

Coastal Plain Pondshore Community

State Rank: S3 - Vulnerable



Coastal Plain Pondshore with vegetation zones. Photo: Patricia Swain, NHESP.

Description: Coastal Plain Pondshores (CPPS) are herbaceous communities characterized by a distinct coastal plain flora on exposed pondshores in southeastern Massachusetts. Coastal plain ponds are shallow, highly acidic, low nutrient groundwater ponds in sandy glacial outwash, with no inlet or outlet. Water rises and falls with changes in the water table, typically leaving an exposed shoreline in late summer. Annual and inter-annual fluctuations in water levels are key to maintaining the community: low water years eliminate obligate aquatic plants and allow adapted plants to grow and high water years limit invasion by woody species. The community develops best in small ponds or bays of larger ponds with little space for wind sweep that causes wave and ice damage along shorelines on large ponds. The substrates are usually sand, sometimes with cobbles; a surface layer of organic muck occurs on some ponds and pondshores.

Characteristic Species: Coastal Plain Pondshore Communities are composed of a mixture of herbaceous and graminoid plants that include state-rare

Coastal Plain Pondshore Communities occur on exposed shores of ponds in glacial outwash in the coastal plain where water levels are controlled by seasonal groundwater changes. The herbaceous flora has a distinct southern component.

species that can be locally abundant, growing mixed with more common plants typical of dry grasslands (such as little bluestem) or marshes (including rushes, sedges, bonesets, and purple gerardia). A characteristic zonation pattern, correlated with flooding regime, from dry to waterline is: 1. Upland oak/pine forest; 2. Shrub border dominated by highbush blueberry associated with sweet pepperbush, and green briar; 3. An intermediate area of beach provides habitat for most of the species of the Coastal Plain Pondshore Community. Emergent exposed pondshore dominated by slender-leaved flat-topped goldenrod, pondshore rush, rose coreopsis and golden pert, with beaksedge, lance-leaf violet, and dwarf St. John's-wort; 4. Semipermanently flooded zone characterized by one or more of the following: bayonet rush, spike-rushes, or pipewort; and 5. Hydromorphic rooted vegetation in deeper water including



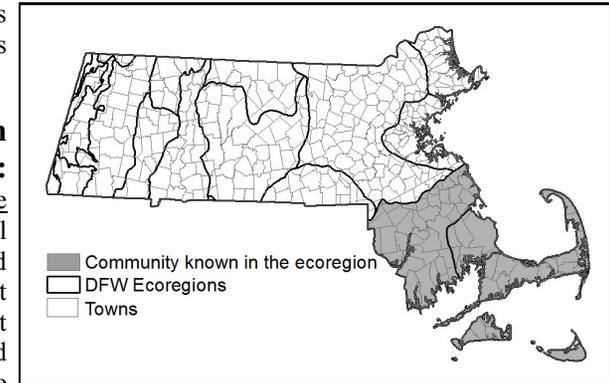
yellow water-lily, white water-lily and Robbins' spike-rush. Not every pond has every zone, shores
Plymouth gentian, a CPPS specialist. Photo: Jennifer Garrett, NHESP.

within ponds vary, and zones change width and species composition from year to year.

Differentiating from Related Communities:

Coastal Plain Pondshore Communities are in the coastal plain, generally on sand around ponds in closed basins that intersect groundwater that affect pond levels. The seasonally and annually fluctuating water table typically leaves an exposed shoreline by late summer that supports common and rare, often coastal or southern, herbaceous species. Coastal Plain Pondshores – Inland Variant also occur in closed basins in sandy outwash, but are in the Connecticut River Valley. Some, but fewer, coastal plain species grow in them. Acidic Pondshore/Lakeshore Community is broadly defined, variable, and includes shorelines not explicitly included in coastal plain pondshores, the inland variant, or calcareous ponds. The shore line is often not distinct, merging into marsh or other wetlands. Many ponds have inflow or outflows. Calcareous Pondshores/Lakeshores occur in the Marble Valleys of Berkshire County, around ponds that have calcium in the water. Freshwater Mud Flat Communities are within ponds rather than along shores. Mud flats in Coastal Plain Ponds are treated as part of the pondshore community.

Habitat for Associated Fauna: Coastal Plain Pondshore Communities and ponds provide habitat for many state rare animal and plant species, some of



which occur only on coastal plain ponds. Coastal plain pondshores are important habitat for dragonflies and damselflies (over 45 species are known to occur on coastal plain ponds). They are also important habitat for painted, musk, spotted, and snapping turtles, and the federally endangered northern red-bellied cooters. Larger pond and pondshores are used by migrating and wintering waterfowl.

Examples with Public Access:

Myles Standish State Forest, Carver; Mary Dunn Ponds WMA, Hyannis; Nickerson State Park, Brewster.



CPPS, sandy shoreline in low water year. Photo: Jennifer Garrett, NHESP.

