

Effects of Climate Change and Sea-Level Rise on the Tuckerton Peninsula Salt Marsh System

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The Tuckerton Peninsula is projected to be among the first salt marsh systems in New Jersey to be lost by sea-level rise associated with climate change and coastal subsidence. This ~2000-ha *Spartina* salt marsh platform in southern New Jersey is heavily dissected by expanding channel networks and pond development. Broad expanses of the marsh surface are susceptible to inundation and submergence. Reduction in marsh habitat area has accelerated due to extreme weather events, storm surge, sea-level rise, and perimeter shoreline erosion; for example, the rate of salt marsh habitat loss along the eastern and southern shorelines of the southern platform margin amounted to 1.6 m yr⁻¹ between 1995 and 2008. Current sediment accretion rates (0.18 to 0.30 cm yr⁻¹) of salt marsh in the general area are only slightly higher than local rates of relative sea-level rise (0.10 to 0.24 cm yr⁻¹), and they may be significantly lower in future years. Management plans must be formulated for coastal communities to ensure effective adaptation strategies for future loss of this extensive marsh platform.