GEOG 1000 – Assignment 3

Reading assignment: *Forecasting California's Earthquakes – What can we expect in the next 30 years?*

Date Due: Friday March 17, 2014

Total Marks = 30 (8% of total grade for class)

Late penalty = 10% per day late to a maximum of 3 days.

PLEASE PRINT ANSWERS AND BRING TO CLASS BY THE DUE DATE

Make sure to include your: Name; Student ID; and Email

In this popular article, scientists discuss earthquake forecasting in California, and what might be in store for the next 30 years.

Questions: Answers should not exceed one page in total (for all three question groups). Please read the entire 4 page article.

1. *Mapping probabilities or 'forecasts' is an important method used for estimating where an earthquake might occur in the future. Describe what is meant by 'probability' (using either this article or another source) (4 marks) and relate this to another naturally occurring event (2 marks). Please state your source for information if you use additional literature. Total = 6 marks.*

2. *Using the map on Page 1: California Area Earthquake Probability, describe areas of high vs. low probability: a) where do we find areas of greatest probability and lowest probability for earthquakes using north, south, east, west, centre, etc. descriptors (4 marks); b) in which direction do the lines of high probability for earthquakes occur (1 mark); c) do you think that living between the areas of high probability on the map will exclude you from the effects of a magnitude 5 earthquake? What about a magnitude 7.0 earthquake (why/why not)? (5 marks). Total = 10 marks*

3. *a) Using the vector (arrow) map on pg 2, and the fault map extending from pages 2-3, describe the relationship between tectonic movement (velocity) and the formation (or lack thereof) of fault lines (6 marks). b) Using these maps, why do you think that the greatest probability for a magnitude 6.7 occurs in the southern part of California (4 marks)? c) Where did most of the earthquakes occur in the past in California (e.g. describe clusters of epicenters on the Seismology map, relative to their north, south, east, west, centre, etc. locations and fault lines) (4 marks). Total = 14 marks.*