



Interdunal Marsh/Swale

Community Code: CP2A0A1100

State Rank: S2



Concept: Graminoid- or shrub-dominated coastal community occurring in shallow basins (swales) between sand dunes.

Environmental Setting: Interdunal Marshes/Swales form in barrier beach systems in low, shallow depressions between sand dunes. The best examples are complexes of multiple swales with varied conditions. Soils generally have a thin (1 cm) organic layer over coarse sand. The substrate may be seasonally flooded or permanently inundated, with water coming from groundwater and precipitation, with occasional brackish overwash from storms. The water regime controls the vegetation. The community is usually graminoid- or shrub-dominated. One variant has a pitch pine canopy.

Vegetation Description: Interdunal swale vegetation ranges from graminoid-dominated to low shrub-dominated, with or without scattered patches of tall shrubs or, occasionally, a canopy of pitch pine. The most common type is dominated by large cranberry (*Vaccinium macrocarpon*; often with > 90% cover) on sphagnum moss. Typical associates include various rushes (*Juncus pelocarpus*, *J. canadensis*, etc.), spatulate-leaved and thread-leaved sundews (*Drosera intermedia* and *D. filiformis*), beaksedges (*Rhynchospora capitellata* and *R. alba*), yellow-eyed grasses (*Xyris* spp.), St. John's-worts (*Triadenum* spp.), southern bog clubmoss (*Lycopodiella appressa*), and several orchid species such as rose pogonia (*Pogonia ophioglossoides*), grass-pink (*Spiranthes cernua*), and nodding ladies-tresses (*Spiranthes cernua*) and occasional arethusa (*Arethusa bulbosa*) and ragged fringed orchis (*Platanthera lacera*). Graminoid-dominated swales are characterized by a mixture of rushes (*Juncus* spp.), beaksedges (*Rhynchospora* spp.) and other graminoids. Some interdunal swales have large numbers of Plymouth gentian (*Sabatia kennedyana*).



Scattered pitch pine (*Pinus rigida*), eastern red cedar (*Juniperus virginiana*), bayberry (*Morella pensylvanica*), sheep laurel (*Kalmia angustifolia*) or other wetland shrubs can also occur.

Differentiating Occurrences: Occurrence in shallow, wet basins in dune systems is the defining characteristic of Interdunal Marsh/Swales. They are graminoid-, shrub-, or pitch pine-dominated communities growing on shallow peat over sand. Acidic Graminoid Fens and Sea-level Fens are differentiated by location; they are not in barrier beach systems. They both generally have deeper peat than Interdunal Marshes/Swales, but all share many species.

Associated Fauna: Interdunal swales can function as vernal pool habitat if water remains standing for 2-3 months and they lack fish; these swales provide important amphibian breeding habitat, particularly for toads such as American toad, Fowler's toad, and eastern spadefoot. Interdunal swales are part of the habitat of mobile animals for food, cover, and nesting sites. They can be an important source of freshwater in the generally very dry and exposed dune systems.

Public Access: Several dune systems on public lands have trails and/or boardwalks that intersect interdunal swales. If visited, care should be taken not to create trails across the peat surface or in the easily damaged surrounding dunes. Cape Cod National Seashore, multiple areas; Parker River National Wildlife Refuge, Newburyport, multiple areas; Sandy Neck Beach Conservation Area (town-owned), Barnstable; Demarest Lloyd State Park, Dartmouth.

Threats: Invasion of non-native species (especially phragmites (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*)).

Management Needs: Control the spread of phragmites and purple loosestrife.

USNVC/NatureServe: *Vaccinium macrocarpon*-*Myrica pensylvanica* Dwarf-shrubland [CEGL006141]; *Spartina patens* Seasonally Flooded Herbaceous Vegetation [CEGL006342]. *Cladium mariscoides*/*Vaccinium macrocarpon* - *Morella pensylvanica* Dwarf-shrubland (CEGL006141, G2G3) (?); ?A0580 *Pinus rigida* Saturated Woodland Alliance - *Pinus rigida*/*Vaccinium macrocarpon* Woodland [CEGL006127].