

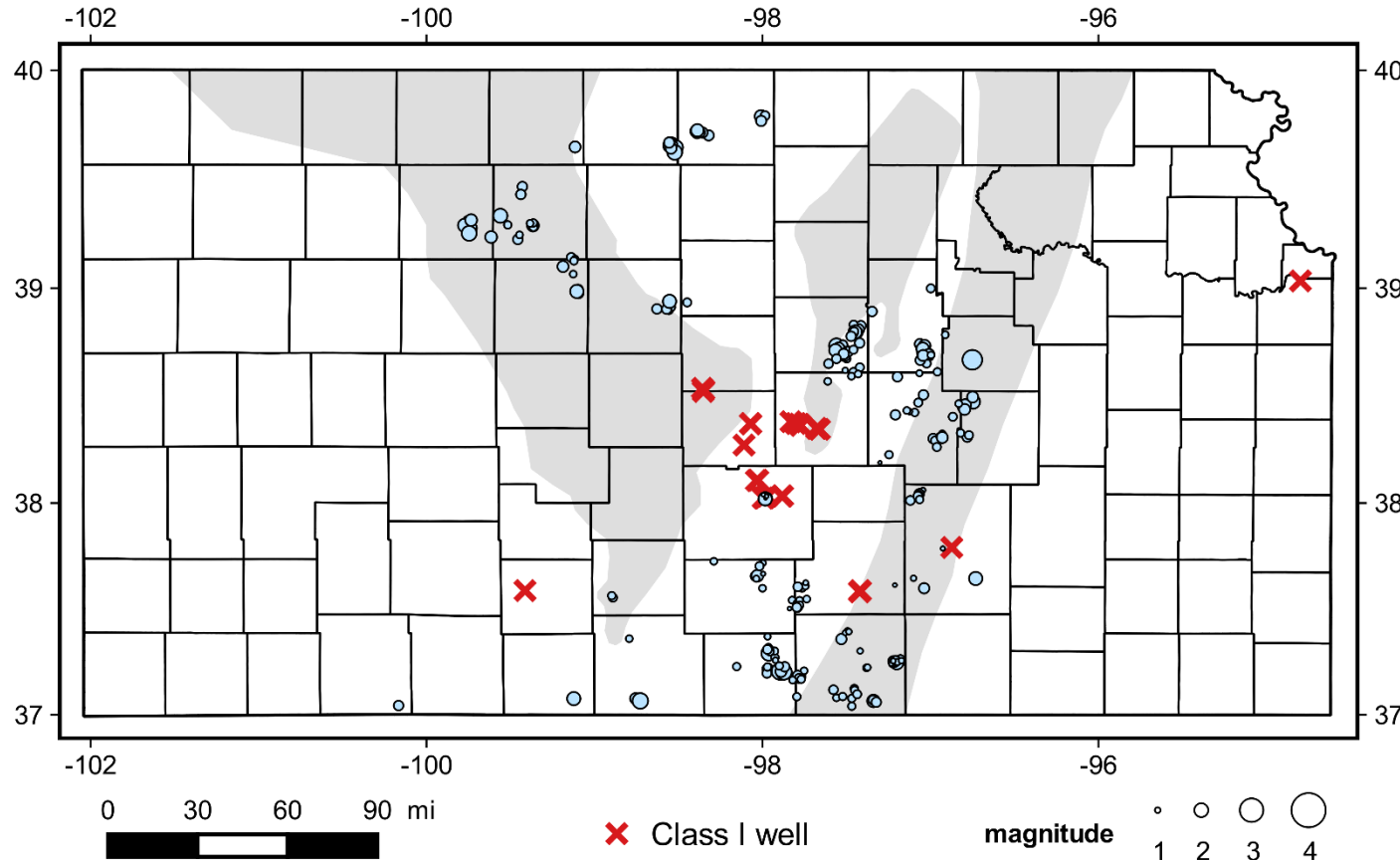
Consortium to Study Trends in Seismicity

Quarterly Report July 1 to September 30, 2020

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



Statewide Earthquakes

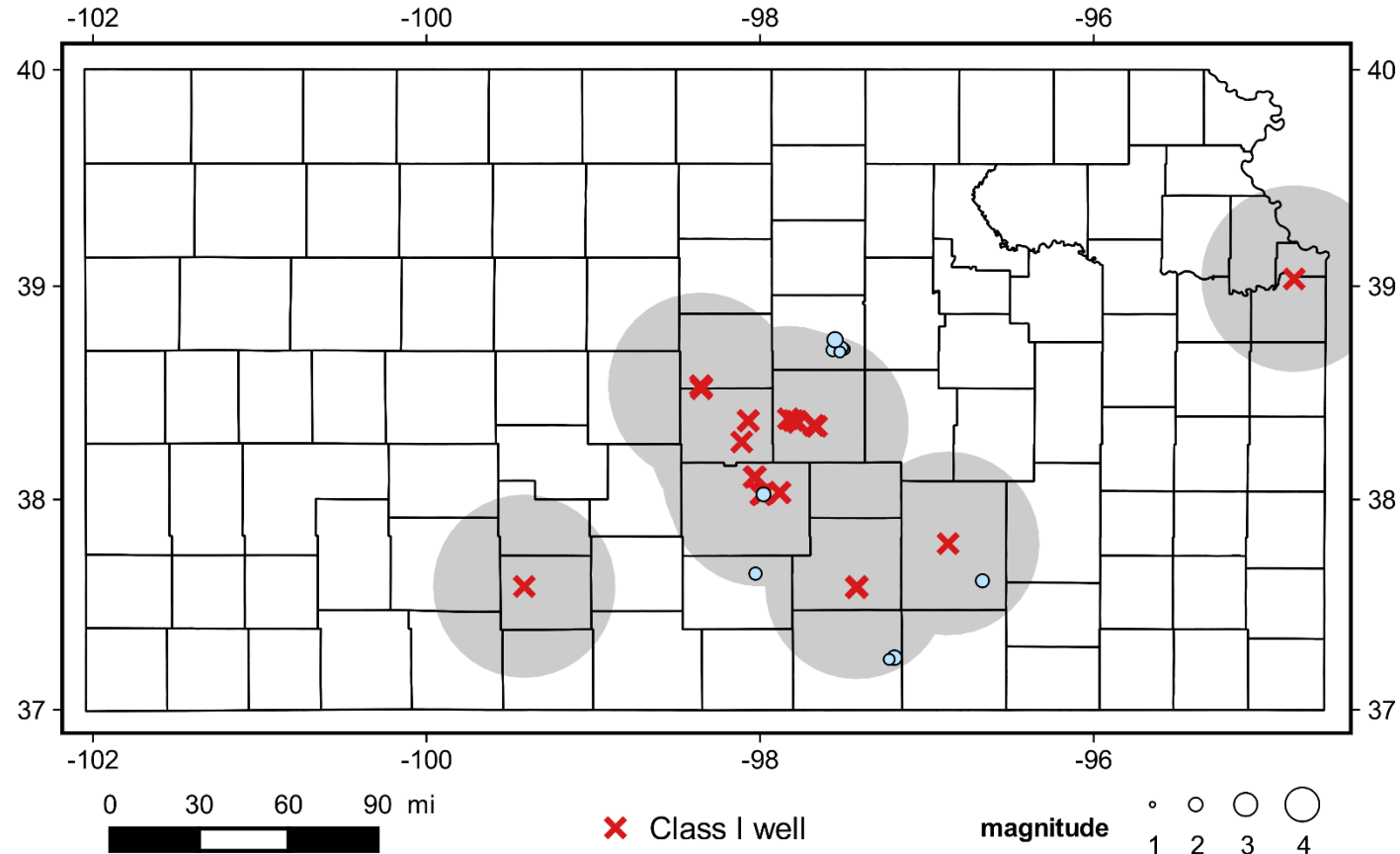


245 earthquakes

down from 352
(-30%)

largest = M 3.1
in Morris Co.

CSTS Alerts

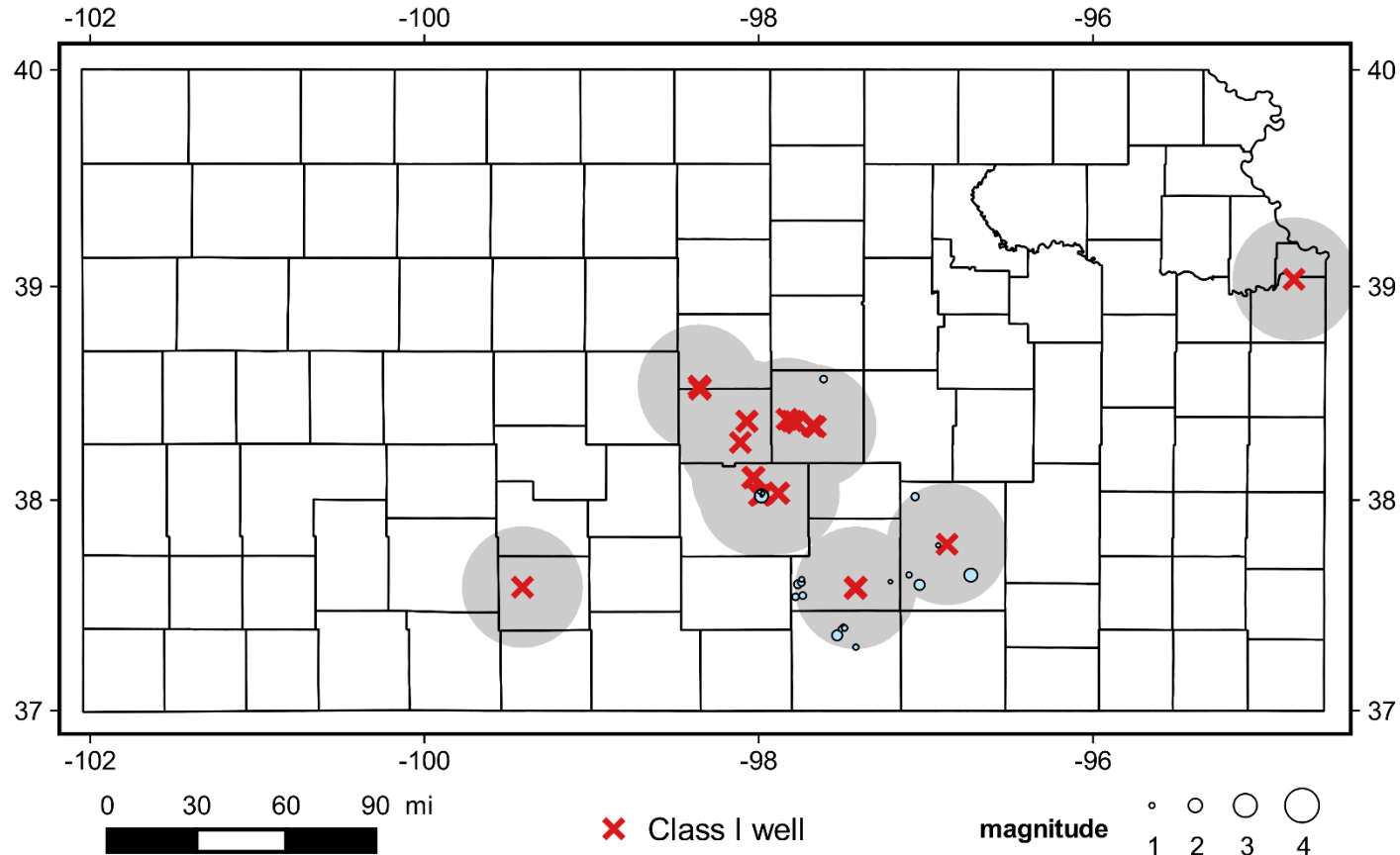


$M \geq 2$
within 30 miles

Total: 10

down from 39 the
previous quarter

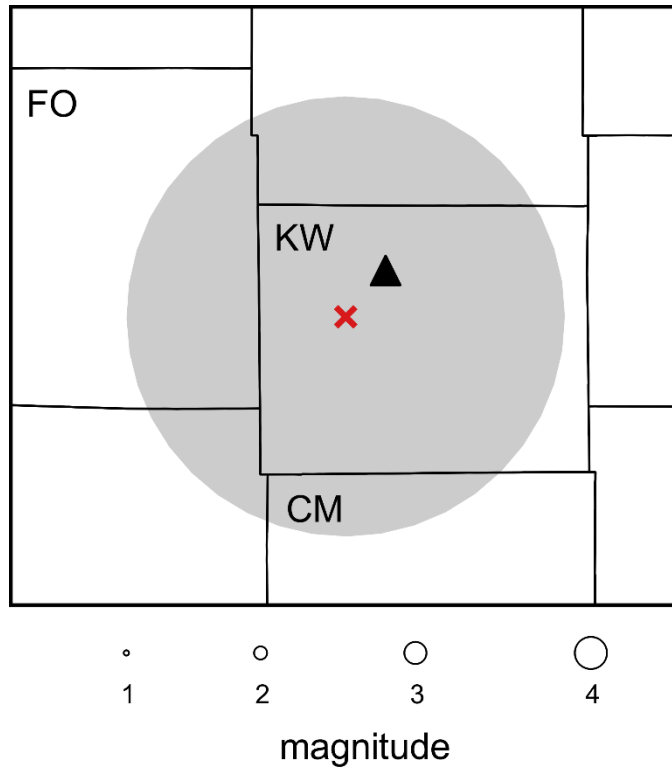
Earthquakes Within 20 miles



Total: 22

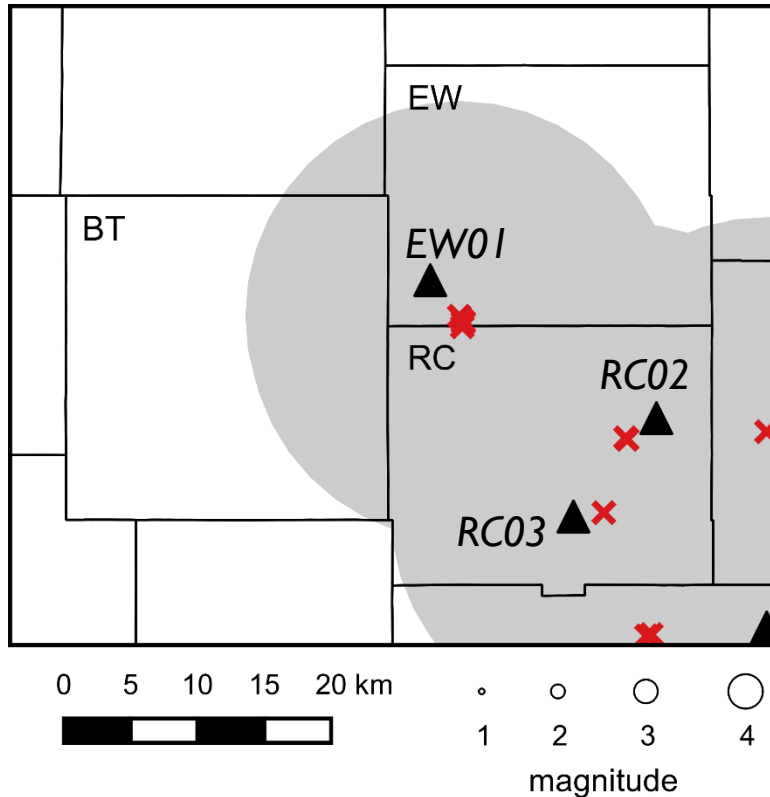
*33 in the
previous quarter*

Kiowa County



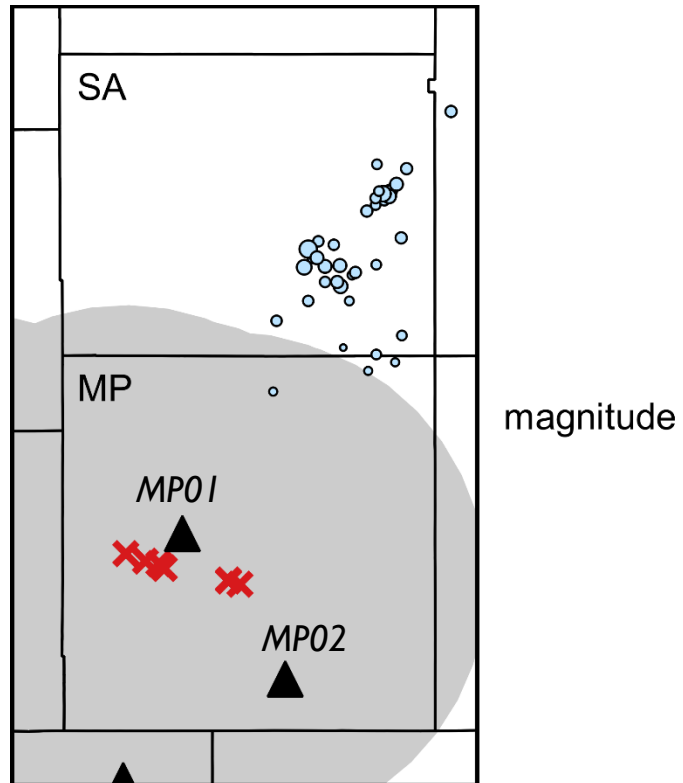
- Located earthquakes
 - none
- Subnetwork events
 - none

Rice and Ellsworth Counties



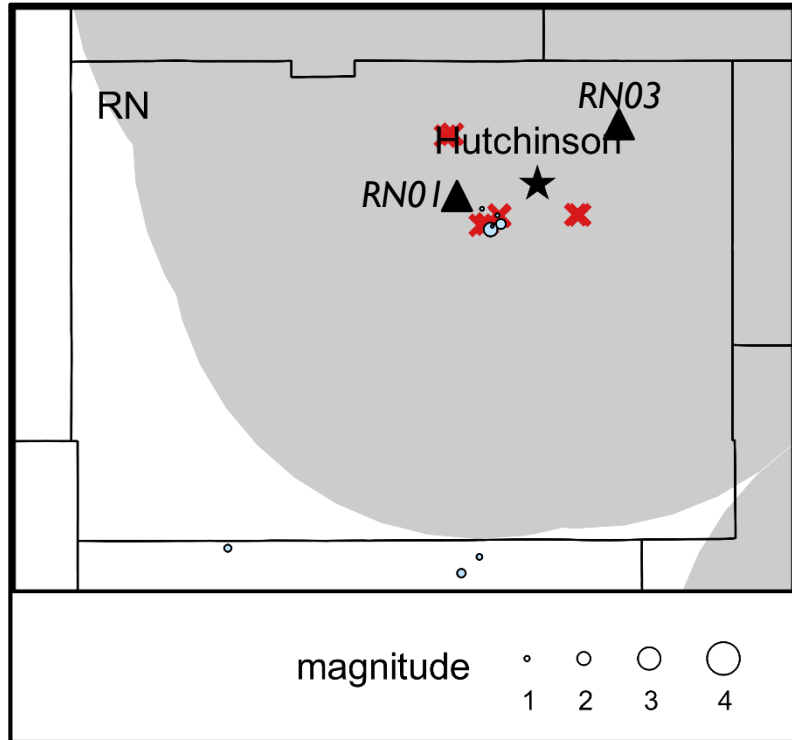
- Located earthquakes
 - none
- Subnetwork events
 - EW01: one $M < 0$
 - RC03: 73 (blasts)
 - RC02: 3, largest M 0.5

McPherson County



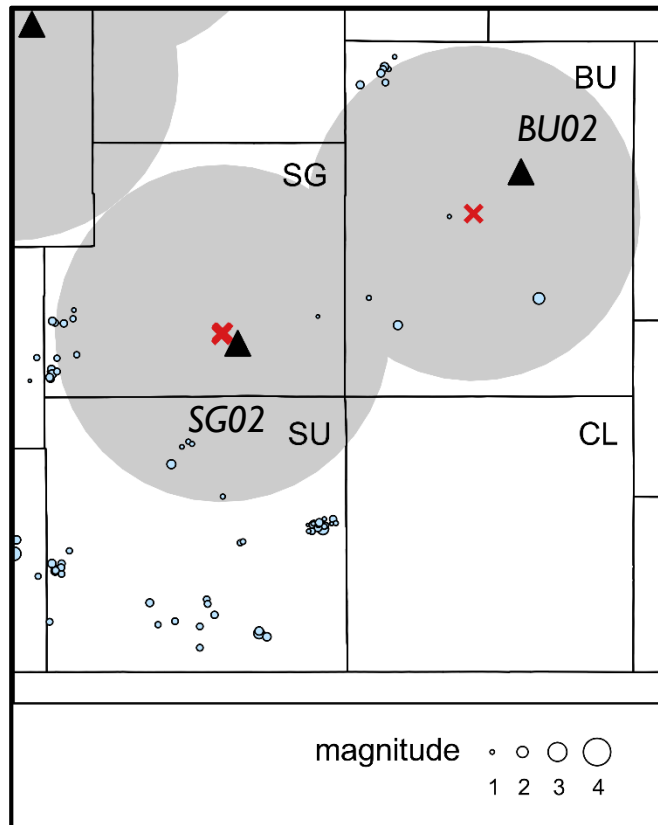
- Located earthquakes
 - 2 (M 1.4 and 2.2)
 - >15 miles from wells
 - consistent with MGA
- Subnetwork events
 - MP01: 5
 - MP02: 5
 - largest = M 0.4

Reno County



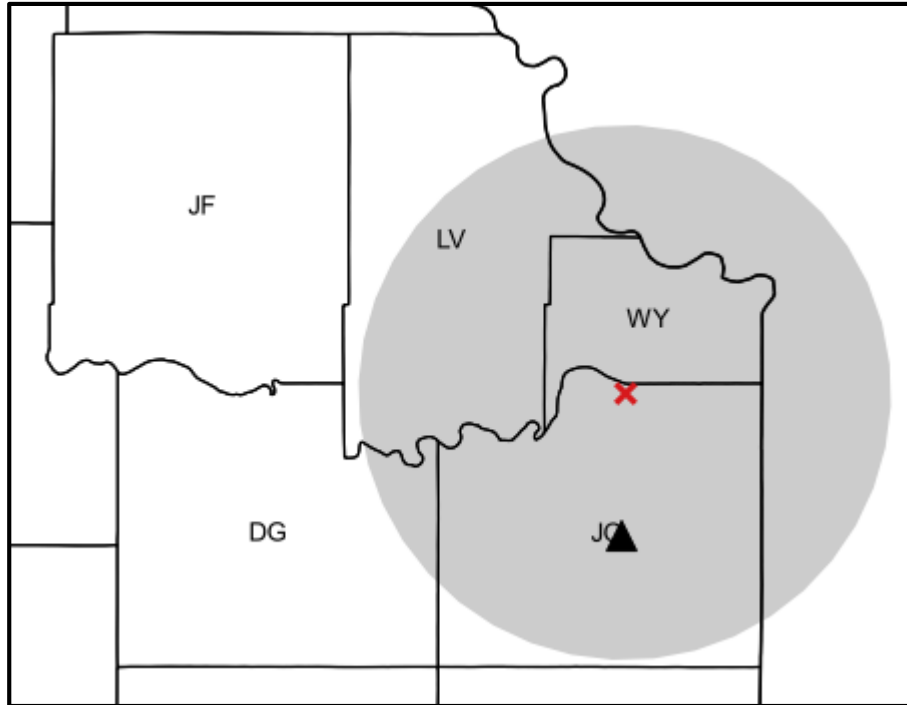
- Located earthquakes
 - 5 (down from 18)
 - largest = M 2.3
- Subnetwork events
 - RN01: 58
 - consistent with the Hutchinson cluster
 - increase from 39 previous quarter
 - greater proportion of smaller events
 - increase in b-value
 - RN03: none

Sedgwick and Butler Counties



- Located earthquakes
 - 15 events M 0.9 to M 2.3
 - along known trends
- Subnetwork events
 - BU02: none
 - SG02: 4, $M \leq 0$

Johnson County

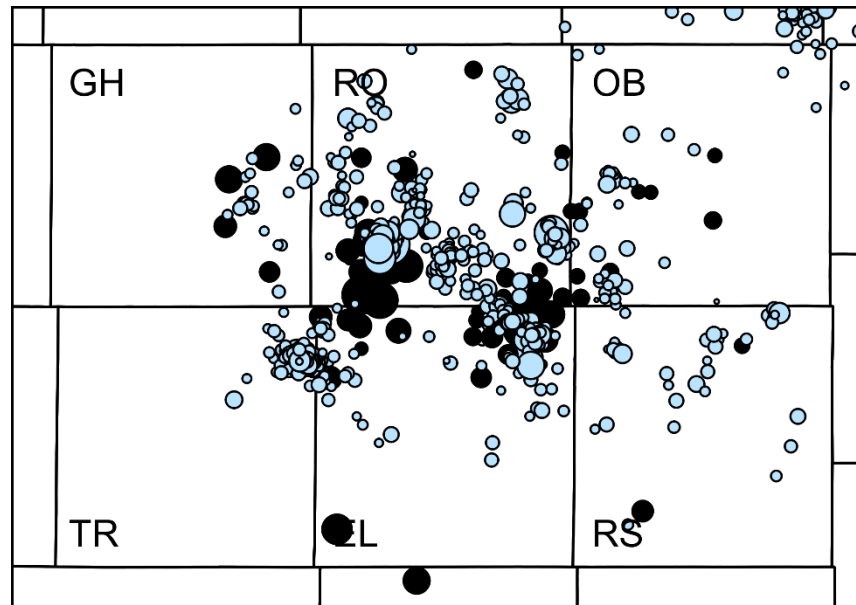


- Located earthquakes
 - none
- Subnetwork events
 - none

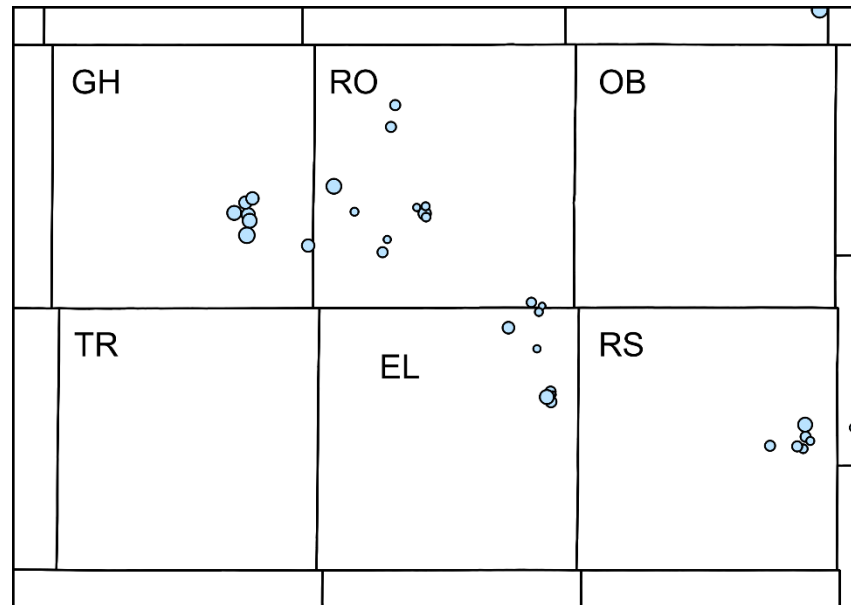
Seismicity Around the State

Central Kansas Uplift

prior to July 1, 2020



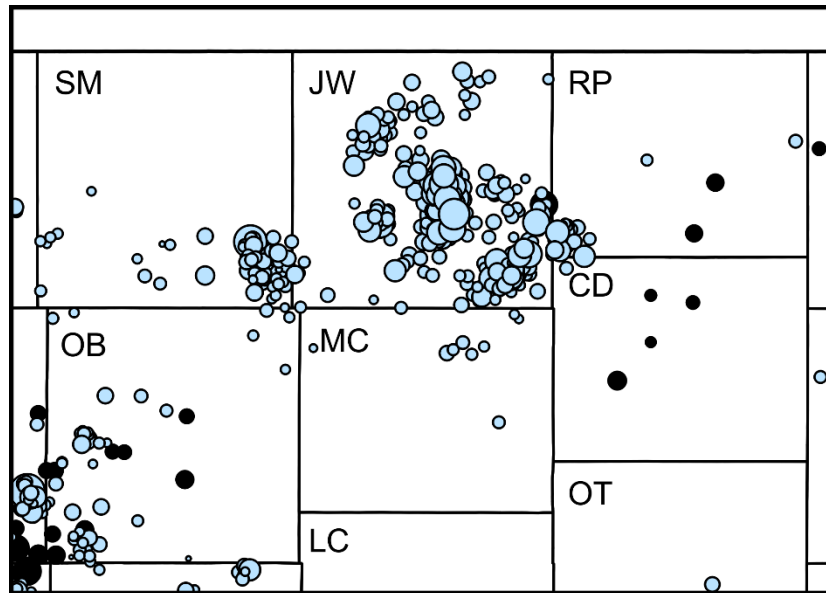
July 1 to Sept 30, 2020



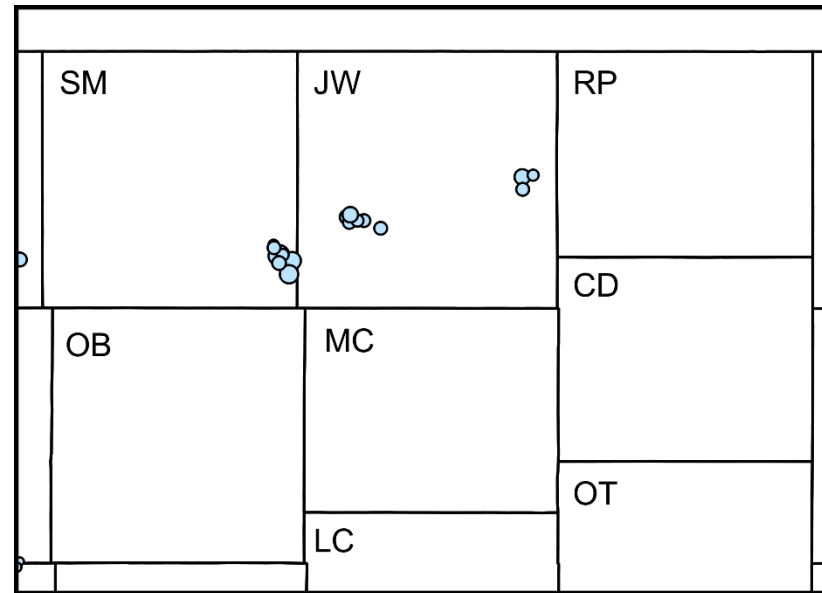
- historic earthquakes (1977-2014)
- recent earthquakes (2015+)

Salina Basin

prior to July 1, 2020



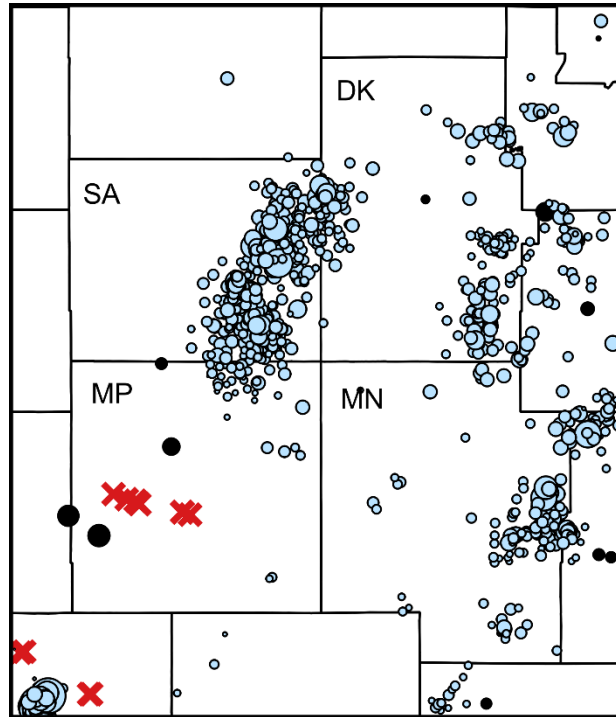
July 1 to Sept 30, 2020



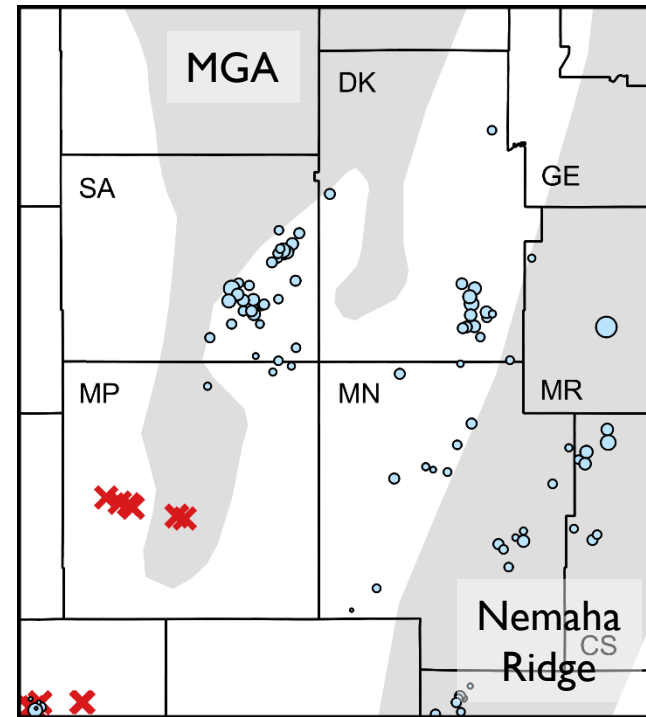
- historic earthquakes (1977-2014)
- recent earthquakes (2015+)

Nemaha Ridge and MGA

prior to July 1, 2020



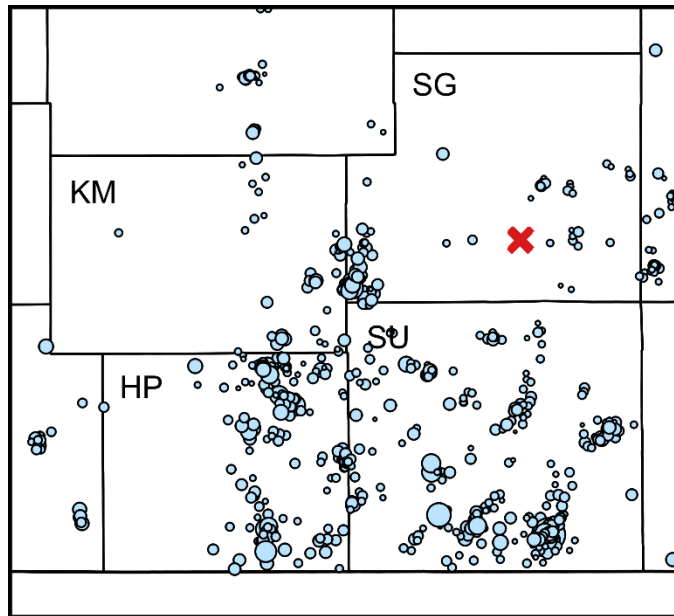
July 1 to Sept 30, 2020



- historic earthquakes (1977-2014)
- recent earthquakes (2015+)

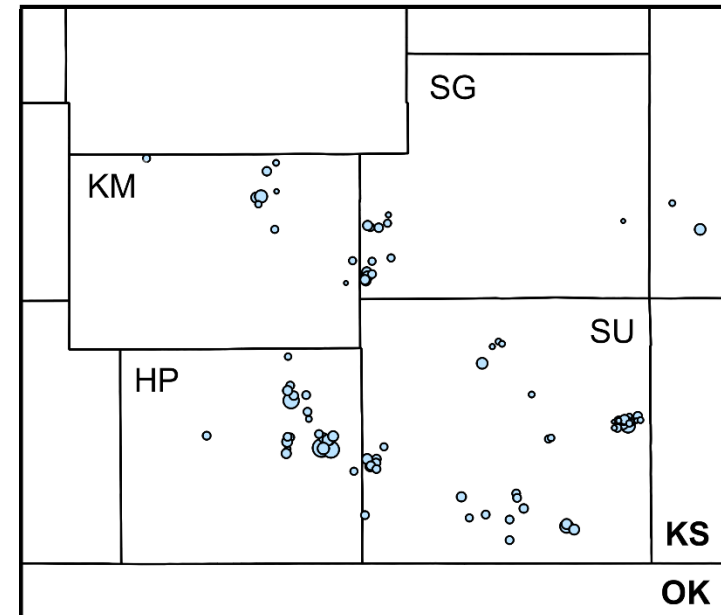
South-central Kansas

2019



● recent earthquakes

July 1 to Sept 30, 2020



South-Central Kansas

