

Aquatic Invasive Species Workshop Summary: *Developing a Rapid Response Plan for Ohio*

Bay Village, OH

April 18, 2007

Workshop Proceedings

Welcome

Frank Lichtkoppler & Eugene Braig, *Ohio Sea Grant College Program*

Lichtkoppler reviewed the agenda and gave a brief introduction of the purpose of the workshop: to help the Ohio Department of Natural Resources develop a framework for building a rapid response plan for aquatic invasive species. Braig reviewed some common invasive species related acronyms that would be used throughout the workshop and led the participants in a round of introductions.

Aquatic Invasive Species in Lake Erie: Pathways and Impacts

Fred Snyder, *Ohio Sea Grant College Program*

Snyder's presentation described the pathways and impacts of invasive species in Lake Erie. He covered several pathways, all of which involve human activity: ballast water; removal of natural barriers; intentional stocking of species; the aquarium trade; and accidental stocking of species. He also explained that non-native species have had a wide range of impacts in Lake Erie, not all of which have been negative. He provided examples of invasive and non-native species that have been introduced via each of the different pathways. Ballast water has been linked to the introduction of zebra and quagga mussels into the Great Lakes which have transformed the Lake Erie ecosystem as a result of their filter feeding and reproductive capacity. They have also had significant economic impacts as they clog water intake pipes for power and water treatment plants. Snyder further explained how ballast water has been linked to the introduction of several other invasive species including round and tubenose gobies, spiny and fishhook water fleas, and the Eurasian ruffe. He described how removal of natural barriers between waterways has facilitated the introduction of sea lamprey, alewife and white perch, all having significant impacts in Lake Erie. Intentional stocking of carp, possibly the plant purple loosestrife, rainbow smelt, and pacific salmon have all impacted Lake Erie and the Great Lakes as well. Snyder pointed out that while pacific salmon has become very popular with the sport fishing community; it has also impacted native species populations. Species introductions linked to the aquarium trade include goldfish, Eurasian water milfoil, and curly-leaf pondweed. He indicated that aside from pet and aquarium releases, these species may also be released for cultural reasons, as is the case with snakehead, a fish species not yet found to be in the Great Lakes. Accidental stocking, including undesirable species release during intentional stocking, unused bait dumping, and aquaculture escapement, has been linked to the introduction of white perch in Ohio and Asian carp in the Mississippi River. Snyder also described new invaders, the New Zealand mud snail and bloody red shrimp (*Hemimysis*), found in Lake Erie. He indicated that these species may have existed in the lake previously, but until now populations have been too small to detect and their impacts are currently unknown. In conclusion, Snyder again emphasized the role of human activity in species introduction and that many pathways are still open and will need to be closed to make further progress in preventing invasive species introduction and spread.

Regional Perspectives: State Management Planning in the Great Lakes Region

Erika Jensen, *Great Lakes Commission*

Jensen provided a brief overview of state management planning efforts in the Great Lakes region. She explained the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) passed

by the U.S. Congress in 1990 which established the national Aquatic Nuisance Species Task Force (ANSTF) to coordinate ANS programs on a nation scale and the Great Lakes Panel on Aquatic Nuisance Species to address ANS problems on a regional basis, as well as required the development of state management plans (SMPs) to prevent introduction, limit spread and mitigate impacts of ANS. The legislation was previously reauthorized in 1996 and is pending reauthorization in the current session of Congress. Jensen described the process for approval and funding of SMPs through the ANSTF and cited funding as a common obstacle among states to both develop and implement their plans. She provided a brief overview of Ohio's SMP which the Ohio Department of Natural Resources (ODNR) Division of Wildlife began development on in 1995 and was approved by the ANSTF in 1997. Jensen highlighted the value of the SMP as a tool for communication, collaboration, information sharing and raising awareness. She then gave a brief overview of the role of GLC in providing a regional framework for state management planning and the project *A Collaborative Approach to Advance State Management Plans for Prevention and Control of Aquatic Nuisance Species*. The project is funded by the National Sea Grant College Program and administered by the GLC in cooperation with state Sea Grant programs & natural resource agencies. State-specific workshops have been conducted in the Great Lakes states to help the states develop or implement their SMP depending on their stage in the process. Five other workshops have been completed and the culmination of the project will be an all-day session focused on advancing state management planning at the upcoming spring meeting of the ANSTF, being held in conjunction with the spring meeting of the Great Lakes Panel. Jensen concluded noting that materials from each workshop are available online at <http://www.glc.org/ans/initiatives.html>. Jensen's presentation is available online at: <http://www.glc.org/ans/initiatives.html#advance>.

Regional Perspectives: Model Rapid Response Plan for Great Lakes Aquatic Invasions

Kathe Glassner-Shwayder, *Great Lakes Commission*

Shwayder gave a presentation on a model rapid response plan that was developed for the Great Lakes region in the hopes of helping the states with rapid response planning. She emphasized the importance of rapid response planning for potential new Great Lakes invaders such as the snakehead, hydrilla and Asian carp, as well as the importance of public engagement and awareness of the issue. She explained that without this awareness, it can be difficult to implement some of the strategies that maybe necessary in a rapid response. Shwayder then spoke more specifically about the model plan, highlighting the primary components: introduction, defining the problem, and goals; organizational structure and communication; outreach; early detection and monitoring; decision support and rapid scientific assessment; management options for eradication/control; implementation; adaptive management; and funding. She then explained further some of the components.

With regards to organization structure and communication she indicated that a person in charge should be designated to make decisions and also to designate a local coordinator. She emphasized again the need for outreach and communication with the public throughout the rapid response process: pre-invasion, during invasion, and post-invasion. She said an informed public is critical in order to create political will to put a rapid response plan into action. Shwayder also noted that agencies should be kept involved as well and advised that a website be dedicated to keeping people updated and apprised of the situation. She recommended open public forums to debate issues and build consensus around the response plan. Shwayder spoke about improving early detection and monitoring which usually occurs incidentally by a lay person and requires confirmation by an expert. She indicated that the ANS Task Force was establishing an "expert database" to aid in this process by

providing the public access to experts in the field. She explained the need for a decision support system to determine the technical and economic feasibility of eradicating or controlling a new invasion. She talked about identifying management options and tools ahead of time to evaluate potential impacts and obtain necessary approvals for use of these tools. In regards to implementation, Shwayder described the need for a single point of operational contact to execute the rapid response that would be a different level of support from making the decision to go forward with rapid response. The last component, funding, Shwayder indicated was the largest obstacle for rapid response and that a dedicated pool of money would be necessary. She advised that states would have to be creative to establish this pot of money and make it easily accessible when it is finally needed. She also advised that cost-estimates for different species be conducted to estimate how much money would be needed for a rapid response. In conclusion, she reminded participants that the model plan is a generic model for the Great Lakes and has been used in Michigan to develop a rapid response plan for hydrilla. The model plan is available online at: <http://www.glc.org/ans/initiatives.html#rapid>, as is Shwayder's presentation at: <http://www.glc.org/ans/initiatives.html#advance>.

Indiana's Rapid Response Experiences

Doug Keller, *Indiana Department of Natural Resources*

Keller presented two invasive species discoveries in Indiana that required rapid response action from the state. He said that both incidents involved invasive plants and that the state does not currently have a rapid response plan to deal with any invasive species discovery or introduction. The first incident occurred when the plant Brazilian elodea was discovered in an inland lake in south-central Indiana. Keller explained that the Indiana Department of Natural Resources (IDNR) found the plant during a routine plant survey in 2004, but later discovered that it had been found in 2002 by a researcher who never reported his finding. In response to the discovery of elodea, the state used a Sonar (chemical) treatment, but was not able to begin the treatment until 2006. Keller indicated that the 2006 treatment nearly eradicated the plant, but because they did not achieve their goal of complete eradication, the treatment would be repeated in 2007. Keller said that this experience was an opportunity for learning due to the significant time lag between discovery and response, as well as the lack of reporting. He said the time lag occurred because there was no one leading a coordinated effort and therefore, there was insufficient engagement of the public and local community in the process and no sense of urgency within IDNR to respond. He also indicated that funding was another limitation in response as the treatment was very costly for a single 109-acre lake.

The second rapid response experience Keller described occurred in the summer of 2006 when the plant hydrilla was discovered, again during a routine IDNR plant survey, in a northern Indiana inland lake (Lake Manitou). He said the plant was only found in a couple of areas in the lake and that they had to have the identification confirmed by an outside expert. Once it was confirmed that the plant was hydrilla, IDNR implemented multi-faceted response to the discovery. They conducted an intensive survey to map the areas of infestation, finding the heaviest area to be near a boat ramp, as well as surveying approximately 30 other lakes within a half-hour drive of Lake Manitou. Next, they applied a Komeen (chemical) treatment on 20 acres of the most heavily infested area and closed down all of the access points to non-residents, as well as prohibiting access once equipment has been pulled. Keller indicated there was very strong public support for closing down the lake and the IDNR was encouraged to take this action as soon as possible. IDNR staff sought technical advice as to how to eradicate the plant and was told it would require a minimum of 4 years of treatment. As a result, IDNR also needed to find funding for response implementation as it will cost \$500,000 for a single year of treatment on the 700-acre lake. Keller explained how the agency did and will be

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taking money from other programs to implement the Sonar treatment and conduct samples and surveys to ensure the chemical exists in the right concentration and is being effective. He also indicated that this treatment may impact native vegetation, which is undesirable, but something the agency is willing to accept in order to eradicate the hydrilla.

Keller concluded by outlining the challenges and lessons learned from Indiana's two rapid response experiences, as follows:

1. Challenge: funding
 - a. Federal – the U.S. Department of Agriculture regulates hydrilla as a federal noxious plant, however, they would not provide the state of Indiana money to manage their infestation
 - b. State – the INDNR Fish & Wildlife Fund and the Lake & River Enhancement Fund could both be used, however, will require taking money away from other established programs that receive money each year for other important management efforts
2. Lessons learned (needs):
 - a. Increase surveying and sampling effort to improve early detection of new invasions
 - b. Establish a funding “war chest” that is set aside and preserved until it is really needed
 - c. Plan a response now based on potential new invaders so a response can be implemented when the new species is discovered
 - d. Clear regulatory hurdles now (i.e., get exclusions or exemptions, or conduct the necessary impact assessments so a response can be implemented immediately)
 - e. Don't unnecessarily lighten the tool box of response options based on anticipated opposition to those actions. Instead, educate and eliminate potential opposition.
 - f. Keep the public engaged at all states of response
 - g. Designate a person in charge that is coordinating the effort s that everyone, agencies and the public, are informed

Exotic Aquatics in Ohio: Heading in All Directions at Once

John Navarro, *Ohio Department of Natural Resources – Division of Wildlife*

Navarro provided further background on ANS impacts in Ohio, which include harm to native species; economic damage; and in some cases, danger to humans. He also emphasized that human activity has played a significant role in the introduction of ANS. He described efforts the ODNR has been undertaking with regards to limiting ANS introduction via different vectors or pathways. ODNR has been working with the aquaculture and bait industries to determine species that can and cannot be raised. They have joined the national *Habitattitude*TM campaign to work with the pet industry, owners and suppliers. With regards to the shipping industry, Navarro indicated that many people in the region, including the Great Lakes Commission were working on the issue of ballast water. He also mentioned the Ohio Invasive Plant Council which has been working very effectively with the plant industry to prevent and limit the spread of ANS.

Navarro explained why ANS issues were especially important in Ohio because of links between the Great Lakes and Mississippi River basins. He indicated that the waterways were not historically connected, but human activity has broken down their natural barriers, facilitating the exchange of ANS between the basins. There are two connections in Ohio, which have received less attention than the Chicago Sanitary and Ship Canal in Illinois and have a lower potential to introduce ANS. He indicated that both are important, however, because of their connection to a large network of rivers, canals and reservoirs. Navarro went on to say that there are known to be at least 180 non-native

species in the Great Lakes and it is estimated that there is a new species introduced every 28 weeks. He emphasized that once a species has established it is almost impossible to eradicate and can be very costly to control. Navarro spoke about the impacts of the invasive fish the round goby on native sport fish populations, and the danger to humans from the Asian carp migrating up the Mississippi River towards the Great Lakes basin as they are known to jump from the water and can cause injury. He explained the millions of dollars spent on and still needed to complete an electric barrier in the Chicago Sanitary and Ship Canal to prevent the carp from migrating into Lake Michigan. Navarro used these examples to emphasize that prevention is important to avoid the high costs associated with control efforts. He indicated that the Ohio State Management Plan for invasive species focuses on three sequential areas of invasive species management: prevention, control and abatement. He said the ODNR is currently working to update the plan and would like to add a rapid response component.

Break-out Sessions

Participants were divided into four groups to brainstorm on the following question: “A reasonable, sensible, effective, and responsible Ohio Rapid Response Plan for dealing with aquatic invasive species should include...” Comments were recorded from each group and ranked in priority order by the participants. A record of all comments can be found in the Appendix following this summary.

Federal Perspective

LT. Regan Bloomshield, *U.S. Coast Guard – District 9*

LT. Bloomshield of the U.S. Coast Guard, a participant at the workshop, provided a brief impromptu report on federal activities related to rapid response and invasive species. She explained there are two primary federal funds for response and/or clean up: OPA 90 and Superfund. OPA 90, the Oil Pollution Act (OPA) of 1990, she explained, was passed largely in response to concern following the *Exxon Valdez* oil spill incident. OPA 90 improved the federal government’s ability to respond to incidents and fund clean up efforts by holding the responsible party liable for the costs associated with the containment or cleanup of the spill and any damages resulting from the spill. In addition, OPA 90 established the Oil Spill Liability Trust Fund to pay for incidents in which the responsible party cannot be identified or is unable to pay. Revenue for this fund is obtained through fees on imported and domestic oil. She explained that Superfund, a program established in 1980 to clean up uncontrolled or abandoned hazardous waste sites, also attempts to identify responsible parties and hold them liable for clean up costs. As with OPA 90, if a responsible party cannot be identified or is unable to pay, the federal government is able to clean up the Superfund site using money from a Trust Fund to which revenue from a tax on the chemical and petroleum industries is directed.

LT. Bloomshield informed workshop participants of the Coast Guard’s activities related to ballast water. She indicated that this summer is the projected date for printing and disseminating an Environmental Impact Assessment (EIA) for proposed ballast water regulations. The EIA has been underway since 2004, following the proposal of regulations in 2003. She advised the group to look for public meetings to be held this summer for receiving comments on the draft EIA. Bloomshield described the Great Lakes ballast water program which is different than the national program. She indicated that it is the strictest ballast water program in the world because there are no safety restrictions. She explained that ships are not allowed to enter the Great Lakes carrying ballast water unless that ballast water was exchanged 200 miles off shore prior to entering the lakes. If a ship does enter without making this exchange, despite any safety concerns that may have prevented them from doing so, it will have to leave to go conduct the exchange or the Coast Guard will issue a retention letter. The retention letter details the composition of the ballast water when the ship first arrives in

the Great Lakes and the Coast Guard will sample the ballast as the ship leaves the Great Lakes to verify that the composition is the same and the ship did not conduct an exchange within the basin.

Further, Lt. Bloomshield indicated that more invasive species are being found and have been found over the last few years because more people are looking for them and detection has improved. She emphasized that the upcoming EIA is a precursor to a national ballast discharge standard that will require all vessels to meet a concentration standard when discharging ballast water. She said that this standard will be stricter than the International Maritime Organization standard and vessels will be required to have treatment systems on board to meet this standard. She let participants know that all ballast water information from vessels conducting ballast operations is submitted and available to the public via the Ballast Water Information Clearinghouse. She noted, however, that Great Lakes ballast water documentation is entered by hand because different information is required and as a result, data entry is a couple months behind for the Great Lakes.

Report Out from Break-out Sessions

Each group was asked to prioritize their ideas using a ranking system and the top five ideas from each group were reported to the group and are detailed below. Once these were reported, participants were asked to identify from the list the top five priorities overall, also indicated below.

Group 1:

1. Prioritize species for response (bang for the buck, likelihood of success, feasibility and effectiveness)
2. Use a multi-pronged approach to securing funding (dedicated funding)
3. Establish and incident command system (chain of command)
4. Classify priority sites based on how ecologically pristine they are
5. Develop a strategic plan that has rapid response actions pre-approved by regulatory agencies

Group 2:

1. Identify adequate funding levels, resources available, find gaps, and determine amount of money needed
2. Continue prevention (e.g., vectors) while developing a rapid response plan (e.g., advocacy for legislation and enforcement)
3. Formalize monitoring programs including public as first level for monitoring (passive approach)
4. Establish a protocol and transparent process for rapid response plan (e.g., identify responsible authorities, professionals and potentially affected interests)
5. Build in public involvement at all levels of rapid response plan development (e.g., watershed outreach user groups)

Group 3:

1. Have "war chest" of designated funding
2. Conduct economic impact analysis
3. Ensure sufficient public and stakeholder education both before incident and during rapid response
4. Designate a full-time person at lead agency to coordinate rapid response
5. Identify a lead agency for rapid response with legislative authority to act
6. Create a government affairs arm to write, advise and testify on legislation

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Group 4:

1. Establish a framework or flow chart to help agencies walk through a problem (will include environmental and economic feasibility)
2. Have an approved set of tools that can be used for rapid response situation (i.e., chemicals, biological controls)
3. Federal and state funding must be sought before a problem arises (i.e., dedicated funding)
4. Use public information outlets to educate people about AIS (TV, radio, magazine, etc.)
5. Develop criteria to allow prioritization of which species to address

Overall:

1. Have “war chest” of designated funding
2. Establish a framework or flow chart to help agencies walk through a problem (will include environmental and economic feasibility)
3. Formalize monitoring programs including public as first level for monitoring (passive approach)
4. Continue prevention (e.g. vectors) while developing a rapid response plan (e.g. advocacy for legislation and enforcement)
5. Have an approved set of tools that can be used for rapid response situation (i.e. chemicals, biological controls)
6. Prioritize species for response (bang for the buck, likelihood of success, feasibility and effectiveness)

Wrap Up, Next Steps

John Navarro told participants that he would be reestablishing an advisory group for invasive species management and invited workshop participants to indicate their interest in joining such a group. Participants were also reminded that materials from this workshop and others conducted under the Great Lakes Commission project could be found online at: <http://www.glc.org/ans/initiatives.html>.

Appendix: Break-out Sessions

Break-out Sessions: Group 1¹

Facilitator: Frank Lichtkoppler *Recorder:*

Suggested Rapid Response Plan Components

- Target community outreach education toward local interest groups and institutions to both recruit volunteers for monitoring tasks and to delegate additional outreach activities
- Coordinate with local educational institutions to establish databases and utilize students for information management
- Educate the public to be on the lookout for potential invasions and target people who are already interested in the environment (e.g., nature center visitors) – rapid response is preceded by rapid identification
- Identify a list of professionals (e.g., botanists, zoologists) who can help in identification
- Perform ongoing journal literature searches re: effective eradication methods
- Hire a lobbyist at the Federal government level
- Involve public
- Establish an advisory committee made up of users and experts to formulate policy and action plans
- Identify potential public health impacts associated with particular AIS (i.e., how does an AIS affect water quality and does this in turn affect human health?)
- Attempt to anticipate future pathways for AIS to Ohio and design rapid response around species with the highest potential of invasion
- Assign a statewide AIS coordinator with regional associate coordinators (e.g., Lake Erie, Ohio River, Northern inland lakes, and Southern inland lakes)
- Sides of freighters with violations become billboards for AIS messages
- Enact new legislation or policy as tool if needed
- Create or identify a dedicated funding source
- Identify a list of experts to identify possible AIS
- Develop an inventory or survey program for AIS in Ohio water bodies
- Develop a response “tool kit” for potential AIS categories
- Develop “tool kit” with public and agency input
- Do not work in a vacuum; monitor what other states are doing and work in coordination with them
- Have a field accountant to observe, record and certify operations of contractors
- Identify / utilize control means: physical, chemical, and biological
- Do nothing (i.e., let nature take its course because the economic cost of slowing spread may cost more in the long run)
- Establish a watershed based database which documents species distribution, biological data collected by various agencies (OEPA, ODNR, etc.) and universities
- Establish an evaluation and assessment process to determine the feasibility of taking an effective action
- Identify a post-treatment restoration plan to implement following eradication in a local area
- Determine a formula or process to prioritize AIS threats on a cost/benefit and “likelihood of success” basis to ensure scarce resources go where they can achieve maximum benefit
- Establish an Incident Command System for all Rapid Response Plans

¹ The flip chart sheets with the group’s ideas and prioritization scores were lost. All ideas from Group 1 have been collected from the participant’s note cards. Many of these were lumped together on the flip chart papers that were lost. Many duplicate ideas were not presented to the group but are included for completeness.

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- Involve local governments and public communities that will be affected by AIS through education
- Create a mechanism for knowledgeable identification of the incident AIS
- Establish a notification procedure and chain of command
- Utilize Best Management Practices (i.e., proper ballast practices; proper pet disposal; proper stocking methods; QA/QC measures)
- Develop a strategic plan that has rapid response actions that are pre-approved EPA treatments not requiring a NEPA review and can be immediately applied to introduced or new AIS
- Upon recognition of a new species, conduct rapid elimination (cleansing) of all aquatic life to stop the invasion and spread of AIS
- Determine who facilitates the AIS “team”
- Identify which AIS should we be looking for
- Public involvement
- Present visual evidence on television of threats and the consequences of ignoring them
- Put a dollar figure on the impact of particular exotics
- Conduct close monitoring of all potential sources
- Create a cabinet post (or similar) at the state government level to speed process of response
- Identify who pays (e.g., the source, waterway users, fishermen)
- Have an overall communication plan
- Develop an education outreach plan on possible invaders and ways to prevent invasion (e.g. boat washing)
- Develop an effective public awareness system to inform the majority of the people of Ohio
- Have a core rapid response team
- Have a team of knowledgeable experts in “all” areas of aquatic invasive species
- Establish access to national database of information
- Establish a cadre of volunteer field responders
- Establish a volunteer monitoring program including training, reporting, identification and verification, target species
- Create flexibility for local or agency implementation
- Have the ability for plan to be implemented on an agency level (such as ODNR) as well as on a statewide level depending on funding, jurisdictional issues, etc. Some AIS control & eradication might best be implemented at a local level (for speed & access to funding)
- Establish a way to classify aquatic resources by the degree of protection they deserve based on factors like how ecologically pristine they are and potential negative impacts of AIS on recreation, economic uses, public water supply, etc.
- Educate all stakeholders as to the value of a rapid response to AIS and what the implication of no action would be (i.e., associate negative aspects of action balanced by the positive potential results)
- Convince public and agencies that some desirable species may need to be sacrificed to achieve eradication of particular AIS
- Utilize federal funding, state funding and have a state team ready to respond
- Disseminate public information via the radio (NPR), television, etc.
- Establish a decision making framework for AIS response that incorporates economic, feasibility, and environmental factors
- Have pre- and post- response monitoring including cost-effectiveness monitoring pre-invasion that is coordinated between agencies
- Establish stiff ballast related penalties/rewards for compliance

Break-out Sessions: Group 2

Facilitator: Fred Snyder *Recorder:*

<u>Suggested Rapid Response Plan Components</u>	<u>Score²</u>
• Identify adequate funding levels, resources available, find gaps, and determine amount of money needed	5 / 24
• Continue prevention (e.g., ballast water, other vectors) while developing a rapid response plan (e.g., advocacy for legislation and enforcement)	5 / 20
• Formalize monitoring programs including public as first level for monitoring (passive approach)	4 / 14
• Identify responsible authorities, professionals and potentially affected interests	3 / 11
• Build in public involvement at all levels of rapid response plan development (e.g., user groups: watershed outreach, recreational boating/fishing, commercial fishing, industry)	3 / 8
• Research needed to expand toolkit for rapid response management measures (e.g., integrated pest management, adaptive management)	2 / 7
• Involve other disciplines in the study of AIS	1 / 5
• Rapid response plan needs to be compatible with plans from other jurisdictions in the Great Lakes basin (e.g., Canada)	4 / 4
• Control methods should be incorporated into plan and pre-approved (e.g., Rotenone use needs green light)	1 / 3
• Long term manager monitoring after rapid response measures are implemented to gauge the success of response	2 / 2
• Rapid response plan should be easy to update	1 / 2
• Identify the most “unwanted” AIS through on consensus-based criteria that would shift the focus from non-native species that are not causing impacts	1 / 2
• Create a watch list of likely “next” invaders	1 / 2
• Hold informative public meetings as soon as a problem is identified to gain support more quickly	--
• Educate public before the problem is identified	--
• Involve politicians at a very early phase	--
• Build in public input during process of rapid response plan development (use website)	--
• External measurement of success	--
• Rapid response plan should identify what needs to be done	--
• Provide input into the understanding of research needs	--
• Integrated Pest Management (IPM) – chemical, mechanical, biological	--
• Stop ballast water discharge	--
• Spell out in plan before rapid response needed	--
• Standardized command system	--
• Establish a system for communication (e.g. website curricula, 1-800 number, outreach tools) and utilize RAP (remedial action plan) community and Canadian partners	--
• Establish protocol and transparent process for rapid response plan	--

² The “score” of each idea is indicated by the number of people voting / total score. Each person was allowed to assign one point value of 1, 2, 3, 4, or 5 to their top five ideas (a score of 5 would indicate the highest priority).

Break-out Sessions: Group 3

Facilitator: Eugene Braig *Recorder:* Erika Jensen

Suggested Rapid Response Plan Components

Score

• Have “war chest” of designated funding	8 / 35
• Conduct economic impact analysis	5 / 18
• Ensure sufficient public and stakeholder education both before incident and during rapid response	4 / 13
• Designate a full-time person at lead agency to coordinate rapid response	3 / 13
• Identify a lead agency for rapid response with legislative authority to act	3 / 8
• Create a government affairs arm to write, advise and testify on legislation	2 / 8
• Create buy-in at highest levels of government	3 / 7
• Conduct public education based on impacts to specific watershed areas (e.g., Ohio River and Lake Erie)	3 / 7
• Establish an expert panel of scientists to make determinations and decisions	2 / 7
• Get more legislators involved in problem and get more funding	2 / 7
• Immediate consultation of any affected industries	2 / 6
• Sufficient monitoring and networking to ensure rapid new introduction identification and notification of appropriate responders	3 / 5
• Cost effective means of early detection for each potential category of AIS	2 / 5
• Pre-approval of implantation measures from the different jurisdictions/agencies	2 / 5
• Clear criteria for what is an invasive species	1 / 5
• Species and geographically specific sub-plans	1 / 4
• Educate fish tournament fisherman cleaning after going to multiple launch ramps (including bait buckets and trailers)	1 / 2
• Publicize the problem (e.g., in the newspaper) and what are we fighting	1 / 2
• Establish permanent prevention measures (e.g., boating regulations)	1 / 2
• Consult and pay attention to information from local user groups	1 / 1
• Organization of interested and trained people in place to implement response	1 / 1
• Jurisdictional control (i.e., identifying who responds where)	1 / 1
• Identify a benefit-cost threshold	1 / 1
• Designate a public information officer	1 / 1
• Create a mechanism for collecting information and identification of vectors for later litigation (i.e., identifying and holding parties responsible)	1 / 1
• Hire a legal consultant (attorney) to ensure rapid response actions are legal	--
• Sensitivity to concerns about non-targeted organisms	--
• Use an integrated pest management (IPM) approach to control and management	--
• Create a “hot list” database of potential invaders with documented control methods	--
• Establish a formal education program that is both proactive and reactive	--
• Consider management and protection of spawning fish in rapid response plan development	--
• Contact local Sea Grant agents as to any invasive species located	--
• Create separate response teams for animals and plants (but in the same plan)	--
• Plans for mitigation of potential impacts of AIS and any potential impacts from response actions	--

Break-out Sessions: Group 4

Facilitator: David Kelch *Recorder:*

<u>Suggested Rapid Response Plan Components</u>	<u>Score</u>
• Establish a framework or flow chart to help agencies walk through a problem (will include environmental and economic feasibility)	6 / 26
• Have an approved set of tools that can be used for rapid response situation (i.e., chemicals, biological controls)	4 / 14
• Federal and state funding must be sought before a problem arises (i.e., dedicated funding)	3 / 14
• Use public information outlets to educate people about AIS (TV, radio, magazine, etc.)	2 / 9
• Develop criteria to allow prioritization of which species to address	4 / 8
• Target outreach and recruit volunteers from groups that are more likely to be out in the environment (e.g., hiking clubs, birding clubs, watershed groups)	4 / 7
• Implement a post-treatment restoration plan	3 / 7
• Have a cost-effective, collaborative monitoring program by all agencies, centralized individual or agency	2 / 6
• Create a cabinet post (or similar) to speed up response to AIS, especially getting funding	2 / 6
• Educate the public about AIS impacts, implications	2 / 6
• Early consultation with USFWS to determine potential impacts to endangered species.	2 / 6
• Encourage innovative research and technology to help control or eradicate AIS	2 / 5
• Establish a way to regulate shipping industry	3 / 4
• Early detection through ongoing sampling that is coordinated by a central agency or person	1 / 4
• Close monitoring of all AIS vectors	1 / 4
• Put a dollar amount on impact of AIS and create awareness of the economic impact	1 / 2
• Have an AIS awareness day where people go out and monitor water bodies (will require training, could use schools, outdoor businesses)	1 / 2
• Identify a clear chain of command or authority for specific water bodies	1 / 2
• Large national media coverage (e.g., TV programs such as 20/20, CNN, etc.)	1 / 1
• Assemble a team of experts that will be available to rapidly identify AIS	1 / 1
• Coordinate with local education institutions to establish databases and utilize students for information	1 / 1
• Create a AIS terrorist alert system (green, yellow, orange, red)	--
• Disseminate information (i.e., printed material) with purchase of bait or other fishing products	--
• Establish mandatory boat cleaning regulations where there are endangered species	--
• Create a way to regulate small recreational boating	--