

Recommendations for Coastal Restoration at the Tamaroff Property (70 Pleasant Point Drive,
Portsmouth, NH)

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The homeowner has witnessed shoreline erosion along her property. Eroding shorelines include low marsh, high marsh, tidal buffer, and a rock outcrop.

We recommend the following methods to control marsh erosion and high bank erosion at the Tamaroff property. All of these methods may be found color-coded on the figure below.

1. Remove understory vegetation and re-seed with tidal buffer mix (dashed yellow line). This will allow in more light for the salt marsh and understory vegetation as well as possibly invite predators to control burrowing species. Species to be removed are bushes (e.g., Japanese Honeysuckle) and seedlings that have overgrown in the past decade. The undergrowth has supported burrowing animals as well as shaded out the adjacent salt marsh plants, leaving open soil subject to erosion.
2. Restore western salt marsh (blue-shaded area). This will replace lost salt marsh. We believe that grazers, snails, green crabs, and possibly birds over-grazed this area of salt marsh as they are still visible there. Although we do not have long term observational data, from our two site visits, overgrazing by the introduced common periwinkle seems to be a significant cause of salt marsh loss here. The restored marsh will have a rock sill that starts at the existing marsh on the east and extend westward to the first large rock outcrop. In addition, a gravel path (<6 ft wide) should connect the kayak storage to the water through the restored marsh.



3. Install a snail fence (red dashed line). This will prevent snails from grazing on the existing and restored salt marshes. This will be a galvanized fence of low height. The fence may be configured to allow kayak launching and may only need to be 8 to 12 inches high.

4. Marsh and tidal buffer restoration (green-shaded area). Here, the marsh is intact and the high bank is eroding. There are also listed plant species (high tide bush, *Iva frutescens*) at this location. If the high bank continues to erode, it will affect the road and buried utilities. Start two feet south of the existing fence, and grade towards the marsh at a slope of 15% (preferably flatter at 10%) down to the marsh. This will require excavation at the top of the slope and fill at the bottom. Before filling at the bottom of the slope, remove the existing salt marsh vegetation and re-use at the salt marsh restoration site to the west. At the bottom of this slope will be a staked coir log. By laying the slope to much flatter than it is now and revegetating, there is little need for an engineered embankment. After the slope is built, it will be seeded above the high high water line, then covered in a staked coir mesh blanket (keyed in on all edges), and then planted throughout its length. Below the high high water line, the new marsh surface will be planted with *Spartina* (high and low marsh plants). The need to lay back the slope is required to be able to successfully grow plants where there is now a vertical, eroded bank. Vegetation will not presently take hold on the vertical bank.

At this writing we do not believe that there is sufficient documented information on the bedrock retreat or marsh edge erosion to the east to offer solutions at this time, but rather we recommend these locations be monitored over the next few years to understand the nature, causation, and rate of retreat. The bedrock can be monitored by photography, and the salt marsh edge with erosion pins.