Calcareous Pondshore/Lakeshore Community

Community Code: CP2A0B1300

State Rank: S2

Concept: Vegetated gravelly, sandy, or muddy shores of calcareous or circumneutral inland lakes and ponds.

Environmental Setting: Calcareous Pondshore/Lakeshores are submerged or saturated for a significant part of the year or continuously in wet years. The substrate is mineral soil and may range in texture from fine silts to sand and gravel. Organic material may accumulate, creating quite mucky sediments. Some shores are steep mineral banks; others are gradual with emergent vegetation that grades into Deep or Shallow Emergent Marshes, calcareous fens, shrub swamps, or forested swamps that can form extensive wetland complexes within the basins. Calcareous ponds are restricted to limestone areas of Berkshire County where they are surrounded by upland Northern Hardwoods - Hemlock - White Pine Forests.

Vegetation Description: Calcareous Pondshores/Lakeshores have abundant shrubs in many areas with red maple (*Acer rubrum*), speckled alder (*Alnus incana* spp. *rugosa*), and swamp rose (*Rosa palustris*). The herbaceous layer is dominated by sedges, especially awned sedge (*Carex crinita*), porcupine sedge (*C. hystericina*), lakeside sedge (*C. lacustris*), tussock sedge (*C. stricta*), threeway sedge (*Dulichium arundinaceum*), and soft-stemmed spikerush (*Eleocharis obtusa*). Northern blue flag (*Iris versicolor*) is also common on the shore. Emergent species in the shallow water adjacent to the often ill-defined shoreline include bur reeds (*Sparganium androcladum* and *S. eurycarpum*). The shores and surrounding marshes often have patches of the invasives purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and reed canary-grass (*Phalaris arundinacea*). Sites with steep silty banks may have additional exotics such as true forget-me-not (*Myosotis scorpioides*) and

moneywort (*Lysimachia nummularia*). The ponds themselves contain mats of the green alga stonewort (*Chara* sp.) and support aquatic plants including several species of pondweeds (*Potamogeton* spp.) that are restricted to calcareous waters.

Differentiating Occurrences: All the pondshore/lakeshore communities occur around water bodies that can be differentiated by setting and location. Calcareous Ponds and Lakes occur in the Marble Valleys of Berkshire County and have calcium in the water derived from nearby limestone or dolostone bedrock. The ponds usually have inflow and outflow, and often have mats of stoneworts (*Chara* sp.) in the lake bottoms. The shore line is often not distinct, merging into marsh or other wetlands. Acidic ponds and lakes have lower pH than calcareous ponds, and do not have stoneworts. Many have inflow or outflows. Acidic pondshore vegetation is broadly defined and variable, and includes shorelines not explicitly included in calcareous or coastal plain pondshores. Coastal Plain Ponds are generally on sand in the coastal plain in closed basins that intersect groundwater that affects pond levels. The seasonally and annually fluctuating water table typically leaves an exposed shoreline by late summer that supports common and rare, generally coastal or southern, mostly herbaceous species. Coastal Plain Pondshores - Inland Variant also occur in closed basins in sandy outwash, but in the Connecticut River Valley. Coastal plain species grow in them, but include fewer specialists. Freshwater Mud Flat Communities are within ponds rather than on shorelines. They have low, sparse, annual herbaceous vegetation on recently exposed muddy sediments.

Associated Fauna: There are a few species that specialize in alkaline (therefore calcareous, in Massachusetts) ponds or lakes, but these invertebrates are not particularly associated with shorelines, but the waterbodies themselves. Some shorelines immediately become shrub swamp and emergent marshes where inconspicuous ("secretive") water birds nest. Such marsh nesters are not concerned with the water chemistry, but rather in the extent of habitat and lack of human disturbance. Their use of extensive marshes and associated open water are not shore-based, per se.

Public Access: Three Mile Pond WMA, Sheffield; Agawam Lake WMA, Stockbridge.

Threats: The primary threat is exotic, invasive species including purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and reed canary-grass (*Phalaris arundinacea*). Other threats include alteration of normal water-level fluctuations, shoreline development, and disturbance from off road vehicles.

Management Needs: More information is needed to assess the management needs of calcareous pondshore/lakeshore communities.

USNVC/NatureServe: Pond: A4066: *Potamogeton* spp. - *Ceratophyllum* spp. - *Elodea* spp. Herbaceous Alliance: *Elodea canadensis* - *Potamogeton* spp. Eastern Herbaceous Vegetation [CEGL006431].