

## TOWN OF STOCKBRIDGE BOARD OF HEALTH

### REGULATIONS OF THE STOCKBRIDGE BOARD OF HEALTH TO PREVENT ACTIVITIES AND INTERVENTIONS POSING A SIGNIFICANT RISK OF PROMOTING HARMFUL CYANOBACTERIAL GROWTH IN THE STOCKBRIDGE BOWL

#### A. Statement of Purpose

Whereas the Commonwealth of Massachusetts places upon local boards of health responsibility for protection of the local public health and safety;

Whereas the Stockbridge Bowl, a Great Pond<sup>1</sup>, located entirely within the Town of Stockbridge, is a public resource that includes an accredited public beach, a public boat launch, a public fishery, a recreational camp for children, and multiple private, commercial, and not-for-profit bathing beaches and boat launches utilized by residents and non-residents alike;<sup>2</sup>

Whereas, in August 2018, the Department of Public Health of the Commonwealth of Massachusetts recommended that the Stockbridge Board of Health issue a health advisory against water activities in the Stockbridge Bowl due to a public health hazard created by a large bloom of cyanobacteria;<sup>3</sup>

Whereas it is known that such cyanobacteria are capable of producing toxins that are harmful to humans and animals, and to the environment;<sup>4</sup>

Whereas such cyanobacteria produce spores that can lie dormant in the bottom of the lake for years before they finally develop under the influence of favorable conditions;

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<sup>1</sup> Great Pond: Great Pond means any pond which contained more than ten acres in its natural state, as calculated based on the surface area of lands lying below the natural high-water mark. The title to land below the natural low water mark is held by the Commonwealth in trust for the public, subject to any rights which the applicant demonstrates have been granted by the Commonwealth. The Department shall presume that any pond presently larger than ten acres is a Great Pond, unless the applicant presents topographic, historic, or other information demonstrating that the original size of the pond was less than ten acres, prior to any alteration by damming or other human activity. - 310 CMR: 9.02

<sup>2</sup> Stockbridge Town Beach; Stockbridge Boat Launch; Camp Mah-kec-nac; Kripalu; Tanglewood; Mahkeenac Boat Club; White Pines Beach; Wheatleigh; Gould Meadows; Bullard Woods; Canyon Ranch; Arcadian Shop

<sup>3</sup> Mike Celona, Director of the Toxic Waters Program, Massachusetts Department of Public Health, August 30, 2018: Personal communication with Charles Kenny MD and James Wilusz, Director, Tri-Town Health Dept.

<sup>4</sup> United States Environmental Protection Agency: Health Effects from Cyanotoxins; Massachusetts Department of Public Health: Harmful algae blooms in freshwater bodies; World Health Organization: Toxic Cyanobacteria in Water: A guide to their public health consequences, monitoring and management.

Whereas, by scientific analysis during July 2019, large numbers of such cyanobacteria have been identified in the deeper waters of the lake;<sup>5</sup>

Whereas it is known that such cyanobacteria, under favorable conditions, may rise to the water's surface overnight and create a public health hazard;

Whereas it is known that cyanobacterial blooms are dependent on adequate amounts of phosphate dissolved in the water;<sup>6</sup>

Whereas the Stockbridge Bowl is an uncommon hard water lake;<sup>7</sup>

Whereas in such hard water lakes, a significant portion of the dissolved phosphate is removed by underwater plants during photosynthesis and is thereby rendered unavailable to cyanobacteria;<sup>8</sup>

Whereas activities and interventions that significantly reduce the quantity of aquatic vegetation in the Stockbridge Bowl pose a significant risk of disrupting such photosynthetically-based phosphate removal, thereby making phosphate available to cyanobacteria and creating conditions favorable to a bloom;<sup>9</sup>

Whereas such widespread disruption of the usual phosphate-removal process would be injurious to the public health by increasing the risk of cyanobacterial bloom in the Stockbridge Bowl;<sup>10</sup>

Whereas the Town of Stockbridge has embarked on a scientific study program to understand better those factors that fostered the 2018 cyanobacterial bloom; and

Whereas knowledge of those factors is essential to guide activities and interventions in the lake to prevent future cyanobacterial blooms,

Now therefore, having examined into the cause of the cyanobacterial bloom public health hazard of August 2018 and, having scientifically determined the presence of large numbers of potentially toxic cyanobacteria dormant in the Stockbridge Bowl in July 2019, it is the intention of the Stockbridge Board of Health to protect the public health and safety by making regulations

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<sup>5</sup> Stockbridge Bowl Water Quality Monitoring July 2019, GZA GeoEnvironmental, Inc. p 7-8

<sup>6</sup> United States Environmental Protection Agency: Causes of Cyanobacterial Blooms

<sup>7</sup> Ludlam, S.D., K.S. Hutchison, and G.E. Henderson. 1973. The limnology of the Stockbridge Bowl, Stockbridge, Massachusetts.

Cyanobacterial bloom - A growth of cyanobacteria of sufficient to trigger a health advisory according to Massachusetts Department of Public Health: MDPH GUIDELINES FOR CYANOBACTERIA IN FRESHWATER RECREATIONAL WATER BODIES IN MASSACHUSETTS

Hard water: Water with high concentrations of calcium and magnesium is said to be hard. Hardness in water is measured by the amount of calcium carbonate it contains: it is soft if it contains 0 to 60 milligrams per liter; medium hard if it contains 61 to 120 mg/L; hard if it contains 121 to 180 mg/L; and very hard if it contains more than 181 mg/L. - U. S. Geological Survey: "Ground Water" (1980)

<sup>8</sup> Memorandum, January 4, 2018, Robert Kortmann, Ph.D., Limnologist, Ecosystem Consulting Service, Inc.

<sup>9</sup> IBID

<sup>10</sup> IBID

relative to interventions and activities that pose a significant risk of creating or predisposing to such cyanobacterial blooms in the Stockbridge Bowl.

**B. Authority**

These regulations are issued pursuant to the authority granted to the Stockbridge Board of Health by Massachusetts General Laws Chapter 111, Sections 5S, 31, and 122.

**C. Prohibitions**

No person shall place or cause to be placed into the water of the Stockbridge Bowl any article, substance or material, nor engage in any activity or intervention within the Stockbridge Bowl, that is intended or likely to destroy or prevent the growth of aquatic vegetation in 10 percent or more of the area of the Stockbridge Bowl, without authorization from the Stockbridge Board of Health.

**D. Permit Procedures**

Any person or entity wishing to obtain authorization from the Stockbridge Board of Health for an action regulated by Section C shall notify the Board of Health in writing and shall submit a detailed and complete description of the proposed action and a well-supported analysis of the action's anticipated effect on phosphate uptake by aquatic vegetation, and water-column levels of phosphate, in Stockbridge Bowl. Within 60 days of submission of the notification and analysis, and after a public hearing in which the applicant has an opportunity to be heard, the Board of Health shall issue a written determination as to whether the proposed action is authorized.

**E. Violations**

Enforcement of these regulations shall be by the Stockbridge Board of Health or its designated agent(s). Any citizen who desires to register a complaint regarding violation of the regulations may do so by contacting the Stockbridge Board of Health or its designated agent(s) and the Board shall investigate. The Board of Health may impose a fine of \$1,000 for each violation of these regulations. To the extent permitted by the General Bylaws of the Town of Stockbridge, such fines may be collected using the non-criminal disposition provisions of *M.G.L. c.40, §21D*. The Board of Health may also enforce these regulations by issuing enforcement orders and, with the permission of the Board of Selectmen, by bringing legal actions in a court of competent jurisdiction.

**F. Severability**

If any provision of these regulations is declared invalid or unenforceable, for any reason, in a court of competent jurisdiction, such invalidity shall be construed as narrowly as possible, and the balance of the regulations shall be deemed to be affected to the minimum extent necessary,

so as to secure the purposes thereof, as set forth in Section A.

**G. Effective Date**

These regulations shall take effect upon publication of the substance of the regulations in a newspaper of general circulation, pursuant to *M.G.L. c.111, §31*.

By the duly elected members of the Stockbridge Board of Health.

  
Charles Kenny, Chair

  
Henry Schwerner

  
Rae Williams

Date Regulation approved: Jan 22, 2020

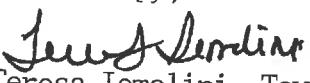
Town Clerk Attested Date: January 24, 2020

Date of Published Notice of Public Hearing: December 6, 2019 and December 10, 2019 via  
Berkshire Eagle Circulation Printed Paper

Date Summary of Regulation Published in Public Newspaper: January 24, 2020

Date Submitted to MA DEP Central Registry: January 27, 2020

A true copy, ATTEST:

  
Teresa Iemolini, Town Clerk  
Stockbridge, MA 01262