

Projections of Sea level Rise and High tide Flooding for the Southeast and for Florida

Gary T. Mitchum
College of Marine Science
University of South Florida

Some perspective

NRC 1987

SLR by 2100 will be 0.5 to 1.5 meters

IPCC AR6

SLR by 2100 will be 0.55 to 1.0 meters

Sweet et al. report last week

Emphasis on 2050 time horizon

Increase in High Tide Flooding

Emphasis on Regionalization

The 2050 time horizon

Change from 2017 to 2022 reports
(uses St. Petersburg as an example)

Intermediate Low to High range is:

2017 – 0.29 to 0.78 meters

2022 – 0.32 to 0.48 meters

The 2050 time horizon (cont.)

Regional variation (Low to High)

US - 0.31 to 0.52 meters

NE - 0.36 to 0.53 meters

SE - 0.28 to 0.49 meters

EG - 0.30 to 0.51 meters

WG - 0.49 to 0.69 meters

SW - 0.15 to 0.38 meters

NW - 0.10 to 0.31 meters

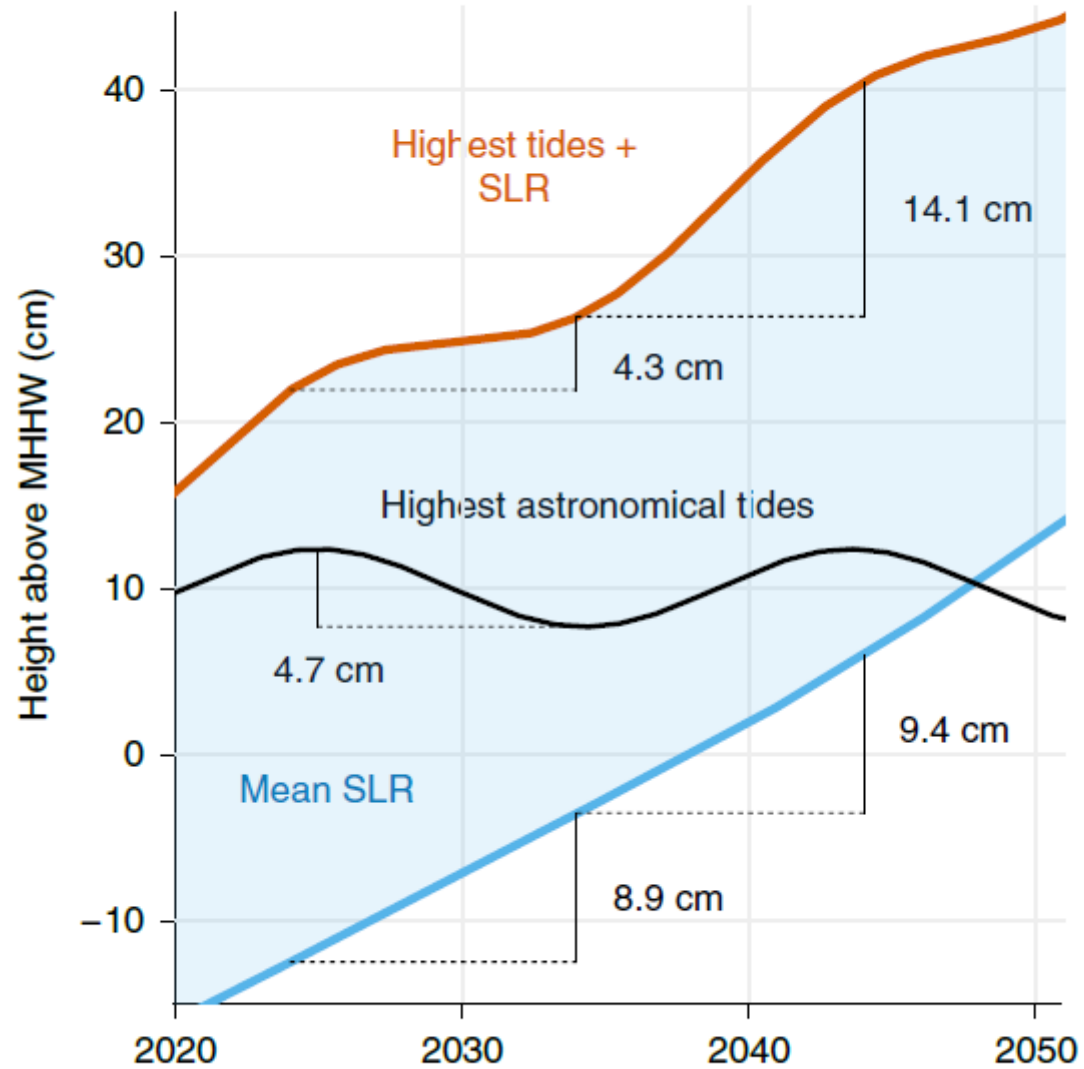
High Tide Flooding

By 2050 order of 10 times more frequent, and will happen sooner than that in many places.

Following figure is from
Thompson et al. 2020

Impact of the nodal cycle

NOAA intermediate SLR scenario
St. Petersburg, FL



What about Florida?

It is unfortunate that Florida has been split in two, with the east coast in the SE region and the west coast in the EG region.

This obviously needs to be examined carefully, which the Florida Flood Hub is in the process of doing.

52 380.093 Statewide Flooding and Sea Level Rise Resilience

53 Plan.-

54 (1) LEGISLATIVE INTENT.-

55 (a) The Legislature recognizes that the state is
56 particularly vulnerable to adverse impacts from flooding
57 resulting from increases in frequency and duration of rainfall
58 events, storm surge from more frequent and severe weather
59 systems, and sea level rise. Such adverse impacts pose economic,
60 social, environmental, and public health and safety challenges
61 to the state. To most effectively address these challenges,
62 funding should be allocated in a manner that prioritizes
63 addressing the most significant risks.

64 (b) The Legislature further recognizes that the adverse
65 impacts of flooding and sea level rise affect coastal and inland
66 communities all across the state. Consequently, a coordinated
67 approach is necessary to maximize the benefit of efforts to
68 address such impacts and to improve the state's resilience to
69 flooding and sea level rise.

70 (c) The Legislature further recognizes that to effectively
71 and efficiently address and prepare for the adverse impacts of

Sweet et al. report last week

Emphasis on 2050 time horizon

Increase in High Tide Flooding

Emphasis on Regionalization