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| EENS 204  | Natural Disasters       |
| Tulane University   | Prof. Stephen A. Nelson |
| <b>Homework I. Natural Disaster Information on the Internet</b> |                         |

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The purpose of this assignment is to help you become familiar with the various types of natural disaster information available on the Internet. While the Internet is continuing to evolve and is changing the way people think about information resources, it can also be dangerous. Among the dangers involved are: (1) you can end up wasting a lot of time because you continually find new and interesting places to visit; (2) not all information on the internet is necessarily reliable; (3) there is a chance that you can run into something that you don't want to be exposed to, and (4) Malicious web sites can download and install spyware and parasites that can interfere with the normal operation of your computer. Try to avoid these pitfalls in carrying out the following assignment.

**Answers to these questions should be typewritten.**

- Using the Web Browser of your choice go to the Google Search Engine: <http://www.google.com>). Once in Google, do a search for asteroid and comet impact hazards, by typing in the the following words:

asteroid comet hazards

Make sure to include the spaces.

Google should return a list of sites that contain these words. One of the sites should be the *NASA Ames Research Center Asteroid and Comet Impact Hazards Page*.

On this page notice that there are links to various pages that give further information. For example: a catalog of all known Near Earth Objects (NEOs), reports concerning the possibility of impacts (Government Studies), and a multimedia gallery.

First, read the Introduction and FAQs section (FAQ stands for Frequently Asked Questions) and answer the following questions

- What is the threshold size of an object that would produce a catastrophic disaster if it struck the earth? **(1 point)**
- How often is it expected that an asteroid or comet with a diameter greater than this threshold size strikes the earth? **(1 point)**
- Why would collision with such an object produce more than just a local effect? **(1 point)**
- Have there been any historic examples of a collision with an NEO? If so, when and where? (Note that historic in this context refers to **human recorded history**) **(2 points)**

- e. Is there any evidence that a **large** NEO collided with the Earth at **any time** in its history? If so, when and where was this impact event, and what were the consequences for the inhabitants of the planet at the time? (hint: look in the multimedia gallery). **(2 points)**
2. On December 26, 2004 an earthquake in Indonesia produced a tsunami that resulted in one of the greatest disasters in human history. Use the internet search engine of your choice to answer the following questions about this disaster.
    - a. How big was the earthquake that caused the tsunami? **(1 point)**
    - b. What countries were directly affected by the tsunami? **(1 points)**
    - c. What country that was affected was farthest away from the epicenter (source) of the earthquake? **(1 point)**
    - d. What is the estimated death toll from this event? **(1 point)**
    - e. Why was the death toll so high? **(1 point)**
    - f. What could have been done in the years preceding the disaster to mitigate against the large number of deaths? **(2 points)**
  3. Some Web sites offer News sources and archives that can be searched. One of these is Yahoo News - <http://news.yahoo.com/>. Use the **Advanced** search feature on the Yahoo News site to answer the following questions. Note that the Advanced Search feature allows you to not only search for key words, but to eliminate certain words from the search, limit the search by date or ranges of dates and to sort the results in different ways.
    - a. Did any tropical cyclones (hurricanes, typhoons, or cyclones) occur since **August 1 , 2009** that caused **more than 50 deaths** ? If so, give the location, date, number of casualties, , and estimated damage, if available, for each of these events. (Note that there is usually more than one article that reports on any given event, make sure you look at the most recently updated information for the event). **(2 points)**
    - b. Next, find out if any landslides (including mudflows and "mudslides") have caused loss of life or property anywhere in the world since **August 1 , 2009**? If so, give the dates, locations, number of casualties, economic damage, and cause, if available, for these landslides. **(2 points)**
    - c. Is it possible to have an event that causes more than one hazardous process to occur? Give at least one example based on what you learned in answering parts a and b. **(1 point)**
  4. Some other sources of current up to the minute news are as follows:

ABC News: <http://abcnews.go.com>

CBS News: <http://www.cbsnews.com>

CNN News: <http://cnn.com/>

USA Today: <http://www.usatoday.com/>

MSNBC: <http://msnbc.com/>

Google News: <http://news.google.com/>

Earth Week: <http://www.earthweek.com/>

These sources will be helpful when you need to follow a natural disaster that occurs during the course. For now, log on to each one of these sites and see if there is any news on **any** natural disasters that have occurred since the beginning of this course. If you find any, be sure to keep track of them for your disaster summary. Note that some of these services allow you to set yourself up to receive an email informing you each day of any event that has occurred based on a key word. For example, I have set up a "News Alert" at google.com to send me information on any natural disasters that occur, using key words such as "natural disasters", "landslide", "earthquake", "flood", tornado, etc. Yahoo has a similar service. A service such as this is useful for keeping track of information for your disaster summary.

For this question, provide the same information you provided in question 3 for each natural disaster that has occurred **since the beginning** of the course (August, 2009). **(2 points)**

5. Use the search engine of your choice (I recommend <http://www.google.com>) to locate pages on the NOAA (National Oceanographic and Atmospheric Administration) website concerning the following topics. Answer the questions for each topic.
  - a. Find a NOAA news story published in 1999 about last century's (1900 - 1999) top weather, water, and climate events. Give a list of what NOAA considers the ten worst events in **both** the **U.S.** and the **World**. **(4 points)**
  - b. Find a report about Billion Dollar U.S. Weather Disasters from 1980 to 2008, and answer the following questions Be sure to look at all maps and charts:
    - i. What **region** has the highest number of weather related disasters that cost over \$1 Billion during this time period. What reasons can you suggest that might explain why this region is subject to so many damaging events? **(1 point)**
    - ii. What **state(s)** appear(s) to be the safest when it comes to costly weather related disasters (be sure to consider **all** states)? **(2 points)**
    - iii. What is the single most costly weather event to have hit the United States during this time period? **(2 points)**

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