

**Guidelines for Permitting Shoreline Structures on
Freshwater Lakes and Ponds in the
Pleasant Bay Area of Critical Environmental Concern (ACEC)**

I. Overview

The Pleasant Bay Area of Critical Environmental Concern (ACEC) contains eleven freshwater ponds that are hydrologically connected to the estuary (see Table 1.) Five of the ponds are considered Massachusetts Great Ponds because they exceed ten acres in size.

Table 1. Lakes and Ponds within the Pleasant Bay ACEC

Water Body	Size (Acres)	Town
Crystal Lake*	36	Orleans
Pilgrim Lake*	39	Orleans
Gould Pond	6	Orleans
Meadow Bog	3	Orleans
Sarah's Pond	6	Orleans
Uncle Seth's Pond	5	Orleans
Fox Pond	5	Chatham
Lover's Lake*	36	Chatham
Mill Pond*	22	Chatham
Minister's Pond	5	Chatham
Stillwater Pond*	16-18	Chatham

*Massachusetts Great Pond (greater than 10 acres)

Shoreline structures that are proposed below Mean Annual High Water (MHW) within Great Ponds must obtain a Chapter 91 waterways license from the Massachusetts Department of Environmental Protection (MassDEP.) In the ACEC, applications for structures that require a Chapter 91 license are subject to the categorical restriction on such licenses for new private structures. The categorical restriction is in effect until such time as the Alliance develops permitting guidelines for new private structures that are consistent with the approved Pleasant Bay Resource Management Plan. The guidelines must then be adopted by the Alliance Towns and approved by the Secretary of Energy and the Environmental Affairs.

The Resource Management Plan states that “the existing [categorical restriction] on new [Chapter 91] licenses for docks and piers in freshwater ponds within the ACEC should be continued pending the completion of a resource assessment and analysis....In the event that the assessment identifies freshwater areas where docks and piers may be allowed, the existing terms of the [categorical restriction] should continue until new performance standards and design criteria for licensing freshwater docks and piers...are adopted into regulation by the respective towns and approved by the state.”¹ These permitting guidelines respond to this charge.

¹Pleasant Bay Resource Management Plan, 1998, p.108-9

The first step in developing the guidelines was to undertake an assessment of pond shore resources. With a grant from the Cape Cod Foundation Freshwater Fund, the Alliance contracted Horsley Witten Group to conduct *A Qualitative Survey of Pond Shoreline Vegetation and Anthropogenic Threats at Eleven Freshwater Ponds in the Pleasant Bay Area of Critical Environmental Concern*. The survey, conducted during the 2002 growing season and reported in 2003, documented the presence of state-listed species (*Endangered, Threatened, Species of Special Concern*), and characterized the dominant vegetative species, including invasive species, that were found within approximately 100 feet along the pond shores. Additionally, the survey provided management recommendations to protect the health of the pond shore habitats. With respect to recreational uses the survey found that “[b]eaches, boat ramps, private docks and floats have impacted the vegetated communities along the waterbodies. While these activities may have prevented woody encroachment by willows and other ... woody plants, expansion or creation of new recreational beaches, boat landings and docks should be discouraged in future management plans for the ACEC, in order to protect the fragile pondshore environment.”² The survey was relied upon by the Alliance in developing this document, entitled *Guidelines for Permitting Shoreline Structures on Freshwater Lakes and Ponds in the Pleasant Bay ACEC (Guidelines)*.

The objectives of the guidelines are to:

- Protect significant exemplary habitats, including Coastal Plain Pond Shore and Atlantic White Cedar communities;
- Protect bordering vegetative wetlands;
- Protect rare and endangered plant and wildlife; and
- Ensure safe access to freshwater bodies within the ACEC.

Significance of Protecting Exemplary Habitats

The Horsley Witten Group report also characterized the variety of habitat communities among the ponds’ shorelines. In particular the report documented the presence of two Exemplary Habitats, as defined by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), the *New England Coastal Plain Pond Shore Community* and the *Atlantic White Cedar Swamp Community*. Coastal Plain Pond Shore communities are characterized by gradually sloping shorelines and are, because they are directly linked to the groundwater aquifer, “specially adapted to the desiccation –inundation effects of the seasonal hydrological cycles...” As a result, pond levels fluctuate considerably from year to year. According to NHESP, “coastal plain pond shores and ponds provide habitat for at least 43 rare animal and plant species. Coastal plain pond shores are important habitat for over 45 species of dragonflies and damselflies. They are also important habitat for painted, musk, spotted, snapping, and the federally endangered Plymouth red belly turtles. Larger ponds are used by migrating and wintering waterfowl...”

² Horsley Witten, p.11

Atlantic White Cedar Swamp communities are forested wetland communities characterized by a dense, primarily evergreen canopy, a deciduous shrub layer, and a sparse herb layer dominated by mosses. These areas provide important forested wetlands habitat, including amphibian habitat, and can function as vernal pool habitat under certain conditions.

According to NHESP, coastal plain pond shores and Atlantic white cedar swamp communities are both ranked S2, meaning they are state imperiled with only six to twenty occurrences statewide. Coastal plain pond shores also are considered a globally rare ecosystem occurring only in Southeastern Massachusetts. Thus a major objective of the guidelines is to protect coastal plain pond shore and Atlantic white cedar swamp communities found within the Pleasant Bay ACEC.

Significance of Bordering Vegetated Wetlands

As defined in the state Wetland Protection Act Regulations, Bordering Vegetated Wetlands (BVW) are freshwater wetlands which border creeks, rivers, streams, lakes and ponds³. BVW are areas where soils are saturated or inundated such that they support a predominance of wetland indicator plants. The boundary of BVW is the line within which 50% or more of the vegetation consists of wetland indicator plants and saturated or inundated conditions exist.⁴ BVW are probably the Commonwealth's most important inland habitat for wildlife. BVW are likely to be significant to public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, and protection of fisheries and wildlife habitat (310 CMR 10.55(1)).

According to state regulation, BVW within an ACEC may not be destroyed or impaired unless the presumption of significance can be rebutted or the proposed project can meet the three specific performance standards for limited project status under 310 CMR 10.53(j) which are:

- (1) Protecting rare wildlife habitat (which must always be met),
- (2) Preserving adequate light to maintain pre-construction vegetation, and
- (3) Maintaining reasonably unobstructed flowage of water.

If a dock cannot meet the last two of the three standards, it may apply for limited project as a water dependent use (310CMR10.53 (l)), which has stricter standards and which must meet normal performance standards for BVW, including replication, or in-kind recreation of wetlands in adjacent upland.⁵ The intent of the guidelines is to meet and reinforce the state standards for protection of BVW within ACECs.

Importance of Access to Ponds and Lakes

The guidelines recognize the desirability of access to freshwater bodies for a wide range of recreational pursuits (e.g., kayaking, canoeing, bird watching, fishing, nature viewing) as well as stewardship activities such as monitoring water quality, or plant or animal species. It is the intent of the guidelines to balance these access needs with the fragile ecology of our lakes and ponds within the Pleasant Bay ACEC.

³ 310 CMR 10.55(2)(a)

⁴ 310 CMR 10.55 (2)(c)

⁵ A Guide to Permitting Small Pile Supported Docks and Piers, MassDEP (September 2003, p.19)

II. Applicability

The guidelines are intended for use by local Conservation Commissions, Boards of Appeal and Planning Boards in the review of permit applications for shoreline structures in the freshwater lakes and ponds located in the Pleasant Bay ACEC. The guidelines provide a framework for permitting that may be implemented through changes in local bylaws and regulations governing the structures, and also raise issues for consideration in the application of such bylaws and regulations. These guidelines are also intended for use by the Department of Environmental Protection (DEP) once the towns have adopted them and enacted local regulatory revisions in compliance with them and the Secretary of Energy and the Environment approves them as required in the Secretarial Approval of the Pleasant Bay Area of Critical Environmental Concern Resource Management Plan.

The guidelines are meant to apply to any pier, dock, catwalk, footbridge, float or platform that is proposed to provide access to the freshwater body in the Pleasant Bay ACEC for any purpose (kayaking, canoeing, nature viewing, swimming, fishing, etc.) The guidelines are intended to apply to any newly constructed structure or the alteration or expansion of pre-existing structures. Pre-existing unlicensed structures would need to meet the guidelines in order to obtain local and state licenses. The guidelines are not meant to apply to pre-existing, licensed structures or the maintenance or reconstruction of pre-existing licensed structures within the footprint, profile and other terms of the pre-existing license.

A walkway which is located above mean annual high water in a freshwater resource area should not be allowed to have affixed to it a float or raft, (e.g., through a section 10(a) permit) that would extend the use of the structure below mean annual high water where it could function like a dock without meeting the requirements contained within the dock and pier guidelines. This requirement is necessary in recognition of the potential that applicants who are unable to obtain a permit for a dock could conceivably seek a permit for a “walkway” structure that could function as a dock without meeting the same permitting standards.

III. Performance Criteria

All naturally formed ponds and lakes on Cape Cod are groundwater fed and therefore the presumption is that a pond or lake is a Coastal Plain pond with characteristics including concentric bands of coastal plain pond vegetation, gentle sloping shoreline, and fluctuating water level. Therefore it is recommended that new or expanded structures be prohibited in lakes and ponds within the Pleasant Bay ACEC unless this presumption can be overcome using verifiable evidence from a credible source. Furthermore, it is recommended that new or expanded structures not be allowed if any of the following criteria apply:

- (1) The presence of rare, endangered or threatened species has been documented within 100 feet of any portion of the proposed structure.

- (2) Where in the judgment of the permit granting authority the small size of the water body or the proximity of reasonable access alternatives makes a structure unnecessary;
- (3) Where in the judgment of the permit granting authority a structure is unnecessary to protect and maintain wetland resources, and particularly the exemplary habitat communities and BVW noted above.

In the event that none of the foregoing criteria apply, a proponent must be able to demonstrate to the satisfaction of the permit granting authority that the proposed structure is able to meet the following performance criteria:

- (4) There should be no adverse effect on, loss or degradation of habitat for shellfish, finfish, birds, reptiles or other animals, or of fish runs resulting from the proposed structure.
- (5) There should be no adverse effect on submergent or emergent vegetation or BVW caused by the proposed structure.
- (6) There should be no adverse effect on water circulation patterns caused by the proposed structure that could result in a decrease in water quality.
- (7) There should be a sufficient depth of water at the terminus of the proposed structure to prevent damage to emergent or submergent vegetation.
- (8) There should be no adverse effect on the visual character of the shoreline area resulting from the proposed structure. To the extent practicable, applicants should apply the methodology for assessing visual impacts described in the Cape Cod Commission's Visual Impact Assessment Technical Bulletin.
- (9) There should be no adverse effect on public access opportunities resulting from the proposed structure.
- (10) The cumulative effect of the proposed structure should not result in an adverse effect on wetland resources. Cumulative effects are the combined effects (4 through 9) of all existing structures within the same water body.

In order to assess the applicability of any of the criteria noted above, the proponent must provide all required applications and supporting documentation, including clear delineation of property boundaries, to the relevant permit granting authority. Documentation should be provided to address the site conditions described below.

A. Existing Conditions: The slope and vegetative survey of terrain from Observed Mean Annual Low Water to the upland edge of Bordering Vegetated Wetland (BVW) (as defined in 310 CMR 10.55) should be evaluated. The extent of existing erosion or degradation of vegetation or substrate (underlying soils) resulting from foot traffic must be evaluated. Reasonable efforts to regenerate damaged resource areas should be fully explored and documented.

B. Characterization of the Water Body: The size (acreage) of the water body should be documented. Observed Mean Annual High Water and Observed Mean Annual Low Water should be documented based on measurements taken between April 15th and May 15th and between August 15th and September 15th, respectively, and provided to the

permit granting body along with groundwater and precipitation data for the year of measurement and the preceding nine years so that the permit granting authority may determine how characteristic these measurements are of annual levels. Topography and depth of water should be shown in one-foot contours from the upland edge of the BVW to five feet beyond the terminal point of the proposed structure.

C. Wildlife Habitat: The presence or absence of wildlife habitat must be determined. A comprehensive inventory of fish and wildlife, including fisheries, shellfisheries, reptiles, amphibians and other wildlife located within fifty feet laterally from any edge of the proposed structure, conducted by a qualified professional, should be provided.

D. Vegetation in Wetlands: A comprehensive inventory of emergent and submergent vegetation and BVW fifty feet laterally from any edge of the proposed structure, conducted by a qualified professional, should be conducted during the growing season and provided.

E. Rare and Endangered Species: Given the delicate and migratory nature of some rare species, the presence or absence of rare or endangered species must be determined through a site survey by a qualified professional. Copies of notice to the Massachusetts NHESP and all responses to the notice from NHESP are required.⁶

F. Monitoring: Photographs of the surrounding area should be taken before and after initial installation, and on an on-going basis to be determined by the Conservation Commission and specified in the Order of Conditions.

G. Use: Impacts on the resource from the use of the proposed structure should be determined. The type, frequency, volume and intensity of use must justify the need for the structure. Secondary impacts (II.4 through II.9) should be evaluated to determine impacts from use. "Shared-use" proposals (i.e., a single structure jointly owned and used by two or more waterfront property owners) are generally to be encouraged as a way of providing access to the water body while reducing the overall number of structures that might otherwise be permitted.

IV. Standards for Design, Installation and Maintenance

The general performance standard in an ACEC is *no adverse effect*. In general, a proposed structure should be designed and constructed so as to cause no adverse effect on the local ACEC ecology, including but not limited to, wildlife, fisheries, and BVW.

⁶ The Massachusetts Natural Heritage and Endangered Species Program (NHESP) has identified and mapped Gould Pond (Orleans) as an estimated Habitat of Rare Wildlife, and as such any project proposed in this pond must be reviewed by the Natural Heritage Program. ⁶ The Massachusetts NHESP has mapped as Priority Habitats of Rare Species Gould Pond and portions of Crystal Lake, Lover's Lake, Stillwater Pond and Minister's Pond.⁶ In addition, a study by Horsley & Whitten conducted for the Pleasant Bay Alliance ⁶documented rare species at the following four ponds: Crystal Lake, Gould Pond and Uncle Seth's Pond in Orleans and Mill Pond in Chatham

In all cases, structures should be designed to minimize the overall size wherever possible. No structure should be allowed that is designed to accommodate vessels that are not feasible or allowed in the body of water where the structure is proposed.

A. Width: The width of the structure should not exceed 3 feet at any point.

B. Length: The length of the structure should be the minimum needed to reach minimum required water depth (see D. below) and clear emergent vegetation. In cases where additional walkway access is warranted to traverse BVW, such additional walkway area should be designed pursuant to *Guidelines for Private Walkways and Stairways in Fresh and Marine Resource Areas In Pleasant Bay*.

C. Height: The height of the structure should be no less than two and one-half feet, above the existing grade of the BVW or Land Under Water as measured from the bottom surface of decking.

D. Water Depth: Water depth at the terminal end of the structure should be at least one (1) foot. For water bodies that allow motorized vessels there should be a terminal water depth of 2.5 feet.

E. Total Area: The total area of the walkway and dock structures should be the minimum needed to meet performance standards.

F. Orientation: Structures should be designed to be located as close to perpendicular to the shoreline as possible. If this requirement cannot be met, the structure should have a grated or transparent surface to allow light penetration. Structures should be designed to have a north-to-south orientation whenever possible. Structures with an east-to west orientation should have a grated surface to allow maximum light penetration.

G. Setbacks: Structures should be located a minimum of 50 feet from any property line, as measured from the nearest edge of the structure, and should be a minimum of 250 feet from any pre-existing shoreline structure or town- or association-owned landing. Setback requirements may vary for structures shared by two or more property owners, provided that setback requirements for non-participating property owners are maintained.

H. Seasonality: All structures should be seasonal in nature and should be installed no earlier than May 1st and removed no later than November 1st. All seasonal components should be securely stored at an upland site that is approved by the Conservation Commission.

I. Pile Size and Spacing: Pilings, if used, should be four inches by four inches and should be spaced eight feet apart unless the dock is shorter than eight feet. Some innovative design technologies, if used, may not require pilings. However, if pilings are used they should be driven to refusal; no pilings may be jetted.

L. Materials: Lightweight materials, such as aluminum, are preferred for their easy removal. Grated surfaces are preferred, to allow maximum light penetration. If planks are used, spacing should be a minimum of $\frac{3}{4}$ inches.

M. Handrails: Docks should not have handrails unless a compelling safety issue or code requirement necessitates their use.

J. Utilities: No utilities or lighting should be allowed on the structure.

K. Storage of Hazardous Materials: Storage of gasoline, oil, grease, pollutants or other hazardous materials on the structure should be prohibited.

N. Innovative Structures: Innovative structures and materials that can be demonstrated to have less impact on natural resources and public safety than traditional docks may be considered.

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