

EENS 3050/6050

Natural Disasters

Tulane University

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Homework I. Natural Disaster Information on the Internet

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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.

1. 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 Near Earth Objects* Page.

This page has changed recently, and is not longer as concise and user friendly as it used to be. Nevertheless, you should be able to find the answers to the following questions. If necessary, search for other web pages.

- a. What is the threshold size of an object that would produce a catastrophic disaster if it struck the earth? **(1 point)**
- b. How often is it expected that an asteroid or comet with a diameter greater than this threshold size strikes the earth? **(1 point)**
- c. Why would collision with such an object produce more than just a local effect? **(1 point)**
- d. 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)**
- f. In June of 2012, Asteroid 2012 LZ1 passed fairly close to the Earth (in astronomical

- terms). Although it is was not a threat to Earth, after it passed, two serious issues were raised concerning the asteroid's discovery and size. Use the search engine of your choice to find out about these issues (note that it is important to look for articles published after the asteroid passed). What are these two serious issues? **(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.
- How big was the earthquake that caused the tsunami? **(1 point)**
 - What countries were directly affected by the tsunami? **(1 points)**
 - What country that was affected was farthest away from the epicenter (source) of the earthquake? **(1 point)**
 - What is the estimated death toll from this event? **(1 point)**
 - Why was the death toll so high? **(1 point)**
 - What could have been done in the years preceding the disaster to mitigate against the large number of deaths? **(1 point)**
3. Some Web sites offer News sources and archives that can be searched. Among these are:

Yahoo News <http://news.yahoo.com/>

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

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

NBC News: <http://www.nbcnews.com/>

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

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

The Guardian <http://www.theguardian.com/world/natural-disasters>

Huffington Post Natural Disasters Page: <http://www.huffingtonpost.com/news/natural-disasters/>

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 large earthquake occurred off the coast of Japan in March of 2011. Briefly describe the event, providing information about the size of the event, the amount of damage, and the number of casualties. What was the most destructive aspect of this earthquake, and what is likely to be the most long lasting effect of this disaster. (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)**
- Hurricane Irene hit the east coast of the United States between August 27 and 28, 2011. Describe the disaster and provide information about the amount of damage, number of casualties, and areas affected,. What was the major cause of damage due to the event? **(2 points)**

- c. Is it possible to have an event that causes more than one hazardous process to occur? Give at least two examples based on what you learned in answering parts a and b. **(1 point)**
4. The news sources listed in question 3 will be helpful when you need to follow a natural disaster that occurs during the course. 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 disaster", "landslide", "earthquake", "flood", "tornado", "eruption", "tsunami", etc. Yahoo has a similar service. A service such as this is useful for keeping track of information for your disaster summary.

For now, remind yourself of the information you will need and the format for reporting disasters for the Disaster Summary, by going to the Disaster Summary Information page - http://www.tulane.edu/~sanelson/Natural_Disasters/disasterssummaries2018.htm. Then, as practice for the final disaster summary, find information on the 2 major disasters that occurred in the 1 month period prior to the start of the course and report it in the same format you would for the final summary. Note that your summaries will likely be less than a page long for each disaster and you should use the same format outlined in link above. Note also, that since both of these disasters occurred before the course started, neither should occur in your final disaster summary. **(4 points)**

5. Use the search engine of your choice (I recommend <http://www.google.com>) to locate pages 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 worst events in **both** the **U.S.** and the **World**. Note that you may need to find more than one web page to get both the U.S. and World articles. **(2 points)**
 - b. Every so often, the Sun produces massive solar flares that could have an effect on Earth. We are not going to cover this type of an event in this course, nevertheless it is something to be aware of. Answer the following questions concerning such events.
 - i. What would the effect on humans be if a massive solar flare were to hit Earth? **(1 point)**
 - ii. Has such an event happened within human history and what effects did it have on humans? Explain **(1 point)**
 - iii. What could we as humans do to avoid the effects of such an event? **(1 point)**
 - iv. Have there been any close calls for such in an event within the past 10 years? Explain **(1 point)**

Extra Credit Question - What kind of event caused the damage seen in the photograph at the top of the EENS-3050 web page? **(2 points)**

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