

Calcareous Pondshore/Lakeshore (S2)

State Status: None
 Federal Status: None

Description: Calcareous Pondshore/Lakeshore communities are sparsely vegetated shorelines surrounding ponds or lakes that are circumneutral or alkaline (which is usually calcareous). They appear as a sandy or muddy shoreline during periods of low water, with sparse to abundant, primarily herbaceous, vegetation.

Environment: The substrate is mineral soil and may range in texture from fine silts to sand and gravel. Organic material may accumulate from material washed from the pond or lake or from the adjacent upland. Water level in the pond or lake fluctuates over the course of the year, with high periods in spring and fall and low periods during the growing season. Over the winter, ice forms, and during ice out, there may be some scouring of the shoreline. Plants emerge during low water periods in the spring and summer.

Characteristic and Indicator Species: This community is not well described. Species noted at one site include several species of sedge (*Carex crinita*, *C. hystericina*, *C. lacustris*, and *C. stricta*), three-sided sedge (*Dulichium arundinacea*), spike-rush (*Eleocharis obtusa* and *E. ovata*), and some aquatic emergent plants such as bur-reed (*Sparganium angrocladum* and *S. eurycarpum*).

Related Communities: Coastal Plain Pondshores are only found in the coastal plain with related ponds in sandy outwash in the Connecticut River Valley of Massachusetts. Inland Acidic Pondshore/Lakeshores have similar hydrology but occur in conditions with lower pH. There are few occurrences of these calcium-rich pondshore communities in Massachusetts, so classification and comparison are difficult.

Range: The New York Natural Heritage Program recognizes an Inland Calcareous Lakeshore, found throughout New York State including in the Taconics, which border Massachusetts. Vermont reports one example of an Outwash Plain Pondshore, which has some similar species as found in Massachusetts. Maine describes a similar community, and Rhode Island described a Common Pond or Lake Shore, which is a primarily herbaceous community.



A Calcareous Pond in relatively undeveloped surroundings with the Pondshore areas marked. Map: MassGIS 2009 Orthophoto, data from NHESP.

In Massachusetts it is found in the western parts of the state where limestone and dolostone are prevalent.



Threats and Management Recommendations: The primary threat is alteration in the annual cycle of water level fluctuation. Stabilizing that would result in loss of those species adapted to emerging when water level is lower in the growing season. Since these are shorelines,

trampling by foot or motorized traffic could cause soil compaction or erosion and damage the vegetation. If motorized boats were used extensively, wave action could damage the shoreline.

Sufficient upland buffer, preferably forested, should be protected to reduce the potential for establishment by invasive species. This community may occur as part of a complex of other wetland types. Hydrologic connections between this and other wetland types may be important to maintaining community integrity.

If it is determined that invasive species threaten this community, a plan should be developed, in consultation with the Massachusetts Natural Heritage and Endangered Species Program, to remove the invaders. All active management of rare plant populations, including invasive species removal, is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage and Endangered Species Program.

Further work is needed to better document this community in comparison with other lake and pond shore types. In addition, the importance to invertebrates, particularly Odonates, and vertebrates, such as Sedge Wrens or other birds that nest in sedge meadows or other habitat that may occur on shorelines should be investigated.

Status in Massachusetts: This community is ranked as S2 (Imperiled), indicating there are 6-20 occurrences in the state. The occurrences are generally small and may grade into other wetland types such as calcareous sloping fens or calcareous peatland communities including calcareous fens.

For More Information See:

Enser, R. W. and J. A. Lundgren. 2006. Natural Communities of Rhode Island. A joint project of the Rhode Island Dept. of Environmental Management Natural Heritage Program and The Nature Conservancy of Rhode Island. Web published by R.I. Natural History Survey, Kingston, RI. www.rinhs.org.

Gawler, S. and A. Cutko 2010. Natural Landscapes of Maine: a guide to natural communities and ecosystems. Maine Natural Areas Program, Maine Department of Conservation, Augusta, ME.

Manomet Center for Conservation Sciences. 2006. A guide to the natural communities of Massachusetts. Manomet Center for Conservation Sciences. Manomet, MA. URL: http://www.communitymapper.org/natcom_resources.htm

New York Natural Heritage Program. 2009. Online Conservation Guide for Inland Calcareous Lake Shore. <http://www.acris.nynhp.org/guide.php?id=9917> . Accessed May 4, 2010.

Swain, P.C. and J.B. Kearsley. 2011. Classification of the Natural Communities of Massachusetts. Version 1.4. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries and Wildlife. Westborough, MA. URL: <http://www.mass.gov/dfwele/dfw/nhosp/nhclass.htm>

Thompson, E.H. and E.R. Sorenson. 2000. Wetland, Woodland, Wildland: a guide to the natural communities of Vermont. University Press of New England, Hanover, NH.