

# Consortium to Study Trends in Seismicity

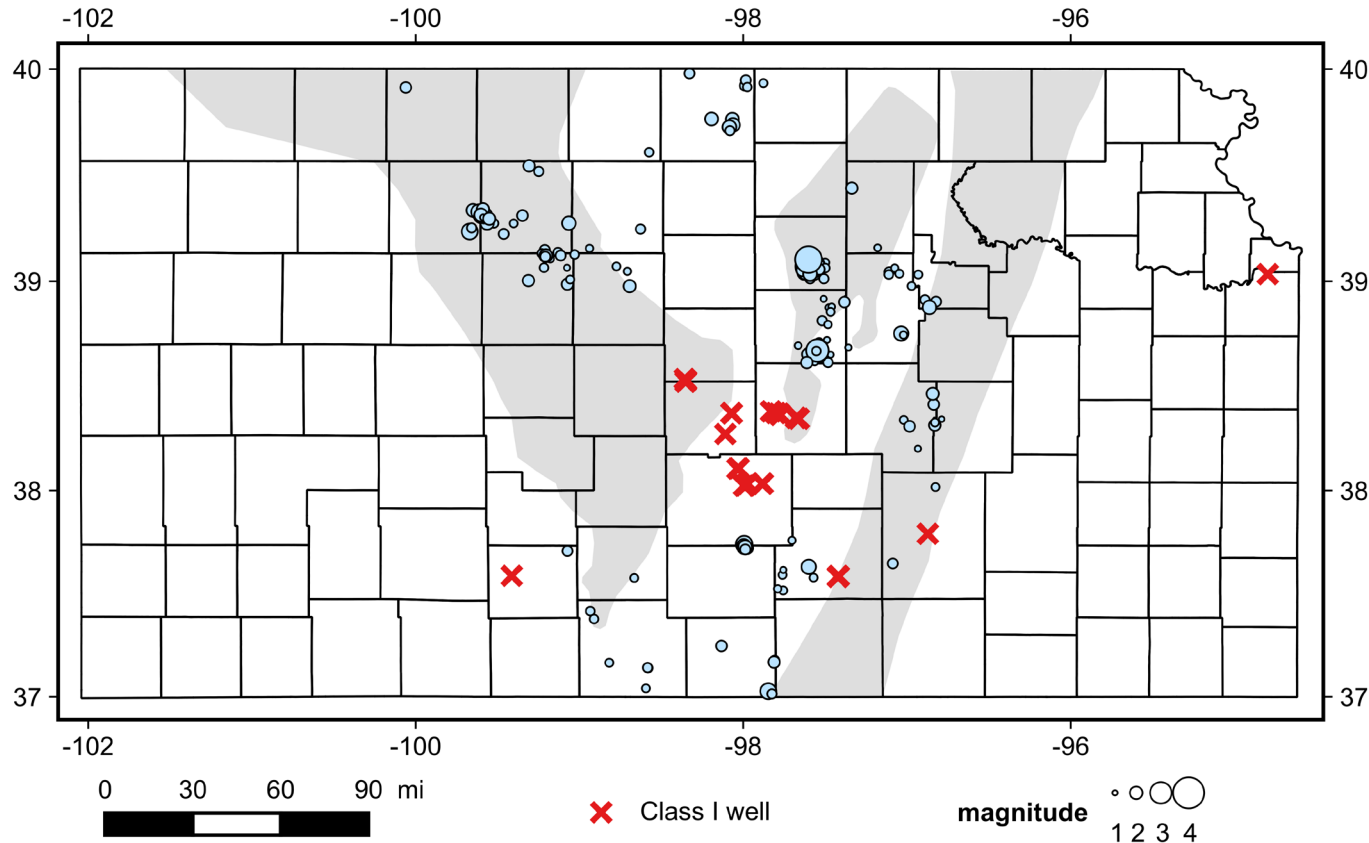
## Quarterly Report

October 1 to December 31, 2023

Rex Buchanan, Shelby Peterie, Rick Miller, *Kansas Geological Survey*

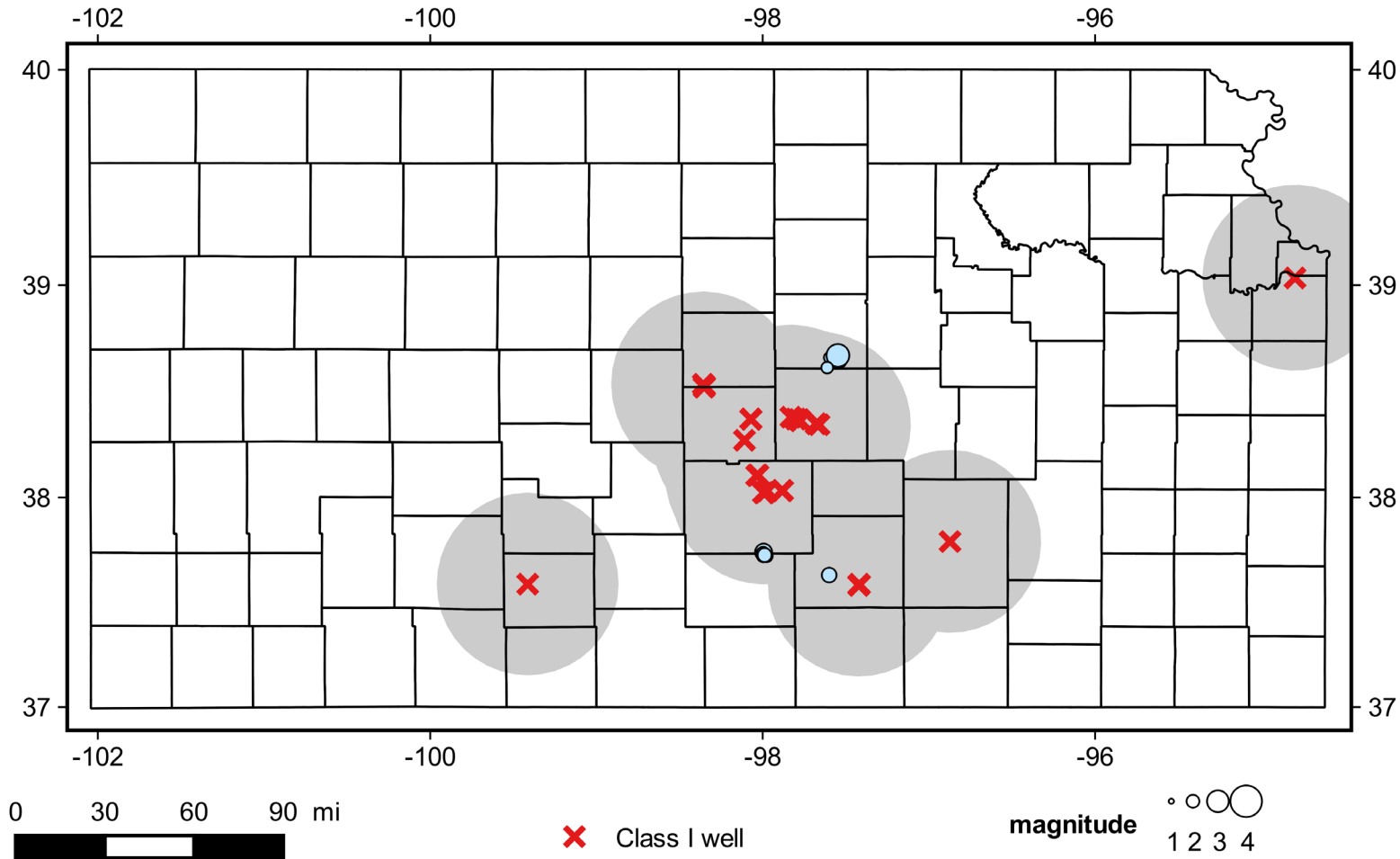


# Statewide Earthquakes



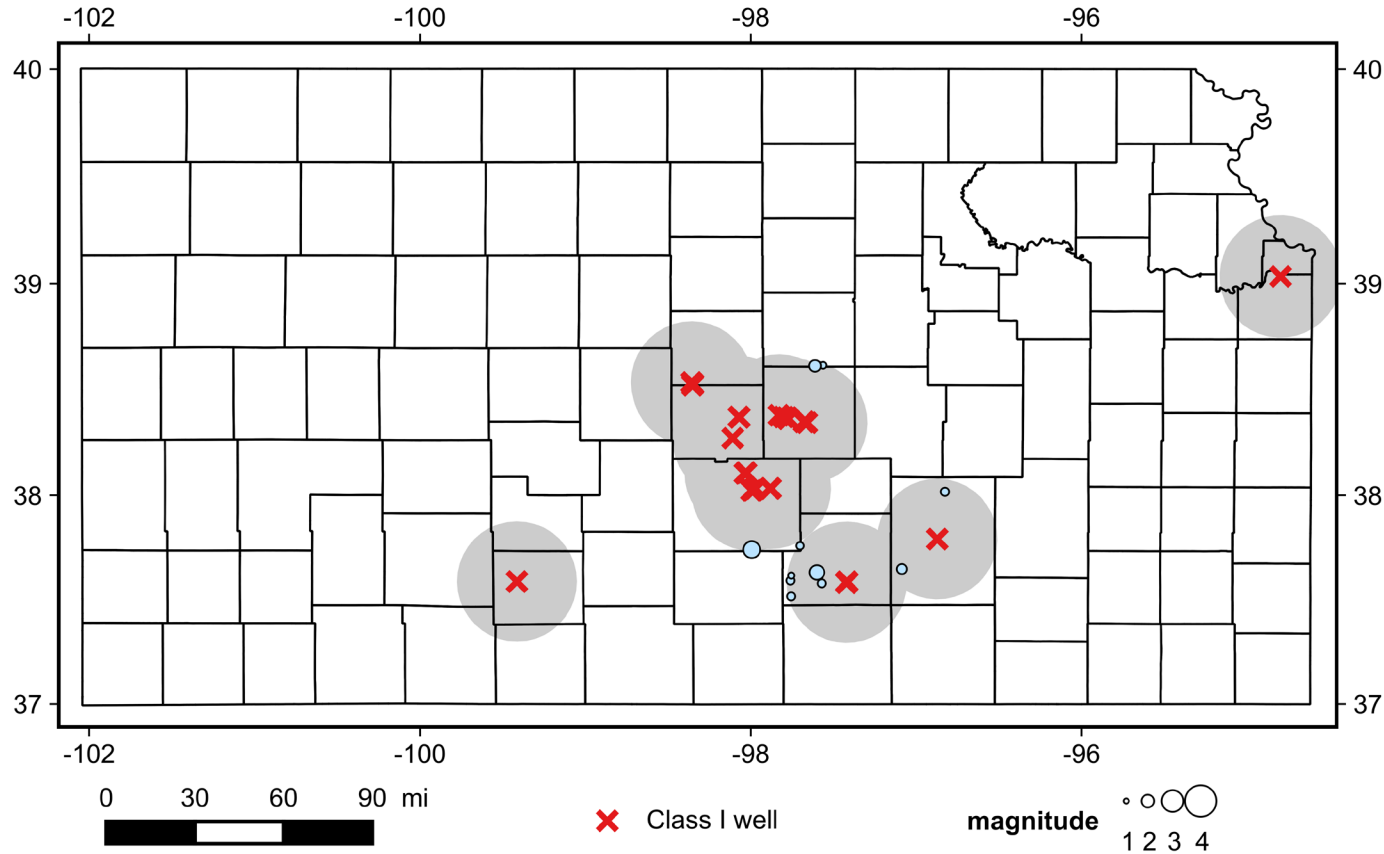
- Statewide earthquakes
  - this quarter: 165
  - previous quarter: 206
  - largest = M 4.3 in OT
- Ottawa County
  - this quarter: 32 (M 4.3)
  - previous quarter: 2 (M 2.3)
- Saline County
  - this quarter: 24 (M 3.5)
  - previous quarter: 17 (M 2.3)
- Reno–Kingman
  - 13 (M 2.8)
  - previous quarter: 2 (M 1.7)
- Jewell area
  - 9 in Jewell Co (M 2.4)
  - 4 in Nebraska (M 3.9)

# CSTS Alerts



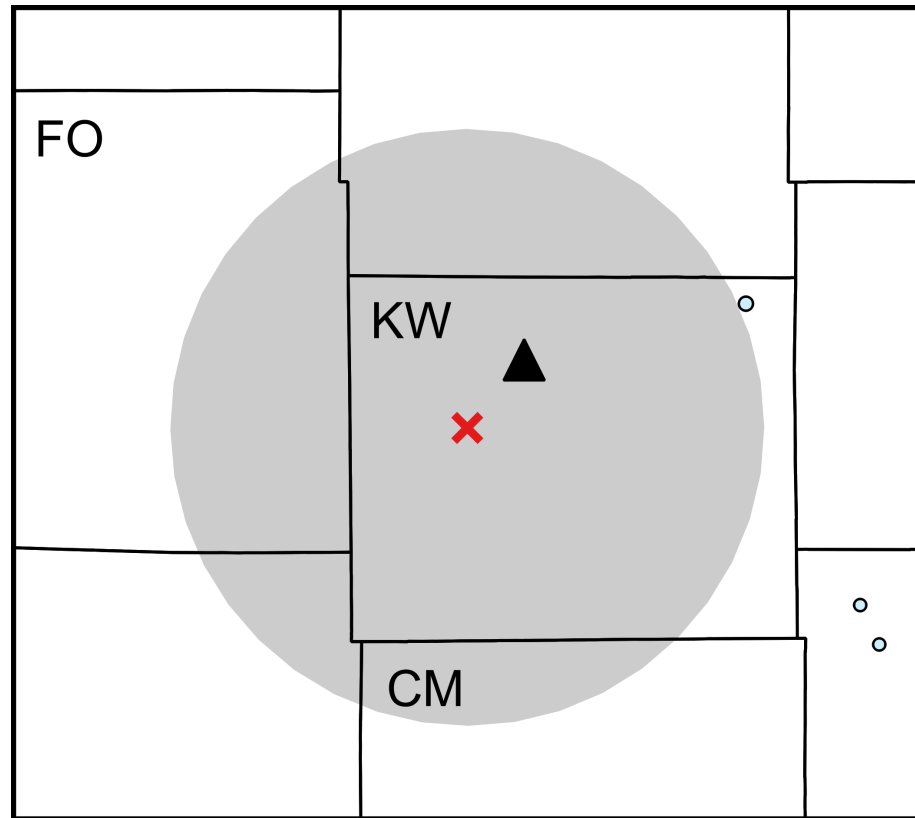
- Criteria
  - $M \geq 2$
  - 30 mi of tier I wells
- Alerts
  - This quarter: 13
  - Previous quarter: 4
- Summary
  - Only one  $M > 3$
  - Half in Saline Co ( $M$  3.5)
  - Half at KM-RN county line
  - Russell Co alert relocated 35 mi from RC-EW
  - One in SG

# Earthquakes Within 20 miles



- Earthquakes w/in 20 mi
  - This quarter: 12
  - Last quarter: 12

# Kiowa County

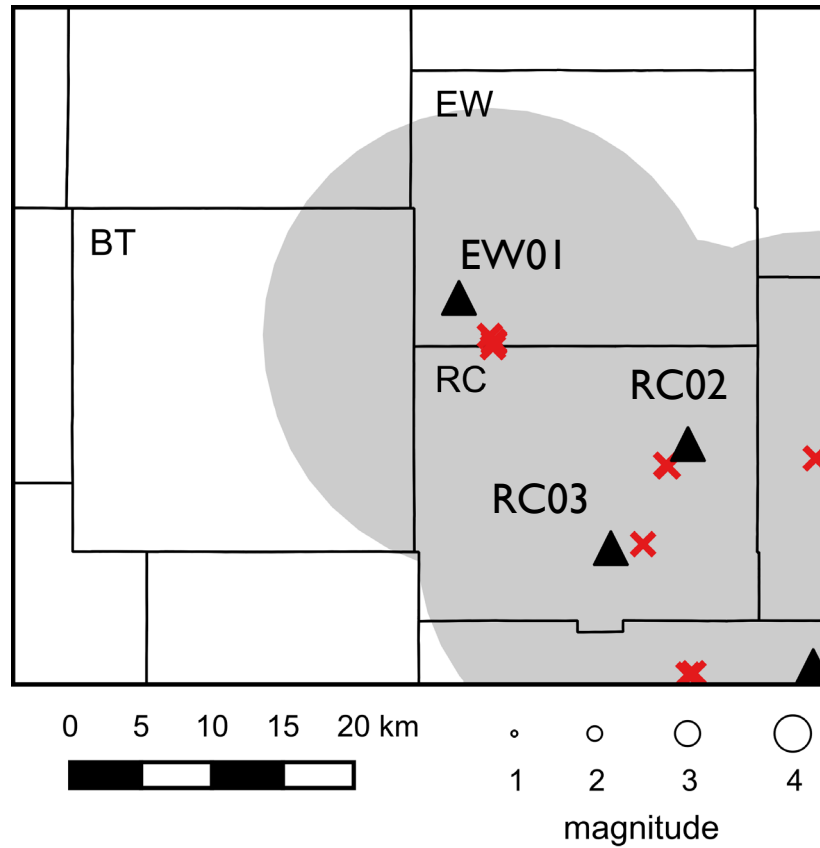


magnitude

◦	○	○	○
1	2	3	4

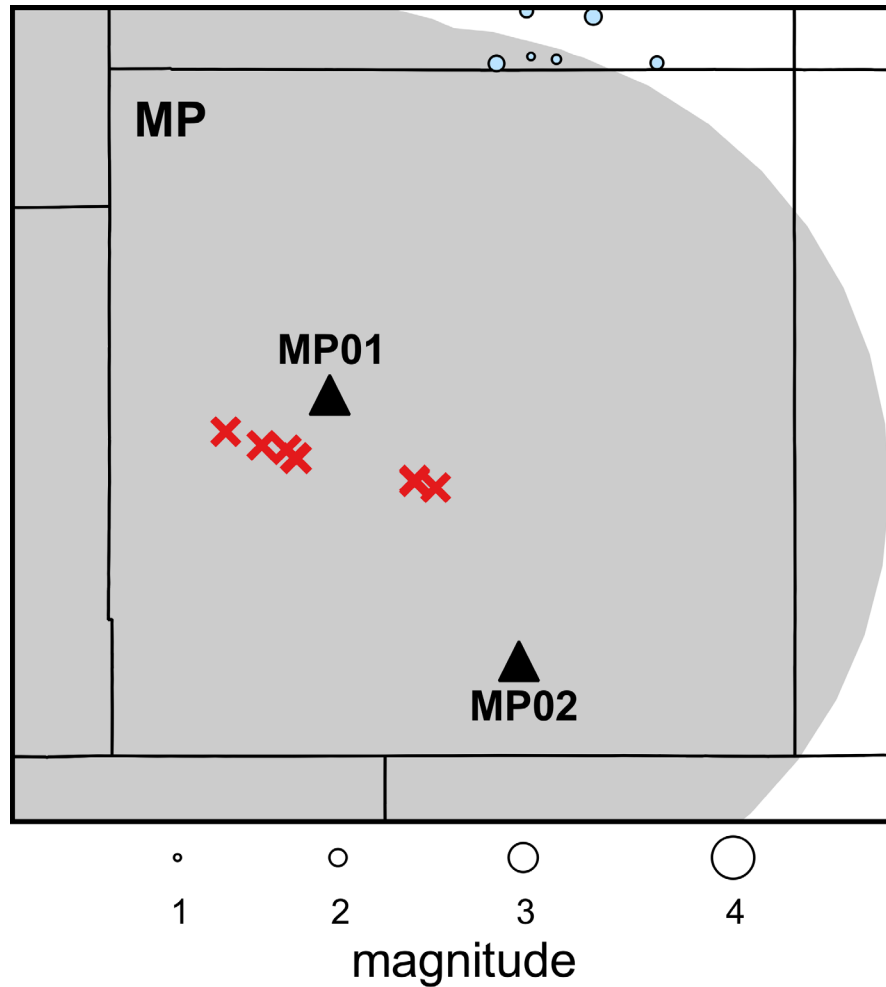
- Located earthquakes
  - none
  - one just outside 20 mi
- Subnetwork events
  - None

# Rice and Ellsworth Counties



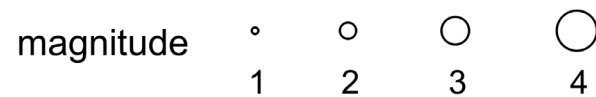
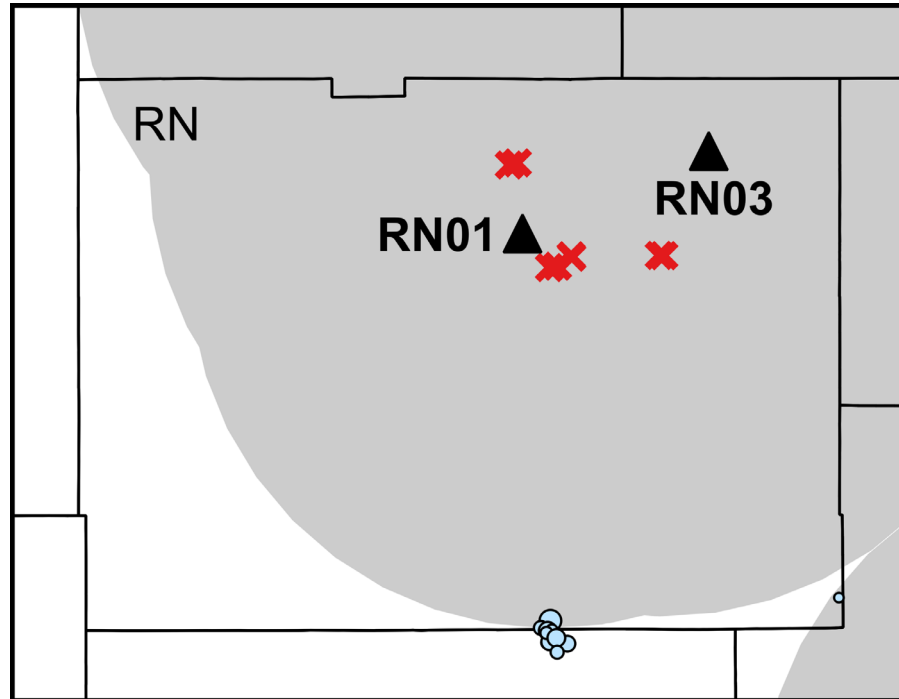
- Located earthquakes
  - None w/in 20 mi
- Subnetwork events
  - None w/in 20 mi

# McPherson County



- Located earthquakes
  - 3 within 20 miles
  - M 2.1 on Dec. 27 in southern SA
- Subnetwork events
  - MP02: one -0.4M about 6 miles
  - MP01: None

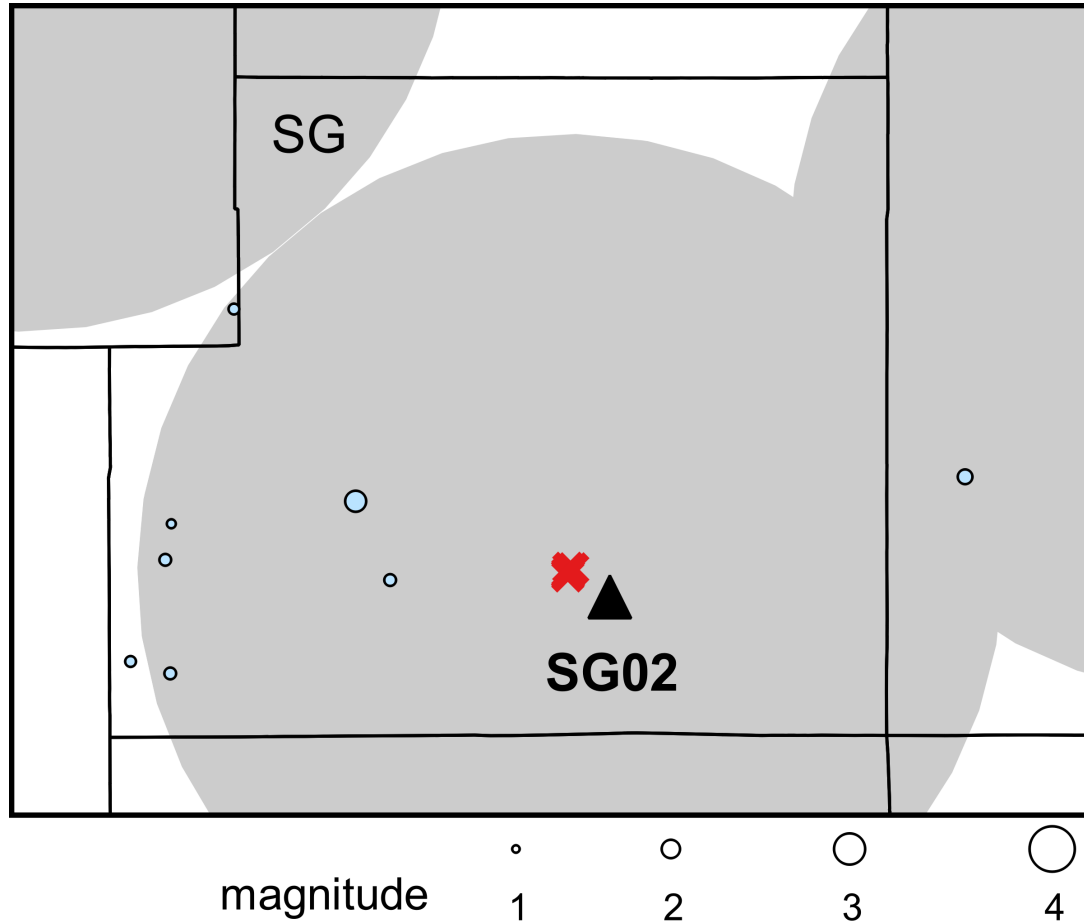
# Reno County



- Located earthquakes
  - 13 events  $\geq 20$  mi at Reno–Kingman county line
  - 1 microevent  $\geq 20$  mi near southeast county corner (M 2.8)
- Subnetwork events
  - None

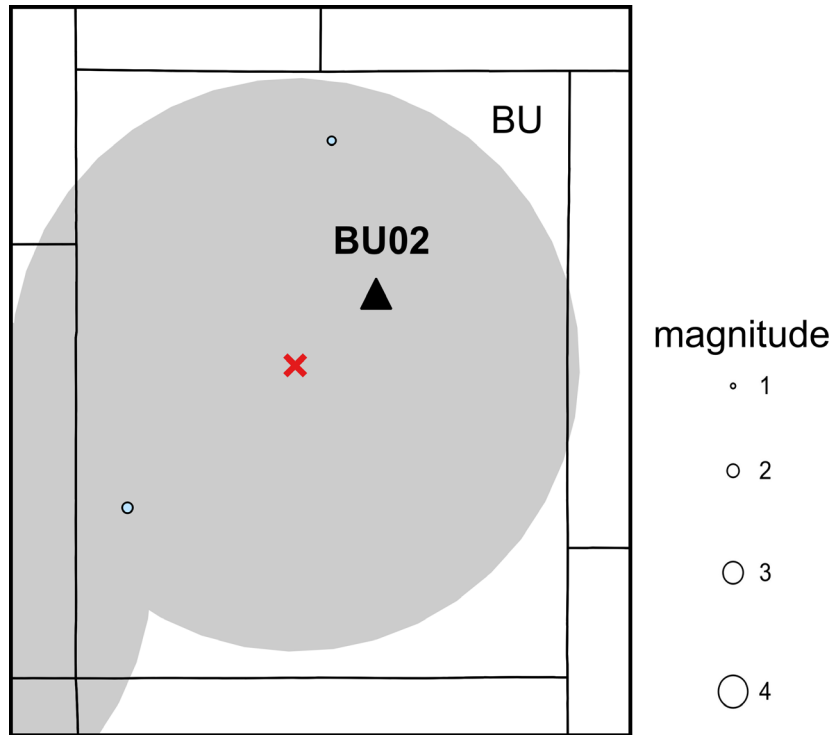


# Sedgwick County



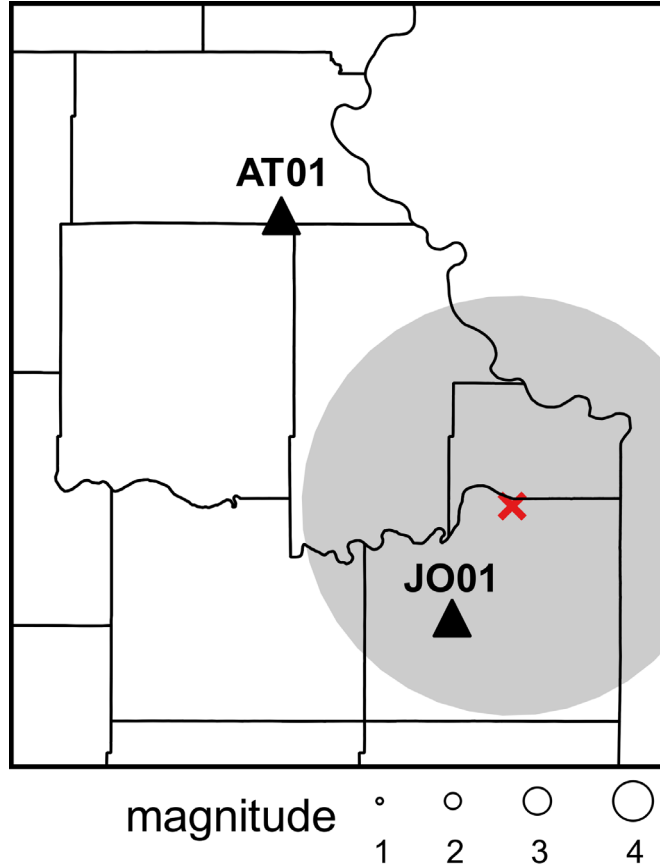
- Located earthquakes
  - M 2.5 about 10 mi from wells
  - a few M <2 at about 20 mi
- Subnetwork events
  - None

# Butler County



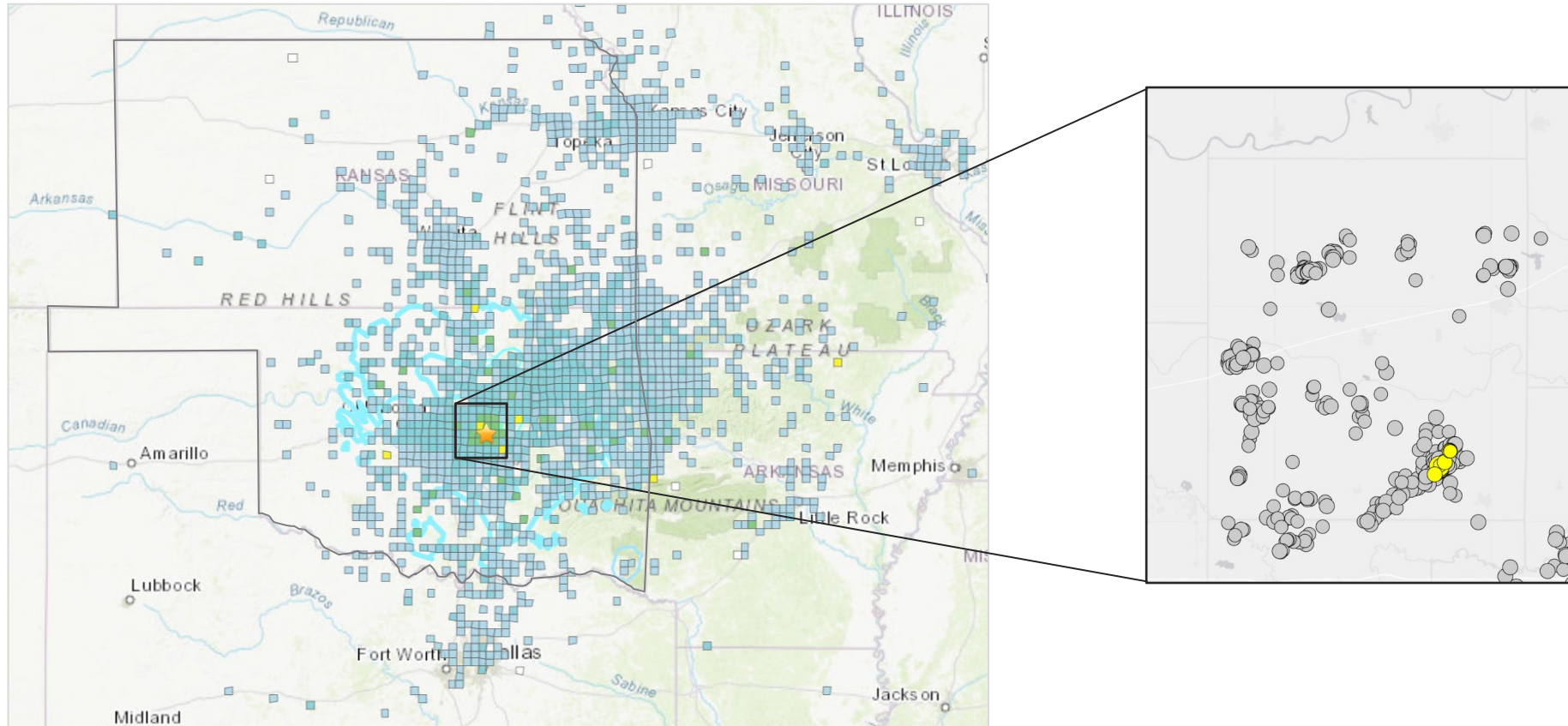
- Located earthquakes
  - 2 events w/in 20 mi
  - $M < 2$
- Subnetwork Events
  - None

# Johnson and Atchison Counties



- Located earthquakes
  - None
- Subnetwork events
  - None

# Prague M 5.1



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

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