**Sea-level in Google Earth**

Google Earth provides a great way to look at sea-level trends around the world, a topic that is highly relevant to understanding coastal sediment transport. Remember that sea-level at individual locations can change because of processes operative globally (e.g., the volume of water in the ocean is increasing due to glacial melting to the expansion that occurs as the oceans warm) or due to local effects. Local sea level change may be caused by movements of the Earth’s crust (e.g., due to isostatic rebound after glaciers melt or to faulting/folding) or by the deposition or compaction/subsidence of sediments on the seafloor.

**Instructions:**

1) Open Google Earth

2) Navigate to the National Oceanic and Atmospheric Administration (NOAA) web page <http://tidesandcurrents.noaa.gov/googleearth.shtml> and select Sea Level Trends.

3) Return to Google Earth.

**Looking at the data:**

1. First take a look at the East Coast of North America. Note that these trends are based on the record of tidal currents from gauges that are fixed to the seafloor (click on any one of the stations and follow the link to “sea level trends” to see the data—the Charleston, SC record is a particularly nice example). Approximately what is the average rate of sea-level rise along the East Coast?
2. Now travel up the coast to Canada. Can you explain why the gauges at Quebec and Pointe Au Pere indicate that sea-level is falling?
3. Scoot down to the Gulf of Mexico. How would you describe the sea-level trends at Eugene Island and Galveston Pleasure Pier compared to those on the East Coast? Can you think of explanations for the differences?
4. Now take a trip to Alaska (you can see Russia from there!). What is going on with sea-level at Cordova? Make sure to take a look at the sea-level trend data—what do they indicate about changes in this region during the past 50 years? (You might also want to look at the record from Kodiak Island)
5. Finally—take a trip around the world. Some interesting places to observe: the Hawaiian Islands, northern Europe/Scandinavia, the Maldives (-0.652306, 73.173140). Why are the people of Maldives particularly concerned about sea-level rise?