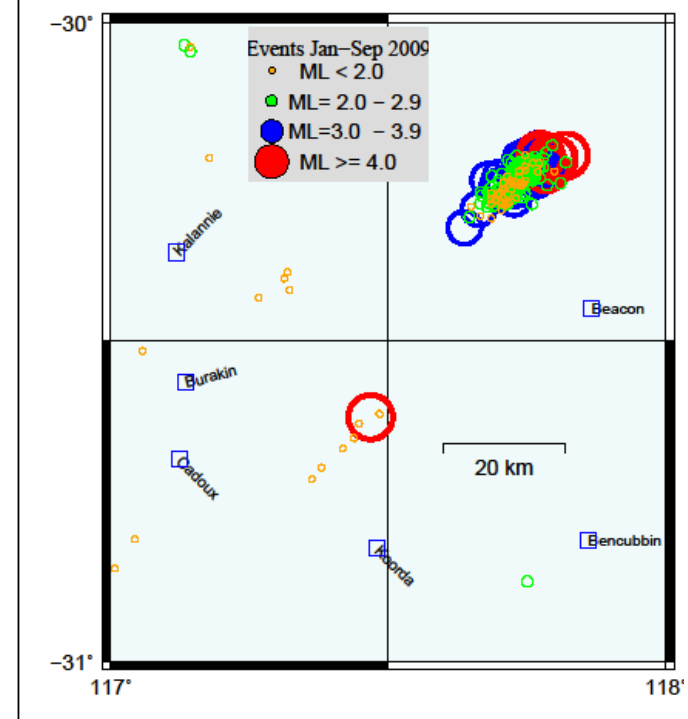


1. A major series of earthquakes was experienced at Beacon, approx 300 km NE of Perth, commencing on 30 Jan 2009. There were ~150 events in first 24 hours, with many felt, and some damage to the nearest residents. Most of the activity was in the first 48 hours, but events continued until Aug 2009. In total there were five events over Magn 4.0



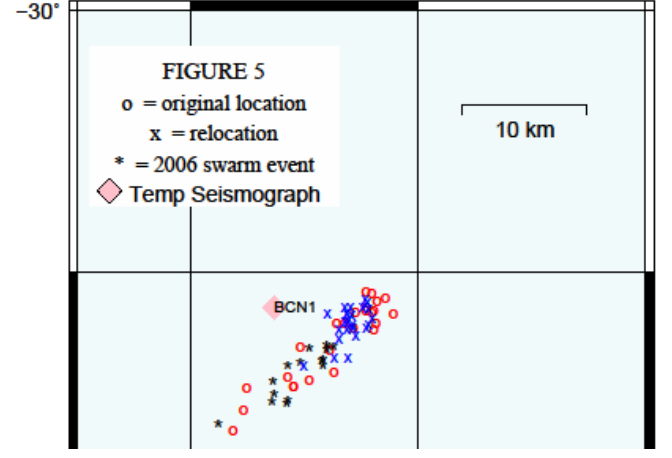
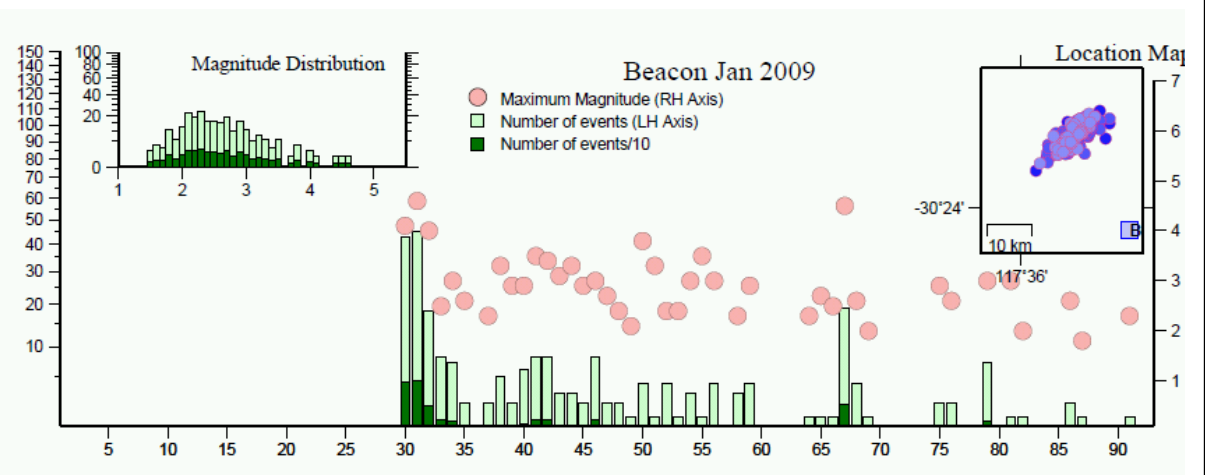
2. one of Australia's most significant earthquake sequences in past 20 years, and part of an interesting history of significant recent activity in the northern regions of the southwest seismic zone of WA. An even more significant period of activity occurred at nearby Burakin between 2000 and 2002

5. the plot of locations by Geoscience Australia shows an apparent NE-SW trend in epicentres

3. the series is called a swarm because the largest events occurred some time after the initiation of activity, and there are a number of events at approx the same maximum magnitude

4. a lesser swarm of events from the same area was recorded in March 2006, and prior to that, another small swarm in May 2005. This suggests a pattern of on-going seismic activity at this location

11. A plot of the frequency-magnitude distribution of events in the swarm shows an approximate log-linear relationship, with a change in slope occurring at about magnitude 2.3. This suggests that not all the events in the swarm with magnitudes less than 2.3 have been located.



9. at the present state of knowledge of the geological and geophysical characteristics of the epicentral region, there is no suggestion of a significant fault in the area, or other reason for the concentration of seismic activity there.

7. Three temporary seismographs were installed in the area, and the data from these stations suggests that the trend is probably due to the poor distribution of the permanent (ANSN) stations around the events, resulting in large uncertainties in the locations.

8. The series is within the so-called "Southwest seismic zone" of Western Australia, a zone of continued significant seismic activity over the years (including the damaging events at Meckering (1968, mag 6.7) and Cadoux (1979, mag 6.1)).

10. Focal depths are not well constrained. Relocations using the best available data suggests that the focal depths are less than 2 km, and that is also consistent with other events in the general area, which have been well located. However, events of such shallow depths should also develop Rg phases in their seismic signatures, and these phases do not seem to be present in

11. A plot of the frequency-magnitude distribution of events in the swarm shows an approximate log-linear relationship, with a change in slope occurring at about magnitude 2.3. This suggests that not all the events in the swarm with magnitudes less than 2.3 have been located.

