

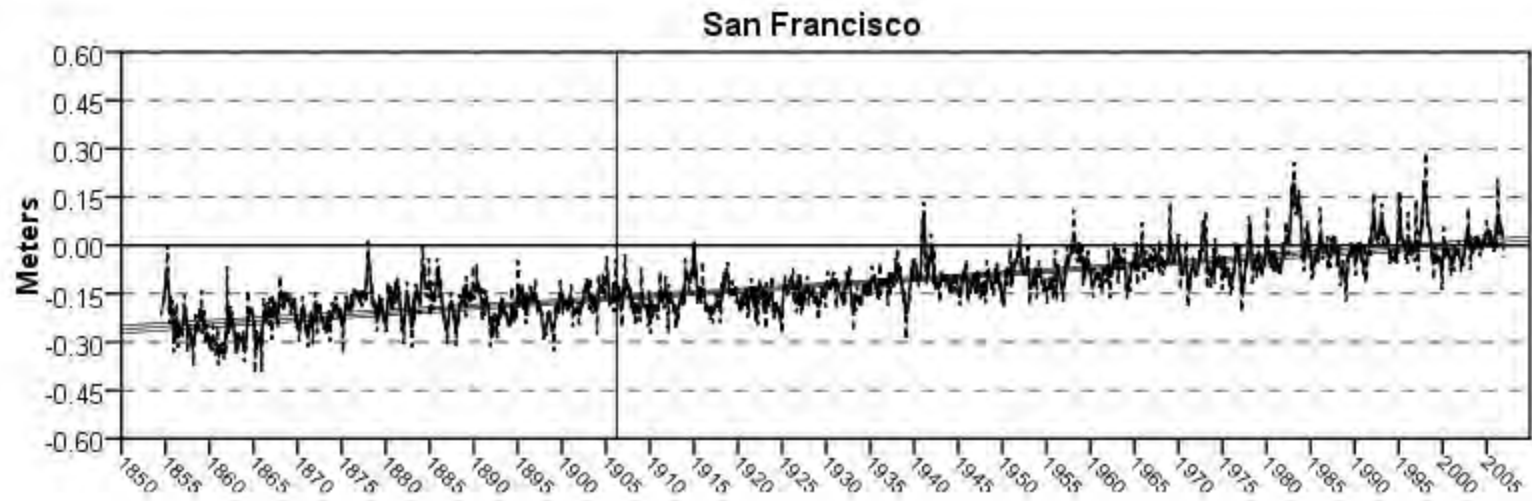
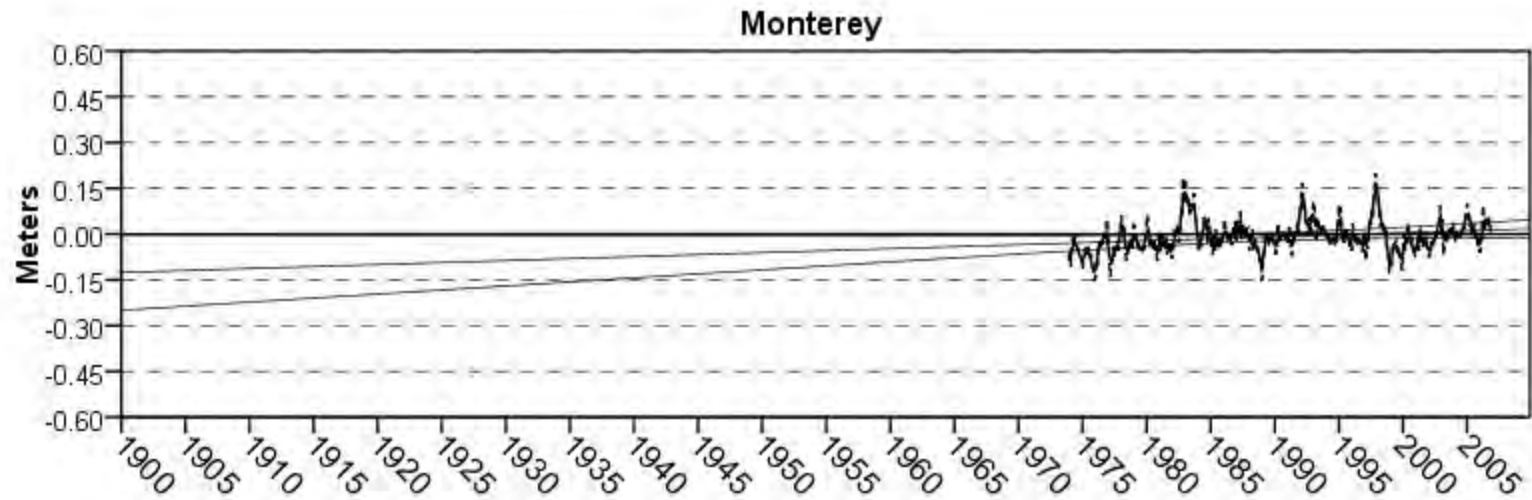
Predicting Climate Change Impacts



photo: Tupper Ansel Blake

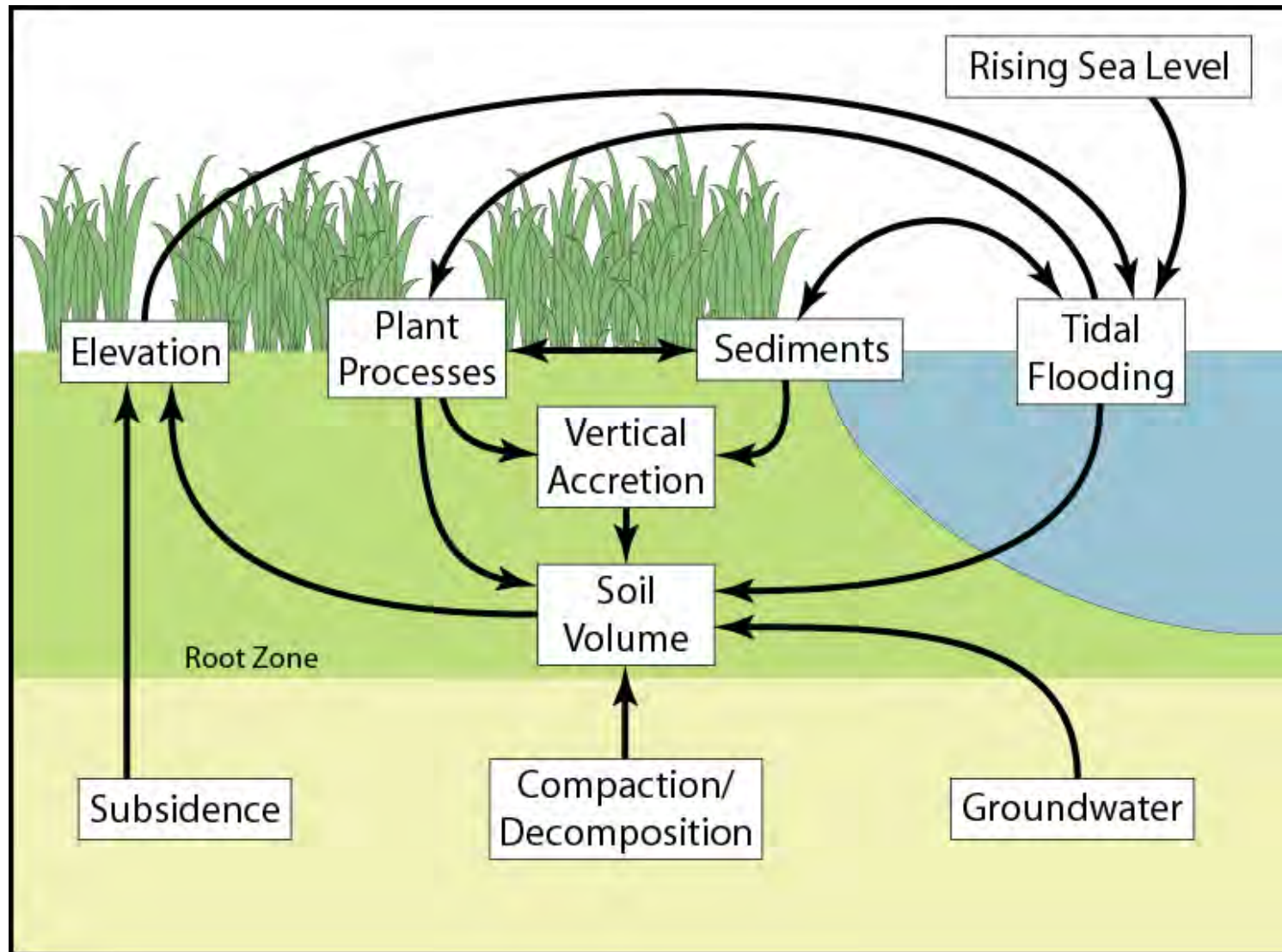
Eric Van Dyke
Geographical Ecologist
Elkhorn Slough National Estuarine Research Reserve

Sea Level Trends



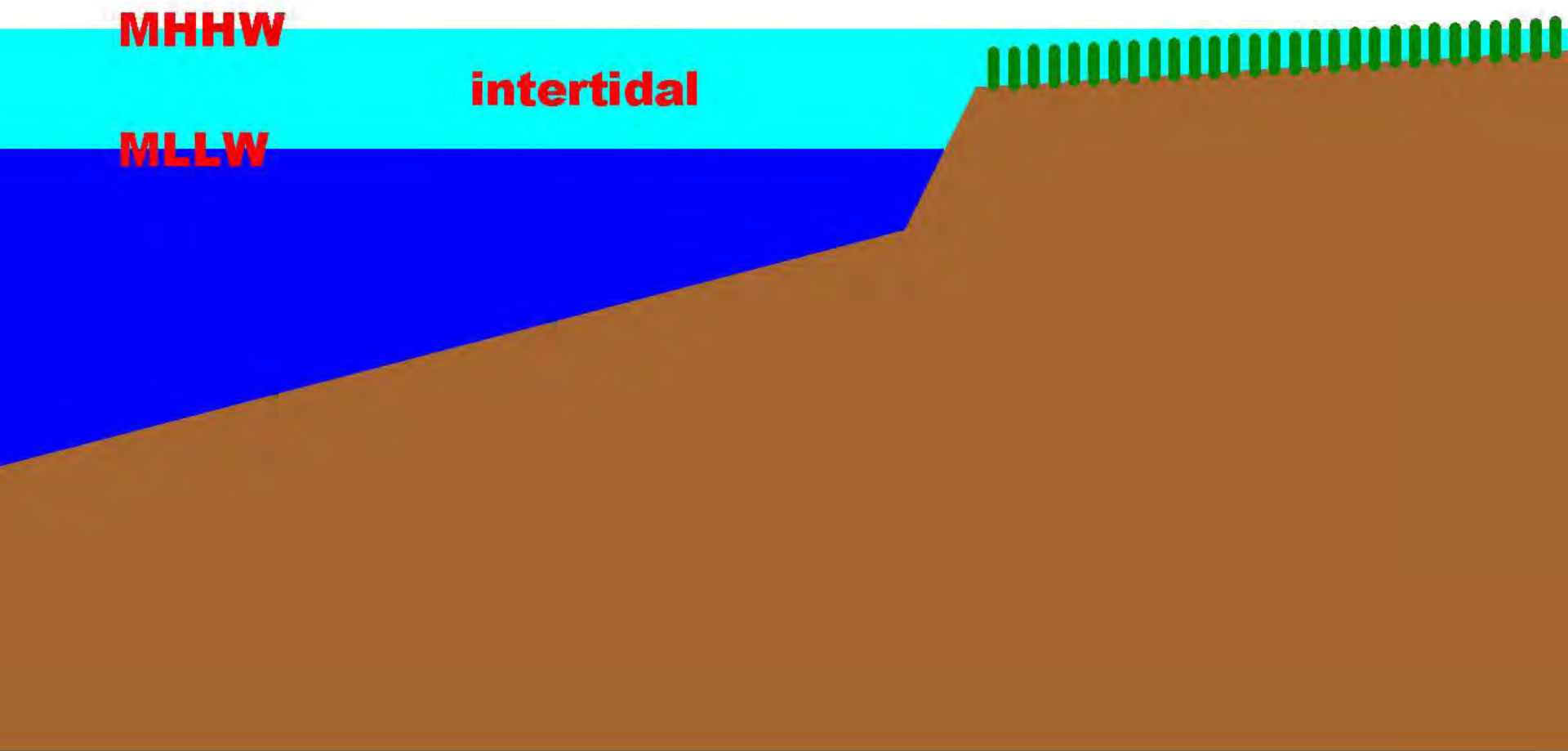
source: NOAA

Conceptual Model: Relative Sea Level Rise

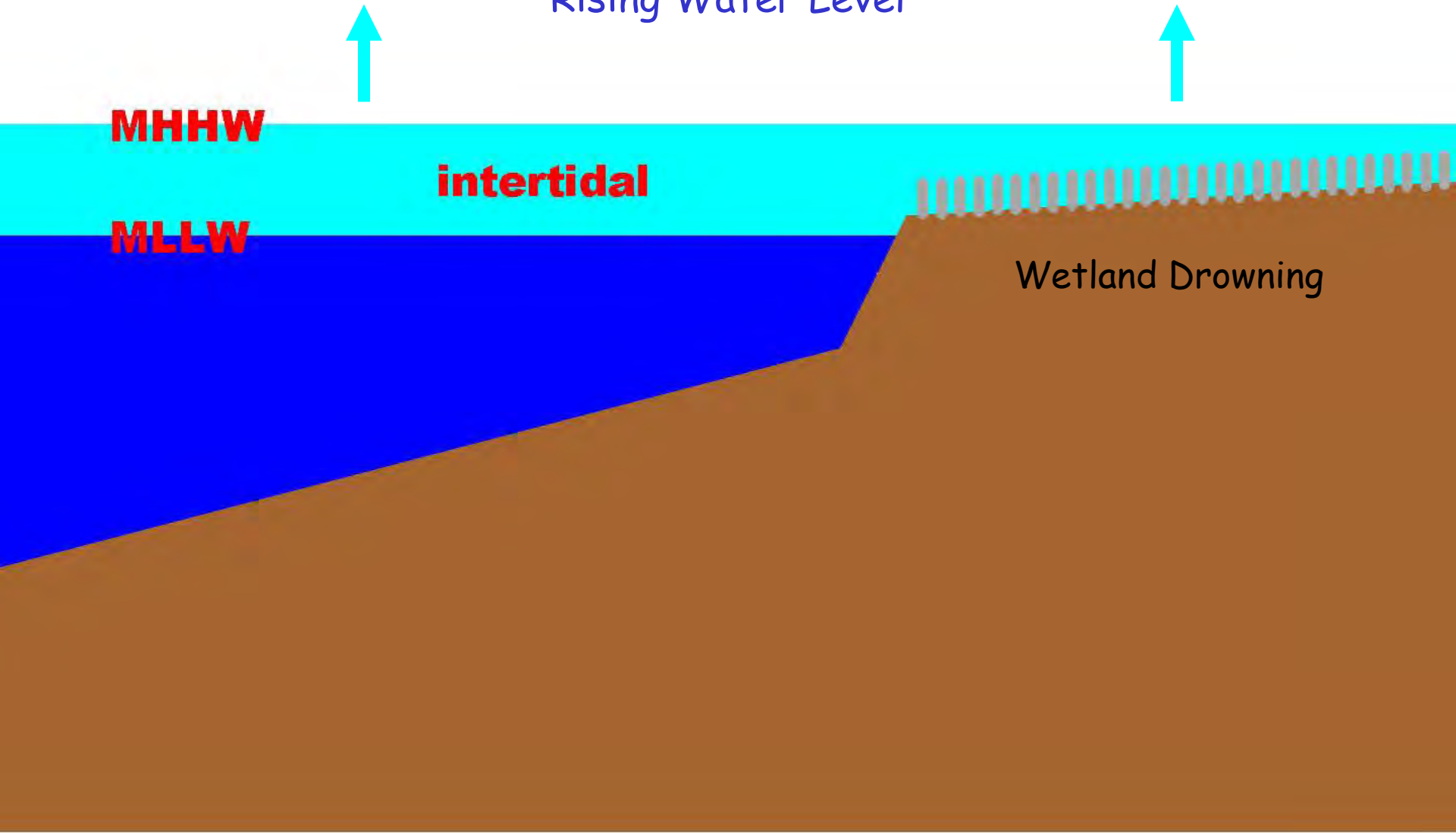


source: Cahoon, Day, and Reed 1999

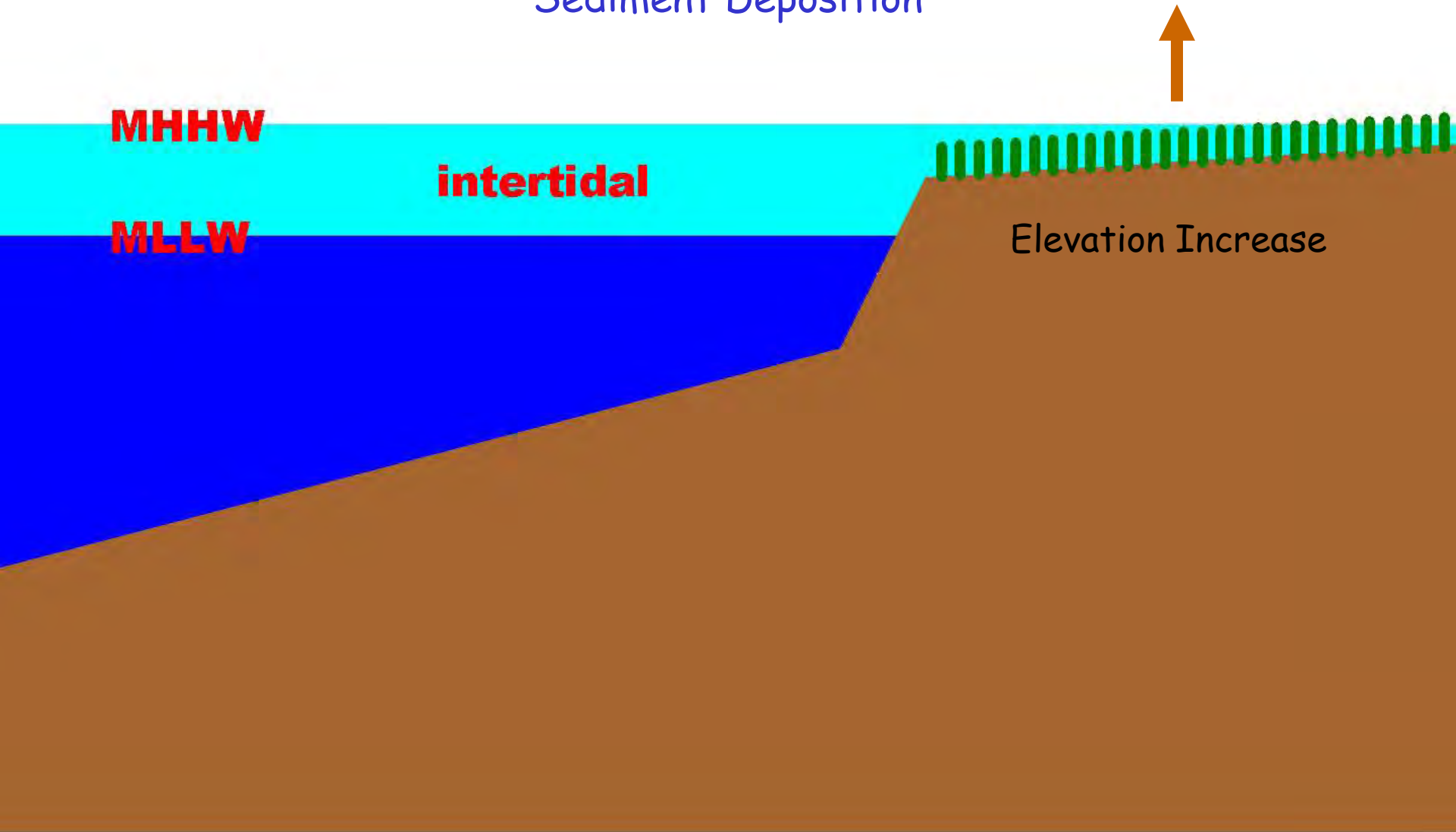
Relative Sea Level Rise (1)



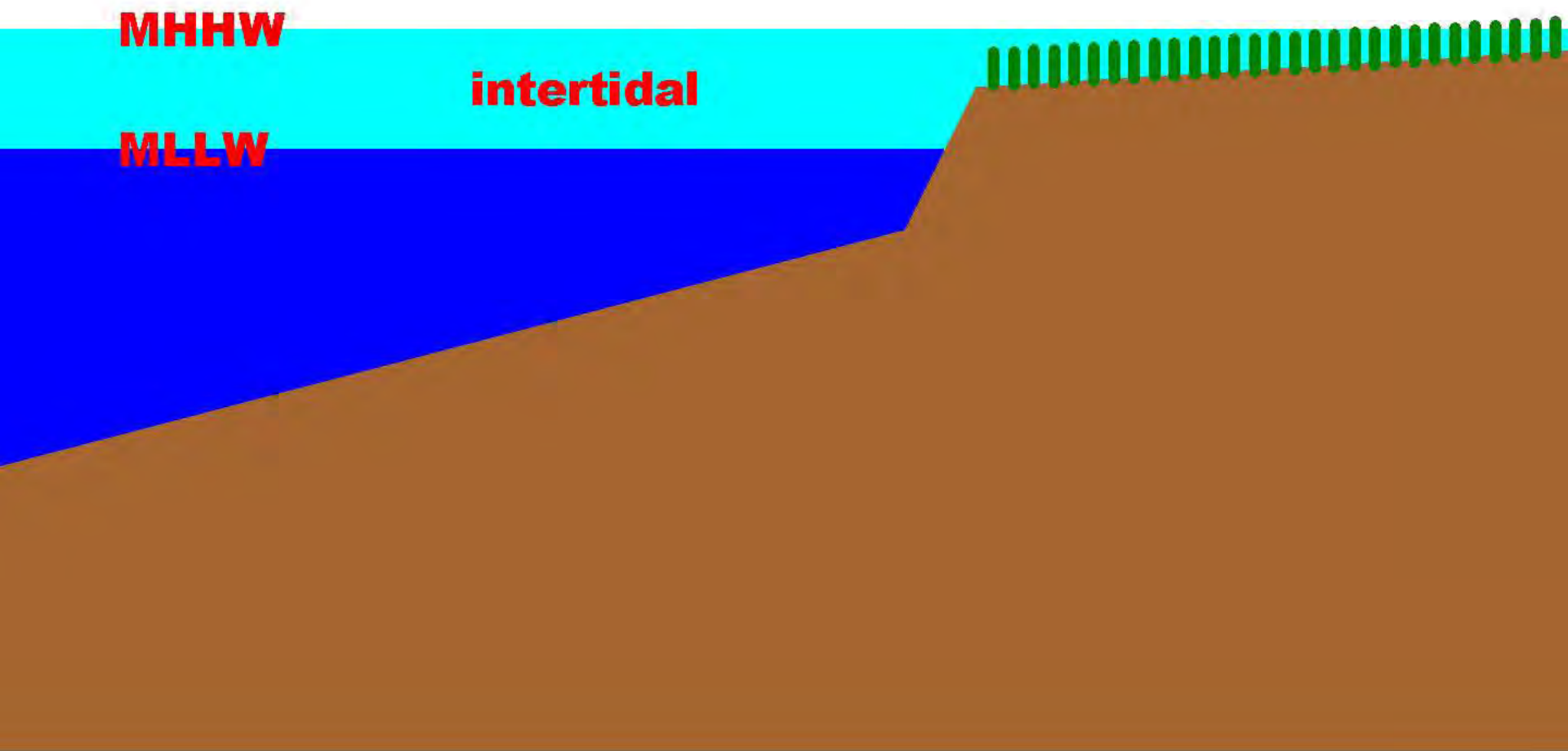
Relative Sea Level Rise (1) Rising Water Level



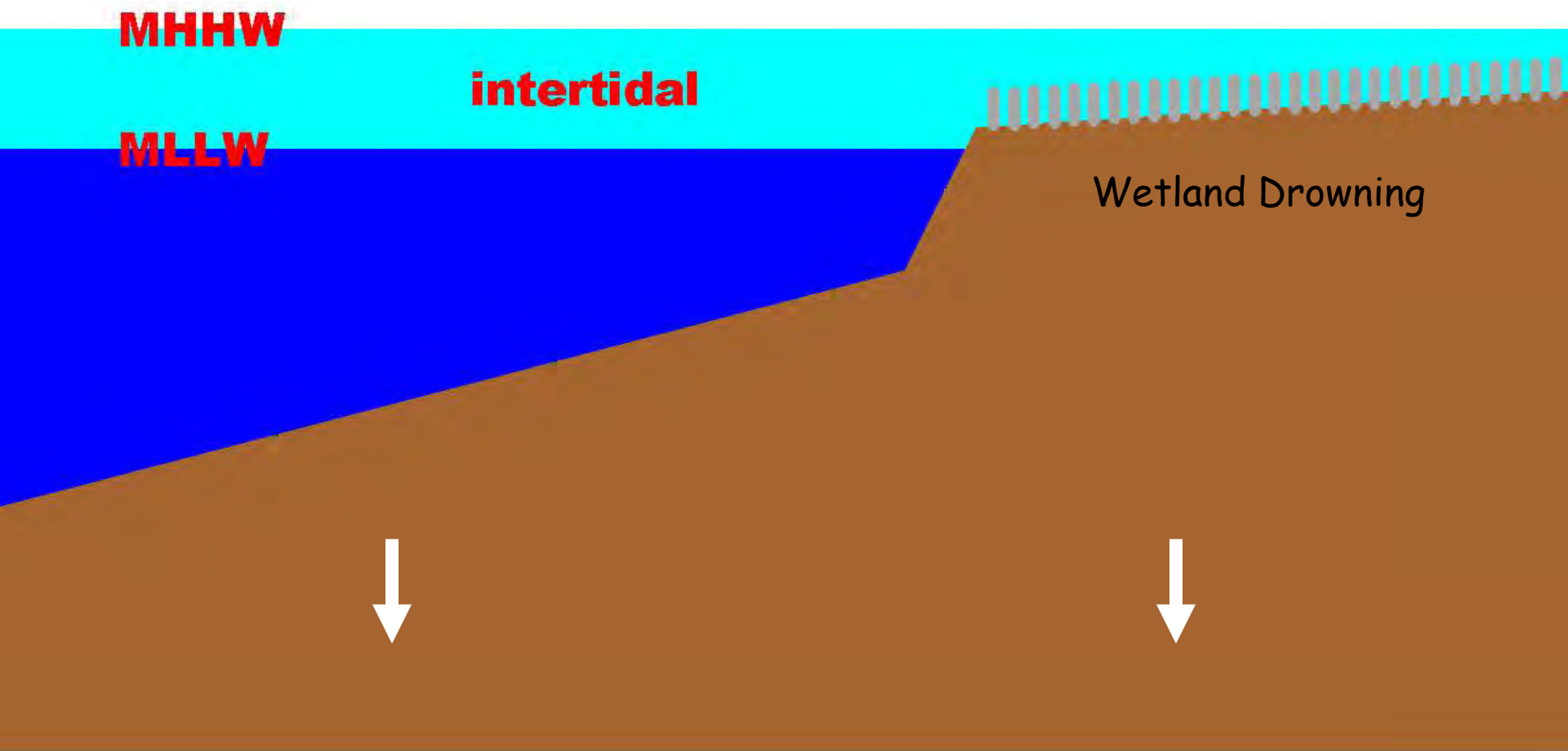
Relative Sea Level Rise (1) Sediment Deposition



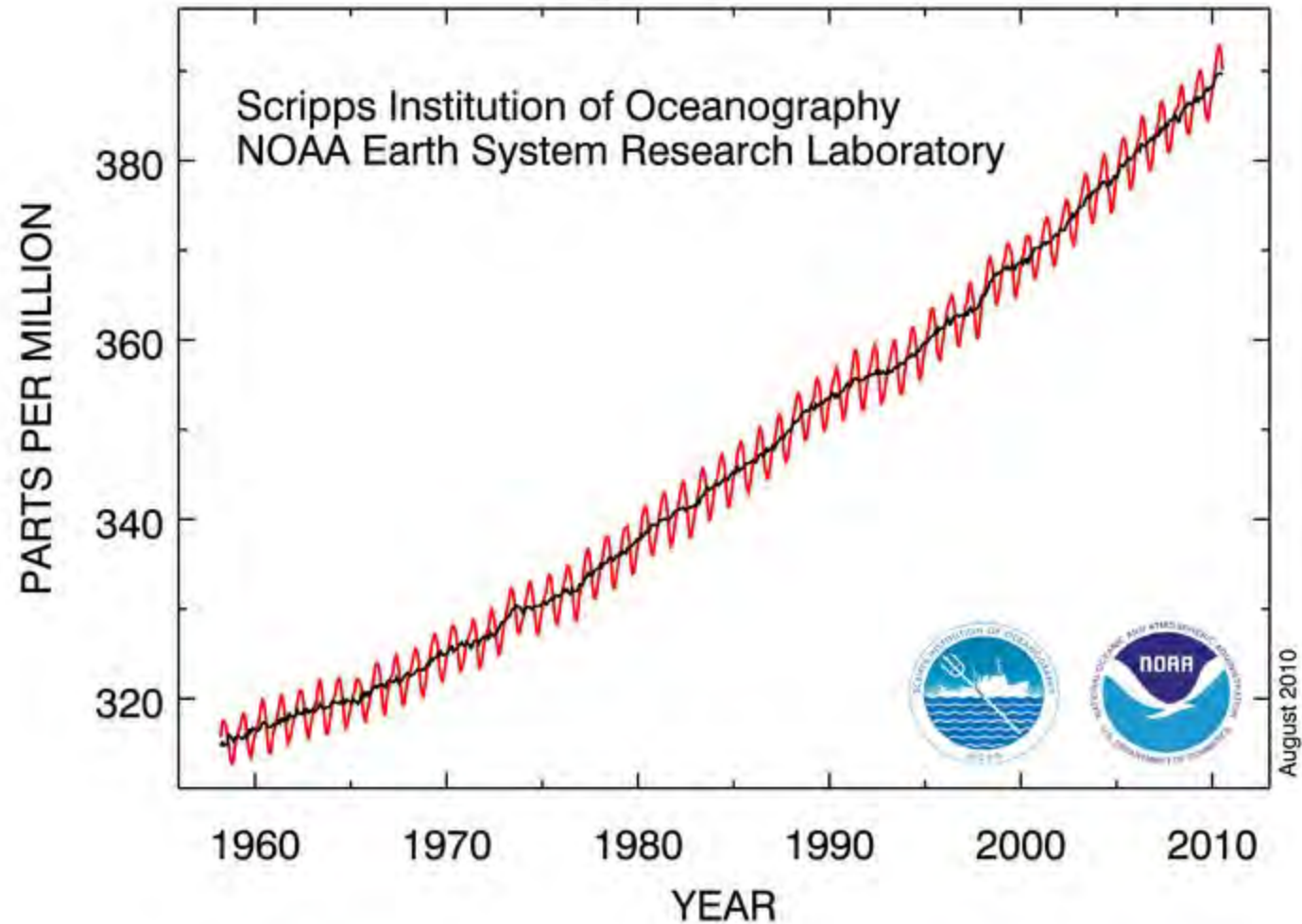
Relative Sea Level Rise (2)



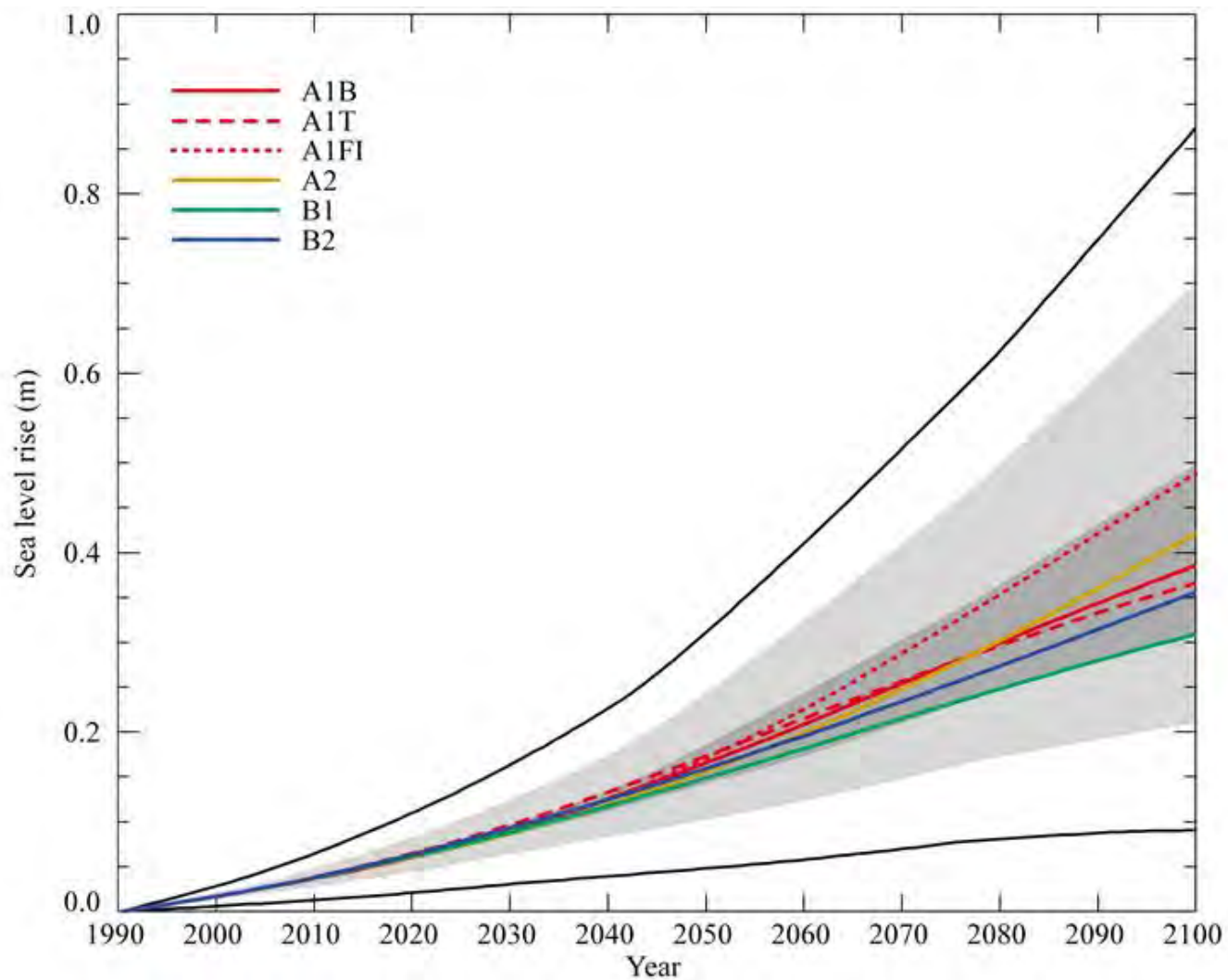
Relative Sea Level Rise (2) Subsidence



Atmospheric CO₂ Measurements



Sea Level Projections



source: IPCC

Sea Level Projections

“A1B High” (0.7m SLR by 2100)

The A1B storyline describes a future world of very rapid economic growth, energy obtained from a balance of sources, global population that peaks in mid-century and declines thereafter, and the rapid introduction of new and more efficient technologies.

(IPCC 2001)

“R07 High” (1.5m SLR by 2100)

Updated projection by Vermeer and Rahmstorf.

(Proceedings of the National Academy of Sciences 2009)



Santa Cruz

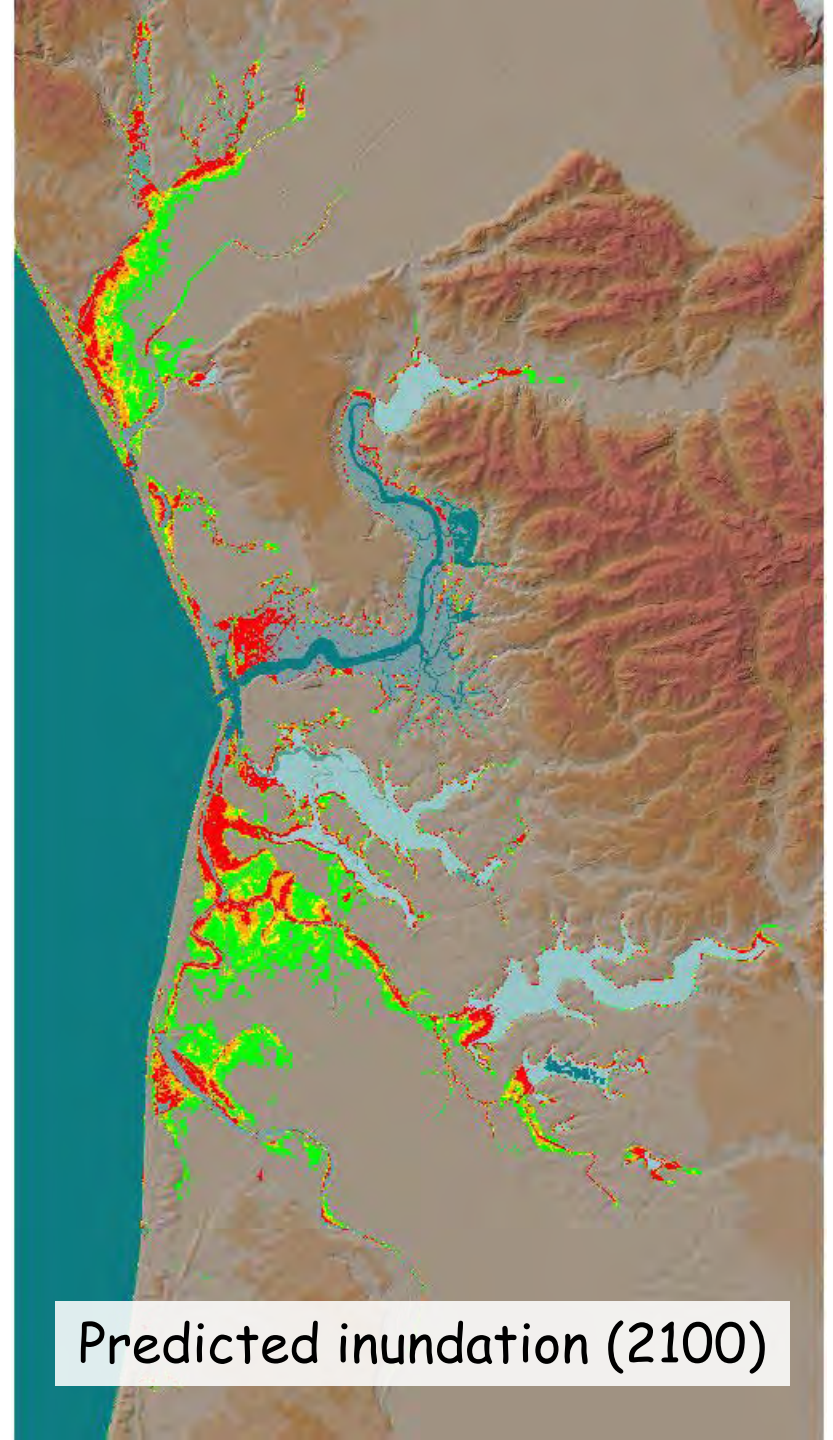
Elkhorn Slough

Monterey

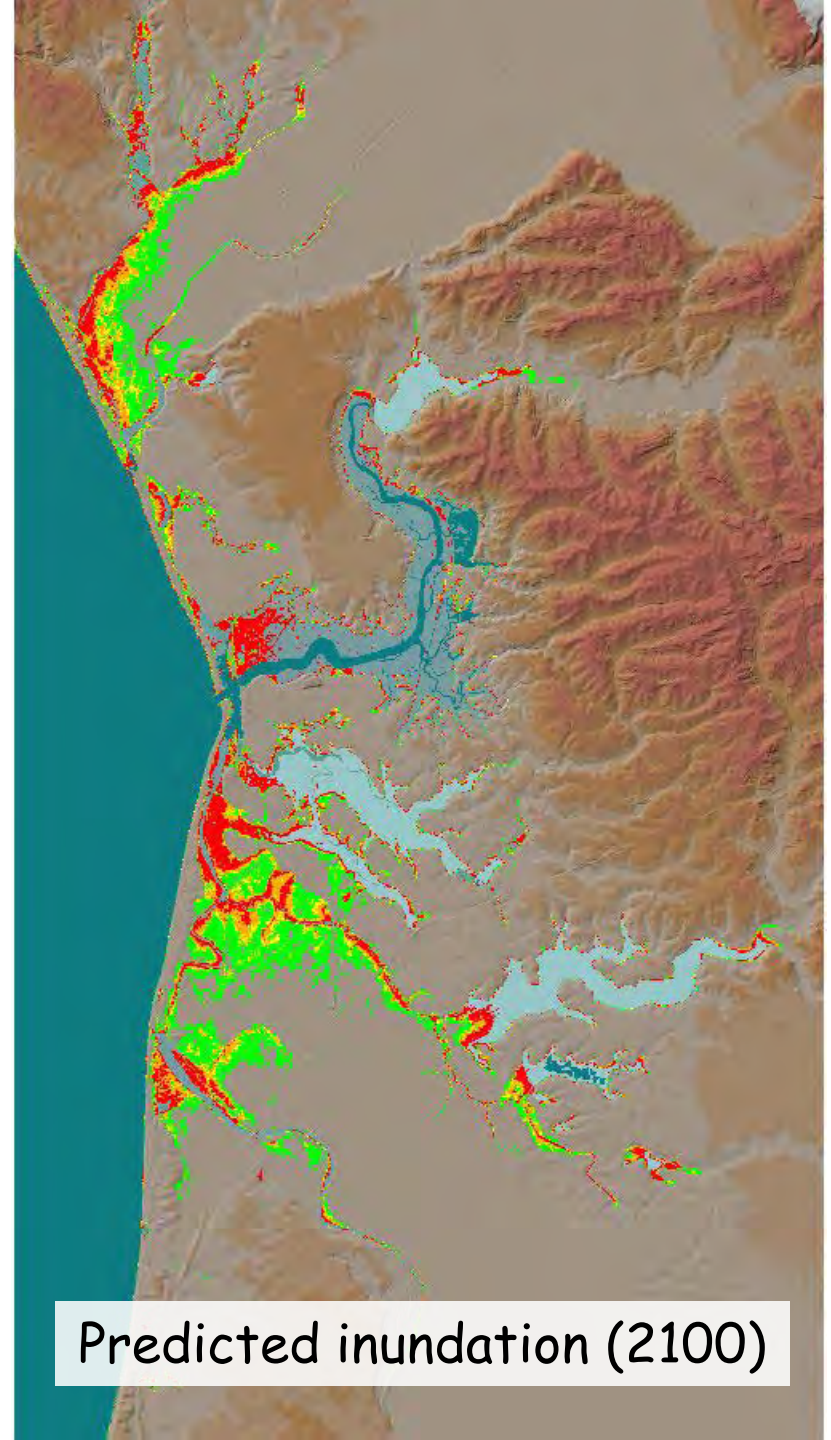
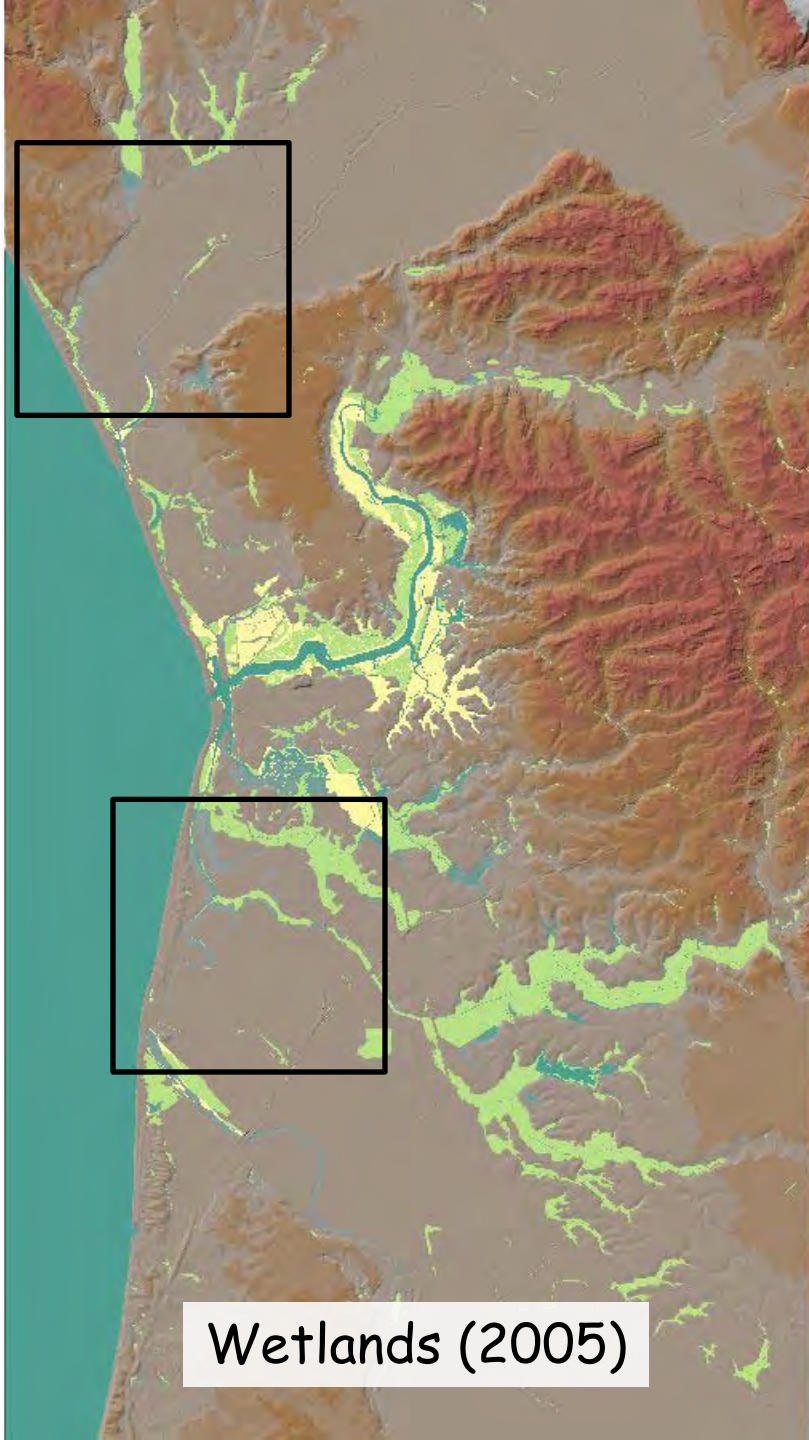
0 10 20 30 40
Kilometers



Wetlands (2005)

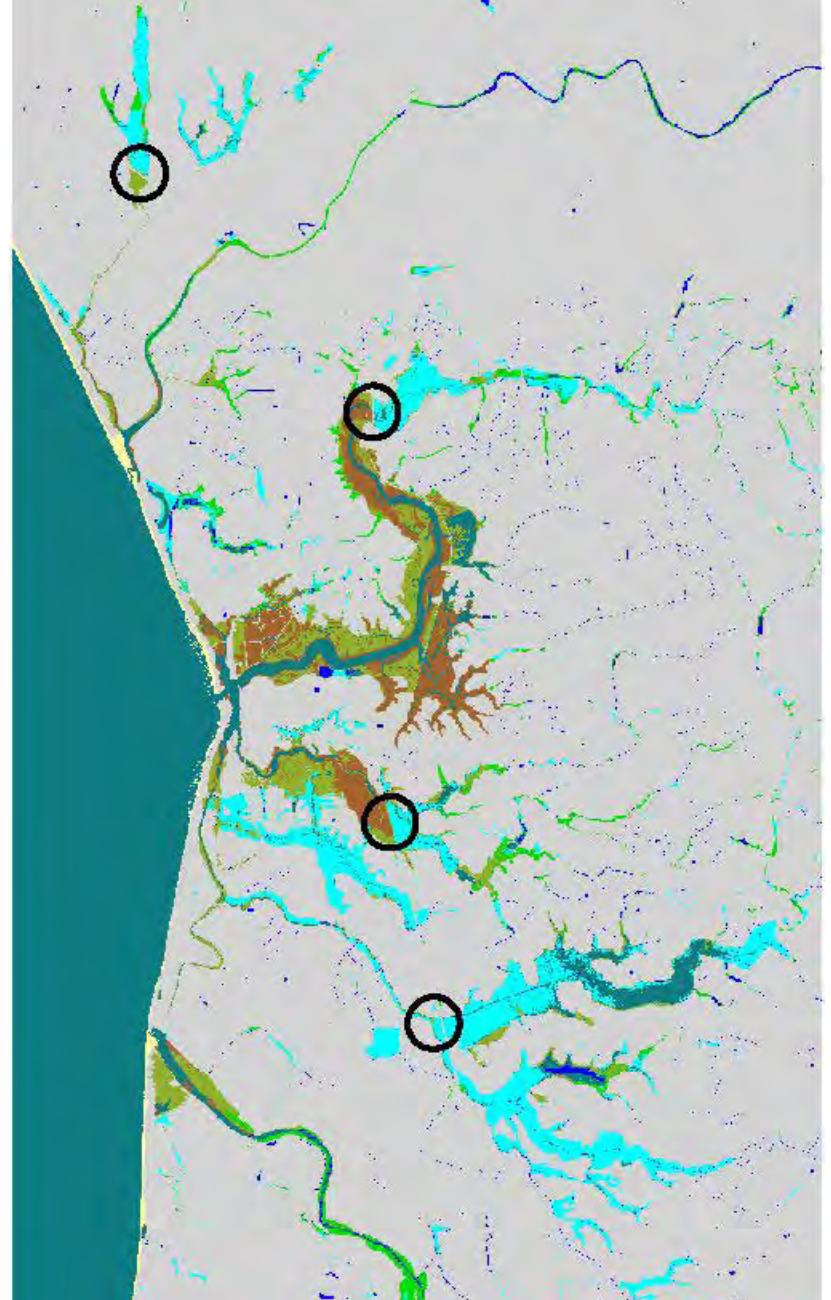


Predicted inundation (2100)





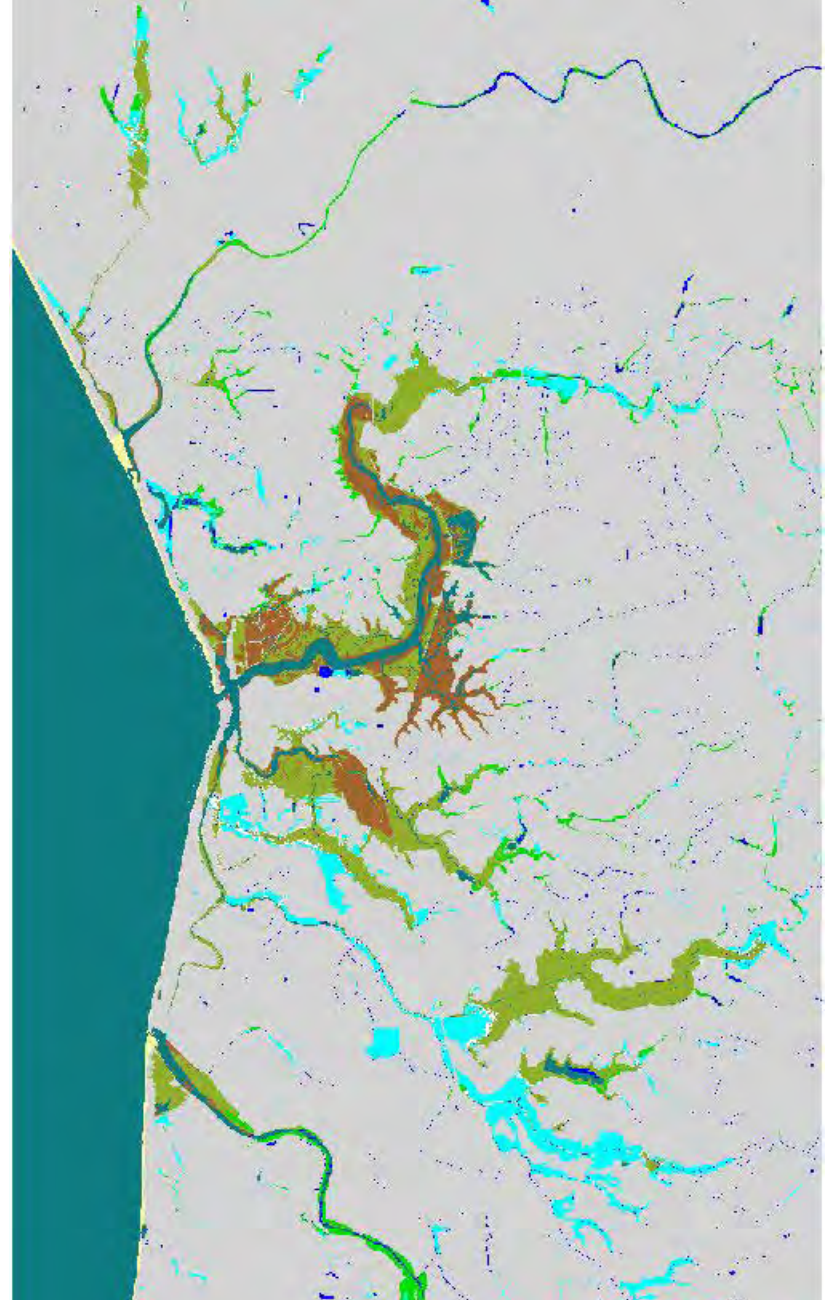
2025 (A1B scenario, 0.13m SLR)



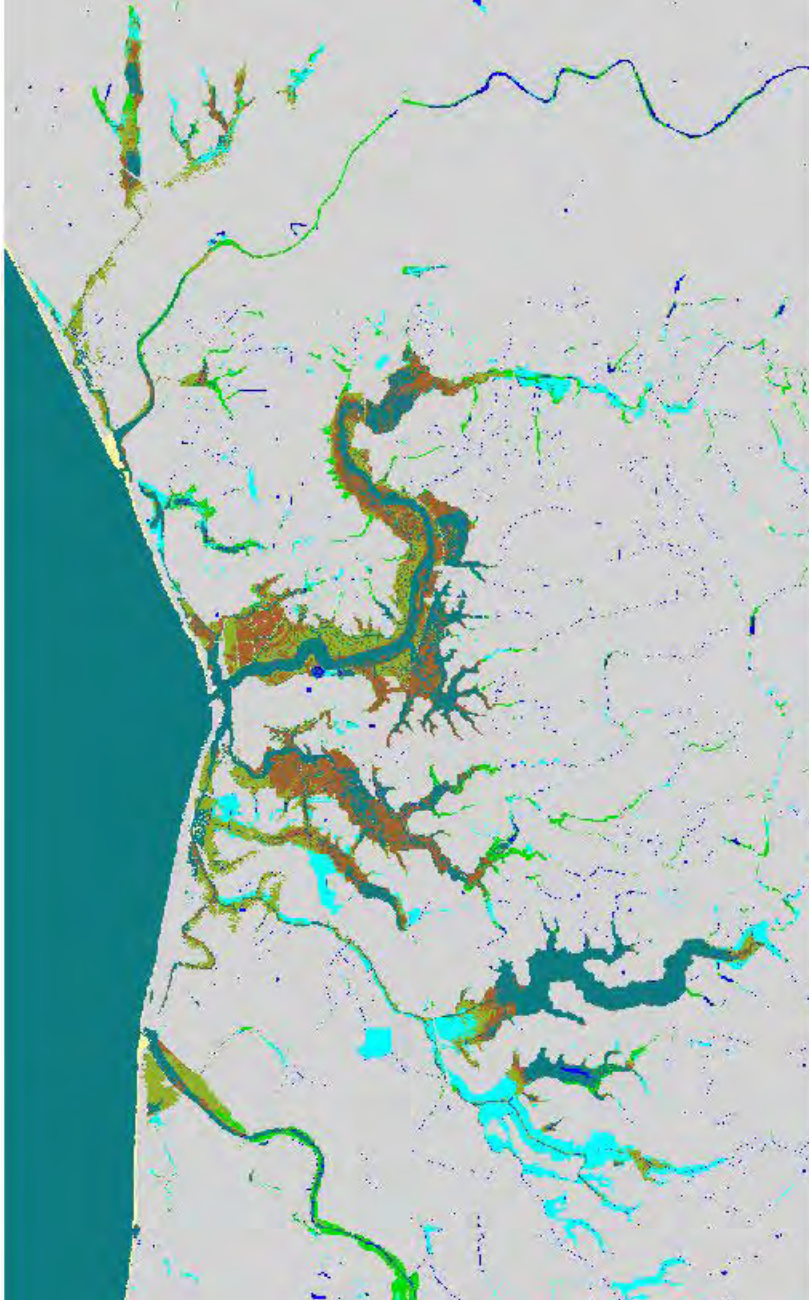
2025 (with levees)



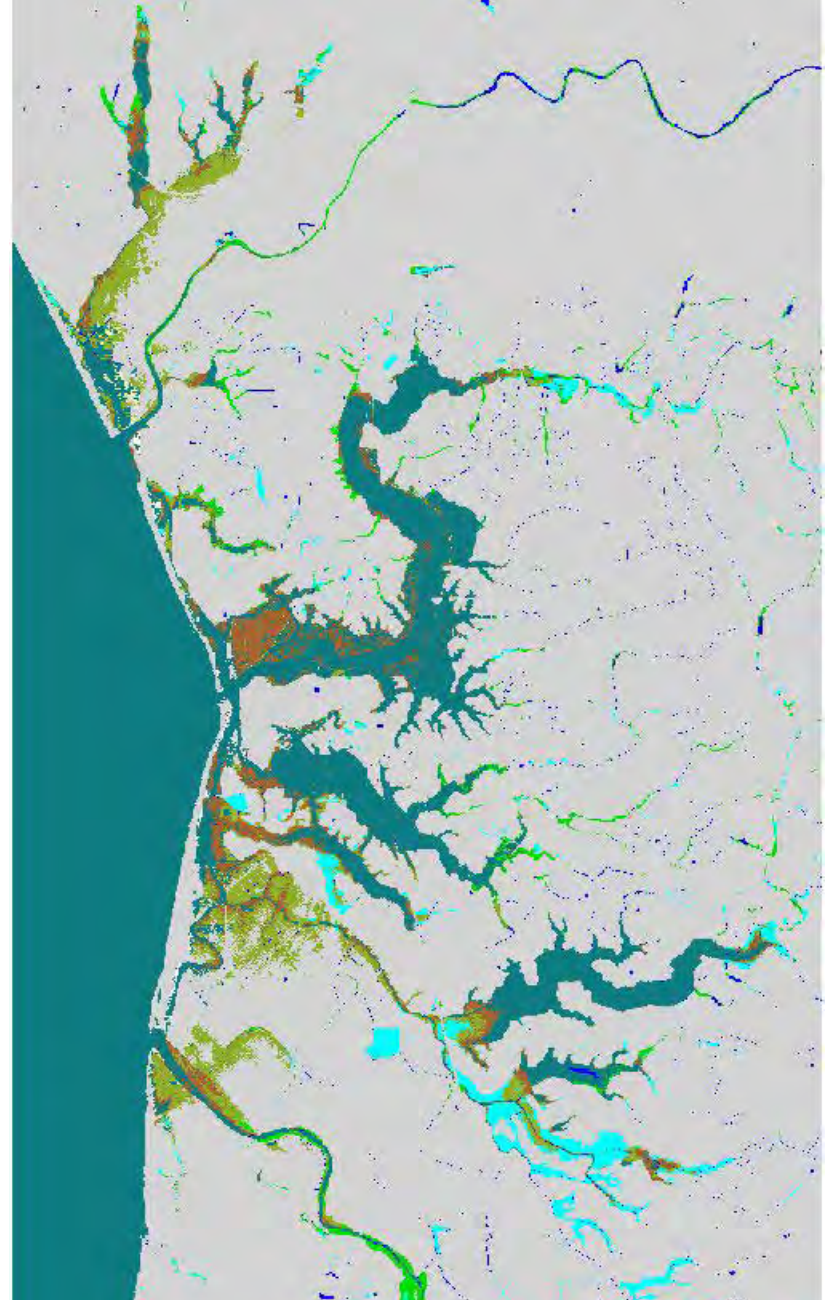
2025 (A1B scenario, 0.13m SLR)



2025 (R07 scenario, 0.3m SLR)



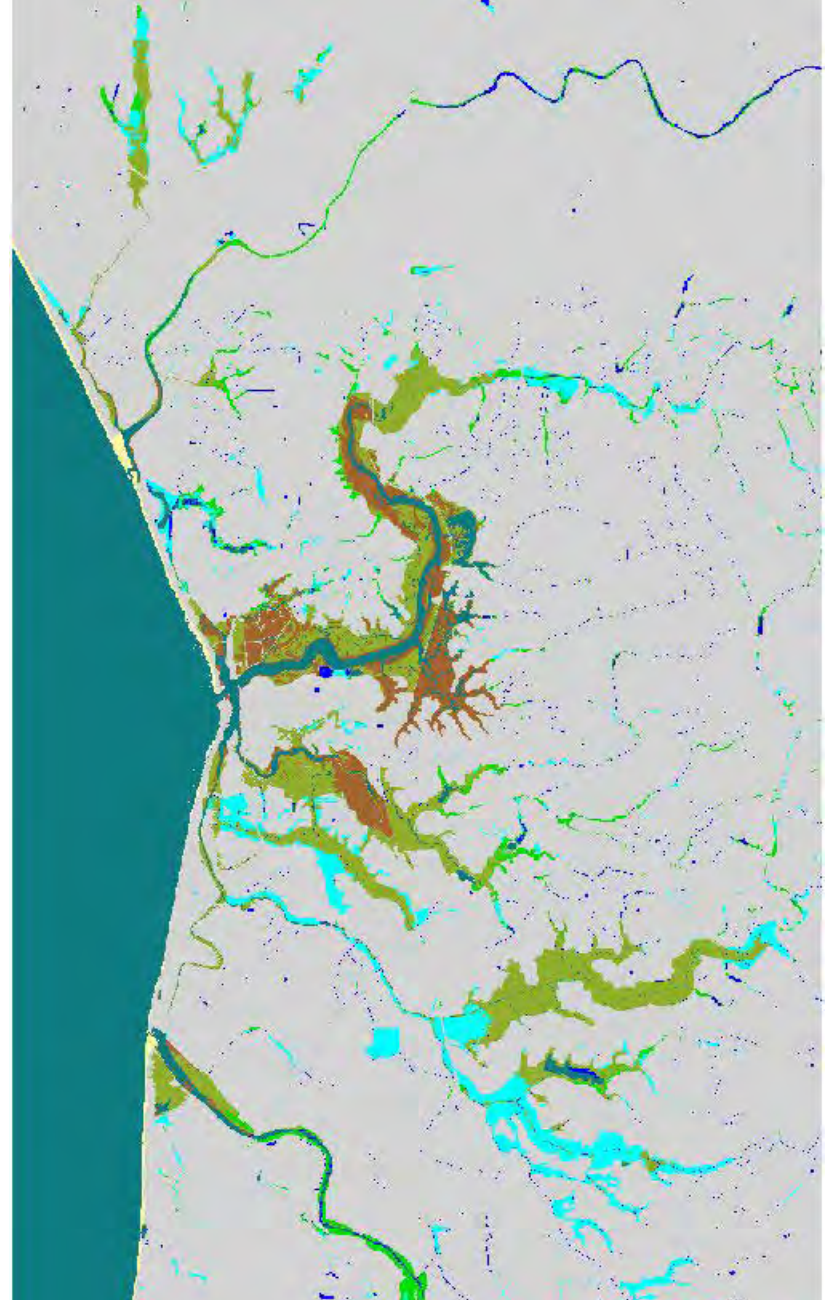
2100 (A1B scenario, 0.7m SLR)



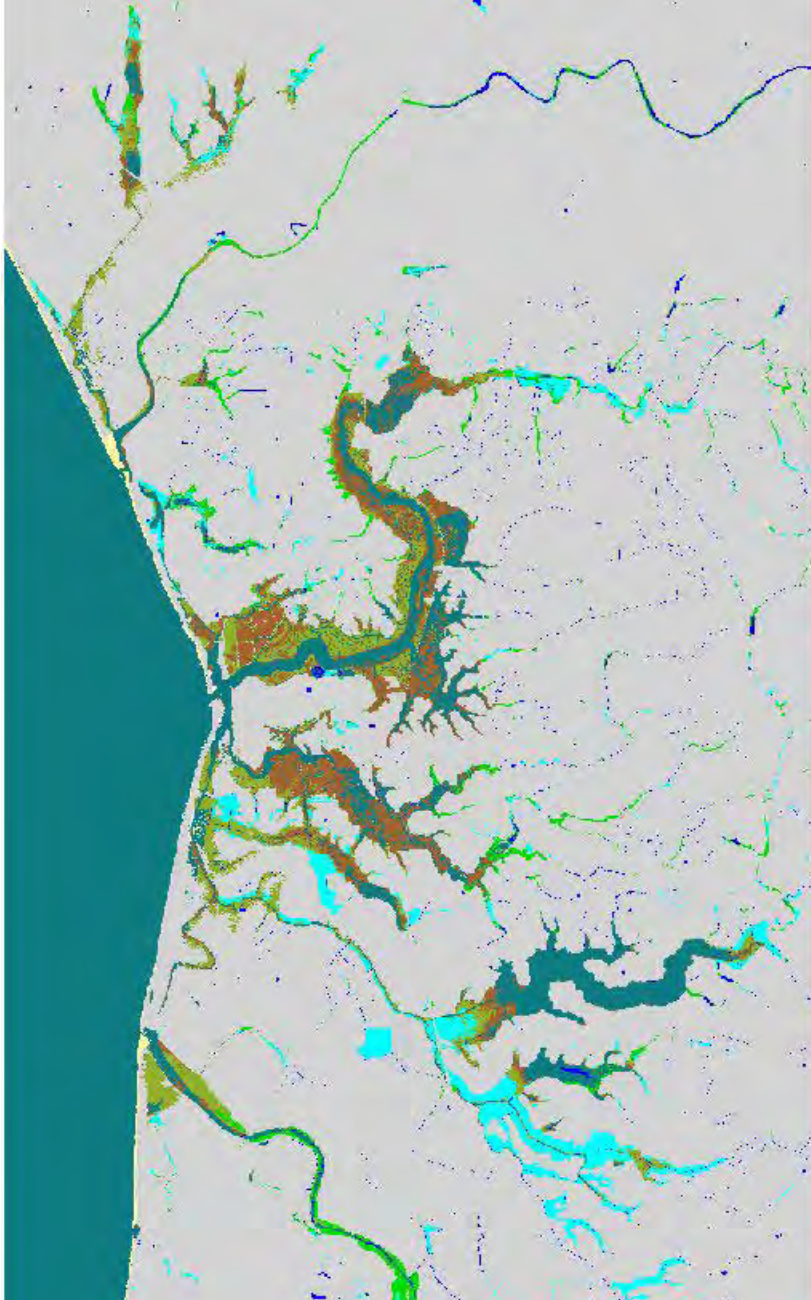
2100 (R07 scenario, 1.5m SLR)



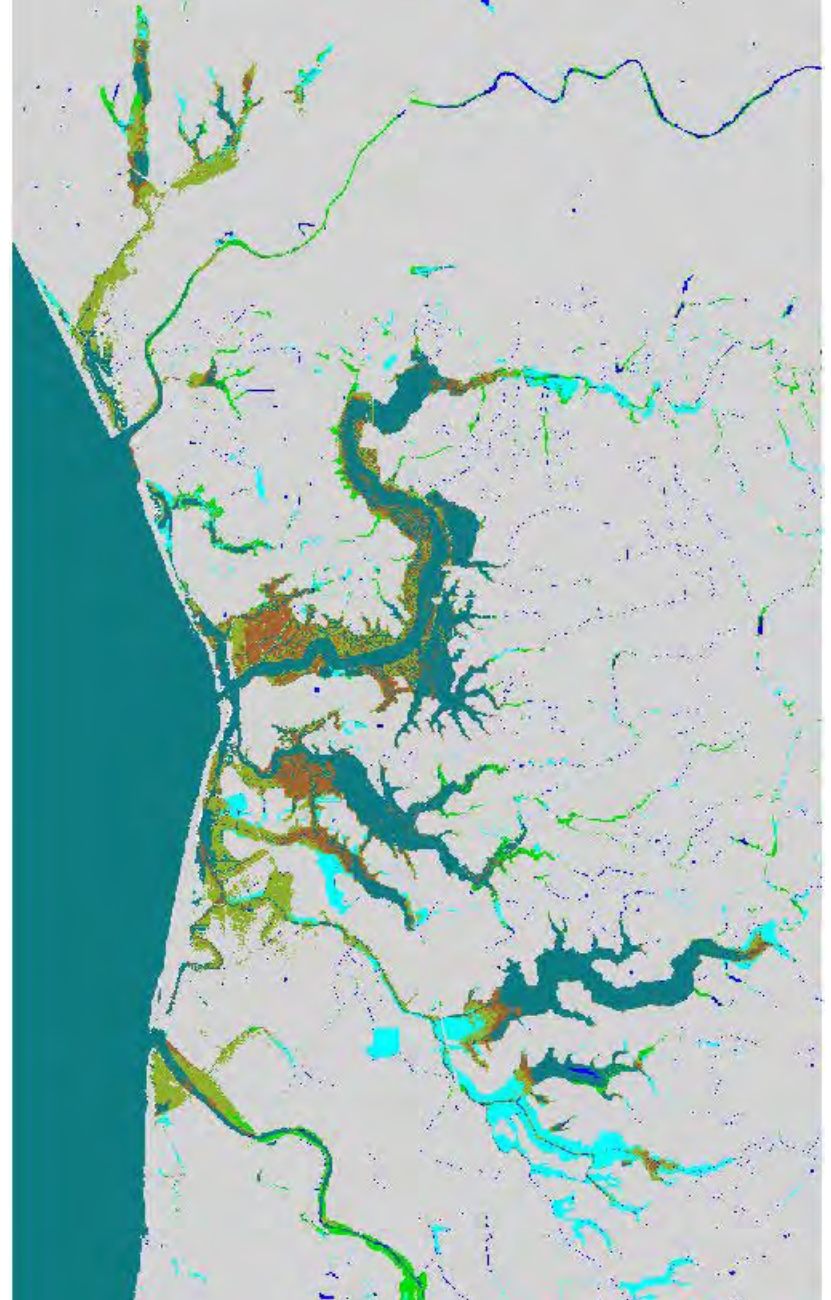
2025 (A1B scenario, 0.13m SLR)



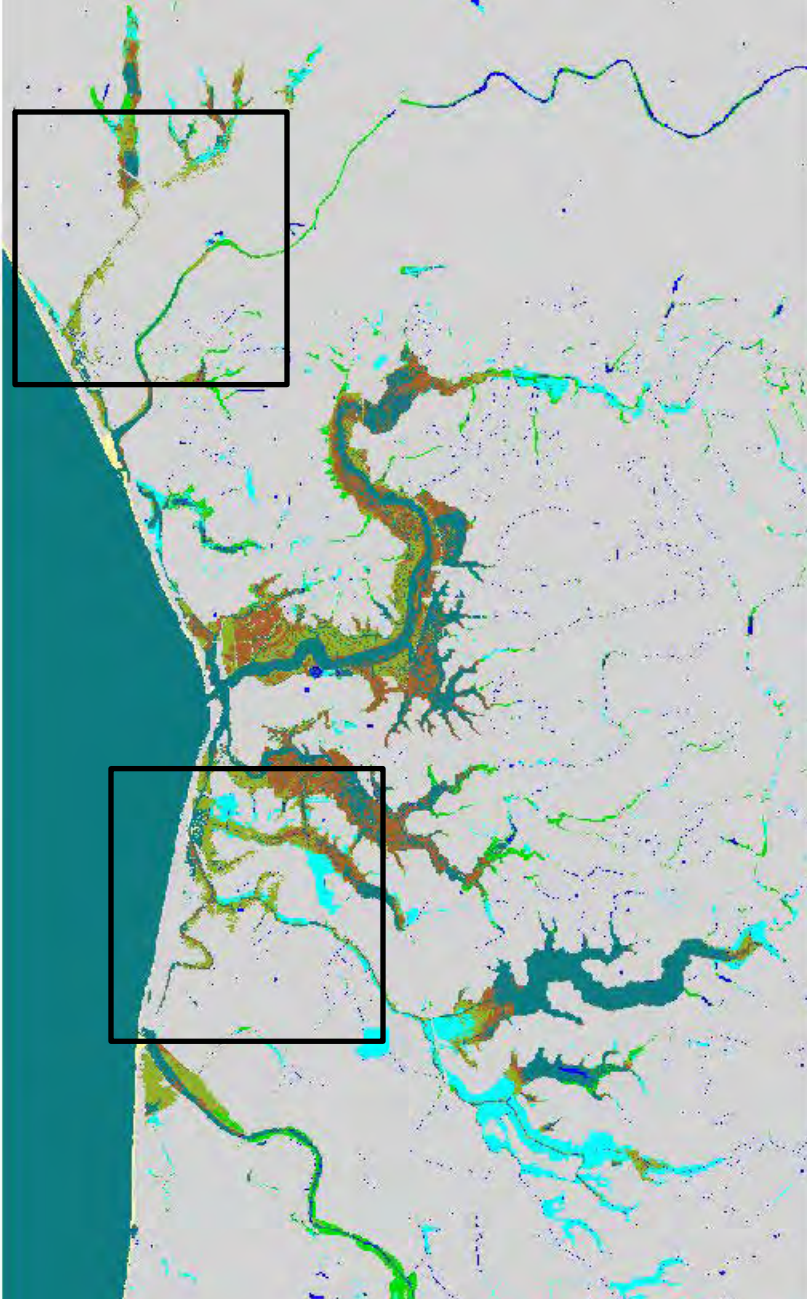
2025 (with 4mm/yr subsidence)



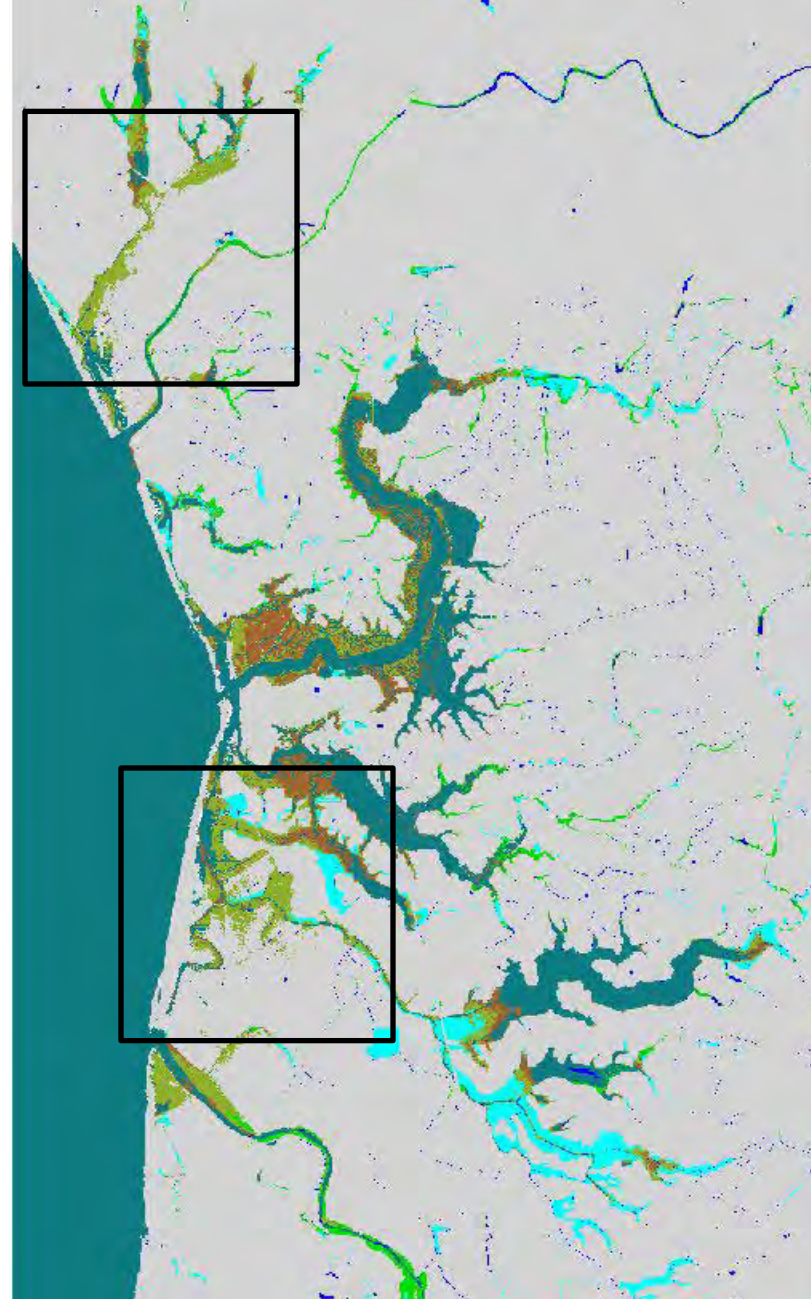
2100 (A1B scenario, 0.7m SLR)



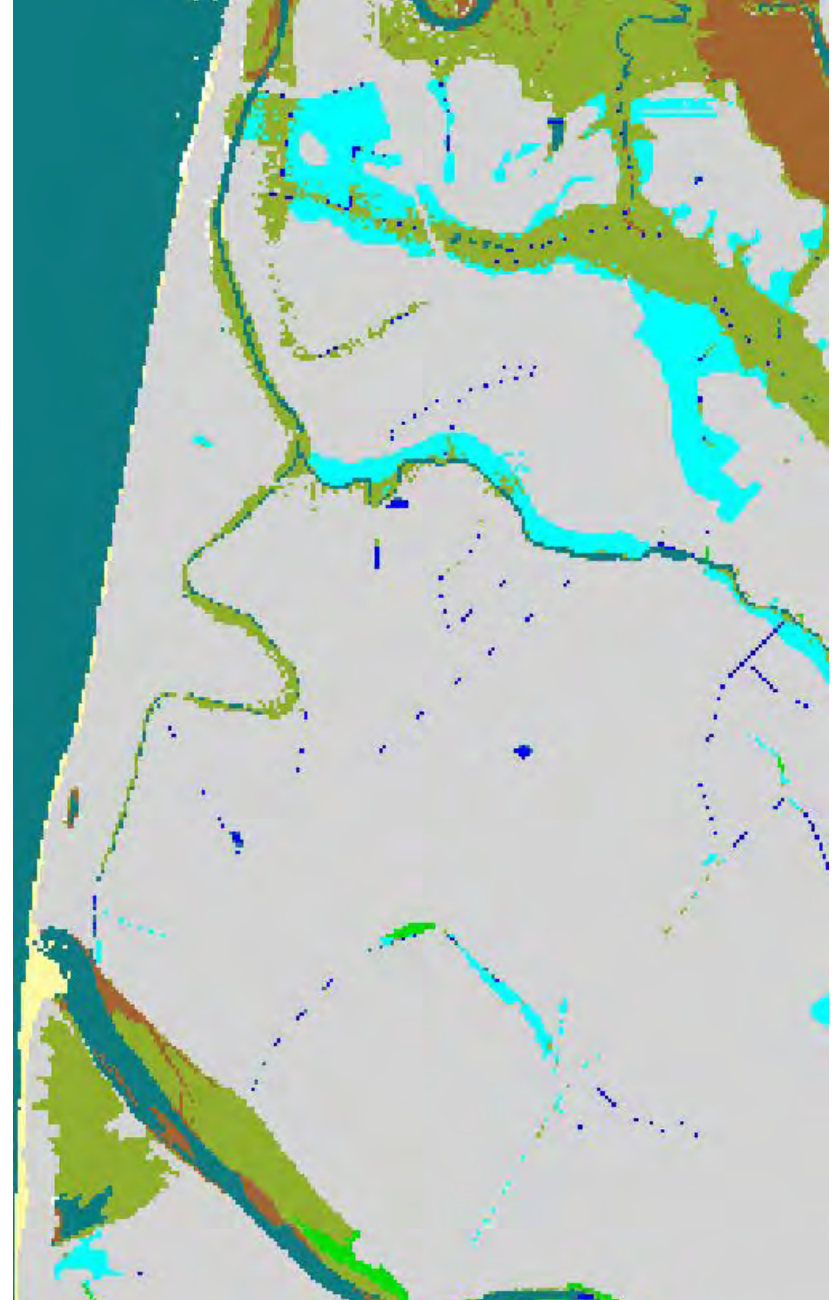
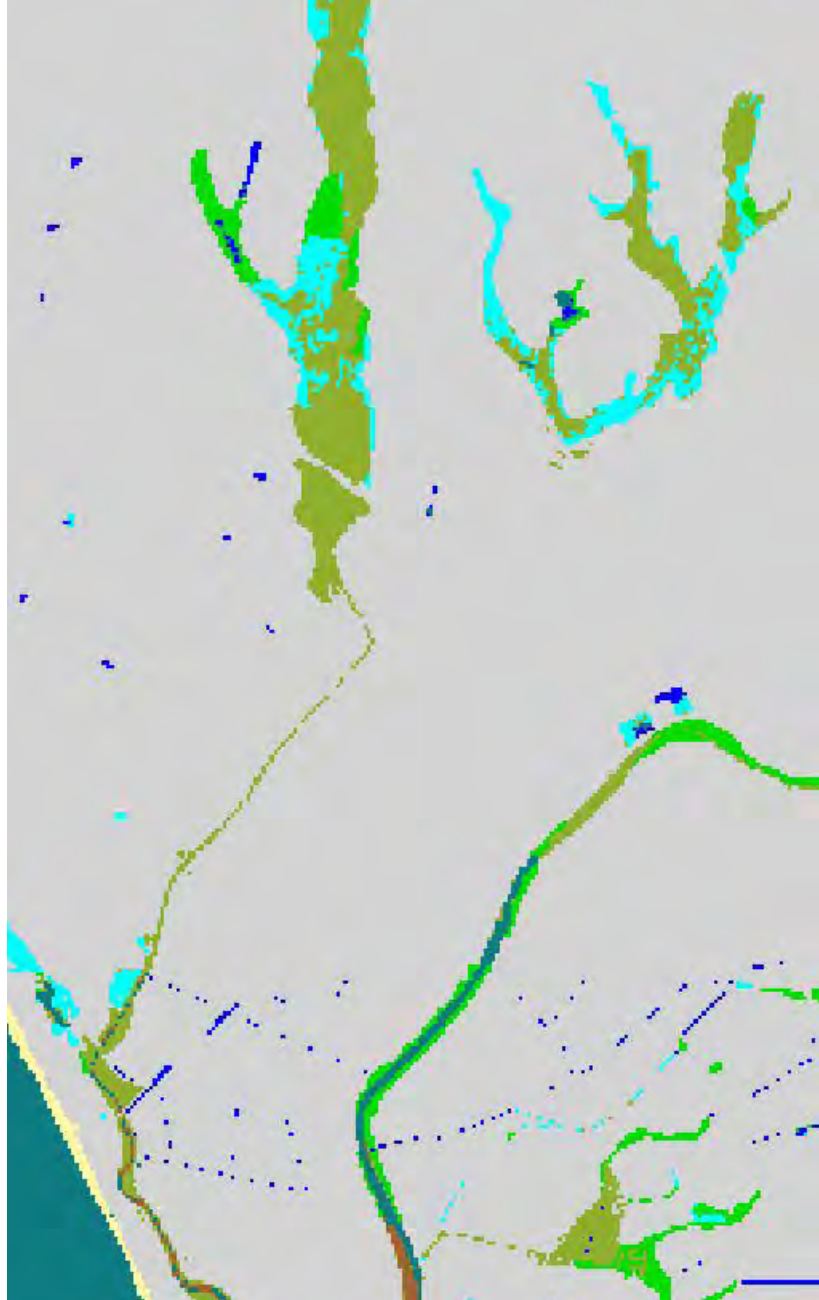
2100 (with 4mm/yr subsidence)



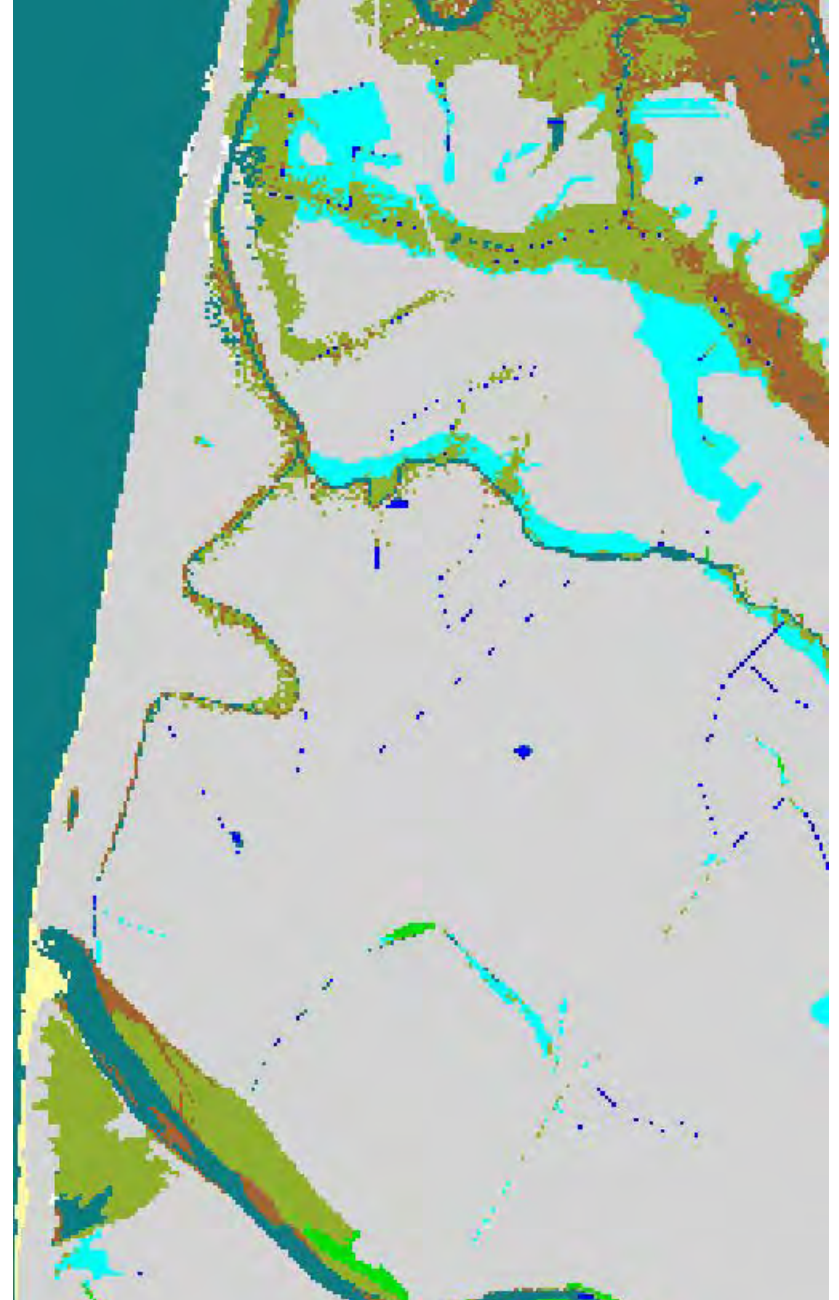
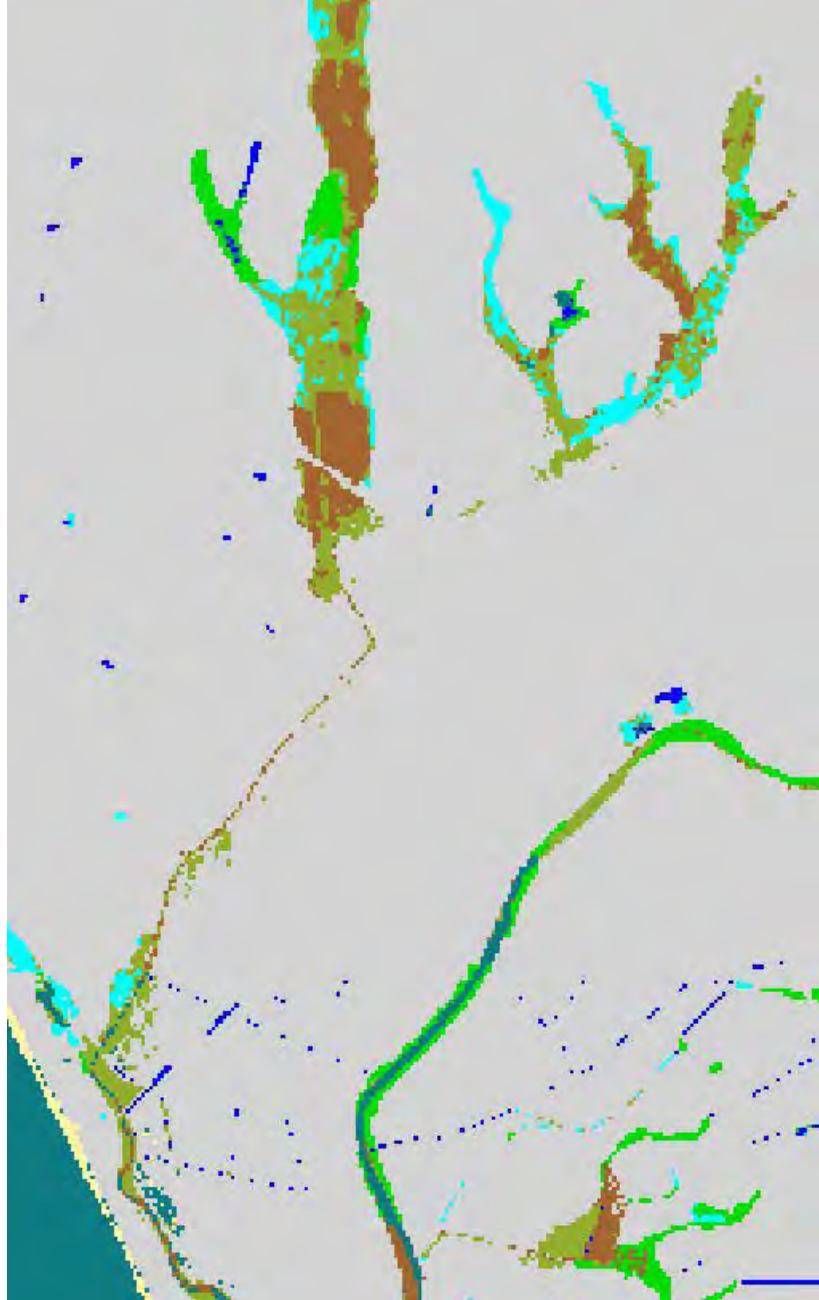
2100 (A1B scenario, 0.7m SLR)



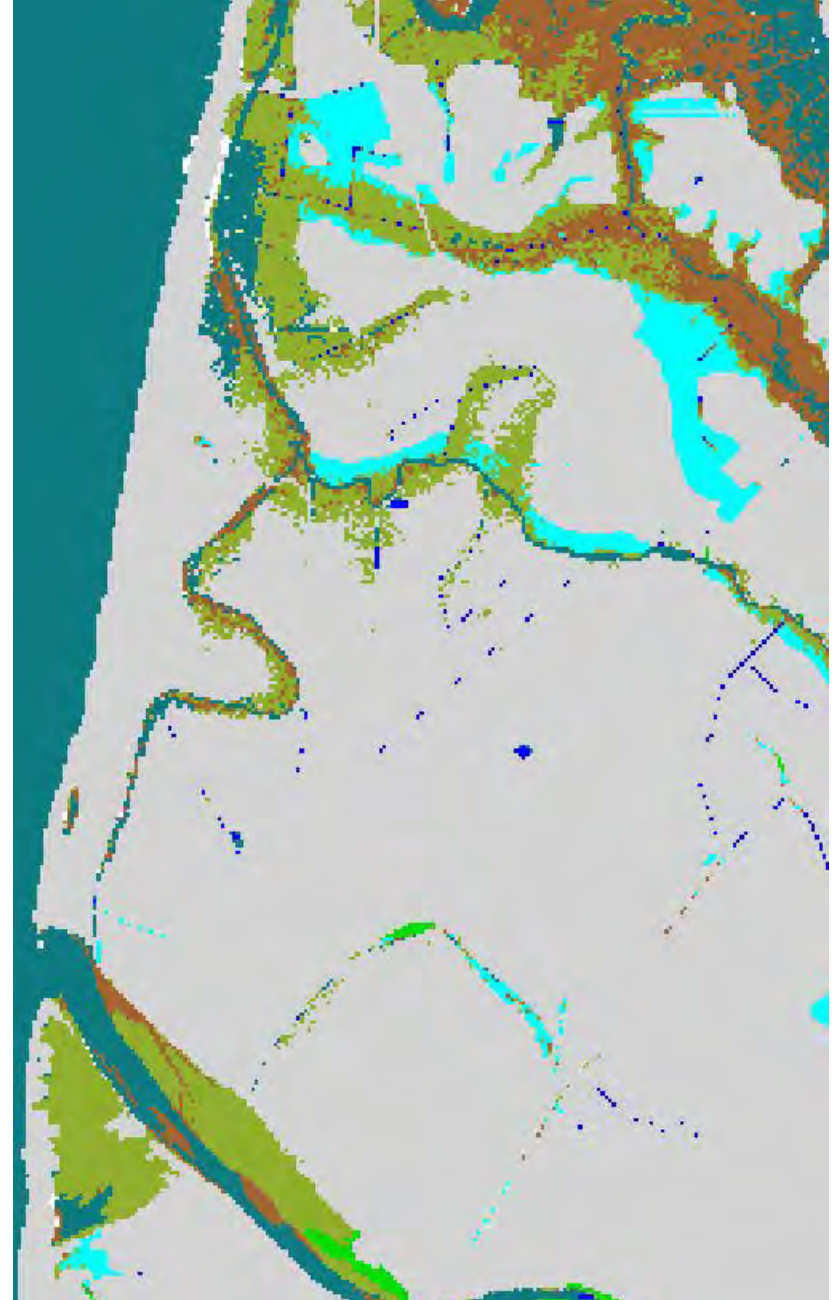
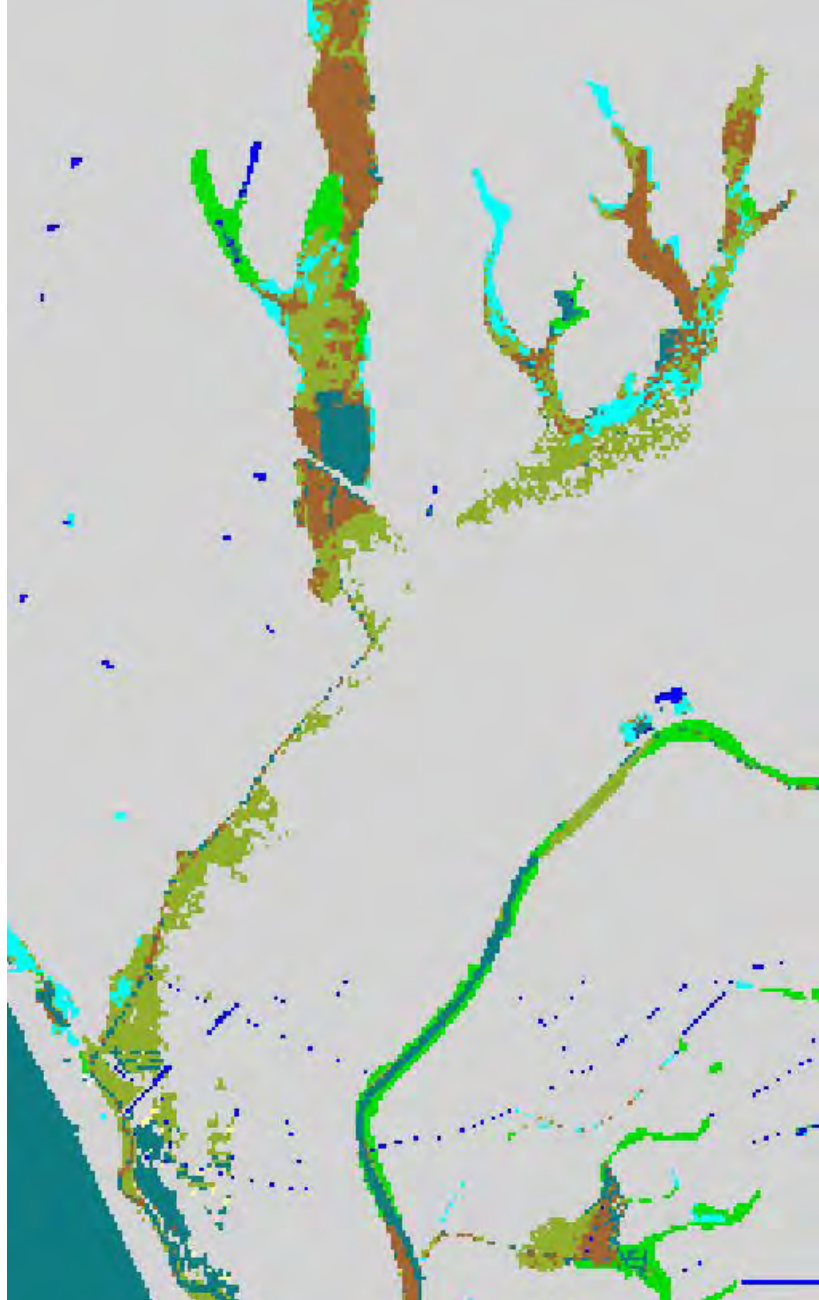
2100 (with 4mm/yr subsidence)



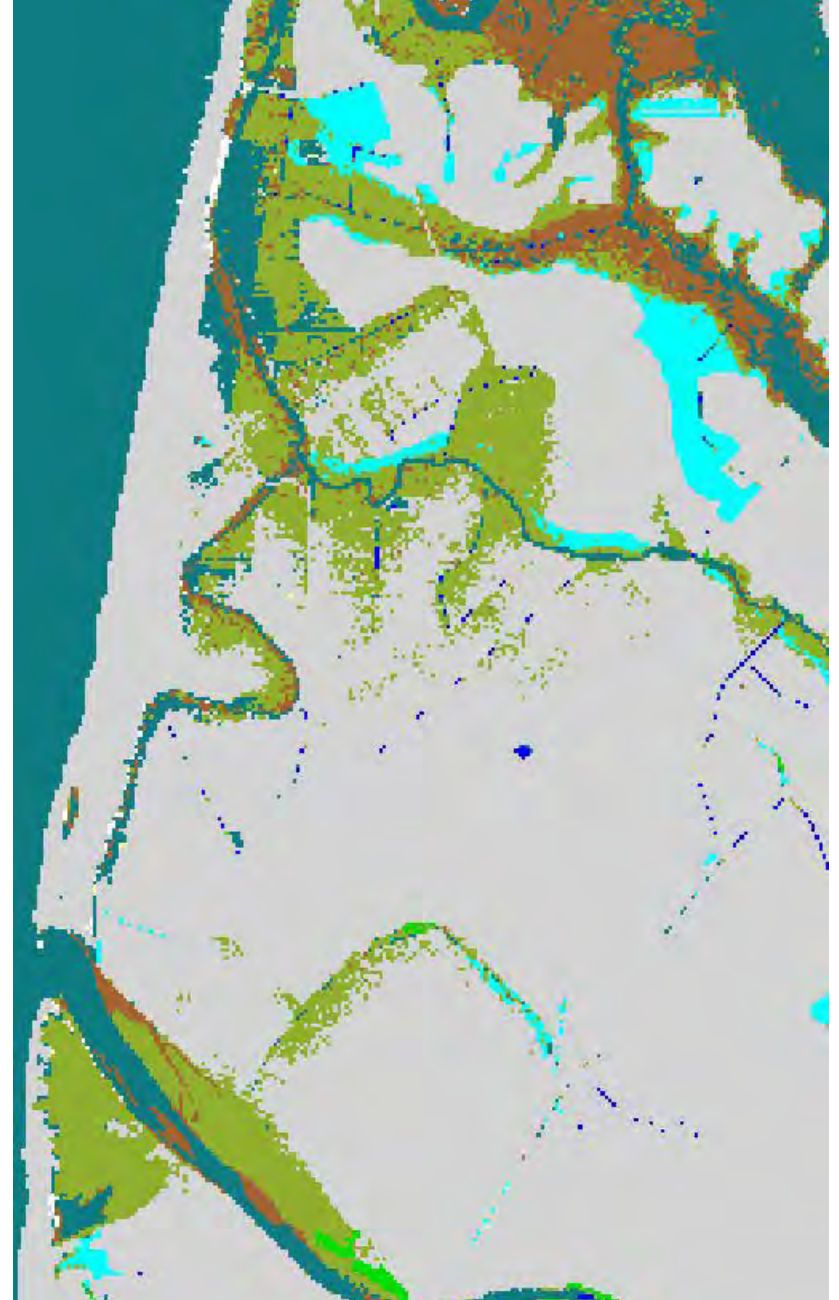
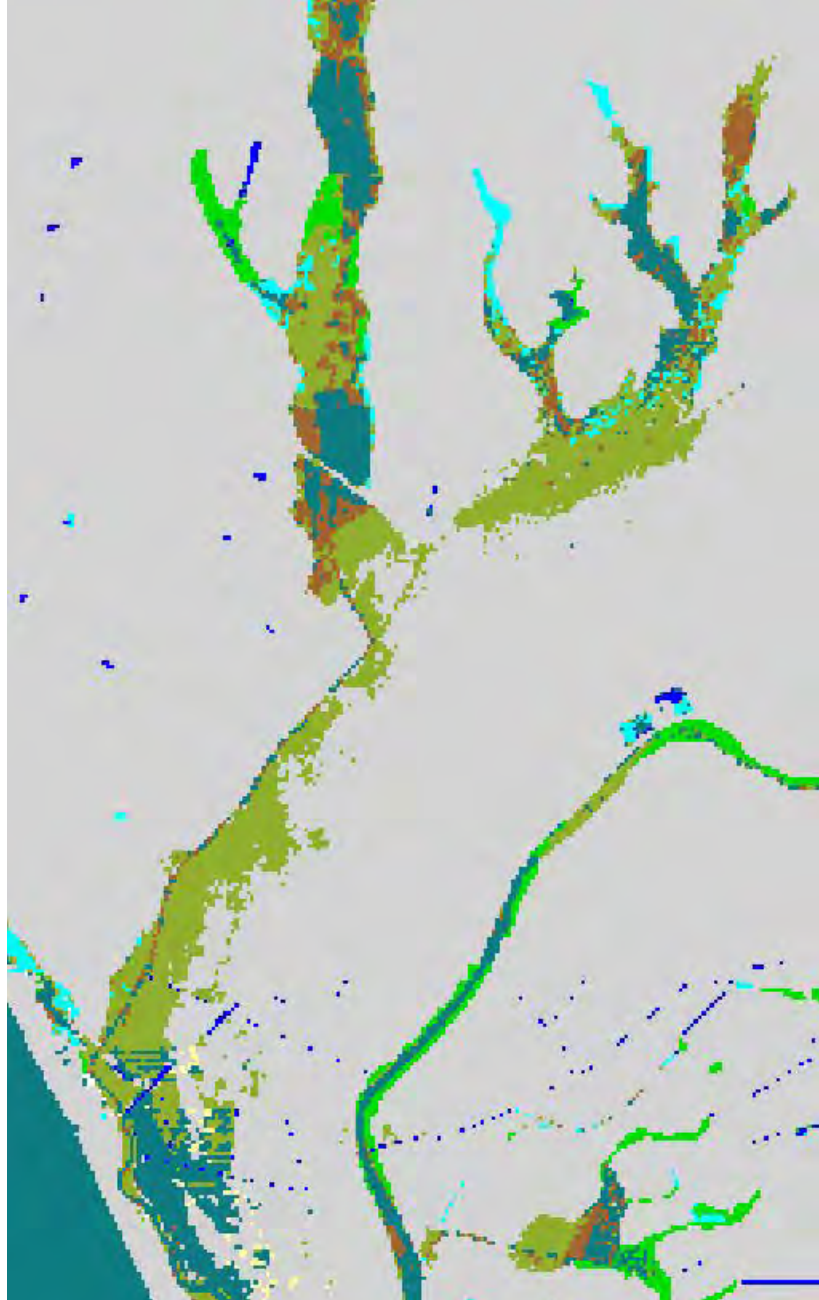
2025 (A1B scenario, 0.13m SLR with 4mm/yr subsidence)



2050 (A1B scenario, 0.28m SLR with 4mm/yr subsidence)



2075 (A1B scenario, 0.49m SLR with 4mm/yr subsidence)



2100 (A1B scenario, 0.7m SLR with 4mm/yr subsidence)

