

Salt Marsh showing shrubby uplands and internal micro-topography. Diagram: K. Percival, NHESP.

Description: Salt Marshes develop in areas between high spring-tide and mean-tide in estuaries and behind barrier beaches and spits where they are subject to tides but sheltered from wave energy. There are wide variations in temperature, level of salinity, and degree of inundation. Upper edges where freshwater enters from the upland may be brackish. Salt marshes are structural mosaics with **salt shrub, high and low marsh, tidal creeks, and pannes** (poorly drained depressions). Salt marsh plants reduce wave erosion, capture sediments around their bases, and create a peat from their roots and fallen leaves.

Characteristic Species: Salt Marshes in Massachusetts are dominated by saltwater cordgrass and salt-hay -- perennial salt tolerant grasses. Inundation by tides causes distinct vegetation bands

Salt Marshes are graminoid dominated, tidally flooded coastal communities developed on peaty material in areas protected from wave energy in estuaries and behind barrier beaches.

due to the sensitivity of plants to the length of inundation. **Pannes** occur throughout with highly saline water or salt incrustated mud with only very salt-tolerant plants like widgeon grass, glassworts, and saltworts. **Low marsh** extends from mean sea level to the lower high tide mark. It is dominated by saltwater cordgrass, a stiff, coarse plant that grows in virtually unbroken stands and was once used for roof thatch. Associated plants include saltmarsh sea-blite, glasswort, and salt marsh sand - spurrey. Macroscopic marine

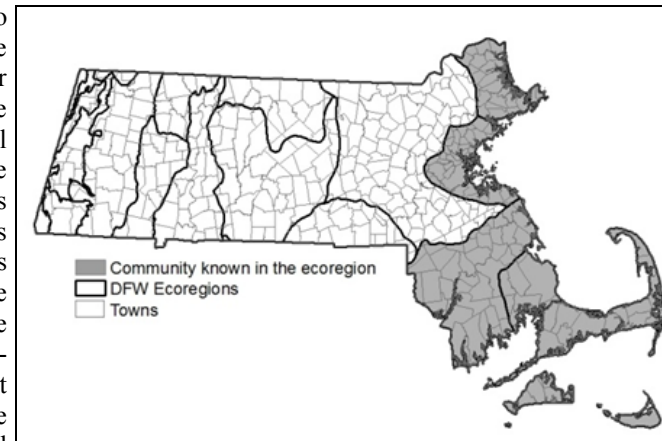


Flooded salt panne in a Salt Marsh. Photo: Joanne Singfield, NHESP.

algae (seaweeds) are also prominent in this part of the salt marsh. At its lower edge, the salt marsh surface may be colored by algal mats that grow on or in the mud. Low salt marsh grades into mud flats with seagrass beds. **High marsh** extends from the lower high tide level to the high spring tide level and has more freshwater influx. The dominant salt-hay and saltmarsh spike-grass have limited tolerance for submergence in salt water. At the upper edge of the high marsh, black-grass, seaside goldenrod, switch grass, sea lavender, and marsh elder grow. Above the high marsh is brackish marsh with cattails and giant reed grass (both native and exotic invasive varieties).

Differentiating from Related Communities: Salt Marsh is flooded by salt water (annual average salinity >18ppt). Dominated by saltwater cordgrass and salt hay, it looks grassy. Brackish Tidal Marsh has salinity levels between fresh- and salt water (0.5-18 ppt). The vegetation is mixed with saltmarsh bulrush, salt reedgrass, and narrow-leaved cattail. Freshwater Tidal Marsh lacks saltwater cordgrass and salt hay, and has sweet flag, wild rice, climbing hempweed, and other broadleaved herbaceous plants. It is flooded by freshwater (salinity <0.5 ppt).

Habitat for Associated Fauna: Salt Marshes comprise a very productive ecosystem. They provide a nursery for many marine species including



commercially important fish and shellfish. Resident and migratory waterfowl and shore birds nest and feed in them. Salt marshes protect the coast from damaging surf, protect adjacent lowlands from flooding, and help absorb and breakdown water contaminants.

Examples with Public Access: Parker River NWR, Newbury; Salisbury Marsh, Salisbury; Great Marshes, Barnstable; Nauset Marsh, Eastham; Great Sippewissett Marsh, Falmouth.



Salt Marsh with windblown grasses. Photo: Joanne Singfield, NHESP.

