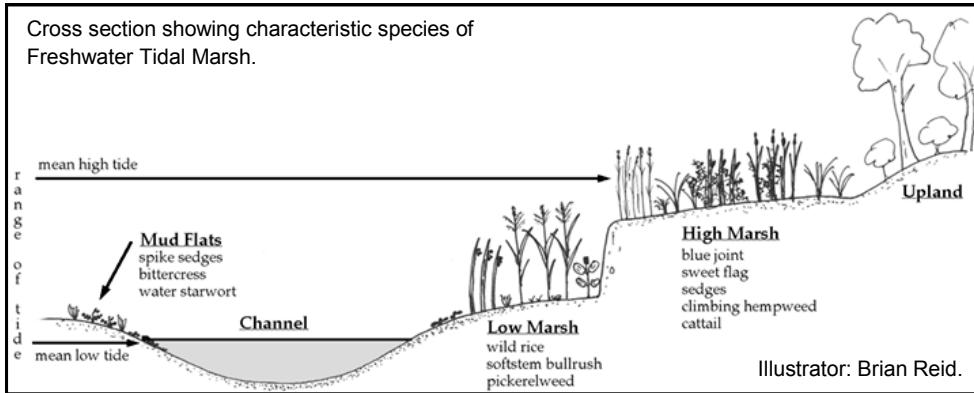


Freshwater Tidal Marsh

State Rank: S1 - Critically Imperiled



Description: Freshwater Tidal Marshes occur on free-flowing coastal rivers just upstream of the salt front carried by incoming high tides. They are flooded twice daily by the freshwater that is backed up as it meets resistance from the high tides downstream. Being along the shores of dynamic rivers, freshwater tidal marshes are often structurally diverse. Freshwater tidal marsh represents the upstream end of a tidal gradient from salt marsh, to brackish tidal marsh, to freshwater tidal marsh. Tidal amplitude may be up to 150 cm. Average annual salinity is less than 0.5 ppt (from 0.5 ppt to 5 ppt salinity there is a gradient of species to brackish conditions which have an average annual salinity of 5-18 ppt). **High marsh** begins with an abrupt bank of peat 1-3 feet above mean low water. It is often the most diverse vegetated zone of the freshwater tidal marsh. **Low marsh** is on muddy or rocky sloping shores below the bank of high marsh particularly

Freshwater Tidal Marshes are mixed herbaceous marshes flooded by daily tides, and occurring in the freshwater reach of coastal rivers.

on large rivers. **Rocky shores** have sparse, low growing annuals in patches of shallow soils. **Mud flats** in the river channel regularly have sediment deposition and prolonged inundation. They are sparsely vegetated with a suite of low-growing plants.

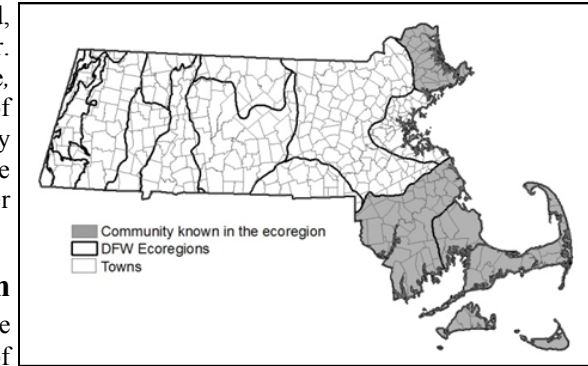
Characteristic Species: Freshwater Tidal Marshes are characterized by salt intolerant plant species, typically a rich association of emergent grasses, sedges, rushes and forbs, with only occasional shrubs in upper edges of the backmarsh. Narrow-leaved cattail and sweet flag occasionally forms exclusive stands, and climbing hempweed often sprawls over large patches of backmarsh. Dominant species include blue joint, lakeside and tussock sedges, narrow-leaved cattail, wild rice, smartweeds, tearthumbs, jewelweed, climbing hempweed, false pimpernel, and sweet flag. Low marsh often has stand-forming emergent plants with tough mat-forming rhizomes that resist erosion; annuals may also dominate large sections of marsh. Large stands of wild rice usually dominate muddy areas, however stands of sweet flag, soft-stem

bulrush, arrowhead, pickerel-weed, and water dock frequently occur. Freshwater cord-grass, threesquare, and water hemp are typical of rockier substrates. More sparsely vegetated mud flats include spike sedges, water purslane, water starwort and bittercress.

Differentiating from Related Communities: The key difference from other types of

Freshwater Marsh is that Freshwater Tidal Marshes are restricted to the area of freshwater tidal action on coastal rivers and streams above the zone of regular salt water incursion. A difference from Brackish Tidal Marshes is the lack salt tolerant plants. Long's bittercress, estuary arrowhead, and estuary beggar-ticks, although shared with Brackish Tidal Marshes, most commonly occur in the freshwater situation. Some other species that co-occur in Freshwater and Brackish Tidal Marshes are more likely to be found in the brackish condition: *Lilaeopsis* or eastern grasswort, Atlantic mudwort, water-pimpernel, Parker's pipewort, and Eaton's beggar-ticks. Many of these are uncommon, even in the appropriate habitats.

Habitat for Associated Fauna: This community provides outstanding general wildlife habitat, with abundant food sources for migratory and wintering waterfowl, and is generally associated with river reaches with spawning habitat for anadromous fisheries. It tends to have more vertebrate species, such as freshwater snakes and muskrats, than do the Brackish Tidal Marshes. Freshwater



Tidal Marshes provide habitat for nesting songbirds. Freshwater mussels are locally abundant.

Examples with Public Access: West Newbury Conservation Area, West Newbury; Willow Brook Farm Preserve (Wildlands Trust), Pembroke; Stetson Meadows, Norwell; Mounces Meadow, Marshfield.



Wild rice in a Freshwater Tidal Marsh. Photo: Joanne Singfield, NHESP.

