



Recording of Break-out Brainstorming Sessions

Zebra Mussel Forum Bard College @ Simons Rock

(These notes are a collection of session discussion, personal opinions, and/or general thoughts.)

Scientific Monitoring & Reporting Protocols

Moderated by:

Ethan Nedeau, Biodiversity

Dr. Mitch Wagner, Dept of Biology & Environmental
Science, WCSU

The group recommends that there should be a Housatonic Watershed central clearinghouse for ZM/AIS information; including data, education and outreach materials, and various implemented management strategies.

- 1) Long-term monitoring and data collection is vital.

There are two major problems for detecting Zebra Mussels; one is that it can be years before detectable as adults, the second is that monitoring for mussels can be labor-intensive.

However there are effective methods to determine ZM infestation that can utilize citizen involvement. Also local schools may also be able to assist, which will increase educational involvement for the students who can also educate their parents

Specific activities information on distribution of ZM.

- Hang a short (four foot) section of a PVC pipe off of docks as substrate to

monitor for adults at end of season. The group recommends that a PVC pipe should be hung in Laurel Lake to show trends.

- Use a drag net to collect samples for microscopy. Since it can be difficult to verify, have the samples analyzed by a profession. The role for volunteers could be to collect samples, pack them in alcohol, and send off for expert assessment. Every lake should have own equipment (nets, etc.), and local volunteers can handle that equipment and sample collection.
- Pontoosuc Lake & some other Berkshire lakes use plastic or masonite sheets as substrates to monitor ZM attachment. Luckily, after several years, nothing has been found. This 'no mussel' data is important.

Monitoring has some expense, but there are ways to raise funding to pay for needed supplies such as nets and supplies. Lake associations or other citizen groups could assist in purchasing equipment. For instance, Lake George had a program in which people purchased "shares" (such as buy-a-brick' campaigns) to help monitor the lake.

People also get passionate about their lake, and are motivated to get actively involved. For instance, homeowners around a lake can generate a map of ZM densities. Another entity, such as a university, can then serve to collect & collate the data.

2) Relevant Life cycle information

Veligers die more easily, they are more sensitive to pH levels (< 7).

Contained lakes have less opportunity for infestation from inflow.

Water may be suitable for supporting adults but not for reproduction. Also, veligers can get into a lake, but may not be able to develop into adults due to certain lake conditions.

However if there are no zebra mussels found in a waterbody, they still may be there. There is a concern that the lack of observed mussels may mean that it is just early stage of infestation, or that the adults are there, but just haven't been detected yet. Veligers can live for about 3-4 weeks before they attach to a solid object.

There is current research study being explored which may study CO2 bubbling as way to acidify water which will kill any veligers.

Community Based Boat Ramp Monitoring

Moderated by:

Gwendolynn Flynn, Boating Division Environmental Analyst, Ct DEEP
Jim McGrath, Pittsfield Harbor Master, City of Pittsfield

Volunteers:

Needed especially at highest use periods

- Recruit volunteers from a wide area of community; residents, students, Retired Seniors Volunteer Program (RSVP), etc..
- Provide consistent training
- Keep them coming back, find ways to keep their interest and involvement
- Need a volunteer coordinator to oversee the program.

Volunteers need to:

- Look official and professional: t-shirts help to identify who is a monitor.
- Be consistent with their message to the public
- Be Knowledgeable
- Track data such as where they are from, use patterns, etc.

Program should be coordinated with state and statewide association of lakes regarding data collection, design of forms and surveys, training, appearance, etc..

Ideally, try to limit the points of access to a waterbody
Educate the public, especially landowners living on the lake or river.

Education and Outreach

Moderated by:

Phyllis Schaer, Invasives Species Subcommittee Chair, Candlewood Lake Authority
Jim Straub, Lakes and Ponds Program Coordinator, Ma DCR

What works:

- People need to know that the ‘Clean, Drain, Dry’ campaign is effective in managing AIS
- ‘One Voice One message’. Message needs to be consistent. Even colors of forms, displays, t-shirts should be uniform.
- Partnerships are critical in educating the public. Lake Associations, state and federal agencies, NGO, businesses, should team up on their outreach efforts. i.e. public booths with experienced people to provide discussion opportunities on AIS . “Stop Aquatic Hitchhiker Booths”
- Web based self certification works to help improve prevention and control awareness and should also be consistent. The 100th Meridian web site offers this option.
- High School crews can help provide both water and ramp monitoring.
- Ct. Bass Fishing Federation, and Ct DEEP now requires self certification

for tournament fishing on susceptible lakes and encourages all fishing tournaments to do monitoring. Massachusetts requires self certification on lakes that already have certification requirements in place, and does not have a uniform across-the-board regulation. We should work to create and encourage all fishing tournaments and participants as well as recreational boaters to self certify every time they launch.

- Printed Information should mention the issues of all Aquatic Invasive Species (AIS), not just Zebra Mussels.
- Targeted marketing provides better results; such as attending sporting goods trade shows, fly fishing shows, boating shows, etc.
- Consistency with any outreach information creates “Brand Recognition”. Tags such as ‘Stop Aquatic Hitchhikers’ and “Clean, Drain, Dry” provides a consistent message that will provide better retention results. Informational web sites should be linked to other similar sites for additional educational information.
- ‘GLANSIS’ is a website watch list which has information on the status of all AIS.
- Sportsman Meeting presentations are ideal informational opportunities.
- A program to provide AIS and ‘CLEAN, DRAIN, DRY’ stickers , which can be affixed to a boat winch, is a method to ensure decontamination information is retained. These can be given out by boat ramp monitors, and also be included in boat registration information.
- It is CRITICAL that AIS infested waterbodies are labeled.
- Signage presentation is critical. Improved, Uniform Clear information needs to be visually appealing and must describe what is in the waterbody.
- Minnesota Sea Grant has a ‘Traveling Truck’ education program for students that is available in the Great Lakes region. It provides AIS education materials for students and schools and has extensive educational literature available for training and outreach..
- Billboards are a most effective form of public outreach and education.
- Research has shown that Billboards are in the top 3 or 4 media approaches to get the message across to boaters.
- Information is readily available for use in managing AIS. Overall outreach programs need to join a nationwide, consistent effort and message. ‘No need to re-invent the wheel’. Established programs such as “Protect Your Waters’ will share their data files and information.

Concerns:

- Boaters can be very transient.
- Overcrowding of waterways.
- Several attendees questioned the continued stocking at Laurel Lake. The feeling was that it would contribute to the spread of AIS.
- Senate Bill 1904 in Massachusetts sponsored by Senator Downing from

the Berkshires. We need to get it passed. It creates monetary penalties for not decontaminating. Wisconsin passed a bill 4 years ago. It wasn't perfect but the bill has been improved since then.

- Getting message out to more areas. i.e. Deerfield River is a national fishing destination location, these users may not know the message.
- Kids – we need to establish a focused educational message for this age group. Minnesota Sea Grant has an educational traveling trunk show that can be purchased for this purpose.
- Better education of monitors. Some paid monitors said that they did not receive any or had insufficient training. There was also a suggestion for a mentor program and/or a manual for monitor training to improve their understanding of situation. Monitor options: paid and volunteer at ramps. Could be retired seniors, or college or high school students

- Educating other lake associations is crucial. Provide educational material and DVD on “Don't Move a Mussel”. There is a 2011 version now available
- Zebra mussels tend to clarify the water column which is conducive to growth of Milfoil and can become the basis for other aquatic invasive issues because they disrupt the natural balance.

Specific Concerns from session participants:

Great Barrington Concerns

- Chemical composition of waterways is conducive for ZM habitat, especially pH
- There are 2 public ramps in town.
- We only have signage and self certification since at the present time they have no monitors

Massachusetts Bass Federation

- Self certification was necessary only on lakes that require it. This should be improved to include all lakes. Currently not required statewide.
- Would like Sea Grant partnership and assistance.

Ct. DEEP

- Monitors State public boat launches and issues fishing tournaments permits & provides BEA's at state ramps, but needs more ramp coverage.
- Self certification now required for fishing tournaments on lakes that have high susceptibility. Working to improve boat ramp monitoring program and expand volunteer participation.
- Posting of warning signage at know infested waterbodies.

Candlewood Lake Authority

- Sponsors the regional Zebra Mussel Task Force; which will continue to meet to address on-going concerns.

- We need a uniform message.
- Need a comprehensive state-wide Rapid Response Plan.
- Concerned about the continual contamination of veligers from upstream source from Laurel Lake and Laurel Lake Brook via the Housatonic River.
- Need for greater Public Awareness and education.
- Created and provides signage for local Lake Association and municipal ramps. Candlewood has over 65 launch sites. It is difficult to monitor all of them, so better public awareness is IMPORTANT!
- Provides educational outreach material and monitoring for Zebra Mussels and AIS.
- Has partnered with agencies across the nation to share and expand data and resources available. Recommend using available resources to improve message and keep things uniform.
- Sponsors ramp monitor training programs with Ct DEEP.
- New comprehensive Zebra Mussel data available on CLA web site.

Massachusetts Audubon Society

- Re-tooled their education program on the Housatonic River. They operate a program for student canoe trips at the 5th & 6th grade level.

Stockbridge Bowl Committee

- They have a very positive and active monitoring and boat wash program at their boat launch.
- Need to continue to educate volunteer and paid monitors

Richmond Pond Association

- 1 public boat launch. They have a public newsletter that goes to weekend & year-round residents and to visitors. Also have a website.

Prevention and Decontamination

Moderated by:

Mark Howarth, Director of Education, Candlewood Lake Authority
George Shippey, Chairman, Stockbridge Zebra Mussel Committee

Most boaters want to help out but they need to know what they can do to help.

1) Education

- Ramp Monitors
To keep an official appearance, they need t-shirts and other identifying clothing. Bright colored shirts also help with safety.
- Fishing Tournaments; Participants need to be pre-certified.
- Marine Event Permits; Participants need to be self certified.
- The 'Pulled Plug Program' is an effective program that stressed that all boats pull their plugs after leaving the water.

- All user groups need to be contacted. For instance the wakeboard community, and jet skiers need to be contacted. Talk to boaters and people at marinas.
 - Educate heavily along with decontamination. Wash stations @ infested lakes is critical! The challenge is to find adequate funding to construct and operate.
 - Reach out to retailers & those who rent boats equipment and boats.
 - Don't stock infested lakes. i.e. Laurel Lake, thereby only making them more enticing to outside use.
- 2) Game Warden/Law Enforcement, including local police
 - There can be partnerships between game wardens and state and local police.
 - They should be on-site at busy times and have a visible presence. i.e. patrol vehicle, to help convey the seriousness of the situation – (media involvement covering their presence can increase the reach of their message).
 - Cameras have also been used effectively at boat ramps
 - 3) Media involvement. Newspapers. Television crews, billboard coverage to reach large audience.
 - 4) Decontamination
 - Stress importance of home decontamination through educational efforts, as well as wash sites.
 - Share resources as much as possible. Wash stations should be open for everyone.
 - 5) Possible follow-up workshop on "What can be done when First Zebra Mussels are found?"

Exploring New Management Strategies

Moderated by:

Dr. Donald Roeder, Environmental Studies and Biology Professor, Bard College @ Simon's Rock.

Meghan Ruta, Ct Water Protection Manager, HVA

What Kills or Negatively Affects Zebra Mussels? (this list does not account for impacts to other aquatic organisms)

- UV light
- Increase carbon Dioxide which will lower pH. 7.4 kills larva, 6.4 kills adults
- Lake drawdowns
- Molluscides such as
- Exposure/desiccation
- Freezing
- Manual removal/scraping
- No O2
- Lack of Food
- Predator
- Filters/membranes

- Turbulence
- Light exposure
- Muddy substrate

What can be done when First Zebra Mussels are Found?

- Ideally follow a Rapid response plan. However there are no known existing plans for zebra mussels.
- Close boat access sites
- Evaluation to avoid same cause of ZM presence
- Monitoring. Collect data to expand understanding of infestation
- Reevaluate Regulation and Legislation. Define AIS as ‘pollutant’. Try to prevent instream transportation.
- Strategies to control and modify human behavior. Need for trailer or hitch tag permit system to document decontamination.
- Think Outside the Box: change perspectives and rethink strategies.

Factors to Consider:

- Legal considerations for any actions that may be implemented upstream of any other area.
- Unintended negative consequences; economic or environmental.
- Political complication and hurdles
- Opportunities to explore new technology. Unique/limited window of opportunity, such as use of zequinox
- What controls the AIS in their native habitat?
- How can we approach differently to achieve same results?

Case Study: Laurel Lake

- Regulations should have prevented the continued water flow in pipe from the lake directly to the Housatonic River. This pipe could either have been fixed and not allow any additional discharge, or the flow could have been treated.
- There could have been more management controls at lake outlet
 - Water level could have been maintained at lower levels
 - Laurel Lake outlet could have been treated.
 - Molluscicide Chemical treatment (zequinox) during period of no outflow.
- The pH could have been lowered, along with CO₂ diffusion in outflow pipe.