**Coastline data info**

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These are vectors used to draw coastlines on plots. They are particularly useful when editing a grid.

The original data source is the USGS Coastline Extractor: <http://www.ngdc.noaa.gov/mgg/coast/>

over the range 41 to 53 latitude and -132 to -121 longitude, downloaded 5/2/2011 by PM, and by Sarah Giddings for the river file.

They are extracted at two resolutions and saved in uncompressed “matlab format” (this is what the coastline extractor calls it, it actually makes the .txt files) at two resolutions:

* High-res: from the NOAA/NOS Medium Resolution Coastline (designed for 1:70,000). This is the best resolution but it is missing Canada! Saved as pnw\_coast\_detailed.txt
* Mid-res: from the world Vector Shoreline (designed for 1:250,000). This has lower resolution but includes Canada. Saved as pnw\_coast\_regional.txt
* Rivers: from World Data bank II (1:2,000,000). This is the lowest resolution and may have some datum offsets. This is evident for example when you overlay it with Columbia River from the “detailed” coastline dataset.

Then these are converted to matlab format using the code *coast\_mat\_maker.m*, which creates fields of the same names, but with a .mat extension. I also added a couple of points to the 'detailed' vectors to include the south jetty at the Columbia River mouth (estimated from a google earth map). The variables inside are column vectors of decimal degrees 'lat' and 'lon'. We also create a combined file called that is both coastline files (has a lot of overlap). Use *coast\_plot.m* to plot them all.

So the final list of files is:

* **pnw\_coast\_detailed.mat**
* **pnw\_coast\_regional.mat**
* **pnw\_coast\_combined.mat**
* **pnw\_rivers.mat**

NOTE: need to add info about the horizontal and vertical datums.

**UPDATE 10/12/2012**: I wrote the program *separate.m*, and created the vector “**separator.mat**” to cut out the overlap of regional coast on US land where detailed is better. These are then combined and are the new version of “**pnw\_coast\_combined.mat**.” The data names and its uses in functions like *Z\_addcoast.m* is unchanged.