

Assessing the impacts of sea level rise on coastal communities

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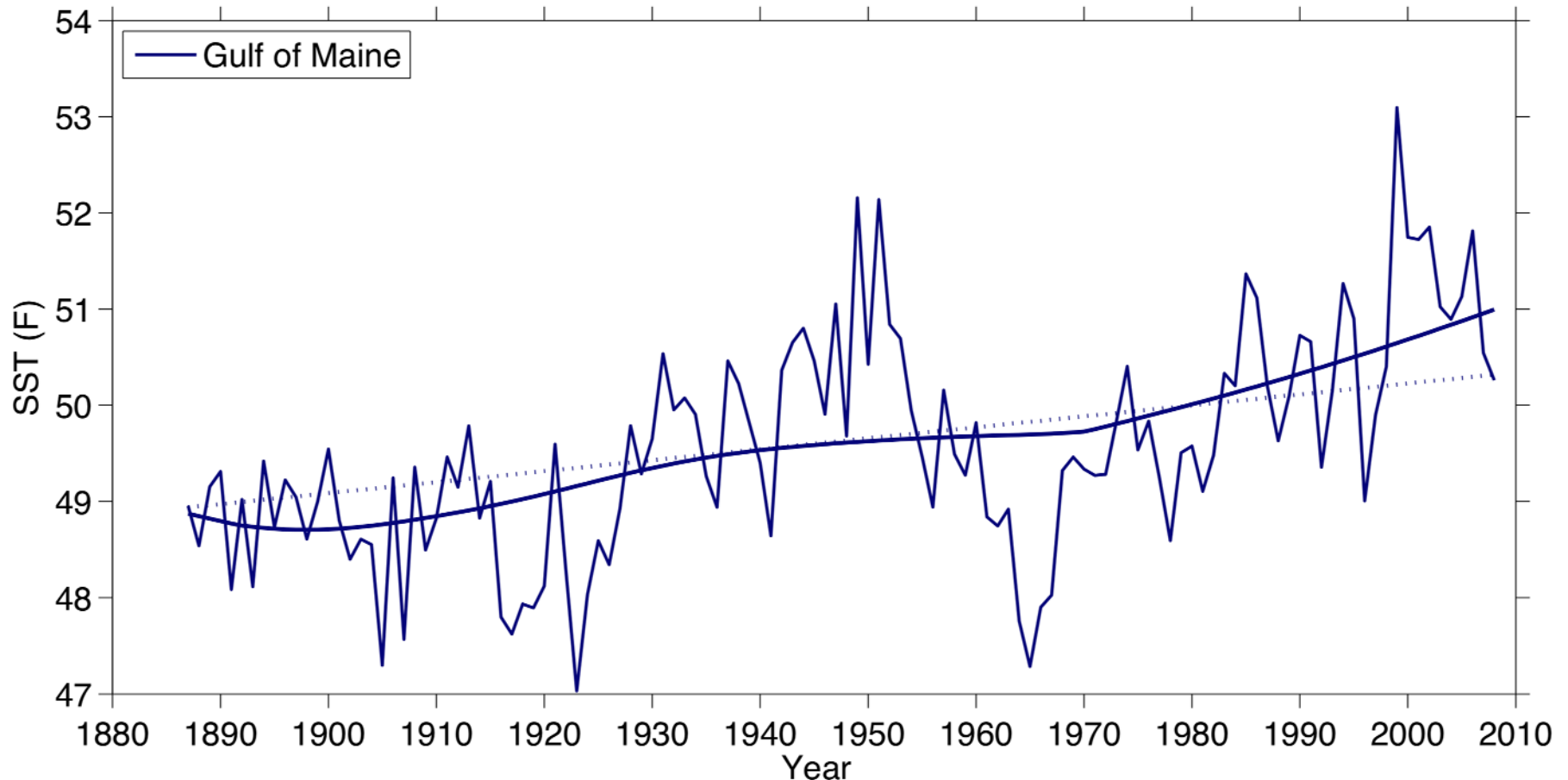
*²Environmental, Earth and Ocean Sciences, University of
Massachusetts Boston, Boston, MA*



Carbon Solutions New England

COLLABORATION FOR A LOW-CARBON SOCIETY

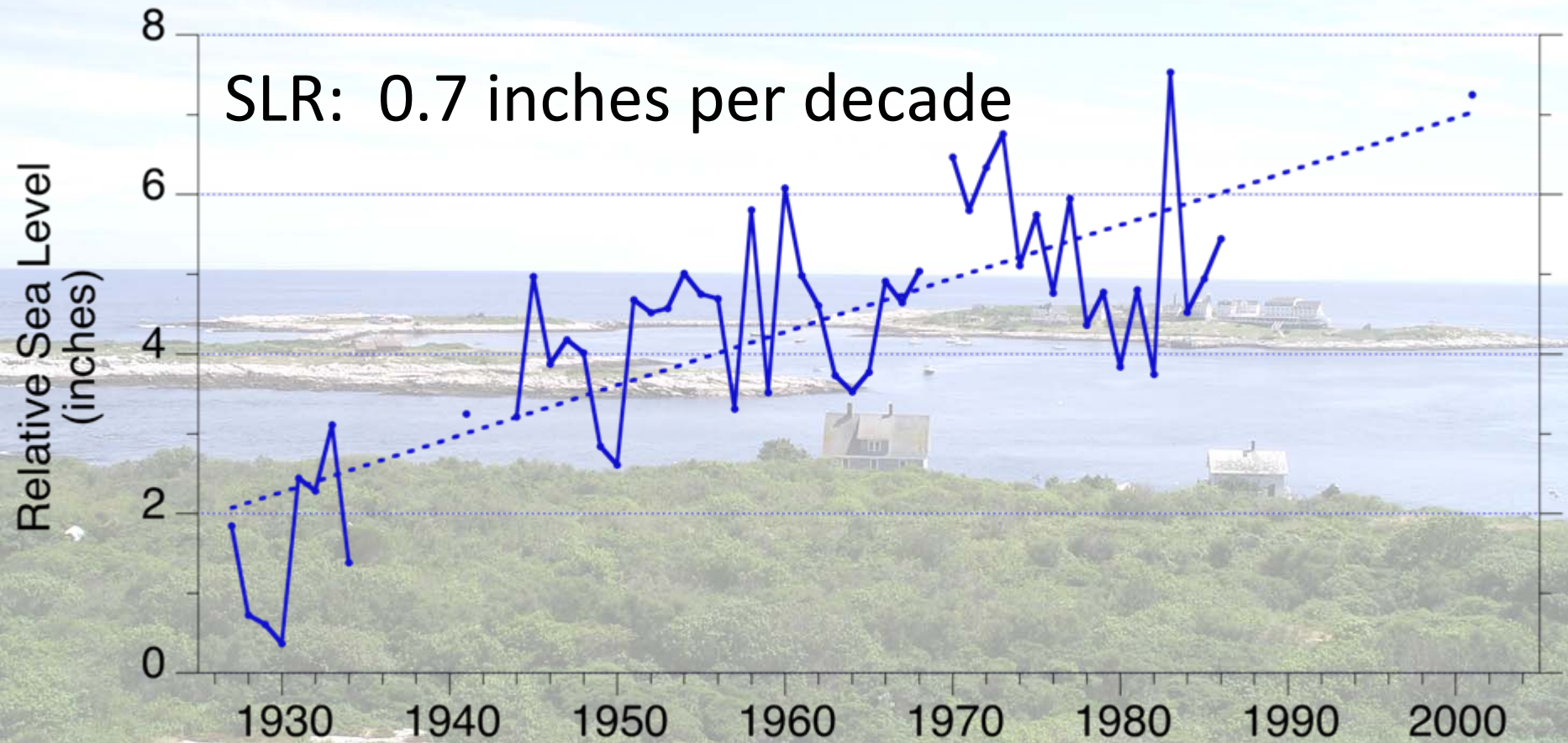
Gulf of Maine Sea Surface Temperatures



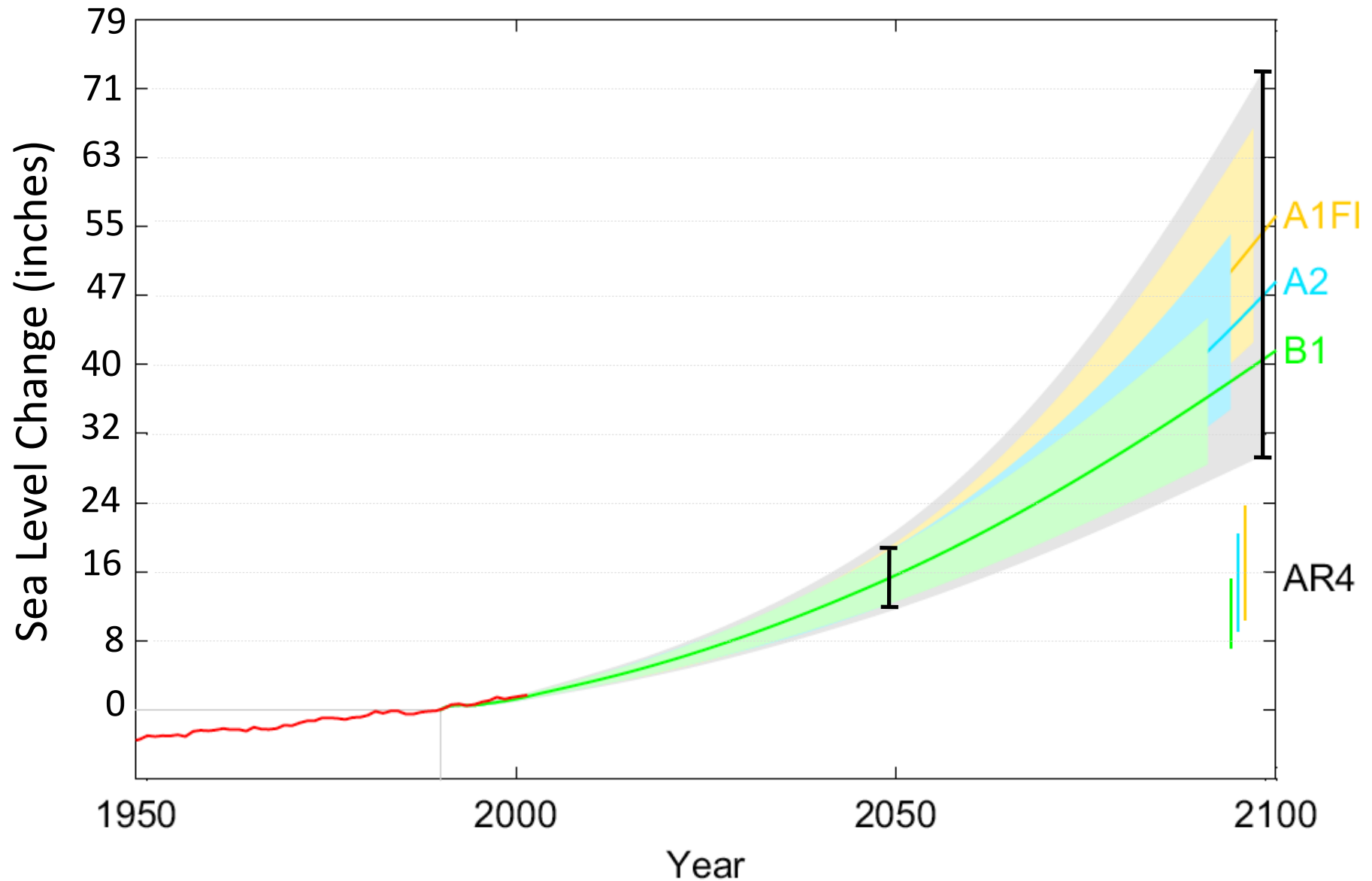
Data from the Extended Reconstructed Sea Surface Temperature (Smith and Reynolds 2003)

<http://nomads.ncdc.noaa.gov/thredds/dodsC/ersstv3Agg.html>

Sea Level Rise at Portsmouth Harbor 1927 - 2001

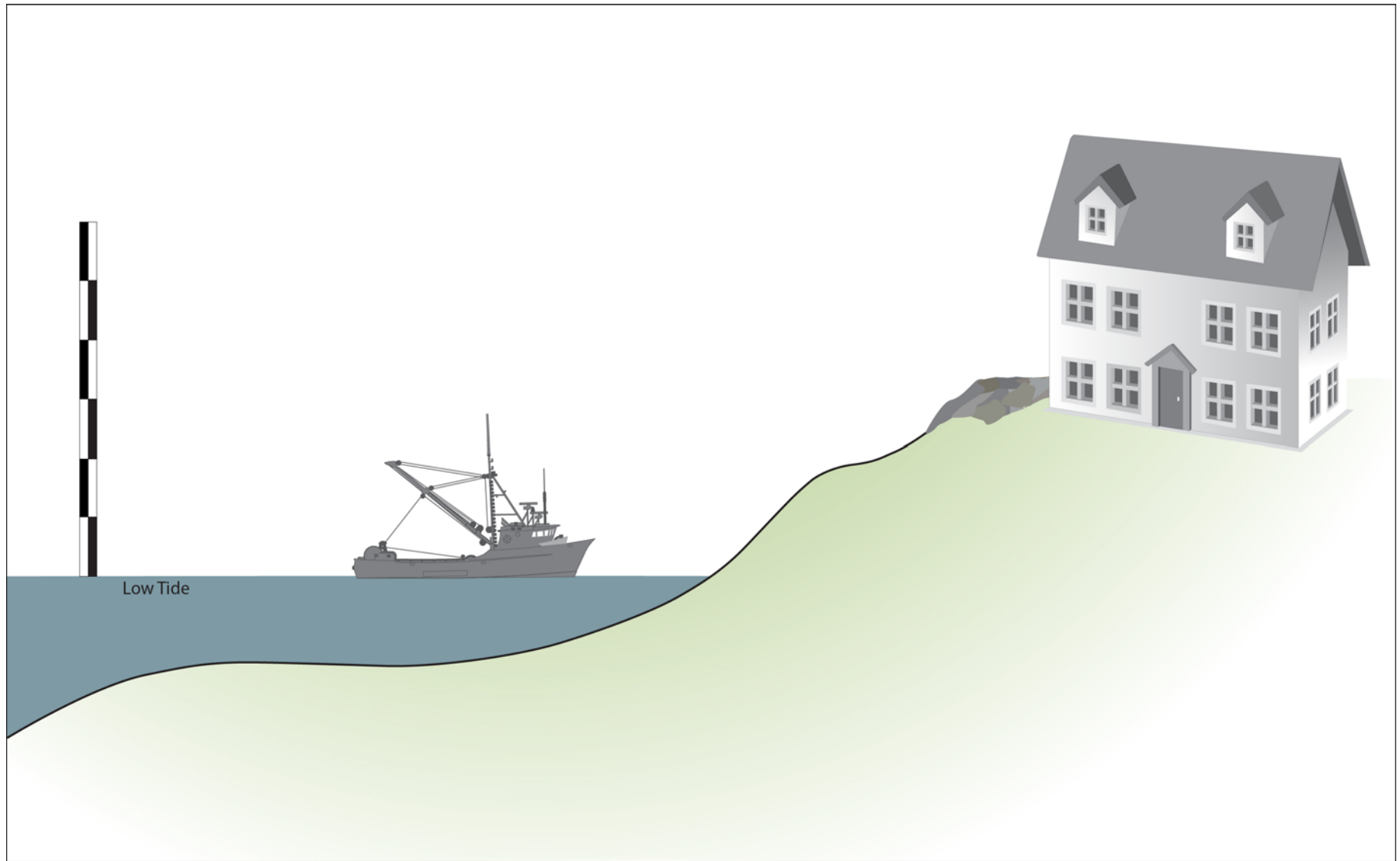


Projection of Global Sea Level Rise 1990 to 2100



Vermeer and Rahmstorf (2009) Global sea level linked to global temperature. PNAS 106, 21527–21532.

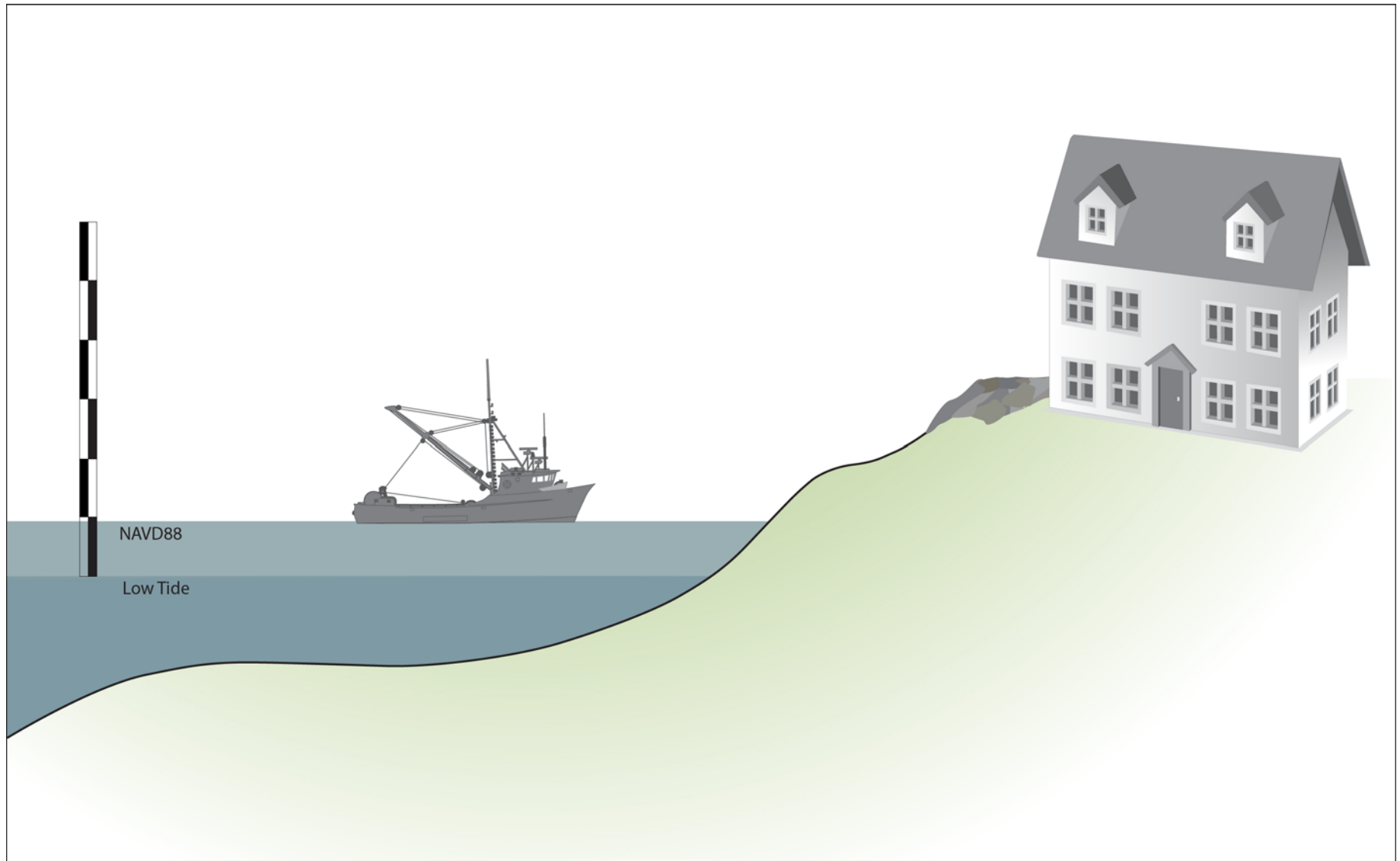
Stillwater Elevations for New Hampshire Seacoast



Wake et al. (2011) Climate Change in the Piscataqua/Great Bay Region: Past, Present, and Future.

<http://www.carbonsolutionsne.org/>

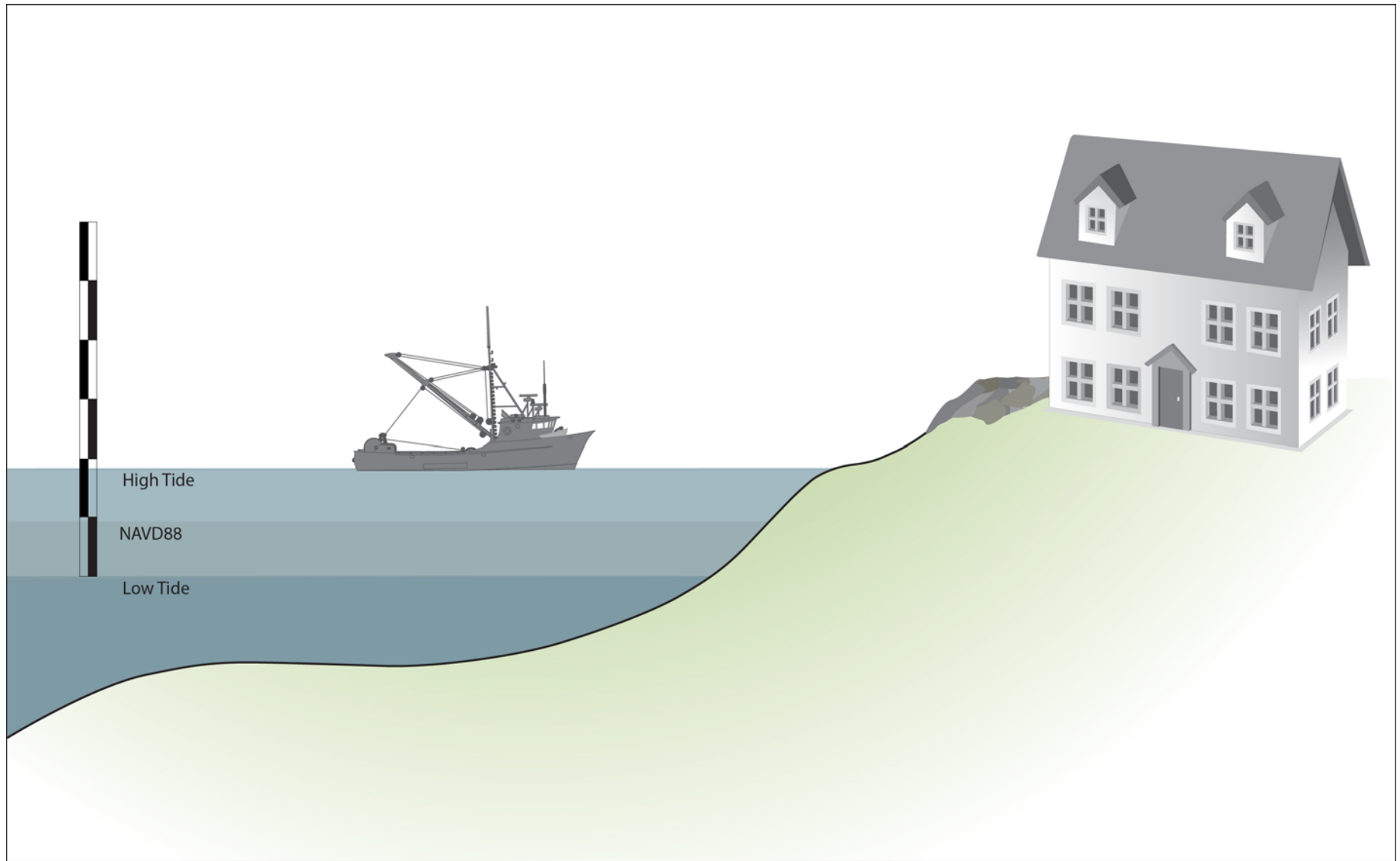
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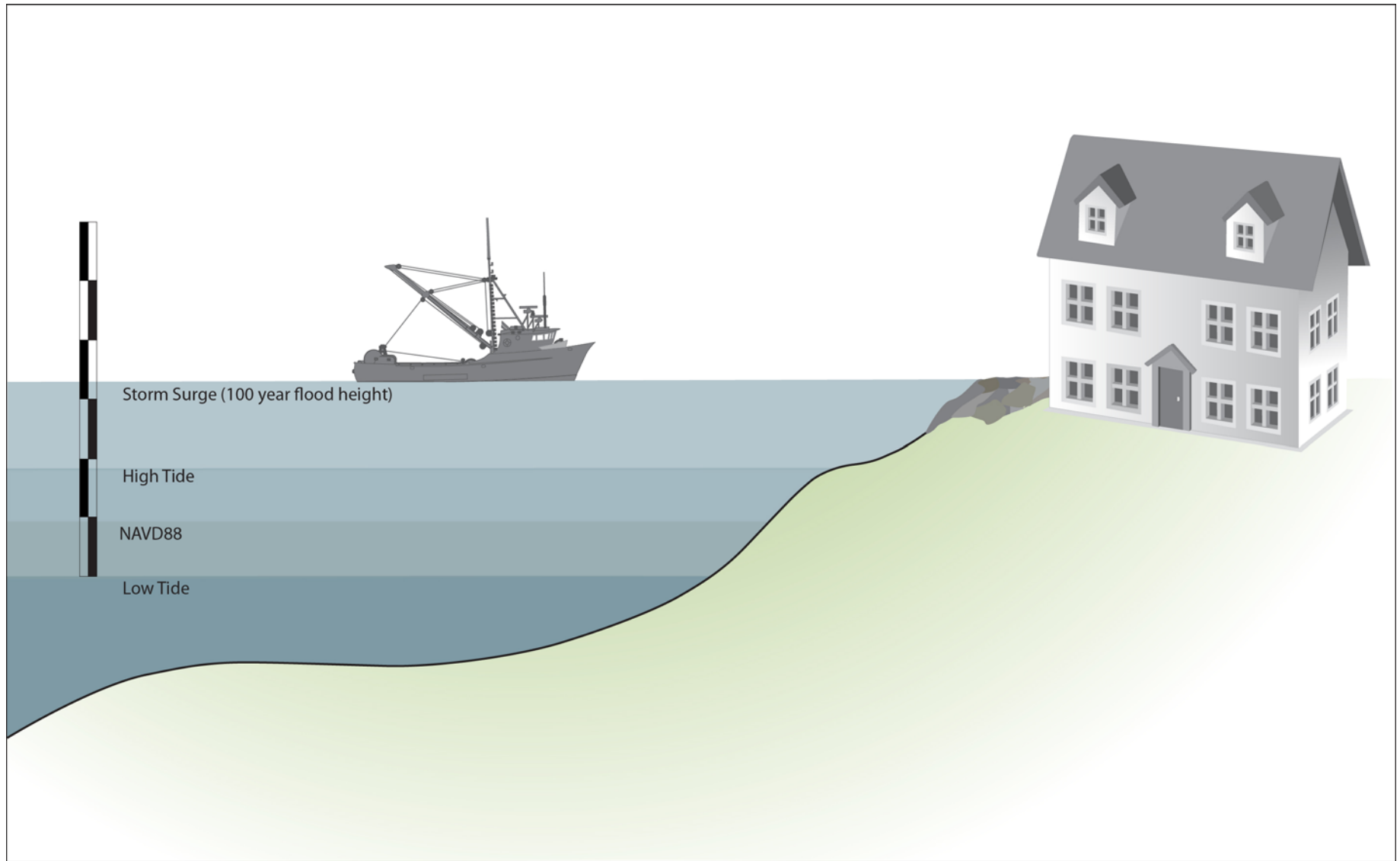
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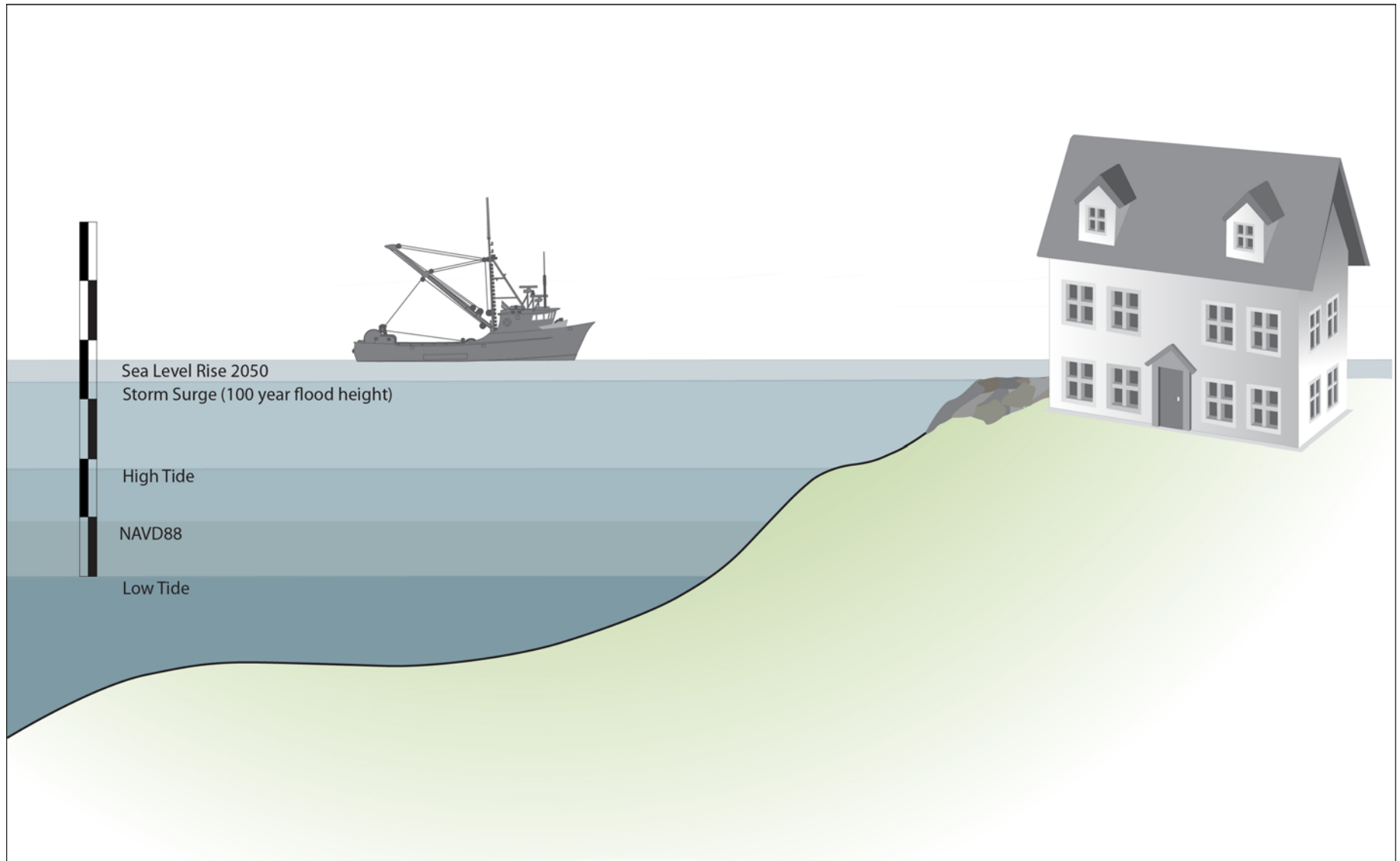
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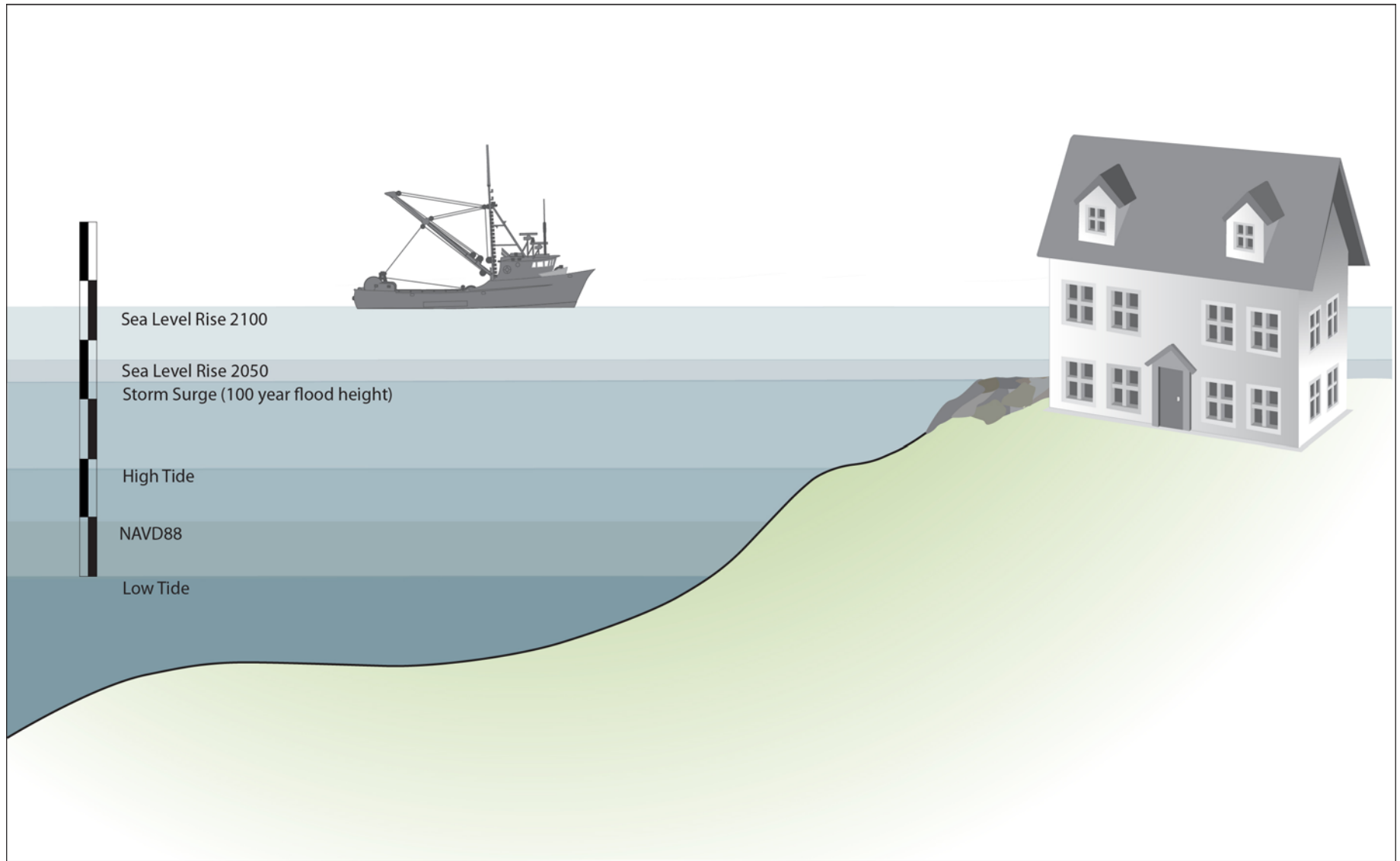
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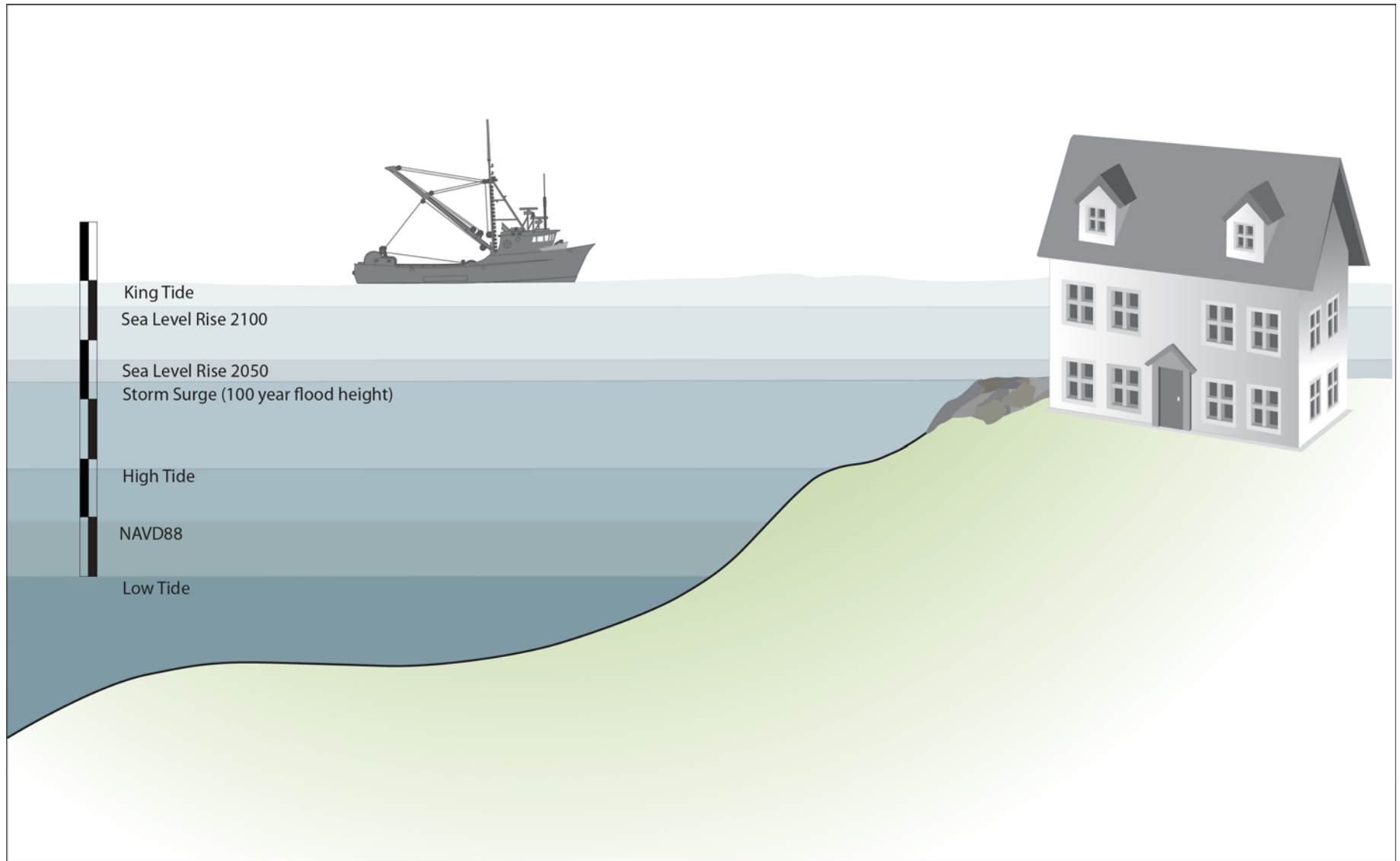
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Sea level rise maps for coastal NH

- Coastal flooding maps for potential future scenarios developed for:
 - Coastal NH
 - Piscataqua River
 - Great Bay
- At each location, maps of MHHW +
 - 6 ft
 - 9 ft
 - 12 ft

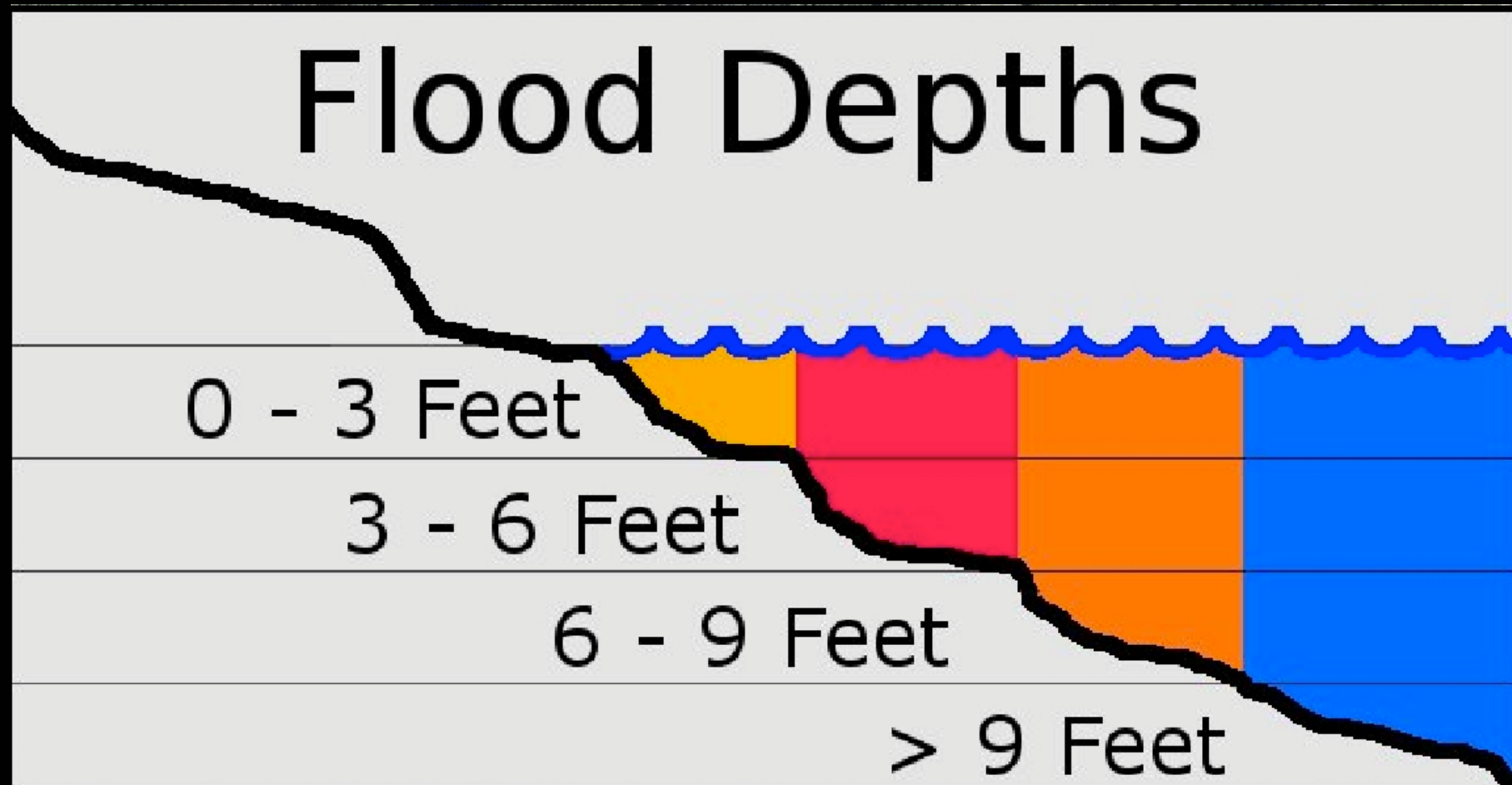
Flood Depths

0 - 3 Feet

3 - 6 Feet

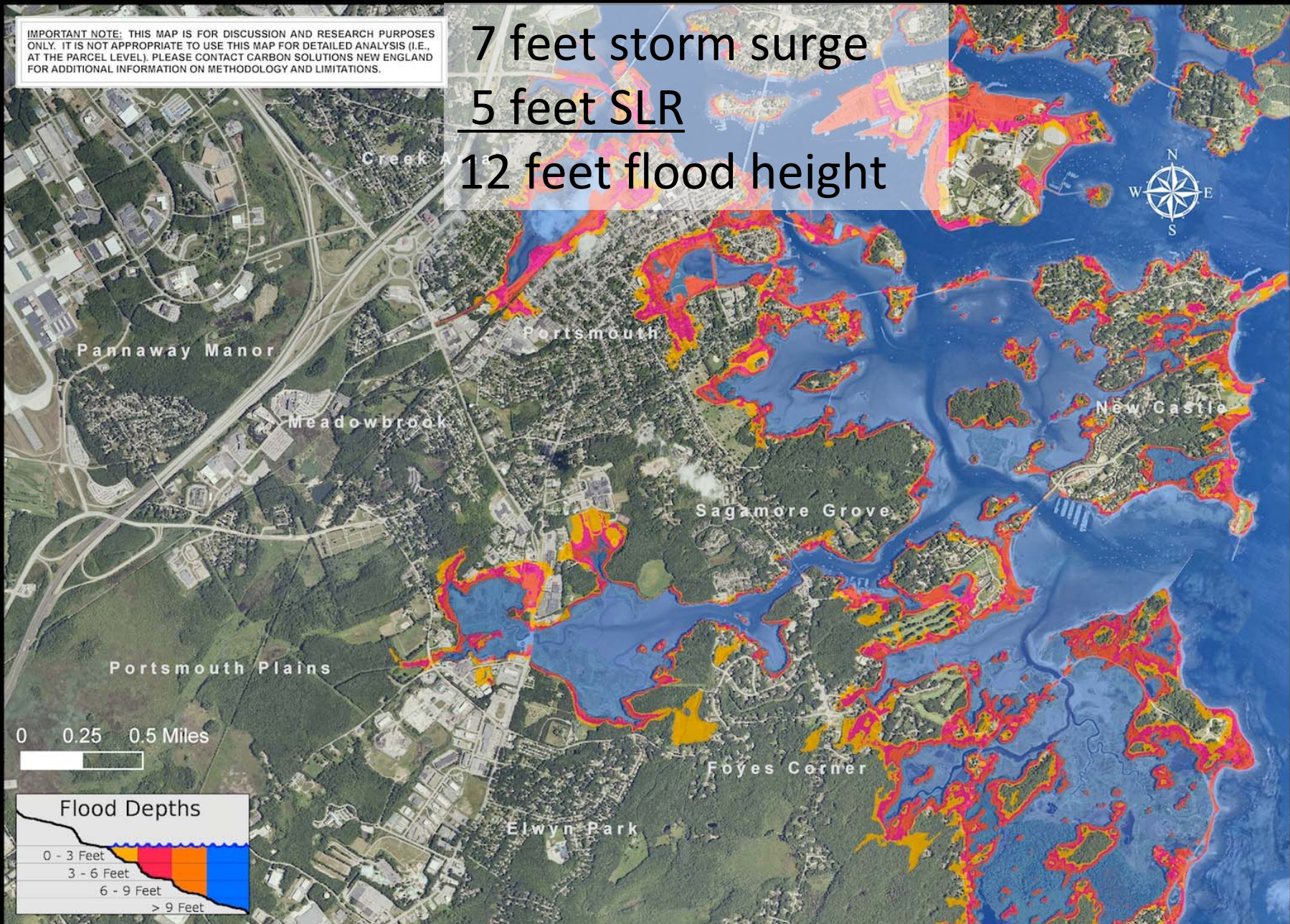
6 - 9 Feet

> 9 Feet



IMPORTANT NOTE: THIS MAP IS FOR DISCUSSION AND RESEARCH PURPOSES ONLY. IT IS NOT APPROPRIATE TO USE THIS MAP FOR DETAILED ANALYSIS (I.E., AT THE PARCEL LEVEL). PLEASE CONTACT CARBON SOLUTIONS NEW ENGLAND FOR ADDITIONAL INFORMATION ON METHODOLOGY AND LIMITATIONS.

7 feet storm surge
5 feet SLR
12 feet flood height



Uses for these maps

- “Screening-level” vulnerability assessments
 - Changes in flooding due to different levels of sea level rise
 - Location sensitivity analysis
 - What locations show big change in flooding to small changes in sea level
- Future coastal planning
 - Target locations for current action
 - Where to reserve options for future action

Where to find the maps

- High resolution maps available web

[http://www.granit.unh.edu/MapLibrary/Project Maps](http://www.granit.unh.edu/MapLibrary/ProjectMaps)

and click Sea Level Rise in Coastal NH link

- Climate Change for Great Bay region available at Carbon Solutions New England (www.carbonsolutionsne.org)