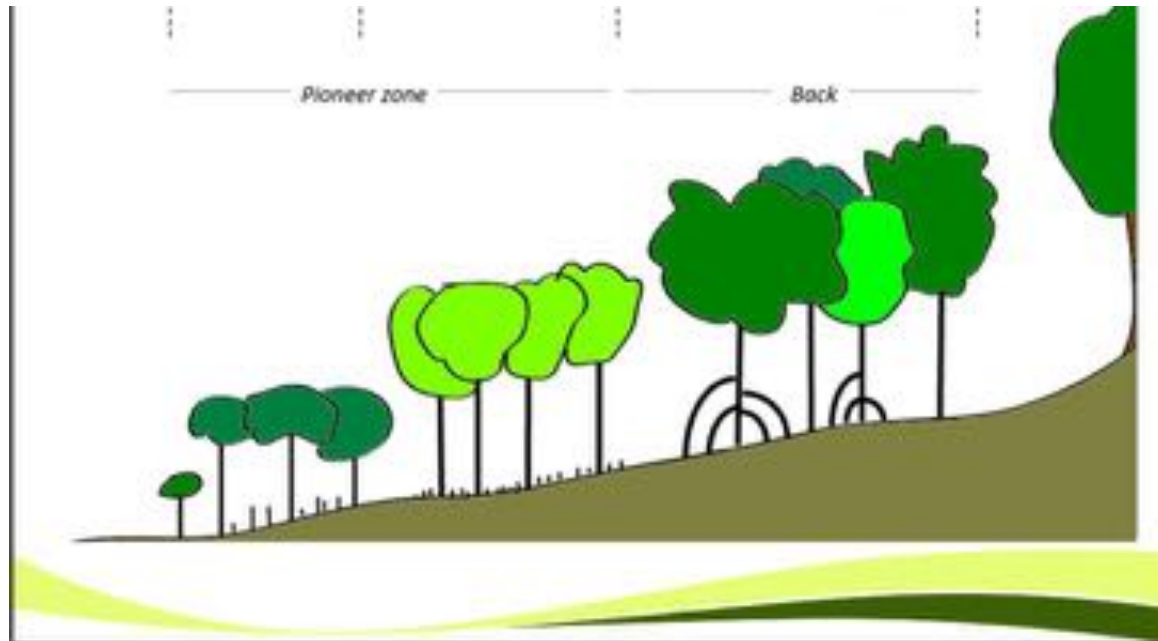


MODELLING SEA-LEVEL RISE, SUBSIDENCE AND ACCRETION RATES IN MANGROVE ECOSYSTEMS



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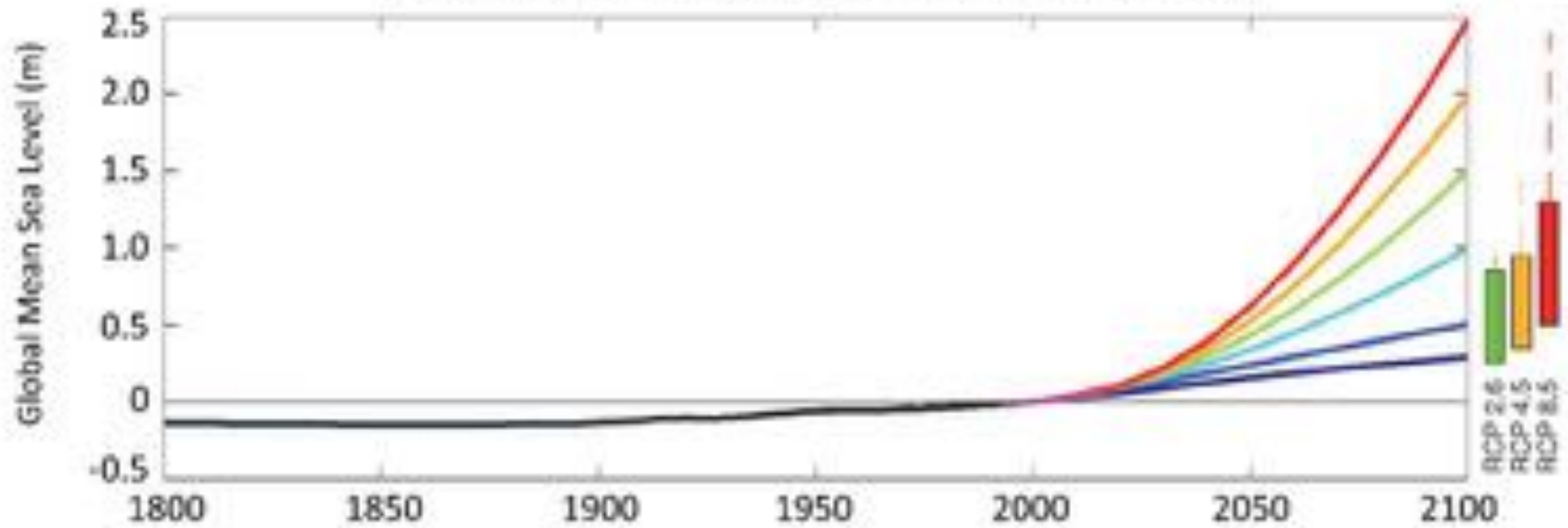
GROUP INSTRUCTOR:
MADELINE FOSTER-MARTINEZ
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OUTLINE

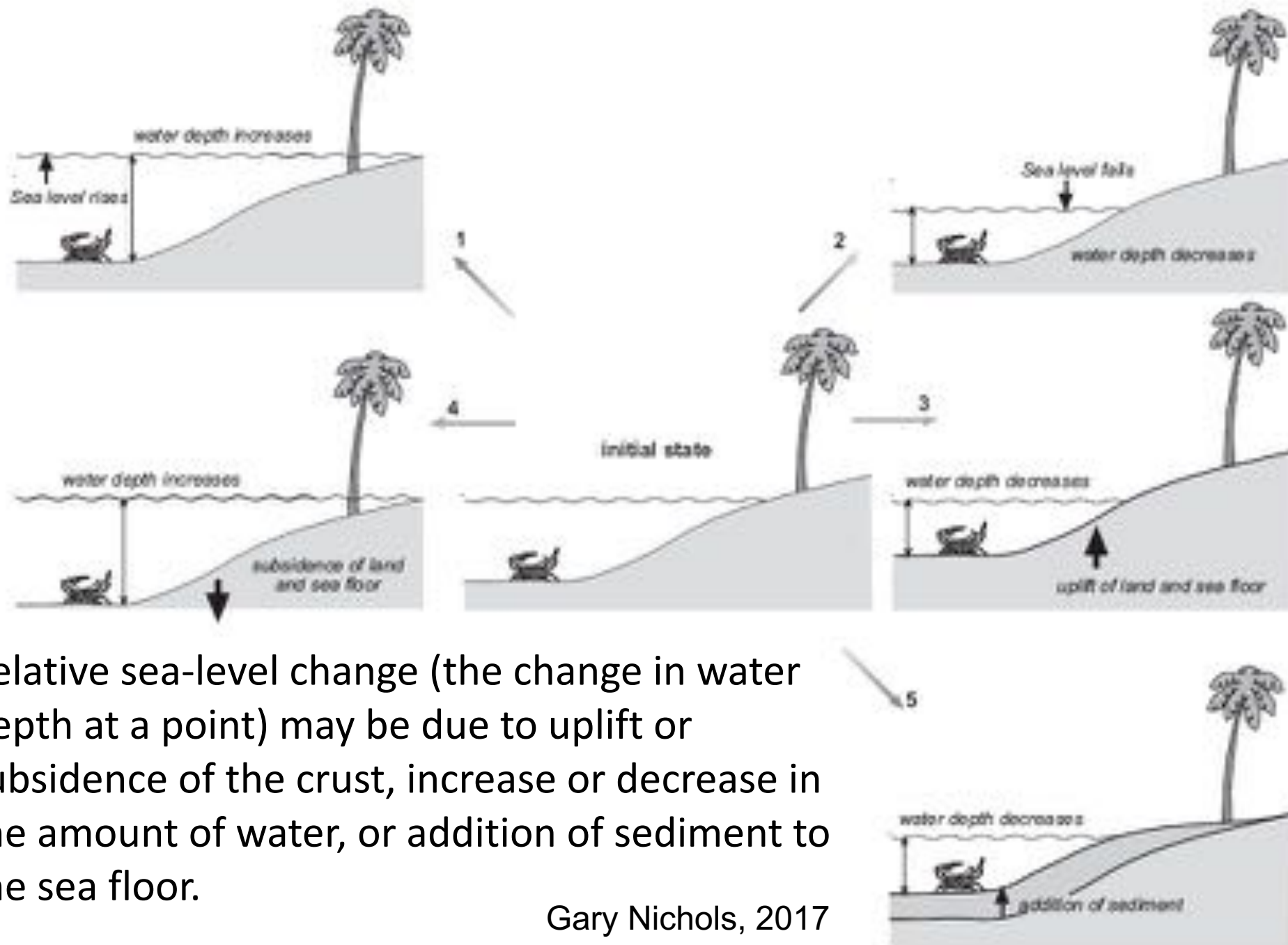
- Brief Introduction
- Study area: Rookery Bay, Southwestern Florida
- Results
- Conclusion



NOAA Global Mean Sea Level (GMSL) Scenarios for 2100

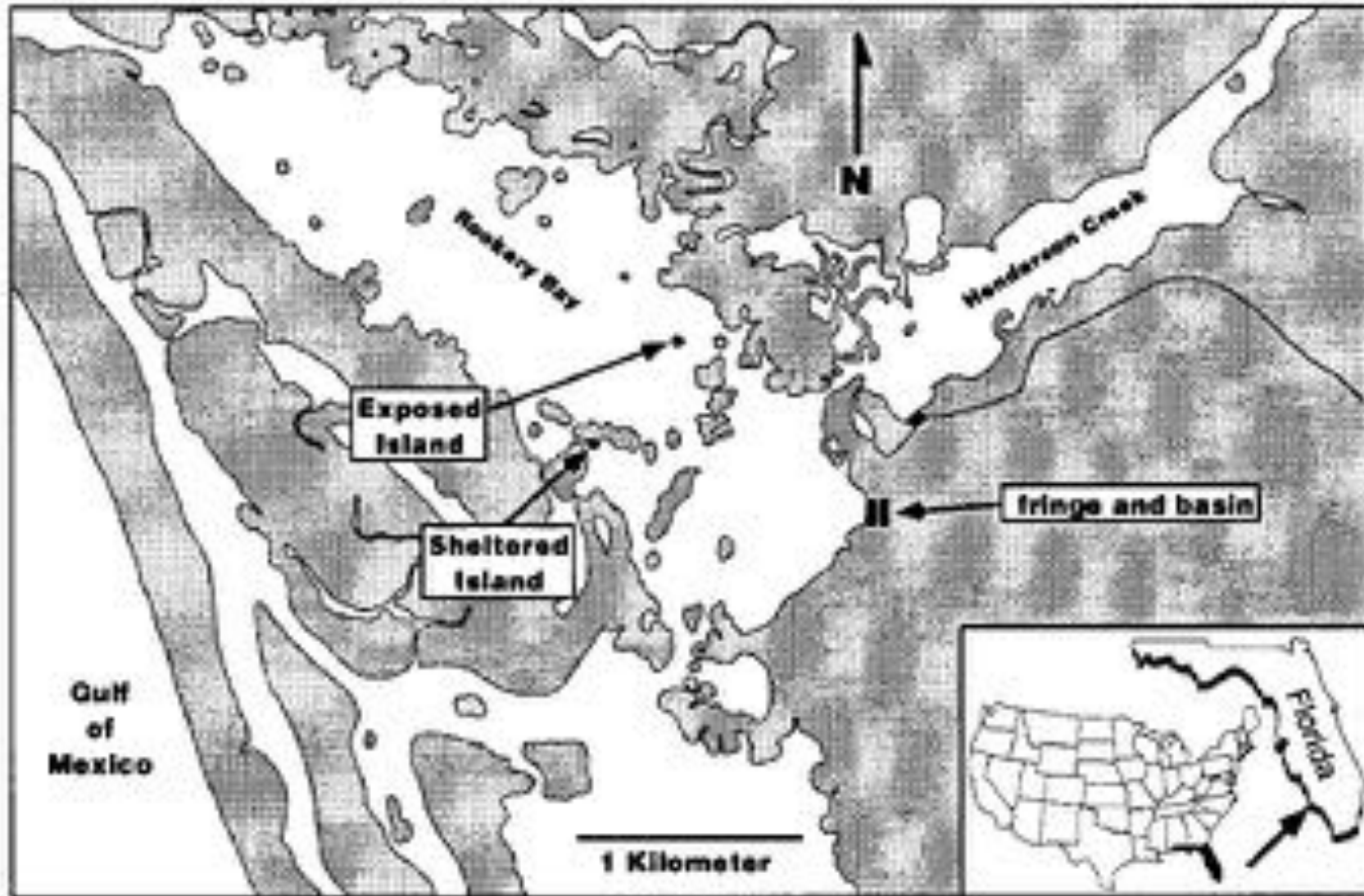


*After Sweet et al. 2017
IPCC Projections*



Relative sea-level change (the change in water depth at a point) may be due to uplift or subsidence of the crust, increase or decrease in the amount of water, or addition of sediment to the sea floor.

Study Area: Rookery Bay, Florida



Methodology

- Literature Review
- We used Webplot Digitizer to extract our data from “Sweet., et. al 2017.”
- We employed Python software to develop our Model of global sea-level rises in the 2100s.

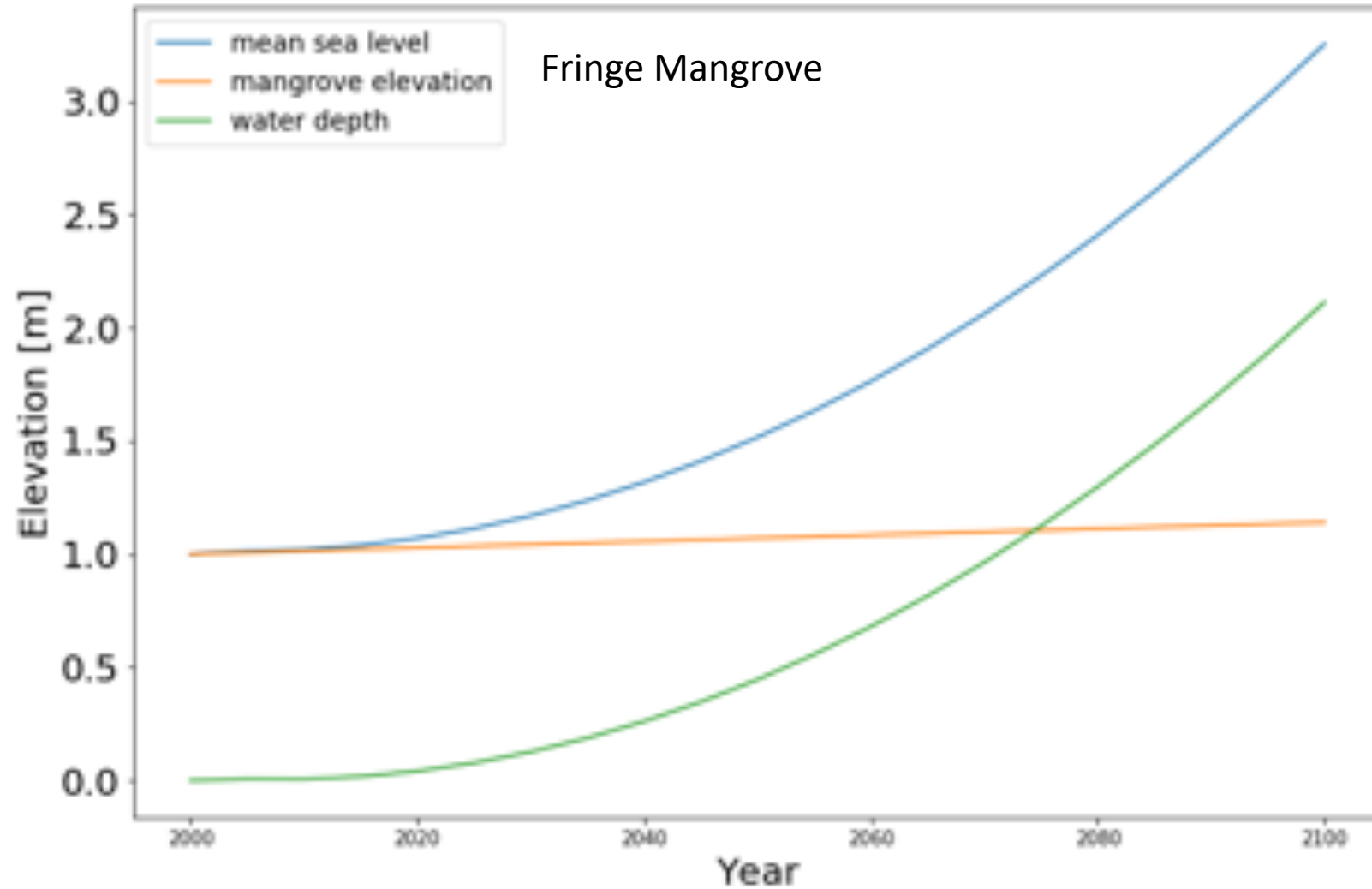
The Mangrove Ecosystem is governed chiefly by these factors:



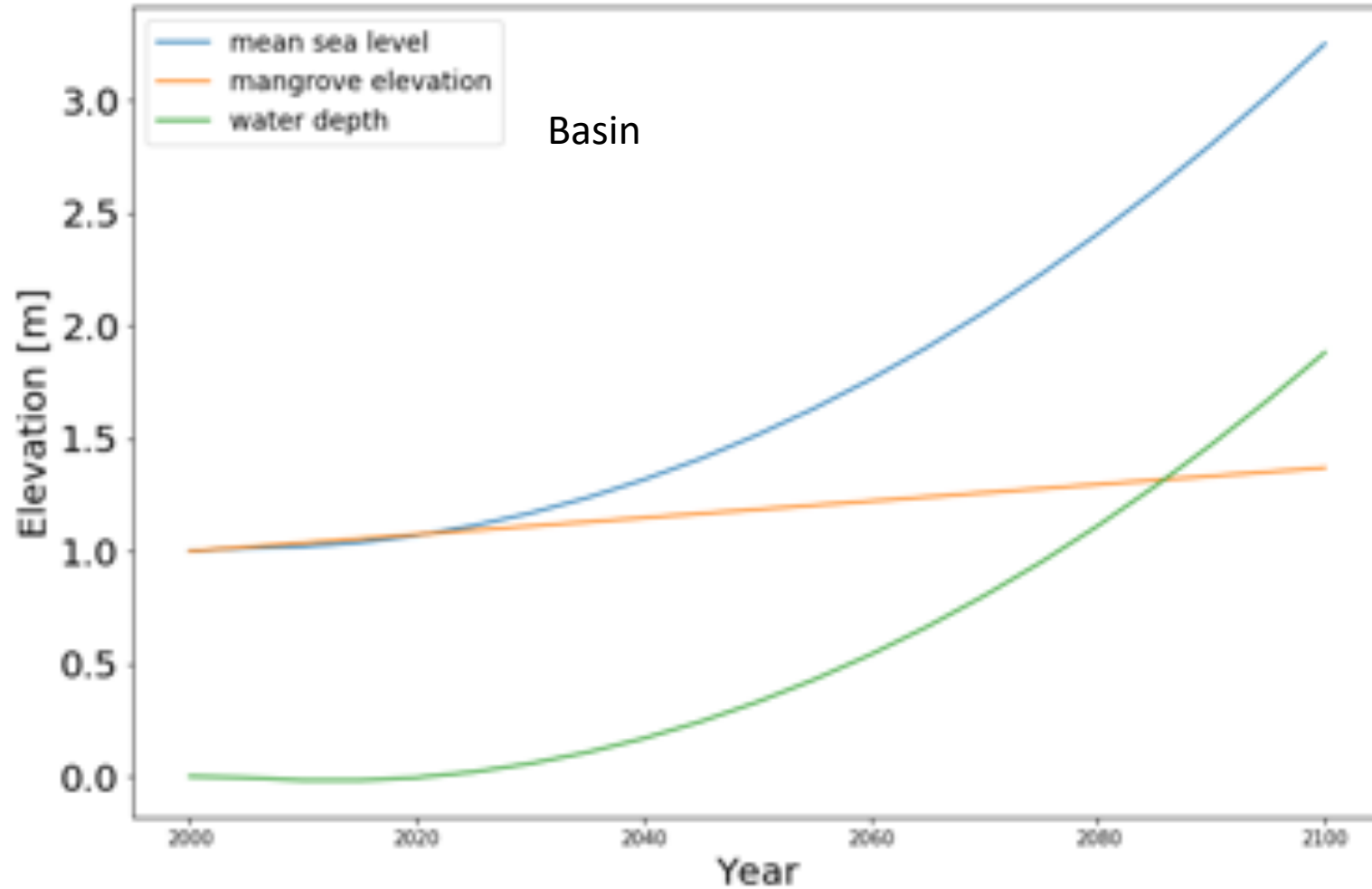
Parameters defined

- Accretion rate
- Subsidence rate
- Total elevation
- Representative Concentration Pathways (RCP)
- Flood rate

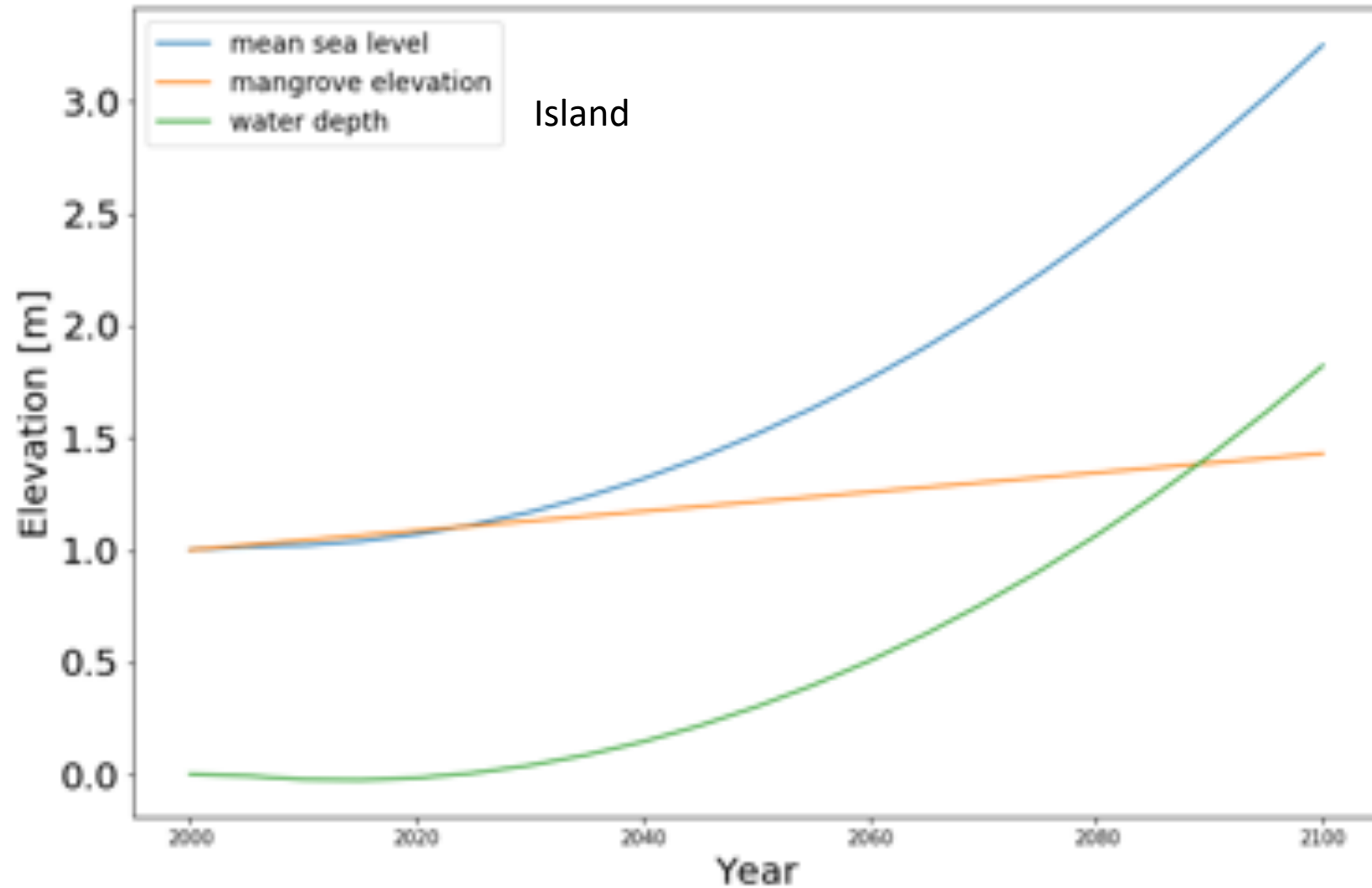
Prediction at extreme Scenario 2.5m



Prediction at extreme Scenario 2.5m



Prediction at extreme Scenerio 2.5m



Conclusion

- If the rate of sea level rise is greater than the mangroves accretion rate, then mangroves are pressed to retreat landward so that they can maintain their preferred hydroperiods

A wide-angle photograph of a coastal scene. In the foreground, dark, jagged rocks are scattered across the bottom half of the frame. The middle ground shows waves with white foam crashing onto a sandy beach. In the background, a line of green vegetation and some buildings are visible under a sky filled with soft, grey clouds. The overall mood is serene and natural.

**THANK YOU FOR
LISTENING**