

TIDAL FRESHWATER MARSH (THREESQUARE SUBTYPE)

Concept: The Threesquare Subtype covers the uncommon zones dominated or codominated by *Schoenoplectus pungens* (= *Scirpus pungens*) in association with other salt-intolerant plants. These zones generally occur in the interior of oligohaline marshes.

Distinguishing Features: The Threesquare Subtype is distinguished from all other subtypes by the dominance of *Schoenoplectus pungens* (= *Scirpus pungens*) or by the codominance of *Schoenoplectus* with species other than the dominants of other subtypes.

Synonyms: *Schoenoplectus pungens* - (*Osmunda regalis* var. *spectabilis*) Herbaceous Vegetation (CEGL004189).

Ecological Systems: Atlantic Coastal Plain Embayed Region Tidal Freshwater Marsh (CES203.259). Atlantic Coastal Plain Central Fresh and Oligohaline Tidal Marsh (CES203.376).

Sites: This community occurs on intertidal flats, usually in the interior of zoned mosaics with other subtypes.

Soils: Most occurrences in both lunar and wind tidal areas have organic soils, most often Currituck (Terric Haplosaprist) but often Lafitte, Hobonny, or Dorovan (Typic Haplosaprist). A few may be mineral soils such as Chowan (Thapto-histic Fluvaquent).

Hydrology: Lunar or wind tides in oligohaline waters. Though this is not clear, this subtype may be associated with interior areas where water pools, so that evaporation concentrates salt more than in the rest of the marsh.

Vegetation: The dense tall herbaceous vegetation is dominated by *Schoenoplectus pungens*. Woody species may be sparsely present, as in other subtypes. In 6 CVS plots, other species that were frequently abundant were *Juncus roemerianus*, *Distichlis spicata*, *Sporobolus pumilus* (*Spartina patens*), *Mikania scandens*, and *Pluchea odorata*. Other species occasionally abundant to codominant were *Sagittaria lancifolia* var. *media*, *Bacopa monieri*, *Eleocharis vivipara*, *Eleocharis obtuse*, *Bulboschoenus robustus*, *Proserpinaca pectinate*, *Osmunda spectabilis*, *Hydrocotyle verticillata*, *Typha angustifolia*, and *Baccharis halimifolia*. At least in the plots, this subtype, species richness is lower than the associated subtypes, with only about 20 additional species found in the plots, and an average of only 8 plant species per 10x10 meter plot.

Range and Abundance: Ranked G2G3. As defined, this subtype is confined to North Carolina. It is known both from the wind tidal marshes of the Embayed Region and the lunar tidal freshwater marshes of southeastern North Carolina.

Associations and Patterns: This subtype often occurs in mosaics with the Giant Cordgrass, Sawgrass, Needlerush, Cattail, Oligohaline Low Marsh Subtype. It may grade particularly gradually into the latter.

Variation: No variants are recognized. Examples vary with the transition to other subtypes.

Dynamics: Dynamics appears to be similar to those of associated subtypes. The hypothesis that ponding of water and concentration of salt by evaporation is uncertain, but the frequent presence of *Distichlis spicata*, more than in other subtypes, suggests it. Thus, this subtype may be in a more stressful environment and have lower productivity.

Comments: There has been confusion over the nomenclature and identity of the *Schoenoplectus* species. Dominant sedges have also been called *Schoenoplectus americanus*, but presumably are the same species.

Schoenoplectus pungens Tidal Herbaceous Vegetation (CEGL004188) is a more northern, but also more brackish, association of more northern marshes. The existence of this more northern association appears to be why this equivalent association is defined with so narrow a range.

Rare species:

References: