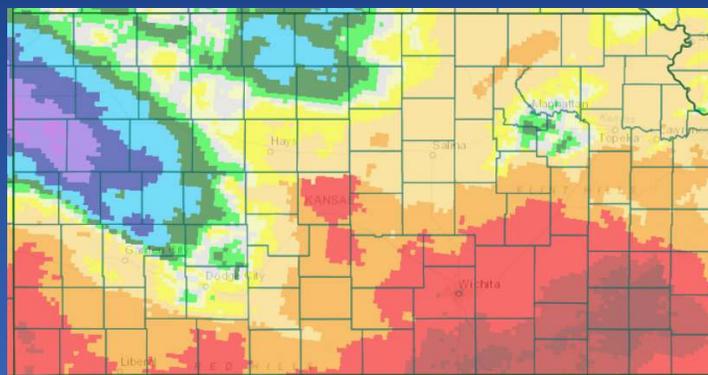


October

December



January, 2022

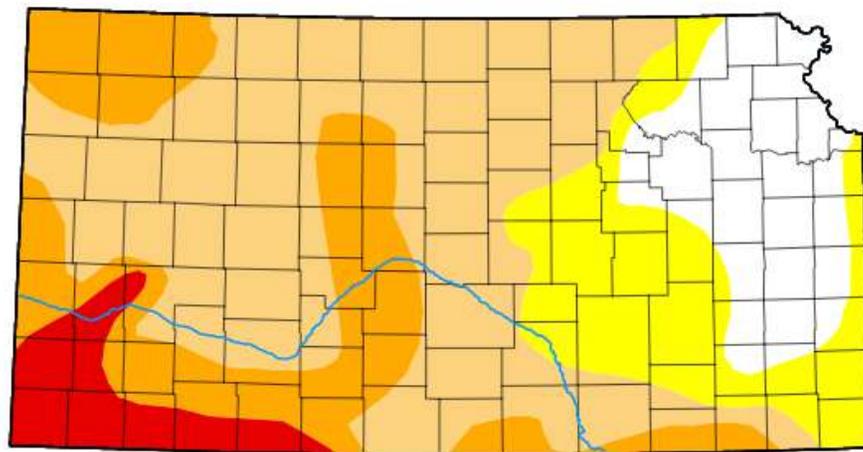
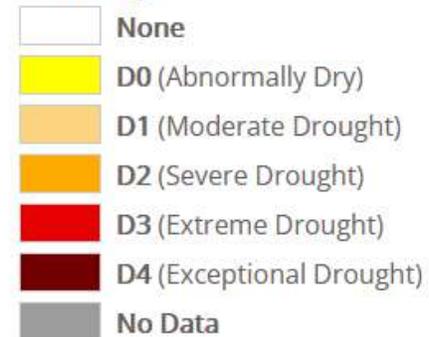


# UNL Drought Monitor

Map released: Thurs. February 17, 2022

Data valid: February 15, 2022 at 7 a.m. EST

## Intensity



## Authors

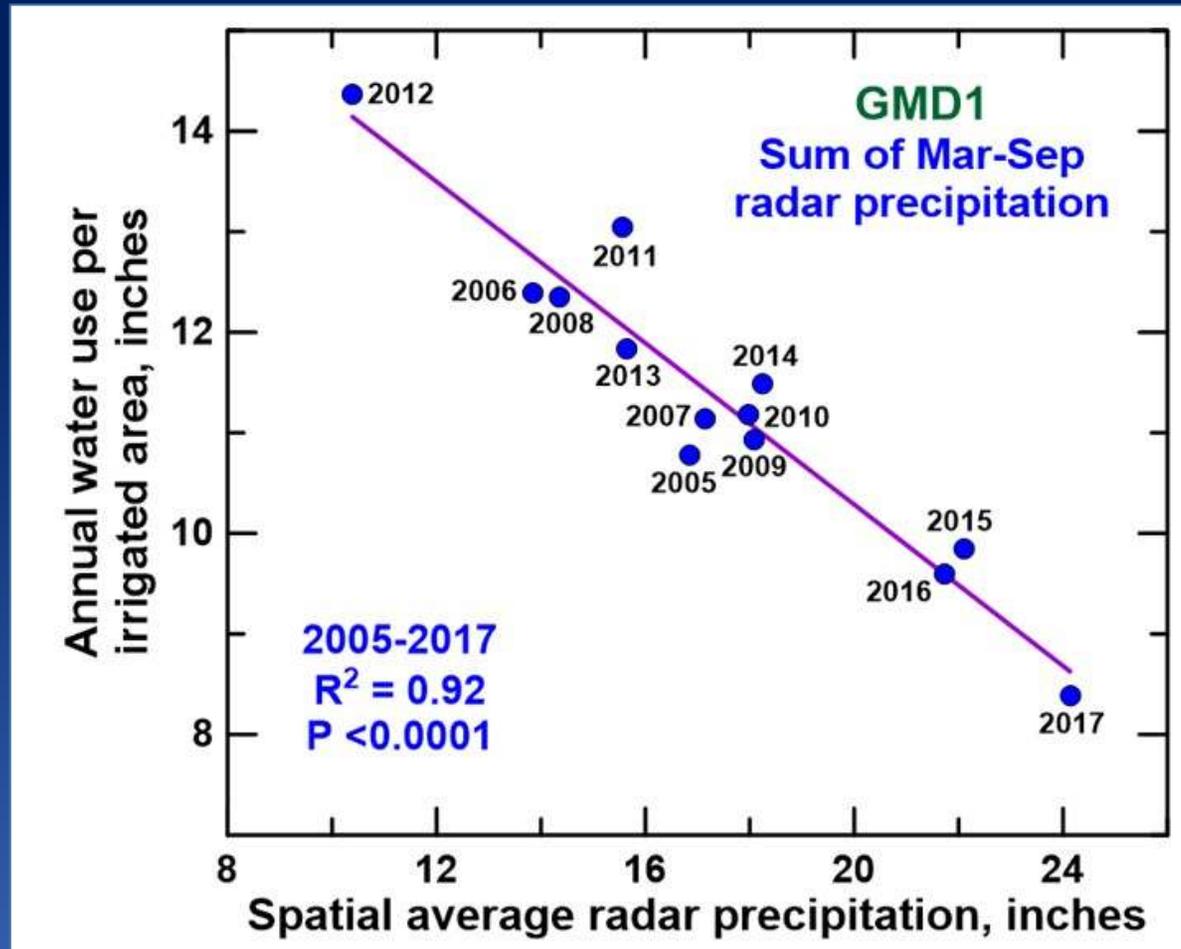
United States and Puerto Rico Author(s):

**Brad Pugh**, NOAA/CPC

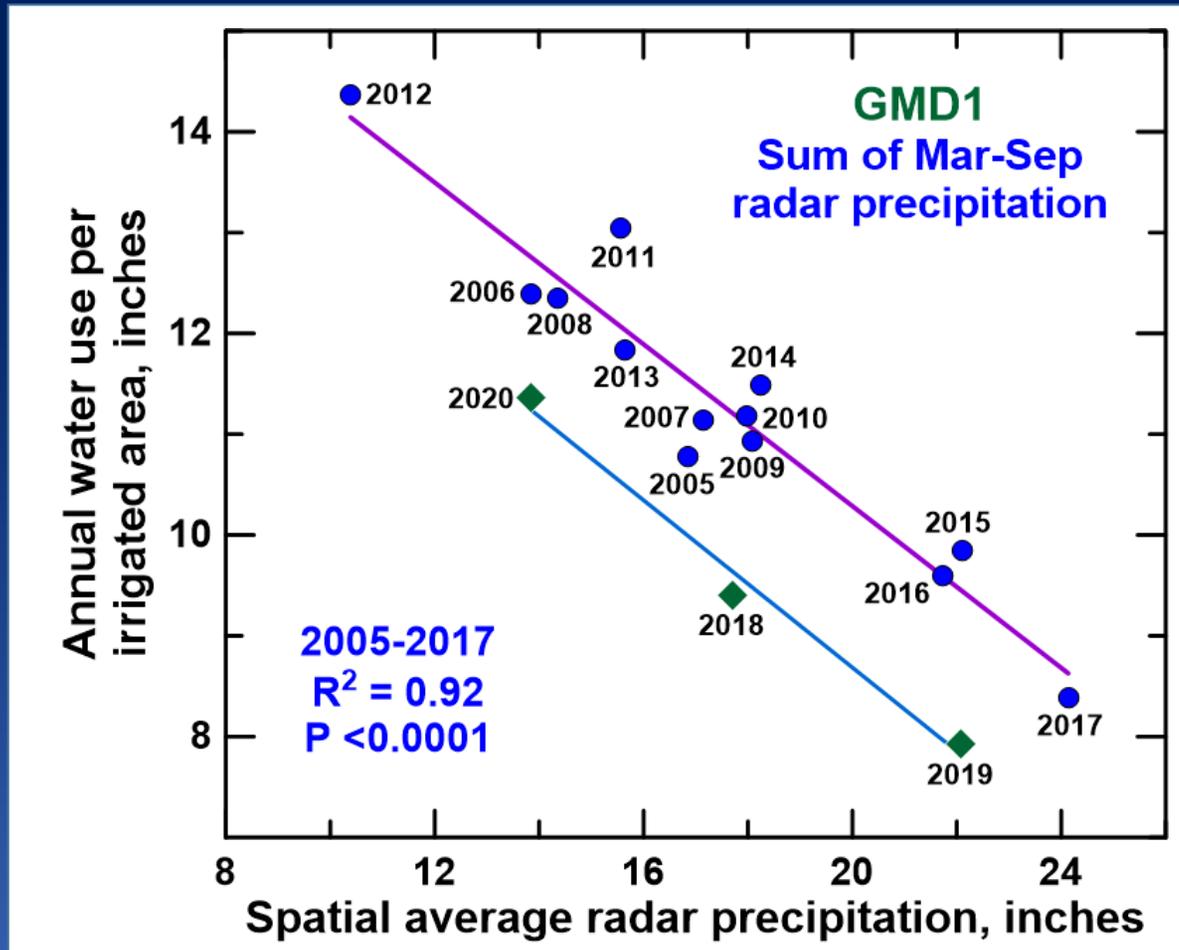
Pacific Islands and Virgin Islands Author(s):

**Richard Heim**, NOAA/NCEI

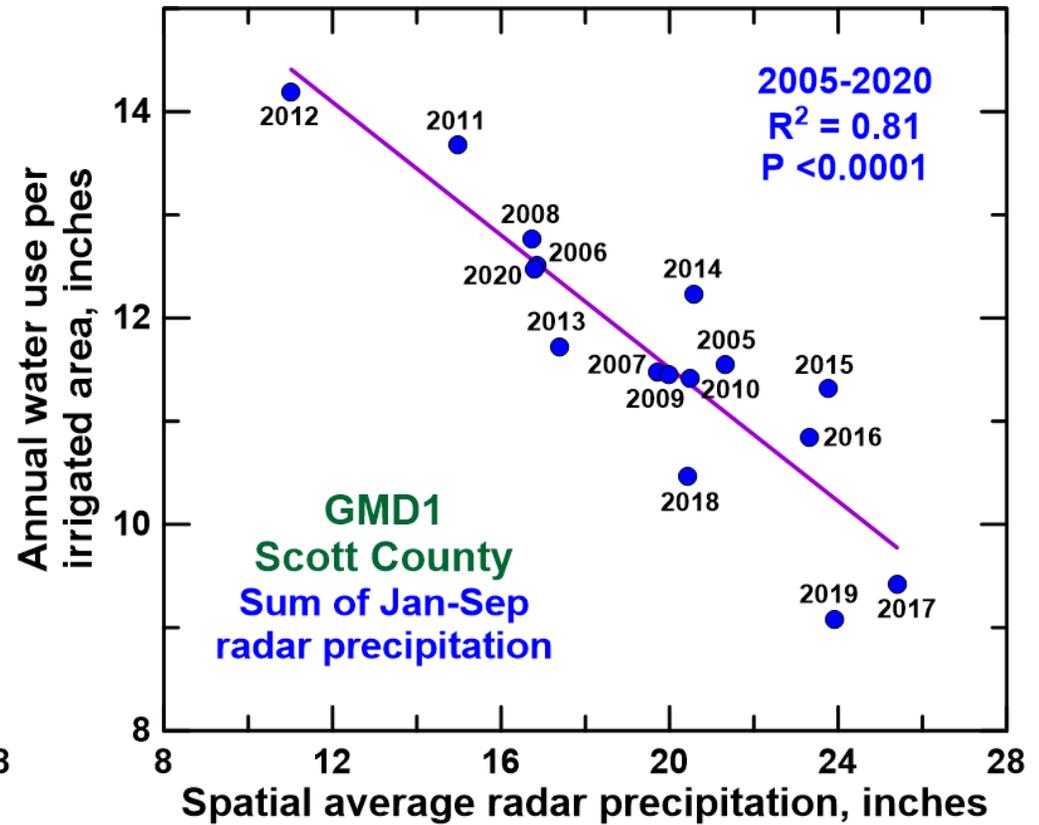
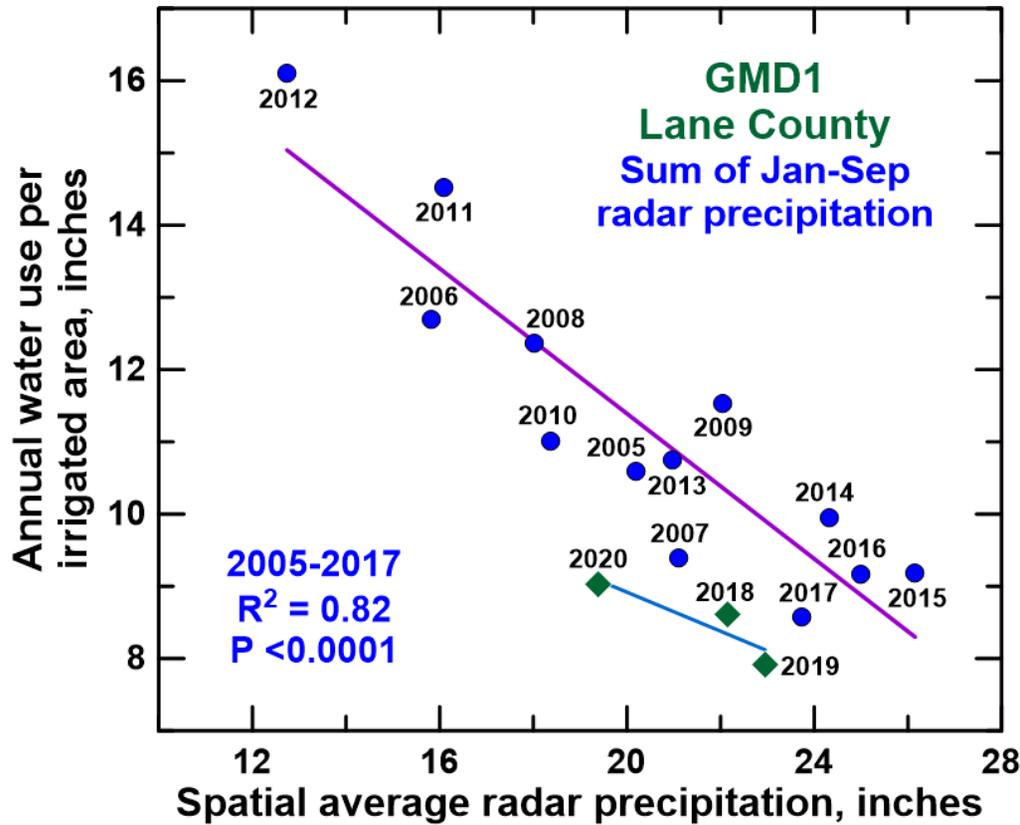
# Water Use vs Precipitation Relationships



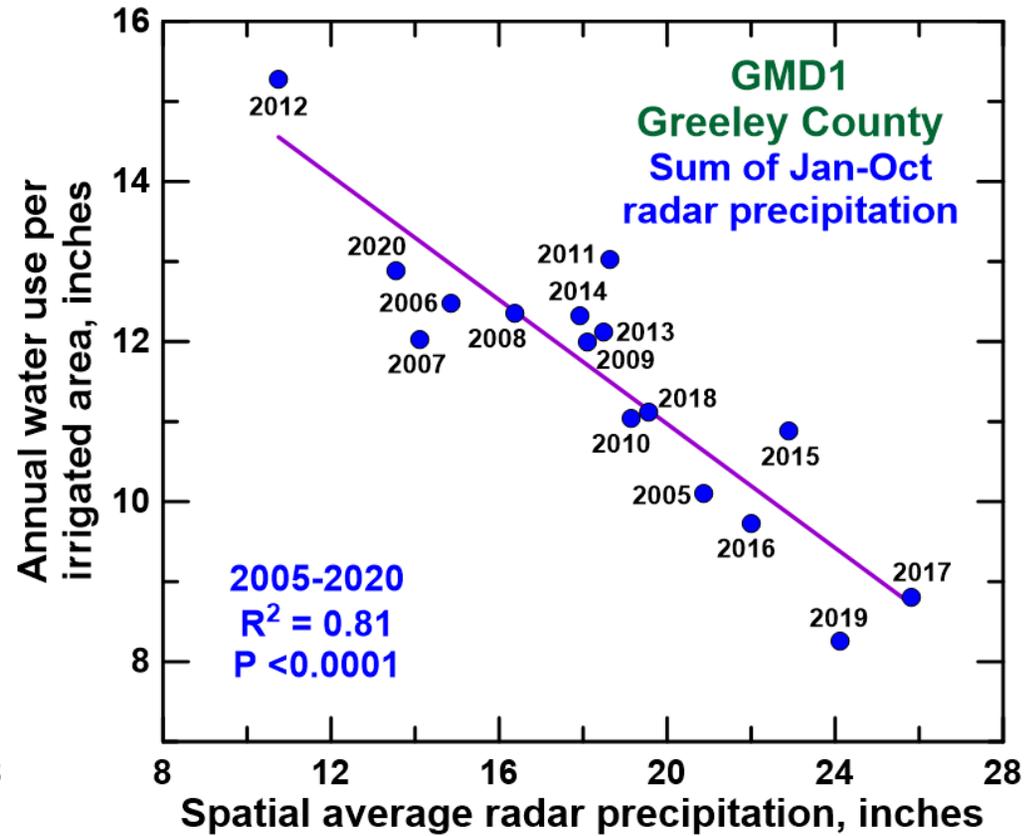
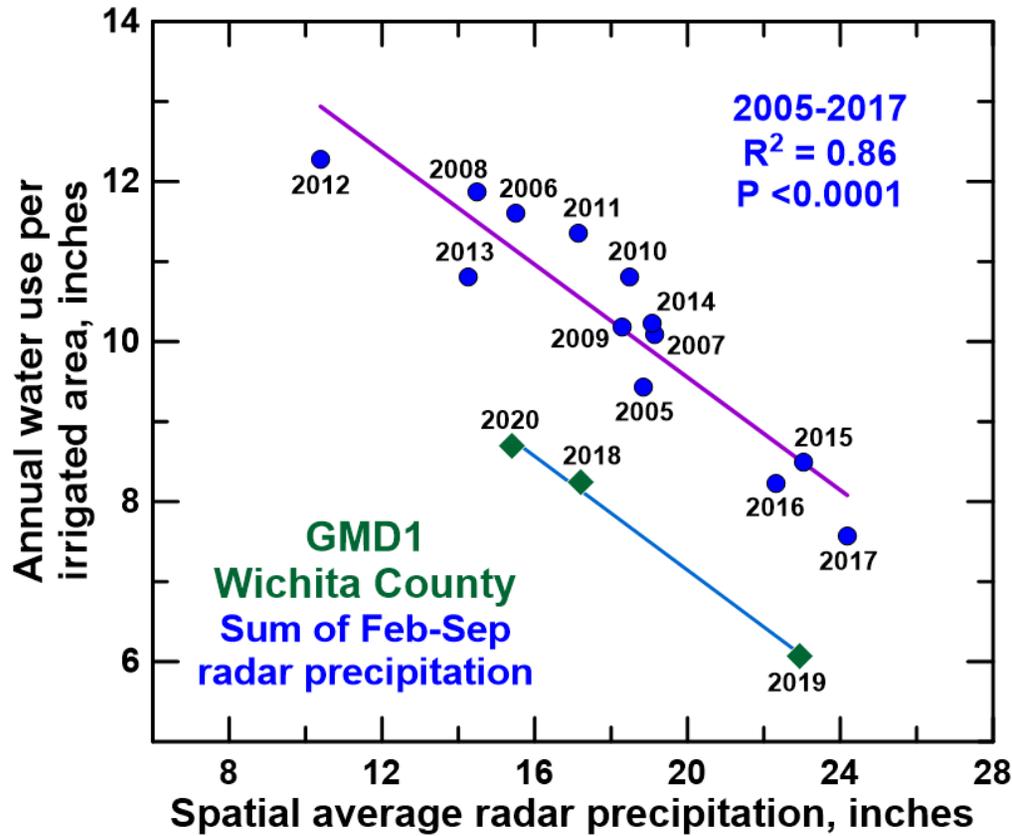
# Water Use vs Precipitation Relationships



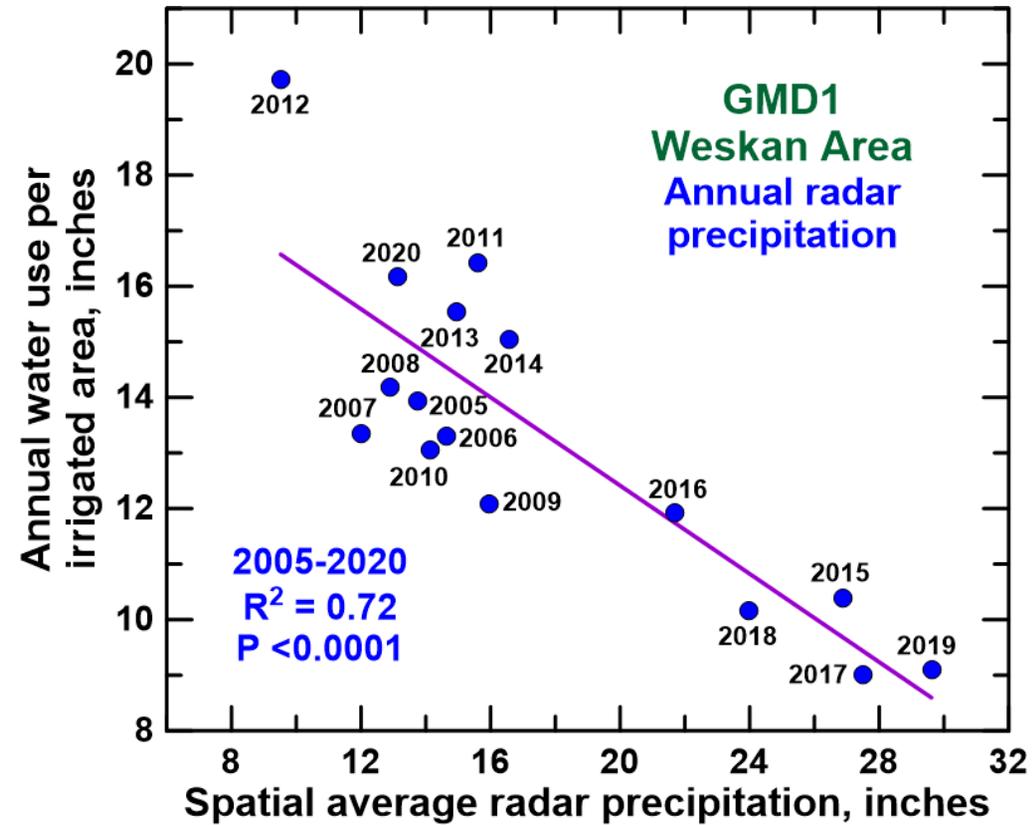
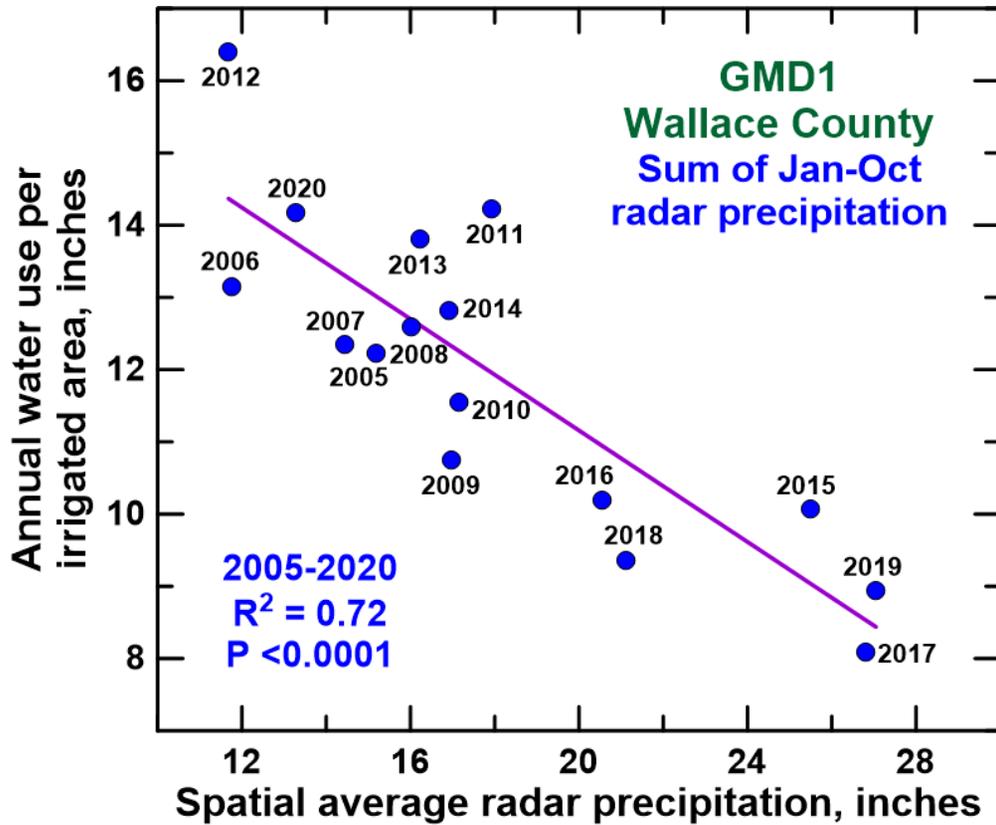
# Lane and Scott Counties



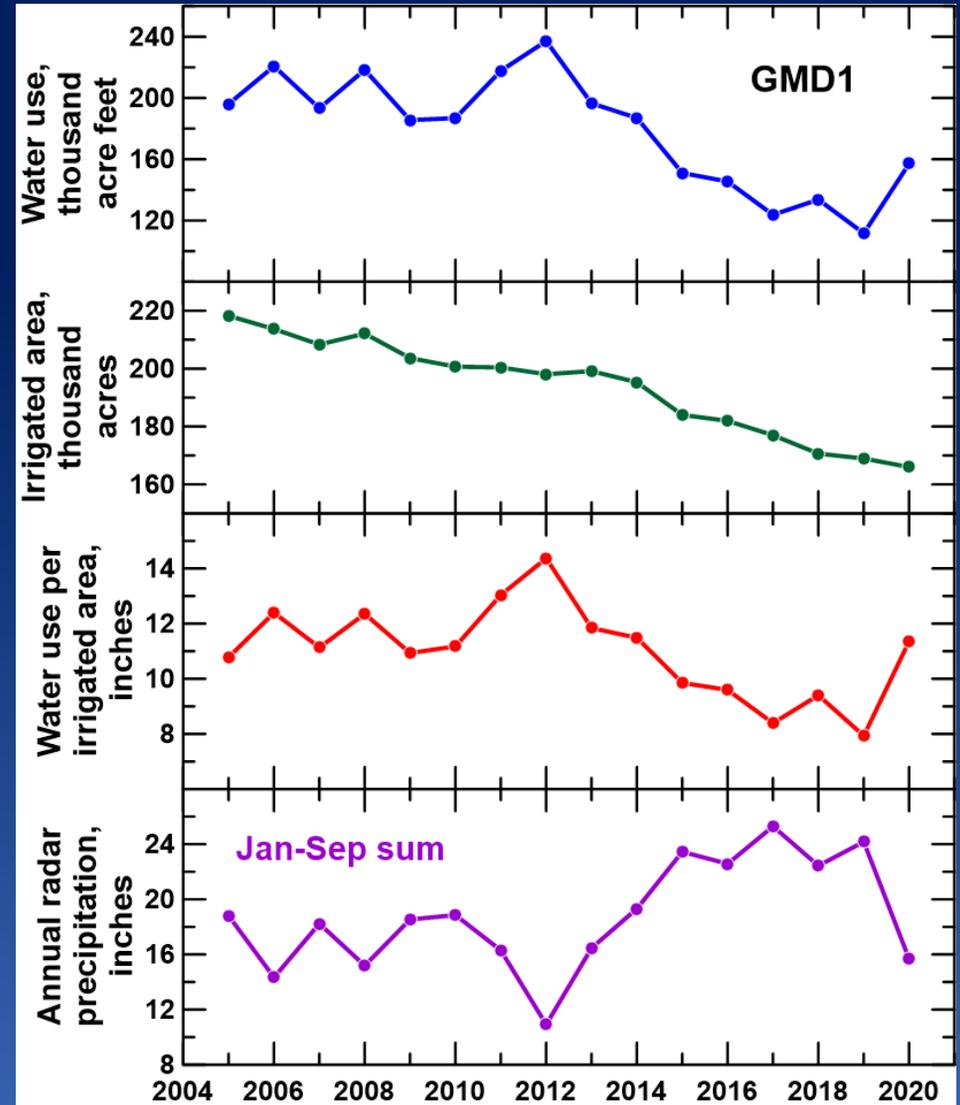
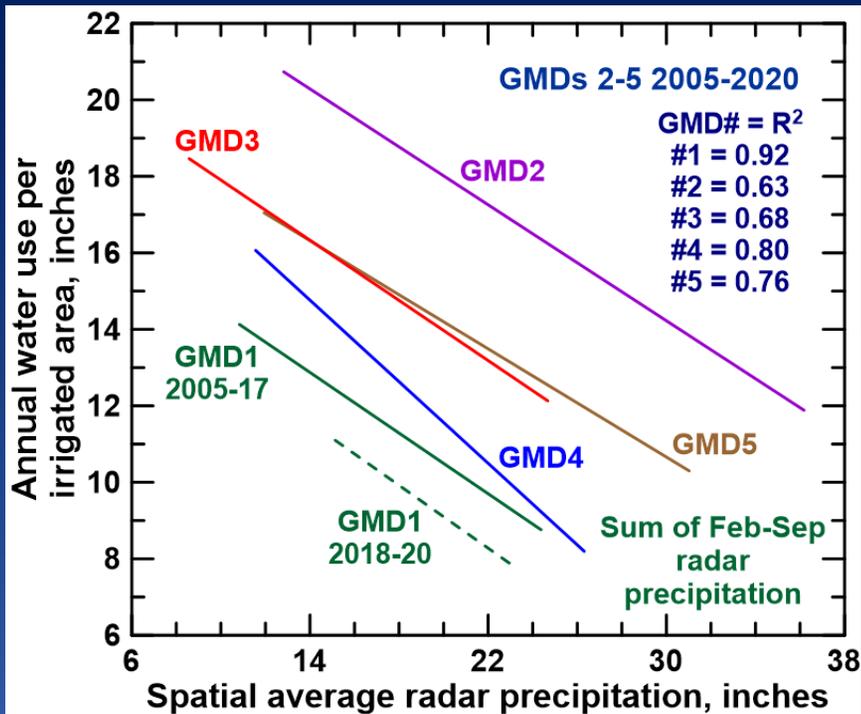
# Wichita and Greeley Counties



# Wallace and Weskan Area

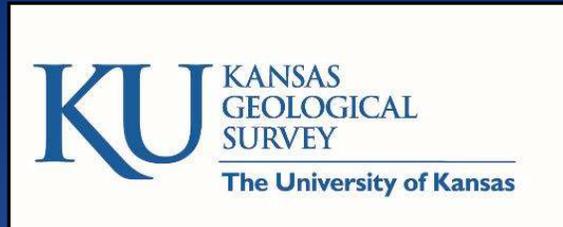


# Water Use and Reported Acres Irrigated



**Questions????**

**Kansas Geological Survey  
1930 Constant Ave  
Lawrence, KS 66047  
785-864-2118**



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