



The Science of Shifting Sands

Barrier islands are constantly on the move. Wind and water carry sand to and from our ocean and bay beaches. Even in a single day, storms can drastically change the shape of our shorelines. The more we know about the movement of sand, the better prepared we can be to make decisions about living, working, and playing in sustainable ways on Fire Island.

While we might think of erosion as a bad thing, it isn't. Erosion describes the natural movement of sand away from one area. Hard structures like bulkheads interrupt the natural movement of sand and typically cause increased erosion adjacent to the hard structure. This is evident on the west side of the Sailors Haven Marina, where rates of erosion are higher closer to the bulkhead.

The constructed feeder beach you see on the bayside of the Sunken Forest is part of a National Park Service demonstration project designed to help protect the Sunken Forest from accelerated rates of erosion, to keep sand in the bay that would otherwise be removed during dredging, and to allow for movement of sand that is natural for a barrier island. Sand from this constructed feeder beach is moving west along the bay shoreline and accumulating downdrift of the feeder beach. Scientists are studying how sediments move in this area, and will monitor nearshore fish and marine invertebrates through time to evaluate the physical and biological affects of this demonstration project.

How you can help

By staying on the boardwalk through the Sunken Forest and using the east side of the marina as access to Sailors Haven from the Great South Bay, you can help us protect the study area.



A snapshot of change: 1979 shoreline overlays 2007 satellite image of project area.



Trees undercut by bayside erosion in the Sunken Forest before construction, 2011.



A feeder beach was constructed in November, 2011 on the bayside of the Sunken Forest. This is not meant to be a permanent feature.

