RHODE ISLAND SLAMM Maps

Sea Level Affecting Marshes Model

What are SLAMM maps?

SLAMM maps show how coastal wetlands will likely be lost and in some cases migrate onto adjacent upland areas under projected sea level rise scenarios of 1, 3, and 5 feet in the coming decades.

SLAMM Projected Statewide Salt Marsh Changes Due to Sea Level Rise

Sea Level Rise	1 Ft.	3 Ft.	5 Ft.
Loss (Acres)	450	1895*	3189
Gain (Acres)	1057	1148	2151
Net Change (Acres)	607	-747	-1038

* Half of the current acreage of salt marshes in Rhode Island

What threatens our salt marshes?

Accelerated sea level rise will drown marshes that cannot migrate landward. Also, fragmentation caused by human, animal, and natural processes threaten our valuable salt marshes. As seen in the photo on the right, hard barriers like roadways prohibit salt marshes from naturally migrating landward as sea levels rise.

Why are salt marshes so important?

Salt marshes provide us important "ecosystem services," such as:

- Serving as nursery habitats for fisheries and foraging for birds
- Cleaning and filtering water
- Stabilizing shorelines
- Reducing erosion in low energy environments
- Providing areas for recreation and tourism
- Acting as a sponge for flood waters and reducing upland flooding
- Sequestering carbon to mitigate climate change

What opportunities exist?

- Restore degraded marsh areas to be more resilient to sea level rise.
- Increase setbacks for new development in key areas.
- Protect undeveloped land upland to allow marshes to naturally migrate.
- Remove and/or prohibit hard barriers next to marsh, such as sea walls and roads.
- Educate and engage citizens, landowners, and developers.
- Prioritize coastal parcels for future conservation and salt marsh migration corridors.
- Inform management of currently conserved parcels adjacent to coastal wetlands.
- Work with property owners regarding structures and landscaping.

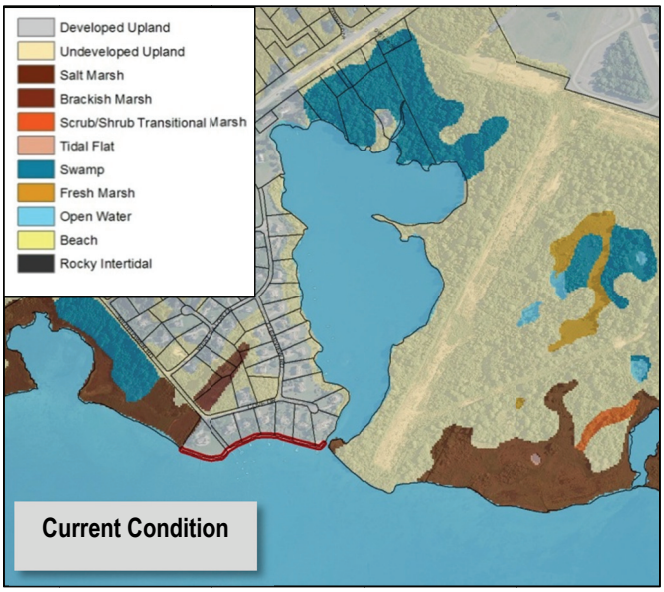
Case Study

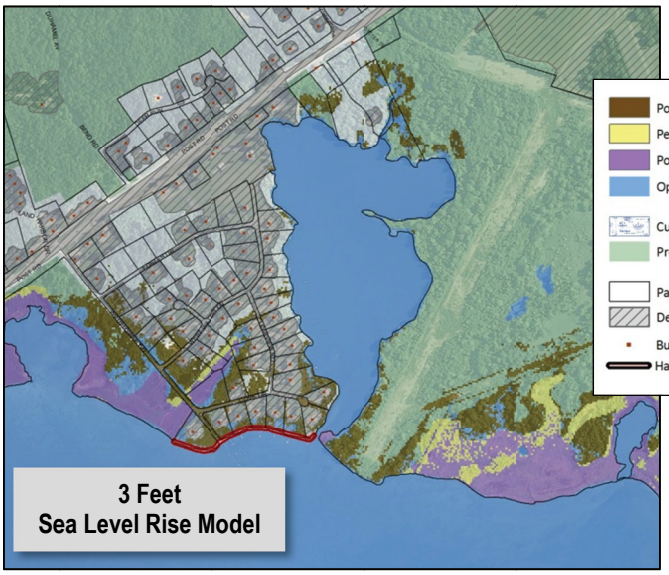
Foster Cove within Ninigret Pond
Charlestown, Rhode Island

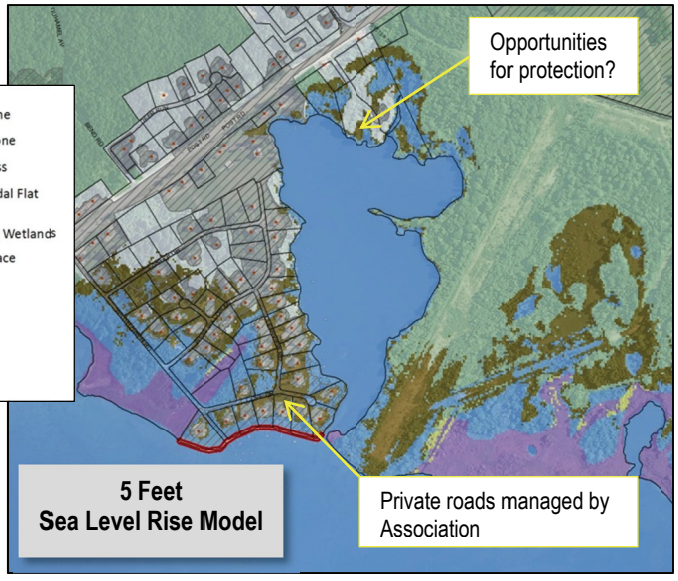
The SLAMM map on the left illustrates the "current condition" at Foster Cove including the locations of existing salt marshes.

Changes are projected to be seen at Foster Cove in the coming decades as sea level rises to 3 feet or more. Purple shading represents areas where salt marshes will likely be lost. Potential new marsh shaded brown, are likely to develop in upland areas (marsh migration).

With 5 feet of sea level rise, the marsh zone would likely continue to migrate inland with further overall wetland loss. Potential opportunities to support wetland habitat might include land protection and road relocation.







Learn More

View SLAMM maps for your coastal community: http://www.crmc.ri.gov/maps/maps_slamm.html
Explore more of Rhode Island's Resilience Tools: http://www.crc.uri.edu/activities_page/resilience-tools/
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