



Coastal Salt Pond Community

Community Code: CE3B000000

State Rank: S2



Concept: The vegetation in and surrounding coastal saline to brackish ponds with shallow water. The inland ends tend to be fresher, with denser, taller vegetation developing.

Environmental Setting: Salt ponds are found on the south and east sides of Cape Cod, Martha's Vineyard, Nantucket, and along Buzzards Bay. The critical process causing great variability in salt ponds is the irregular or periodic creation of sandspits that separate the pond waters from direct tidal ocean influence, often for prolonged periods. Formed by drifting sand, the sandspits allow formation of brackish ponds with little tidal action. Water levels fluctuate when the ponds are closed to the ocean, with evaporation reducing water level and freshwater inflow from streams, groundwater, and rain raising water levels. Sandspits may be breached in storms or by human action, allowing water exchange with the ocean and renewed exposure to tidal and wave action. Shoreline marshes may be fresh to brackish to salt. Sea-level Fens may occur in very restricted areas along the shores.

Vegetation Description: Coastal salt pond vegetation is quite variable both spatially and temporally. Eelgrass (*Zostera marina*) beds are often dominant communities of subtidal mud flats. Other areas may have various macroalgae such as sea lettuce or not be vegetated. Towards the ocean, salt marsh usually occurs just above the shore. Mud or sand shores appear during dry spells that support mudflat species such as Atlantic mudwort (*Limosella australis*), saltpond spikerush (*Eleocharis parvula*), saltpond flatsedge (*Cyperus filicinus*), seaside crowfoot (*Ranunculus cymbalaria*), false pimpernel (*Lindernia dubia*), lesser waterwort (*Elatine minima*), water pygmyweed (*Crassula aquatica*), and saltpond pennywort (*Hydrocotyle verticillata*). The



vegetation of inland ends is similar to the landward, brackish portions of salt marshes, with beds of narrow-leaved cattail (*Typha angustifolia*), common reed (*Phragmites australis*), freshwater cordgrass (*Spartina pectinata*), switchgrass (*Panicum virgatum*), bulrushes (*Schoenoplectus* spp., particularly *S. pungens*), and mock bishop's-weed (*Ptilimnium capillaceum*). During fresh periods, extensive beds of pondweeds (*Potamogeton* spp.) may form.

Differentiating Occurrences: The Coastal Salt Pond Community is the only estuarine community represented by a body of water with a narrow opening to the sea, generally formed between the mainland and a barrier beach. Sites contain variable vegetation including seagrasses and the vegetation of many saline and brackish mud flats. Seagrass Communities on marine and estuarine subtidal and intertidal flats have some similar species but are in open, shallow, saline or brackish water.

Associated Fauna: Within the salt pond, fishes are those typically found in estuaries. Eel (*Anguilla rostrata*), alewife (*Alosa pseudoharengus*), and white perch (*Bairdiella chrysura*) are typical fish species. Bird species would be typical of estuaries and near shore areas. 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. Eastern oysters (*Crassostrea virginica*) extract material from the water column. In some cases, oysters or mussels (including blue mussels (*Mytilus edulis*)), having attached to the substrate, may attach to one another, forming oyster or mussel beds. Many nematodes, sponges, mollusks and barnacles hold on to submerged plants, such as eelgrass or macroalgae.

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

Threats: Artificially maintaining ponds open or closed. The increasingly invasive Mute Swan (*Cygnus olor*) is becoming more abundant and displacing native species. Eutrophication and other forms of coastal pollution, dock and pier construction. Nutrient input and changes in water flow from development along shore lines. Phragmites is a major problem.

Management Needs: Changes in the flow of freshwater can alter the salinity of these systems: below impoundments and areas of water withdrawal, salt tides extend further upstream, affecting species composition and abundance, particularly during drought periods when river flows are low.

USNVC/NatureServe: Includes parts of: *Zostera marina* Permanently Flooded - Tidal Herbaceous Alliance --*Zostera marina* Atlantic Herbaceous Vegetation [CEGL004336]; Includes part of *Spartina patens* High Tidal Marsh Alliance -*Schoenoplectus pungens* - *Eleocharis parvula* Herbaceous Vegetation [CEGL006398].