

## RESEARCH BRIEF 03: Sea Level Rise

April 1, 2025



### Overview

Rates of sea level rise vary from place to place and over time, meaning they are faster or slower during different years. In Georgia, the average rate since the 1930s has been about one inch every eight years. But, this rate has increased in the past twenty years to as high as one inch every 2.5 years due to faster rates of rise caused by global warming. Scientists predict as much as one foot of sea level rise within the next 25 years for Georgia, which could cause more regular flooding in the Community of Hogg Hummock. The Community averages three feet in elevation above the mean high tide line.

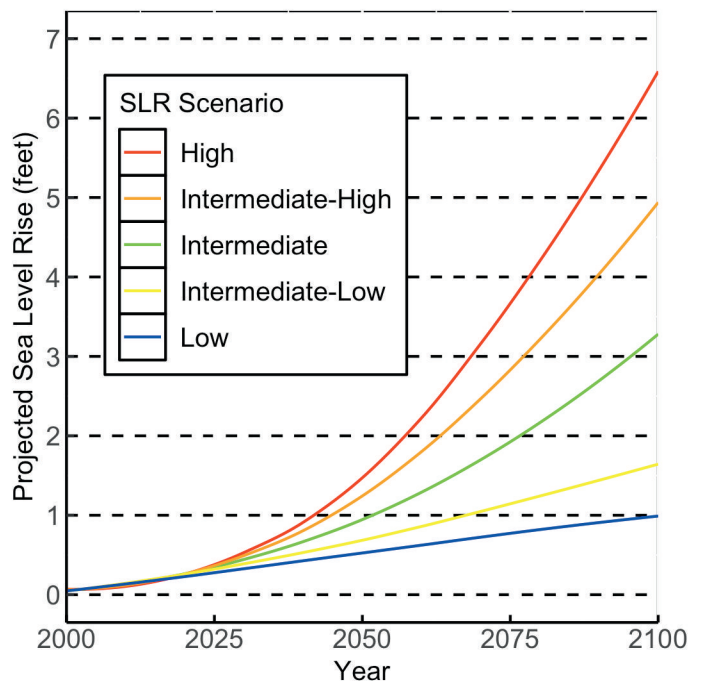
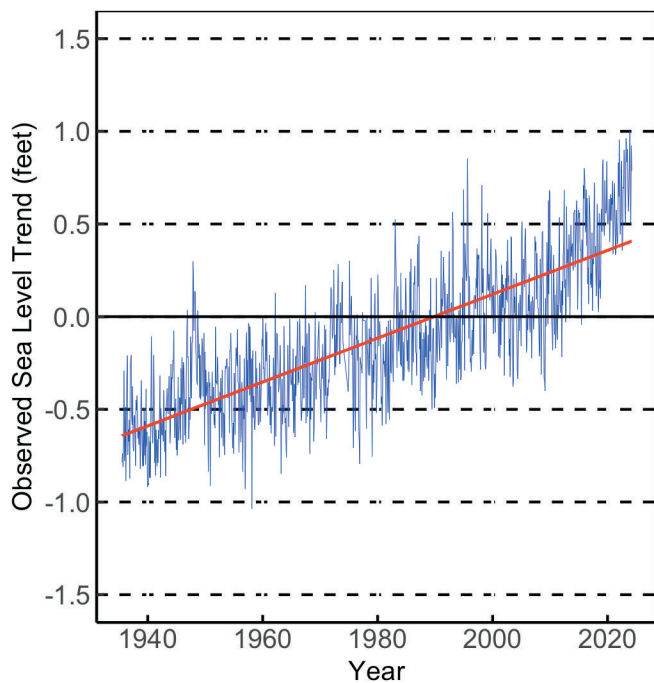
### Sea Level Rise in the Past

Sea level rise does not occur at the same rate everywhere. Each coastal community has its own specific experience related to rising seas due to local weather and climate such as the regional ocean temperature and even land rising or sinking very slowly. For example, according to NOAA, New Orleans has experienced a rate of sea level rise equal to about a one inch every four years since the 1980s. Closer to home near Savannah, NOAA measured a rate of sea level rise equal to a little more than one inch every eight years since the 1930s.

New Orleans' faster rate is due to the land sinking and the water rising, whereas Savannah's rate is mostly caused by rising water levels. Just as rates are different between locations, they can be different over time, too. For example, the sea level at Savannah has increased about one inch every 2.5 years for the past two decades. This is three times faster than the average rate since the 1930s. This faster rate has led to tide related flood events like the one pictured above in 2015. So, how much will future seas rise along Georgia's coast and beyond?

### HIGHLIGHTS

- Hogg Hummock averages about 3 feet above the average high tide line.
- Water levels near Savannah have risen about one inch every 8 years since the 1930s.
- The rate of rising water levels has increased near Savannah to about one inch every 2.5 years in the past 20 years.
- Coastal Georgia could experience as much as 1 foot or more of sea level rise over the next 25 years.
- Flooding will become more frequent as sea level rises.



(A) Past monthly mean sea level observed at Fort Pulaski near Savannah, GA. Red line indicates trend. (B) Future sea level rise projection scenarios from the U.S. Interagency report, 2022 Technical Report on Sea Level Rise. Scenarios depend on how much greenhouse gas is emitted in the future.

one-way tidal gates (structures that let the rain water out but that can block the incoming tide).

## Sea Level Rise in the Future

U.S. scientists predict that sea level rise rates will increase rapidly in the coming years. Coastal Georgia may experience as much as one foot or more of sea level rise in the next 25 years, or one inch every two years. By the end of this century, sea level near Sapelo could be as much as six feet higher than today under the worst case scenario (red line in Figure B above). That would mean someone born in 2020 or thereabouts would witness near daily tidal flooding of Hogg Hummock around the time they turned 40 in the year 2060. Optimistically, this same person may only see about one foot of rise by the time they are 40 under the best case scenario of mitigation of global warming (blue line in Figure B). The community of Hogg Hummock sits only about three feet in elevation above the mean high tide line. This means that the majority of the community is relatively exposed to increased frequency of flooding as sea level rises into the future. How much is partially dependent upon global decisions to mitigate global warming. However, some of it depends upon local action. Methods for locally mitigating such bad flood events in the future include green infrastructure such as oyster reef restoration, artificial levees or embankments, and

## Recommendations

In partnership with SOLO, the UGA Cornelia Walker Bailey Program has a project studying the implications of rising seas on community flood risk in Hogg Hummock. Our primary goal with this project is to better understand the sources of flood risk and to seek funding and expertise to mitigate flood risk for the community and its residents. Further information about this project will be shared in future research briefs.

## Contributors

Dean Hardy, University of South Carolina  
 Maurice Bailey, Save Our Legacy Ourselves  
 Nik Heynen, University of Georgia

## Further Reading Recommendations

U.S. Interagency Taskforce, 2022 Sea Level Rise Technical Report. <https://oceanservice.noaa.gov/hazards/sealevelrise/sealevelrise-tech-report.html>

Hardy, Dean. 2024. Technical Report on the Water Levels in the Community of Hogg Hummock. Report to the Sapelo Island National Estuarine Research Reserve (SINERR) in March 2024.