

Mississippi River Basin Panel On Aquatic Nuisance Species

September 29-30, 2009
Sheraton Station Square
Pittsburgh, PA

Decisions Points and Action Items

1. MRBP and Coast Guard (CG) develop a scope of work for a project to investigate and describe the issues and risks associated with ballast water transport in barges in the Mississippi River Basin (MRB). The ANSTF needs to identify what the risk vectors are so that CG inspectors can be taught what the problems are and how best to handle them.
2. MRBP should request the Captain of the Port for the Chicago Sanitary and Shipping Canal (CSSC) to require mandatory inspection of void spaces on all commercial vessels moving upriver through the Lockport Lock and Dam and to prohibit movement of vessels carrying water other than as cargo upriver past the Electric Dispersal Barrier.
3. Contact Kim Bogenschutz if you are interested in assisting with planning for the National Invasive Species Awareness Week to be held in January 2010 in DC.
4. Contact Kim Bogenschutz if your state needs to be added to the distribution list for the AFWA Invasive Species Committee's quarterly newsletter that is sent to state agency directors to help get Invasive Species issues on their radar.
5. Submit ideas for AFWA multi-state grant program National Conservation Needs (NCN) for AIS issues to Kim Bogenschutz.
6. MRBP can inform AFWA, via AFWA's Invasive Species Committee, if there are specific AIS legislative or policy issues that the panel is specifically interested in seeing moved forward.
7. The panel approved the proposed changes to the membership section of the by-laws with a requested amendment to make the wording more consistent.
8. An outline for the model Rapid Response Plan will be sent out to MRBP members along with a request for information to develop the different sections of the plan. MRBP should send information to Greg Conover. Greg will compile the information provided by MRBP members into a draft document and distribute for comment. The target completion date for the plan is prior to the spring ANSTF meeting.
9. MRBP members should submit comments on the first draft of MICRA's action plan for AIS in the Mississippi River Basin to Greg Conover. Panel members may also want to inform their fish chiefs of their support for MICRA's development of an action plan for the MRB.
10. MRBP members should consider providing comments on the Coast Guard's proposed ballast water discharge standards. MRBP members may also want to contact their fish chiefs about the panel's desire for MICRA to also provide comments as ballast water transport and hull fouling are issues that are of direct interest to the MRB states.
11. The next MRBP meeting was scheduled for April 20-21, 2010 in Nashville, TN.

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Meeting Notes

1. **Welcome and Introductions**

Jason Goeckler welcomed the [meeting attendees](#). A final meeting [agenda](#) and [member updates](#) were distributed.

2. **Host presentation: ANS issues in Pennsylvania**

Sarah Whitney, Pennsylvania (PA) Sea Grant, provided an overview of AIS issues in PA. Sarah chairs Pennsylvania's Aquatic Invasive Species Work Group. Topics discussed include PA's Invasive Species Council; regulated species; zebra and quagga mussel monitoring program; Didymo; water chestnut removal; biosecurity measures for PA Fish and Boat Commission (PAFBC) operations, facilities, and equipment; AIS outreach; and an upcoming rapid response mock exercise.

Discussion:

You mentioned purple loosestrife is on PA's state noxious weed list. How do you enforce that?

PAFBC has asked how they should decide which species to go after first? How do we know when to take action and what resources to direct to which species? Nurseries are prohibited from selling species on noxious weed list, but not aware of much action being taken otherwise. The state is struggling with enforcement and will likely need to have some legislation tweaked so that agencies will have the authority to enforce regulations and to eradicate populations.

How big are the signs that you have at water accesses and have you had requests for larger signs yet?

The state is using 18" x 24" signs.

MN started with 18" x 24" signs, but everyone requested larger and brighter signs.

Money was the limiting factor in the size and color (two colors) of the signs designed for use in PA. Costs had to be minimized to purchase the number of signs needed for use throughout the state.

3. [Zebra mussel control](#)

Sarahann Dow, Marrone Bio Innovations, is the invasive mussel product manager for the development of Zequanox, an environmentally and applicator friendly invasive mussel control strategy. Sarahann provided an overview of Zequanox including product development and evaluation; ecotoxicology; field pilot and demonstration projects; and regulatory status. Keith Pitts, vice-president of regulatory and government affairs for Marrone Bio Innovations, was present to help with regulatory questions regarding the product.

Discussion:

Would this product be regulated under FIFRA?

Yes, the biopesticide pollution prevention division. There are NPDS permitting uncertainties with pesticides in general. It will be regulated under FIFRA if approved for use prior to signing of NPDS permitting decision.

Will there be label restrictions applied to that product?

Yes the pesticide label will have restrictions including ppm. Current treatment being investigated is a single 6 hour treatment.

Would there need to be additional environmental compliance under NEPA?

BOR would need to comply with NEPA requirements. As for overall pesticide regulation, the EPA decision would be sufficient for a NEPA review as well.

How well does the product stay in suspension? Does it need to be used in flowing water?

Current formulation is only for flowing water system. There is potential for development of a formulation for standing/open water treatment.

What sites are you asking for registration for? Not so much what you use it on, but where it can be used?

The label package submitted is broad, but mostly focuses on clearing pipes for conveyances of water. Not necessarily for open water (stream) applications. The label is currently written for up 200 ppm for 6 hours, but more work is needed for formulation in open water treatments. Marrone is interested in partnering with agencies to investigate how the product could be used in open water locations.

4. [Aquatic Vegetation Early Detection Technique Comparisons](#)

Christopher Jerde, Notre Dame University, presented an overview and preliminary results of a project led by Lindsay Chadderton. The emphasis of the project, and the Notre Dame lab in general, is surveillance: where, when, and how often to look to

increase detection probabilities. *Hydrilla* was detected in Lake Manitou, Indiana in 2006. This study was designed to help IN test and refine aquatic invasive plant surveillance methods, complete *Hydrilla* delimitation surveys to compliment Indiana response efforts, inventory other aquatic invasive plants, and to record presence of dreissenid mussels and mystery snails. The Notre Dame lab is interested in using the results to design risk-based surveillance methods.

Discussion:

Are you saying that snorkeling near public water accesses with two snorkelers is comparable to lake wide rake surveys? And how many sampling locations in the lake for rake surveys?

Yes. Two person crews use 40-100 rake tosses depending on the size of the lake. Researchers wanted to look at this from the perspective of where do invasions occur in a lake. Used snorkeling near the boat ramps since it is most likely where plants are introduced. Wind can move things around and establishment can occur in other locations. The snorkeling methods used would miss establishment in these other locations. The methods could be modified to include locations away from the boat ramp and would likely detect plants that are widely distributed. To detect rare events throughout the lake it is an effort game; broad coverage will be needed to find plants that are newly established. But the researchers believe that most plants are introduced near boat ramps.

Did you say that rake surveys picked up fewer species than snorkelers?

Yes. Snorkelers picked up more species than rake tosses at the boat ramps. Snorkelers will do better than rake tosses within the same vicinity. Rake tosses are effective for getting broad coverage of a lake. Some plants are more susceptible to collection by rake toss than others, it just depends on plant physiology. Rake tosses can be an effective tool for detecting *Hydrilla*. Snorkel surveys provide quick broad coverage and can be helpful if you are trying to classify the spread of invasive species across an area.

For a lake association wanting to do lake tosses, would having volunteers collecting plants and taking them to an expert to identify be an effective means of detection?

Yes. If you can get just one volunteer who is actively collecting plants and looking for changes in a lake, that would be more effective than an occasional survey by a snorkel crew. However, many lakes don't have associations or volunteers that are watching them.

5. [Fitness loss due to desiccation of aquatic invasive plants](#)

Matt Barnes, graduate student at Notre Dame University, presented the results of his research on desiccation and survival of invasive plants. He specifically looked at 3 species of invasive plants that can spread by means of vegetative reproduction: Eurasian watermilfoil, Brazilian waterweed, and green cabomba. The objectives of

his research were to evaluate 1) the extent of water loss that plant fragments experience when transported from one lake to another, and 2) how does that water loss affect the establishment of the plant once it is reintroduced to a water body. The results of this research could help to design more strategic boat inspection and cleaning protocols; prioritizing species that are more capable of surviving overland transport and thus present greater risks; and could help to identify potential source populations when a new detection occurs.

Discussion:

Do you have data for *Hydrilla*?

No, Indiana did not want the researchers to work with *Hydrilla*. Notre Dame is currently talking with USACE – ERDC about the possibility of conducting similar research on *Hydrilla* at their facility in Mississippi.

How does the box fan relate to actual driving wind speed?

Researchers used a wind speed monitor to measure wind speed behind a vehicle. Wind speed was measured at 15-20 mph around the trailer hitch, which was comparable to wind speed measured from the box fan.

What temperature and humidity were used during the study?

The research was completed in a solarium on top of the biology building on Notre Dame University. The room was air conditioned and data loggers recorded temperatures ranging from 20-25° C. Humidity was not controlled but ranged from 20-25% on average, with some spikes.

Did *Egeria* dry slower than milfoil?

No, desiccation rates were similar. *Egeria* had much lower survival even after only 1 hour of drying time than Eurasian watermilfoil. Researchers have been expanding this work to additional species. Northern milfoil appears to have much faster desiccation and lower survival rates than any of the other plants reported.

6. [US Coast Guard barge tow ballast water transport](#)

LCDR Brian Moore, USCG, spoke about the potential transport of water by tow boats and barges on river systems. The Coast Guard's (CG) presence on the river system is pretty limited and the CG has no authority to inspect many of the vessels on the river. New regulations for uninspected towing vessels are near completion and there may be some opportunity to collect data on tug boat ballast in a couple of years, once the new regulations are in place. However, the volume of vessels on the river is the barges that remain unregulated.

Tugs and Barges have potential to transport water from Brownsville, TX to Chicago, IL but the CG is not authorized to routinely look at all of these vessels. And further,

many of the ones the CG is authorized to look at are enrolled in “Alternative Compliance Programs” which can reduce CG personnel visits to once in 5 years. LCDR Moore’s experience as a vessel inspector is that many barges have leaks in the void space compartments (i.e., ballast tanks). There is also great potential for river water to splash on decks of loaded barges, leak into these void spaces, and to be transported great distances. It is common to find water in these compartments and LCDR Moore has found organisms such as snakes and full grown fish in these void spaces. The panel’s concern appears well founded, but unfortunately there is nothing on CG reports that includes data on ballast water. Even casualty reports do not include information on ballast. Basically there are no data available to characterize the problem. In addition to leaking void spaces, many barges are open topped and can collect rain water. Is there a risk in transported rain water? The panel needs to determine what water is a problem and what water is not a problem. Once the Panel (or ANSTF) have characterized the risk in moving water around, CG inspectors can be taught what the problems are and how best to handle them.

Another potential problem is abandoned barges that may contain water taken on board in a different part of the river system. CG standard procedure is to hire a salvage crew to cut these abandoned barges up and dispose of the metal. Is there a potential problem if the salvage contractor pumps water out of the abandoned barges prior to disposal?

There is a need for data to get a handle on what the problem is, but the CG does not have the authority to gather the data. What are potential options we can use as a group for gathering the needed data? For example, could we engage the USACE to conduct random surveys when vessels are locking? Barge companies state that they do not ballast. But there are low bridges that vessels have to ballast under. The companies can use air driven pumps on deck to pump water on and off. Under certain conditions, vessels are also easier to control when there is less freeboard. However, CG ballast water regulations exempt vessels that are not equipped with ballast systems. This is a regulatory definition not a practical definition that allows barge companies to declare that they do not ballast. Are there any other ideas on ways to gather data or fund data gathering? Changes to the CG casualty reporting form could be requested, but this is an OMB form that has to go all the way to the Executive Office for changes to be approved. This may not be very likely, and the casualty reports are completed by the mariners themselves whose company policy are likely that they do not use ballast. Another option is to appeal to the barge companies themselves to self-report, but this would likely not be of interest to the barge companies. Regardless, data are needed to understand the risks.

Discussion:

Graduate students may be an option for cheap labor and a neutral party to collect data. A cooperative project among multiple universities, state resource agencies and CG units could be very helpful. The panel can recommend research projects and provided some limited funding on occasion. Maybe the panel could work with CG to develop a scope of work.

Will vessel operators/barge owners be open to survey?

It is likely that they would work with CG and USACE personnel, but not sure about others who may be working on an agency's behalf. It might be possible to use CG Auxiliaries (CGA) or have surveys conducted as a CG or USACE sponsored project.

Missouri is working with CGA on boater surveys at Missouri reservoirs as part of their public service and education programs. There may be some potential to work with CGAs to assess risk of inland barges and tows.

CG has an office of recreational boating safety that works with manufactures to design safe boats. Until very recently, the CG's focus has been solely on personal safety rather than environmental protection and AIS. The CG has started working on ways to reduce/eliminate potential water storage and transfer spaces/mechanisms.

What can we do to avoid transport of water specifically around the CSSC electronic barrier?

The local Captain of the Port does have the ability to implement specific measures. The panel could make a request for mandatory inspection of void spaces on all commercial vessels locking in the area. There is a lock immediately downstream of the barrier that may be a good point for such a requirement. Vessels found with such water could be required to de-water or treat prior to entering the CSSC.

Barges are worked hard and are often left in fleeting areas where they beat and bang against each other. The bottom line is that barges often have cracks and potential to take on water. They also have a lot of reserve buoyancy, so if one or even several void space compartments have taken on water the vessels can remain operational so operators either may not know of the water carried or disregard the water as they can still operate the barge as needed for commercial purposes.

Does CG have the authority to enforce restrictions on movement of barges that do have water in the void spaces?

Yes, CG has ballast water management regulations and statute under NISA and NANPCA to take enforcement action.

The CG is involved in design of recreational vehicles. Has the CG been involved with trailer design for recreational vehicles? MN has been concerned about the increased potential of different trailer types (i.e., padded bunks vs. rollers) for spreading nuisance aquatic vegetation.

No, and doubt that DOT does either.

Notre Dame University has looked a little at survival of crushed plants and has never had a crushed plant survive.

There is concern about plants that are crushed for short periods when boats are transported to a near-by lake. There is also usually part of the plant that does not get crushed and may have higher survival.

7. **Proposed rulemaking for a Ballast Water Discharge Standard**

LCDR Moore, USCG, provided an overview of the CG's proposed rulemaking for ballast water quality discharge standards. NISA and NANPCA provide the authorities for CG to develop the proposed rule making. CG originally proposed reductions by percentages, but is now moving to a water quality discharge standard. Discharge standards have been in the works since 2002. There are a number of problems with developing and enforcing a discharge standard. For example, how many organisms present a risk? This is very difficult to address from a regulatory perspective. NISA directs CG to implement a program that is practical and effective. The standards are written in two phases to make them more practical to implement. The first phase adopts a discharge standard that is equal to the international standard found in the IMO BWMC. Using international standards also helps to make the standards more practical. Congress has stipulated a few exemptions from the standards. One statutory exemption is for vessels engaged in coastwise trade carrying oil from the Trans Alaska Pipeline. Further the CG has exempted (by policy) vessels that operate exclusively within one Captain of the Port Zone, however in some cases like in Alaska, these zones can range tremendously in size and area.

The CG initiated the Shipboard Technology Evaluation Program (STEP) in 2004. Seven treatment systems have been installed on ships and are in use for sterilizing ballast water. Chemical and physical treatments are currently being evaluated.

Discussion:

What was rational for using 1000x imo?

The 1000x IMO standard proposed as the Phase Two level is inclusive of the standards which have been adopted by states that desired more stringent standards. The practicality of implementing such a standard will have to be studied prior to the CG adopting it. For now, the IMO equivalent standard is believed to be one that can be implemented quickly and with some level of confidence that the CG can verify that it is being met. Models suggest that a less stringent (but enforceable) standard implemented sooner would prevent more introductions over the long-term than a more stringent standard implemented at a later date.

8. **Minnesota statewide AIS plan overview**

Jay Rendall discussed the finalization of MN's state invasive species management plan. Development of the MN plan was led by an invasive species council

comprised of approximately 30 different members. The MN plan is a single plan for terrestrial and aquatic invasive organisms. The single plan provides a common structure, framework, and language for each of the agencies mandated to develop invasive species management plans for the state. The plan includes four basic elements: prevention; early detection, rapid response, and containment; management of invasive species; and leadership and coordination. The plan includes a number of strategies and recommendations for each of the four elements. Next steps for completing the plan will be to develop the implementation tables that identifies who will do what. The implementation tables will be put into a database for any agency or organization interested in implementing part of the plan. The idea is to be able to query the database to see who is doing what work, who is interested in doing specific work, and how much money is needed for identified work. The unique nature of this plan is that it is everybody's plan; it is a statewide plan and not just a DNR plan.

MN has had an ANS program up and running for a number of years. The state currently has a \$4 million dollar budget for the ANS program and is accomplishing a lot. Even with such a large program the MN public doesn't think that the program is doing enough because of the recent spread of some AIS in the state. However, the public has not identified anything new that the state is not already doing.

Discussion:

How are the logistics of the database handled?

People filled out paper versions at the workshop, but that did not work well. May try to use an excel spreadsheet that different partners can complete and return.

9. AFWA Update

Kim Bogenschutz, vice-chair of the Association of Fish and Wildlife Agencies (AFWA) Invasive Species Committee, provided an update and highlights of the committee's recent meeting held two weeks ago in Austin, TX. AFWA coordinates actions among the state departments of natural resources and related management agencies. AFWA is unique in that the organization can lobby and be involved in legislative and policy issues. The Invasive Species Committee addresses both terrestrial and aquatic invasive species.

- AFWA has been involved with the National Weed Awareness Week in the past. The event focused on invasive weeds during previous years, but this year it is being expanded to include invasive species as a whole and is being called National Invasive Species Awareness Week. Janet Clark with the Center for Invasive Plant Management in Montana is coordinating the event along with the Weed Science Society of America and numerous other agencies. The event will be held over four days in January in Washington DC. The website for the event is: www.nisaw.org. There are 3 focus areas for the event: climate change, energy and biofuels, and the green economy. The event is intended to build more of a grassroots effort nationwide, and to influence congressional representatives and executive level agency staff by

making them more aware of Invasive Species issues. A plenary committee is working on speakers and developing issue papers for each of the focus areas. State participation is desired. Please let Kim know if you are interested in assisting with planning.

- AFWA has commented on the ballast water proposed rulemaking.
- AFWA commented on the Non-native Wildlife Invasion Prevention Act. Larry Riley provided AFWA testimony during a congressional hearing in April. The pet industry, aquaculture industry, and others have expressed concerns. There has not been much action on the proposed legislation. AFWA has now developed its own task team to look at that proposed legislation and the Lacey Act to identify some alternative approaches to prevent new species from being introduced.
- When the Clean Boating Act was passed it exempted recreational boats from permitting, but called for BMPs. EPA and CG are involved in developing BMPs. EPA has requested AFWA participation to help identify what states are doing to prevent spread of AIS. This is a three year process that you may want to pay attention to.
- NPDES permits will be required within two years for pesticides. This will affect many states and their treatment of invasive plants and fish.
- Biofuels are a growing issue. Many of the characters that make organisms invasive, also make them attractive as potential biofuels. The Council on Sustainable Biofuel Production is developing practices for sustainable biofuels, including not allowing invasive species or limiting their use to very controlled environments. The practices are available for review at: <http://www.csbp.org>. Algae are of particular interest as potential biofuels.
- AFWA Invasive Species Committee has a quarterly newsletter with updates from states. The newsletters go directly to state agency directors to help get Invasive Species issues on their radar. Please let Kim know if your state needs to be added to the distribution list.
- Each year AFWA has a multi-state grant program. Each committee is allowed to submit one National Conservation Need (NCN). The NCNs go to the AFWA governing body that selects up to seven for funding each year. The beginning of the Stop Aquatic Hitchhikers program was previously funded as an NCN. The Invasive Species Committee is looking for new NCNs to propose for funding by February. Project must apply to at least 26 states. Directors look favorably on projects that link back to hunters and anglers. Examples of proposed ideas for new NCNs include electronic tracking of boat movement to/from lakes, and biofuels and invasive species. Kim requested that other ideas be submitted to her.
- Larry Riley is the AFWA representative for the Genetics Biocontrol Symposium. Larry will be representing the state perspective and may be contacting states on this issue.

Discussion:

Does the AFWA Invasive Species committee need anything from the MRBP? Are there any things we can do?

In addition to the specific items Kim has already requested, the Panel can provide AFWA with legislative/policy interests that they would like to see AFWA move forward on.

10. **Coordinator's report**

Greg Conover provided a [handout](#) and presented an update on MRBP finances and projects. FY08 funding has been received. FY09 funding has been obligated and FWS has been invoiced. FWS funding is current and on track.

Three of eight projects funded with FY08 funds are complete. An update on Leah Sharpe's [DSS project](#) was provided. Several thousand *Hydrilla* and Brazilian elodea WATCH cards are still available, contact Greg if you want additional WATCH cards.

FY09 funds were obligated for the [Tripliod Grass Carp Program Review](#), ANS boater surveys in Wisconsin and Missouri, and the [Genetics Biocontrol Symposium](#). FY09 funds were also used to provide travel support for panel meetings.

The Executive Committee developed a [proposal](#) that was submitted to NOAA for funding to develop a model Rapid Response Plan for the Mississippi River Basin. That project was funded. The panel will need to complete that plan by June 2010. The Executive Committee goal is to have a draft plan to present to the ANSTF at their spring meeting. There will be more discussion on the Rapid Response Plan tomorrow.

Discussion:

It is great to see so many projects. Compliments to the panel ExCom and all that are working on the various projects.

The panel has started using funds to provide travel support to attend MRBP meetings, which takes away from the available project funds. This may get worse given state budgets and travel restrictions.

11. **Chairman's report**

Jason Goeckler provided updates on the MRBP Executive Committee's activities, and gave an overview of the panel's previous meeting in San Antonio. A handout of the [action items](#) from the San Antonio meeting was provided.

ANSTF meeting:

Doug Keller presented the following MRBP recommendations at the ANSTF spring meeting:

- 1) requested links to the experts database from ANSTF member agency websites for greater visibility;
- 2) ANSTF provide ANS information and BMP's to the barge industry;

- 3) Funding and implementation of the Asian Carp Management and Control Plan;
- 4) FWS assist with funding of an independent scientific review of the FWS Triploid Grass Carp Inspection and Certification Program;

The following action items resulted from the panel's recommendations:

- 1) Susan Mangin will follow-up with the federal agencies to add links from their respective web sites to the experts database;
- 2) CG will evaluate the recommendation regarding barge industry transport and BMPs;
- 3) FWS will be developing an implementation committee and explore funding for the plan;
- 4) FWS will explore funding for the TGC program review. MRBP is working with the ANSTF to get participation from all panels so that this is a national project and not just an MRBP project.

The Panel Principals met prior to the ANSTF meeting to discuss issues and develop collective recommendations for the ANSTF. The principals agreed to a single recommendation regarding the need for increased panel funding and outlined the panels' needs to accomplish the panels' mandated mission. The recommendation was presented to the ANSTF by Doug Keller and Jim Grazio, Great Lakes Regional Panel Chair.

The ANSTF discussed the issue. Due to timing of federal budget cycles, the regional panels were asked to identify funding needs prior to fall ANSTF meetings so that the federal agencies can work funding needs into budget development. Panel members, working through their parent agencies, need to work with people who develop federal budget to build support for AIS funding.

ANSTF Executive Secretary will work with Regional Panels on this issue and requested each of the panels identify their specific funding needs prior to the fall ANSTF meeting, i.e. what work will be completed at the current level of funding; what work is needed but will not be completed; and how much funding is necessary to complete the remaining work? The MRBP committees will be tasked with identifying current and long-term funding needs later this afternoon. The ANSTF will use this information to build funding needs into different budget initiatives as possible (e.g., climate change). The FWS also requested the other federal ANSTF members contribute to the administrative support of the ANSTF.

Discussion:

Was there any discussion about the other ANSTF committees?

The only committee that reported action was the Non-native Wildlife Screening Working Group that reviewed the MRBP's proposed screening process. The review resulted in minimal comments and changes. The revised screening process is posted on the MRBP web site.

Other committees are scheduled to report at the fall ANSTF meeting.

Gary Frazier who was the FWS co-chair to the ANSTF, he has been reassigned and Bryan Arroyo is the new Assistant Director for FWS Branch of Fisheries and Habitat Conservation. Bryan will now serve as the FWS co-chair to the ANSTF.

Has a NOAA co-chair been appointed yet?

Don't believe so. Susan may have sent out an email with an appointment.

Doug Keller gave the [paylakes presentation](#) (presented by Duane Chapman at the MRBP San Antonio meeting) to the ANSTF. The ANSTF discussed the vector and recommended that since the issue is one that would likely be addressed by state regulations, the panel should bring the issue to AFWA's attention.

The MRBP was requested to host the spring ANSTF 2012 meeting.

MICRA update:

Jason gave the paylakes presentation to the MICRA Executive Board. MICRA recommended that the issue be brought to AFWA.

Consistent grass carp regulations were also recommended for discussion at the next AFWA meeting.

Discussion:

Many AFWA committee meetings have been shortened from 4 hours to 2 hours and there is not a lot of time for discussion of issues. It would be most effective to work with the AFWA committee liaisons so that they can send information out to the committee members.

12. Membership changes

Jason Goeckler led a discussion regarding proposed changes to the membership section of the MRBP Operational Guidance. The proposed changes and notice of vote were e-mailed to the full membership for review prior to the meeting. Handouts summarizing the [proposed changes](#), the [original membership section](#), and the [revised membership section](#) were provided.

The proposed changes are intended to bring membership into agreement with participation over the last several years. A few new positions were created and a few inactive positions were removed. The Regional Representatives were reduced to a single MICRA representative.

As currently written, the by-laws do not identify the number of At-large positions or a term of service for these positions. The revisions set a limit of 8 At-large members and establish a 4-year term of service for these positions.

Some additional wording was taken from the Great Lakes Regional Panel's Operational Guidance to make the membership section of the two panels more consistent.

Discussion:

The wording in the proposed changes inconsistently identifies the number of representatives in each of the "regular membership" categories. A recommendation was made to change the wording so that each category first states how many total representatives there are, then identifies each of the agencies or organizations that are to be represented. This would allow someone to quickly know the total number of representatives in each category.

Jay Rendall motioned that the proposed changes, with the recommended amendment to make the wording more consistent, be approved. The motion was seconded by Mike Hoff. There was no further discussion. MRBP members in attendance approved the proposed changes, as amended, with 15 votes in favor, 0 opposed, and 0 abstained.

13. [Environmental DNA surveillance tool](#)

Christopher Jerde, Notre Dame University, gave a presentation on environmental DNA surveillance of bighead and silver carps in the Chicago Sanitary and Ship Canal (CSSC). This idea of using DNA as a surveillance tool started about a year ago after Lindsay Chatterton posed the question 'Do you think if we put a Koi in a bucket we could filter some of the water and be able to tell it was there?' The idea really took off this past March when researchers went with the USACE and collected water samples from the Illinois River near Morris, Illinois, where Asian carp are thought to be moderately abundant. Silver carp were successfully detected in 500 mL water samples.

Results of eDNA surveillance work in the CSSC were presented. Prior to this work, the furthest upriver bighead and silver carps have been detected by standard fisheries sampling techniques is the Dresden Island Pool, two pools below the electric dispersal barrier. Environmental DNA has detected silver carp in the Lockport Pool immediately below the electric barrier and in the Des Plaines River approximately 8 miles upstream of the electric barrier. To date, there have been no positive detections of silver carp in the CSSC above the electric barrier. No bighead carp samples have been analyzed to date.

Similar markers have been developed for sturgeon species and snakehead. In addition to its utility as a surveillance tool, eDNA may also be a useful tool to evaluate success of control/eradication efforts.

Discussion:

What costs are associated with this technique?

Supply costs are approximately \$35 per water sample for DNA extraction and PCR amplification. Not included in this cost are the infrastructure costs; centrifuges and PCR machines are the most expensive pieces of equipment. Majority of the cost will be man power; a good lab technician is critical.

How much water was taken for the samples?

2 L water samples are used.

Do you take larger samples?

Different sample sizes (20L, 2L, and 15mL) were evaluated in the Dresden Island Pool. Paired 2L samples have matched very well with 20L samples when the fish are moderately abundant. 20L works well where the fish are relatively rare.

Have you considered potential sources that may move carp DNA other than the fish themselves. For example, *E. coli* can be spread in bird feces.

Yes, we also considered the possibility of ballast water in barges moving eDNA upriver. These are reasons for focusing on repeatability, and so far the results have been repeated from multiple sampling trips. Preliminary results of DNA degradation suggests the DNA cannot be detected after about 48 hours. A whole dead fish would inject large amounts of DNA and could yield repeated positive results.

Do you have any idea of quantification? The results showed a gradient between the pools, but could the positive results in the Des Plaines River be from a single fish?

The tool is effective for presence/absence, but it is not set-up to measure abundance. Water samples would need to be taken in conjunction with rotenone samples to begin to evaluate the tools usefulness for estimating abundance. There are likely few fish in the Des Plaines River, but this tool is more sensitive than traditional sampling techniques.

Is there any talk about what would trigger an increase in the voltage of the barrier?

The voltage has been increased from 1volt/inch to 2 volts/inch. The barrier advisory panel believes the 2 volts/inch is adequate to prevent Asian carp from moving through the barrier.

14. **Status of Asian Carp Rapid Response Planning in the Illinois River**

Bill Bolen (USEPA), Steve Shults (IL DNR), and Sam Finney (USFWS) discussed the status of rapid response planning for Asian carp in the Illinois River as a result of the work just presented on eDNA surveillance monitoring. With the new information on the distribution of Asian carp, efforts have shifted from developing a rapid response plan over the next 6 months to having the plan completed within the next 6 weeks. A set of proposals was developed for state and federal agencies to consider. In addition to the carp being at the electric barrier, the fish are moving up two adjacent waterways. The COE is determining what they can do to stop the movement of Asian carp from the Des Plaines to the CSSC during a high water event, but right now they are informing partner agencies that they can study the issue but have no authorization or appropriations to address the issue. The USEPA considers the Asian carp threat to the Great Lakes its highest priority. GLRI is potentially putting \$400+ million into Great Lakes Restoration. That funding is considered at risk if Asian carp get into the Great Lakes.

In addition to the Des Plaines River, Asian carp are moving into the I&M Canal. Fish cannot move up the I&M Canal and bypass the barrier during dry conditions, but can easily do so during wet conditions because there are culverts that connect the I&M with the CSSC above the electric barrier.

Rapid Response Plan has been broken into 4 geographic areas and secondary measures:

- 1) above the barrier to the Lockport Lock and Dam – cost estimated >\$700,000
- 2) Des Plaines River – specifically 5 backwater locations
- 3) Catastrophic scenario – Asian carp detected past the barrier
- 4) I&M canal – looking at engineering solutions
- 5) Secondary measures

Shults described the consensus recommendations proposed to state and federal agencies by the rapid response working group of the Dispersal Barrier Advisory Panel.

- 1) The primary concern is backwater locations on the Des Plaines River. Several backwaters look to be ideal habitat for Asian carp and are in the location where the Des Plaines floods overland into the CSSC. eDNA surveillance will be used to look for Asian carp in these locations. If carp are detected, localized rotenone actions are planned to confirm presence of the fish and to get some idea of abundance. This is planned within the next 2-3 weeks.
- 2) The secondary area of concern is just upstream of the barrier to the Lockport Lock and Dam. Barrier II will need to be shut-down for maintenance by November. A rotenone treatment is planned for that section of the canal (~6 miles) prior to the barrier being turned off (by mid-November). The Lockport Lock will be drained and kept dry until the maintenance on Barrier II is complete. The USACE will need to perform maintenance 8-9 months following the scheduled maintenance this fall. The group is planning on Barrier IIB being

constructed and operational before maintenance on Barrier IIA is needed again. Operation of Barrier IIB is critical to the rapid response plan. Illinois has stated that a rotenone action is a one time only tool.

EPA and FWS were tasked to fully vet NPDES, FIFRA, and NEPA in anticipation of this rotenone action. This has been completed all the way through the agencies and the state has been informed that they can use the chemical according to its labeled directions.

- 3) Secondary barriers (SPA/BAFF) have been recommended in the Des Plaines River just downstream of the CSSC and immediately below Barrier IIA.
- 4) Engineering options are being looked at for the I&M Canal.

Discussion:

If you set up a series of barriers and get fish between the barriers, the fish could have unpredictable behavior.

The treatment in the CSSC starts above the barriers to kill all fish in the Lockport Pool so there should be no fish trapped between barriers. The SPA/BAFF recommended for the Des Plaines River would divert fish into the I&M Canal (once it has been physically separated) and allow fish to be captured to reduce propagule pressure in the Brandon Road Pool.

Are there any agencies involved that are not 110% behind this or that do not realize the importance of the planned actions?

There is at least one agency involved that does not support the use of rotenone to kill fish. There is a wide array of professional opinions, ranging from the Clean Water Act does not allow us to use rotenone to kill fish to others who have recommended that the whole 15 miles of Des Plaines River below the Hoffman Dam be killed out with rotenone. What we have to do is balance biology and policy, balance resource management with available funding and collateral damage. We have to make a balanced approach.

Is there going to be a net put up at the base of the electric barrier to see what is killed above the barrier? This would also serve as another deterrent to keep the fish from moving upriver when Barrier IIA is taken off line.

It would be difficult to effectively deploy a net near the barrier that would completely block fish movement. If the net were efficient the state would not be using rotenone.

Is there any chance of putting a SPA/BAFF system in before the rotenone treatment?

No. These systems are about \$1 million each and take months for construction and installation.

The projected cost for the canal proper alone is more than \$700,000. A rotenone order could not be filled by the proposed action date in mid-November. Therefore Illinois has requested chemical from other states ([handout](#)). Several Great Lakes states and one Canadian province have committed resources.

How much rotenone do you need?

In the range of 4,000 – 5,000 gallons of liquid rotenone.

What is the plan for the Des Plaines River?

Right now we are just planning on localized rotenone sampling, but nothing is off the table depending on the results.

15. **Committee Meetings**

Each committee chair provided an overview of what their respective committee will be addressing during the breakout session. The group was reminded that the committees are tasked with developing a 2010 work plan and identifying their full funding needs (short- and long-term). The remainder of the day was spent working in committee breakout sessions.

16. **Committee Reports**

Each Committee Chair reported out on the previous day's breakout meeting. Committee meeting notes and 2010 Workplans are included in [Attachment 1](#).

Research and Risk Assessment Report – Duane Chapman

The group primarily focused on identifying highest priority funding needs for the committee.

Very short-term needs:

- Host a symposium at the 2010 AFS meeting in Pittsburgh on commercial navigation as a vector for the transport of AIS in MRB and the Great Lakes. Travel support for invited speakers is needed. (\$3,000)
- Host a symposium at another professional meeting (e.g., ICAIS) on AIS effects on water quality. Experts in water quality effects tend to be overseas. (\$8,000)

Short-term needs:

- Support the genetics biocontrol symposium (\$10,000)
- Automated system for updating the Experts Database (\$10,000)
- Development of a dataset for use with the MRBP screening framework (\$85,000)
- Risk assessment on barge traffic including a study of bilge water and internal transport of water in barges (\$125,000)
- Risk assessment on fee fishing and paylakes. Commercial fish haulers (“jobbers”) are a large information gap that need addressed. (25,000 - \$50,000)

Long-term needs:

- Development of a rapid and accurate screening tool for presence of AIS in live bait trade or fish hauling operations. A water sample can be collected and analyzed on sight for presence of multiple AIS.
- Development of novel integrated control mechanisms for AIS and models to support their use and evaluation. (\$500,000)
- Support research to determine the socio-economic effects of invasive species, including direct and indirect effects.
- Develop criteria that distinguish between range expansions caused by climate change and nuisance invasion. (\$100,000)
- Wild bait industry basin-wide risk assessment. (\$125,000)
- Continue to identify and prioritize AIS issues including new invaders, unaddressed vectors, pathways, and potential control methods.

Outreach and Education Report – Steve Schainost

Review of previous work plan projects:

- Field Guide to ANS – final editing. Projected completion date is March 2010.
- ANS Boater Surveys – 5 surveys completed to date. WI and MO were selected for 2009. PA and MN have requested funds for 2010. CO has requested funds to analyze data collected from 100th Meridian surveys completed in 3 previous years. This project has not been funded by MRBP.
- Continue contact with NGO's (e.g., Wildlife Forever and B.A.S.S.). Activity of the groups within a state seems to determine how active the state reps are.
- Water garden outreach – targeting materials for consumers and retailers. Posters and DVDs with guidelines for handling materials. Poll states and develop a list of priority species.
- Asian carp marketing to enhance control via commercial harvest. Poll states to see if this is a priority for the panel and determine if the panel should be involved with marketing these fish.
- LSU, IL/IN Sea Grant, and Duane Chapman developed a video on how to clean and prepare Asian carp.
- The committee began working on strategic planning for the committee in 2004 but was never completed. The committee will work on this in conjunction with the revamping of the MRBP web page.

Funding needs:

- Construct bill boards along major interstate highways to convey information on AIS to travelers. NGO's such as Wildlife Forever could be helpful partners. 1 billboard/per state/per year (\$50,000)
- Water garden outreach material production (\$25,000). New materials will be needed approximately every 3 years.
- Outreach material production for outdoor sport shows. Nomadic displays, lawn banners, acrylic blocks with AIS species, etc. – 1 set/state (\$150,000)
- Consumable outreach materials (e.g., punch out airplanes, temporary tattoos, coloring books) – (\$50,000/yr)

The identified funding needs total \$225,000 in year-1 and \$125,000 - \$150,000 annually thereafter.

Discussion:

Has anybody tried or seen aquatic plants displayed in acrylic blocks?

It might be possible to plasticize them.

You might want to check with Sam Chan with Oregon Sea Grant. He has done a lot with acrylic, but not sure if he has tried aquatic plants.

How do they preserve plants for museum exhibits? It might be necessary to make models. It might be useful to contact a natural history museum.

Prevention and Control Report – Steve Shults

GLRI: The committee discussed the potential for overlap with some Great Lakes efforts resulting from the Great Lakes Restoration Initiative. This could be an exceptional opportunity for MRB states that are also in the Great Lakes Basin.

Rapid Response: Identified the need for additional training, specifically recommended a workshop to develop an institutional arrangements framework.

Grass carp: The grass carp program review is moving forward. A steering committee is developing a Scope of Work. All ExCom members are participating on the steering committee. The committee also discussed the Great Lakes Fishery Commission's (GLFC) position paper that opposes the use of grass carp. The MRBP project is not contrary to the GLFC position. The national Asian carp management plan recommends the safest approach is to not use grass carp, but recommends that if used, grass carp be limited to triploids only. MRBP effort is an attempt to strengthen and increase confidence in the triploid program.

Dry hydrants: Jason Goeckler has recently done some work on this issue and volunteered to take the lead in moving this issue forward.

Great Lakes and MRB invasive species exchange: The committee recommends the MRBP develop an issue paper in support of permanent ecologic and/or hydrologic separation of the Mississippi River and Great Lakes basins. The Alliance for the Great Lakes has published a paper on this and the COE was authorized and funded to conduct a feasibility study on separating the two basins.

Prevention and Control Committee Chair vacant: Steve Shults stepped down as committee chair to serve as MRBP co-chair. A new committee chair is needed.

Funding Needs:

- Annual rapid response prep including workshop, training, development of MOUs, travel support, invasive species threat assessment, and pathway and vector identification (\$80,000)
- Revolving rapid response fund for travel support, operations, logistics, and supplies (\$1 M)
- Grass carp program review (\$250,000)
- Ranking system for species prioritized for full risk assessment (\$10,000)
- Risk assessment for priorities species and vectors (\$100,000/yr)
- Basin-wide early detection and monitoring program, including eDNA monitoring (\$240,000)
- Certification and annual review of laboratories conducting eDNA monitoring
- Primer development for eDNA monitoring of priority species
- Funding to implement priority recommendations in the Asian carp management and control plan
- Travel support for annual meetings
- Additional ANS/boater surveys
- Consultant to develop and maintain a new MRBP web site

17. [Tilapia eradication efforts in Louisiana](#)

Mark McElroy, LA DWF, discussed a “delayed rapid response” effort to eradicate tilapia from an area near Port Sulphur, LA. The tilapia were confidentially reported to LA DFW through a third party. The fish were confirmed in a pond via electrofishing in October 2008. The agency had developed containment plans for aquaculture facilities years prior and was concerned that required containment measures had failed. It was later determined that the fish were intentionally stocked into a private pond and had not escaped from an aquaculture facility. The agency first decided to see if the fish would die off over the winter due to cold water temperatures. When they returned in the spring the fish had survived and spread to the nearby marsh. Mark described the agency’s efforts to implement a successful eradication effort to prevent the tilapia from spreading further.

Discussion:

Coming from an emergency response background, it is good to see that you used the ICS approach.

The Incident Action Plan was downloaded from the Internet and was very useful.

The total project cost so far is well over \$1 million. The treatment area was approximately 7.5 miles. In addition to the cost of chemicals, there were considerable costs for logistic and sampling.

Giant salvinia, pictured on the last slide, is a water garden plant that is sold in many states. Foliar application does not work well because you miss much of the plant that is below the water surface and doesn’t transport through the water well.

Galleon is effective but costs \$1,851/gallon. Giant salvinia is a fern and likes to be around water. In LA, the plant is all through the Red and Atchafalaya rivers and is all the way to the gulf. Control efforts are costing LA a fortune and the state is losing the battle. Over \$1 million in chemical was put in this lake alone last year and the plant went from 4,500 to 9,000 surface acres. The state has to do massive drawdowns each year for control, which upsets the boating and fishing public.

18. **Rapid Response Plan**

Greg Conover reported that the MRBP Executive Committee submitted a funding proposal to NOAA for the development of a [model Rapid Response Plan](#) for AIS in the Mississippi River Basin. The proposal has been funded by NOAA. The MRBP Executive Committee discussed a couple of approaches for completion of the plan: the panel could use the funding to hire a contractor, or the panel could request MICRA to allow the coordinator to use additional time with the panel to complete this project. The MICRA Executive Board agreed to allow Conover to assist the panel on this project.

Conover presented a draft outline for the plan that he developed with assistance from Mike Hoff. Once the panel agrees to an outline for the plan, Conover will compile information to be provided by MRBP members into a draft document. The hope is that minimal new writing will be required, but rather information can be pulled from a number of existing documents and resources. Conover will work with the Executive Committee to address comments and revise the draft as necessary.

The document is intended to be a brief readable document with detailed actions provided in appendices. The plan will eventually have an appendix for fish, plants, and invertebrates, but the panel is only obligated to develop the body of the plan and the fish appendix by the end of the project period in June 2010. The Executive Committee's goal is to have the plan completed in time for it to be presented at the spring ANSTF meeting next May.

Discussion:

The reason there are different appendices for fish, plants, and invertebrates is that there will very likely be different chemicals and standard operating procedures based on what the rapid response options are.

Do you anticipate that this will go beyond eradication? For example, if eradication is not possible would containment be included.

The decision as to what the appropriate action should be would likely be part of the decision tree. It may also be addressed under the adaptive management section.

Is this plan intended to compliment state rapid response plans?

The model plan is intended to assist states that have not already developed a rapid response plan. The model plan provides a template for rapid development of a specific plan.

It may be possible to use the fish component for a number of different fish since the chemical and procedures will remain unchanged, but how do you foresee a generic plan that would be useful for plants that have a wide array of herbicides for treatment.

The details of the different modules have not been worked out. Development of the modules will depend on input and involvement of the panel members. This is also a reason why the proposal only included the fish component. It may be necessary to hold workshops for development of the plant or invertebrate components.

CG does a lot of ICS training. Much of the value of ICS training is to meet the people that you would be doing ICS work with. Contact the Captain of the Port for whatever state you're in and ask when their next training is scheduled. The training is available for free. There are a lot of experienced people in the CG who use ICS for responding to incidents.

Minnesota developed a response plan for the introduction of non-native fish in inland waters many years ago. The plan is relatively simple but includes a process and decision tree. This might be useful.

The fish appendix could mostly be the rotenone use manual and the antimycin analog. Those documents would compose the fish appendix almost in its entirety, whereas the plant appendix may provide more of a framework with one chemical as an example but not necessarily the full sweet of options.

Rotenone is being re-registered. Will this result in a new rotenone use manual?

Not sure. The existing manual can be used for now and replaced if a new manual is developed.

What is the timeframe for developing the plan?

The project period ends in June 2010, but the Executive Committee would like to have the plan completed in time to present to the spring ANSTF meeting in May.

An announcement and call for information will be sent to all MRBP members soon.

19. [Action plan for Mississippi River Basin](#)

Mike Hoff provided background and a summary of the first draft of MICRA's [action plan](#) for AIS in the Mississippi River Basin that was sent out to panel members for

review the week prior. The Great Lakes Regional Collaboration strategic action plan served as a model for the development of MICRA's draft action plan.

The idea of an action plan for the Mississippi River Basin (MRB) was discussed during the most recent MICRA Executive Board meeting and the board requested that a draft action plan be developed with input from the MRBP as MICRA's AIS committee. The draft action plan was sent out to the MRBP with a deadline for comments in late October. Comments will be addressed in a revision, and the revision will be presented to the MICRA Executive Board at their winter meeting this January.

An action plan for the MRB would likely included components for multiple issues and AIS would be just one component. Other components may also be developed for habitat and native species action plans, but for now the board wants to see the AIS component to get an idea of what an action plan for the MRB would look like.

The desire is to develop a readable plan with budget figures related to priorities. The draft action plan includes 2 goals and 5 recommendations. The plan needs to clearly articulate the highest priority items. Please submit comments on the draft action plan to Greg Conover. The desire is to have a short marketable product for congressional staff and decision makers; the marketing of the plan will be crucial.

Discussion:

Are the MICRA leaders all behind this or is a sales job needed by MRBP members?

There will likely be some marketing of MICRA leadership needed. MICRA has a new chair that will need to be briefed. Mike will be presenting the draft action plan to the MICRA Executive Board in January.

How much money did the Great Lakes plan include for state management plans?

The plan originally identified \$8 million for state management plans and the funding was actually increased to more than \$10 million. OMB was very supportive of moving more money to the states.

We need to be careful what we ask for since there may be a 25% match requirement.

Not sure how it will come out, but the Great Lakes request was submitted with a zero match.

The second goal is really 3 separate goals that are somewhat conflicting. They may need to be separated. For example, stopping spread can be different than control.

There are many notable successes of the Sea Lamprey Control Program, but the Program may not be the best example for IPM. It is ok if looked at from a very broad framework, not necessarily as a model for the approach.

The Federal proposed ballast water regulation is out for comment. Is MICRA considering submitting comments?

This is an issue that MICRA should be interested in, as it is not only a Great Lakes or coastal issue. States also need to comment individually. This is a great opportunity that exists right now to influence proposed regulation. MRBP members may want to contact their fish chiefs about the group's desire for MICRA support on this issue. Ballast water transport and hull fouling are issues that are of direct interest to the MRB states. The comment period for the proposed regulations closes end of November.

20. **2010 Work Plan Development**

Jason Goeckler led a discussion on MRBP funding needs for FY2010 and beyond. Each of the committees presented their identified funding needs this morning. The group discussed ideas based on the discussions, presentations, and committee meetings held over the last 1-1/2 days. The committee reports will be used to develop the 2010 workplan, the group was tasked with identifying those needs that will not be met by 2010 funding. Following is a list of identified needs:

- Acrylic exhibits for rusty crayfish
- Centers for AIS control research and development (fish toxicants, micromatrix, eDNA, integrated pest management, etc.)
- Travel support for one member from every state to attend 2 meetings/year
- Letters of importance and support for state member participation
- Revolving rapid response fund
- Full-time funded coordinator for the panel
- Grant program for priority needs of members
- Facilitated annual training of field personnel on HACCP, ANS early detection, rapid response, etc.
- Regional/national boat certification or alert system
- Professional public relations assistance for panels and ANSTF

21. **Public comment period**

There were no public comments.

22. **Next meeting**

The next MRBP meeting was scheduled for April 20-21, 2010 in Nashville, TN.

Attachment 1 – Technical Committee Meeting Notes and 2010 Work Plans

Outreach and Education Committee

Attendees

Andy Burgess, SD
Jay Rendell, MN
Steve Schainost, NE, Chair

Funding Needs

The Committee identified projected work that could be completed if additional funding were available.

1. Development of a network of billboards throughout the basin. These would be placed on major north-south and east-west travel corridors. As they traveled, the public would be alerted to the changes in the AIS concerns of various states. The billboards would be up during the main summer travel season and renewed annually with new messages and art. Here is where we would tap into the resources of Wildlife Forever. Being free of state bureaucracies, they can move more quickly in developing the billboards and getting them installed. We just need to funnel them the money. Based on an basin-wide average of one per state for three months per year and \$500-700 per month rent for each one, we would need \$50,000 per year.
2. Water gardener outreach. We need to do a poll of the states for their thoughts and ideas on this topic. One objective of the poll will be suggestions for outreach materials for the retailer and for the consumer. Not knowing what these might be at this time, we think we could use \$25,000 per year to produce materials.
3. Production of items that can be used by member states to get out the message at sport shows, kids environmental education events, etc. This project can be divided into two categories:
 - Short-term: production of display materials. These are items that can be used to set up a stand-alone or attention-getting display. This can include lawn banners, portable stand-up displays, acrylic blocks with sample AIS species, and fiberglass fishes. One full set would be produced for each state and the projected one-time cost would be \$150,000.
 - Long-term: production of consumables. These are hand-out materials that need to be restocked regularly, many of which would be targeted to kids. These might include punch-out boats (light cardboard sheets pre-punched with a fold-and-lock boat carrying the AIS message), temporary tattoos, cards, brochures, water bottles, yo-yos, ad infinitum. Budget request of \$50,000 per year.

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Outreach and Education Committee - 2010 Work Plan

Activity	Milestones	Deliverables	Funding Request
"Field Guide to Aquatic Nuisance (Invasive) Species"	1 Mar 2010	Print and distribute	\$18,000
ANS and Boater surveys	Next meeting	State survey results	Up to \$5,000 per state, two states per year
CO compilation of 100 th Meridian boater surveys	Next meeting	Report	Up to \$5,000
Wildlife Forever and B.A.S.S.	Next meeting	Continue contacts and see if how we can work together.	None at this time
Water Garden outreach	Next meeting	Poll MRBP states for their ideas	None
Asian carp marketing	Next meeting	Poll MRBP states for their ideas	None

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Prevention and Control Committee

Attendees

Steve Shults, IL DNR, Chair
Kim Bogenschutz, IA DNR
Tim Banek, MO DOC
Sam Finney, USFWS
Bill Bolen, USEPA
Kathy Burda, USDA
Frank J., WV DNR
Doug Keller, IN DNR
John Navarro, OH DNR
Jason Goeckler, KS DWP
Greg Conover, USFWS

Work-Plan Accomplishments

- Finalize Statement of Need Letter to ANSTF - completed
- ICS Rapid Response Exercise - completed
- Develop RFP for Triploid Grass Carp Inspection Program External Review - completed
- Develop a ranking system for prioritizing species needing detailed risk assessment – in process.
- Support early detection monitoring for Asian carps near the dispersal barrier in the upper Illinois Waterway – in process.
- Identify barriers to rapid response efforts – in process – funding request to ANSTF for FY 10
- Develop guidance on dry hydrants to prevent the spread of AIS – in process.

On-going Projects

- ICS Rapid Response Exercise follow-up:
 - MRBP has secured NOAA funding to develop an ICS-based model rapid response plan for the Mississippi River Basin. More discussion during the general session tomorrow.
- Triploid Grass Carp Inspection Program External Review:
 - Sam Finney has taken the lead on this project. The RFP has been finalized. A multi-stakeholder steering committee has been organized and will discuss next steps for the review. All MRBP Executive Committee members are on the steering committee. Progress has been slow, but continues under Sam's leadership.
- Species Ranking System for Detailed Risk Assessment:
 - Jennifer Holman previously volunteered to lead this project at the February 2009 meeting, but she is no longer working as the AIS Coordinator for Onieda County. The project does not have a lead once again. This project has been on the committee's work plan for a couple of years. If no one is willing to lead

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the project, we may want to consider contracting this project. It is an important compliment to the Model Rapid Risk Assessment process that Mike Hoff has developed.

- Guidance / Policy recommendation for risk management associated with dry hydrants and related vectors.
 - Jennifer Holman previously volunteered to lead this project at the February 2009 meeting, but she is no longer working as the AIS Coordinator for Onieda County. A new lead is needed for this project also. Jason Goeckler has recently worked on this topic in Kansas. Jason (was) volunteered to take the lead on this project.

New Items

- New Prevention and Control Committee Chair needed.
 - Steve Shults has stepped up to serve as the MRBP First-Year Co-Chair and is stepping down as Chair for the Prevention and Control Committee following this meeting. A new chair is needed but was not identified. The committee chair will be vacant following the meeting.
- “Identify methods to interrupt pathways of ANS introduction into MRB identified by the Research and Risk Assessment Committee.”
 - Committee members agreed on the need to write an issue-paper on hydrologic separation between Mississippi River and Great Lakes basins. Information on the advantages and disadvantages is needed for panel members that are not familiar with the issue.

Funding Needs

1. Annual Rapid Response Preparation - \$80,000
 - Workshops
 - Regular training exercises
 - Develop MOU's
 - Travel support for participation
 - Invasives threat assessment
 - Pathway/vector identification
2. Revolving Rapid Response fund for MRB states - \$1M
 - Travel support
 - Operations and logistics
 - Materials/supplies
3. Grass carp review - \$250,000
4. Develop a ranking a system to prioritize species for full risk assessment - \$10,000 (FY10)
5. Risk assessments for priority species and vectors (up to 5/yr) - \$100,000

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6. Early detection / monitoring - \$400,000
 - Aquatic vegetation early detection monitoring programs - \$240,000
 - Basinwide eDNA monitoring for priority species - \$100,000
 - Certification and annual review of laboratories conducting eDNA monitoring - \$20,000
 - Primer development for priority species - \$40,000

7. Asian Carp Management and Control - ?
 - Implement highest priority recommendations in the ANSTF plan – committee is making progress on recommendations for the triploid grass carp program review and needs to review the document to select additional recommendations to begin implementing.

8. Other needs for full panel –
 - Regular meetings
 - Travel support for members to attend panel meetings and functions
 - Additional ANS Boater Surveys
 - Website development/management
 - Full-time dedicated coordinator

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Prevention and Control Committee - 2010 Work Plan

Activity	Description	Deliverables	Funding Needed
Develop a ranking system for prioritizing species needing detailed risk assessment	The MRBP previously developed a risk assessment screening tool to determine which species warrant a detailed risk assessment. As a next step in the process, a systematic approach is needed to prioritize species for which detailed risk assessments are needed.	Model tool to prioritize species needing detailed risk assessment.	\$10,000
Support early detection monitoring for Asian carps near the dispersal barrier in the upper Illinois Waterway	Support multi-agency surveillance efforts of Asian carps near the dispersal barrier in the upper Illinois Waterway by providing sonic transmitters.	Increased numbers of bighead and silver carps monitored for movements near the barrier resulting in more effective early detection monitoring to prevent the spread of Asian carps into the Great Lakes.	None in FY2010
Identify barriers to rapid response efforts	Build from the ICS mock rapid response exercise to identify barriers to rapid response efforts and make recommendations for agency cooperation and coordination.	Identification of needs and recommended actions to improve agencies abilities to plan and execute rapid response actions in a timely manner.	None in FY2010
Develop guidance on dry hydrants to prevent the spread of AIS	Invite Oneida County (WI) Land and Water Conservation District AIS Coordinator to attend the MRBP annual meeting and discuss the risk of spreading AIS associated with dry hydrants.	Increase MRBP members understanding of risks associated with dry hydrants, and identify next steps to address risks.	None in FY2010

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Research and Risk Assessment Committee

Attendees

Duane Chapman, USGS, Chair
Brian Moore, USCG -5224, STEP manager, 2100 2cd street SW STOP 7126,
Washington, D.C. 20593 brian.e.moore@uscg.mil
Peter Sorensen, Univ. of MN, soren003@umn.edu
Christopher Jerde, Univ. of Notre Dame cjerde@nd.edu
Charles Lester, USCG, Charles.e.lester@uscg.mil
Sue Thompson, Pennsylvania, suethomps@state.pa.us
Brian Wagner Arkansas bkwagner@agfc.state.ar.us

Roles and Responsibilities

Committee briefly discussed roles and responsibilities of committee, as provided on handout. Chair requested that members take the roles and responsibilities and provide comments, suggest changes, for discussion via email.

River Barges as Vectors

At the June 2008 meeting the committee identified a data gap in regard to barge traffic (including tows) bilge and ballast water on the Mississippi River. The risk of commercial traffic on the Mississippi River and between the Mississippi River and the Great Lakes as vector for aquatic nuisance species is largely unknown. Member(s) of barge association (American Waterways Operators) and Coast Guard personnel were invited to talk at Feb and September MRBP meetings, to share knowledge about barges and tows and the potential for transport of ANS. Coast Guard has provide three speakers on this topic, two at the Feb 2009 meeting and one (Brian Moore) at the Sept. 2009 meeting. This vector does seem to have substantial probability to be a vector of ANS, both through external hull fouling and through waters transported in void spaces (not really ballast, in barges). To bring the important actors in this arena together, and to enhance the visibility of this issue, the Committee has requested funding (\$2000) for travel support for presenters at a symposium to be held at the American Fisheries Society meeting in Pittsburgh in 2010. The committee has also requested that the Corps act with high priority to disallow the upstream movement of damaged barges through the electronic barrier in the Chicago Ship and Sanitary Canal, because of the risk that young Asian carp might be moved through the barrier through this vector. The Corps is investigating this vector and recently has emailed the committee chair for information regarding Asian carp and the potential for upstream transport through the barrier. It seems likely that some action will be taken, but the form of the action is not known.

Experts Database

In mid-2008, effort made to update database to correct it for people that have changed positions. At the Sept. 2009 meeting we determined that it is time again to repeat the process. Because this annual activity is time-consuming and it is difficult to account for non-responses, the committee determined that it would be valuable to investigate the possibility for some improvements to the database. These include: 1. automated

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annual notification to Tier 1 and 2 experts requesting that they update their information in the ANS experts database. 2. Include email bounce notification, so that people with incorrect contact information are known and can be removed or contacted through other means and notified to modify their entries. 3. Allow people to update their own information once on the list, rather than going through the research committee chair. 4. Add facility for experts to add links to their publications and websites.

Risk Assessment Framework/Screening Tool:

At the June 2008 meeting, a joint GLP MRBP subcommittee for development of a Risk Assessment Framework was formed. Mike Hoff, Lindsay Chadderton (TNC), Christina Donnelly (GLP, Great Lake Commission) were subcommittee members. The framework has been completed and may be found on the MRBA website. There remains a need for a database with information on invasive organisms that can be rapidly plugged into this framework.

Wild-caught Bait, Live Food, Pay Lakes:

These were identified as substantial important data gaps in 2008. There has been no substantial committee action on aquatic organisms shipped live as human food or the wild bait issue, but committee chair researched the paylake issue and provided a report to MRBP and the report was also provided to the ANSTF and MICRA by the MRBP president. Committee Chair determined that there is no organization of paylake operators and that the range of business models is extreme. Chair surveyed the National Association of State Aquaculture Coordinators and MRBP representatives regarding paylake operations in different states. Findings were that regulations and number of warmwater paylakes differed dramatically between states, with Kentucky and Ohio having the most paylakes in the MRB region. Some states require disease-free certification on all fish brought in. Most states have no regulations specifically concerning paylakes. Illinois and Kentucky have a licensing system, but some pay lakes operate unlicensed. Kentucky reported providing ANS outreach materials to pay lake operators and clients. This has been identified as a substantial potential vector for ANS, and some cases of Asian carp transport into paylakes far from existing ranges of Asian carps were identified. There is a need to collate information on wild bait harvest and shipping routes. Also, information needed on how different states monitor or regulate the sale of live aquatic food organisms. Information needed on warmwater pay lakes. Cold water paylakes use almost entirely cultured rainbow trout which are closely monitored for disease issues and not co-cultured with other species and so are likely to pose less risk than warmwater pay lakes. Warmwater pay lakes use cultured fish and wild-caught fish. Both are sometimes transported long distances. Transport of wild fish is thought to have a higher degree of risk than aquaculture fish. There is need to collate information on how different states manage and regulate paylakes, how pay lakes are operated, where their fish come from, what happens to the fish after being captured, and the possibility of escape from paylakes. There is a need to collaborate with Great Lakes and east coast and gulf panels on the paylake issue, because there is substantial overlap and fish are transported between these regions, in all directions. Committee Chair developed a PowerPoint presentation on these issues and offered the

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presentation at February meeting. MRBP co-chairs later offered the presentation at the ANSTF meeting and the MICRA meeting.

In late July 2009, Committee Chair contacted HDR, Inc. (formerly Fish-Pro) and requested an estimate of expenses for development of a risk assessment related on paylake-related activities. In September 2009 HDR provided two estimates on potential risk assessment/evaluations that could be performed. EXCOM determined that the lower level assessment (~12,000 dollars) would not provide useful information, and that the higher level assessment (~25,000) would provide most needs, but would not address some needed information, especially that related to fish transporters.

Genetics and control of exotics symposium

Ten thousand dollars remains in the budget for support of symposium on genetics and control of exotics. Anne Kapuscinski is in charge. The symposium date is now tentatively set for May 2010.

ANS and water quality

At the September 2009 meeting, the committee recognized ANS affects on water quality as an under-investigated and poorly understood, but important, factor. Asian carps, common carp, zebra mussels, and nuisance aquatic vegetation all have substantial and often highly undesirable effects on water quality, both directly and indirectly. Water quality effects resulting from species invasions can have human health effects and often effect fisheries and general environmental health. The committee requested funding for a symposium to be held with an as-yet-undetermined professional society meeting that would focus on water quality effects of ANS in fresh water, including enough money to bring international speakers (\$8000).

Research needs

At the 2009 September meeting, the committee discussed priority needs that MRBP and the committee should support. Funding requirements were loosely estimated for these needs.

Very short term:

1. Support a symposium at AFS 2010 on “Commercial Navigation Transfer of ANS within Freshwater Systems” including presentation on barges within the Mississippi River basin, and potential for transport of carp or other ANS upstream through CSSC barrier. Could also address movement within Great Lakes. \$3000 for travel support for invited speakers.
2. Support a symposium at a scientific society (perhaps ICAIS) on “Invasive Species Effects on Water Quality in Freshwater”. \$8000 – includes travel support for invited speakers, some international.

Short term:

1. Support symposium on genetic control of ANS (10K, already obligated)

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2. Support triploid grass carp review – dollar amount required uncertain. Prevention and Control Committee taking the lead on this issue; R&RA committee also supports this as a very high priority.
3. Implement automated annual notification to update ANS experts database info. Should include email bounce notification, to remove people with incorrect contact information. Allow people to update their own information once on the list. Add facility for links to experts' publications and websites. 10K
4. Develop dataset to provide data for insertion into Risk Assessment/Risk Management Framework. Should be global in nature, because organisms invade from global sources. One option is to support the Global Register of Invasive Species. The Invasive Species Specialist Group is looking for ~85 thousand to complete the GRIS.
5. Risk assessment for barge traffic, including study on bilge water and external transport of materials on barges within the Mississippi River Basin. Suggest 125K for risk assessment, including support of a doctoral candidate. Study should identify potential methods to manage risk.
6. Risk assessment for fee-fishing lakes – 50K
7. Study of operations of live fish transporters – fish transported for fee fishing lakes, cultured fish including diploid and triploid grass carp, bait fish and live food trade fish, including but not limited to bighead carp, and including bighead carp transported live for sale freshly dead. Are these the same people? Do they transport more than one of these at a time? How do their operations affect risk of transport and escape/release of ANS? 50K

Long term:

1. Development of rapid accurate screening tool for presence of invasives in live bait trade and fish hauling operations. 125K
2. Development of viable integrated control mechanisms and models to support them. 500K to be used over several projects, matching funding
3. Support research that determines the socioeconomic effects of invasive species. Include direct and indirect effects – 100K
4. Make criteria for distinguishing between range extensions due to global warming and nuisance invasions 100K
5. Wild bait industry basin-wide risk assessment 125K
6. Continue to identify and prioritize ANS issues (including new invaders, unaddressed vectors, and pathways, potential control methods) that require attention in the basin. No new dollars.

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Research and Risk Assessment Committee - 2010 Work Plan

Activity	Description	Deliverables	Funding Needed
River Barges	Support symposium at 2010 annual meeting of the American Fisheries Society on commercial navigation as a vector within freshwater. Approach Introduced Fish Section of AFS for potential co-sponsorship.	Symposium	\$2500 for travel support
Experts Database	Investigate potential for improvements to experts database, including automation of update requests, and ability to add links or other information	Database support	None in FY2010
Paylakes	Contact other panels, other potential funding sources for risk assessment for paylake-associated activities.	Decision as to whether to move forward with risk assessment or other product	None in FY2010
International Symposium on Genetic Biocontrol of Invasive Fish	Provide financial support to help ensure the symposium is held in June 2010.	Symposium held in 2010 to provide an Increased level of understanding among MRBP and other AIS managers regarding emerging technologies and their potential use to control AIS	\$10,000
ANS and Water Quality	Support symposium on effects of ANS on water quality at a professional society meeting in calendar 2010	Symposium	\$8000