

Sea Level Change

Focus Activity

- Hands-on Activity

Sea Level Change

- Examples & Causes
- Classification

Recent History

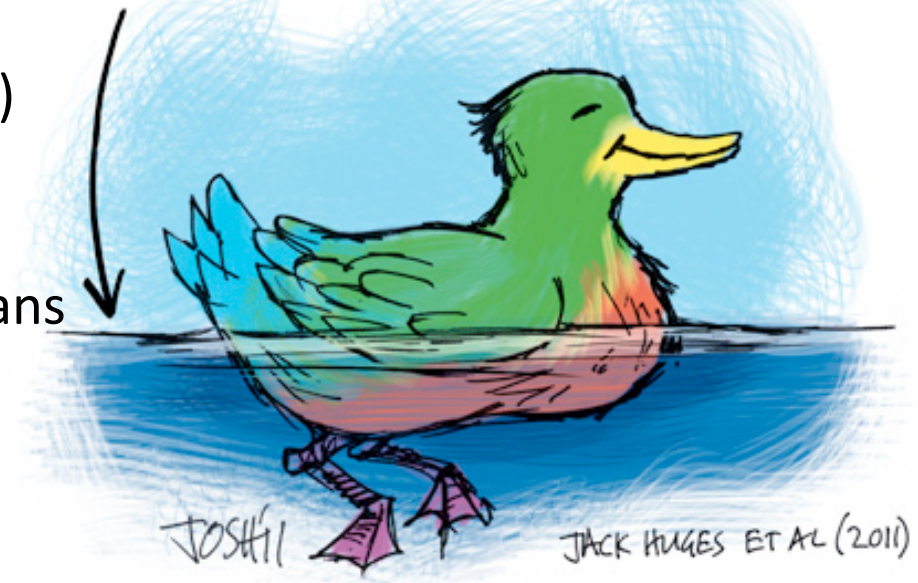
Spatial Variability (i.e., geographically)

- Satellite Evidence

Impacts of Sea Level Change on Humans

CONCLUSIVE PROOF OF STABLE SEA LEVELS

STILL ONLY COMES
HALF-WAY UP A DUCK



Focus Activity

- Hands-on Sea Level Change Activity



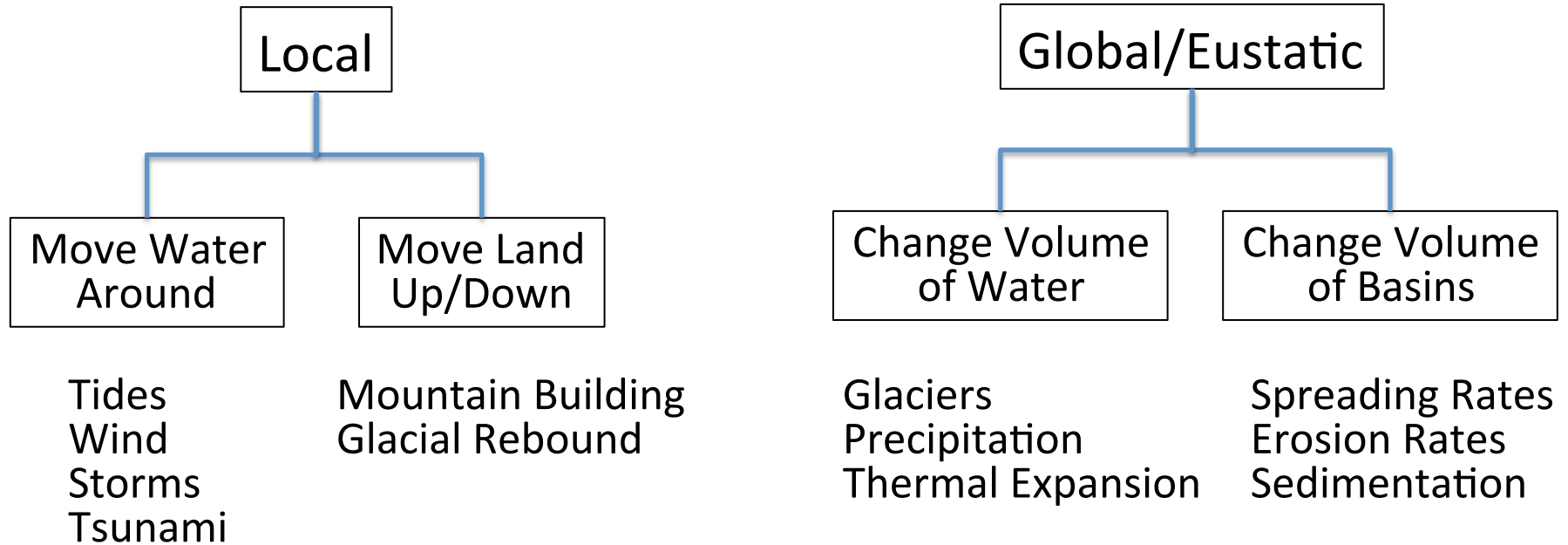
The line drawn around the cup represents a reference sea level or “datum”

Fill cup with water to level of the line.

- 1) List how many ways can you get the water level to change.
- 2) Note direction of water level change
(i.e., up, down, or depends)
- 3) Note how the new water level departs from the original.
(i.e., same everywhere or variable)
- 4) Note how long the water level change persists.
(i.e., temporary, maintained, depends)

- Hands-on Sea Level Change Activity

[illegible]



Think-Pair-Share

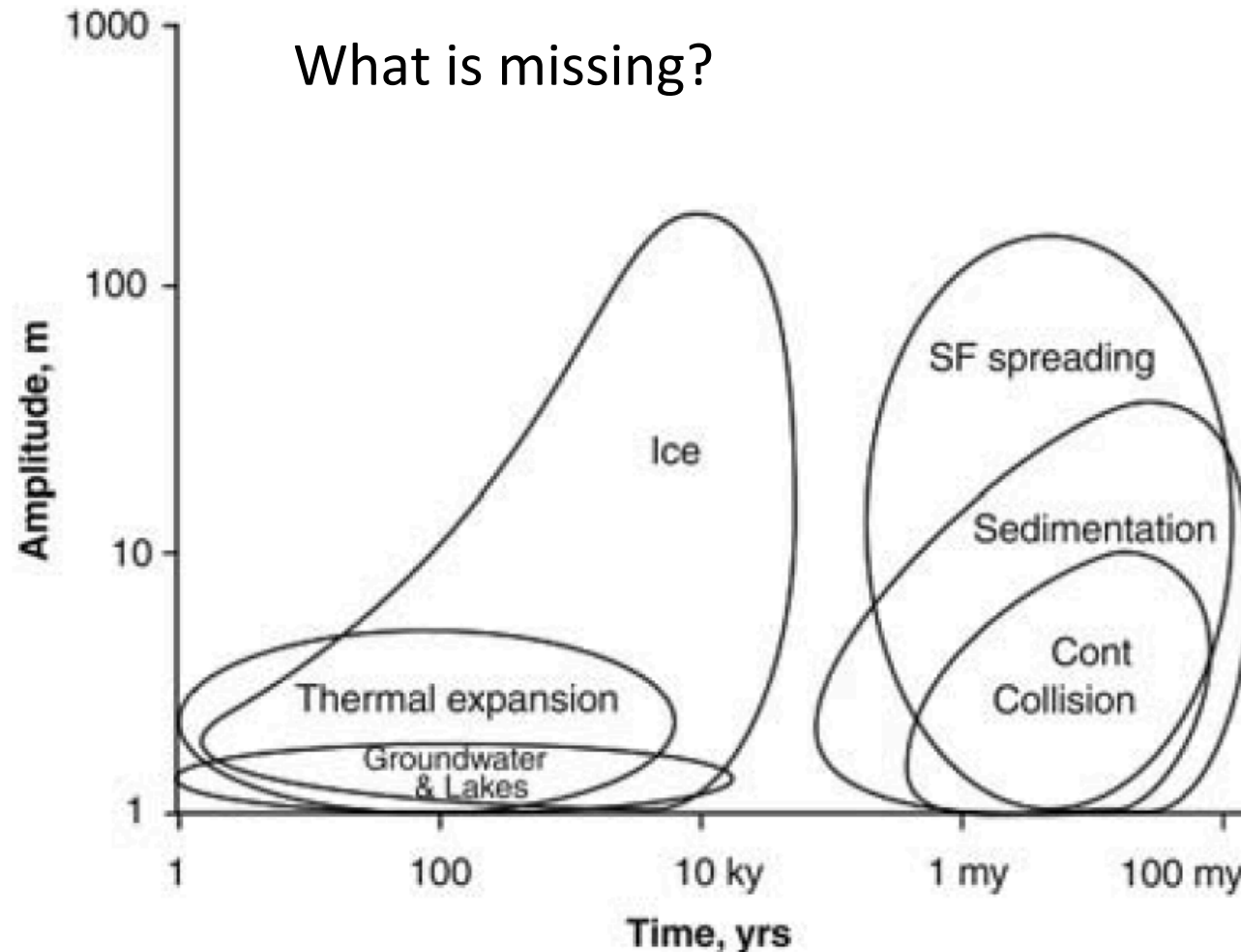
Which sea level change examples should we be worried about ??

- Think Rate of Change
- Think Magnitude

Which ones should we be worried about ??

- Think Rate of Change
- Think Magnitude

What is missing?



Sea Level Change - History

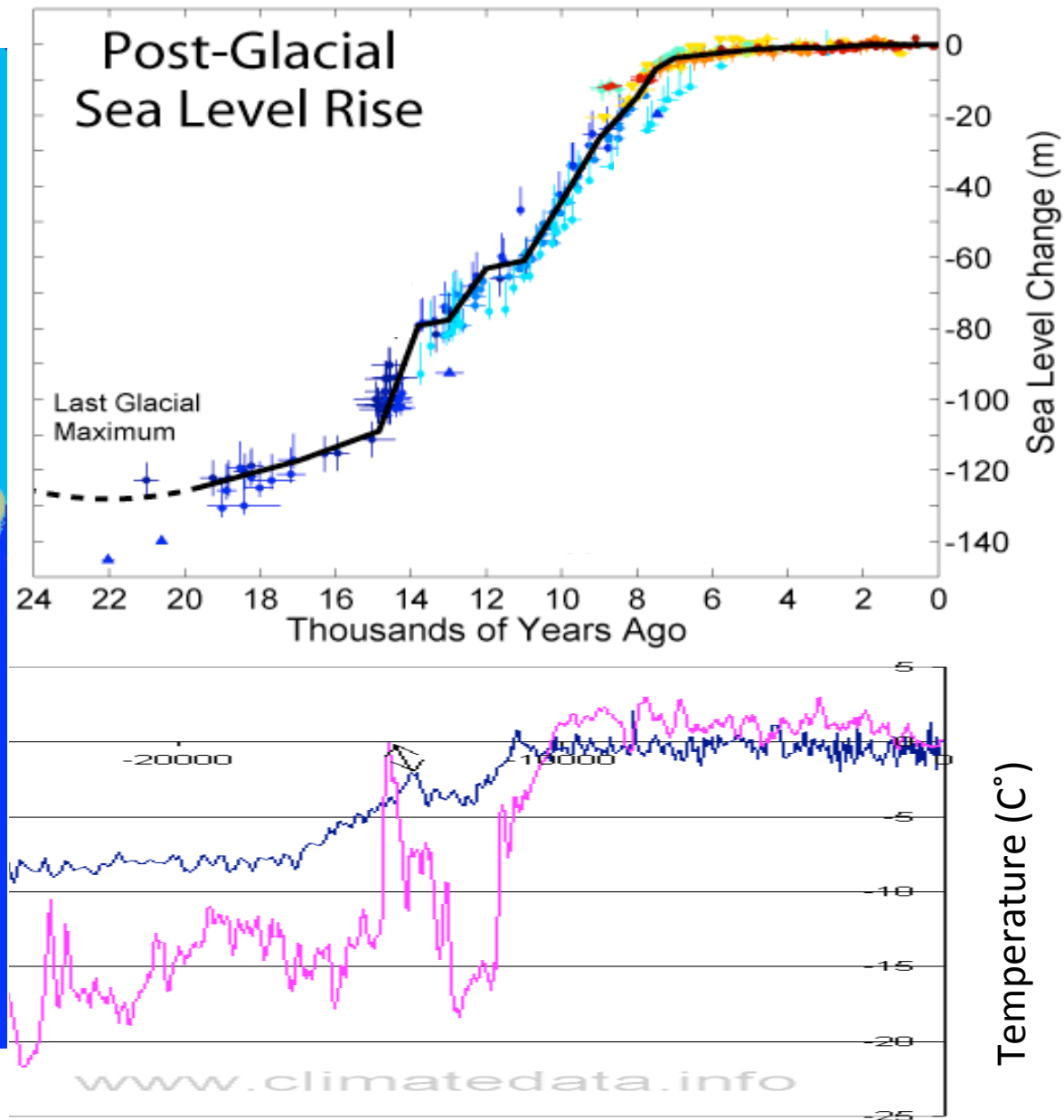
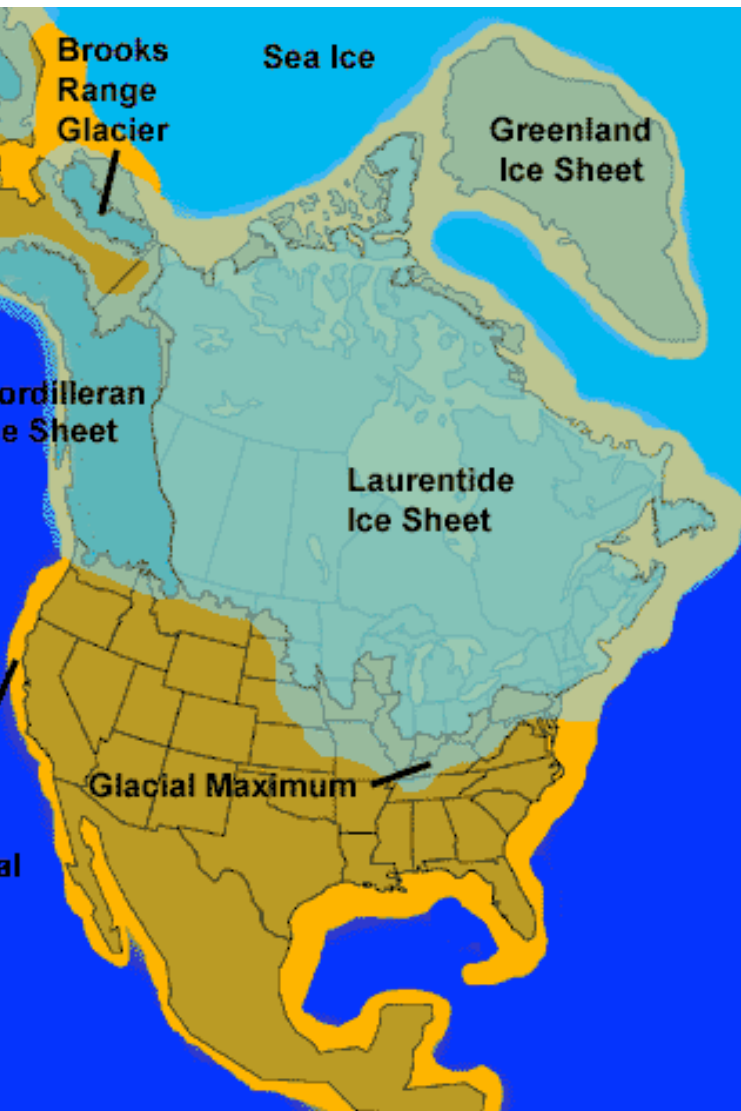
7

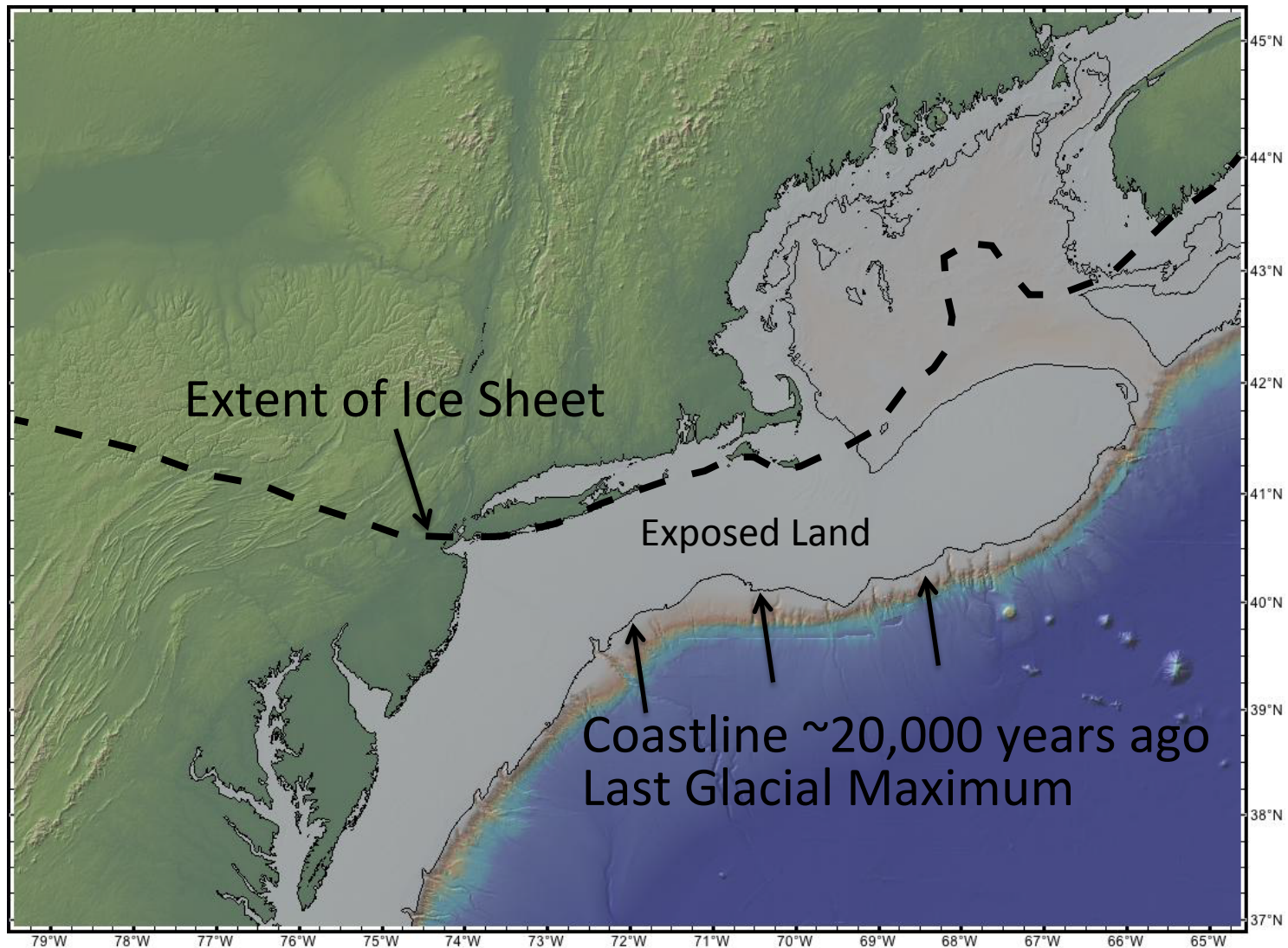


Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
Image IBCAO

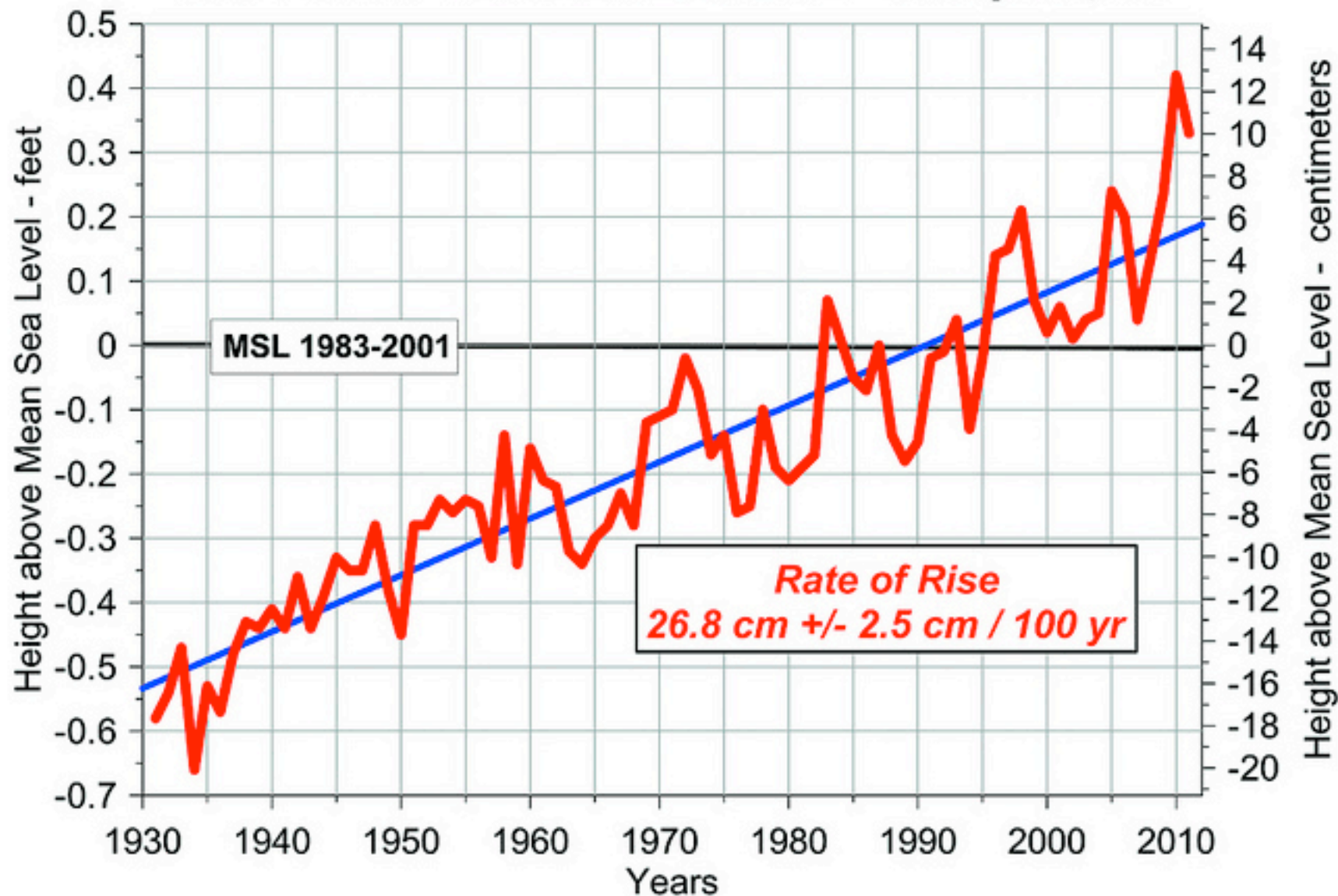
Google earth

Sea Level Change - History





HISTORIC SEA-LEVEL RISE - Newport, RI

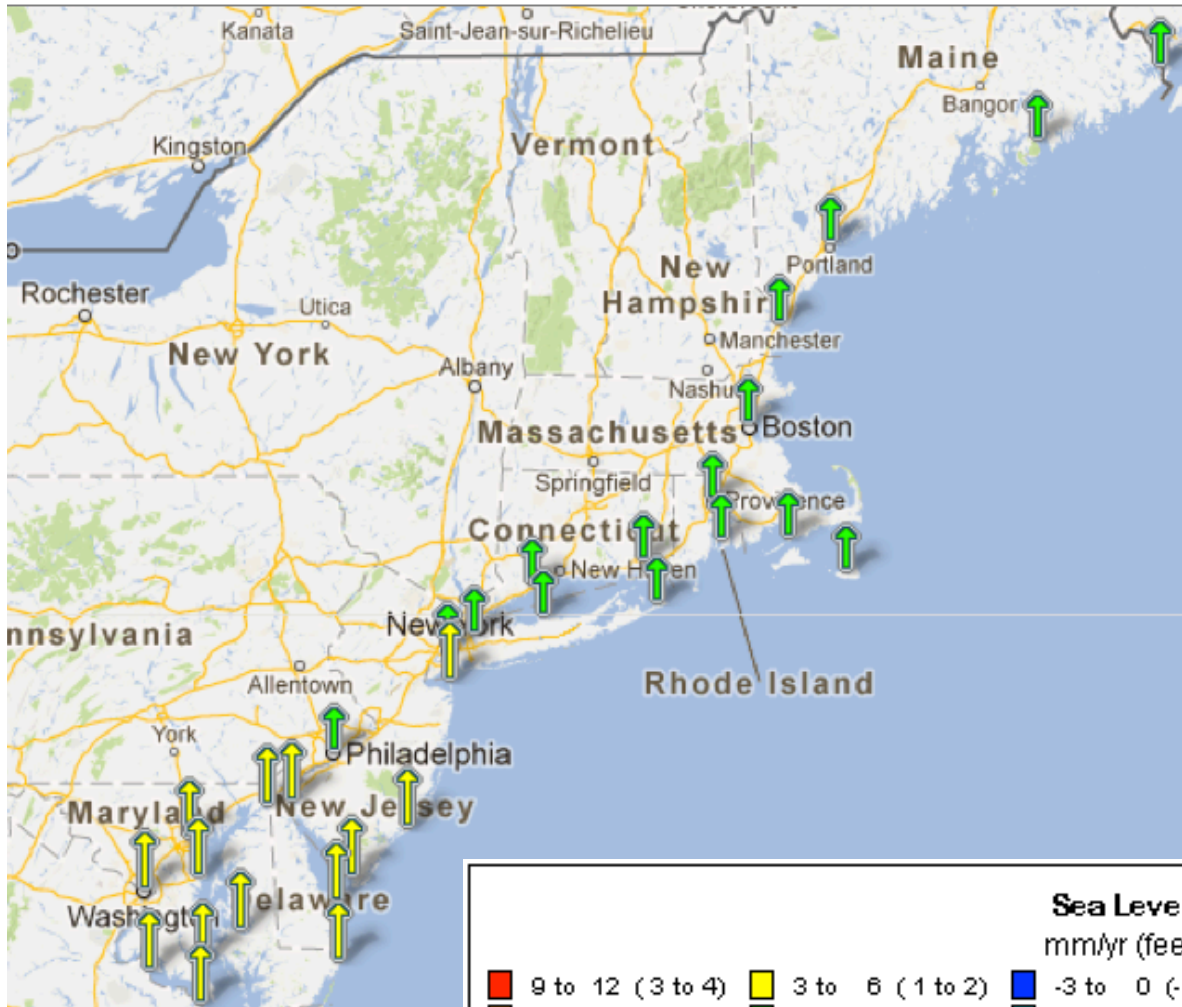


Sea Level Change – Regional View

Sea Levels Online

<http://tidesandcurrents.noaa.gov/sltrends/sltrends.shtml>

East Coast West Coast Gulf Coast Alaska Hawaii Global



Portland, ME => 1.82 mm/yr

Boston, MA => 2.63 mm/yr

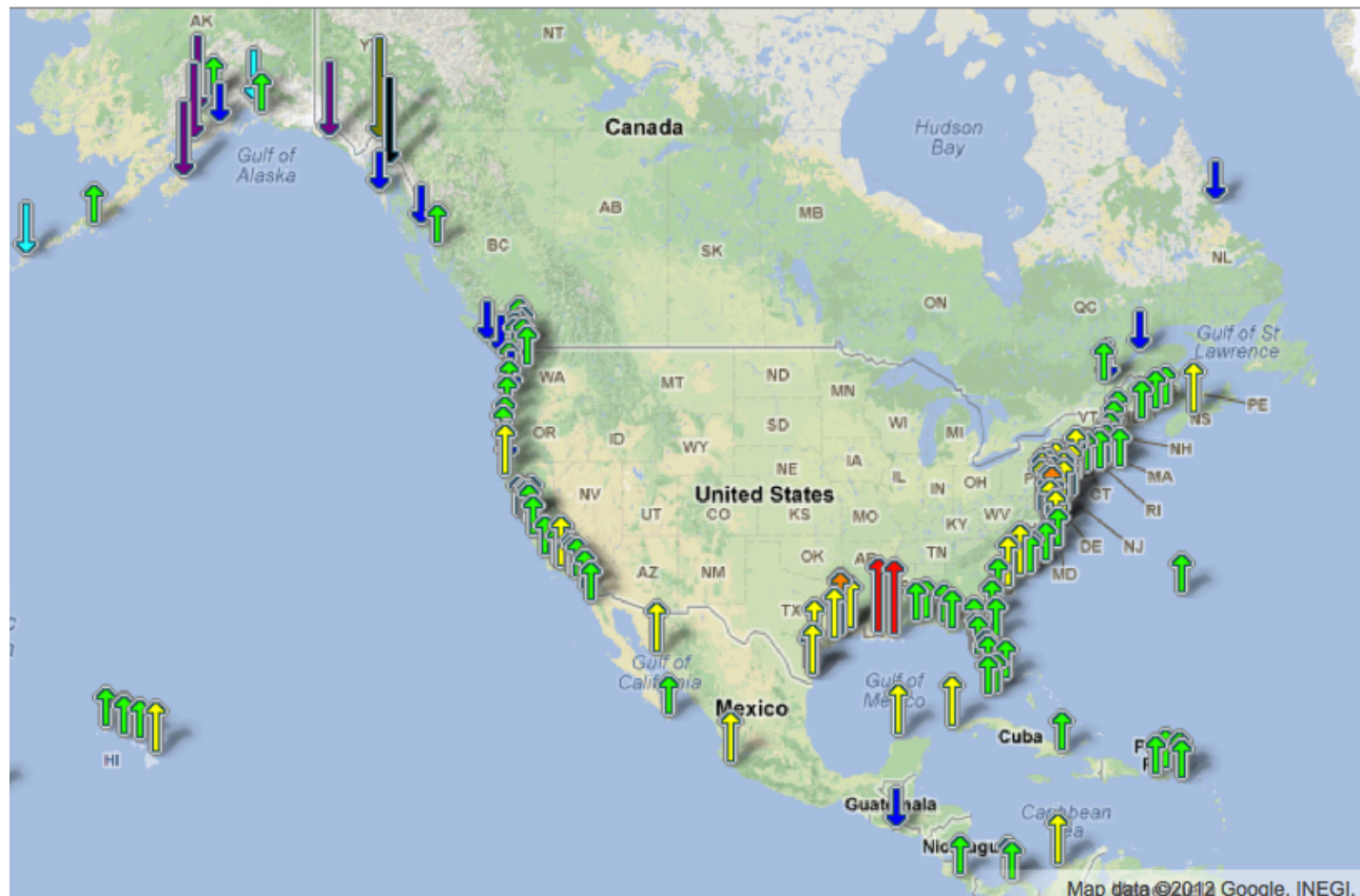
Providence, RI => 1.95 mm/yr

Newport, RI => 2.58 mm/yr

New York => 2.35 mm/yr

Atlantic City, NJ => 3.99 mm/yr

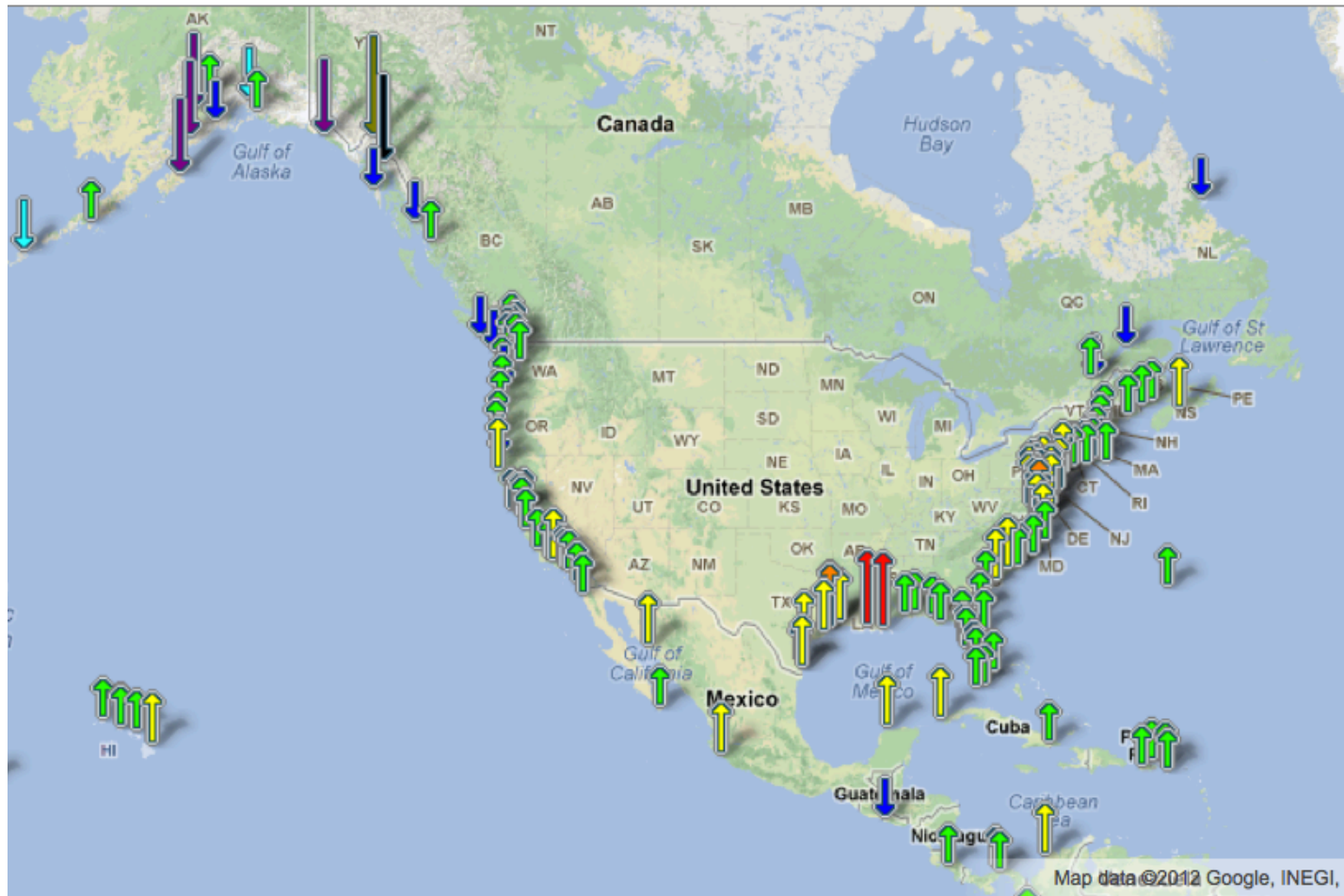
Sea Level Change – Regional View



Sea Level Trends mm/yr (feet/century)

9 to 12 (3 to 4)	3 to 6 (1 to 2)	-3 to 0 (-1 to 0)	-9 to -6 (-3 to -2)	-15 to -12 (-5 to -4)
6 to 9 (2 to 3)	0 to 3 (0 to 1)	-6 to -3 (-2 to -1)	-12 to -9 (-4 to -3)	-18 to -15 (-6 to -5)

Sea Level Change – Regional View



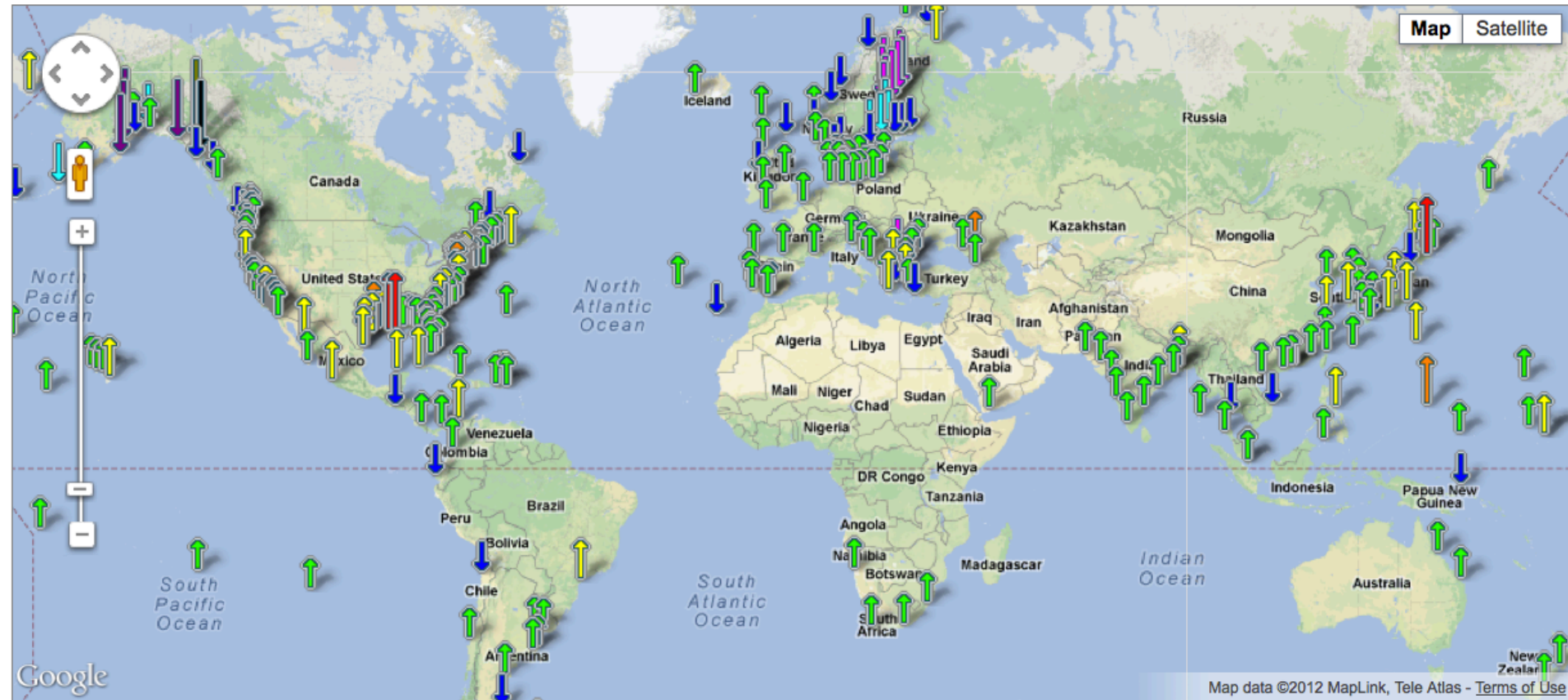
Think-Pair-Share

Why does it appear that sea level rising in some regions and falling in others?

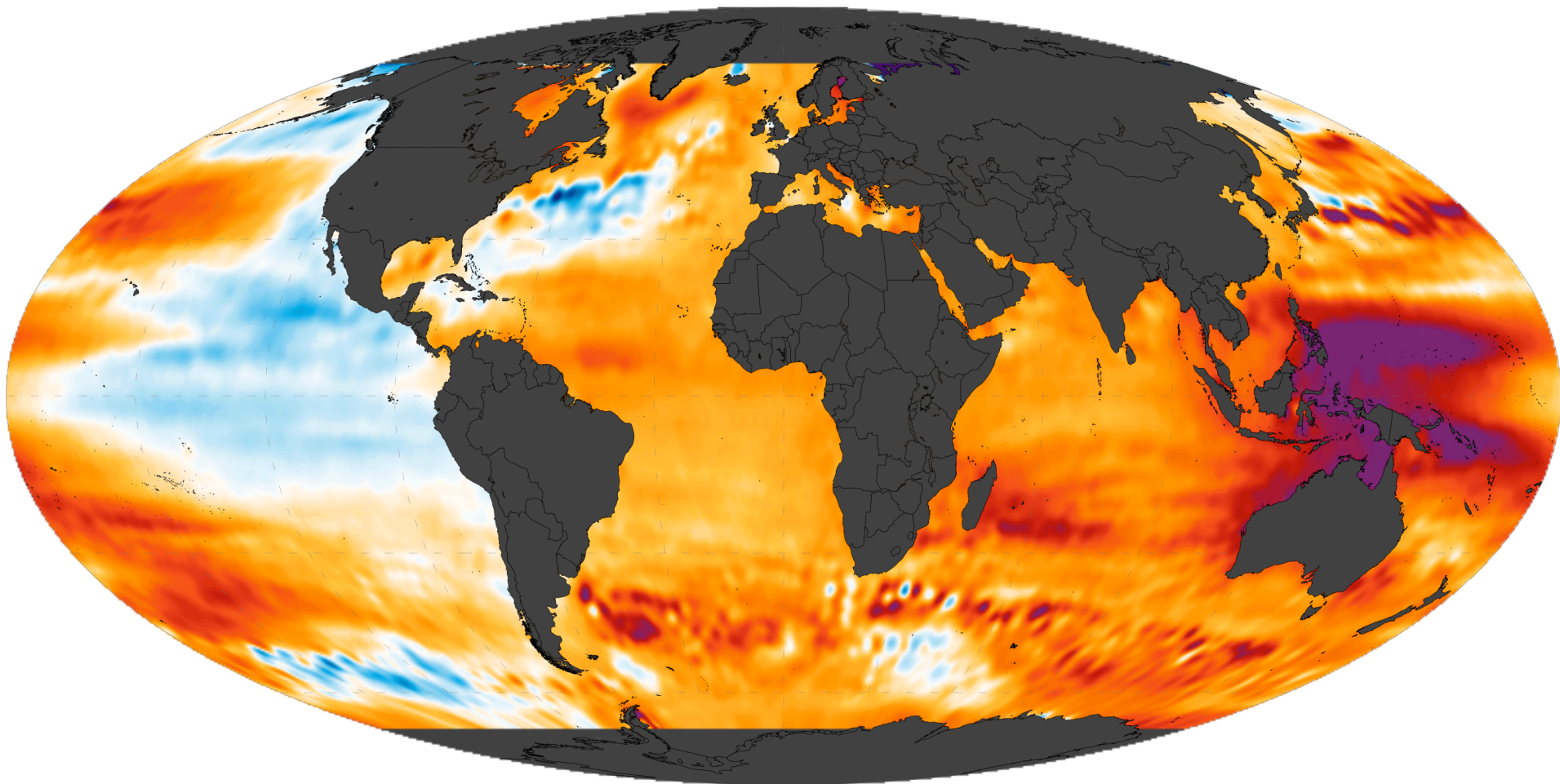
Sea Level Change – Regional View

Sea Levels Online

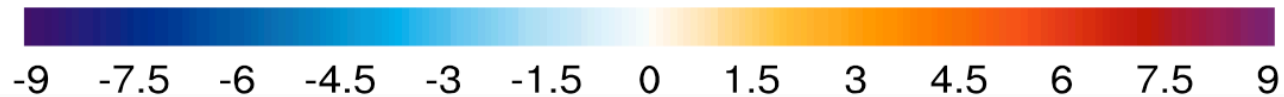
East Coast West Coast Gulf Coast Alaska Hawaii Global



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Sea Level Trend 1993-01/2012-01 (mm/Year)



Focus Activity

- Conceptual examples of sea level change

Sea Level Change

- Examples & Causes
- Classification
 - (local vs global)

Sea Level Change Temporal Variability (i.e., history)

- Geologic – varies by about 300 meters
- Glacial – sea level 120 m lower ~ 20,000 years ago.
- Recent – mostly rising, but variable

Sea Level Change Spatial Variability

- local examples (rising 2-3 mm/yr)
- satellite evidence (overall rising, but quite variable)