

Coastal Salt Pond Community

State Rank: S2 – Imperiled



Coastal Salt Pond and surrounding marsh, early spring. Demarest Lloyd SP, Dartmouth. Photo: Patricia Swain, NHESP.

Description: Coastal Salt Ponds are in coastal depressions, surrounded by land, completely or partially isolated from the sea by barrier beach sand spits. Salinity conditions and water levels vary within the ponds and change both over time and at any given location. The critical process causing great variability in salt ponds is the irregular or periodic creation of sand spits that separate the pond waters from direct tidal ocean influence, often for prolonged periods. Formed by drifting sand, the sand spits allow formation of brackish ponds with little tidal action. When the barrier beach is closed, as it is most winters, seawater doesn't enter except as overwash during storms. Water levels fluctuate when the ponds are closed to the ocean, with evaporation reducing

Coastal Salt Ponds are separated from the ocean by sand spits that open and close irregularly causing great variability in salinity and water levels - and vegetation - within the salt pond.

water level and freshwater inflow from streams, groundwater, and rain raising water levels and mixing with seawater to create a range of salinity conditions. The inland ends, where streams may enter the ponds, tend to be fresher, with denser, taller vegetation developing. Sand spits may be breached in storms or by human action, allowing water exchange with the ocean and renewed exposure to tidal and wave action. The size of the opening to the ocean regulates how much water flushes through the pond system.



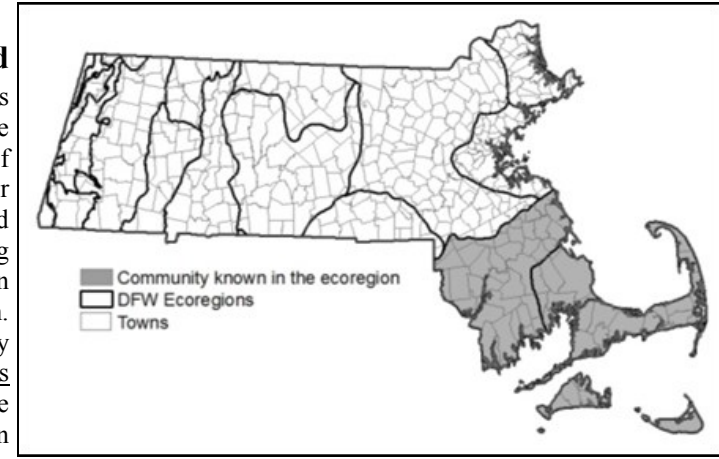
Saltpond pennywort. Photo: B. Sorrie, NHESP.

Characteristic Species: In Coastal Salt Ponds groups of plants grow together based on inundation, salinities, light, and other limiting factors. Coastal Salt Ponds may contain beds of eelgrass or various macroalgae (seaweeds) such as Sea Lettuce, or may be relatively free of vegetation. Species present are those with habitats that grade from inundated mudflats into marshes, including Atlantic mudwort, saltpond spikerush, saltpond flatsedge, false pimpernel, lesser waterwort, shore pygmy-weed, or saltpond pennywort.

Differentiating from Related Communities: This is the only estuarine community in a body of water between a barrier beach and the mainland with a narrow opening to the sea. Sites contain variable vegetation. Coastal Salt Ponds may include Seagrass Communities which are defined as occurring in more open ocean

waters. Shoreline marshes may be fresh to brackish to salt and are categorized as those community types if distinct enough. Sea-level Fens, small peatland communities, may occur along the shores, and would be classified as that community type. Salt ponds occur along Buzzards Bay and on the south and east sides of Cape Cod, Martha's Vineyard, and Nantucket.

Habitat for Associated Fauna: Within the salt pond, birds and fish would be those typically found in estuaries. A large number of small to large invertebrates live in or on the sediments. Their distribution is influenced by sediment composition and oxygen levels. Some, such as clams, oysters, and other bivalves filter water for nutrients. Other species such as segmented worms, amphipods, shrimp, clams, and snails extract organic matter from sediments and churn the sediments as they feed making material available to other organisms.



Examples with Public Access: Sesachacha Pond, Nantucket; Allen's Pond, Dartmouth; Tisbury Great Pond and coves off of it, West Tisbury; Salt Pond, Falmouth.



Coastal Salt Ponds on Martha's Vineyard. Openings in the barrier beaches occur on the two ponds on the left side. These ponds are in long narrow glacial drainages. MassGIS 2009 Orthophoto. DEP wetland delineations.

