

**Northern Nevada
1° x 2° Quadrangles**

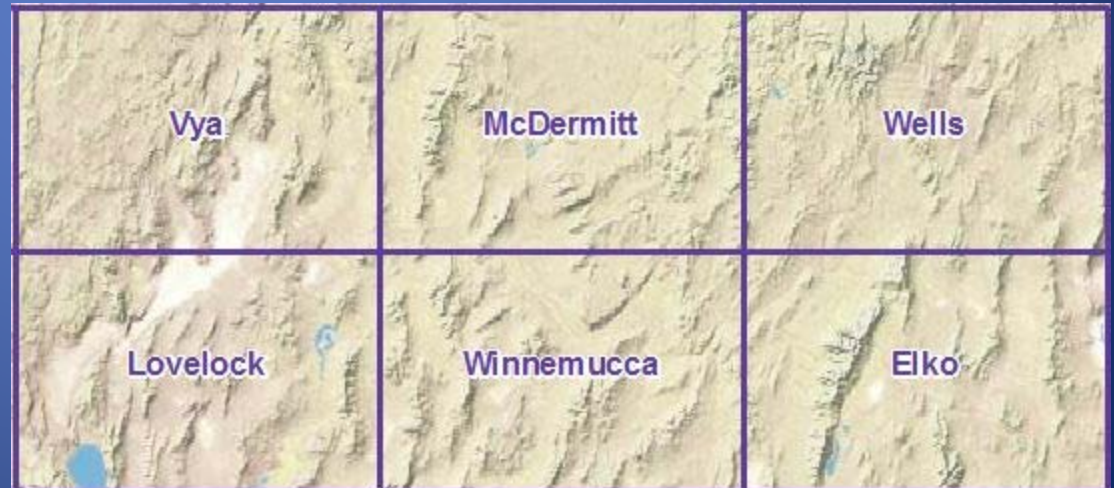
Fault and Earthquake Maps

Preliminary 1:250,000 Quaternary Fault and Earthquake Maps – Northern Nevada

- Experimenting with a scale of public fault maps.
- Experimental maps to see what needs to be done in a Quaternary fault mapping project.
- Looked at the northern six quads and reviewed the faults in the areas around communities.
- Short time frame – used existing fault map and seismicity data. Continued tinkering with them.

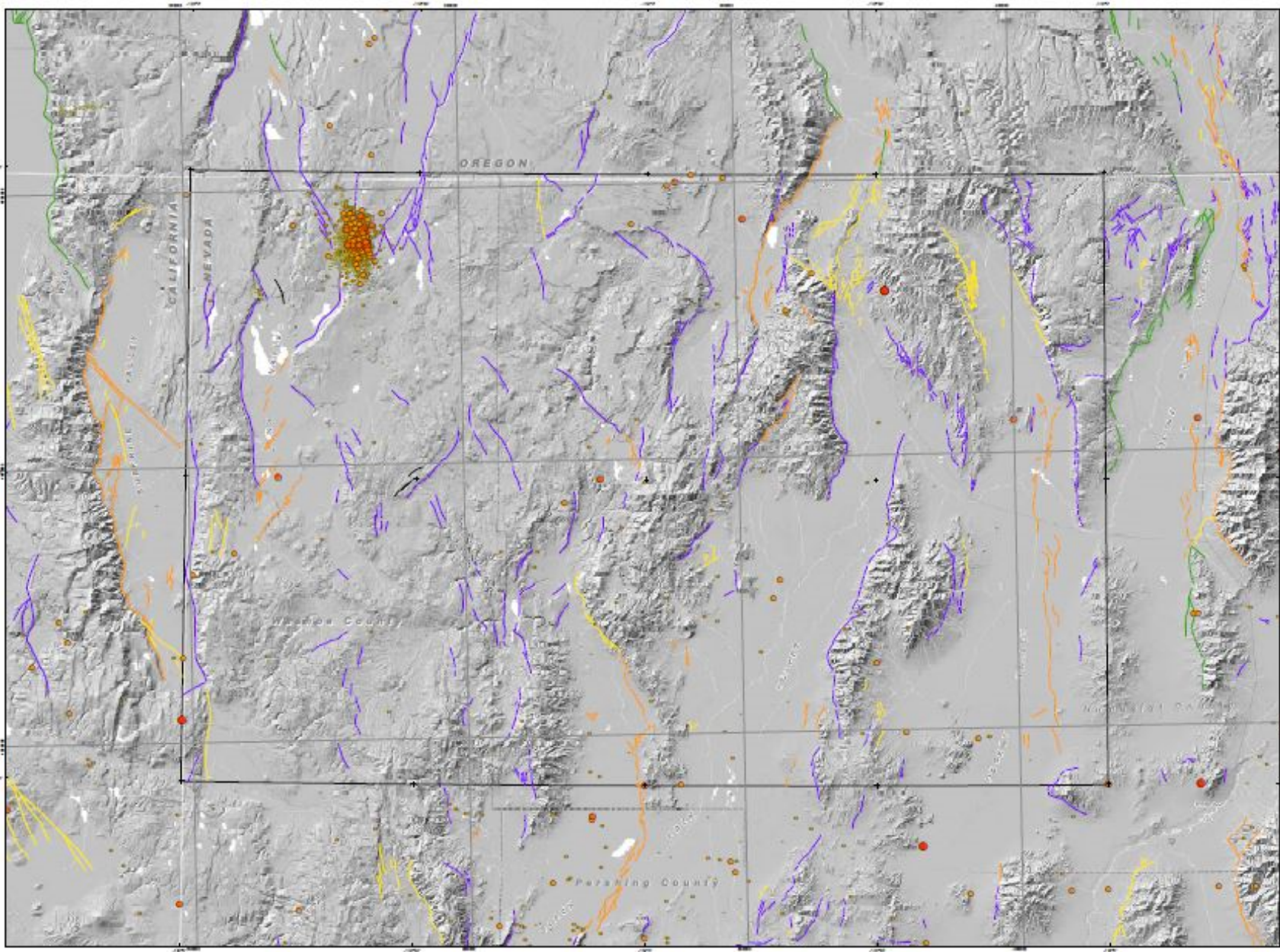
Northern Six Quadrangles

- Vya Quadrangle
- McDermitt Quadrangle
- Wells Quadrangle
- Lovelock Quadrangle
- Winnemucca Quadrangle
- Elko Quadrangle



The Maps

- Shows area around the quadrangle
- Shaded digital elevation image
- Some Culture



Age of Last Faulting

- Red line: Holocene (< 11,700 years BP)
- Orange line: Pleistocene (11,700 - 10,000 years BP)
- Yellow line: Late Pleistocene (10,000 - 11,700 years BP)
- Green line: Early Pleistocene (11,700 - 100,000 years BP)
- Blue line: Pre-Pleistocene (> 100,000 years BP)

Seismicity

- Orange dot: Magnitude 2.5 - 2.9
- Red dot: Magnitude 3.0 - 3.4
- Dark red dot: Magnitude 3.5 - 3.9
- Red circle with center: Magnitude 4.0 - 4.9
- Red circle with center and star: Magnitude 5.0 - 5.9
- Red circle with center and star: Magnitude 6.0 - 6.9
- Red circle with center and star: Magnitude 7.0 - 7.9
- Red circle with center and star: Magnitude 8.0 - 8.9
- Red circle with center and star: Magnitude 9.0 - 9.9

Scale

1:50,000

North arrow pointing up.

PRELIMINARY QUATERNARY FAULT AND SEISMICITY MAP OF THE VYA 1 x 2 DEGREE QUADRANGLE, NEVADA

Craig M. dePolo and Seth M. Dee
Nevada Bureau of Mines and Geology

2015



Map Symbols

Red line	Holocene (< 11,700 years BP)
Orange line	Pleistocene (11,700 - 10,000 years BP)
Yellow line	Late Pleistocene (10,000 - 11,700 years BP)
Green line	Early Pleistocene (11,700 - 100,000 years BP)
Blue line	Pre-Pleistocene (> 100,000 years BP)

Scale

1:50,000

North arrow pointing up.

Nevada Bureau of Mines and Geology

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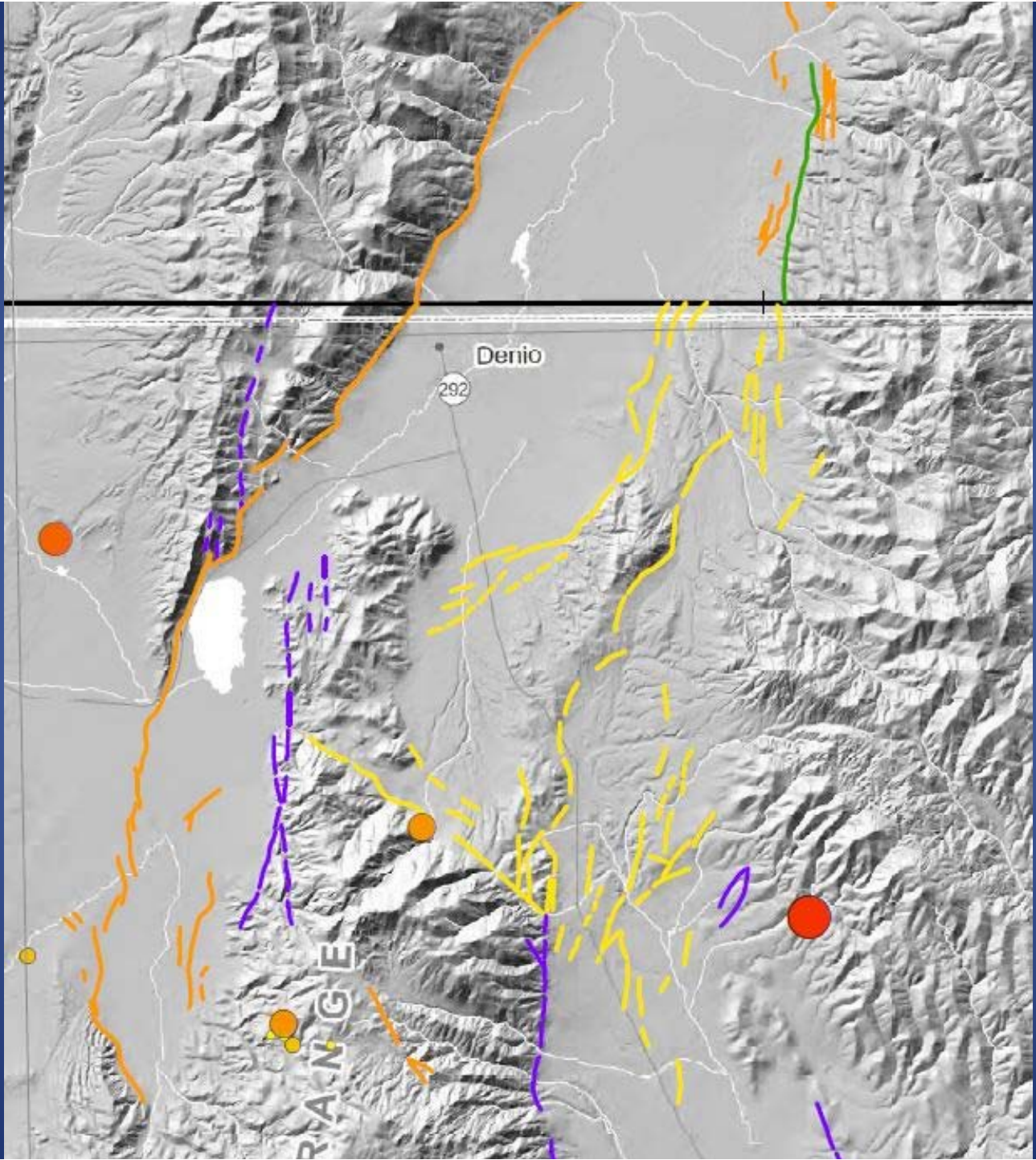
Red circle with center and star: Magnitude 5.0 - 5.9

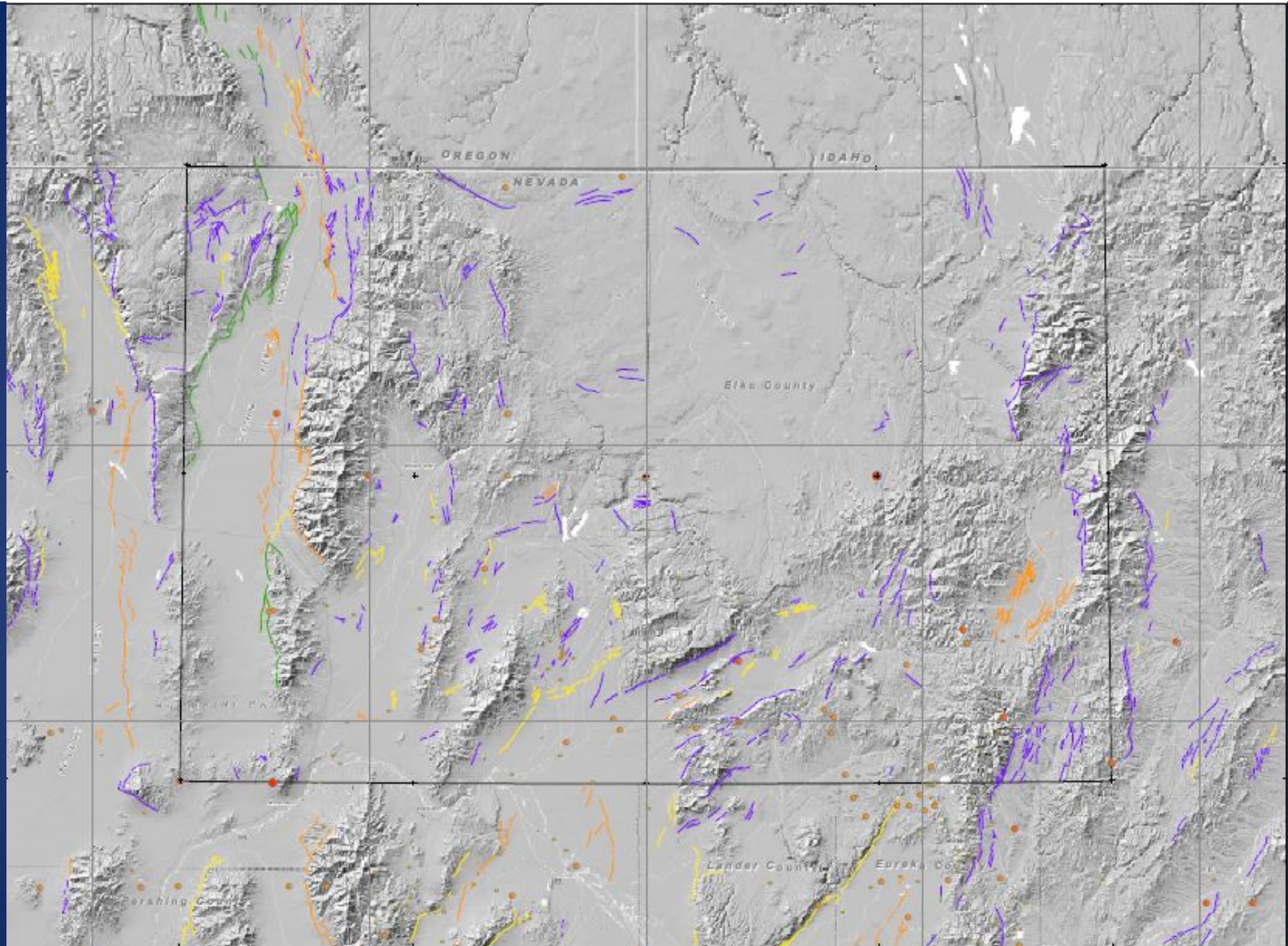
Red circle with center and star: Magnitude 6.0 - 6.9

Red circle with center and star: Magnitude 7.0 - 7.9

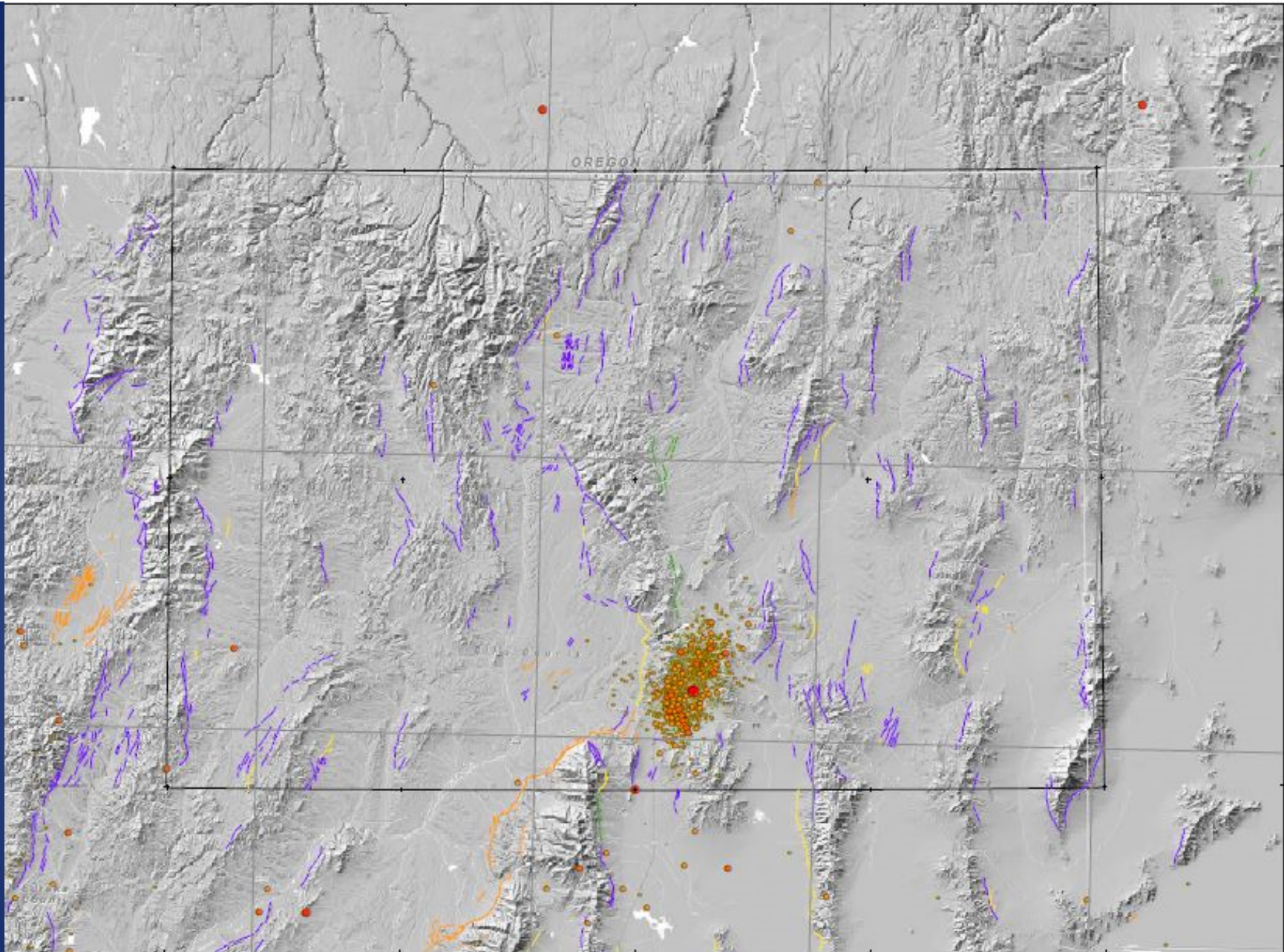
Red circle with center and star: Magnitude 8.0 - 8.9

Red circle with center and star: Magnitude 9.0 - 9.9

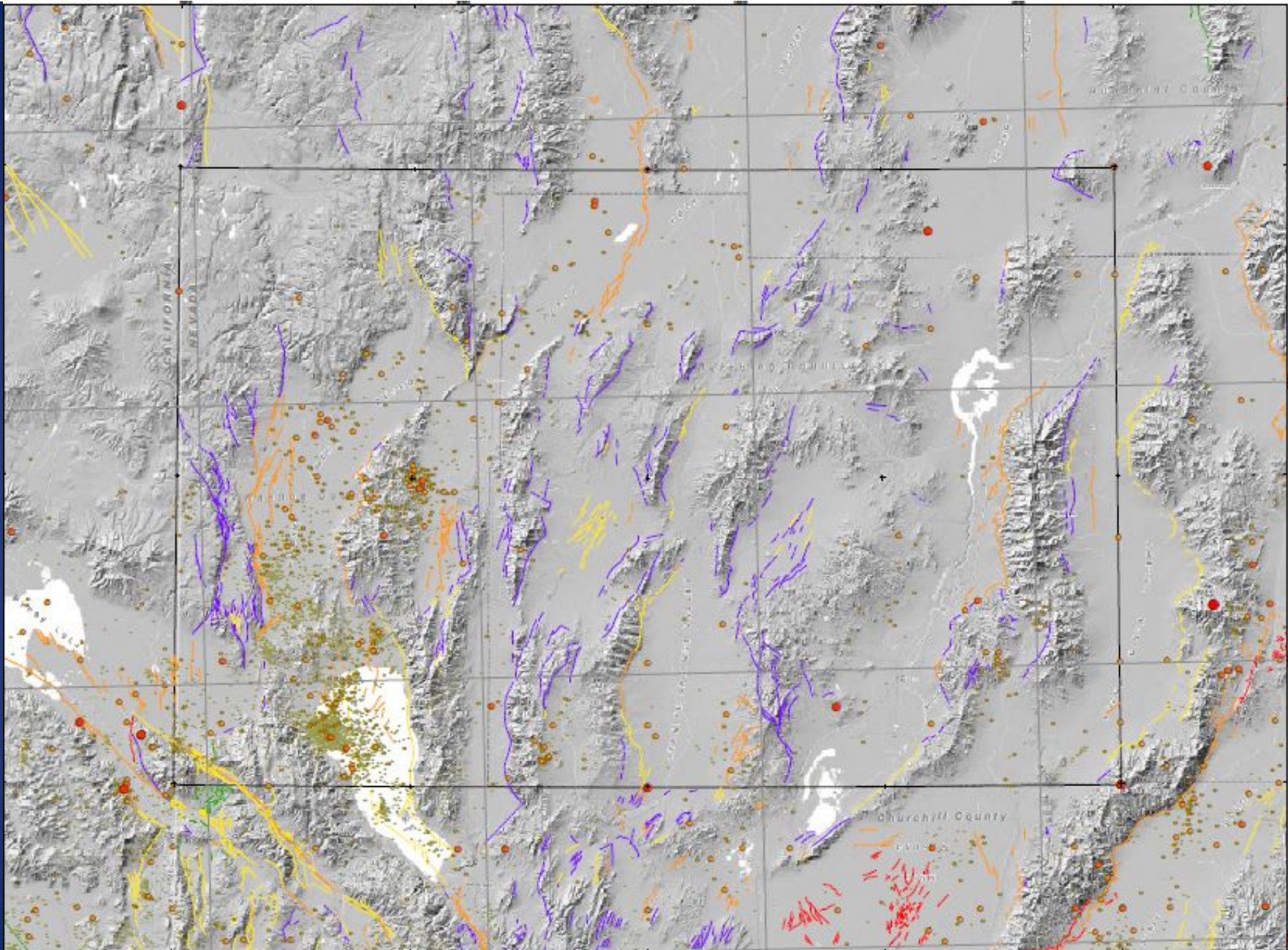




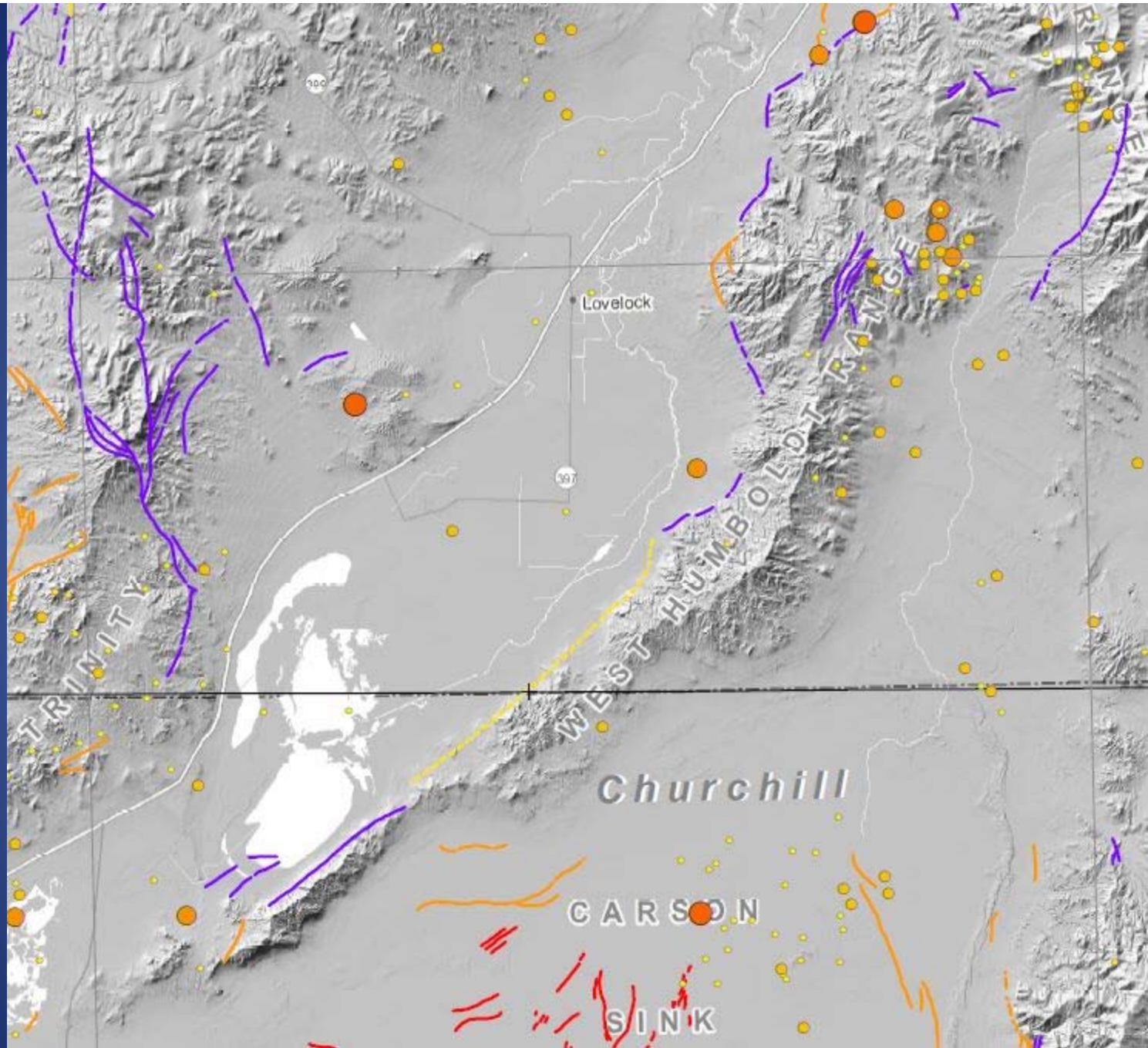
McDermitt Quadrangle



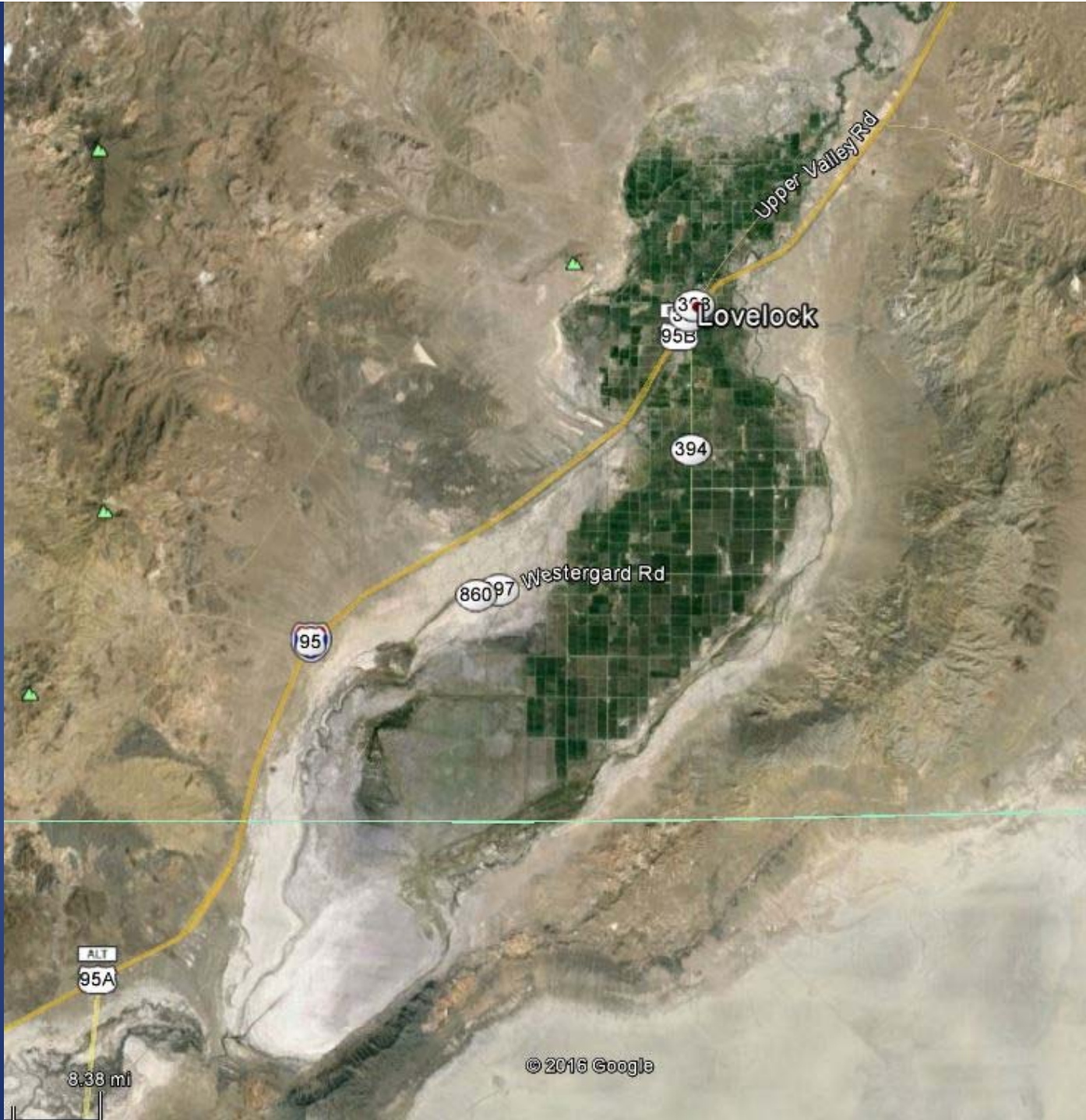
Wells Quadrangle



Lovelock Quadrangle



Lovelock – buried faults?



© 2016 Google

8.38 mi

ALT
95A

95

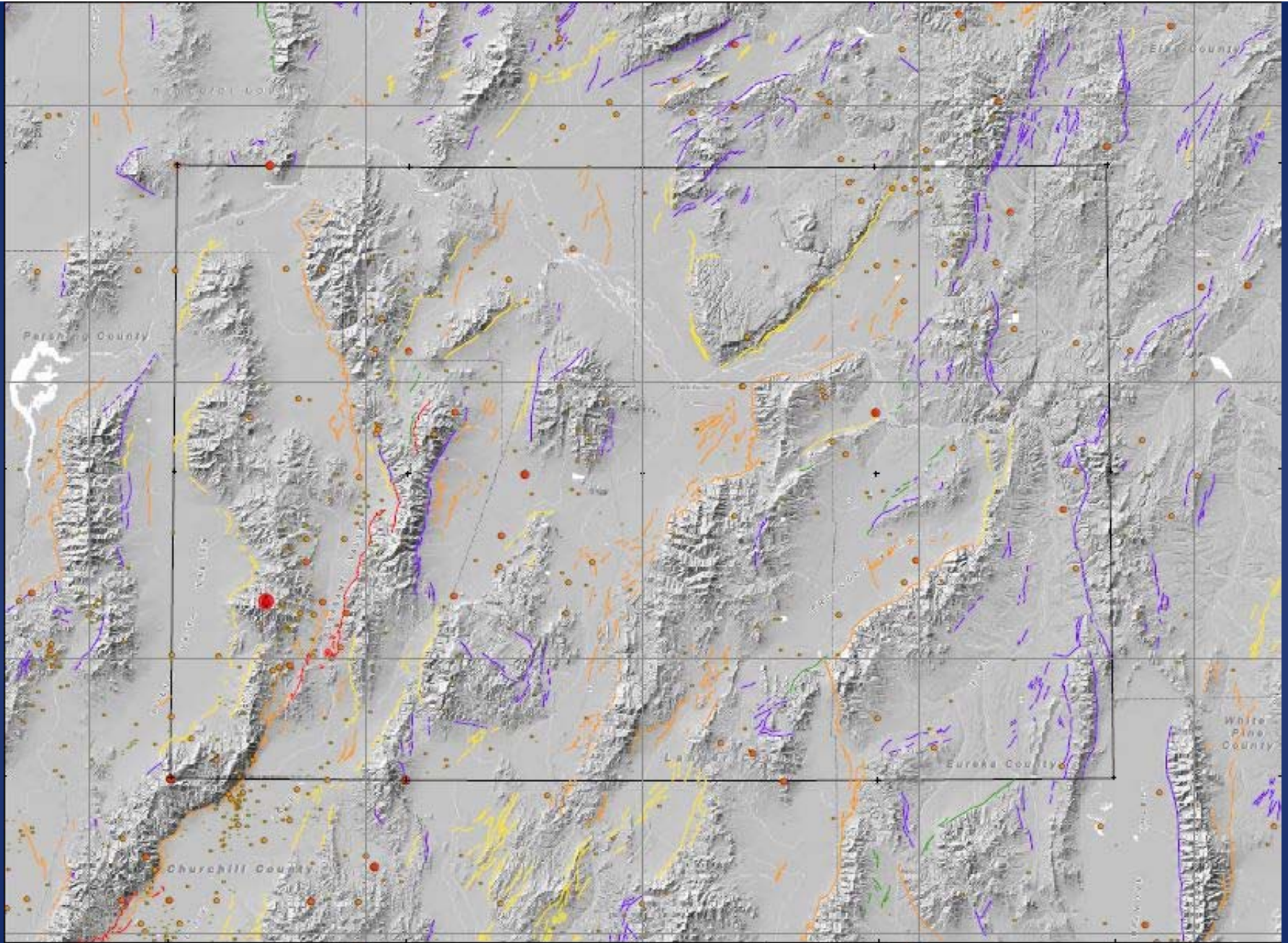
86097

Westergard Rd

394

395
95B
Lovelock

Upper Valley Rd

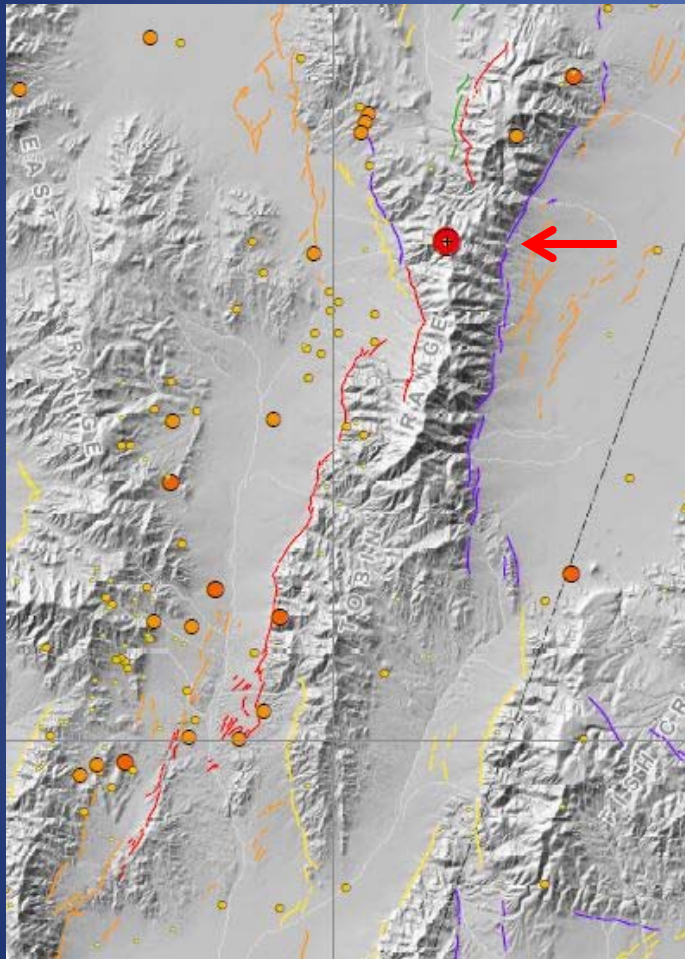


Winnemucca Quadrangle

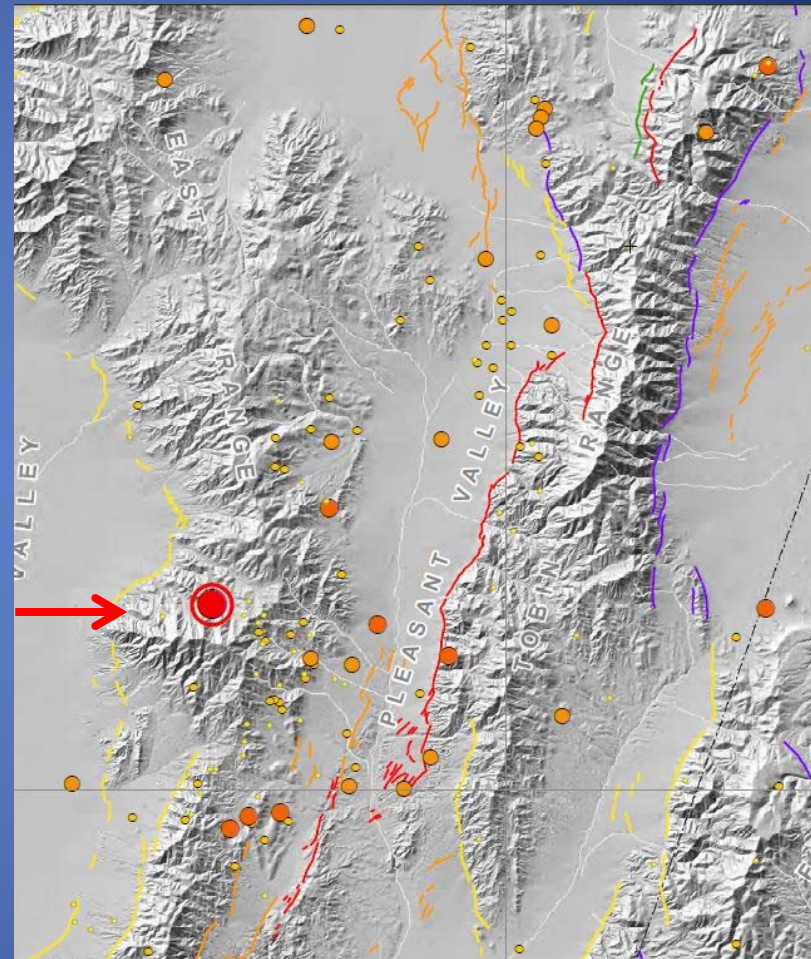
Moved the 1915 Pleasant Valley Earthquake Epicenter

- Historically placed at an even half latitude and half longitude intersection ($40^{\circ} 30'$; $-117^{\circ} 30'$).
- Traditional epicenter along or behind surface rupture breaks; fault dips to west-northwest.
- Wrongly placed in the footwall of the earthquake.
- Moved to hanging wall, down dip to about 10 km depth (assumed 50° dip), near probable foreshocks

Traditional and Proposed Epicenters



Traditional Epicenter
40.5°; -117.5°



Proposed Epicenter
40.3°; -117.8°

1915 Foreshock Sequence

3:40 p.m. M5.0 “with a terrific report, similar to a large dynamite blast, the mountain side of Kennedy **gave a lurch due north** and then vibrated for five seconds”

5:49 p.m. M6.1 “without the slightest warning a great roar was heard and the earth’s surface began to roll and sway up and down, evidently in all directions. ... This convulsion continued without stop for fully one and a half minutes.”

“from this disturbance on, it was an incessant, continued disturbance, the earth never appeared quiet.”

From Leon St. D. Roylance (1915)

nts on the ground

479.63 Kilometers

479.59

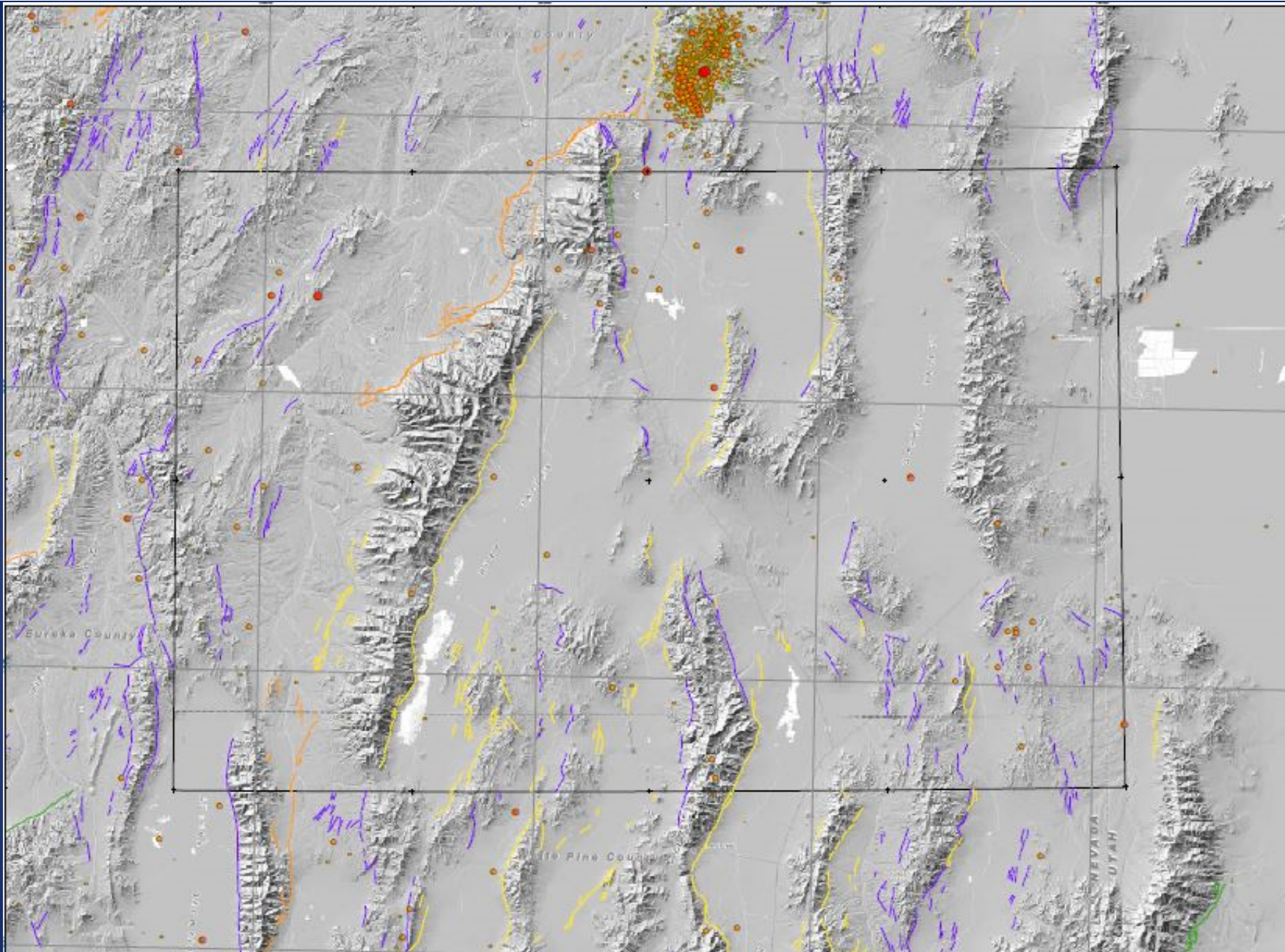
236.95 degrees

Save

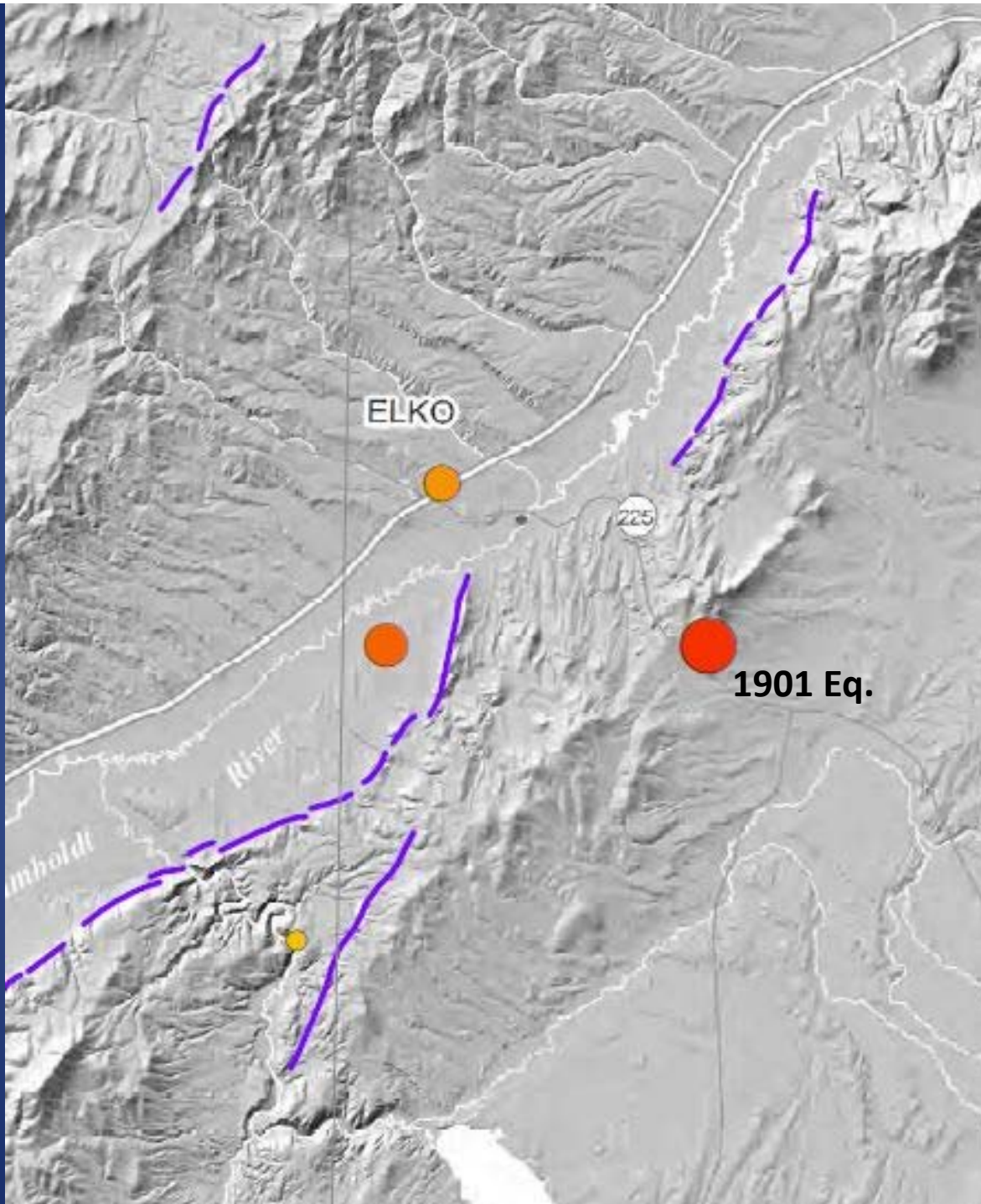
Clear



Data SIO, NOAA, U.S. Navy, NGA, GEBCO



Elko Quadrangle



**1901 Earthquake
Damage to Elko
Magnitude 5**

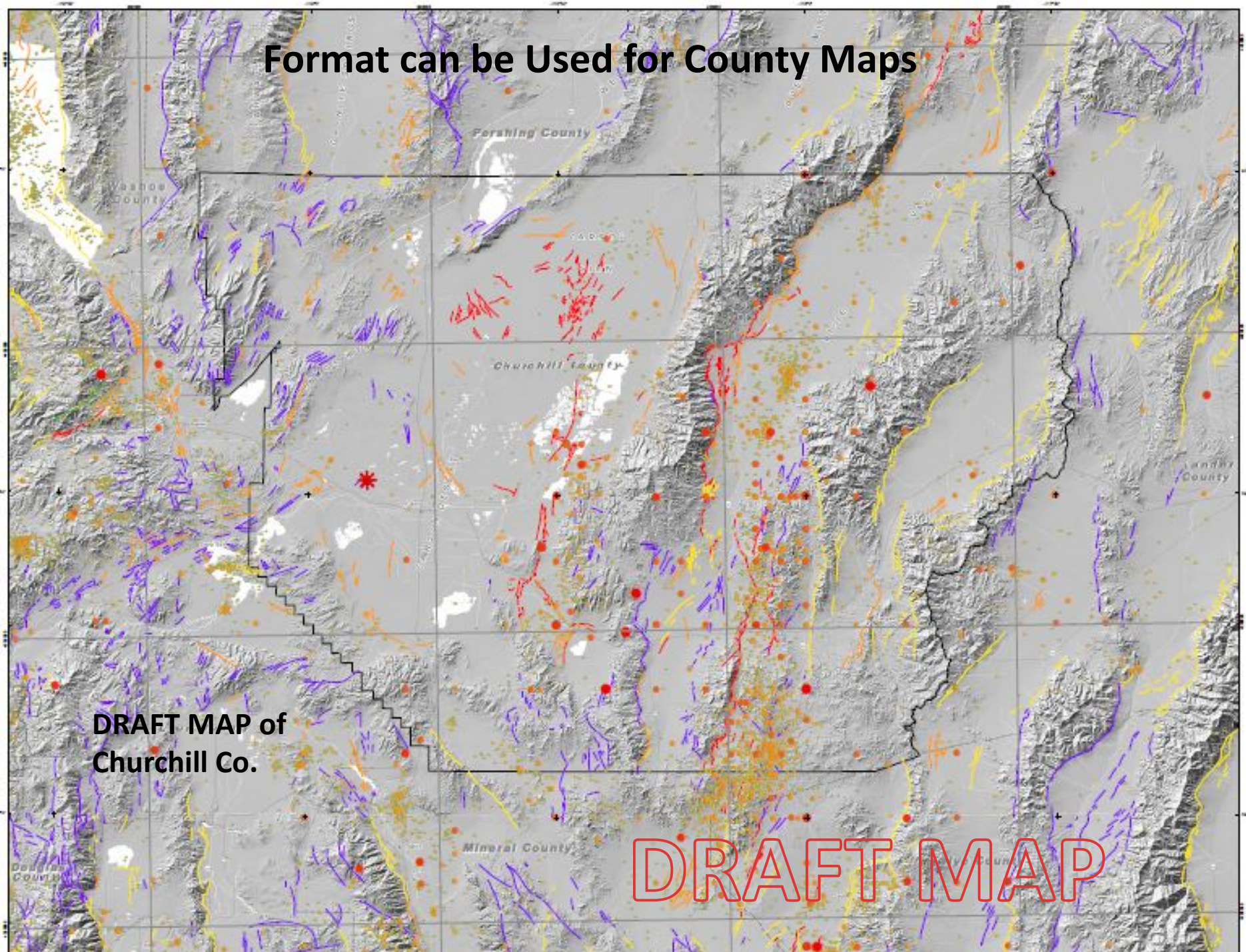
High School
Building (brick)
badly cracked,
slight damage
other buildings

Lincoln County
Record 8/2/01

Conclusions

- Successful scale and topography for illustrating faults and the general locations of earthquakes.
- Many problems with the Quaternary fault dataset at these scales: missing faults, poorly located faults, better activity characterization.
- Need new, systematic mapping of Quaternary faults in Nevada.
- Forcing a closer look at the earthquakes that have been located in greater Nevada.

Format can be Used for County Maps



**DRAFT MAP of
Churchill Co.**

DRAFT MAP

What Happened to the Volcanoes?

