FRESHWATER MARSH POOL

Concept: Freshwater Marsh Pools are vegetated permanently flooded portions of Tidal Freshwater Marsh complexes, with floating or submersed aquatic vegetation.

Distinguishing Features: Freshwater Marsh Pools may be distinguished from Tidal Freshwater Marsh subtypes by dominance by floating and submersed aquatic vegetation in enclosed waters. Tidal channels and adjacent large estuaries are not included, but would be treated as submersed aquatic vegetation that is not yet defined.

Synonyms: *Ceratophyllum demersum - Utricularia macrorhiza - Nymphaea odorata* Herbaceous Vegetation (CEGL004661).
Ecological Systems: Atlantic Coastal Plain Embayed Region Tidal Freshwater Marsh (CES203.259). Atlantic Coastal Plain Central Fresh and Oligohaline Tidal Marsh (CES203.376).

Sites: Freshwater Marsh Pools occur in shallow permanently flooded areas on intertidal flats. Pools may be isolated in marsh complexes or may be connected by tidal channels.

Soils: Generally associated with organic soils, such as Currituck (Terric Haplosaprist) or less likely Hobonny (Typic Medisaprist) or other series.

Hydrology: Wind tidal areas with oligohaline water. Pools may be connected by tidal channels, so that they are quickly subject to all tidal fluctuations, or may be isolated so that tidal flooding occurs only when the tide overflows the adjacent marshes.

Vegetation: Vegetation may include any of the submerse or floating aquatic plants tolerant of oligohaline water. The few examples that are well described have *Nymphaea odorata* and *Spirodela polyrrhiza*. Submersed plants include *Ceratophyllum demersum, Utricularia gibba, Utricularia biflora, Najas guadalupensis,* and *Ruppia maritima*. Algae and the liverwort *Riccia fluitans* may also be prominent. *Eleocharis* sp. and *Juncus* sp. also may be present, and there may be a more diverse zone of emergent marsh plants around the edge. The NVC description, based on Virginia data, also includes *Utricularia marcrorhiza, Utricularia purpurea, Elodea nuttallii, Wolffiella gladiate,* and *Lemna* spp.

Range and Abundance: Ranked G3?. Only a handful of examples are documented, but more may occur in northeast North Carolina. The NVC association is attributed to Virginia as well as North Carolina. The synonymized association may not be completely parallel and may be more broadly defined.
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Associations and Patterns: Freshwater Marsh Pools occur in Tidal Freshwater Marsh complexes, associated with the Sawgrass, Needlerush, Threesquare, Cattail, Giant Cordgrass, and Estuarine Low Marsh subtypes.

Variation: Examples appear to be very variable, but patterns have not been elucidated.

Dynamics: Dynamics of Freshwater Marsh Pools are particularly poorly known. There is concern that pools in marshes are associated with marsh deterioration. If sediment accumulation does not keep pace with rising sea level, productivity will decline first in the lowest areas, vegetation will eventually drown, and open water pools will form. Once formed, they can expand, as well as proliferate as additional areas drown. It is not clear that the vegetated Freshwater Marsh Pools represented by this community are the same phenomenon. Stable vegetated pools should be regarded as natural communities, though they, like marshes, are at risk of being replaced by deep water as sea level continues to rise. The wind tidal areas where the known examples occur are in the Embayed Region, where geological subsidence exacerbates global sea level rise. There is very little mineral sediment movement in this area, and marshes have kept pace with past sea level rise by accumulation of organic matter.

Comments:

Rare species:

References: