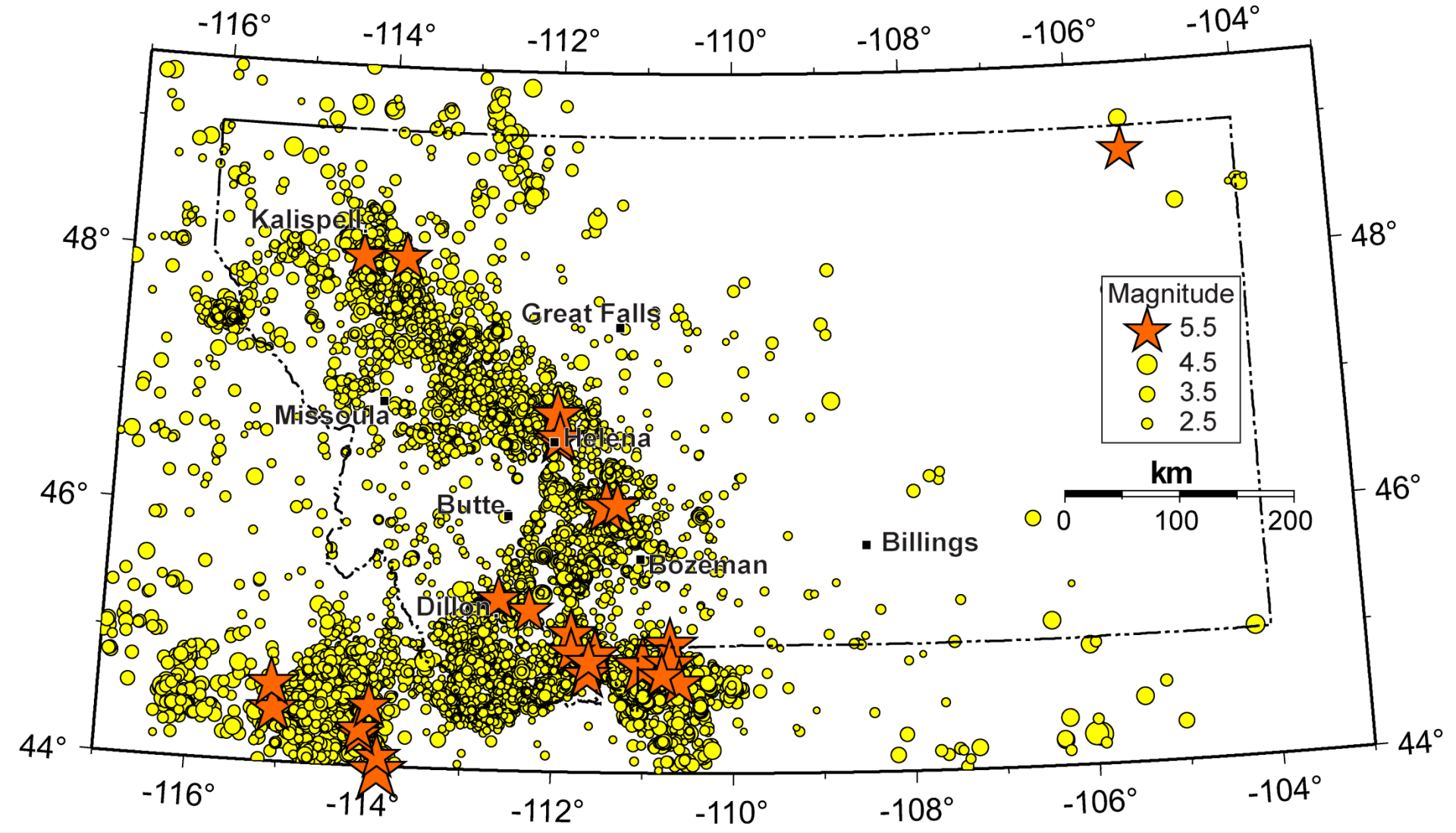
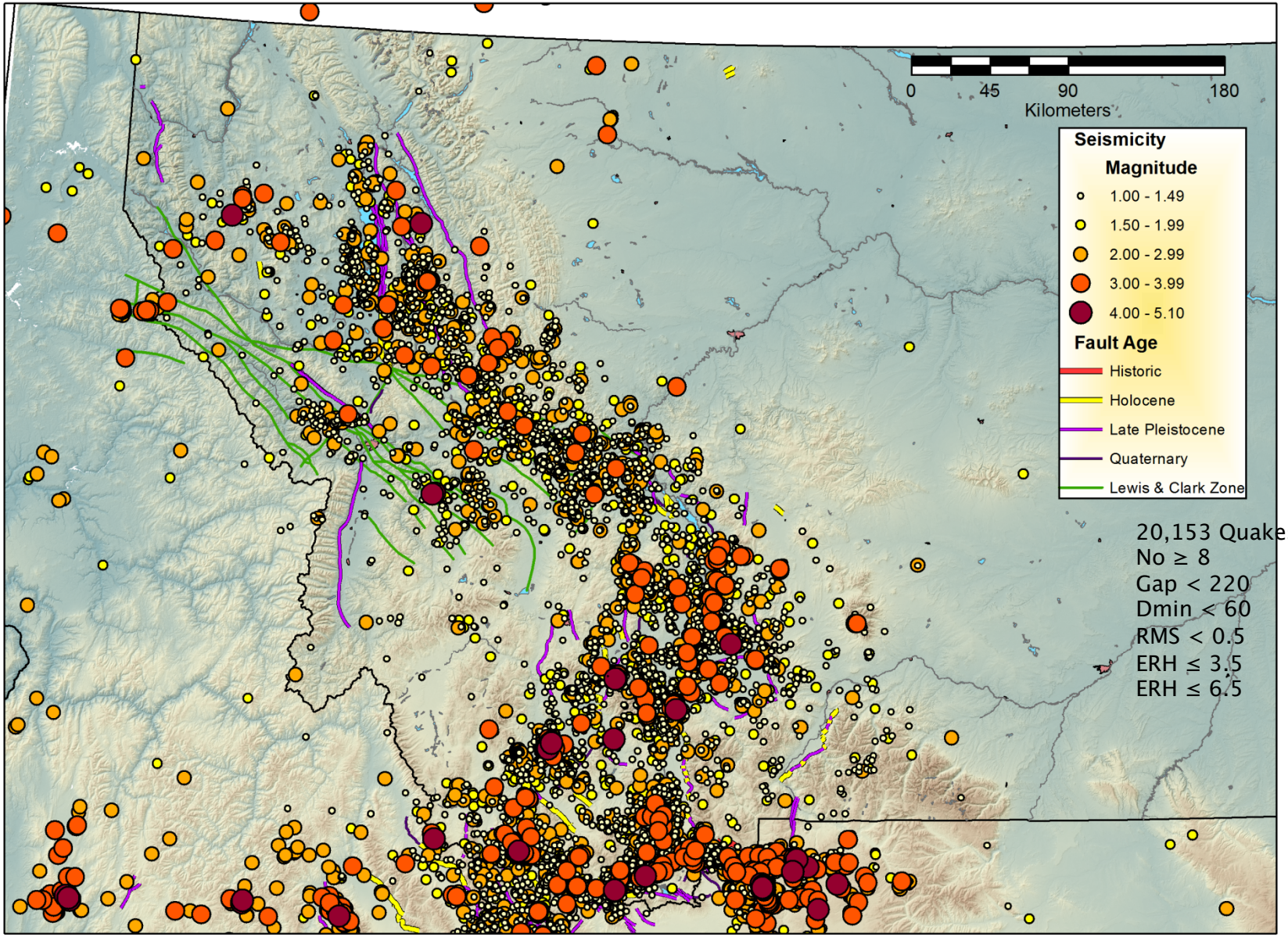
Mike Stickney
Montana Bureau of Mines and Geology

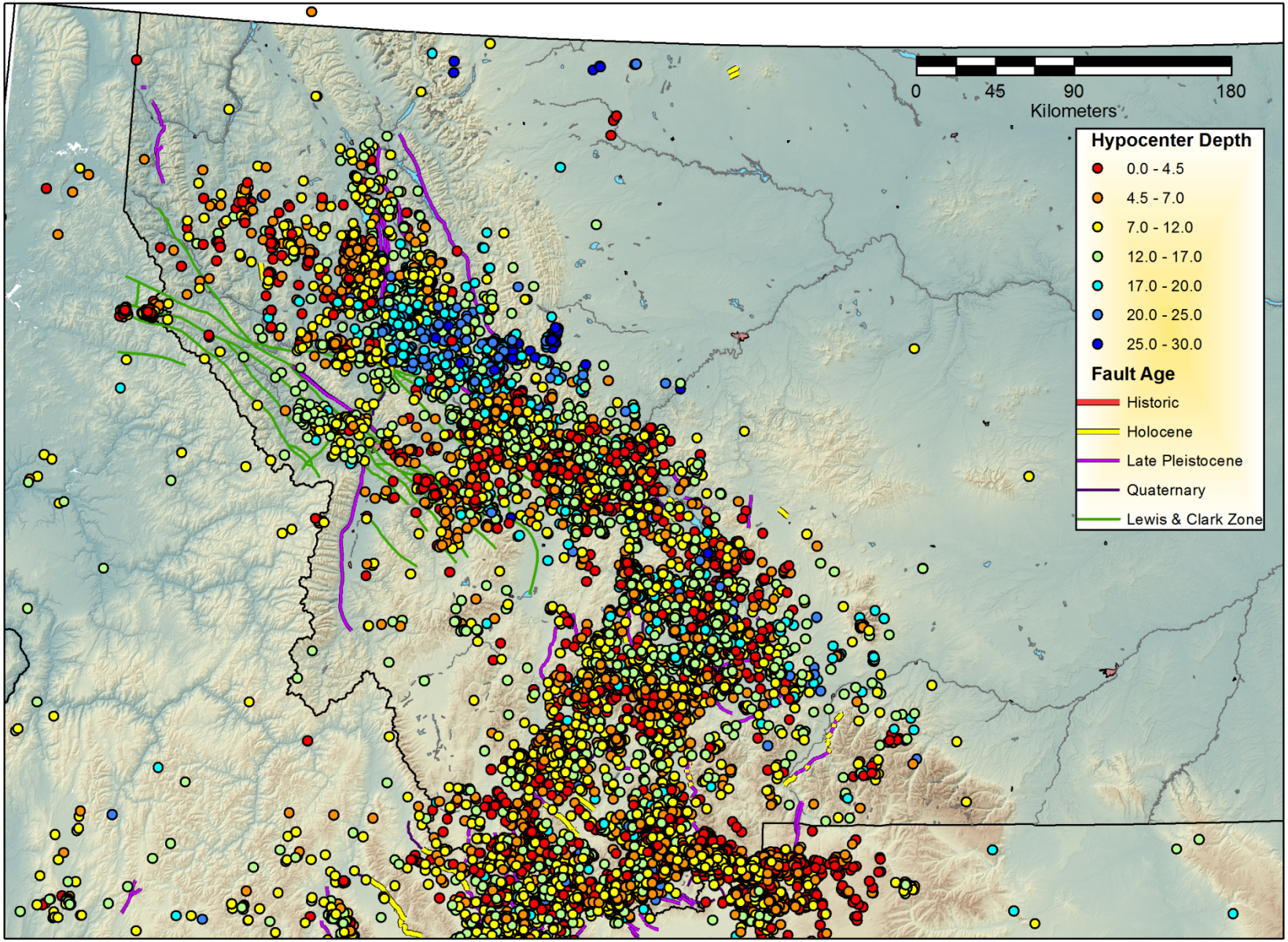


Montana Region Seismicity 1982-2012 and Historic Earthquakes ≥ M5.5

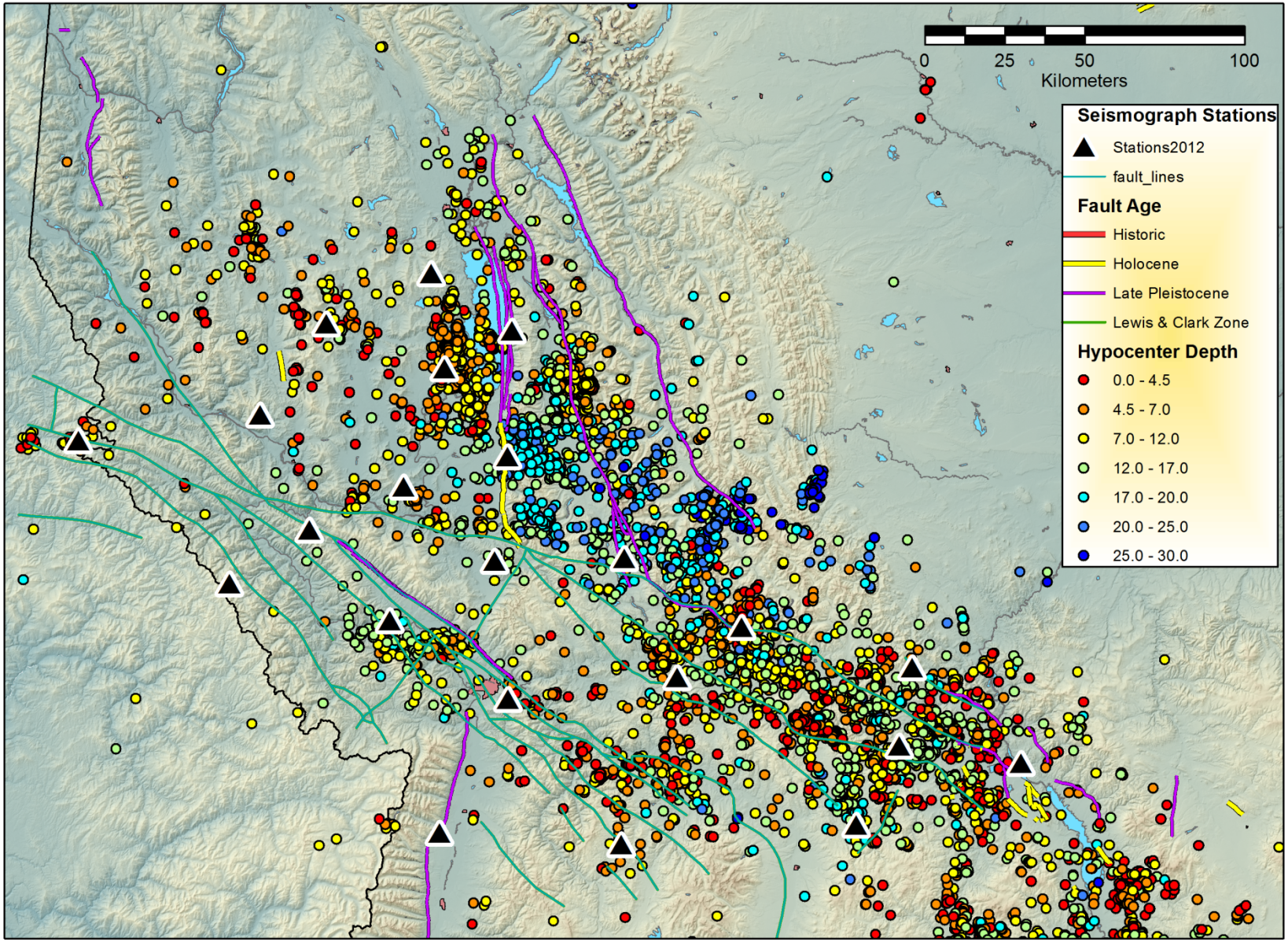
Seismicity 1982 – May 2012 classified by magnitude



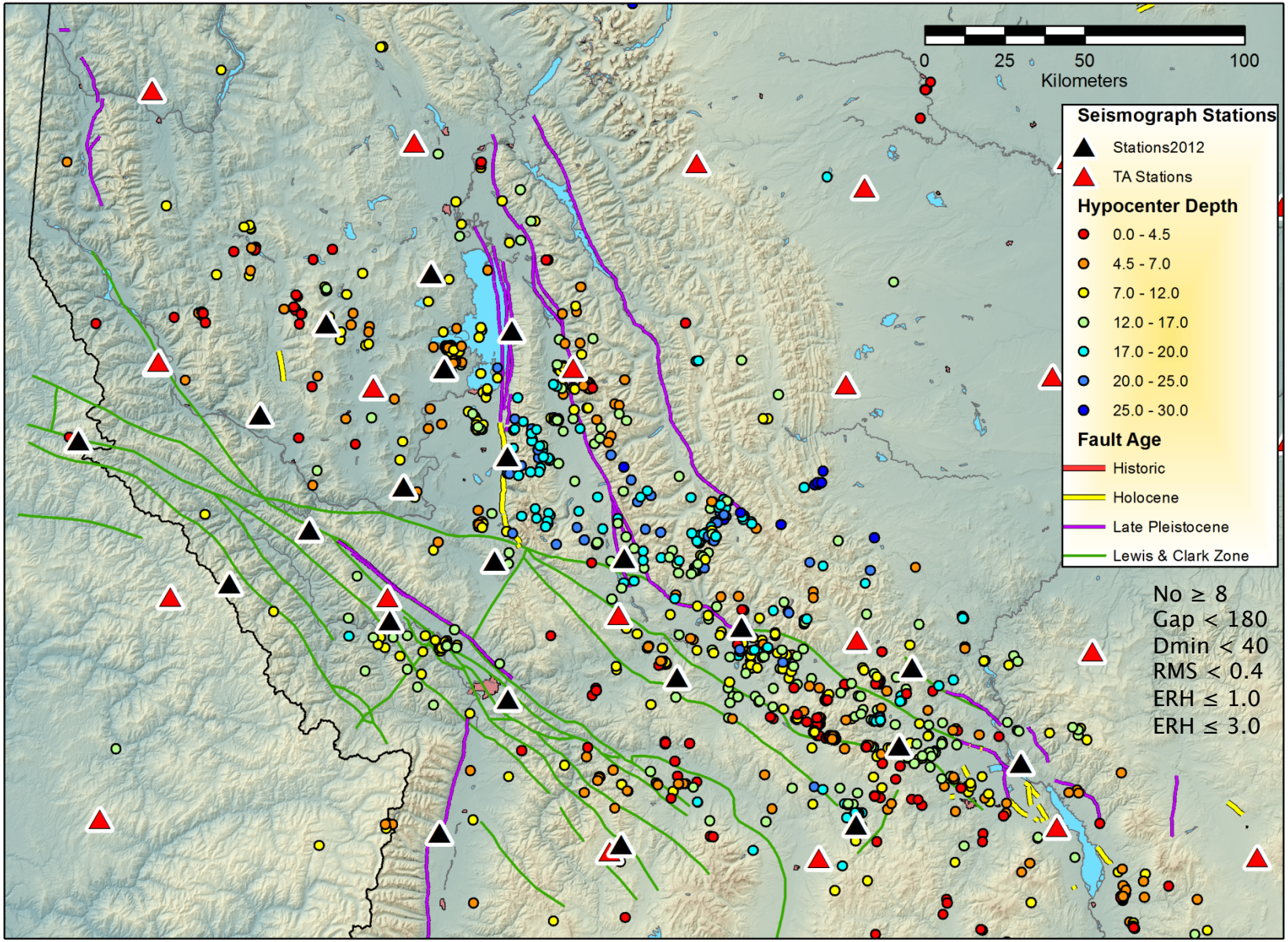
Seismicity 1982 – May 2012 classified by hypocenter depth



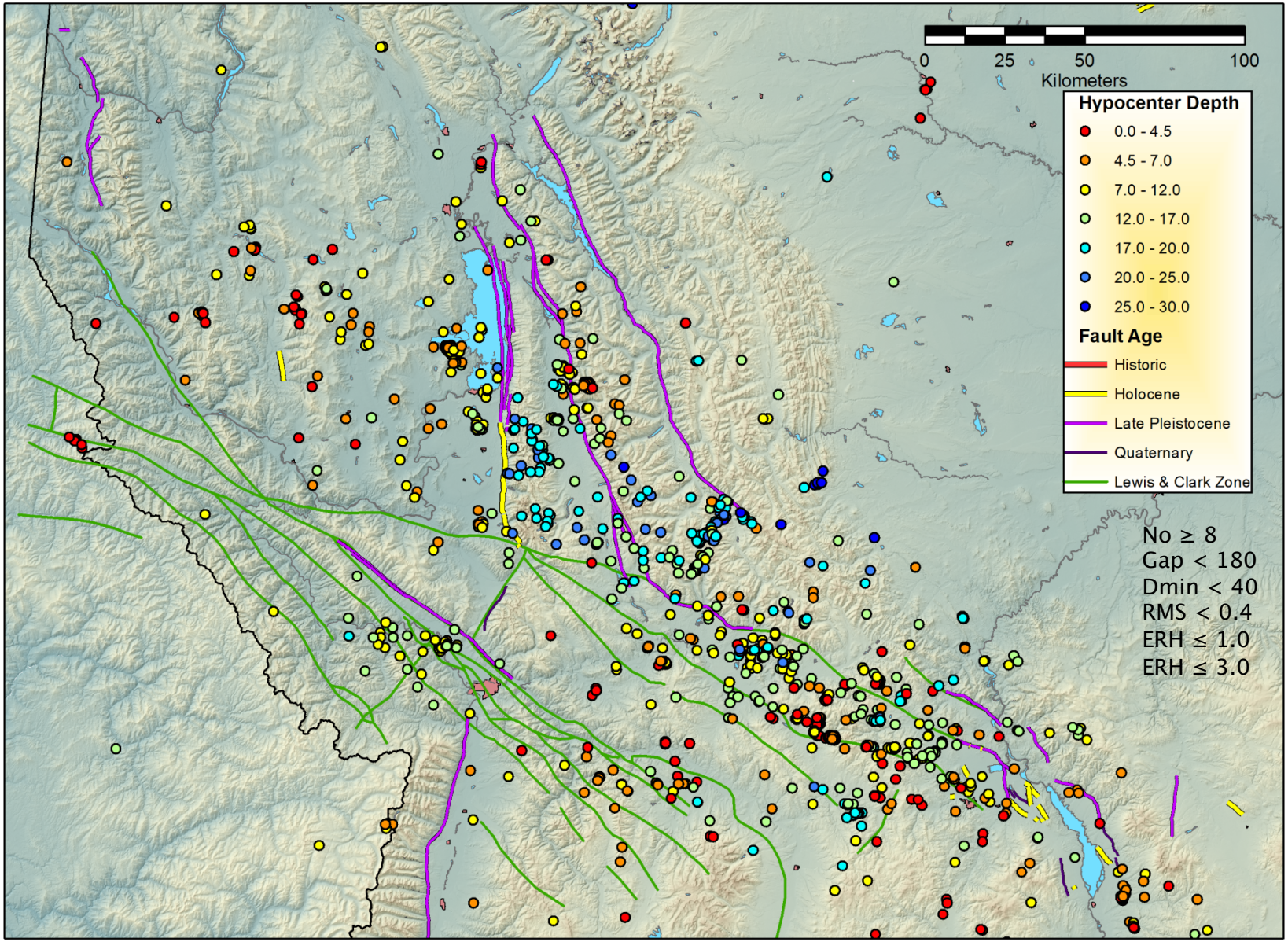
Seismicity 1982 – May 2012 classified by hypocenter depth



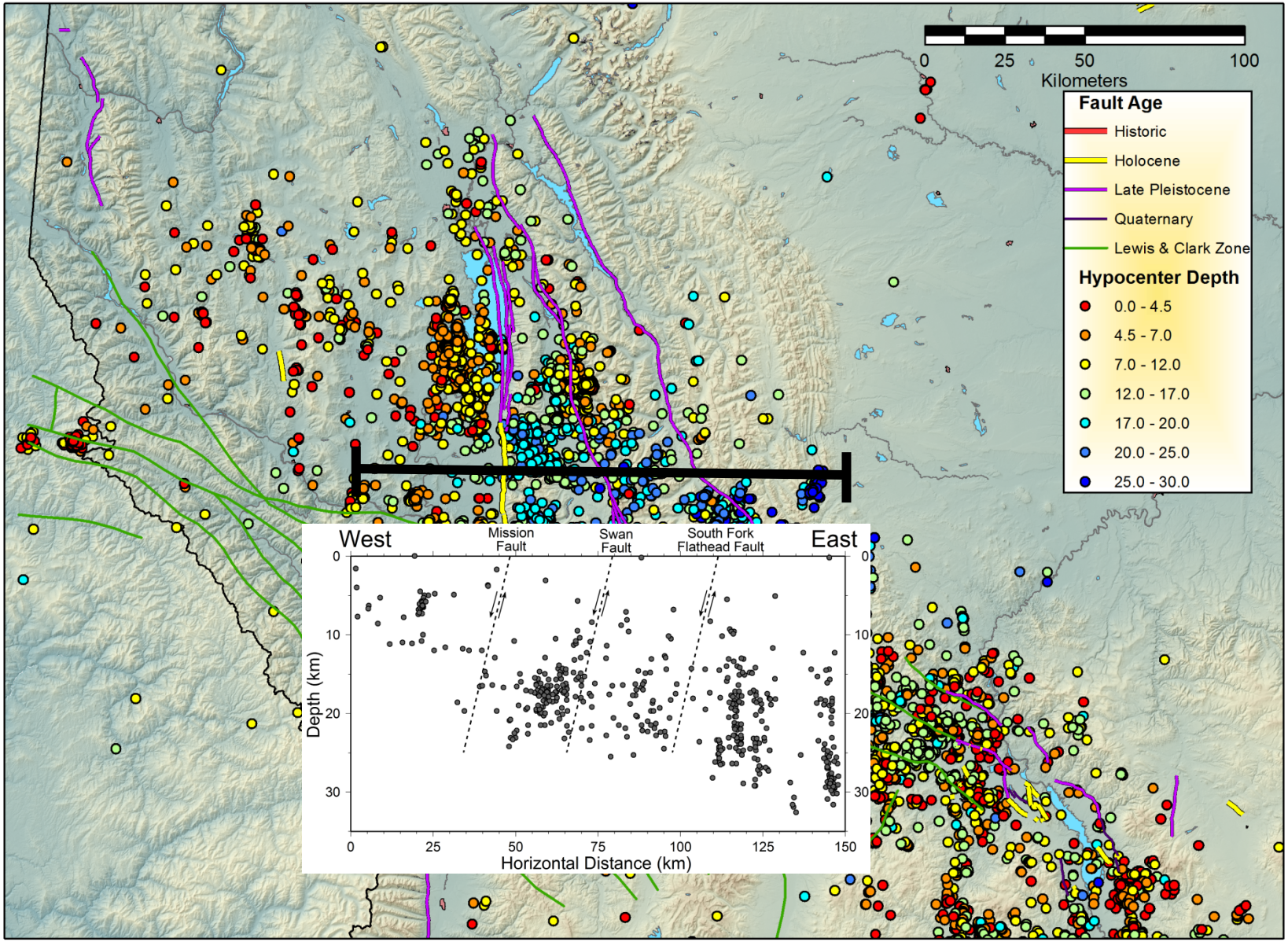
Seismicity Sept 2006–Aug 2009 classified by hypocenter depth



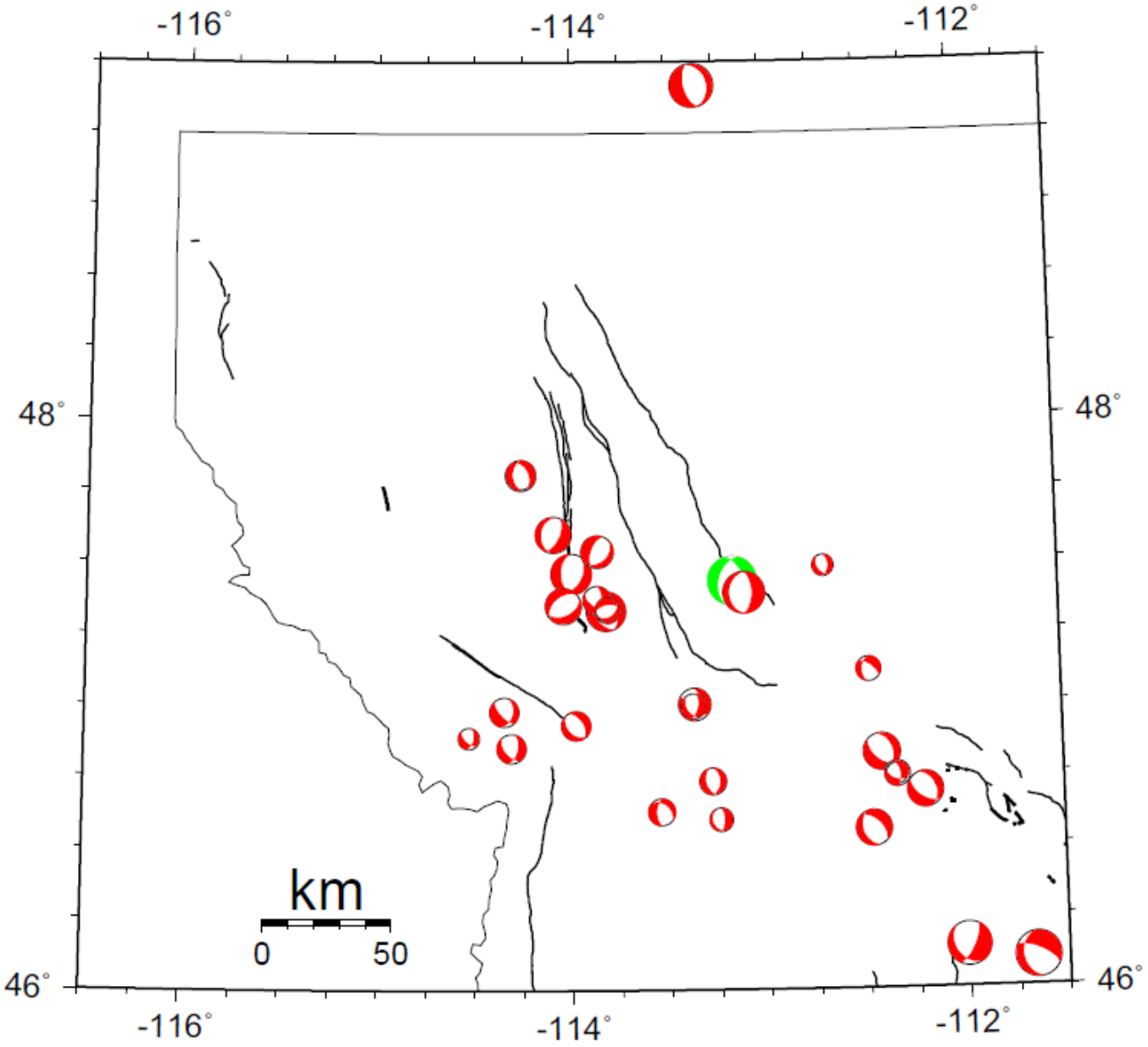
Seismicity Sept 2006–Aug 2009 classified by hypocenter depth



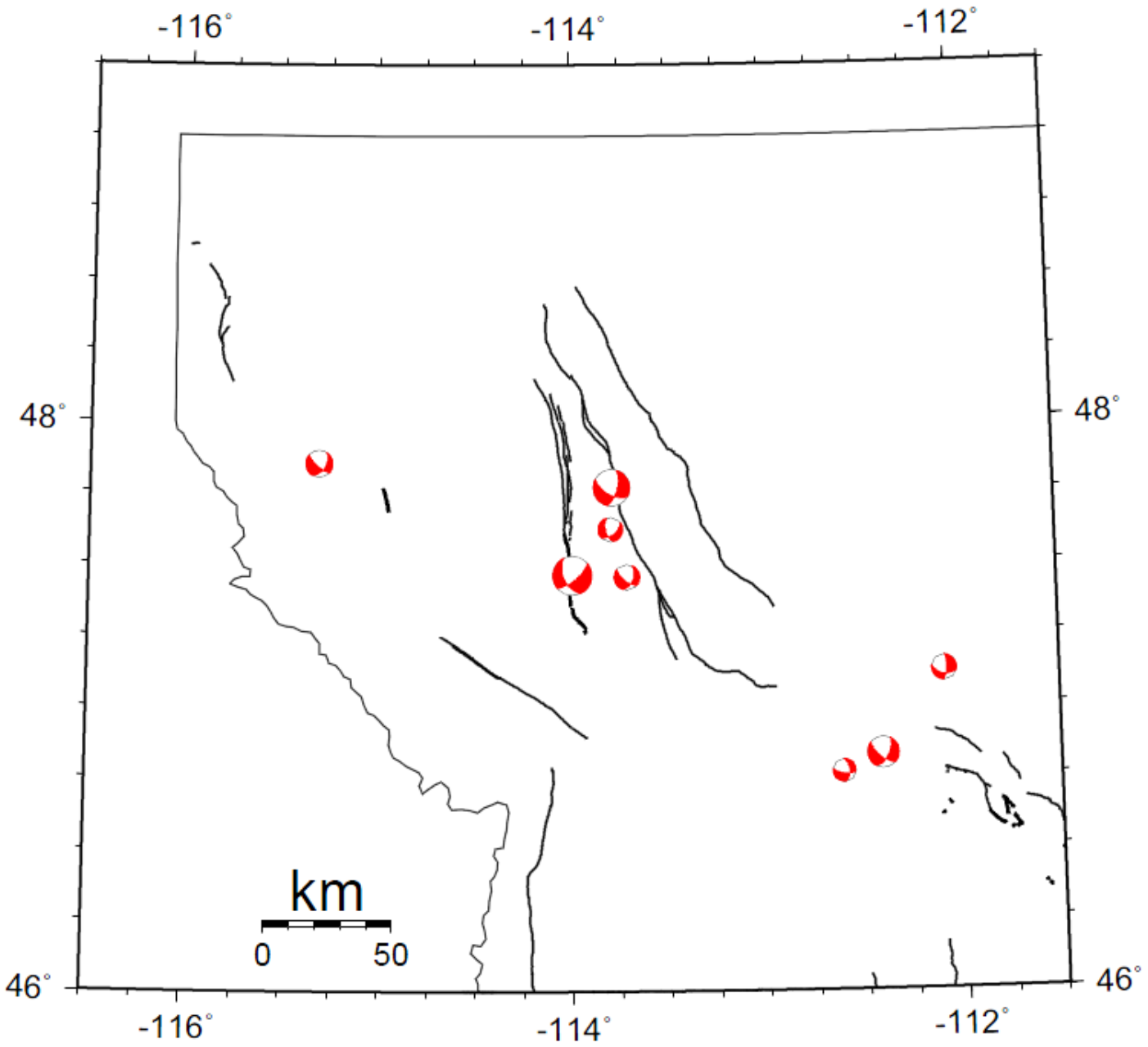
Seismicity 1982 – May 2012 classified by hypocenter depth



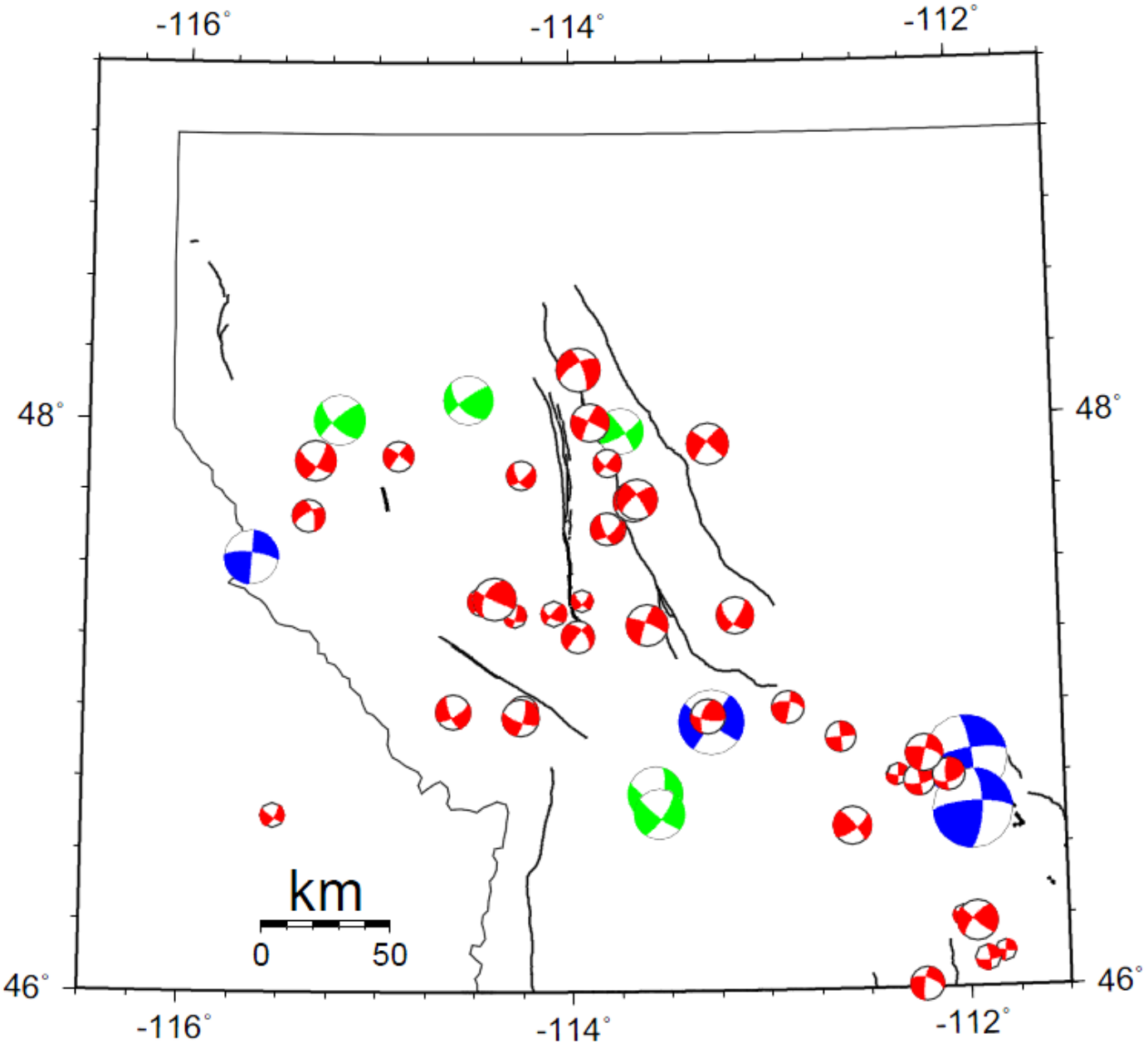
Normal fault plane solutions



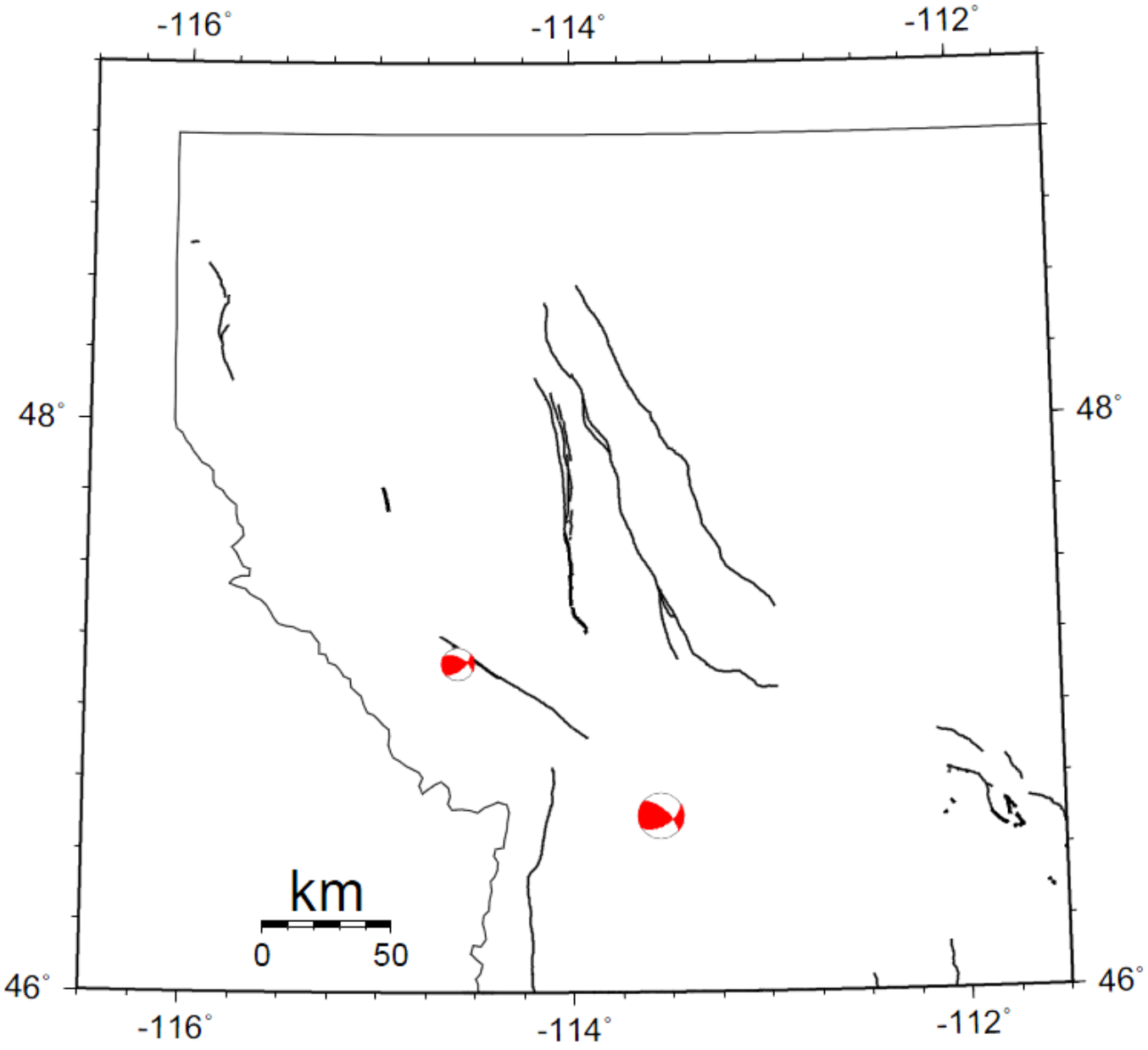
Normal-oblique fault plane solutions



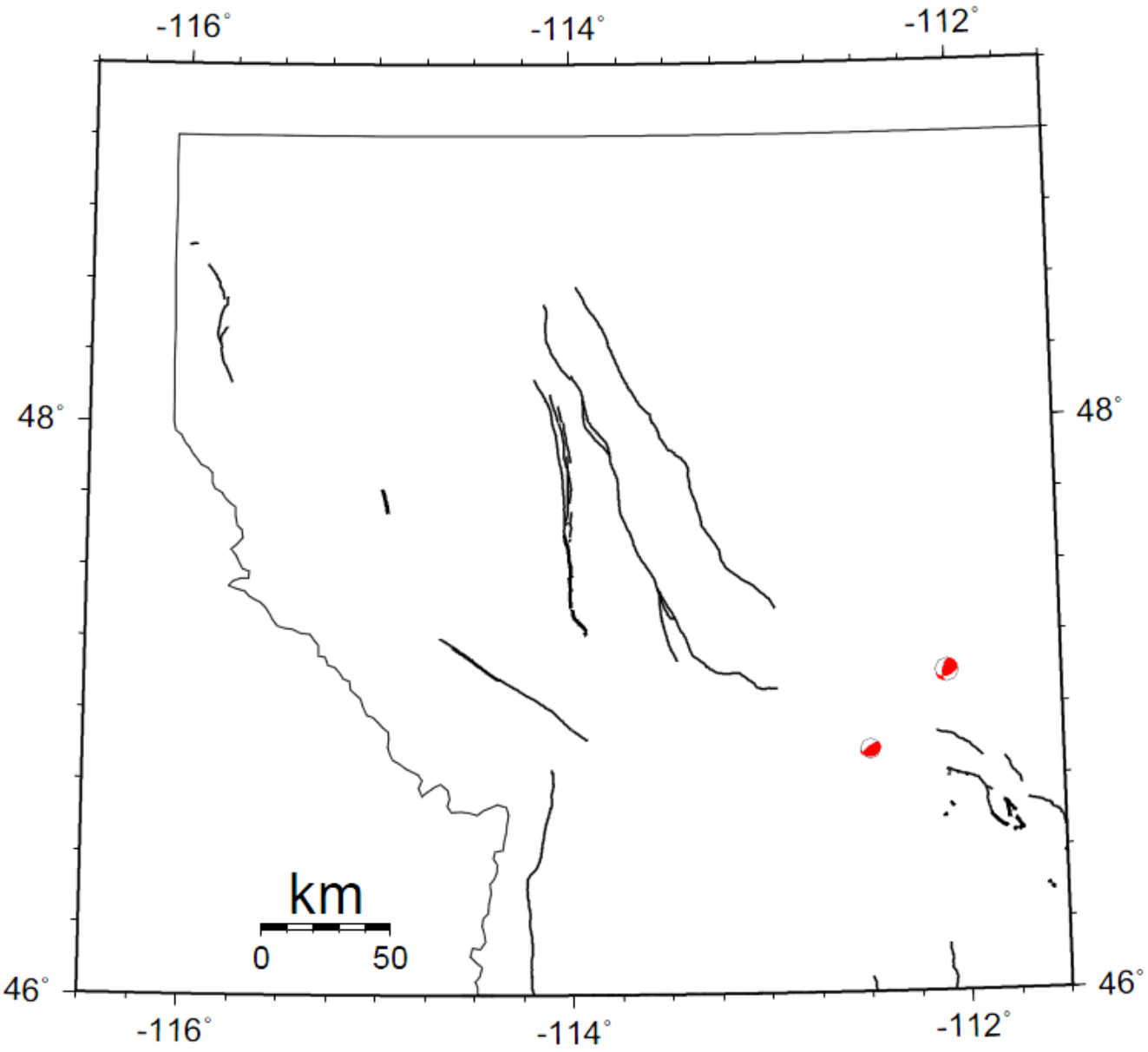
Strike-slip fault plane solutions



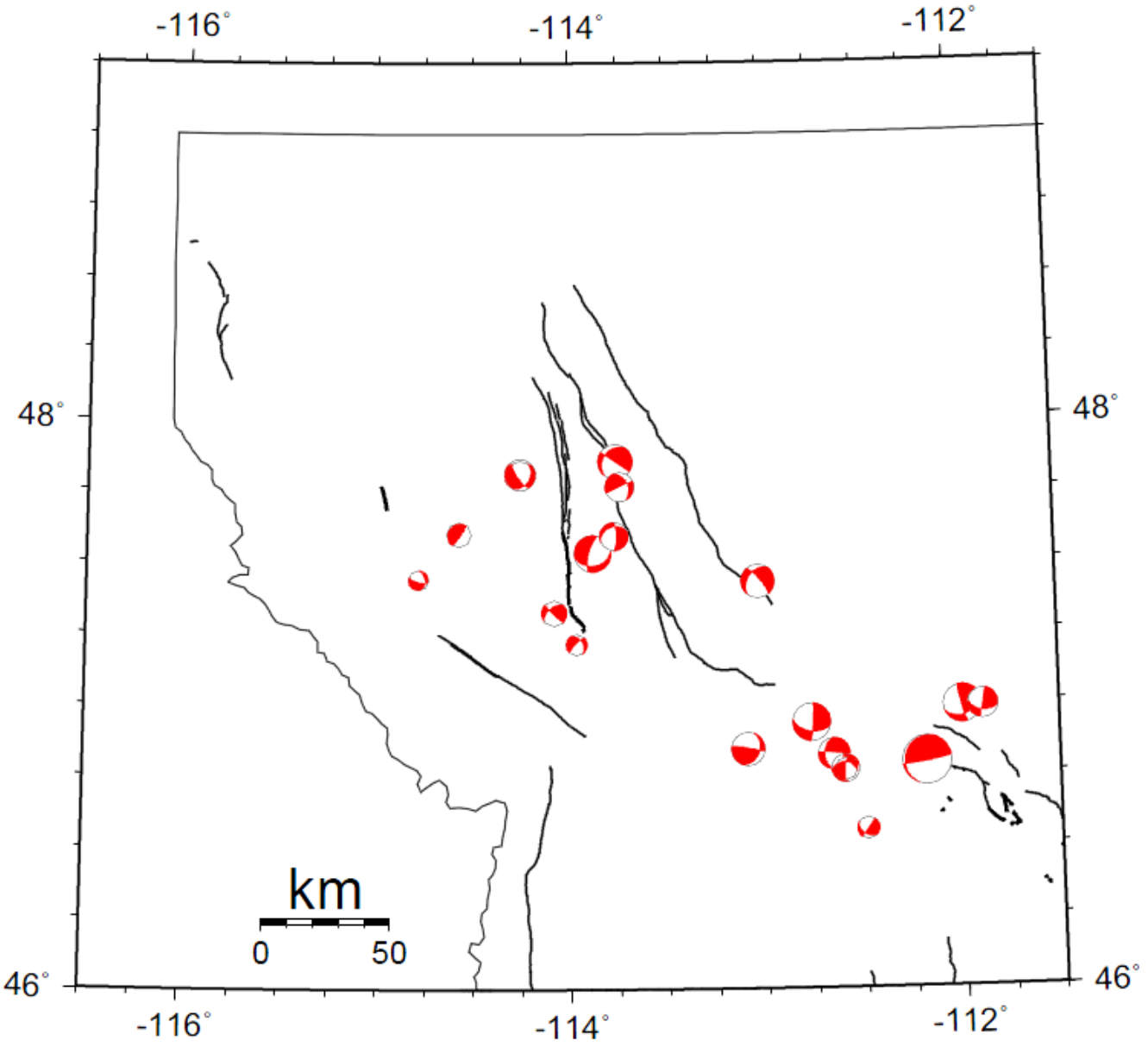
Reverse-oblique fault plane solutions



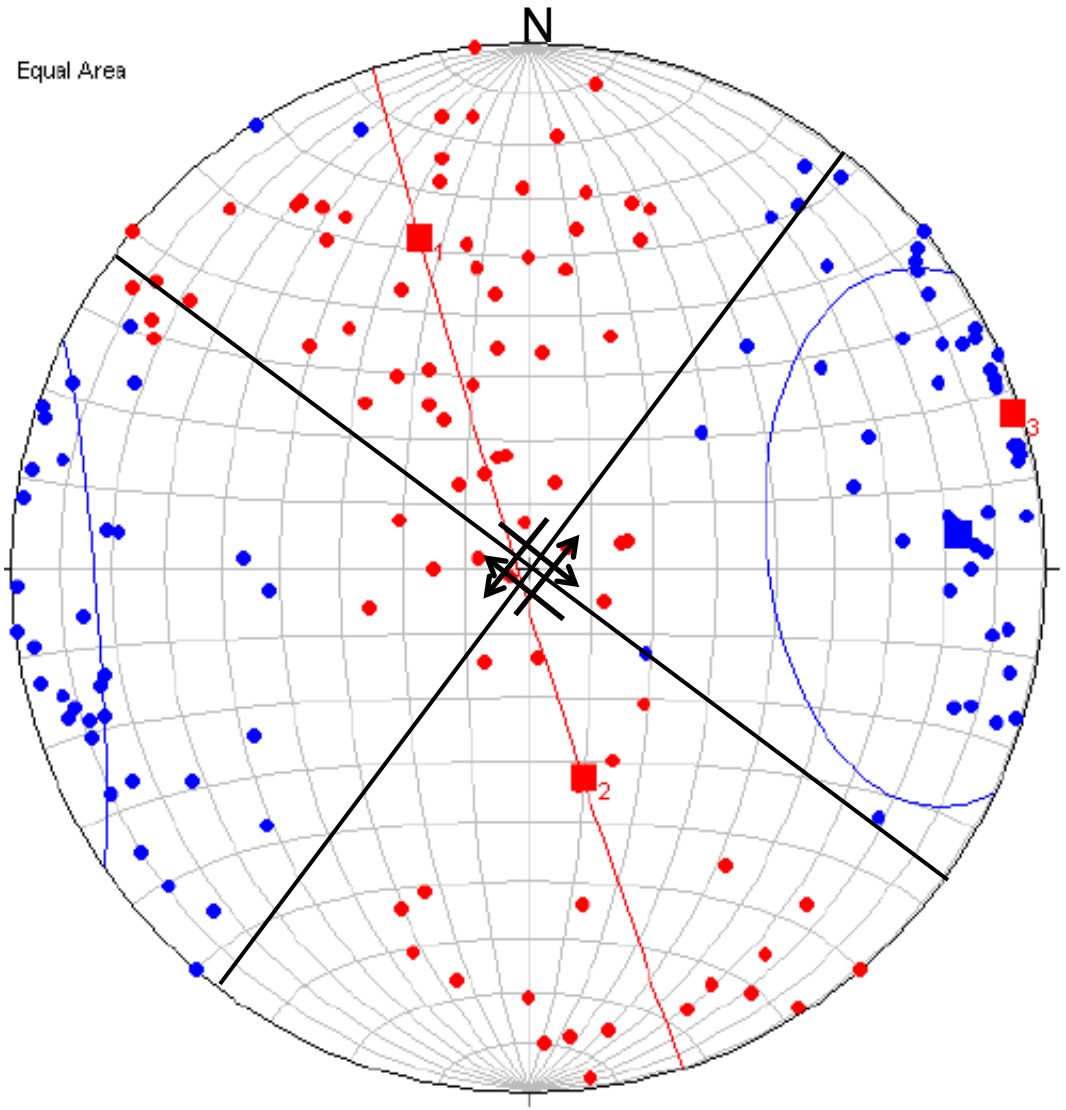
Reverse fault plane solutions



“None of the above” plane solutions



P (red) and T (blue) axes for all fault plane solutions



Explanation

LINES SCATTER PLOT (n = 84):

CYLINDRICAL BEST FIT

	Eigenvalue	Eigenvector (T&P)	Confidence
1.	0.5760	341.5° 33.9°;	Max = 21.5°, Min = 7.1°
2.	0.3338	165.1° 56.1°	
3.	0.0902	72.6° 1.7°;	Max = 9.6°, Min = 6.3°

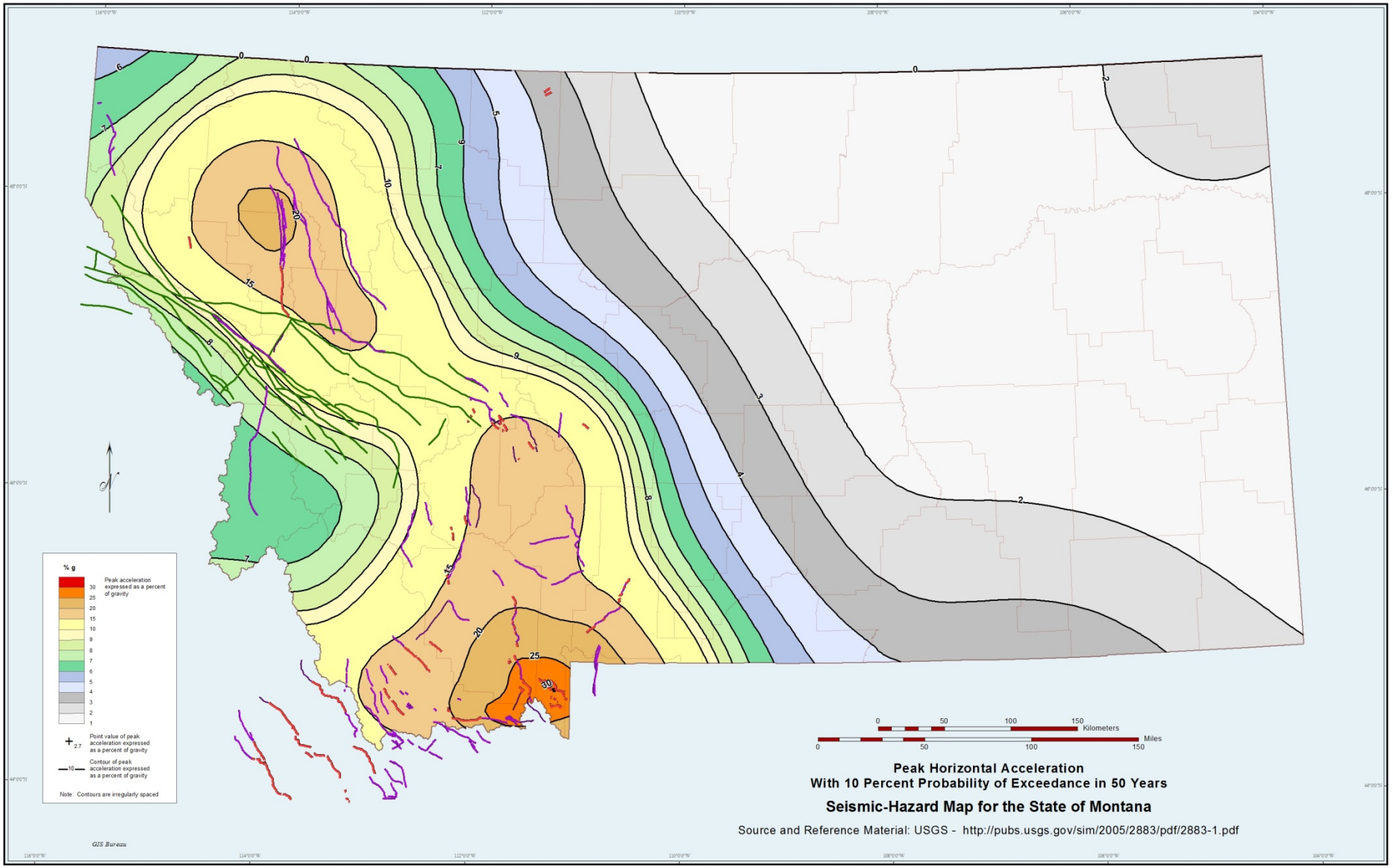
LINES SCATTER PLOT (n = 84):

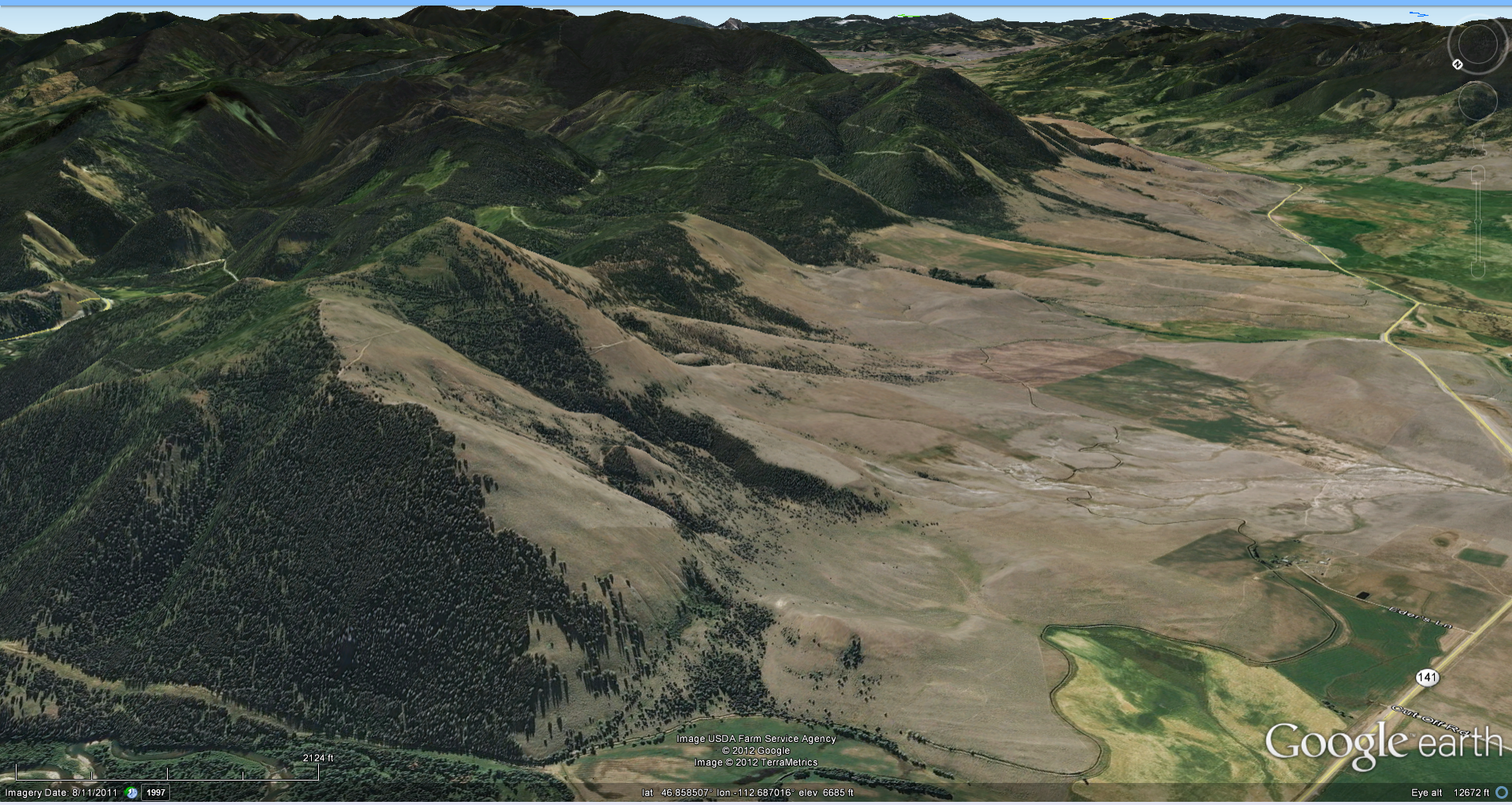
CONICAL BEST FIT:

N = 84; first line = 1; last line = 84

Cone Axis (T, P) = 85.5°, 17.3; Half angle = 34.3°

error = -17.3253


% g
Peak acceleration expressed as a percent of gravity
30
25
20
15
10
9
8
7
6
5
4
3
2
1
Point value of peak acceleration expressed as a percent of gravity
Contour of peak acceleration expressed as a percent of gravity
Note: Contours are irregularly spaced
0
50
100
150
Kilometers
Miles
Peak Horizontal Acceleration
With 10 Percent Probability of Exceedance in 50 Years
Seismic-Hazard Map for the State of Montana
Source and Reference Material: USGS - http://pubs.usgs.gov/sim/2005/2883/pdf/2883-1.pdf
GIS Bureau


Eder's Ln
141
Cut Off Rd
Image USDA Farm Service Agency
© 2012 Google
Image © 2012 TerraMetrics
2124 ft
Imagery Date: 8/11/2011
1997
lat 46.858507° lon -112.687016° elev 6685 ft
Eye alt 12672 ft
Google earth

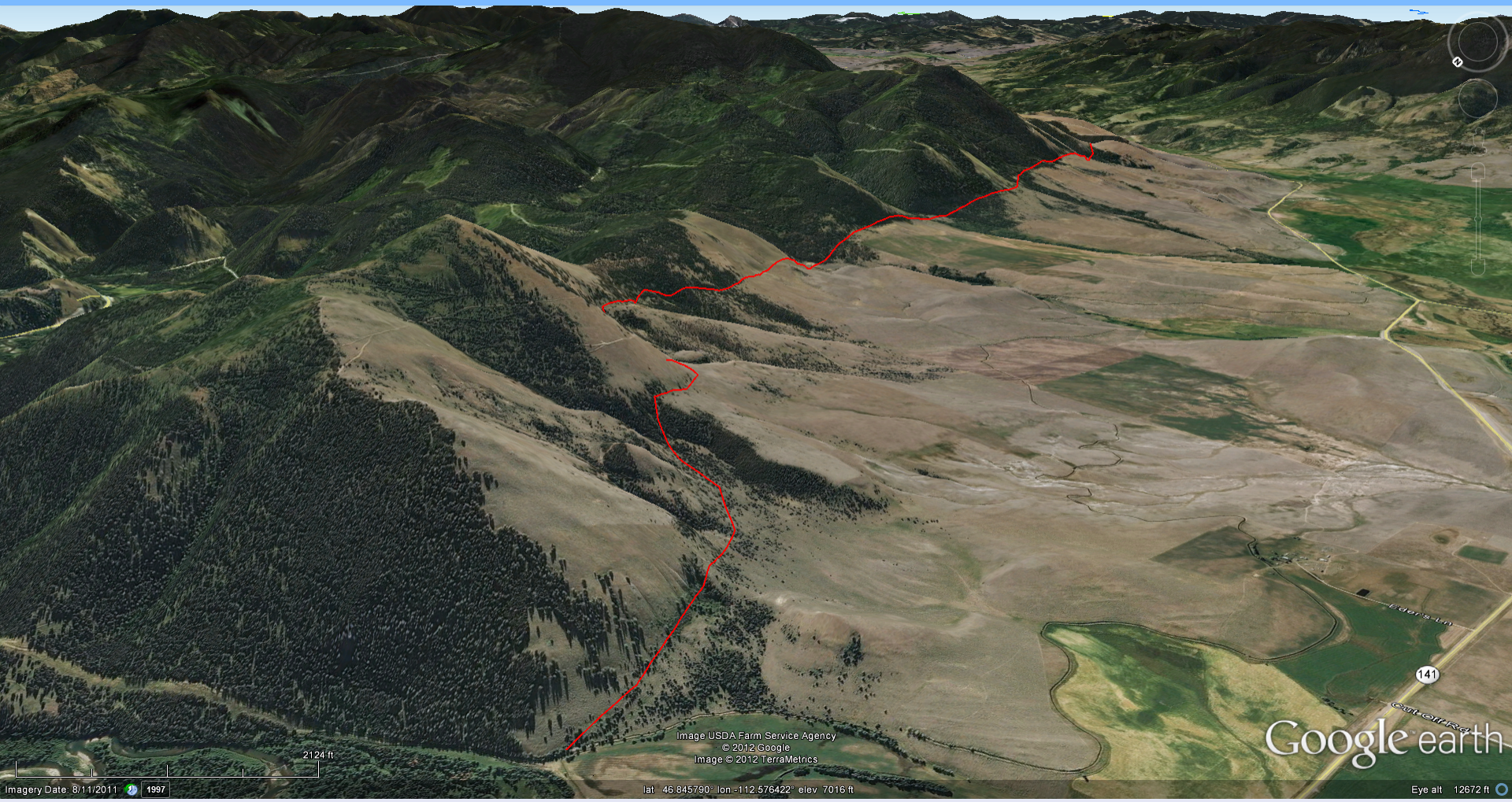


Image USDA Farm Service Agency
© 2012 Google
Image © 2012 TerraMetrics
2124 ft
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1997
lat 46.845790° lon -112.576422° elev 7016 ft
Eye alt 12672 ft
141
Google earth

Bloody Dick Rd
Image USDA Farm Service Agency
© 2012 Google
Image © 2012 GeoEye
Google earth
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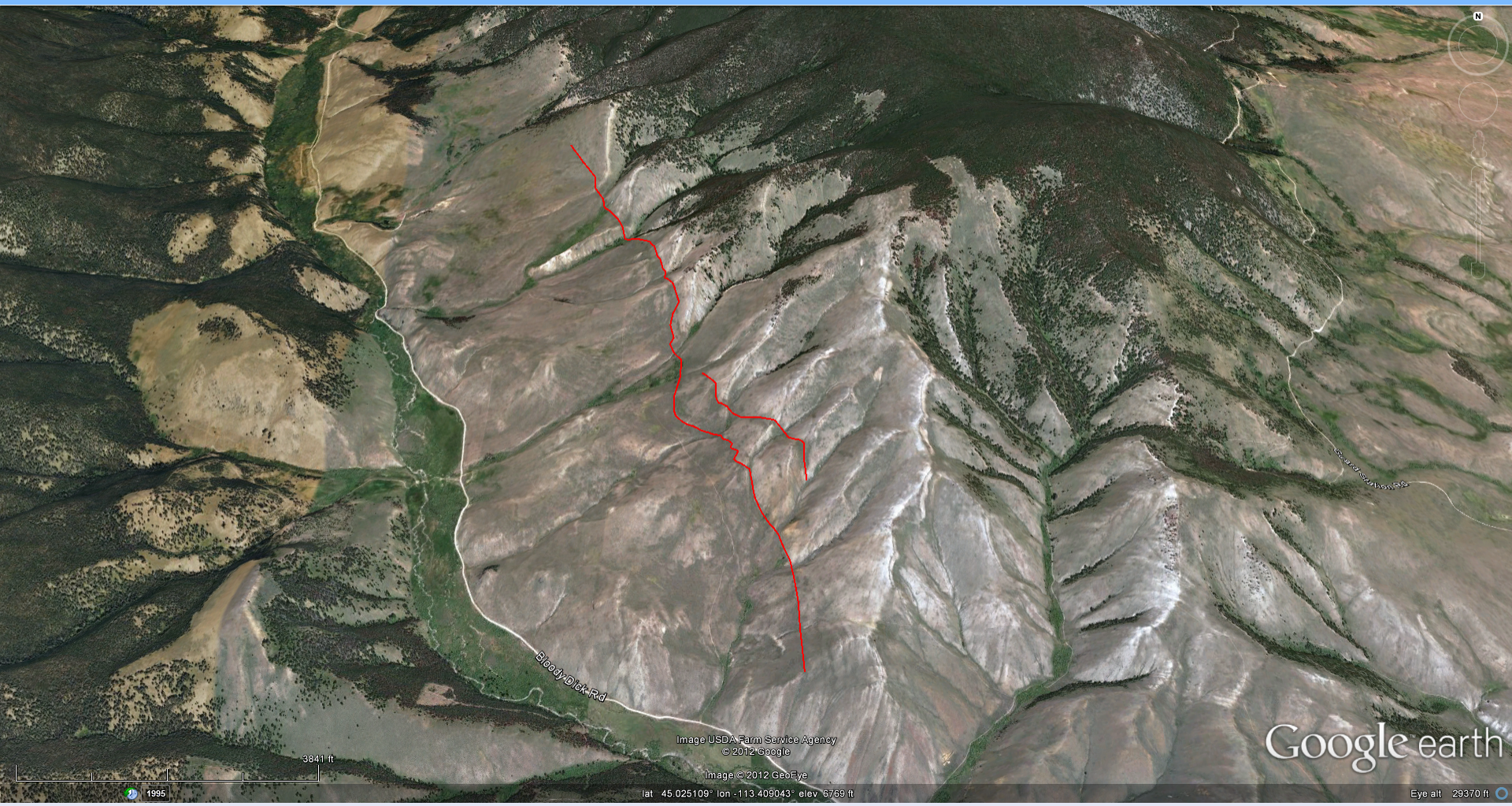
Bloody Dick Rd
Image USDA Farm Service Agency
© 2012 Google
Image © 2012 GeoEye
3841 ft
1995
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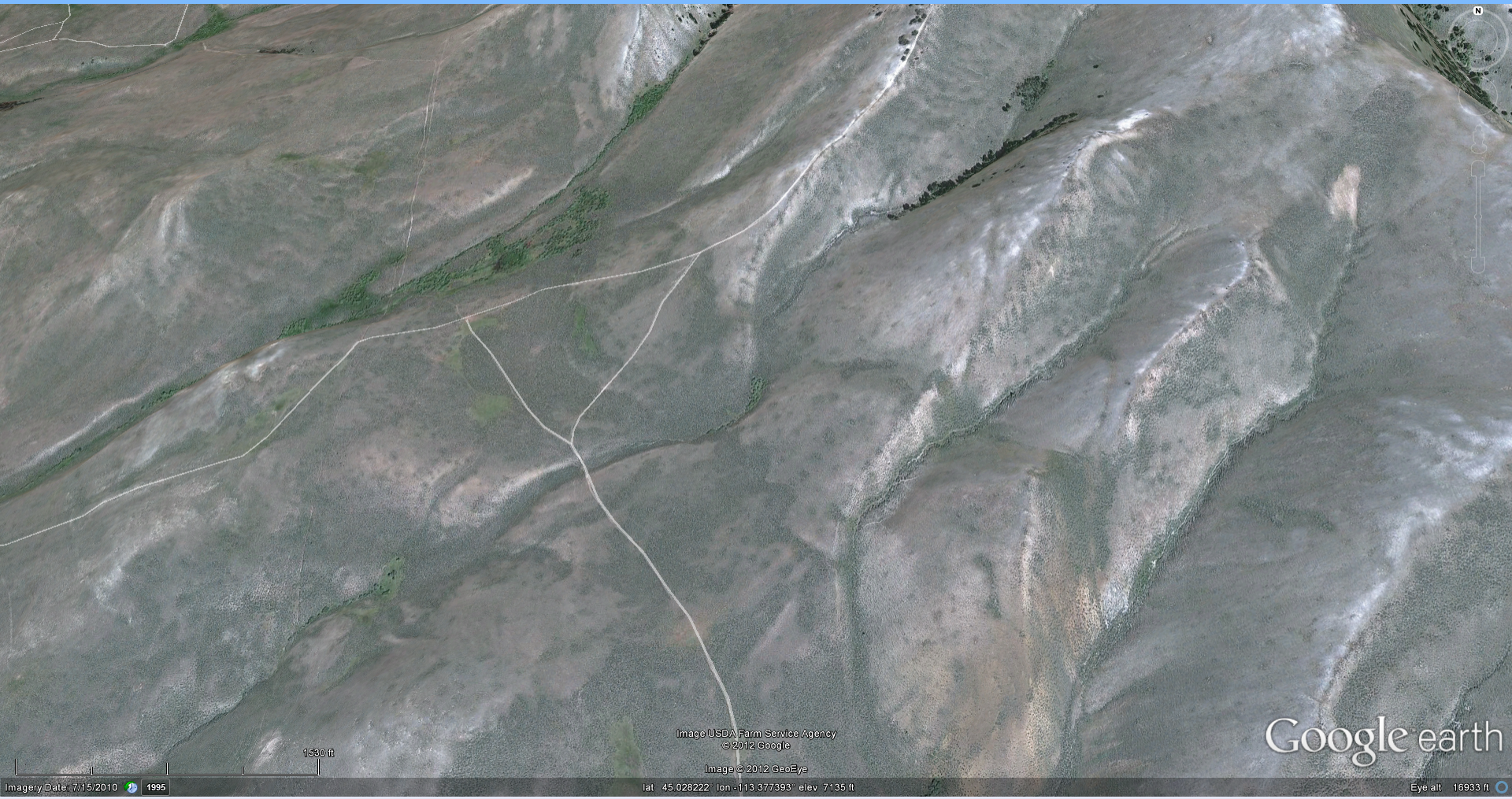
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1530 ft
Image USDA Farm Service Agency
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