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Relationship between marine mammal stranding events and offshore earthquakes

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The causes of marine mammal stranding events are largely unknown, but may relate to ocean currents, severe weather, anthropogenic noise pollution, and other factors. Large stranding events have been suggested to occur as a result of offshore earthquakes but there is little evidence as yet to support this hypothesis. Stranding events occur in hotspots, which are sometimes areas of high seismic activity, such as Taiwan, and other times, in areas that are removed from seismic zones, such as Cape Cod. We analyse a large and robust dataset of marine mammal stranding data collected off the coast of Washington and Oregon from 1999 to 2010, to look for statistical connections to offshore earthquakes. We looked forward, as well as backward in time from significant seismic events, to ascertain whether stranding occurrences, if connected to earthquakes, are a result of the earthquake preparation period or the earthquake itself. Possible mechanisms are discussed.