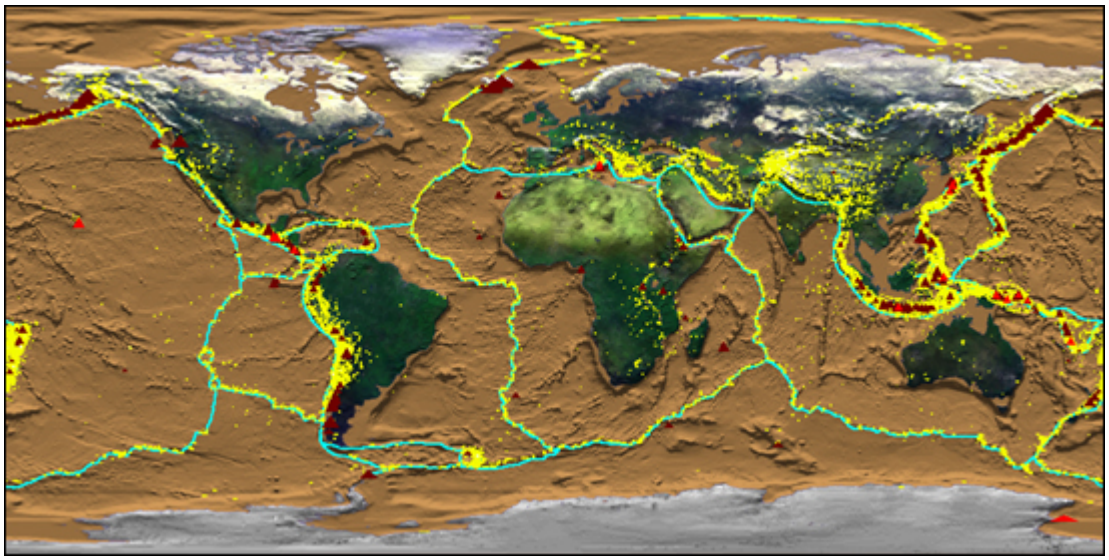
EARTH 270 – DISASTERS AND NATURAL HAZARDS

Instructions for Disaster Project 2018



1. **Introduction:** A disaster event has been assigned to each of you. The list is posted on the EARTH 270 UW-LEARN site. A 3,000 word report (not including references and figure captions) is required on Thursday, March 29 at 6:30 p.m. The report will outline the location, geological/hydrological/atmospheric setting, event chronology and characteristics, damage and losses, and lessons learned for the disaster in question.

   This task is typical of when earth scientists prepare disaster reports for governmental organizations (e.g. UN Development Program), financial institutions (e.g., World Bank), re-Insurance Companies (e.g., MunichRe), scientific organizations (national geological surveys) and humanitarian organizations (e.g, Red Cross/Red Crescent).

2. **Report length**: **3,000 words, 1.5-line spacing, 12pt font (roughly 9.5 pages)**. The words included in figure and/or photograph captions does not count in this limit. Neither does the title page. Tables do count in the word limit. Words in reference list do not. All references used in the report should be listed in a separate page at the end of the report.

3. **Format**: The report should be prefaced by an **Executive Summary** of 150 words (strict limit). Use effective headings to organize your report. Refer to figures in sequential figure numbers (e.g., Fig. 1) and include figures in sequence after the reference list in your report. Number all pages and use captions for all photographs and figures.

4. **Deadline**: On Thursday, March 29, at 6:30 p.m., you must hand in a paper copy of your report for marking. **Note: submission of project report is a requirement for EARTH 270 you cannot pass this course without submitting your disaster report.**

5. **Grading**: 85% of the grade for this report will be on the **content** – this includes thoroughness, quality of discussion, extent to which you have addressed the issues, and the success of integrating all data into a viable report. The other 15% will be based on the **presentation quality**. Included in this portion is length, appearance, use of maps and illustrations, how you attributed your information (is it clear which information came from which source?), and the reference list.

6. **Information you must include and issues you must address**;

1) **Disaster Location**: longitude, latitude, country, near any major feature. **Google Earth** is essential/indispensible in this. If you have been given a regional disaster give the location of its major city. A clear map is essential.
2) **Disaster Context:** e.g., what were the conditions before the disaster struck, global and regional geologic/atmospheric/hydrological processes
3) **Disaster Drivers**; what were the main causes of the disaster
4) **Hazard Magnitude:** what was magnitude of hazard that caused the disaster (e.g. Richter magnitude, Saffir-Simpson, Fujita, etc)
5) **Hazard Frequency:** e.g., what was frequency of disaster-causing-event? Rare, common?
6) **The Lesson of Precedent**? Had a similar occurrence happened before? In historical time or prehistoric time.
7) **Effect of Human Activity (if any**?) Did human activity contribute to event occurrence and/or losses
8) **Magnitude of Losses** (death toll/economic losses)
9) **Why did so much loss ensue?** e.g. overwhelming magnitude? Population density? Poor construction? Land Use policy?
10) **How could this have been mitigated**? e.g., what could have been done to prevent loss – if anything?
11) **Onset Conditions and Warning**? Were there any onset conditions that could have foretold the occurrence? Was there warning time? Was there warning?
12) **Lessons Learned?** In conclusion what are the lessons learned which may be applied to reduce similar losses in the future.

7. **References and sources**: Reference all information (books, articles, papers, web pages, etc.). Choose any reference format as used in any common scientific journal (e.g., *Geomorphology*, *Canadian Journal of Earth Sciences*) but be consistent. Reference list must be alphabetical. You **must** attribute specific facts to specific sources.
Example from a recent paper:

The 1962 and 1970 mass movements originated on the steep west face of the North Peak (Pico Norte) (Fig. 4) of Nevados Huascaran (6654 m.a.s.l.), occurring in comparatively young terrain in a very active tectonic and geomorphologic environment (e.g., McNulty and Farber, 2002). The Huasacran massif itself is mainly made up of massive intrusive rocks of the Miocene/Pliocene Cordillera Blanca batholith (Cobbing

et al., 1981) consisting of massive tonalite and granodiorite. Geological mapping has shown that the intrusive

Example of reference format in reference list is as follows;

Clapperton, CM (1983) The glaciation of the Andes. Quaternary Science Reviews, 2: 83-155

Clapperton CM, Hamilton P (1971) Peru beneath its eternal threat. Geographical Magazine, 43: 632-639

Cluff, L.S. (1971) Peru earthquake of May 31, 1970; engineering geology observations. Bulletin Seismological Society of America, 61: 511-533

Cobbing, EJ, Pitcher, WS, Wilson, JJ, Baldock, JW, Taylor, WP, McCourt, W, Snelling, NJ (1981) The geology of the western Cordillera of northern Peru, Institute of Geological Sciences Overseas Memoir 5, Her Majesty's Stationery Office

Craig, RF (2004). *Craig's Soil Mechanics*. 7th Edition, Spon Press, London and New York

Crozier, MJ (2004) Landslide. In: Goudie, A (ed) *Encyclopedia of Geomorphology*, Routledge, London, pp. 605-608

8. Do not forget **page numbers**!

9. **Academic Discipline Issues:** Please also note UW Policy 71 -- Student Academic Discipline Policy; http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm

Plagiarism, which is the act of presenting the ideas, words or other intellectual property of another as one's own. The use of other people's work must be properly acknowledged and referenced. The properly acknowledged use of sources is an accepted and important part of scholarship. Use of such material without complete and unambiguous acknowledgement, however, is an offence under this policy.

10. **ONE FINAL NOTE - A STUDENT CANNOT PASS THE COURSE (OR GET CREDIT FOR MARKS IN THE COURSE) IF THE ASSIGNED DISASTER REPORT IS NOT SUBMITTED BY THE DUE DATE NOTED ABOVE.**

SGE: January 23, 2018