



THE COMMONWEALTH OF MASSACHUSETTS WATER RESOURCES COMMISSION

Policy on Lake and Pond Management for The Commonwealth of Massachusetts

Effective Date: June 13, 1994

I. DISCUSSION

Massachusetts has approximately 3,000 named lakes and ponds (for simplicity, the word “lake” is used throughout this document to mean an open water body: lake, pond, impoundment or reservoir). Many of the state’s lakes are of natural origin, but most have been artificially created or enhanced to achieve one or more specific uses. Lakes are a valuable resource, providing wildlife and fisheries habitat, flood control, water supply, water power, and recreational activities such as fishing, swimming, and boating. Massachusetts places high value on its lakes, recognizing their inherent contribution to the overall quality of life in the Commonwealth, in both environmental and economic terms.

Geologically, lakes are short-lived phenomena that undergo a natural enrichment (aging) process called eutrophication. Generally, the natural life span of most lakes is measured in tens of thousands of years. Over that time period, a lake will gradually fill with sediments and organic materials, with the length of its life depending on its individual characteristics and those of the watershed. In Massachusetts, many lakes are prematurely aging due to stresses caused by human activities.

Watershed activities that disturb soils, increase erosion, or increase stormwater runoff from paved surfaces can lead to increased sediment discharges and accelerate the filling of a lake basin. Nutrient runoff from fertilizers, septic systems, and other nonpoint sources in the watershed can cause undesirable algal blooms and increased growth of aquatic plants. The flow of nutrients and other substances into a lake can degrade overall water quality, altering the ecosystem. Eutrophication may also be accelerated by pre-existing enriched sediments in impoundments. Additionally, ground and surface water withdrawals can affect water quality and accelerate the eutrophication process by concentrating nutrients, increasing water temperature, destabilizing the littoral zone and shoreline habitat, etc.

In addition to eutrophication, another problem plaguing many Massachusetts’ lakes has been the introduction (both intentional and unintentional) and proliferation of non-native and/or invasive aquatic plants. Activities such as boating can inadvertently introduce aquatic plants from one lake to another, leading to rapid spread and domination of the ecosystem. Also, non-native/invasive animals such as the grass carp (white amur) and zebra mussel, although not currently found within the state’s borders, pose a potential serious and costly threat to the health of all lake ecosystems in the Commonwealth.



Different lake uses may conflict with one another. For example, some recreational uses such as swimming are incompatible with the primary function of a public water supply reservoir. The desire for public access to a lake may conflict with private land ownership. The use of motorized watercraft may be incompatible with swimming and other passive activities. Management directed at improving active recreational uses can impact fish and wildlife species and their habitats. It is also important to note that not all lakes have the physical characteristics needed to support all desired uses. Because not all lake uses are compatible, lake management programs must be designed according to the ability of a given lake to sustain desired uses.

Premature aging, the spread of non-native/invasive species, and lake-use conflicts are serious problems for many Massachusetts lakes. In many cases, these problems can be minimized through planning, education, and watershed management. Lake management in Massachusetts should combine: (1) inventory and evaluation of the lake/watershed to determine if the lake is attaining its designated uses¹; (2) assessment of each lake in terms of water quality, biota, and ability to sustain desired uses; (3) development of a comprehensive plan incorporating public participation, public education, and watershed management, and (4) when appropriate, implementation of in-lake and watershed management techniques to address specific problems.

There are a variety of ways to manage a lake, including in-lake management techniques, watershed management, or simply leaving the lake alone. For the reasons discussed above, the absence of active management does not mean that a lake will be “natural”, or free from human impact. Active management is not always desirable or feasible. Decisions on lake management must consider the long-term, as well as immediate, costs, benefits and impacts of available management options.

In-lake management techniques are often implemented to enhance particular uses and/or areas of a lake. These techniques include, among other, water level drawdown, sediment removal (dredging), vegetation harvesting, biological treatment, and chemical treatment. These techniques are used to manage eutrophication, restore lake depth, enhance sport fisheries habitat, or increase the amount of pond area available for recreation. In-lake management may also be used to control the spread of non-native and/or invasive plant and animal species. In-lake management can often effectively address one or more specific symptoms, such as poor water quality, algal blooms, oxygen depletion, or excessive plant growth. However, for in-lake management techniques to achieve long-term goals they must be coupled with watershed protection actions.

A comprehensive lake management program must identify and address the source of problems, many of which are land-based. Watershed management programs must address problems such as failing and substandard on-site sewage disposal systems, agricultural and residential runoff, stormwater runoff, and erosion. Watershed Management, including careful land-use planning, zoning, erosion control, and other practices, is necessary to prevent lake problems from

¹ “Designated Uses” are those uses specified in 314 CMR 4.05 for each water class, whether or not they are being attained. Uses for which a water body may be designated include Public Water Supply, Recreation, Aquatic Life, Warm Water Fishery, Cold Water Fishery, Marine Fishery, and Shellfishing.



continually reoccurring. Watershed management must be an integral part of a holistic management program designed to promote lake ecosystem health and the quality of lake uses.

II. POLICY

Recognizing the importance of Massachusetts' lake and pond resources, the rapid deterioration and loss of many of these resources in recent history, and the complexity of issues surrounding their management, the Massachusetts Water Resources Commission establishes the following Policy on Lake and Pond Management^{2 3}:

Massachusetts advocates a holistic approach to lake and pond management and planning which integrates watershed management, in-lake management, pollution prevention and education. Lake management in Massachusetts will be designed with consideration of the quality of the lake's ecosystem, its designated uses and other desired uses, the ability of the ecosystem to sustain those uses, and the long-term costs, benefits and impacts of available management options.

III. GOALS AND OBJECTIVES

The overall goal of this policy is:

To maintain, improve and protect the quality of lake ecosystems in Massachusetts.

Specific goals and objectives designed to achieve the overall goal include:

GOAL #1: To promote a holistic approach to lake management which is based on sound scientific principles and emphasizes the integrated use of watershed management, in-lake management, pollution prevention and education.

Objectives:

1. To promote the development of comprehensive, integrated individual lake and watershed management plans in accordance with the policy.
2. To achieve and/or maintain designated lake uses and balance other competing uses with regard to the ecosystem's ability to sustain such uses.

² This policy recognizes all existing state and federal statutes and regulations and does not diminish the legal authorities of any state, federal, and municipal governmental bodies relative to management and protection of lakes, watersheds, fisheries and wildlife.

³ This policy and all related Goals and Objectives shall require a review and re-approval by the Water Resources Commission at intervals of no greater than five (5) years.



GOAL #2: To promote sound planning and management of lakes and their surrounding watersheds by providing guidance to municipal agencies, local organizations, and the public.

Objectives:

1. To provide municipal agencies, local organizations, and the public with a comprehensive and consistent policy on the management of Massachusetts' lake as well as the guidance, reference materials, and technical support necessary to implement the policy.
2. To develop an education program that provide municipal agencies, local organizations, and the public with the knowledge and guidance necessary to effectively plan and manage lakes and their surrounding watersheds.

GOAL #3: To streamline the permitting process for in-lake management projects.

Objectives:

1. To promote lake management as a joint public and private responsibility, to be pursued in partnership with lake stakeholders.
2. To establish criteria and procedures to review and approve lake and watershed management plans
3. To allow lake management projects to be classified as "Limited Projects" under the Wetlands Protection Act, upon completion and approval of a comprehensive lake management plan.
4. To review the current permitting process to identify opportunities for greater efficiency, consistency, and timeliness, and implement the necessary changes.
5. To have state agencies proactively implement this policy in their planning, regulations, and programs.
6. To adopt a standard set of lake definitions for the Commonwealth of Massachusetts.

GOAL #4: To promote the importance of lake ecosystems and all associated wetland natural and biological resources, including open water.

Objectives:

1. To recognize the importance of open water bodies for their unique ecological, recreational and aesthetic role as well as the tourism opportunities they provide in the Commonwealth.



2. To protect and promote the health of species that are state and/or federally listed as endangered, threatened, or species of special concern.
3. To develop guidance on protecting lake ecosystems from the introduction and proliferation of non-native and/or invasive species that will be harmful to existing flora and/or fauna.

GOAL #5: To assure that decisions on the use of lake and watershed management techniques to remediate the impacts of eutrophication and non-native/invasive species consider the long term, as well as immediate, costs, benefits and impacts of available management options.

Objectives:

1. To develop a standard methodology for assessing, on a case by case basis, the costs and potential effects of lake management techniques with remediate the impacts of eutrophication and non-native/invasive species.
2. To develop and utilize the findings of a Generic Environmental Impact Report (GEIR) for in-lake and watershed management projects.
3. To allow the use of short-term in-lake management techniques for one year, consistent with the GEIR and federal, state and municipal environmental and public health regulations. For short-term in-lake management techniques to continue in subsequent years, long-term watershed based management plans must be developed and implemented.
4. To require completion of an appropriate lake/watershed management plan as a condition for the use of state funds for lake management projects.
5. To assure that public funds are used for lake projects in waters that are open to the public.

Note to reader: The original distribution of the Policy was prefaced by a letter from DEM Commissioner Peter C. Webber, Chairman of the Commission. In the letter, Commissioner Webber noted that the WRC had formed the Lakes Management Policy Committee and charged it to develop this first statewide, comprehensive policy on the management of Massachusetts' lakes and ponds. The Committee represented a broad spectrum of lake stakeholders, including state and federal agencies, non-profit environmental groups, municipalities, the Massachusetts Congress of Lakes and Ponds Associations (COLAP), and lake management consultants. After a year-long process of policy drafting and reviews, the Commission unanimously approved the Policy on June 13, 1994.

For additional information about this policy, please contact:

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or www.state.ma.us/dem or www.state.ma.us/envir



Footnotes:

1 “Designated Uses” are those uses specified in 314 CMR 4.05 for each water class, whether or not they are being attained. Uses for which a water body may be designated include Public Water Supply, Recreation, Aquatic Life, Warm Water Fishery, Cold Water Fishery, Marine Fishery, and Shellfishing.

2 This policy recognizes all existing state and federal statutes and regulations and does not diminish the legal authorities of any state, federal, and municipal governmental bodies relative to management and protection of lakes, watersheds, fisheries and wildlife.

[1] This policy and all related Goals and Objectives shall require a review and re-approval by the Water Resources Commission at intervals of no greater than five (5) years.