**ES106 Earth System Science Cyber Monday Class Assignment for August 24, 2015**

Read the following journal article: Komar, 1992, Ocean Processes and Hazards Along the Oregon Coast. Answer the following questions using a combination of Microsoft Word, google, Wikipedia, and the Komar journal reading. Where the questions require a “sketch”, you can either hand draw, scan and paste an image; or use your favorite web resource to copy and paste a published image.

Include a hard copy of your answers and sketches in your lab/homework packets due next week.

Komar, 1992, Summary Questions:

1. Describe the tectonic setting and plate boundary condition of Coastal Oregon.
2. True or False: from 1930 to 1970, all coastal areas of the U.S. have been subject to sea level rise due to global warming. Explain your answer.
3. Describe the patterns of vertical tectonic uplift and subsidence of the Oregon Coast, from south to north, latitude 42 to 46 degrees north.
4. According to climate predictions, how much atmospheric temperature change is expected globally by the year 2050, due to global warming? How much vertical sea level rise is expected by the year 2025? What does sea level rise mean in terms of horizontal inundation of land areas, and extent of coastal flooding?
5. What is the primary agent of land erosion in coastal areas of Oregon?
6. List the three factors that control wave production in coastal areas?
7. Describe the seasonal changes in wave energy, wave height and wave erosion along the Oregon Coast.
8. How to summer waves compare to winter waves, and what is the reason for their differences?
9. Which months of the year are typically associated with the highest amount of wave energy? Which months the lowest? Why?
10. True or False: Oregon beaches and beach sand, are very static and unchanging throughout the year. Explain your answer.
11. What is a rip current? How does it form? Draw of sketch of rip currents and their formation. How do rip currents effect Oregon beaches?
12. Define the terms “littoral drift” and “longshore drift”. Draw a sketch.

***MORE QUESTIONS NEXT PAGE…***

1. What is a “pocket beach”? Define and draw a sketch. What factors create pocket beaches on the Oregon Coast?
2. True or False: sea level and the shoreline at the Oregon Coast have been exactly in the same location for the past 20,000 years, as they are today. Explain your answer.
3. Based on mineralogical analysis of beach sand at the Oregon Coast, discuss the primary source of most sand/sediment found in Coastal Oregon. Where is the sand coming from? The Coast Range to the east? Columbia River to the north? or other source areas to the South?
4. True or False: during low sea level stands, coastal rivers form extensive estuaries and flooded tidal bays along the coast. Explain your answer.
5. Define the term “jetty”, draw a sketch, what is their purpose?
6. Define the terms “spring tide” and “neap tide”.
7. Describe the atmospheric and ocean conditions that lead to the phenomenon of “El Nino” on the west coasts of the U.S. and South America. Draw a sketch map illustrating your answer.
8. True or False: El Nino years on the Oregon Coast result in less beach erosion and more stability. Explain your answer and provide 2 pieces of evidence that support the results of your conclusion.
9. Define the term “spit”, draw a sketch. True or False: it is a really good idea to buy beach property and build expenses homes on Oregon coastal spits? Explain your answer.
10. Define the term “rip rap”, how is it used with respect to coastal erosion. Draw a sketch.
11. List the primary factors that effect sea cliff erosion on the Oregon Coast. Draw a sketch.
12. True or False: it is a really good idea to buy coast property and build expenses homes with nice ocean views on Oregon sea cliffs? Explain your answer.