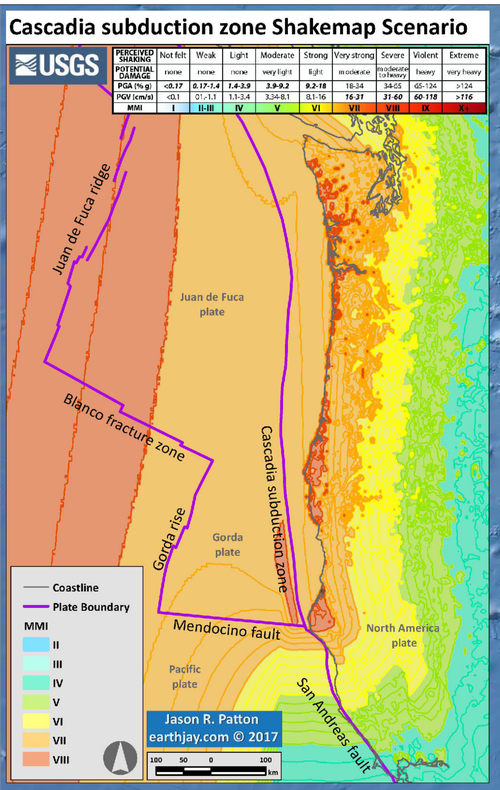
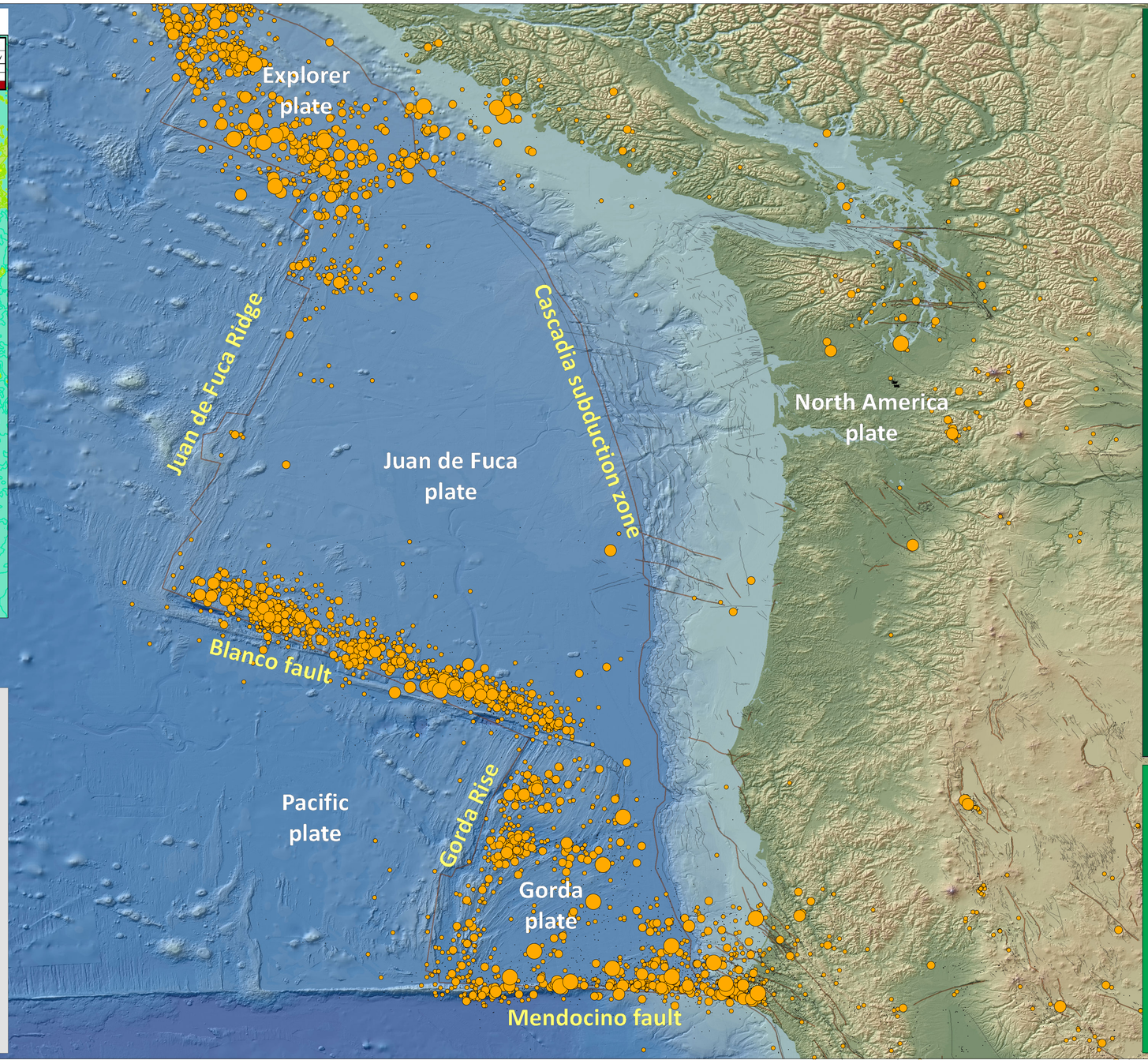
Cascadia subduction zone - Seismicity (USGS 1969-2019 M > 3)





Seismicity (USGS)

Magnitude

- 3.0 - 3.8
- 3.9 - 4.7
- 4.8 - 5.5
- 5.6 - 6.4
- 6.5 - 7.2

Fault (USGS)

Fault (GEM)

Topography: GMRT 2019

GEM GLOBAL EARTHQUAKE MODEL working together to assess risk

Jason R. Patton
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USGS science for a changing world

0 50 100 200 Miles

0 75 150 300 Kilometers

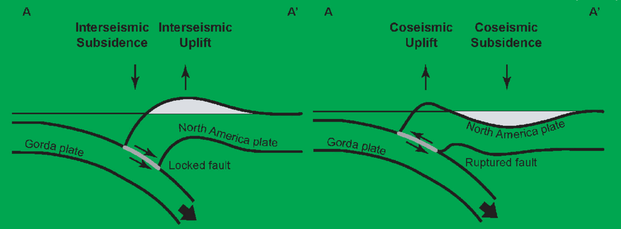
Cascadia subduction zone

Chaytor et al. (2004)
Nelson et al. (2004)

Plate configuration for the Cascadia subduction zone (CSZ). The Juan de Fuca and Gorda plates are subducting northeastwardly oblique beneath the North America plate at ~36 mm/yr in the Humboldt Bay region. Paleoseismic core sites (marine and terrestrial) are plotted as circles.

Vertical Motion: Coseismic vs. Interseismic

Plafker (1972)



Schematic diagrams showing the pattern of (A) inter-seismic and (B) co-seismic deformation associated witha subduction zone earthquake during an earthquake deformation cycle. Adapted from Plafker (1972) to reflect the spatial pattern of tectonic deformation during the earthquake cycle in Cascadia.