Coastal Zone Soil Mapping

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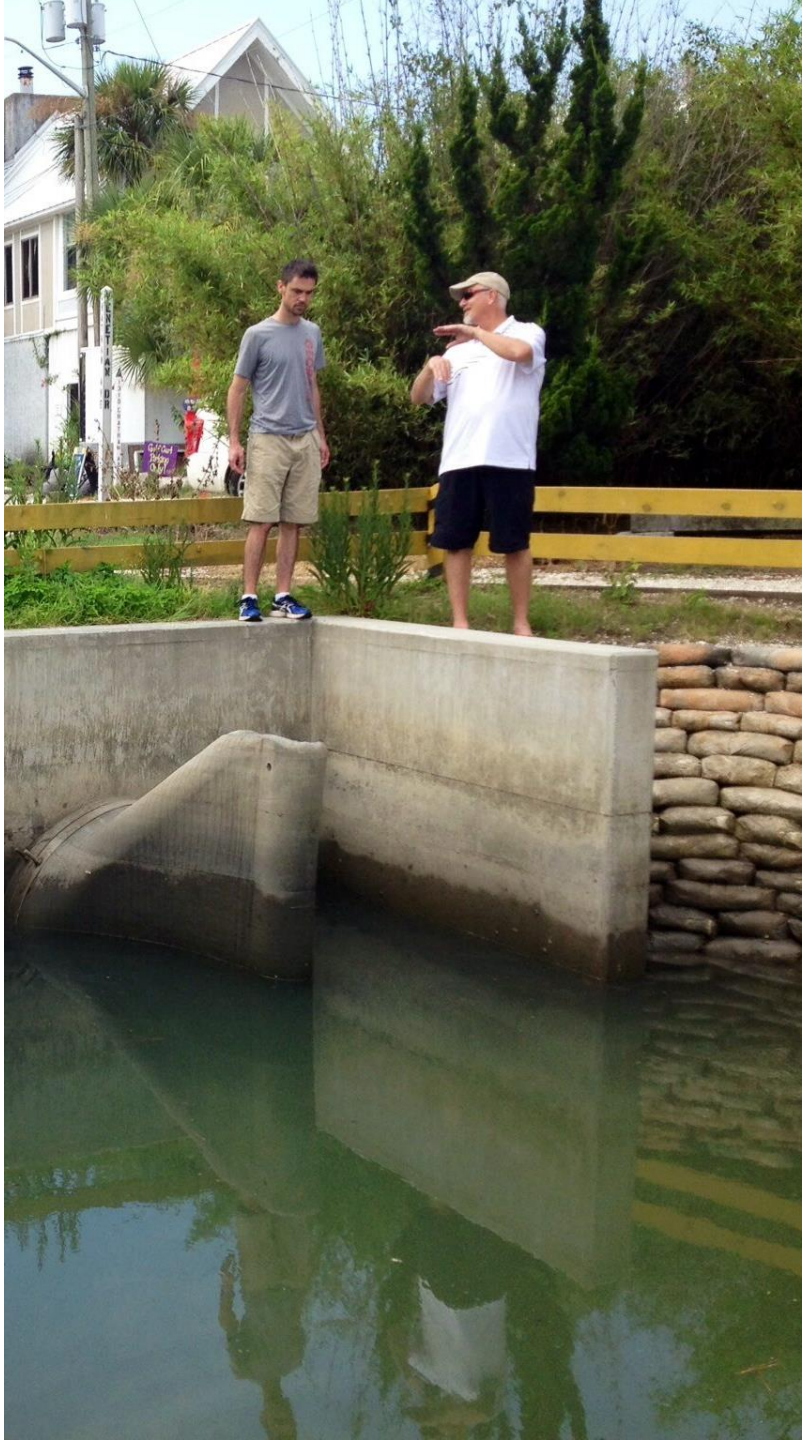
Sea Grant



Mission

To support research, education, and outreach activities that promote environmental and economic health in coastal Georgia by helping improve public resource policy, encouraging far-sighted economic and fisheries decisions, anticipating vulnerabilities to change and educating citizens to be wise stewards of the coastal environment.

Locations

UGA MARINE EXTENSION & GEORGIA SEA GRANT HEADQUARTERS

1030 Chicopee Complex
1180 E. Broad Street
Athens, GA 30603-3636
(P): 706-542-8849
(F): 706-542-8838

SEAFOOD EDUCATION & MARKETING

P.O. Box 2156
Peachtree City, GA 30269
(P): 770-460-2506
(F): 770-460-2507

UGA BRUNSWICK STATION

715 Bay Street
Brunswick, GA 31520
(P): 912-264-7268
(F): 912-264-7312

MARINE EDUCATION CENTER & AQUARIUM

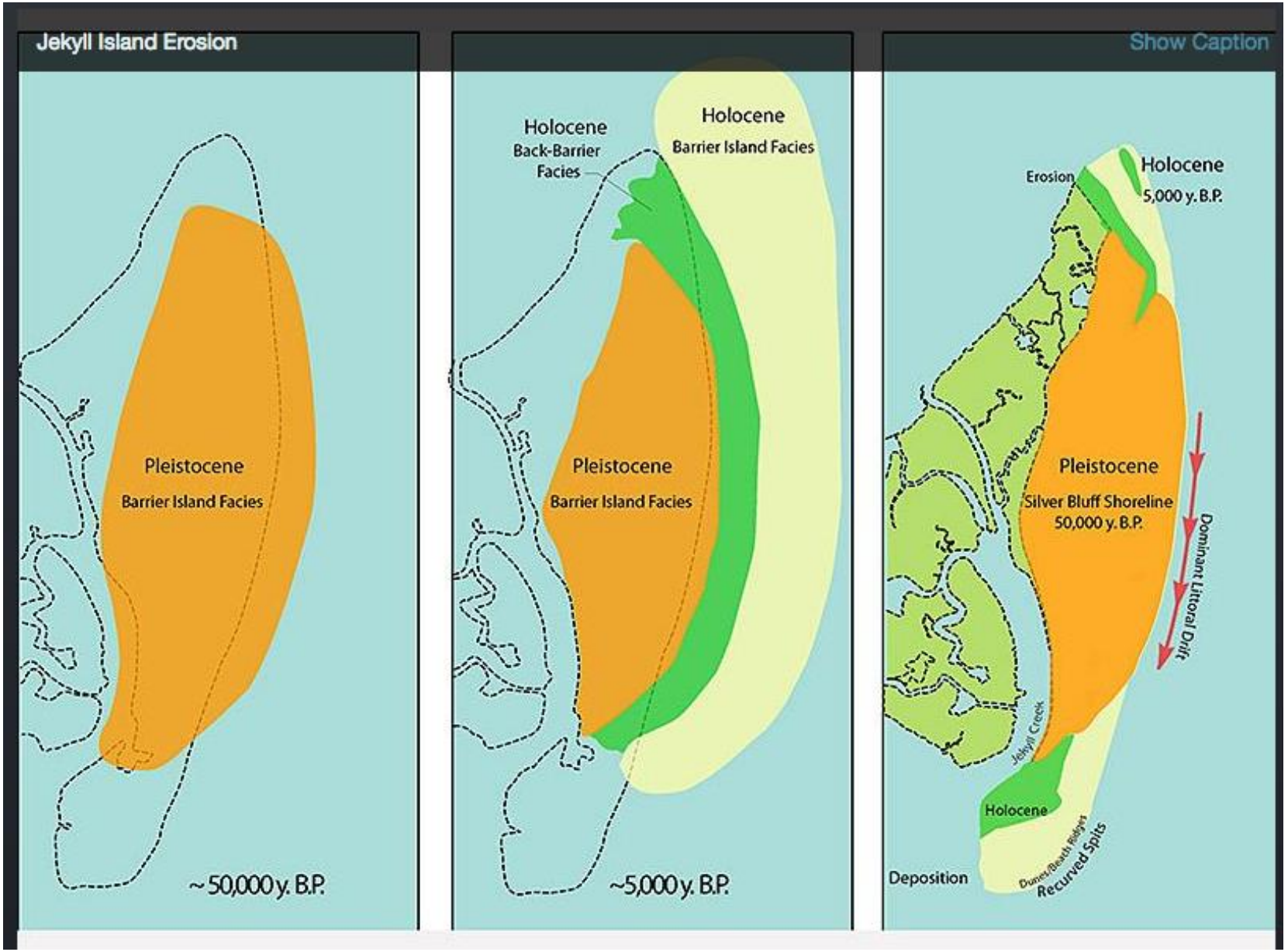
30 Ocean Science Circle
Savannah, GA 31411
(P): 912-598-2496
(F): 912-598-2302

SHELLFISH RESEARCH LABATORY

30 Ocean Science Circle
Savannah, GA 31411
(P): 912-598-2348
(F): 912-598-2399

Coastal Georgia

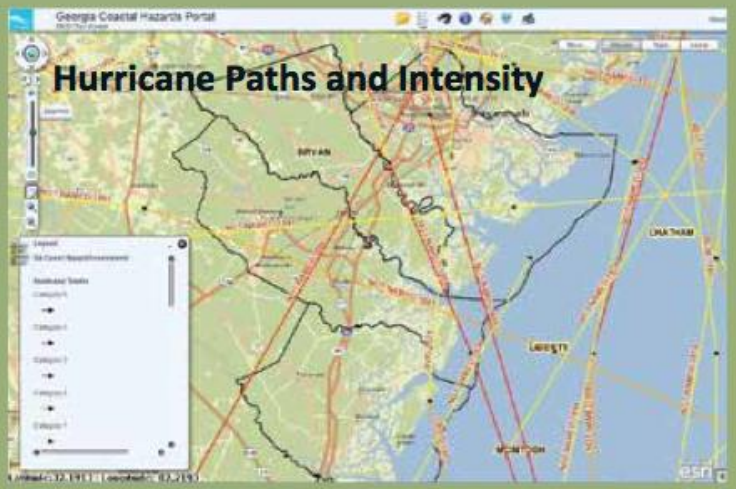
- Largest state east of the Mississippi
- Coast is 2nd fastest growing region in the state
- Coastal population to double over next 40 years
- Ports and military bases
- Economically challenged coastal counties
- Largest salt marsh estuaries in continental U.S., aside from Louisiana

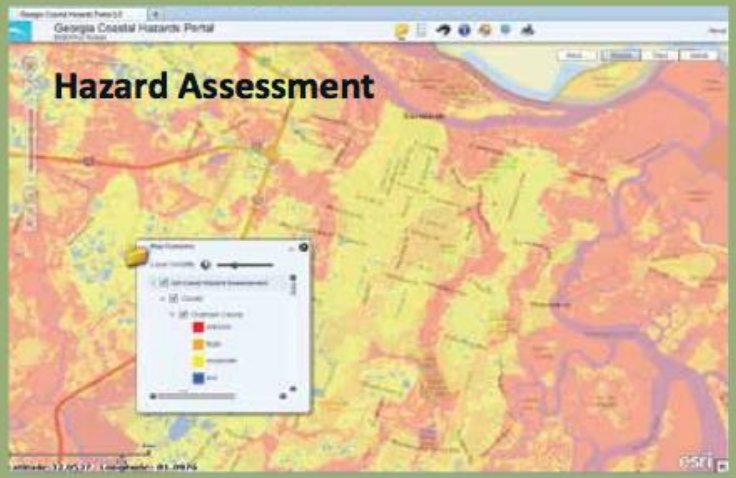

Jekyll Island Erosion
Show Caption
Pleistocene
Barrier Island Facies
~50,000 y. B.P.
Holocene
Back-Barrier
Facies
Holocene
Barrier Island Facies
Pleistocene
Barrier Island Facies
~5,000 y. B.P.
Erosion
Holocene
5,000 y. B.P.
Pleistocene
Silver Bluff Shoreline
50,000 y. B.P.
Dominant Littoral Drift
Jekyll Creek
Holocene
Deposition
Recurved Spits

Georgia Coastal Hazards Portal (GCHP)
http://gchp.skio.usg.edu

GCHP allows users to:

- Learn about coastal hazards along Georgia's coast
- View, manipulate, and overlay Coastal Georgia data sets
- View, edit and export images and assessments



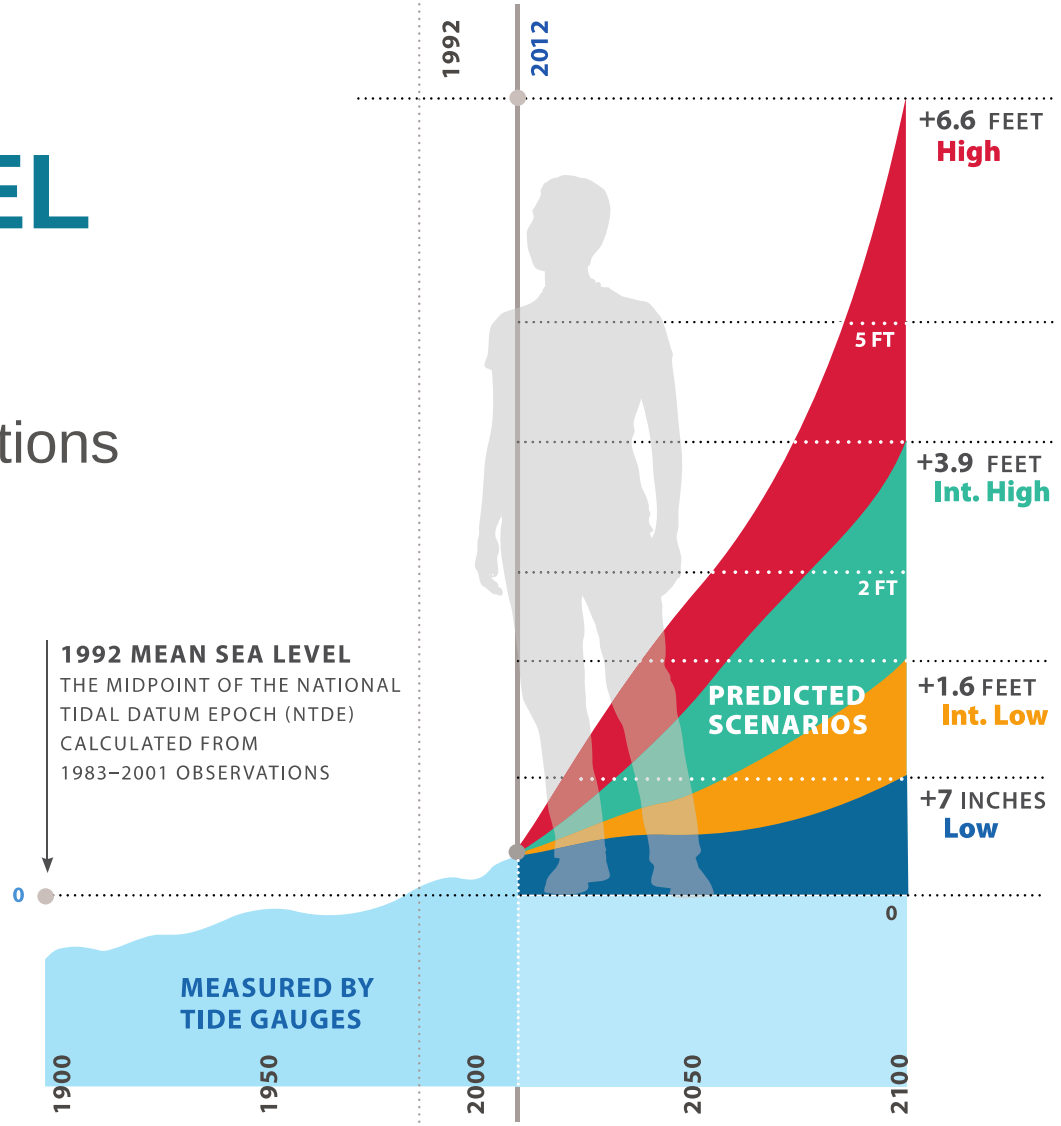


Learn more by attending one of the 2013 GCHP Training Sessions:

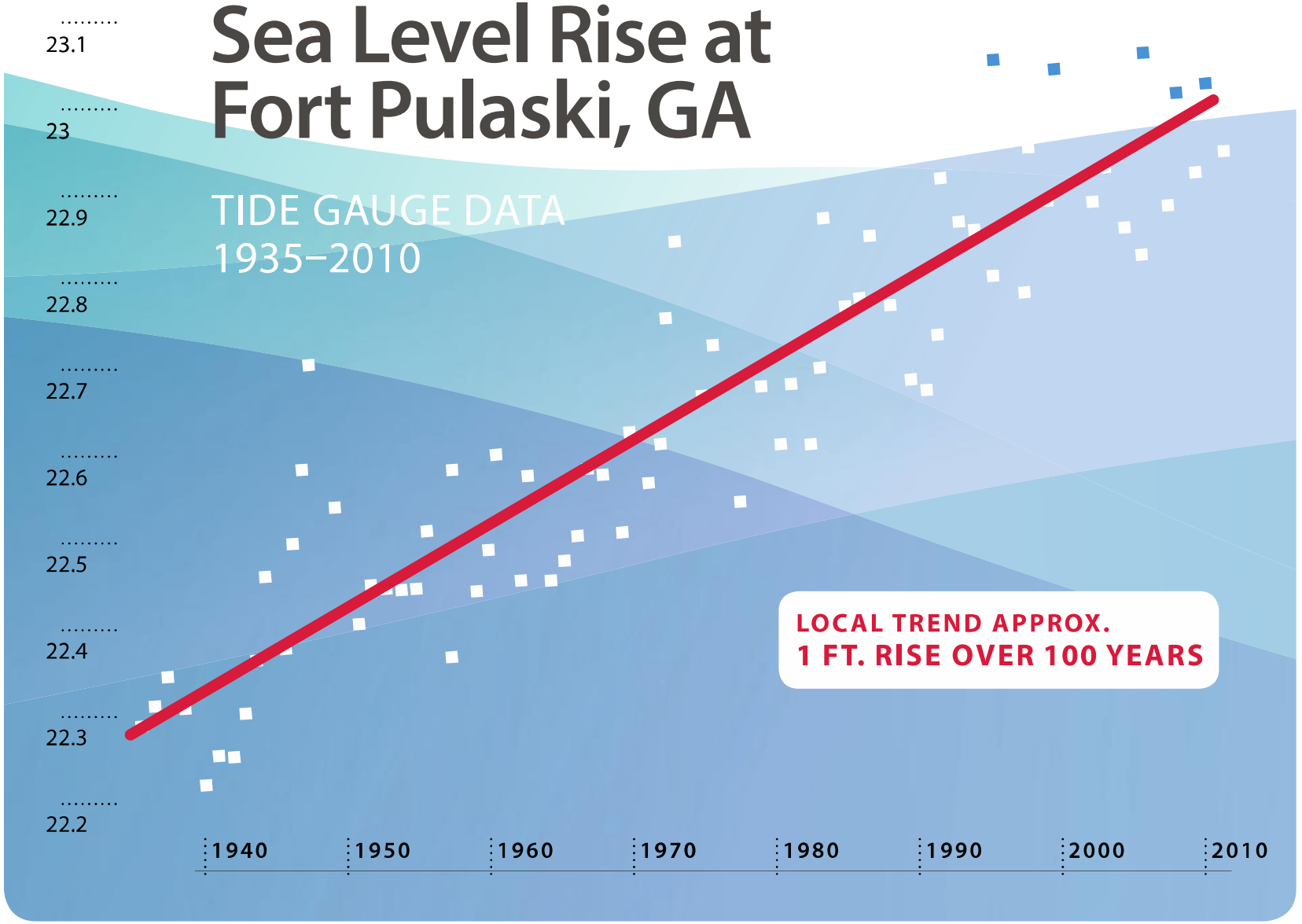
UGA MAREX Brunswick

GLOBAL SEA LEVEL RISE

2012 NOAA Predictions



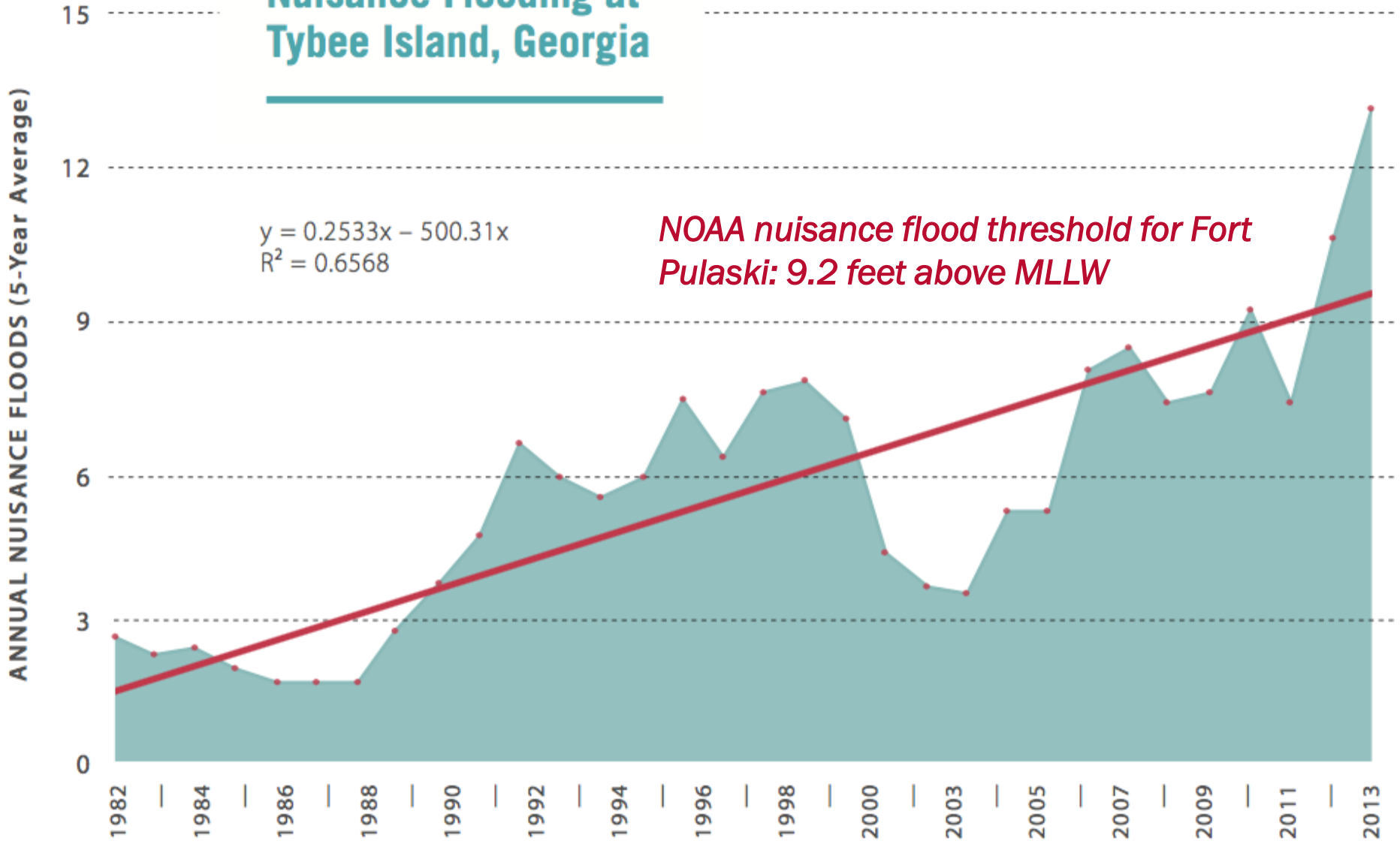
Sea Level Rise at Fort Pulaski, GA



SEA LEVEL RISE ON TYBEE ISLAND

- More frequent flooding
- Stormwater drainage issues
- Beach erosion
- Saltwater intrusion
- Intensified storm surges
- Safety and emergency management concerns

Nuisance Flooding at Tybee Island, Georgia



NOAA nuisance flood threshold for Fort Pulaski: 9.2 feet above MLLW

COMMUNITY RATING SYSTEM

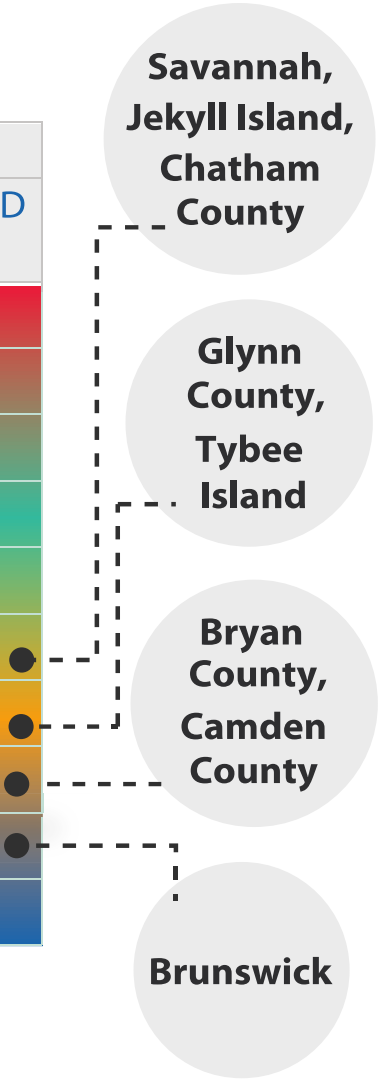
The Community Rating System recognizes communities who take steps to reduce their flood risk.

COMMUNITY RATING SYSTEM (CRS)

CLASSIFICATION AND PREMIUM REDUCTION

Participation can lower community flood insurance rates

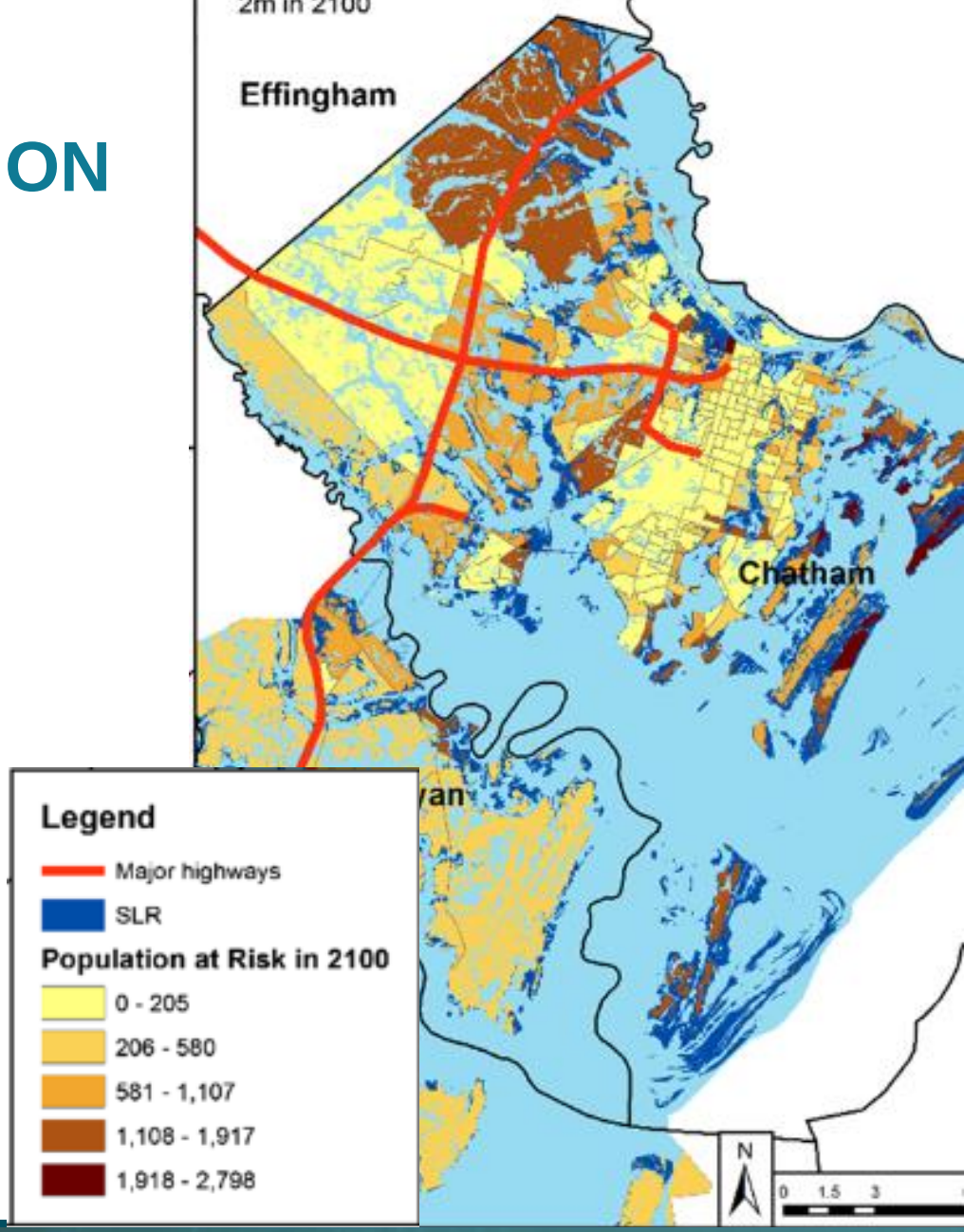
CREDIT POINTS	CLASS	PREMIUM REDUCTION	
		SPECIAL FLOOD HAZARD AREA	NON-SPECIAL FLOOD HAZARD AREA
4,500+	1	45%	10%
4,000 – 4,499	2	40%	10%
3,500 – 3,999	3	35%	10%
3,000 – 3,499	4	30%	10%
2,500 – 2,999	5	25%	10%
2,000 – 2,499	6	20%	10%
1,500 – 1,999	7	15%	5%
1,000 – 1,499	8	10%	5%
500 – 999	9	5%	5%
0 – 499	10	0	0



COASTAL POPULATION GROWTH

Between 62,000 to 159,000 people living in coastal Georgia will be at risk from between 3.3-6.6 feet of sea level rise by 2100.

- Matt Hauer et al.
University of Georgia,
Population and Environment,
Feb. 2015

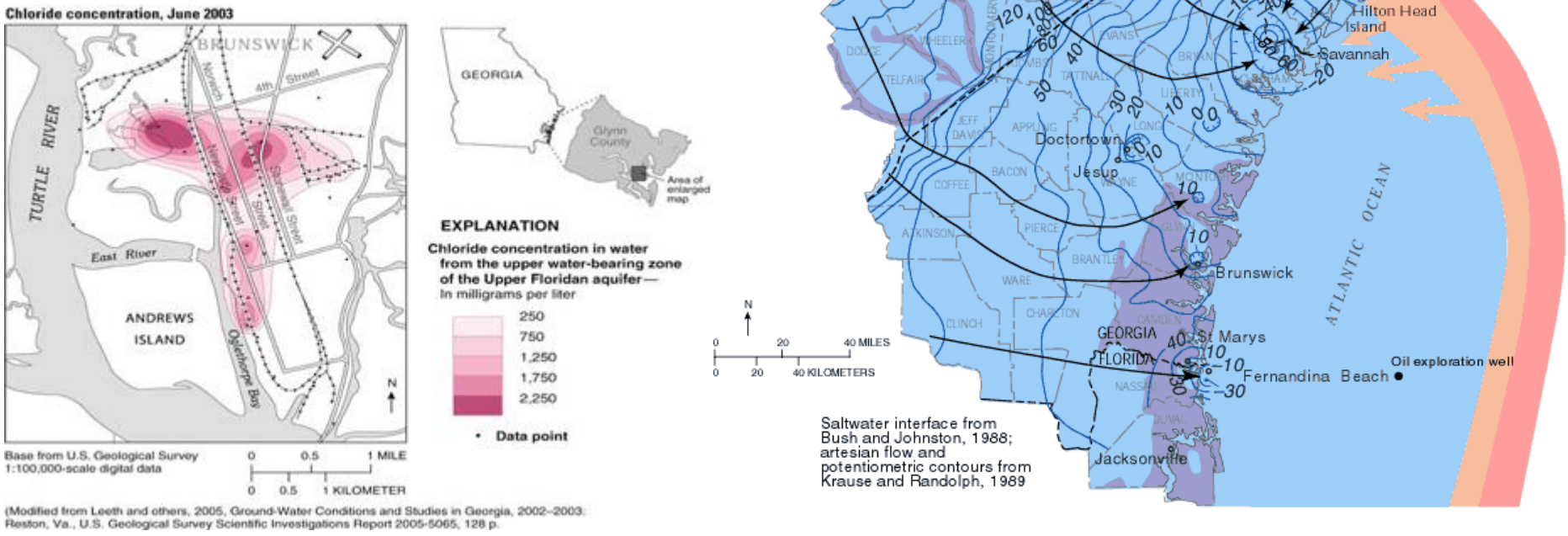


1. **Stormwater Management**
   Higher sea levels infiltrate stormwater systems causing localized flooding at high tide even in small rainfall events.

1. **Water Table**
   High water tables limit stormwater storage volumes.

Brunswick, GA on Sept. 29, 2015
Photo credit: Kelly Patton

Saltwater intrusion into the Upper Floridan aquifer



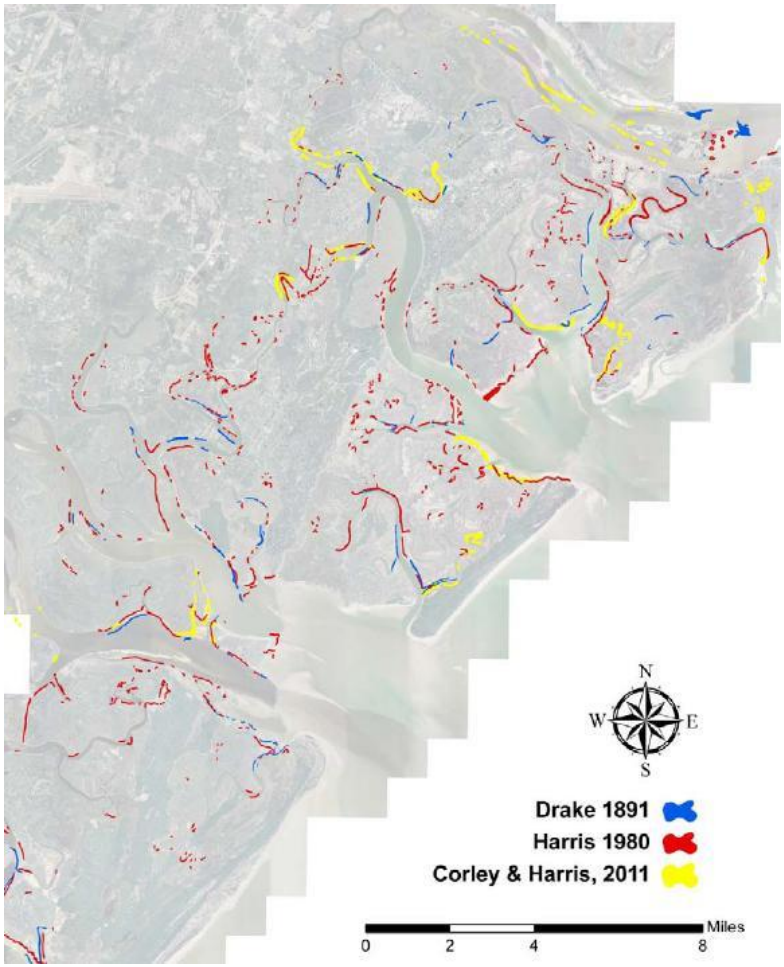
(Modified from Leeth and others, 2005, Ground-Water Conditions and Studies in Georgia, 2002–2003: Reston, Va., U.S. Geological Survey Scientific Investigations Report 2005-5065, 128 p.

Beach and Shoreline Erosion and Renourishment Projects

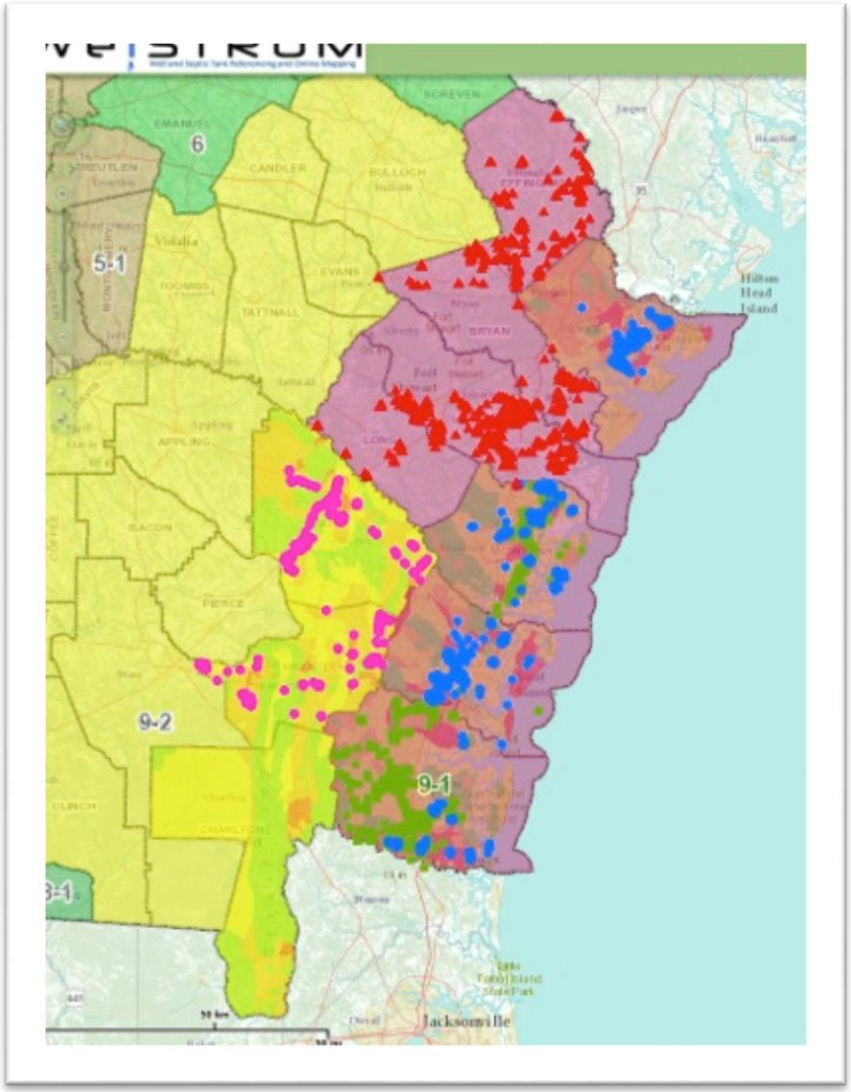
Where and when
Hard and Soft Alternatives

Essential Fish Habitat & Living Shorelines

Oyster Habitat Suitability Index



Onsite Disposal Systems (OSDS)

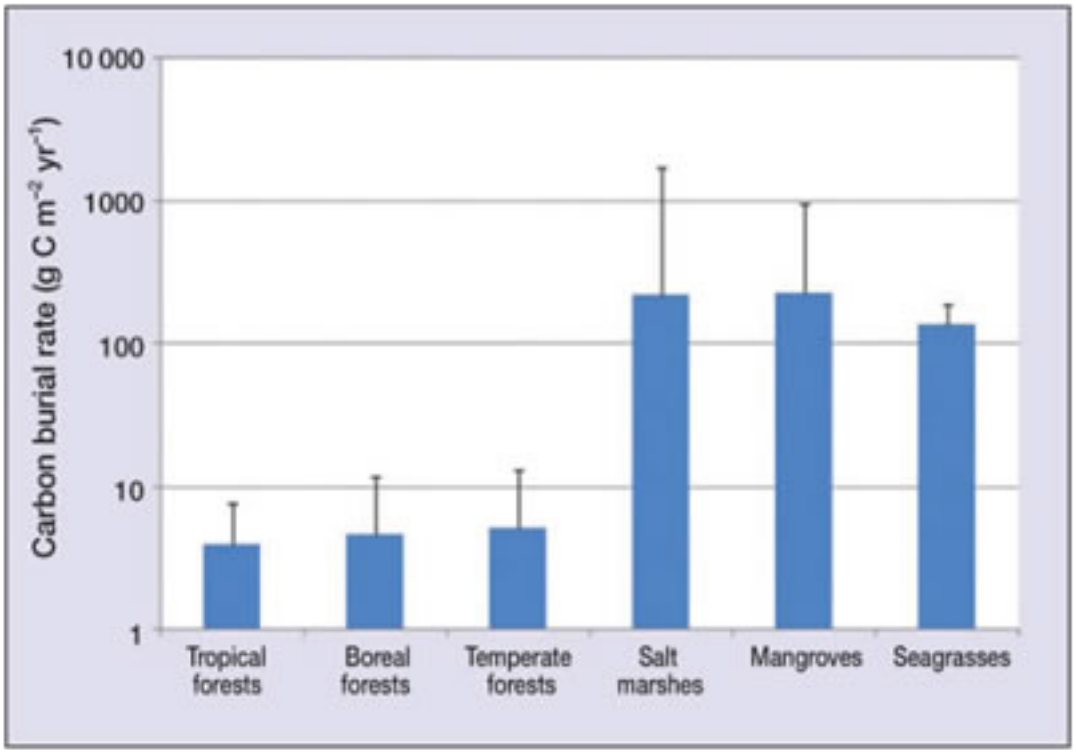


Waste water treatment

- Lots of growth in on-site systems.
- Coast presents unique challenges.
- Need to improve management

Carbon Sequestration Potential in Marshlands

Figure: Carbon Storage Abilities of Different Habitat Types



Mean long-term rates of C sequestration (g C m−2 yr−1) in soils in terrestrial forests and sediments in vegetated coastal ecosystems. Error bars indicate maximum rates of accumulation. Note the logarithmic scale of the y axis. (Source: Mcleod et al. 2011. A blueprint for blue carbon: toward

- Most coastal blue carbon is stored in the soil, not in above-ground plant materials.

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