

MASSACHUSETTS INTERIM ZEBRA MUSSEL ACTION PLAN

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Executive Summary

The Department of Conservation and Recreation (DCR) and the Department of Fish and Game (DFG), including its Office of Fishing and Boating Access (OFBA), have developed this Interim Zebra Mussel Action Plan as a pro-active response to the first documented occurrence of zebra mussels in a Massachusetts water body (Laurel Lake) in July, 2009. Zebra mussels can significantly alter the ecology of a water body and attach themselves to boats hulls and propellers, dock pilings, water intake pipes and aquatic animals. The interim plan, which is targeted to Hoosic and Housatonic watersheds, provides an overview of zebra mussels (Section 1), the pre-existing zebra mussel programs in Massachusetts (Section 2), the emergency management measures and other actions taken by the state in the immediate aftermath of the July 2009 zebra mussel occurrence (Section 3), and details the comprehensive set of requirements and outreach activities that will be put in place to prevent the spread of zebra and quagga mussels to water bodies other than Laurel Lake (Sections 4 and 5).

Specifically, key DCR and DFG actions and management measures at state boat ramps outlined in this interim plan include:

1. Mandatory protocols to be followed by users of state boat ramps in the two watersheds determined by DCR to be highly susceptible to colonization by zebra mussels – the Hoosic and Housatonic watersheds – requiring self certification by users that their boats have not been on water bodies likely affected by zebra or quagga mussels within the last 30 days, or if they have, that the boats have been properly decontaminated in accordance with the procedures in the plan. Violations of these mandatory requirements are subject to fines and other penalties under OFBA regulations.
2. Extension of the temporary closure of the state boat ramp at Laurel Lake, the one Massachusetts water body that has a documented occurrence of zebra mussels to date, until October 15, 2009 (the practical end of the 2009 boating season);
4. Extending the hours of three existing state boat ramp monitors and the addition of a fourth monitor to regularly monitor nine boat ramps in the Hoosic and Housatonic watersheds.
5. Implementation of a robust educational and technical assistance outreach effort designed to facilitate parallel prevention measures by other key stakeholders (municipalities, lake associations, recreational users of Massachusetts water bodies).

DCR and DFG consider this action plan to be “interim” in nature and will evaluate its effectiveness this winter, determining whether any enhancements or modifications are appropriate, and will update the plan with any new information or developments.

Introduction

This Interim Zebra Mussel Action Plan, dated August 2009, was prepared in response to the recent discovery in July 2009 of zebra mussels in Laurel Lake (Lee/Lenox), located in western Massachusetts, Berkshire County in the Housatonic Watershed. Zebra mussels were first found in the United States in 1988 in Lake St. Clair, Michigan. By 1991, zebra mussels were confirmed in all five of the Great Lakes, the Finger Lakes area of New York, and in the Mississippi River basin. Zebra mussels are currently found in at least 30 other states in the country. Zebra mussels

have a high probability of spread due to their biology. They can significantly alter the ecology of a water body and attach themselves to boats hulls and propellers, dock pilings, water intake pipes and aquatic animals. Attempts by other states to eradicate them have been unsuccessful and they continue to spread across the country. There are no practical methods for eradicating zebra mussels once they become established in a natural system¹. Consequently, the zebra mussel will likely be a permanent component of the invertebrate fauna in the bodies of water where it becomes established. Although Massachusetts has not yet had a documented occurrence of another invasive species, the quagga mussel, the education and action components of this interim plan are designed to prevent the occurrence and spread of quagga mussels here as well.

Management actions outlined in this Interim Action Plan are focused on preventing the spread of zebra mussels. The interim plan targets water bodies located in the Hoosic and Housatonic watersheds because they have been determined to be highly susceptible to colonization by zebra mussels based on their water chemistry. The interim plan provides an overview of the distribution and ecology of zebra mussels, existing zebra mussel programs in Massachusetts, and emergency management actions taken by the state, and sets forth a multi-pronged approach to help prevent the spread of zebra mussels that includes public outreach and education actions, ongoing survey and monitoring efforts, and mandatory procedures for cleaning boats and equipment with compliance demonstrated by self certification. Management actions and programs outlined in this interim plan were guided by the Massachusetts Aquatic Invasive Species Management Plan², as well as the experience of other states across the country that have been managing zebra mussels for a decade or more.

This interim plan is intended for state agencies and managers of public access boat ramps, but is also applicable to all stakeholders, including recreational boaters, fishermen, lake associations, municipalities and other government entities interested in what they can do to help prevent the spread of zebra mussels in the Commonwealth. Although the focus of this interim plan is on zebra and quagga mussels, the Commonwealth's larger goal is to prevent the spread of all aquatic invasive species (AIS). To that end, this interim plan includes general decontamination procedures appropriate for AIS other than zebra and quagga mussels. See Section 4.3.

This Interim Action Plan is designed to be a "living document" that will be evaluated by DCR and DFG in cooperation with the State AIS Working Group in the Winter of 2009/2010 to assess how the current measures are working, to determine whether modifications to the plan are needed, and to update the text and provisions of the plan to reflect any new and pertinent information related to zebra mussels, including ecology, best management practices (BMPs), laws, regulations, management measures, and educational materials.

¹ Massachusetts Department of Conservation and Recreation. 2005. Rapid Response Interim plan for the Zebra Mussel (*Dreissena polymorpha*) in Massachusetts.

² Massachusetts Aquatic Invasive Species Working Group. 2002. Massachusetts Aquatic Invasive Species Management Plan.

1. Zebra Mussel Distribution and Ecology

1.1 Species Taxonomy and Identification

The zebra mussel, *Dreissena polymorpha*, is a freshwater bivalve mollusk. The zebra mussel looks like a small clam with a yellowish to brownish shell shaped like the letter “D”. The shell of the zebra mussel normally contains both dark and light-colored stripes giving the mollusk its name, although some zebra mussel shells may be a solid brownish color. Adult zebra mussels can reach two inches in length, but typically are one inch or less. Unlike most freshwater mussels, the zebra mussel grows in clusters containing numerous individuals.



1.2 Species Ecology

The habitat of the Zebra mussel is freshwater lakes, ponds and rivers. Zebra mussels are the only freshwater mollusk that can attach to solid objects, including rocks, logs, docks, boats and various water intake structures. They can also attach to aquatic plants.

Zebra mussels reach sexual maturity within 1 or 2 years and spawn at water temperatures above 50 degrees Fahrenheit (F). They can tolerate water temperatures from 32 – 90F with optimal being 63-74F for growth and reproduction. Zebra mussels require well oxygenated waters (8-10 parts per million (ppm)) with a pH of 7.4 -9.0 and calcium concentrations of 20 – 125 ppm.

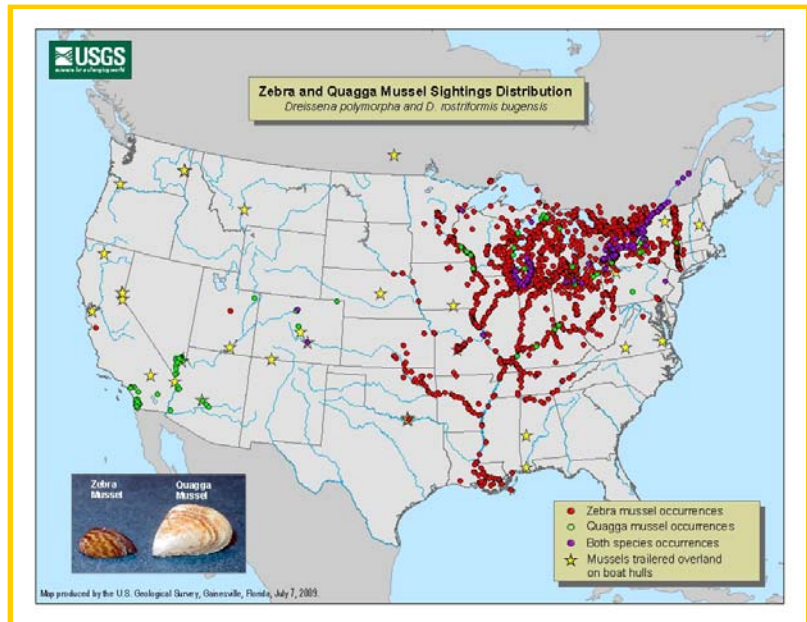
The zebra mussel has three distinct life history stages: 1) larval; 2) juvenile; and 3) adult. Any one of these stages can be easily transported from one body of water to another. This is particularly true for the larval stage (veligers) because the larvae are microscopic and therefore not visible to the naked eye. The juveniles measure just a few millimeters in size. Therefore, both larvae and juveniles can be transported in tiny amounts of water on various watercraft including boats/trailers, kayaks, canoes, jet skis, etc. They can also be moved on SCUBA gear, swimwear, and other clothing used in the waters containing zebra mussels. People are not the only way zebra mussels can be transported. Pets and aquatic wildlife such as waterfowl, turtles, crayfish, beaver, muskrats, and otter are also potential vectors for this species.

1.3 Species Origin and Current Distribution in the United States

Zebra mussels are native to the drainage basins of the Black, Caspian, and Aral Seas of Eastern Europe. Zebra mussels have been documented in the United States for more than 20 years, and were likely introduced from ballast water of cargo ships originating from Europe. Zebra mussels are widely dispersed throughout much of the entire Mississippi River and its major tributaries, all of the Great lakes, and the Chesapeake Bay watershed, and have been recorded in the neighboring states of New York, Connecticut, and Vermont.

1.4 Zebra Mussel Distribution and Potential Habitat in Massachusetts

Zebra mussels, which have been established for at least twenty years in the bordering states of Vermont (including Lake Champlain), New York, and Connecticut, were confirmed in Laurel Lake, located in Lenox and Lee, in July 2009. The size and extent of the zebra mussel occurrence in Laurel Lake indicates that there is an established breeding population³. Numerous reports in the scientific literature indicate that while zebra mussels can survive a range of environmental conditions, substrate type, along with pH levels and calcium concentrations appear to limit reproductive capacity and their ability to establish and colonize new waters. In other words, waters with a pH of less than 7.4, and/or calcium concentrations under 20 mg/l are not optimal habitat conditions for the establishment and survival of zebra mussels.



In 1993, Douglas Smith at the University of Massachusetts Amherst conducted a study that looked at the pH levels and calcium concentrations in the watersheds across the Commonwealth to estimate potential zebra mussel habitat. The Hoosic and Housatonic watersheds were the only areas identified as having high susceptibility to colonization by the zebra mussels based on groundwater and river survey data⁴. Watersheds with lesser susceptibility to colonization by the zebra mussel based on groundwater data include the Connecticut River, Quinebaug, Concord, Shawsheen, Merrimack, Parker, Ipswich, and Mystic watersheds.

³ DCR Lakes and Ponds Program staff Jim Straub and Tom Flannery, Personal Communication, July 6, 2009.

⁴ Douglas G. Smith. 1993. The Potential for Spread of the Exotic Zebra Mussel (*Dreissena polymorpha*) in Massachusetts.

2. Existing Zebra Mussel Programs in Massachusetts

2.1 State Aquatic Invasive Species (AIS) Planning Efforts

The Aquatic Nuisance Prevention and Control Act of 1990 (amended as the National Invasive Species Act of 1996) specifically calls for states to develop comprehensive non-indigenous aquatic nuisance species management plans. This Act authorizes federal matching funds for plans that are approved by the Federal Aquatic Nuisance Species Task Force (The ANS Task Force, also established by the 1990 Act). In 2002, Massachusetts published the Massachusetts Aquatic Invasive Species Management Plan. The Massachusetts AIS plan was approved by the federal Task Force and issued in December 2002 by the Massachusetts Aquatic Invasive Species Working Group (Massachusetts AIS Group). The Massachusetts AIS Group currently consists of 25 members from government agencies and stakeholder groups who meet two to three times a year and work to implement the Massachusetts AIS Plan. DCR and DFG will continue to coordinate with the Massachusetts AIS Working Group to evaluate and update this Interim Zebra Mussel Action Plan.

In 2005, the Massachusetts Department of Conservation and Recreation published the Rapid Response Plan for the Zebra Mussel. This plan follows the recommended template proposed by the Northeast Aquatic Nuisance Species Panel (NEANS Panel) and outlines steps the DCR would take in response to a new occurrence of zebra mussels in Massachusetts. Over the last several years, DCR implemented the monitoring and surveillance program called for in the plan. Now that there has been an occurrence of zebra mussels in Massachusetts, this Interim Action Plan is intended to supersede the earlier Rapid Response Plan.

2.2 DCR Boat Ramp Monitor Program

DCR's Boat Ramp Monitoring Program was developed in 2004 to protect water bodies from an invasion of a range of aquatic invasive species (AIS) and to prevent or minimize the spread of AIS from one water body to another. Boat ramp monitors are hired during the peak recreation season from Memorial Day to Labor Day and are placed at up to eight boat ramps across the state at lakes and ponds with and without AIS. The ramp monitors offer voluntary inspections of boats and provide information on how to prevent the spread of AIS. Since the launch of the program, over 10,000 boats have been inspected. Roughly 20% of inspected boats were carrying plant fragments and 40% of the fragments were invasive, non-native plants. Annual Boat Ramp Monitor Reports can be downloaded at: www.mass.gov/lakesandponds

The Boat Ramp Monitor Program has been expanded in response to the discovery of Zebra Mussels in Massachusetts and the expanded program is described in Section 4 of this plan.

2.3 DCR Zebra and Quagga Mussel Monitoring Program

The Department of Conservation and Recreation established a Zebra and Quagga Mussel Monitoring Program in 2008 to monitor high priority waterbodies of western Massachusetts. High priority sites included waterbodies that were deemed to have the greatest risk of zebra

mussel establishment due to water chemistry and proximity of known infestations. The program provides equipment and trains citizen volunteers to collect samples and identify zebra mussels. The volunteers are responsible for placing and observing settling plates and veliger sampling. To support this effort, the program also developed and posted boat ramp signs, a tri-fold brochure, and other educational materials. There are currently 10 lakes in the program, including Laurel Lake, and the zebra mussel at Laurel Lake was discovered by a DCR-trained volunteer from this program.

3. State Actions Taken Following Discovery of Zebra Mussels in Laurel Lake

3.1 DFG Issuance of Emergency Management Measures Applicable to the Use of State Boat Ramps

Upon the discovery of zebra mussels in Laurel Lake, DCR followed the protocols set forth in its 2005 Rapid Response Plan for Zebra Mussels. DCR notified the Department of Fish and Game's (DFG) Office of Fishing and Boating Access (OFBA), and recommended a short-term, temporary closure of Laurel Lake.

On July 8, 2009 the Director of OFBA, pursuant to his authority under the OFBA regulations at 320 CMR 2.02(4), closed the public boat ramp at Laurel Lake on an emergency basis. The closing was a temporary, short-term action to allow DCR and DFG time to determine more definitively the scope and severity of the zebra mussel occurrence in Laurel Lake, the risk of transport of zebra mussels to other Massachusetts water bodies, and the appropriate management measures for the lake going forward.

OFBA's emergency closure of the state boat ramp at Laurel Lake boat ramp was in response to the first documented discovery of zebra mussels in Massachusetts. At the time it was not known whether a zebra mussel population was established in the lake, which has since been confirmed by DCR. Once the zebra mussels are established in a water body, there is no proven method of eradicating them; the goal is to prevent their spread to other water bodies. Permanent closure of a public boat ramp does not guarantee containment because there are other means for boats to access the water body as well as multiple vectors for transmittal (e.g., divers, wildlife). In addition, in evaluating their management options DFG and DCR are mindful of the provisions of M.G.L.c. 131, s.45, which gives the public the right to use great ponds (where the state boat ramps are located) for recreational purposes (hunting, boating, and fishing). See **Attachment A**.

On July 10, 2009 OFBA established another emergency management measure governing the use of state boat ramps at other Berkshire County water bodies determined by DCR to have calcium concentrations and other chemical and physical characteristics to support breeding populations of zebra mussels. In short, this emergency management measure authorized the municipal or other local manager of the state boat ramp to prevent the use of the boat ramp by boats that the manager determines have been on Laurel Lake within the last 30 days, unless such boat has since been subject to the cleaning and disinfection measures specified therein. The goal of this

management measure is to reduce the risk that boats that have recently been on Laurel Lake will transport zebra mussels to other Berkshire County lakes, ponds, and rivers.

On July 23, 2009, OFBA issued a third emergency management measure that superseded and expanded upon the use restrictions imposed in the July 10, 2009 management measure, including authorizing the municipal or local manager to prohibit a boat from using the state boat ramp if it has been on Laurel Lake or on any other water body with zebra or quagga mussels within the last 30 days, unless the boat has been properly decontaminated, or if the manager observes visible evidence of an aquatic invasive species on the boat. The most recent emergency management measures established by OFBA on July 23, 2009 is included in **Attachment B**.

3.2 Public Meetings

To date, DCR and DFG have held four public meeting in Westborough, Pittsfield, and Ware Massachusetts, as described below:

Westborough, July 10, 2009

DCR and DFG jointly hosted a public meeting and discussion on the recent confirmation of zebra mussels in Laurel Lake. The meeting drew roughly 20 concerned stakeholders along with state agency staff.

Pittsfield, July 15, 2009

DCR and DFG jointly hosted a public meeting on July 15th at Pittsfield City Hall to present information on the status of zebra mussel occurrence at Laurel Lake and the temporary boat ramp access restriction, provide background on zebra mussels and DCR's ongoing public awareness program in western Massachusetts, and discuss future actions such as what citizens can do to prevent the species from spreading. The meeting drew an overflow crowd of 175 people. Lake advocates pressed for lake closings and improved safety measures while fishing/boating advocates pressed for public access.

Belchertown, July 27, 2009 and July 30, 2009

On July 15th, with strong support from the MWRA Board of Directors, DCR took the precautionary measure of temporarily prohibiting fishermen from using private boats at the Quabbin Reservoir's three fishing areas. While the water chemistry in Quabbin likely would not support the establishment of zebra mussels, DCR and MWRA decided that since the risks are so high for infestations at water intake areas there should be further studies and boat cleaning procedures developed before restoring access. The order went into effect on Thursday, July 16. DCR still rents boats for fishing, and shoreline fishing is allowed. DCR divers have subsequently surveyed the reservoir and found no zebra mussels. A full analysis of the conditions and chemistry of the Quabbin is also underway. DCR is evaluating procedures and potential long-term options to allow for recreational boating while strongly protecting against the possibility of any invasive species entering the water supply. A public meeting was held at Quabbin Headquarters on July 27, 2009 and July 30, 2009 to review these actions.

3.3 Additional Postings at State Boat Ramps

For the last several years, it has been standard procedure for the Department of Fish and Game's Office of Fishing and Boating Access and the Department of Conservation and Recreation to place signage at boat access areas on inland lakes and ponds of the Commonwealth instructing boaters on how to stop the spread of invasive aquatic plants and animals. Once zebra mussels were discovered in Laurel Lake, DCR and DFG undertook the additional postings at state boat ramps described below.

All state boat access areas considered high risk for zebra mussel colonization due to water chemistry and proximity to the Laurel Lake occurrence have recently been checked and posted with zebra mussel-specific signs which provide guidance to boaters on how to clean their boats and gear, and contact information. See **Attachment C**.

In addition, as soon as the zebra mussel was confirmed to be present in Laurel Lake, the lake was posted with a caution sign stating, "*Warning! This Water Body is Infested with Zebra Mussels*".



3.4 Zebra Mussel Surveys and Physical/Chemical Evaluations of Berkshire County Water Bodies

On July 23, 2009, DCR issued a Solicitation for Proposals for the Zebra Mussel Rapid Response in Massachusetts, Phase I: Initial Physical/Chemical Evaluations of Berkshire County Lakes. The responses were received August 7 and work should begin by the end of August. The primary goals of Phase I are to a) document the presence or absence of zebra mussels in specified water bodies that are expected to be at high risk for colonization based on water chemistry and/or recreational use and proximity to known infestations, and b) conduct water quality sampling for conditions that favor zebra mussel development. The result will be a database of information on Berkshire County lakes, including:

- Windsor Pond, Windsor
- Cheshire Reservoir, Cheshire/Lanesboro
- Pontoosuc Lake, Pittsfield/Lanesboro
- Onota Lake, Pittsfield
- Ashmere Lake, Hinsdale/Peru
- Plunkett Reservoir, Hinsdale
- Richmond Pond, Richmond/Pittsfield
- Stockbridge Bowl, Stockbridge
- Lake Buel, Monterey/Great Barrington
- Goose Pond, Lee/Tyringham

- Big Pond, Otis
- Center Pond, Becket
- Otis Reservoir, Otis/Tolland
- Laurel Lake, Lee/Lenox
- Benedict Pond, Great Barrington/Monterey
- Shaw Pond, Otis/Becket
- Thousand Acre Pond, New Marlborough
- Housatonic River (site(s) to be determined)

4. Actions Required at State Boat Ramps to Prevent the Spread of Zebra Mussels

Introduction

Set forth below are a summary of actions that DFG and DCR are requiring of all users of state boat ramps in the Hoosic and Housatonic Watersheds to prevent the spread of zebra mussels from one water body to another. *DFG and DCR strongly recommend that these same actions be taken by the appropriate authorities at other public and private boat ramps and water bodies outside of state control.* To facilitate this objective, DFG and DCR are making the signage, educational and training resources, and self certification forms that are required of users at state boat ramps available to municipalities, lake associations, recreational users of Massachusetts water bodies, and members of the public, as described in the subsections below and in Section 5.1.

4.1 Signage

DFG and DCR have posted signage at all state boat ramps. These signs can be viewed and downloaded from www.mass.gov/lakesandponds

4.2 Educational Materials

DCR has developed “*Attention Boaters*” and “*Zebra Mussel*” brochures, which can be obtained from the DCR Lakes and Ponds Program or downloaded from www.mass.gov/lakesandponds

4.3 Decontamination Procedures

It is critical to prevent the transfer of zebra mussels or any other aquatic invasive species from one waterbody to another. In furtherance of this objective, any boat that has been in a water



body that has an occurrence of zebra or quagga mussels within the prior 30 days, must comply with the decontamination procedures described below and further specified in **Attachment D**.

Mandatory Zebra Mussel Decontamination Procedures

- A. Follow the basic steps of CLEAN, DRAIN, and DRY.
- 1) Inspect and clean your boat after removing it from the water and away from the launch ramp.
 - 2) Thoroughly inspect all exposed surfaces on your vessel and trailer. If you find any mussels, scrape them off and kill them by crushing them. Dispose of the remains in the trash.
 - 3) Remove all plants and mud from your boat, trailer, and all equipment. Dispose of all material in the trash.
 - 4) Empty and dry all buckets and dispose of all bait in trash receptacles before you leave. Do not take bait home, or leave it on the ground or dump it in any waterway.
 - 5) Carefully feel your boat's hull for rough or gritty spots, which may be young mussels too small to be seen that have settled on your vessel. Microscopic Quagga/Zebra mussels will feel like sandpaper.
 - 6) Away from the waterway, drain all water from your boat (pull all plugs) and dry all areas, including the motor, motor cooling system, live wells, ballast tanks, bladders, bilges, and lower outboard units.
 - 7) Keep your watercraft dry for at least 1 week (during hot, dry weather) and at least 18 days (during cool, wet weather) before launching into any freshwater lake or pond. Drying is the only way to prevent the spread of zebra mussels.
 - 8) Thoroughly clean all fishing and recreational equipment (fishing nets, etc).
 - 9) Inspect, clean and dry all life jackets, water skis or other items that have been in the water, including anchors, ropes, etc.
 - 10) Clean and dry personal belongings, clothing, and footwear that have come in contact with the water
 - 11) Wash, dry, and brush pets that have been in the water.
 - 12) Divers must thoroughly clean all regulators, BCDs (inside and outside), wetsuits, and any other dive gear. Use a commercially available dive equipment cleaning compound that contains ammonia, vinegar, or chlorine. Allow gear, suit, and other equipment to dry before diving in different waters (veligers can survive on a wetsuit if left damp)
- B. If you can't keep your watercraft dry (per step 7 above), follow these decontamination procedures:
- 13) Wash your boat's hull, trailer, equipment, and any other exposed surfaces, and the inside of your bilge area, livewell, and engine cooling system with high pressure, hot water AND either household bleach, 100% vinegar, or a 1% salt bath. See additional decontamination procedures in **Attachment D**, including directions for using household bleach, vinegar, or a salt bath.

General Decontamination Procedures for AIS (other than zebra and quagga mussels)

- 1) Remove all plants and animals from your boat motor, trailer, anchors, fishing gear, and dive gear and dispose of them on dry land, away from the water or in a trash can.
- 2) Flush engines and dispose of livewell, bait bucket, and cooling water away from the shore after each use.

Note: Professional washing or use of a commercial wash is a decontamination option if a boater is unable to follow the basic steps of clean, drain and dry (especially during wet weather when it is difficult to ensure that a boat is completely dry). However, based on the Boat Wash Station Feasibility Study funded by DCR for Otis Reservoir in 2002, DCR does not consider the construction of new boat wash stations at public access points to water bodies practical due to site constraints, wash water disposal, and other issues.

4.4 Boat Ramp Monitoring

DCR's existing Boat Ramp Monitoring Program is described in Section 2.2 of this Interim Action Plan. In response to the discovery of zebra mussels in Laurel Lake, DCR and DFG have assigned four boat ramp monitors to regularly monitor the use of state boat ramps on water bodies in the Hoosic and Housatonic watersheds, including Laurel Lake, Stockbridge Bowl, Onota Lake, Pontoosuc Lake, Richmond Pond, Cheshire Reservoir, Goose Pond, Windsor Pond, and Lake Buel.

A trained boat ramp monitor (BRM) is the state's point of contact with the public to educate users on the steps needed to be taken by them to prevent the spread of zebra mussels, to conduct inspections of boats, to determine whether any boat that has been on a water body that contains zebra mussels has been properly decontaminated, and to ensure that the required self certification form, described below, has been completed by users of state boat ramps.

Please contact DCR's Lakes and Ponds Program at **617-626-1411** for more information on the BRM program, including training to become a monitor at a non-state boat ramp.

4.5 Clean Boat Certification

Prior to being allowed to use a state boat ramp (even where a boat ramp monitor is posted), the user is required to complete a self-certification form, to be displayed in plain view on the dashboard of their vehicle, certifying that the boat has not been on Laurel Lake or on another specified out-of-state water body likely affected by zebra or quagga mussels within the last 30 days, or if it has, that the boat has been properly cleaned and disinfected. As explained in more detail in Section 5.2 of this interim plan, the requirement to complete a self certification form will be incorporated into management measures established by OFBA pursuant to its authority under 320 CMR 2.02(2). Under the OFBA regulations, violation of a management measure is subject to fines and other penalties.

DCR/DFG has developed a self certification form available on the agencies' web sites and at their offices; the form is also available for distribution and use by municipalities, lake associations and other members of the public. In addition, DCR/DFG will post signage at state boat ramps informing users of this certification requirement. See **Attachment E**.

5. Additional State Agency Actions

5.1 Training and Education/Outreach

WORKSHOPS AND TRAINING

DCR has or will be providing training on boat ramp monitoring, proper boat cleaning procedures, and aquatic invasive species identification. More specifically, DCR Lakes and Ponds staff will be providing training to the following groups at a minimum:

- DCR park staff
- The Lake and Pond Association of Western Mass (LAPA West) Annual Symposium, September 2009
- The Congress of Lake and Pond Associations (COLAP) Annual Workshop, January 2010
- Citizens attending DCR's Weed Watcher Classes throughout the summer
- Annual Attendance at Sportsmen's Shows (Worcester and Big E)
- Environmental Police Officers

EXPANDED BOAT RAMP MONITOR PROGRAM

DCR has expanded its existing Boat Ramp Monitoring Program, as described in Section 4.4 of this Interim Action Plan.

MAILINGS

Educational brochures on zebra mussels and other AIS will be included with boat registration renewal mailings.

PUBLICATIONS

Information on the zebra mussel and how to minimize its spread will be printed in DFG's Division of Fisheries and Wildlife ("DFW") abstracts and handed out with all fishing and hunting licenses sold by DFW.

OUTDOOR RETAILERS

DCR and DFG also plan to make the above referenced educational brochures and publication available to outdoor retailers for distribution to customers.

AGENCY WEBSITES

DCR, DFG and its DFW will regularly update their websites to include the latest information on extent of zebra mussel spread, best practices for cleaning boats and equipment, and any other new information

DCR Lakes and Ponds Website: www.mass.gov/lakesandponds

Department of Fish and Game Website:
<http://www.mass.gov/dfwele/press/index.htm#zebra>

5.2 Further Regulatory Actions and Enforcement

To date, the Department of Fish and Game's Office of Fishing and Boating Access (OFBA) has established the three emergency management measures described in Section 3.1 of this Plan. Under 320 CMR 2.02(4) of the OFBA regulations, these emergency management measures are effective for a period of no longer than 45 days. However, the Director of OFBA, pursuant to his authority under 320 CMR 2.02(2), may also establish a broad range of long term management measures governing the use and operation of its boat ramps, subject to the public notice and public comment requirements in 320 CMR 2.02(3) of the regulations. Violations of the OFBA regulations, including any management measure established by the Director, are subject to the penalties set forth in 320 CMR 2.05, which includes a \$100 fine, a prohibition on the future application for or issuance of a special or general permit to use the boat ramp, and the removal at the owner's cost of any vehicle, trailer or watercraft that is in violation of the OFBA regulations or an applicable management measure established thereunder. Under M.G.L.c. 21A, s.10B and s.11B, the OFBA regulations may be enforced by Massachusetts Environmental Police or by any municipal employee having police powers.

As next steps, OFBA, pursuant to its authority under 320 CMR 2.02(2) and in accordance with the public notice/public comment procedures in 320 CMR 2.02(3), is proposing to implement the following management measures:

1. extend the temporary closure of the state boat ramp at Laurel Lake, the one Massachusetts water body that has a documented occurrence of zebra mussels, until October 15, 2009 (the practical end of the 2009 boating season) to provide sufficient time for DCR and DFG, as well as municipalities and other interested parties, to fully implement the range of actions called for in this Plan;
2. for all other state boat ramps on water bodies located in the Hoosic and Housatonic watersheds, which DCR has determined have calcium concentrations and physical characteristics that support breeding populations of zebra mussels, OFBA will establish a long term management measure that, consistent with Section 5 of this Interim Action Plan, imposes mandatory actions on users of state boat ramps, including prohibiting a boat from using a boat ramp that has been on Laurel Lake or on another specified out-of-state water body likely affected by zebra or quagga mussels within the last 30 days, unless such boat has been decontaminated in accordance with the procedures in this

Interim Action Plan, or if there is visible evidence of an aquatic invasive species on the boat; and

3. as an important component of the above long term management measure, require the completion of a self certification form described in Section 4.4 and in **Attachment E**; violation of the requirement to self certify or any other provision of this OFBA long term management measure are subject to the fine and other penalties specified in OFBA's regulations.

Finally, because the OFBA regulations apply only to the use and operation of state boat ramps under OFBA control (which are not the only vectors for the spread of zebra mussels), DFG/DCR are also evaluating whether additional state legislation or state regulations are needed to comprehensively address the long term management of zebra mussels in Massachusetts.

5.3 Continued Monitoring

Section 3.4 outlines the scope of DCR's upcoming Phase I- the initial physical/chemical evaluation of Berkshire County Lakes. The findings from this survey will inform the scope of future monitoring efforts.

5.4 Procedures for any New Occurrences of Zebra Mussels

As discussed above, the OFBA regulations authorize the Director to establish, on an emergency or long term basis, a range of management measures governing the use and operation of state boat ramps, including prohibiting public access to a state boat ramp. In the event that another Massachusetts water body other than Laurel Lake is discovered to contain zebra mussels, DFG and DCR will take actions consistent with this Interim Action Plan and the management measures established by OFBA, including notifying the public of the existence of the occurrence, determining the extent of the occurrence, posting appropriate signage at the state boat ramp thereon, and establishing any further OFBA management measures that, if deemed necessary and appropriate, could include the temporary closing the boat ramp.

5.5 Partnerships

DCR and DFG, the state agencies with lead roles in implementing this Interim Action Plan, will continue to work with our local partners, including but not limited to:

- LAPA-West
- COLAP
- Watershed Associations
- Lake Associations
- Municipalities in the Hoosic and Housatonic watersheds
- Sportsmen's Associations
- Recreational Boaters

5.6 AIS Working Group Coordinating Function

As noted in Section 2.1, the Massachusetts Aquatic Invasive Species (AIS) Working Group is tasked with “implementing a coordinated approach to minimize the ecological and socio-economic impacts of Aquatic Invasive Species in the marine and freshwater environments.” The AIS Working Group met on July 27, 2009 to discuss the implications of the zebra mussel occurrence in Laurel Lake and to coordinate its education and outreach efforts. The AIS Working Group will continue to serve as an interagency coordinating body for zebra mussel efforts as appropriate, and interim plan to meet in mid-September, 2009 to discuss state agency actions up to that point, as well as long-term strategy. In addition, the AIS Working Group will continue to facilitate discussions with the Northeast Aquatic Nuisance Species Panel and other partners as necessary for input and guidance on future actions.

Attachment A: Right of Access Law

Right of Access Law

The rights of access to the waters of the Commonwealth for its citizens were originally established by the Colonial Ordinances of 1641 to 1647. In general, these ordinances provided the public with access rights to great ponds and tidal waters for the purposes of fishing, fowling, and navigation. More specifically, M.G.L. c. 131, s.45 requires that unless otherwise provided by law, great ponds shall be public for hunting, boating and fishing (see the text of this law below).

☞ [Chapter 131](#). Inland Fisheries and Game and Other Natural Resources ([Refs & Annos](#))

➡ § 45. Great ponds; public use; rules and regulations

Except as otherwise provided in this section and elsewhere in this chapter, every great pond not actively being used as a source of water supply of any town, water supply or fire district or public institution, and not subject to the provisions of [section one hundred and sixty of chapter one hundred and eleven](#), shall be public for the purpose of hunting or boating thereon and shall, notwithstanding the provisions of any special law relating to fisheries in any particular place, be open to all inhabitants of the commonwealth for fishing purposes; provided that any city or town in which the whole or any portion of any great pond not exceeding five hundred acres in extent is situated may, as to so much thereof, as is located within its boundaries, make and enforce rules and regulations relative to hunting, fishing and boating thereon. Any such rule and regulation relative to boating may include, on all or any portion of said pond, for all or any portion of the year, any of the following: a speed limit, a limit on engine horsepower, a prohibition of the use of internal combustion engines, a ban on water skiing and other high speed uses and a limitation of such uses to certain areas and certain times. Any such rules or regulations shall, to the extent that they authorize hunting or fishing or, both, be subject to the approval of the director, and to the extent that they authorize any other use thereof, be subject to the approval of the commissioner of environmental protection or to the extent that they impose restrictions upon the speed limit, a limitation on engine horsepower, a prohibition of the use of internal combustion engines, a ban on water skiing and other high speed uses, and a limitation of such uses to certain areas and certain times, be subject to the approval of the director of law enforcement. All persons shall be allowed reasonable means of access to such ponds for the purposes aforesaid.

Attachment B: OFBA Emergency Management Measures

06/09/2009 11:04 FAX 017 727 7214 PUBLIC ACCESS BOARD 7 COMM. OFFICE 09/27/09

Commonwealth of Massachusetts Department of Fish & Game



Office of **Fishing & Boating Access**

1440 Soldiers Field Road • Brighton, Massachusetts 02135
(617) 727-1843 FAX (617) 727-7214

John P. Sheppard, *Director*

Expanded Emergency Management Measure Governing the Use of Certain Boat Ramps in Berkshire County To Reduce the Risk of Transport of Zebra Mussels

On July 8, 2009, I temporarily closed the public boat ramp at Laurel Lake in Lee, Berkshire County, MA, on an emergency basis pursuant to my authority as the Director of the Office of Fishing and Boating Access ("OFBA") in the Department of Fish and Game ("DFG") under the OFBA Regulations at 320 CMR 2.02(4). As explained in my emergency closure notice on file with the Secretary of State, the closure of Laurel Lake cannot extend beyond 45 days without public notice and an opportunity for the public to comment.

The above emergency closure was in response to confirmation by the Department of Conservation and Recreation ("DCR") that Zebra Mussels, a highly aggressive aquatic invasive species, are present in Laurel Lake in Lee, MA. This is the first time they have been definitively documented in a MA water body. Zebra Mussels, which significantly alter the lake ecology and cause other adverse impacts on animals, humans and boats, can be unknowingly transported from one lake to another by boaters and other lake users. Closing the Laurel Lake boat ramp on a temporary basis gives DCR and DFG time to determine more definitively the scope and severity of the Zebra Mussel infestation in Laurel Lake, the risk of transport of Zebra Mussels to other MA water bodies, and the appropriate management measures for the lake on a going forward basis. As part of that effort, DCR, in partnership with trained lake association volunteers, will conduct an initial survey of Laurel Lake and its outlet stream, as well as surrounding lakes in Berkshire County in the coming weeks, targeting lakes with higher infestation risks.

Once Zebra Mussels occupy a lake, there is no proven method of eradicating them; therefore, the focus should be on preventing their spread to other water bodies. In furtherance of this objective, I am again exercising my authority under 320 CMR 2.02(4) to authorize the following emergency management measure at certain boat ramps located in Berkshire County:

1. The purpose of this emergency management measure is to reduce the risk the boats that have been on Laurel Lake within the last 30 days may transport

Zebra Mussels to surrounding water bodies in Berkshire County that are susceptible to a Zebra Mussel infestation.

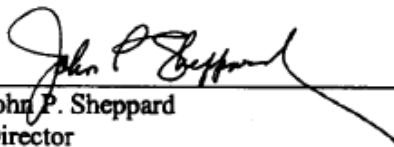
2. Consistent with the above objective, the application of this emergency management measure is limited to a boat ramp located at a water body in Berkshire County determined by DCR to have calcium concentrations and other chemical and physical characteristics appropriate enough to support breeding populations of Zebra Mussels.

3. At the request of the municipal or other local manager of such a boat ramp, the manager shall have the authority, during the duration of this emergency management measure, to prevent the use of the boat ramp by boats that the manager determines have been on Laurel Lake, or any other water body known to contain zebra or quagga mussels, within the last 30 days, unless such boat has since been subject to the following cleaning and disinfection measures:

- the boat (including the boat engine, bilge, ballast water, recreational equipment or anything else that has come into contact with the water) has been thoroughly cleaned, drained and dried, including cleaning all plants, fish, mussels and mud from the boat; draining all water (bilge, livewells, boat engine), and drying for at least 1 week (during hot, dry weather) and up to 4 weeks (during cool, wet weather); or
- see Mass. DCR/DFG Zebra Mussel Action Plan for other cleaning options.

The manager may also, when other invasive aquatic species are visible on any watercraft, refuse use of the boat ramp until said invasive aquatic species have been completely removed to the satisfaction of the managing authority.

4. As provided in 320 CMR 2.02(4), OFBA will comply with the procedures for public notice and public comment in 320 CMR 2.02(3) if this emergency management measure extends beyond 45 days. This expanded emergency management measure and the preceding emergency management measures of July 8 and 10, 2009 may be enforced by the Mass. Environmental Police.


John P. Sheppard
Director

July 23, 2009
Date

2009 JUL 23 PM 3:13
SECRETARY OF STATE
REGISTRATION DIVISION



STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species.
Clean **all** recreational equipment.

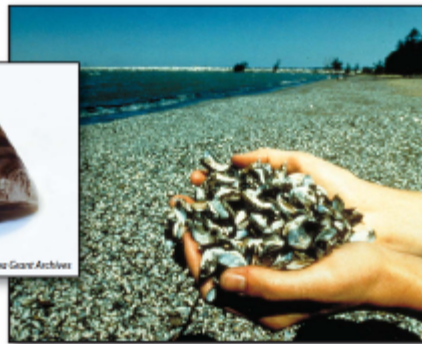
www.ProtectYourWaters.net

CAUTION! INVASIVE ZEBRA AND QUAGGA MUSSELS HAVE BEEN SPOTTED IN NEARBY WATERBODIES

DO NOT: RELEASE ANYTHING INTO THIS WATER BODY THAT DID NOT COME FROM THIS WATER BODY
EMPTY BAIT BUCKET, BILGE, OR LIVELWELL WATER INTO THIS WATER BODY



Photo courtesy of Michigan Sea Grant Archives



DO:

- ▶ Wash the exterior of your boat and trailer and flush the engine, bilge, and live well with tap water. Hot or high pressure rinse (power washer, car wash, etc.) is best. Keep rinse water away from all water bodies and storm drains.
- ▶ Let all equipment dry for at least 72 hours before using it in another water body.

To report a sighting, please contact:
MassDCR Lakes and Ponds Program
(617) 626-4975
www.mass.gov/lakesandponds

CAUTION!



Attachment D: Decontamination Procedures

BOAT AND EQUIPMENT CLEANING AND DECONTAMINATION PROCEDURES

Source: Missouri Dept. of Conservation – Zebra Mussel Prevention

Appropriate safeguards to prevent the transfer of zebra mussels from one waterbody to another are critical. The following steps detail equipment decontamination procedures:

1. Thoroughly inspect boats (hulls, drive units, trim plates, transducers), trailers and components (rollers, bunk boards, axles, etc.), equipment (i.e., water pumps, hatchery equipment, siphons, nets, ropes, traps, etc.), and machinery (tractors, bulldozers, etc.) for adult zebra mussels. Pay close attention to nooks, crannies and other inconspicuous places (i.e., around the motor housing, trim tabs, and water intake screens, or pump fittings). All trash, mud, vegetation, and suspected zebra mussels should be removed and properly disposed of in the trash.
2. All water should be drained from boats, trailers, motors, live wells, bilges, transom wells, holding tanks and live wells, water pumps, pipes, and other equipment prior to leaving a waterway. Pay particular attention to boat hulls under installed decking. Drain as much water as possible from equipment such as lower motor units and portable pumps.
3. Any boat, trailer, tank, equipment, machinery, gear, or net transferred from one body of water into a different body of water or from known infested waters to potentially infested waters must be decontaminated using one of the treatments in Table 1 prior to being used in a new body of water. Equipment decontamination procedures should be completed when moving equipment from infested areas of a water body to uninfested areas of the same water body.

If boats, nets, and other equipment are only used in one body of water, cleaning between uses is not necessary, but these boats, nets, and other equipment **MUST** be clearly labeled for use in that body of water **ONLY**. Periodic cleaning and decontamination (i.e., during winterization or other maintenance) should be conducted to prevent costly repairs.

Table 1. Zebra Mussel Disinfectants and Usage Guidelines for Boats and Equipment

Disinfectant	Concentration	Contact Time	Usage Guidelines, Safety Precautions, Drawbacks
Vinegar	100%	20 min	Use appropriate personal protective equipment (PPE) and caution. Stay upwind of the spray. Is corrosive to metal and toxic to fish at this concentration, so thoroughly rinse with tap water or water from the next lake or river after disinfection. Ensure that solution does not run-off directly into waterways.
Chlorine	200 ppm	10 min	Use appropriate PPE and caution. Stay upwind of the spray. Is corrosive to metal and rubber and toxic to fish at this concentration, so neutralize with 800 ppm sodium thiosulfate and rinse thoroughly with tap water or water from the next lake or river. Ensure that solution does not run-off directly into waterways.
Power wash with hot water	>104° F	20 min	Use appropriate PPE and caution when using hot water due to possibility of burns/scalding. Temperature and contact times are crucial, as efficiency is weather dependent. Most effective when used in conjunction with air drying (see below). Power wash with hot water, including thoroughly flushing lower motor unit.
Freezing	<32° F	24 hrs	Boats, gear, and equipment should be thoroughly frozen. Ambient air temperature should remain below freezing for the entire contact time. No safety precautions.
Air drying	N/A	3-5 days in hot sun 48 hrs in hot sun	Must dry completely to be effective. Most effective when used in conjunction with hot water (see above). To be used for small nets, gear, pumps, etc., <i>ONLY AFTER</i> power washing with hot (104°) water for appropriate contact time.
Salt Bath	1%	24 hrs	Due to the long contact time, may only be used as a bath solution and not sprayed. To be used only for pieces of equipment, gear, and nets that can be completely immersed in the solution.

Table 2. Disinfectant Amounts to Make Needed Concentrations

Disinfectant	1 gallon	2 gallons	5 gallons	20 gallons	100 gallons
100% Vinegar	1 gal	2 gal	5 gal	20 gal	100 gal
200 ppm Chlorine (household bleach, 5.25% Chlorine)	0.5 ounce (15 ml)	1.0 ounce (30 ml)	2.5 ounces (75 ml)	11.0 ounces (300 ml)	6 1/3 cups (1.5 L)
200 ppm Chlorine (HTH granular)	0.04 ounce (1.2 g)	0.08 ounce (2.4 g)	0.2 ounce (6 g)	0.8 ounce (24 g)	4.2 ounces (120 g)
800 ppm Sodium Thiosulfate	0.1 ounce (3 g)	0.2 ounce (6 g)	0.5 ounce (15 g)	2.1 ounces (60 g)	10.6 ounces (300 g)
1% Salt Bath (as NaCl)	1/8 cup	1/4 cup	2/3 cup	2 2/3 cups	13 1/3 cups

Notes:

1. Air drying and hot water are most effective when used in conjunction with each other because their effectiveness is highly dependent upon ambient temperatures and contact times. As needed, hot water wash units should be made available at selected Department facilities.
2. Household bleach (5.25% chlorine) and vinegar can be purchased from grocery or convenience stores. HTH granular chlorine (70% calcium hypochlorite) and Sodium Thiosulfate can be purchased at pool supply stores or chemical companies.
3. All bilges and hidden areas under boat decks must be thoroughly treated as described above.

Attachment E: Clean Boat Certification Form

BOATERS MUST FILL OUT THIS *CLEAN BOAT CERTIFICATION* BEFORE LAUNCHING THEIR BOAT*



WHY IS THIS REQUIRED?

- Zebra Mussels are an Aquatic Invasive Species that can spread rapidly due to their biology and can significantly alter the ecology of a water body and attach themselves to boats hulls and propellers, dock pilings, water intake pipes and aquatic animals. In July 2009 Zebra Mussels were discovered for the first time in Massachusetts, in Laurel Lake in Lee/Lenox.
- WE NEED YOUR HELP TO STOP THE SPREAD OF AQUATIC INVASIVE SPECIES. PLEASE DO YOUR PART TO STOP THE SPREAD BY FILLING OUT THIS FORM. FAILURE TO SELF CERTIFY IS A VIOLATION OF 320 CMR 2.00, WHICH IS SUBJECT TO A FINE AND PENALTIES.

**This self certification form is required for use of state boat ramps at water bodies located in the Hoosic and Housatonic watersheds.*

BOATERS MUST SELF CERTIFY BEFORE LAUNCHING

PLEASE ANSWER THE FOLLOWING QUESTIONS:

A. In the last 30 days, has your boat been used in any of the following waters, all likely affected by zebra or quagga mussels:

1. Laurel Lake, Lee/Lenox, Massachusetts

Yes ____ No ____

2. East/West Twin Lakes, Connecticut

Yes ____ No ____

3. Lake Champlain, Vermont

Yes ____ No ____

4. Lake George, New York

Yes ____ No ____

5. Hudson River, New York

Yes ____ No ____

6. Any of the Great Lakes

Yes ____ No ____

If you answered “No” to all questions in Section A, and to the best of your knowledge your boat is free of all other aquatic invasive species, sign this form on the reverse side and launch your boat.

If you answered “Yes” to any of the questions in Section A above, please see the reverse side of this form.

If you answered "Yes" to any question in Section A, DECONTAMINATE as described below.

B. DECONTAMINATION PROCEDURES

B1. SELF DECONTAMINATION

CLEAN all plants, fish, mussels and mud from boat
Yes ____ No ____

DRAIN all water (bilge, livewells, motor)
Yes ____ No ____

DRY (at least one week in hot/dry weather; at least 18 days in cool/wet weather)
Yes ____ No ____

IF YOU CAN'T KEEP YOUR WATERCRAFT DRY,

WASH your boat's hull, trailer, equipment, and any other exposed surfaces, and the inside of your bilge area, livewell, and engine cooling system with:

- 1) High-pressure, hot water AND
- 2) Household bleach (1/2 cup per 2 cups water) OR
- 3) 100% Vinegar OR
- 4) 1% Salt Bath (as NaCl) (1/8 cup per 1 gallon water).

B2. PROFESSIONAL DECONTAMINATION

You may also use a professional car wash, provided it can apply scalding water (140 degree F) to wash your boat and trailer and to flush your bilge, livewells and motor.

Commercial Wash Company Agent Signature Date

PLACE THIS SIDE OF CERTIFICATE FACING UP ON YOUR DASHBOARD

SIGN A NEW LINE BELOW FOR EACH VISIT

CERTIFICATE OF DECONTAMINATION	
My boat is clean and I have not put it in any waters listed in Section A; or I have decontaminated my boat and trailer as outlined in Section B1 or B2.	
Circle one:	→ Self Decontamination Professional Decontamination
Sign and Date	→ _____ Boater's signature and date (not valid unless signed and dated)

CERTIFICATE OF DECONTAMINATION	
My boat is clean and I have not put it in any waters listed in Section A; or I have decontaminated my boat and trailer as outlined in Section B1 or B2.	
Circle one:	→ Self Decontamination Professional Decontamination
Sign and Date	→ _____ Boater's signature and date (not valid unless signed and dated)

CERTIFICATE OF DECONTAMINATION	
My boat is clean and I have not put it in any waters listed in Section A; or I have decontaminated my boat and trailer as outlined in Section B1 or B2.	
Circle one:	→ Self Decontamination Professional Decontamination
Sign and Date	→ _____ Boater's signature and date (not valid unless signed and dated)

CERTIFICATE OF DECONTAMINATION	
My boat is clean and I have not put it in any waters listed in Section A; or I have decontaminated my boat and trailer as outlined in Section B1 or B2.	
Circle one:	→ Self Decontamination Professional Decontamination
Sign and Date	→ _____ Boater's signature and date (not valid unless signed and dated)