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Resolve, Chapter 32

124th Maine Legislature

A Review of State-Level Risk Management

for

Lakes used as Public Drinking Water Sources

Prepared by

Maine Department of Health and Human Services
Center for Disease Control and Prevention
Drinking Water Program

for

The Joint Standing Committee on Natural Resources

January, 2010

The 124th Legislature directed the Maine CDC Drinking Water Program (DWP) to perform a review of the management of risks associated with surface uses of lakes used as community public water sources. The DWP has worked with the Departments of Conservation (DOC) and Inland Fisheries and Wildlife (DIFW) to assess both the legal framework and current practices of surface use of public water supply lakes.

Thirty-eight Great Ponds are utilized as community public water sources in Maine, serving about 30% of Maine's people. Surface use management on these ponds is governed by historical precedent, water system charters, private and special laws, DIFW laws and regulations, local ordinances, and land ownership patterns. Management ranges from systems where there is no public access to the water to ponds where recreational activities take place in close proximity to the intake. Table 1 illustrates the range of management and control across the state.

State agency statutes, regulations, and activities have the potential to either enhance or reduce the protection of drinking water lakes. There are a variety of uses of lakes, notably fishing, boating and swimming, that are generally protected and encouraged in Great Ponds, since these are waters of the state. These surface uses are sources of increased risk to drinking water, and the restricted zones in place on many drinking water lakes are intended to manage that risk at an acceptable level.

The Maine DOC and DIFW develop and manage nearly all the public boat access to lakes and ponds in Maine. They work with Land for Maine's Future, Maine DOT, local government, and other state agencies to locate, develop, and maintain access points, as well as to manage boating traffic and other surface uses. The DOC mission is guided by sections of Title 12, which authorize a boating facilities program in the Department of Conservation, Bureau of Parks & Lands to acquire, develop and renovate public recreational boating facilities (Chapter 220, Sub 9), including placement and maintenance of navigational aids and regulatory markers. The latter function, referred to as the Navigational Aids Program, is intended to improve boating safety by establishing rules for marking hazards on inland waters of the state and to physically mark such hazards on as many lakes and ponds as budgets allow.

The DIFW boating program is funded by a combination of state Boating Facility Funds and federal Sportfish Restoration Funds and their mission is largely dictated by requirements of the federal funding agencies. In Chapter 935, a system of registration and regulation of watercraft is set out and administered by DIFW. Both agencies have promulgated rules under these authorities, providing significant detail on allowable uses and restrictions on various water bodies. These laws and regulations, along with the location of boat launches and other information, are summarized in "Maine Boating Laws and Rules" available on the DIFW website. Laws pertaining to surface use management are included in Appendix A.

Body contact recreation (swimming and related activities) is not generally regulated at the state level, and is managed by Towns and other local entities. Some public water systems have been able to establish 'no body contact' zones on

certain lakes through ordinances, agreements, charters, or private and special laws. Many of these zones are monitored by DIFW Wardens and water system staff.

Based on experience over the last ten years, there are a handful of public water supply lakes where the existing or proposed management of surface uses and access points has generated conflict between public water systems, localities, and state agencies. It has been difficult to resolve these issues within the existing legislative and regulatory framework. Public water source status has become a political issue at these lakes, and has not helped either the proponents of access or enhanced the protection of drinking water. Rather, it has led to stalemates, where existing conditions persist which are less than optimal both for both the drinking water supply and boating interests.

The perfect drinking water lake has no other human uses, with regards to both surrounding land uses and surface water uses, and provides only passive recreational (scenery and fish habitat) values along with clean and safe drinking water. A number of public water systems in Maine utilize sixteen remote, undeveloped lakes that approach this level of protection. In these cases, the system owns the shoreland and often the watershed either in fee or through an easement. An additional fourteen lakes have existing, managed boat access sites with varying levels of restriction. In some of these cases, there is concern by either the boating public or the water system about the management plan's fairness and effectiveness. Concerns regarding fairness often revolve around inequities of access between shorefront property owners and the general public. The remaining lakes have no reported restrictions on surface use.

The risks associated with surface use of a drinking water supply have been the subject of a number of studies, most recently by two EPA review studies of Fecal Contamination and Zoonotic pathogens in recreational waters (2009). Both studies identify risks associated with body contact recreation (bathing) to water quality and public health. Additional risks are associated with the use of motor fuels and lubricants associated with boating. These risks are increased with older two-cycle engines, which discharge unburned hydrocarbons in measurable quantities during normal operations (Asplund, 2000). There are also security risks associated with boating access to drinking water supplies, including vandalism, deliberate contamination, and accidental discharge of contaminants.

Public Water Systems, under EPA regulations, use a multiple barrier approach to manage these risks to protect public health. Protection of water quality at the source is the first and most important barrier. Treatment and disinfection of the water provide additional barriers, as does a secure distribution system. Eleven Maine lakes and ponds are able to provide high quality water without filtration because they have a high level of watershed and source protection. As part of their protection plan, all have restrictions on surface use in all or part of their source. Maintaining these restricted areas is an ongoing cost to the systems, as well as to public agencies. This cost is a small fraction of the cost of upgrading treatment. Systems with filtration processes also need to manage surface use to maintain water quality and security.

It is technically feasible to produce safe drinking water from poor quality, unprotected sources. It is also significantly more costly. Should Maine choose, as a matter of policy, to increase the risk to water systems and require additional treatment to manage these risks in order to increase boating access, who should support the costs? We are able to provide both high quality drinking water and recreational access on many water supply lakes (Table 1) under current policies.

The 123rd Legislature enacted PL 353, which, among other things, added the following provision to the Drinking Water Statutes:

Sec. 4. 22 MRSA §2649-A is enacted to read:

§ 2649-A. State's impact on public water supply protection

When undertaking actions that have a negative impact on a public water supply, a state agency shall consider the impact and evaluate alternatives to avoid and minimize the impact.

Conceptually, this provision, along with the existing authorizations of DOC and IF&W to develop public boat access, provides an opportunity for a forum for state agencies to confer on issues including surface use and boat access to lakes used for drinking water. Since risk management is not a black and white science, and because each lake has different hydrologic and historical use patterns, the outcome of these discussions will not result in a uniform statewide solution. Public water systems and other stakeholders generally find this acceptable, as long as the process is open, fair, prompt and predictable. One significant complication in the process is that Towns, lakeshore property owners, the boating public, conservation groups, and local businesses also have strong opinions concerning access points and surface use. Finding a forum to resolve these issues effectively is not a simple task.

We can use the existing Environmental Review (National Environmental Policy Act) as a framework to provide structure to this general provision. This does impose a paperwork burden. It also provides a structured process for agencies to work together to receive and deal with public concerns. It does not, by itself, solve the puzzle of balancing other competing interests. We recommend that, for new state funded projects and facilities on or adjacent to PWS lakes, that the state agencies involved work together to develop standards and regulations, including evaluation of alternatives, under the existing authority of 22 MRSA §2649-A to make the process at the state level predictable, fair, and protective of public health.

References

Asplund, T.A, 2000, The Effects of Motorized Watercraft on Aquatic Ecosystems, Wisconsin DNR publication SS 948-00

USEPA, 2009, Review of Zoonotic Pathogens in Ambient Waters, EPA 822-R009-002

USEPA, 2009, Review of Published Studies to Characterize Relative Risks from Different Sources of Fecal Contamination in Recreational Waters, EPA 822-R-09-001

Table 1: Great Ponds used as Community Public Water Sources

Source Name	Water System Name <i>Italicized no filtration required</i>	Horsepower restrictions	Special Launch Procedures	Intake area marked (buoys, etc)	Restrictive Zone >200 feet	Restricted Zone Radius	
Adams Pond	Boothbay Region Water District	Yes	Yes	No	No		Non
Burntland Pond	Stonington Water Company						No
Big Wood Pond	Jackman Water District	No	No	No	No		no r
Boulter Pond	Kittery Water District	Yes	Yes	No	Yes	All	no s
Branch Lake	Ellsworth Water Department	No	No	No	No		tow
Carlton Pond	Augusta Water District	No	Yes	No	Yes	All	cum
Chases Pond	York Water District	Yes	Yes	No	Yes	All	no s
China Lake	Kennebec Water District	No	No	Yes	Yes	3.5 miles	wi
Cobbossee Lake	Augusta Water District	No	Yes	Yes	No		Bac
Eagle Lake	<i>Bar Harbor Water Company</i>	Yes	Yes	Yes	Yes	1000 feet	acc Ser
Floods Pond	<i>Bangor Water District</i>	Yes	Yes	No	Yes	All	no s
Folly Pond	Vinalhaven Water District	No	No	No	Yes	All	no s
Fresh Pond	North Haven Water Department	No	No	No	Yes	All	no s
Ferguson Pond	Aqua Maine, Millinocket Division	No	No	No	No		no c
Grassy Lake	<i>Aqua Maine, Camden & Rockland Division</i>	Yes	No	Yes	Yes	All	no s
Halls Pond	Hebron Water Company	No	No	No	No		info abo
Hancock Pond	Madison/Anson Water Districts	No	No	No	No		ther ram
Hatcase Pond	<i>Brewer Water District</i>	Yes	No	Yes	Yes	1000 feet	inta
Jordan Pond	<i>Seal Harbor Water Company</i>	No	Yes	No	Yes	All	10 f
Knickerbocker Pond	Boothbay Region Water District	No	No	Yes	No		10
Lake Anasagunticook	Canton Water District	Yes	No	No	No		no r
Lake Auburn	Lewiston Water Department/Auburn Water District	No	Yes	Yes	Yes	Half of Lake	No swi prom
Lake Wassookeag	Dexter Utilities District	No	No	No	No		no r to i
Little Pond	<i>Great Salt Bay Sanitary Dist.</i>	Yes	Yes	Yes	Yes	All	no s
Long Pond (Southwest Harbor)	Southwest Harbor Water Company	No	No	No	No		no c

Source Name	Water System Name	Horsepower restrictions	Special Launch Procedures	Intake area marked (buoys, etc)	Restrictive Zone >200 feet	Restricted Zone Radius	
Long Pond (Sullivan)	Long Pond Water District	Yes	Yes	No	Yes	All	no s
Lower Hadlock Pond	<i>Northeast Harbor Water Co.</i>	No	No	No	Yes	All	10 H
Mirror Lake	<i>Aqua Maine, Camden & Rockland Division</i>	Yes	No	Yes	Yes	All	no s
Moose Hill Pond	Livermore Falls Water District	No	No	No	Yes	All	no s
Nequasset Lake	Bath Water District	Yes	No	Yes	No		10 H
Nokomis Pond	Newport Water District	No	No	No	No		littl acc
North Pond	Buckfield Water Department	Yes	No	Yes	Yes	900 feet	no s
Salmon Pond	Dover-Foxcroft Water District	Yes	Yes	No	Yes	All	no p
Sebago Lake	<i>Portland Water District</i>	No	Yes	Yes	Yes	2 miles	2-m no t
Silver Lake	Aqua Maine, Bucksport Divison	Yes	No	Yes	Yes	All	no s
Upper Narrows Pond	Winthrop Utilities District	No	Yes	Yes	No		exis
Varnum Pond	Wilton Water Department	No	No	No	No		no f
Young Lake	Mars Hill & Blaine Water Co.	No	No	No	No		no a