

# Mississippi River Basin Panel Coordination Meeting Minutes

October 5-7, 2021

[Zoom Meeting](#)

## Full List of Attendees (63)

- Voting/alternates (27): Amy McGovern, Andrew Stump, Chris Steffen, Cole Harty, Dave Armstrong, Dennis Riecke, Duane Chapman, Eric Fischer, Heidi Wolf, Jimmy Barnett, Josh Leonard, Katie Zipfel, Kim Bogenschutz, Kristopher Stahr, Luci Cook-Hildreth, Micheal Hoff, Mindy Barnett, Monica McGarrity, Rob Bourgeois, Tanner Davis, Doug Keller, Eugene Braig, Greg Hitzroth, Jason Euchner, Jessica Morris, Patrick Kocovsky, and Tim Campbell.
- Non-voting (15): Amanda Huegelmann, Amy Commens-Carson, Amy Kretlow, Ceci Weibert, Darrell Bowman, Doug Jensen, Emily Maung-Douglass, Emily Pherigo, Jessica Howell, Jon Amberg, Katie Schrag, Matt Neilson, Neal Jackson, Rebecca Neeley, and Sarah LeSage.
- Guest/unknown (18): Earl Chilton, Evan Boone, Grace Loppnow, Guoqing Lu, Hugh Britten, Jacoby Carter, Josh Tompkins, Kayla Kimmel, Kirk Steffensen, Michael Sovic, Robert Stroess, Sebastian Mejia, Stephen Spear, Tait Ronningen, Chris Larson, Seth Herbst, and Reed (?).
- Administrative support (2): Liz Tanner and Andrew Schneyer
- Coordinator (1): Greg Conover

## Action Items Summary

- Ceci W- email Great Lakes Panel (GLP) "Priority established species list" to Greg Conover
- Have each committee discuss "Most Troublesome ANS" further. Solicit members who would like to be involved
- Have Executive Committee deliberate on "Most Troublesome Aquatic Nuisance Species (ANS)" further
- Discuss Silver Carp genetics project during the Research and Risk Assessment Committee Meeting.
- Have administrative support person help with the Silver Carp Genetics project

## Outreach and Education (OE) Committee Action Items

- Review contact information in black carp handout and make sure ID guide is sufficient (committee members)
- Send watermarked ECOSTAR materials to the OE committee (Greg C, Mike H)
- Contact Mike H if you are interested in operationalizing ECOSTAR in your state
- Discuss Live Bait Study more at a later OE meeting, possibly with Meg
- Discuss decision making process for priority projects via email
- Discuss committee goals and strategic planning process via email

## Research and Risk Assessment (RRA) Committee Action Items

- Coordinate with Guoqing and Steve on Silver Carp Genetics sample locations list (Duane C)
- Once Silver Carp Genetics sample locations have been decided, admin support will solicit volunteers and communicate with them (Andrew Schneyer)
- Remove ANS expert's database from responsibilities list (Duane C.)

#### Prevention and Control (PC) Committee Action Items

- Place Live Bait Pathway Study Factsheet to website (Jimmy/Mindy)
- Reach out to Montana and Virginia for injurious state law information (Darrell B., Greg C., Jimmy B.)
- Create a usable form of the Injurious state laws list for communication (Cole H., Jimmy B.)
- Share strategic plan document with membership (place on Google Drive), compile feedback and work on revisions (Andrew Schneyer, Dennis R)
- Create a definition of 'most troublesome' or 'highest priority' (Amy K. and Greg C.)
- Review MRBP website and submit comments to Greg C (committee membership)
- Create an email draft to send to states requesting information on priority pathogens (Katie S. and Mindy B.)
- Send priority pathogen email to states and track responses (Andrew Schneyer)
- Work with Kim B. to get more clarification on the 'Standardization for evaluation of ANS barriers' on work plan (Dennis R. and Cole H.)

#### Recommendations Summary

- Recommendation to the Executive Committee: create an "Most Troublesome ANS" Ad Hoc Committee, create a charge, suggest recruitment (all three committees)
- Recommend to Aquatic Nuisance Species Task Force (ANSTF) to discontinue or alter the ANS expert's database. If ANSTF would like to keep it, the committee recommends that they be responsible for updates (RRA Committee)
- Recommend the executive committee discuss need and interest in a multi-panel project to develop a standardized ANS boater survey with the panel principals (PC Committee)

## **Session 1: October 5, 2021**

10:00am - 12:00pm Central

### **Attendees (45)**

- Voting/alternates (24): Amy McGovern, Andrew Stump, Chris Steffen, Cole Harty, Dave Armstrong, Dennis Riecke, Duane Chapman, Eric Fischer, Heidi Wolf, Jimmy Barnett, Katie Zipfel, Kim Bogenschutz, Kristopher Stahr, Luci Cook-Hildreth, Mindy Barnett, Monica McGarrity, Rob Bourgeois, Tanner Davis, Eugene Braig, Greg Hitzroth, Jason Euchner, Jessica Morris, Patrick Kocovsky, and Tim Campbell.
- Non-voting (11): Amanda Huegelmann, Amy Commens-Carson, Amy Kretlow, Ceci Weibert, Emily Pherigo, Jessica Howell, Katie Schrag, Matt Neilson, Neal Jackson, Rebecca Neeley, and Sarah LeSage.
- Guest/unknown (8): Earl Chilton, Evan Boone, Jacoby Carter, Josh Tompkins, Sebastian Mejia, Stephen Spear, Seth Herbst, and Reed (?).
- Administrative support (1): Liz Tanner
- Coordinator (1): Greg Conover

### **10:00 Welcome and introductions (Eugene Braig, MRBP 2nd-term co-chair)**

Welcome to everyone, especially new state coordinators.

Attendees requested to type introductions into the Zoom chat feature. Phone participants were introduced.

Agenda revisions.

### **10:15 Apple snail presentation (Jacoby Carter, USGS)**

Presentation (provided separately to meeting participants)

- Introduced to US through the pet trade.
- Easy to detect due to bright pink egg masses.
- Invasive issue globally. Displace native fauna and destroy aquatic habitats
  - Wide environmental tolerances in subtropical systems
  - Huge reproductive potential with well-defended eggs
  - Generalist aquatic herbivores
- Control methods
  - Biological- Many potential native predators. Possibility for them to reach a predator/prey balance but native systems may be permanently altered by then.
  - Chemical- Currently approved molluscicides are broad spectrum biocides. More selective molluscicides have not been approved.
  - Physical- egg mass removal, egg mass spraying.
  - Regulations- vary by state.
  - Water hyacinth helps apple snails by providing egg laying habitat, a cover for hatchlings, and a dispersal vector. Effective control includes water hyacinth control.
  - No good control methods

Discussion

- It is fatal to the eggs if they are knocked into the water. However, if you try to raise the water level to inundate them, the snails will just lay the eggs higher.

- Monica M (Zoom chat): Per a TX applesnail expert/researcher, it's only fatal to knock them off into the water if they're freshly laid. If they're close to hatching (egg clusters pale), they may survive inundation.
- Snails lay eggs as late as mid-January, though it depends on the weather.
- Dennis R (Zoom chat)- niclosamide will kill fish so it is only used in catfish fingerling ponds when you want to kill everything
- Rebecca N (Zoom chat)- The USGS has done a lot of work with niclosamide and toxicity testing. She offered to connect with Jacoby separately on this.
- Toxicity of snails to other species: toxicity kills mice and rats. Anything adapted to eating things whole probably have stomach acid adapted to handle the toxins

### **10:45 European frogbit presentation (Sebastian Mejia, OH DNR)**

#### Presentation (Appendix A)

- Frogbit persists on the surface of water and competes with other floating leaf plants.
- Primarily asexual reproduction (turions). Dispersed through wildlife, boats and natural flow. Prefers shallow, slow-moving waters.
- Mechanical control (pulling) is most effective.
- Chemical control using contact herbicide and no surfactant was not successful. Systemic herbicide with surfactant is likely needed which will likely have non-target impacts.
- Notable publications:
  - [USDA Weed Risk Assessment \(2017\)](#)
  - [USFWS Eco Risk Screening \(2019\)](#)
  - [A revision of the genus hydrocharis](#)
  - [The biology of Canadian Weeds](#)
  - [European frogbit: a technical review](#)
  - [Invasive European frogbit in North America](#)
- A summary of state regulations can be found in the presentation (Appendix A)

#### Discussion

- The depth that European frogbit can grow is temperature dependent. Prefers warm water. The deepest Sebastian has seen it grow is 1m.
- There is a native frogbit species in North America but it is a southern species that looks different and is not as prolific.

### **11:15 Project updates (Liz Tanner, MRBP administrative support)**

#### Southern Illinois University (SIU) Microchemistry Project (FY2019 funded project)

- Background: Assess water chemistry of rivers and tributaries in the MRB, focusing on rivers where limited or no water chemistry data are available. This project is designed to fill knowledge gaps and produce an open source data set to help determine fish origin waters using otoliths.
- Progress:
  - Spring 2021- solicited volunteers to collect water microchemistry samples
  - Volunteers collected two sets of samples from each site. Thank you to everyone who volunteered to collect samples.
  - As of Sept 27<sup>th</sup>, Greg W. has received 99/108 samples and has sent UPS shipping labels to the remaining collectors.

- Next Steps:
  - Analyze samples- Nov 2021
  - Make data accessible through an online open-access database- Jan 2022
  - Submit final report to MRBP- Feb 2022

#### ECOSTAR Labeling (FY2019 funded project)

- Background: ECOSTAR is a rating system for nonnative species in commerce. Ratings are based on the risk of establishment, impact, and management. These ECOSTAR ratings will be placed on labels for nonnative species to inform the supply chain.
- Deliverables: Templates, final report, and ECOSTAR label presentation (7/21/21)
- This project has been paid in full and complete.
- The final report will be provided to the panel membership as soon as the PI and MRBP ExComm agree to a disclaimer regarding the protection of intellectual property contained in the report.

#### Asian Carp Regulations

- Updating the MRBP Asian Carp Regulations document.
  - Add additional information regarding legal Asian carp capture methods.
  - Add link to commercial regulations.
- We have received updates from 18 out of 28 states. Missing states: Alabama, Arkansas, Colorado, Minnesota, Montana, Nebraska, New York, South Dakota, Virginia, Wyoming
- Contact Liz with questions

#### Silver Carp Genetics (Initiated with FY20 funding)

- This project seeks to determine if there is a genetic population structure that corresponds to spawning stocks of silver carp throughout the MRB. Identifying these genetic structures could suggest target spawning populations for directed management activities.
- 3 phases:
  - Phase 1 (fully funded with FY20): Develop database of informative genomic markers. Progress report of these results to be submitted by Dec. 31, 2021
  - Phase 2 (partially funded with FY20 and FY21): Expand analysis to three geographically distinct locations
    - Determine locations and solicit volunteers by Dec. 2021
    - Progress report- Sep. 30, 2022
  - Phase 3 (potential project for FY22 funding): Expand analysis throughout MRB
    - Pending successful completion of Phase 2
    - Final report and presentation by June 30, 2022
- This project will be discussed in greater detail in the afternoon session

#### Special printing of North American Journal of Fisheries Management

- Papers have been submitted and should be in review. It is moving forward. Have not heard anything about the project publication date.

#### **11:30 Most troublesome ANS in the Mississippi River Basin (Panel Discussion)**

## Background

- Document (Appendix B) generated nearly 20 years ago and has not been used for some time. Not currently available to the public
- Kim B- this document was created as the panel was forming from each state's list of 'main' invasive species. No standard criteria was used. Original intent was to make a smaller list based on the overall list, but this was never realized.
- Is there interest in updating this document? What would it be used for?

## Discussion

- Uses
  - Inform policy makers (list created by experts)
  - Resource for grant proposals. Could be used to determine funding
  - Education and outreach
- Considerations
  - "Most troublesome" definition
  - Will change across basin, should include each state's input
  - Create as a living document? Update every so often.
  - Could create a professional outreach document once this project is complete (education and outreach committee)
  - Could utilize administrative support person for survey logistics
- Input
  - Ceci W (Zoom chat)- the GLP would be interested in contributing to the effort but needs a little more guidance (define troublesome). The GLP created a "priority established species list" that they could share as a resource.
  - Dennis R (Zoom chat)- Keep this list for historical purposes and do a new survey in 2022
  - Kim B- Wildlife Forever did a 'battle of the bads' report which could be a good resource.
  - Tim C (Zoom chat)- What do we want this document/list to do? Is it to guide research/management funding for the species on the list? To help states develop prohibited species list? Understanding those answers might help us with what we want on it.

## Action Items

- Ceci W- email GLP "Priority established species list" to Greg Conover
- Have each committee discuss further. Solicit members who would like to be involved
- Have Executive Committee deliberate on this further

**12:00 Break**

## **Session 2: October 5<sup>th</sup>, 2021**

1:00pm - 3:00pm Central

### **Attendees (57)**

- Voting/alternates (26): Amy McGovern, Andrew Stump, Chris Steffen, Cole Harty, Dave Armstrong, Dennis Riecke, Duane Chapman, Eric Fischer, Heidi Wolf, Jimmy Barnett, Josh Leonard, Katie Zipfel, Kim Bogenschutz, Kristopher Stahr, Luci Cook-Hildreth, Mindy Barnett, Monica McGarrity, Rob Bourgeois, Tanner Davis, Doug Keller, Eugene Braig, Greg Hitzroth, Jason Euchner, Jessica Morris, Patrick Kocovsky, and Tim Campbell.
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- Guest/unknown (16): Earl Chilton, Evan Boone, Grace Loppnow, Guoqing Lu, Hugh Britten, Jacoby Carter, Josh Tompkins, Kirk Steffensen, Michael Sovic, Robert Stroess, Sebastian Mejia, Stephen Spear, Tait Ronningen, Chris Larson, Seth Herbst, and Reed (?).
- Administrative support (1): Liz Tanner
- Coordinator (1): Greg Conover

### **1:00 Marbled crayfish update (Robert Stroess, WI DNR)**

Presentation (Appendix C)

- Wisconsin basically has a live crayfish white list
  - Native species are ok (6 species) but not really commercially traded
  - Non-native species are prohibited (rusty crayfish limited exceptions due to being widespread)
- Crayfish enforcement in WI began with a specific complaint that led to 900+ invasive crayfish, 1000s of warnings and 38 charges (some still pending).
- Conversation started about crayfish in trade. E-commerce and retail stores.
- Outreach: education letter sent to distributors.
- Raising and selling of 300 self-cloning marbled crayfish in a sellers basement. Traced back to Ohio dealer and has spiraled into about 36 states with thousands of crayfish.
- Many other states do not prohibit marbled crayfish.
- Goal: bring awareness, get more states to list marbled crayfish, and possibly get other states to create a whitelist like WI

Discussion

- Dennis R (Zoom chat)- aquatic plant fragments can also be transported with live crayfish.
- Heidi W (Zoom chat)- MN is in the process of making marbled crayfish a prohibited species.
- Mindy B (Zoom chat)- IL has a white list and is looking to add marbled crayfish to injurious list.
- Katie S (Zoom chat)- OK is also in the process of making marbled crayfish a prohibited species.
- Jacoby C (Zoom chat)- a white list works for states with few species. AR and LA have too many species to create an effective white list
- Eric F (Zoom chat)- IN has solicited public input for prohibiting yabby and marbled crayfish

- Duane C (Zoom chat)- crayfish are included in species released for religion-based karma releases
  - o Tim C (Zoom chat)- [MRBP funded research on life release](#)
- Jessica M (Zoom chat)- KY in the process of having marbled crayfish prohibited
- Chris S (Zoom chat)- marbled crayfish are on KS prohibited list. Found first population of red swamp crayfish in 2019 and rusty crayfish in 2021.

### **1:30 Silver Carp Genetics – Phase I update and Phase II discussion (Chris Steffen)**

#### **Background**

- This project seeks to determine if there are multiple genetic populations of silver carp in the MRB. Will be using latest genetic sequencing to identify markers and apply markers to find distinct populations. If there are distinct populations, can they be used to track specific spawning populations? If so, that would inform targeted management. Factors influencing their invasiveness can also be investigated when the genetics are examined through the scope of ecological and biochemical data
- 3 phases
  1. Develop database of genomic markers- complete
  2. Population structure of silver carp at 3 geographically distant locations will be estimated. If this phase is successful, then researcher will move onto phase 3
  3. Comprehensive understanding of silver carp population genetic structure in the MRB
- Sample collection protocol (Appendix D)

#### **Discussion**

- Duane C (Zoom chat)- Has 20 silver carp from Pool 8 of the UMR and expects to get more. Can send the pictures
- Monica M (Zoom chat)- Researchers in the Red River Basin in TX, OK, AR have been collecting fin clips/tissue samples that could potentially contribute to Phase III.
- Protocol will be provided once it is more refined. Need photos of whole fish. Need about 10 fish from each location but more samples is better
- Jessica M (Zoom chat)- KDFWR can collect fish from leading edge of the invasion in the Ohio River
- Deliberately choose different geographic locations to maximize changes of differences
- The sooner we generate list for phase 3, the easier sample collection will be
- Jacoby C (Zoom chat)- potentially useful reports:
  - o Carter, J. and G. Thibodeaux. 2004. Aquatic Invasive Research and Research Scientists Priorities in Texas and Alabama: a Report Prepared for the Gulf Coast Aquatic Nuisance Species Research Working Group (September 15, 2004).
  - o Carter, J. and J. Biagas. 2004. Aquatic Invasive Research and Researcher Priorities in Louisiana: A Report Prepared for the Gulf Coast Aquatic Nuisance Species Research Working Group. 11 pg., January 22, 2004.

#### **Action Items**

- ! Discuss Silver Carp genetics project during the Research and Risk Assessment Committee Meeting.
- ! Have administrative support person help with the Silver Carp Genetics project

### **2:00 Committee overviews (Committee Chairs)**



Each committee gave an overview of their committee

- Research and Risk Assessment Committee Overview (Appendix E)
- Prevention and Control Committee Overview (Appendix F)
- Outreach and Education Committee Overview (Appendix G)

Everyone is welcome to attend each committee meeting

## **2:15 Panel and ANSTF recommendations (Panel Discussion)**

No proposals or recommendations at this time.

Members can submit recommendations during committee meetings or directly to the executive committee.

## **2:30 FY21 and FY22 work plans (Conover)**

Ongoing projects

- 2019
  - SIU Microchemistry
- 2020
  - Administrative Support
  - Special printing of North American Fisheries Journal
  - Silver Carp Genetics Phase 1
  - Silver Carp Genetics Phase 2 (initial)
- 2021: MICRA received \$50,000 from USFWS (FY21) for panel operations January 1, 2021, through December 31, 2021; panel receives \$45,500 for operations and projects. MRBP 2021 work plan included obligations for:
  - one in-person coordination meeting and member travel support
    - Only expense was down payment on meeting facility (meeting postponed until 2022), remaining funding will not be used in 2021
  - co-chair travel support to ANS/MICRA meetings
    - No in-person meetings were held so this funding was not used in 2021
  - Whac-A-Mussel (WAM) shipping expenses
  - WAM was not used in 2021, funding was not used
  - Administrative Support extension (Feb 2022 - Jan 2023)
  - Silver Carp Genetics Phase 2 (balance)
  - About \$7,000 has been de-obligated and is available for additional projects.
- 2022: MICRA has not received USFWS FY22 funding yet. Anticipate receiving \$50,000 for panel operations January 1, 2022, through December 31, 2022; panel should receive \$45,500 for operations and projects. MRBP 2022 work plan includes:
  - 2 in-person meetings including travel support
  - Co-chair travel support to ANS and MICRA meetings
  - Whac-A-Mussel shipping expenses
  - MRBP.org website hosting
  - Proposed projects:
    - Administrative Support (February 2023 - January 2024)
    - Silver Carp Genetics Phase 3

Discussion

- Money needs to be obligated by the end of the project year, not spent. However, we want to obligate the funding for projects that will be completed as near the end of the year as possible.
- All projects funded through FY2023 will need to be completed by December 31, 2023. That is the end of the 5 year grant period.
- 2022 work plan includes two unfunded projects
  - Asian Carp Regulations
  - Most Troublesome ANS

#### **2:45 Panel coordination meeting plans for 2022 (Braig)**

- April 2022: Columbia - with a field component for invasive carps
  - Tim C (Zoom chat)- could have a special MRBP support workshop rather than a full-fledged meeting. Could encourage non-panel participation
  - Duane C- don't want to repeat what we did in Kentucky
  - Greg C- We have not had a face-to-face meeting in a while so it would be good for committees to meet in-person. We may not want to wait until September 2022 to have the next panel coordination meeting.
- September 2022: Reelfoot Lake State Park
  - Tentative dates are set with the facility
  - Not ideal to do carp focus at Reelfoot, better suited to Columbia
- Meeting dates were deliberately chosen so that they fall in different fiscal years for most state agency members.

#### **Public Comments**

- Jacoby C- request for links from chat in meeting notes
- Matt N (Zoom chat)- USGS is working on rebuilding and revamping the NAS database. Email feedback and suggestions to Matt Neilson at [mneilson@usgs.gov](mailto:mneilson@usgs.gov)
- Matt N- eDNR database update:
  - Working on adding eDNR to NAS database as a separate data source or layer.
  - Need to work with geneticists to develop standards and metadata
  - Have mockup of initial form. Working on database table and more extensive questionnaire. Working to get approval to collect information.
  - Shooting for date to make it live sometime in the spring

#### **3:00 Adjourn**

## **Outreach and Education Committee Meeting: October 6, 2021**

10:00am - 12:00pm Central

### **Attendees (27)**

- Voting/alternates (16): Andrew Stump, Cole Harty, Dennis Riecke, Duane Chapman, Eric Fischer, Heidi Wolf, Jimmy Barnett, Kim Bogenschutz, Michael Hoff, Mindy Barnett, Monica McGarrity, Rob Bourgeois, Eugene Braig, Greg Hitzroth, Patrick Kocovsky, and Tim Campbell.
- Non-voting (7): Amanda Huegelmann, Amy Kretlow, Doug Jensen, Emily Maung-Douglass, Emily Pherigo, Katie Schrag, and Neal Jackson.
- Guest/unknown (1): Sebastian Mejia.
- Administrative support (2): Andrew Schneyer and Liz Tanner
- Coordinator (1): Greg Conover.

### **Introductions**

Agenda review and overview of topics.

Attendees requested to type introductions into the Zoom chat feature. Phone participants were introduced.

### **Review Committee Charge**

Review document containing committee summary and charge (Appendix G)

Discussion

- Mike H- from a Federal perspective, education is formal (classroom)
- Mike H- charge includes an objective to 'develop processes to share information and consistently implement ANS outreach' but there are no future needs currently listed that relate to that objective. We should consider including it in future needs.

### **Review Prior Meeting Notes**

Last committee meeting was July 2, 2021

Brief overview of the notes:

- Social marketing workshop- workshop for coordinators and managers in learning how to change behaviors using social media outreach
- Whac-A-Mussel- 'Carnival game' that can be used at events. Costs about \$500 to ship (earmarked shipping costs built into budget). Needs repair.
- MRBP logo update. Doug Jensen volunteered to present to Executive Committee
- Website updates
- Photo/video shelter- still needs follow up
- ID guide for Black carp- request came from Research and Risk Assessment Committee
  - Duane C (Zoom chat): <http://invasivecarp.us/PrintableHandouts.html> black carp handout is on the right, partway down the page. There are also several ID guides
  - Please review and make sure that state contacts are correct.
    - Andrew S (Zoom chat)- contact for Kentucky is correct

### **Action Items**

- ! Review contact information in black carp handout and make sure ID guide is sufficient (Committee Members)

## Additional Project Suggestions from the Committee

### Most Troublesome ANS

- List of Most Troublesome ANS was originally developed as MRBP was forming (Appendix B).
- Kim B- has notes from a Feb 2002 meeting. Committee members surveyed to determine Most Troublesome ANS within the basin. Sub-basins' priority species are included in the full list, but the panel did not identify sub-basin priorities. Originally planned to develop a matrix with prioritization but it never happened.
- Might be a useful outreach project. Needs an intended audience
  - Grant proposals and determining what to fund.
  - Outreach for pet shops, plant sellers, bait shops, etc.
  - Congressional outreach. Scope of the issue and magnitude of problem.
  - State AIS coordinators to help with prioritizing needs for consistent regulations.
  - Panel membership to prioritize MRBP work and funding allocations.
- Discussion
  - Mike H- The Mississippi River basin is a large basin that encompasses different climates so it is important that risk is determined using sub-basin priorities (focus more on climate rather than an entire basin-wide approach). Climate evaluations would be needed.
  - Duane C- might be difficult to create list by sub-basin because different states may have different priorities within the same sub-basin. Might be easier by state
  - Tim C- everything on the list does not need to serve the same purpose. Might want to consider limiting the number of species for easier outreach
  - Kim B- some ongoing discussions about regionalizing state regulations. Do something similar with top 5 for entire basin and top 5 for each sub-basin/state
  - Doug J (Zoom chat)- MN's approach: <https://www.mninvasives.org/species-lists>
  - Greg C- it would be nice to have an overall list for the panel but it would be helpful to also have identified priorities for each sub-basin for MICRA communication efforts.
  - Dennis R (Zoom chat)- rather than focus on list uses, focus on getting it created.
    - Doug J (Zoom chat)- agrees with Dennis. Updated list is a good step, not an emphasis on what's regulated, researched or outreach. How they approached listing in MN. List that various audiences could work from. Sub-basin approach would be a good approach.
    - Dennis R (Zoom chat)- Once you get the basin list, the subbasins will focus on the species most relevant to them.
  - Duane C- Survey states. Ask if the species is currently problematic or a species to watch. Rank on a scale of high to low concern. Each state gets a single survey
  - Mike H- important to decide how to score species. Standardize

- o Formal motion to propose an Ad Hoc Committee to develop survey and proceed with project (Eugene B. proposes, Tim C. seconds, vote carries)
    - Do not have to be a member to be on committee
    - Request a charge with goals and outcomes. Suggest sending to membership for recruitment purposes
- Recommendation to Executive Committee
  - ! Recommend Ad Hoc Committee, request a charge, suggest recruitment

#### ECOSTAR project

- Labeling system simplified for individual nonnative species. Most important element is risk map based on climate matching. Includes viable sustainable species alternatives.
- Mike H- furthering this project would require each state (or multiple states with similar climates) submit a proposal/cost-share request to operationalize the labels within each state based on their priorities. Develop a suite of labels in an online system for products in a warehouse.
  - o Interested states should reach out to Mike Hoff at [michaelhhoff@comcast.net](mailto:michaelhhoff@comcast.net)
- Watermarked ECOSTAR materials will be sent out to the committee but should not be distributed. Intellectual property in the process of being trademarked.
- Action items
  - ! Send watermarked ECOSTAR materials to committee (Greg C, Mike H)
  - ! Contact Mike H if you are interesting in operationalizing ECOSTAR in your state (state members)

#### Live Bait Study

- Tim C- this study is looking at live bait from a bait dealer's perspective to try and understand economics. Assessment of beliefs and risk perception.
- MRBP funding not currently needed
- Could be beneficial to look at other states as well. If other states are interested, the MRBP would explore options and funding. This effort could be replicated at any time if there is no current interest.
- Duane C (Zoom chat)- this may be more of a Research and Risk Assessment Committee project. Tim C. would be happy to bring this up there also.
- Action Item
  - ! Discuss more at a later meeting, possibly with Meg (committee Membership)

#### Boater Survey Standardization

- Tim C- this discussion may partially stem from a presentation he did in KY about standardizing boater surveys. Having a standardized survey is good for evaluation between states.
- MRBP funded several surveys from 2006-2011. Could potentially fund more, especially once a standardized survey is developed
- Discussion

- Tim C- there is a interjurisdictional boater behavior project planned for the Great Lakes region that will include developing a standardized survey. The MRBP could use the survey as a resource or assist in developing it
- Doug J (Zoom chat)- MN Sea Grant led a multi-state boater survey that involved a standardized survey. Could be a good resource. There are a lot of good models out there.
- Jimmy B- the PCC committee will be discussing this topic also. It has been on their work plan for the last four meetings.

### **Decision Making Process for Priority Projects**

- Could not be discussed due to meeting time constraints
- Greg H. will put together an email and send it out for committee discussion
- Action Items
  - Discuss via email (committee membership)

### **Discuss Committee Goals and Strategic Planning Process**

- Could not be discussed due to meeting time constraints
- Greg H. will put together an email and send it out for committee discussion
- Action Items
  - Discuss via email (committee membership)

### **Member Updates/Project Proposals**

- Duane C- how can we improve outreach on currently available ANS outreach
  - Greg C- welcome to members reviewing website and providing input
- Tim C- technical document on perception of water shore property owners on AIS management actions. This report may help with outreach regarding management
  - Tim C (Zoom chat)- Press release summarizing the project with a link to the report at the end:  
<https://news.cals.wisc.edu/2021/08/23/new-report-examines-lakeshore-property-owners-attitudes-toward-aquatic-invasive-species-management-strategies/>

## **Research and Risk Assessment Committee Meeting: October 7, 2021**

10:00am - 12:00pm Central

### **Attendees (30)**

- Voting/alternates (13): Andrew Stump, Chris Steffen, Dennis Riecke, Duane Chapman, Eric Fischer, Katie Zipfel, Kim Bogenschutz, Mindy Barnett, Monica McGarrity, Eugene Braig, Greg Hitzroth, Jessica Morris, and Patrick Kocovsky.
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- Guest/unknown (6): Earl Chilton, Guoqing Lu, Josh Tompkins, Kayla Kimmel, Sebastian Mejia, and Stephen Spear.
- Administrative support (1): Liz Tanner.
- Coordinator (1): Greg Conover

### **Silver Carp Genetics Project**

Sampling protocol (Appendix D)

- Tissue sample (fin clip) and photo. Photo of gill arch in obvious hybrids
- Primarily want fish that look like silver carp but would be happy to get hybrids as well
  - Need 20 silver carps per site. Extra vials would be included for potential hybrids
- Protocol can be revised for our use

Discussion

- Duane C- is cross contamination a concern? Fish tend to get piled together in the same 'slime' pile. Could include ethanol squirt bottle with sample kit
  - Guoqing L- not too concerned about it
  - Steve S- could see it potentially being an issue. Disinfection wouldn't hurt
  - Andrew S- you may be able to take out an exclusion list from other species
- Created potential sample location list (see Appendix D). Duane C. will communicate with Guoqing and Steve to see if this is too many samples and coordinate the efforts.
- Will have to find somewhere to ship from. It is going to take a lot of boxes.

### **Action items**

- ! Coordinate with Guoqing and Steve on sample locations list (Duane C)
- ! Once sample locations have been decided, admin support will solicit volunteers and communicate with them (Andrew Schneyer)

### **Microchemistry Project**

MRBP and volunteers have funded and collected the samples. Greg Whitledge has received the samples. Data and report expected early 2022 (cost= \$10,000)

- No comments or questions

### **Species of concern in Mississippi River Basin**

Duane's opinion is that it will take a survey of ANS coordinators to compile this list. Proposes that we let Jimmy's group discuss this more.

### **Recommendation to Executive Committee**

- ! Recommend Ad Hoc Committee

## **ANS Experts Database- Duane's survey of use**

### **Background**

- database was put together for two purposes:
  1. For the public to find an expert in their region
  2. For ANS Coordinators or other people to find experts on specific topics
- Responsibility for this database was passed down by the ANSTF.
- Duane C. has put a lot of time into developing and managing this but it does not seem to get much use. Most people get this information from their own states
- Duane C. sent out a survey to 35 of the people on the list. He received 8 responses. Some didn't know that they were on the list and none knew if they have ever been contacted through it before. See Appendix H for survey and results.

### **Discussion**

- Matt N (Zoom chat)- thinks the ANSTF is planning to put some effort into revamping the database
- Can't have each state be responsible for updates. The ANSTF doesn't want the contacts to have access to alter the database. Additionally, you would need someone to hound states to make sure it gets updated and new members would be unaware of the responsibility.
- Formal motion of Eugene B. to recommend to the ANSTF that the database be discontinued or altered, and for the ANSTF to be responsible for updates (Eugene B. proposes, Chris S seconds, vote carries)
- Formal motion to remove ANS expert's database from our responsibilities (Dennis R. proposes, Eugene B. seconds, vote carries)

### **Action Items/Recommendations**

- ! Recommend to ANSTF that the database be either discontinued or altered and that ANSTF be responsible for updates
- ! Remove ANS expert's database from responsibilities list (Duane C.)

## **Mission statement/work plans/ roles and responsibilities (committee and MRBP)**

### **Background**

- 10-year-old document that needs updating. Some things have been completed while others are no longer relevant (see Appendix I)
- Includes the ANS expert's database

### **Action Items**

- ! Look at document and provide input on needed updates (committee members)

## **Life release pathway**

Complete, expect final report soon from Tim Campbell.

## **Black carp reward update**

MRBP Action no longer needed at this time.



**Topics that the committee did not get to will be discussed at a later meeting (in about 6 weeks)**

## **Prevention and Control Committee Meeting: October 7, 2021**

1:00pm - 3:00pm Central

### **Attendees (24)**

- Voting/alternates (12): Chris Steffen, Cole Harty, Dennis Riecke, Duane Chapman, Eric Fischer, Jimmy Barnett, Katie Zipfel, Kim Bogenschutz, Mindy Barnett, Eugene Braig, Greg Hitzroth, and Jessica Morris.
- Non-voting (8): Amanda Huegelmann, Amy Kretlow, Darrell Bowman, Jessica Howell, Jon Amberg, Katie Schrag, Matt Neilson, and Rebecca Neeley.
- Guest/unknown (2): Kayla Kimmel
- Administrative support (1): Liz Tanner
- Coordinator (1): Greg Conover

### **Old Business**

#### **Committee Chair Replacement**

Mindy will be taking over as chair. Jimmy has a new position in his agency.

#### **Fish Health Mini-symposium**

On Hold for In-person Meeting

Presenters:

- Jamie Anderson- largest minnow producer in the world
- Zach Wellman
- Jill and another person from Canada
- Mindy is finalizing a federal speaker

#### **Live Bait Pathway Study Factsheet**

Background

- Received an ADA complaint version of the Live Bait Pathway Factsheet (Appendix J)
- Built by the committee with a lot of help from Jessica Howell
- Formal motion to place on website (Mindy B. proposes, Eric F seconds, vote carries)

#### **Action Items**

- ! Place Live Bait Pathway Study Factsheet to website (Jimmy/Mindy)

#### **Work plan items placed on website**

All items from work plan now on webpage

#### **Injurious State Laws List**

Still working on finalizing injurious species state laws list

- Lacking Montana and Virginia
  - Darrell B., Greg C. and Jimmy B. have volunteered to reach out to some individuals
- Purpose: see what surrounding states have for regulations for certain species
- Need someone to design a useable form for this information. Spreadsheet is difficult to work through. Cole H. will work with Jimmy B. on this.

### Action items

- ! Reach out to Montana and Virginia (Darrell B., Greg C., Jimmy B.)
- ! Create a usable form for communication (Cole H., Jimmy B.)

### **Standardized ANS Boater Survey**

#### Considerations

- A standardized ANS boater survey could be helpful to compare efforts by different states, as well as being beneficial for states without a survey already in place
- Included generalized questions that could be modified to be site and method specific
- Mail, email, or on-site surveys depending on what is feasible for each state.
- Could poll membership to see if this would be something of interest and see what each state already has in place
- Could use what different states already have established to create the survey
- Greg C- the executive committee can bring this up during the panel principals meeting to see if there is interest from other panels. Meeting in November 2021
- Formal motion to recommend the executive committee discuss need and interest in a multi-panel project to develop a standardized ANS boater survey to the panel principals (Dennis R. proposes, Mindy B. seconds, vote carries)

#### Recommendation

- ! Recommend the executive committee discuss need and interest in a multi-panel project to develop a standardized ANS boater survey with the panel principals

### **New Business**

#### **Strategic/long-term work plan**

##### Background

- Old document outlining committee planning and responsibilities (Appendix J).
- Needs to be updated. Some stuff has been completed and some is no longer relevant

##### Discussion

- Similar conversations have taken place in the other committee meetings. Could be beneficial to consider other documents and efforts when developing this. Consider how the committees should work together.
  - o In the work plan, this committee is supposed to be responsive to questions brought up by other committees.
- Dennis R (Zoom chat)- should be posted to the MRBP website with a bullet list of past committee projects and accomplishments.
- Periodic review may be necessary
- Have administrative support place this document on Google Drive, share the link with the membership, and compile comments. Dennis R. volunteered to assist with this effort.

#### Action Items

- ! Share document with membership (place on Google Drive), compile feedback and work on revisions (Andrew Schneyer, Dennis R)

### **Most Troublesome ANS**

## Discussion

- Need to develop a definition of 'most troublesome'
- Create a summary matrix similar to the current one but make it more cohesive.
- First thing we need to do is generate a list. Then each committee could use the list for each of their focuses. May help committees prioritize work plans
- Will likely need input/survey. Send a survey and tracking responses (administrative support). Update yearly?
- Change 'Most Troublesome' to 'Highest Priority'?
- Create an ad hoc committee to handle this topic. However, this committee should put forth a definition and solicit comments (Amy K. and Greg C. volunteer to lead the definition efforts)

## Action Items/Recommendation

- ! Create a definition of 'most troublesome' or 'highest priority' (Amy K. and Greg C.)
- ! Recommend ad hoc committee

## **MRBP Website Review**

Review the [MRBP.org](http://MRBP.org) website for needs and changes. Consider what would help to make it more organized and easier to use. Submit comments to Greg C.

## Action Items

- ! Review website and submit comments to Greg C (committee membership)

## **Develop a pathogen priorities list**

- Pathogens and how they get distributed (i.e. Bait sales, shipping)
- Poll MRBP membership for list of priorities for pathogens throughout the basin. What pathogens are priority in different states
- Volunteers requested to head this effort and draft an email for administrative support to send to states: Katie Schrag and Mindy B.

## Action Items

- ! Create email wording to send to states (Katie S. and Mindy B.)
- ! Send email to states and track responses (Andrew Schneyer)

## **Standardization for evaluation of ANS barriers**

- Process to evaluate different barrier techniques
- Included in the work plan. Has it been done by another group that we could use as a resource instead of having our own efforts?
- No one was able to explain why this project is on the work plan and provide context of what exactly is needed.
  - Kim B. could probably provide more background information on this but she had to leave the meeting early
- Dennis R. will work with Kim B. to get more clarification on this topic. Cole H. will assist

## Action Items

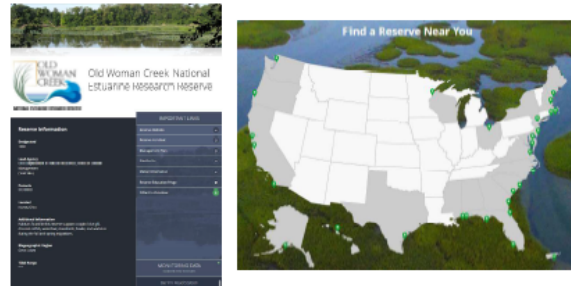
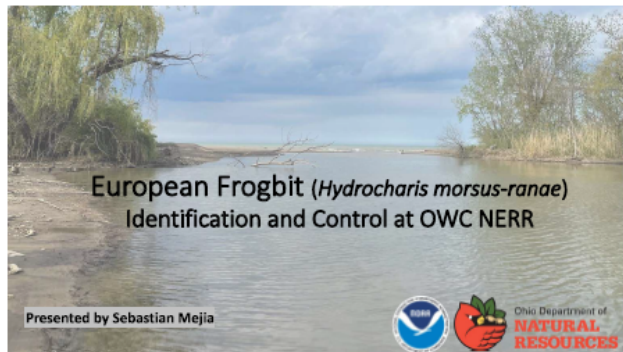
- ! Work with Kim B. to get more clarification (Dennis R. and Cole H.)

## **Appendix**

### **Contents**

- Appendix A: European Frogbit Presentation (Sebastian Mejia, OH DNR)
- Appendix B: Most Troublesome ANS (MICRA/MRBP document developed in 2003)
- Appendix C: Marbled Crayfish Presentation (Robert Stroess, WI DNR)
- Appendix D: Silver Carp Sampling Protocol. (Yellow highlights indicate changes made during Research and Risk Assessment Committee Meeting)
- Appendix E: Research and Risk Assessment Committee Overview
- Appendix F: Prevention and Control Committee Overview
- Appendix G: Outreach and Education Committee Overview
- Appendix H: ANS Experts Database Survey
- Appendix I: Research and Risk Assessment Committee Mission Statement
- Appendix J: Live Bait Pathway Factsheet

## Appendix A: European Frogbit Presentation (Sebastian Mejia, OH DNR)



### Old Woman Creek National Estuarine Research Reserve



### Frogbit Basics

- Native to Europe and N. Asia
- Free-floating rosettes, cordiform leaves
- Stoloniferous, vigorous growers
  - Form dense mats
- Modes of reproduction
  - Asexual = turions
  - Sexual = seeds
- Shallow, slow-moving waters
- Various modes of dispersal
  - Wildlife, boats, natural flow



### Anatomy of Frogbit

- Flower
- Rosette
- Leaves
- Stolon
  - Turion – modified stolon bud
- Fruit - Berry



### Fruit with seeds



### Anatomy of Frogbit

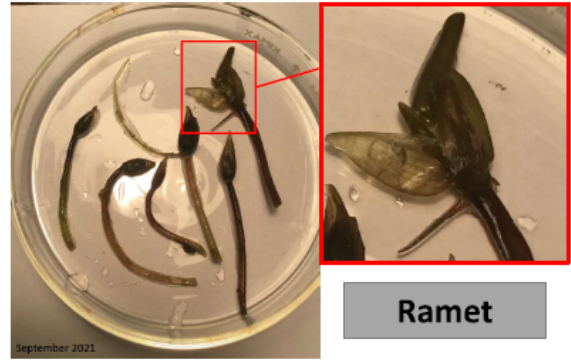
- Flower
- Rosette
- Leaves
- Stolon
  - Turion – modified stolon bud
- Fruit - Berry





## Anatomy of Frogbit

- Flower
- Rosette
- Leaves
- Stolon
  - Turion – modified stolon bud
- Fruit - Berry



**Ramet**



## Field Identification







## Most Effective Method of Control: Mechanical

- Public pulls from April-Sept.
  - Volunteers, staff, other groups
- Low-cost tools and equipment
  - Kayaks, canoe, rakes, buckets, etc.



## Chemical Treatment

- Treatment at OWC
  - Propeller<sup>®</sup>, contact herbicide
  - 1 acre, 12oz, surface spray
  - No adjuvant/surfactant
- Systemic herbicide likely needed
  - Pros and Cons
- Table by EFB Collaborative

Table 2. Summary of herbicide active ingredients used for European frog-bit (Lemna minor) management. 1. Control for each active ingredient, through root system, stem and point of nodes, time and application control, and other symptoms, time and application control, and the final density. 2. Final, information regarding the specific herbicide use for frog-bit or other aquatic plants.

Herbicide	Mode of Action	Speed of Action	Time to Control	Time to Control	Application	Notes
Propeller <sup>®</sup> (EPA Reg. No. 101-101)	Contact	Fast	1-2 weeks	1-2 weeks	10-15 gal/acre	2015-2016, 2017-2018, 2019-2020
Roundup <sup>®</sup> (EPA Reg. No. 101-101)	Contact	Fast	1-2 weeks	1-2 weeks	10-15 gal/acre	2015-2016, 2017-2018, 2019-2020
Roundup <sup>®</sup> (EPA Reg. No. 101-101)	Contact	Fast	1-2 weeks	1-2 weeks	10-15 gal/acre	2015-2016, 2017-2018, 2019-2020
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Roundup <sup>®</sup> (EPA Reg. No. 101-101)	Contact	Fast	1-2 weeks	1-2 weeks	10-15 gal/acre	2015-2016, 2017-2018, 2019-2020

European Frog-bit Collaborative

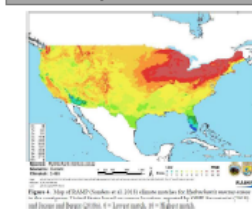
Connecting stakeholders to advance research on and management of European frog-bit in the Great Lakes

## Notable Publications

- [USDA Weed Risk Assessment \(2017\)](#)
- Estimated unmitigated risk
  - Establishment/Spread Potential
    - Risk=14, "High Risk, Major Invader"
  - Impact Potential
    - Risk=3.2, "contribute to hypoxic conditions, heavily shade water column, reduce biodiversity"
  - Geographic Potential
    - Risk=14, "61% of US suitable for est."

## US FWS Eco Risk Screening (2019)

- Overall Risk Assessment: High
  - History of Invasiveness: High
  - Climate Match: High
  - Certainty of Assessment: Med.





## Other Notable Publications

- A Revision of the genus *hydrocharis* ([Cook and Lüönd 1982](#))
- The Biology of Canadian Weeds... ([Catling et al 2003](#))
- European Frog-bit: A Technical Review... ([Nault and Mikulyuk 2009](#))
- Invasive European frogbit in North America...([Zhu et al. 2018](#))

## Regulation and Policy

- States with current regulation on EFB:
  - [Ohio](#), OAC Rule 901.5-30-01 | Invasive Plant Species.
  - [Michigan](#), Act 451 Section 324.41301 "Michigan laws limit the import, sale and possession of prohibited and restricted species..."
  - [Indiana](#), 312 IAC 18-3-23 Prohibited Invasive aquatic plants
  - [Wisconsin](#), Wis. Admin. Code NR 40, makes it illegal to possess, transport, transfer or introduce certain Invasive species in Wisconsin without a permit
  - [Minnesota](#), 6216.0250 Prohibited Invasive Species, "prevent the spread of Invasive species"
  - [Vermont](#), Vermont Noxious Weed Quarantine list, frogbit is illegal to buy, plant, or transport in the state
  - [New York](#), Part 575... prohibits or regulates the possession, transport, importation, sale, purchase and introduction of select Invasive species.
- [Canada](#), Invasive species management is jointly regulated by federal and provincial legislation
  - [Ontario](#), Invasive Species Act: illegal to import, possess, deposit, release, transport, breed/grow, buy, sell, lease or trade prohibited Invasive species.



Thank you!

**Sebastian Mejia**

Stewardship Coordinator  
[Sebastian.Mejia@noa.gov](mailto:Sebastian.Mejia@noa.gov)  
 Office: (567)-623-4878

## **Appendix B**

# **Most Troublesome ANS in the Mississippi River Basin**

In June 2003 the 28 states of the Mississippi Interstate Cooperative Resource Association (MICRA) were surveyed to determine the "most troublesome" ANS in the MRB. The states identified 46 plants, microorganisms, mollusks, fish and mammals that (in their opinion) fit under that category (Table 1). The following lists all the species identified during this survey, with links to various Web Sites offering additional information on each. *NOTE: web links are no longer active.*

### **Plants (18)**

Eurasian Watermilfoil, *Myriophyllum spicatum*

Purple Loosestrife, *Lythrum salicaria*

Curly-leaf Pondweed, *Potamogeton crispus*

Hydrilla, *Hydrilla verticillata*

Salvinia, *Salvinia spp.*

Water Hyacinth, *Eichhornia crassipes*

Phragmites, *Phragmites spp.*

Western Salt Cedar, *Tamarix.spp.*

Parrot Feather, *Myriophyllum aquaticum*

Brittle Naiad, *Najas minor*

Alligator Weed, *Alternanthera philoxeroides*

Floating primrosewillow, *Ludwigia peploides*

Uruguayan primrosewillow, *Ludwigia uruguayensis*

Chinese Tallow Tree, *Triadica sebifera*

Flowering Rush, *Botumus umbellatus*

Japanese Knotweed, *Polygonum cuspidatum*

Australian Water Clover, *Marsilea mutica*

Asian Spiderwort, *Murdannia keisak*

### **Microorganisms (3)**

Carp Spring Viremia, *Rhabdovirus carpio*

Yellow Perch Parasite, *Heterosporis*

Whirling Disease, *Myxobolus cerebralis*

#### **Crustaceans (4)**

Spiny Waterflea, *Bythotrephes cederstroemi*

Rusty Crayfish, *Orconectes rusticus*

Fish Hook Waterflea, *Cercopagis pengoi*

Red Swamp Crayfish, *Procambarus clarki*

#### **Mollusks (5)**

Zebra Mussel, *Dreissena polymorpha*

Asian Clam, *Corbicula fluminea*

Quagga Mussel, *Dreissena bugensis*

New Zealand Mud Snail, *Potamopyrgus antipodarum*

Southern Mapleleaf Mussel, *Quadrula apiculata*

#### **Fish (15)**

Common Carp, *Cyprinus carpio*

Bighead Carp, *Hypophthalmichthys nobilis*

Silver Carp, *Hypophthalmichthys molitrix*

Black Carp, *Mylopharyngodon piceus*

Grass Carp, *Ctenopharyngodon idella*

Round Goby, *Neogobius melanostomus*

White Perch, *Morone americana*

Ruffe, *Gymnocephalus cernuus*

Alewife, *Alosa pseudoharengus*

Sea Lamprey, *Petromyzon marinus*

Rudd, *Scardinius erythrophthalmus*

Blueback Herring, *Alosa aestivalis*

Nile Tilapia, *Oreochromis niloticus*

Red Shiner, *Cyprinella lutrensis*

Rainbow Smelt, *Osmerus mordax*

## Mammals (1)

Nutria, *Myocastor coypus*

**Table 1. Aquatic Nuisance Species Considered the “Most Troublesome” or “Potentially Troublesome Should They Become Established” in the Mississippi River Basin States.**

[illegible]





## Appendix C: Marbled Crayfish Presentation (Robert Stroess, WI DNR)

### Wisconsin's Invasive Crayfish Enforcement Efforts




Lt. Robert Stroess  
Commercial Fishing and Aquatic Invasive Species in Trade  
Enforcement Program Administrator

October 5, 2021 – Mississippi River Basin Panel on Aquatic  
Nuisance Species

### Those 6 Native Species are . . .








### Crayfish in the Pet Industry (continued) . . .

#### Operation Crusty Crab

- Single RSC in pet store
- 900+ invasive crayfish as pets
- Many species (red swamp, Texanus mini, thunderbolt lobster, orange dwarf, etc.)
- 38 charges
  - 7 wholesale/retail suppliers already convicted on 21 charges
  - Others still in system
- 1000s of warnings
- So several of us started talking about crayfish . . .



### Crayfish as Live Food – E-commerce



I just wanted to let you know that our Mishicot matbug boil was a huge success for the youth wrestling club. we ordered 750 lbs Live crawfish shipped to Milwaukee on 3-30-14 by Southwest air.

### Wisconsin Laws

- Basically a live crayfish white list in Wisconsin
  - Native species are OK – Only 6 species! But not really commercially traded
  - Non-native species are prohibited – *no sales, no transport, no possession, no shipment, no anything*
    - Rusty crayfish limited exceptions due to being widespread
    - No other realistic exceptions



### Crayfish in the Pet Industry




### Crayfish in the Pet Industry (continued) . . .

- Several of us started talking
- Basin-wide issue (Great Lakes Basin)
- Educational letter campaign to distributors



Law Enforcement Committee

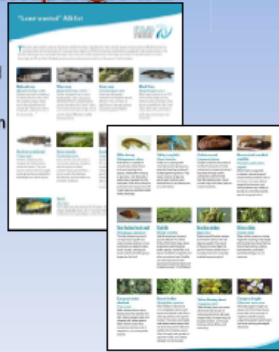
### Crayfish as Live Food – Retail Stores



2019/08/16

## Letter Campaign #2

- Least Wanted AIS List – Governors and Premiers
- Includes yabby crayfish and marbled crayfish
- Educational letter campaign to distributors



## Raising and Selling of Self-Cloning Marbled Crayfish

- eBay sales of marbled crayfish
- Self-cloning!!!
- Prolific throughout Europe
- Covert contacts with Green Bay seller



- 300 being bred and raised in seller's basement
- Seller was convicted on three counts of possessing and transferring a prohibited invasive species

## Other States

- Wisconsin forwarded leads to 14 states
  - 6 = ILLEGAL
  - 4 = No Restrictions (GA, IL, IN, NJ)
  - 4 = State staff unsure (DE, AZ, NY, FL)
- Since found out that many other states also do not prohibit marbled crayfish.
- Michigan 2020
- Minnesota pursuing change
- Traced back to Ohio dealer, and now has spiraled into ~36 states with thousands of crayfish



- Illinois
- Ontario
- Georgia
- New York
- New Jersey
- Pennsylvania
- Texas
- Overseas via Amazon



Thank you!



Lieutenant Robert Stroess  
(920) 901-1361  
Robert.Stroess@wisconsin.gov



## **Appendix D: Silver Carp Sampling Protocol**

### **Asian Carp Tissue Collection Kit**

#### **I. Project description**

Bighead carp (*Hypophthalmichthys nobilis*), and silver carp (*H. molitrix*) are aggressively invading the rivers and tributaries in the MRB. The goal of this project is to identify target spawning populations through genomic analysis for directed management and control.



Silver carp  
*Hypophthalmichthys*  
*molitrix*



Bighead carp  
*Hypophthalmichthys*  
*nobilis*

#### **II. Kit contents**

- 30 screw-cap vials w/95% ethanol
- 1 data sheets
- 1 pair scissors
- 1 pair forceps
- 1 waterproof lab marker
- 2 Ziploc bags
- kit instructions
- 1L 95% ethanol for rinsing – shipping considerations
- Squirt bottle for ethanol - labeled

#### **III. Collection protocol**

##### **1. Tissue Collection**

- ❖ Add rinse step for location to be clipped
- ❖ Cut 1-3 cm<sup>2</sup> of tissue from the soft tip of the anal fin or the tail fin. Scissors provided.



- ❖ Select a screw-cap vial. Use forceps to push tissue toward the bottom of the tube – or at least far enough so that the whole fin clip is immersed in ethanol. Preferably one fish per tube.
- ❖ Screw cap on tightly.
- ❖ Write down species name (E.g., Silver carp, Bighead, Grass carp), location, date, etc. on the tube and write other information (e.g., detailed geographical location) on the field data sheet. An alcohol/waterproof lab pen is provided. Also, data sheets are printed on all-weather paper.
- ❖ Rinse/clean scissors and forceps between fish.



## 2. Digital photos

- ❖ Lay down fish sample in flat area
- ❖ Put ruler (as) beside fish sample as in figures on Page 1. The ruler provided.
- ❖ Take one or two photos for each sample. Record necessary information on the field data sheet.
- ❖ Gill arch pic

## IV. Shipping

Please ship the samples and the kit back to me in the envelope provided. Use whatever shipping method is most convenient for your agency (ex. UPS ground is fine). Pack the contents separately in three bags as per the following:

1. Place all collection vials back in the ziploc bag that they came in. Make sure all caps are secure. Double bag it inside the other bag.
2. Place other materials (scissors, pen, etc.) back in another ziploc that they came in and place in envelope.
3. Place all items including the data sheet in the envelop.
4. Seal envelope and send off.

**Contact me prior to shipping and I will provide an account number to cover shipping expenses.**

## V. Contact information.

**Michael Sovic, PhD  
Freedom Genomics LLC  
520 Hill Rd N. #400  
Pickerington, OH 43147  
Phone: 614-282-8600**

**Guoqing Lu  
514 D Allwine Hall  
Department of Biology**

University of Nebraska at Omaha, Omaha, NE 68182-0040

Phone: (402) 5543195

Fax (402) 402-5543532

E-mail: [glu3@mail.unomaha.edu](mailto:glu3@mail.unomaha.edu)

**WISH LIST of Collection locations:**

- **Invasion Fronts**

- Middle Ohio – Markland Pool
- Tennessee River above Pickwick
- Cheetam Reservoir on Cumberland River
- MS River Pool 8 – Duane has samples and collecting more
- MO River below Gavins Point dam
- IL River Dresden Island pool
- White River – north end, lowhead dam
- AR River – Little Rock area
- Red River – below Texoma
- Tenn-Tom waterway – enough fish?

- **Established Areas**

- 1-3 more sites Ohio River
- Kentucky Lake
- Barkley Lake
- MS River above Lock and Dam 19, below pool 8 (all pools combined)
- MS River between pools 26 and 19
- MS River St. Louis area
- MO River below mouth of Platte
- MO River below KS River
- Little Sioux River
- MO River, Jefferson City – Osage stretch
- IL River – Peoria Pool
- IL River – near mouth of IL River
- Atchafalaya River
- Lower MS River – 2 more sites

## **Appendix E**

### **Mississippi River Basin Panel (MRBP)**

#### **Research and Risk Assessment Committee**

The Research and Risk Assessment Committee is composed of MRBP members interested in increasing and disseminating our scientific understanding of aquatic nuisance species, their effects, their invasion pathways and risks, and methods for their detection, prevention, control and management.

#### **Activities of the Committee**

- 1) Suggest recommendations for membership and EXCOM for submission to the ANS Task force
- 2) Identify and provide expert speakers, workshops, and symposia addressing current understanding on scientific and management techniques, organism status and risk, or other issues of appropriate interest to the membership. Disseminate information through publications such as journal articles, symposia proceedings, videos, and websites.
- 3) Propose research activities that directly benefit needs of membership, that can be funded wholly or partially with MRBP funds, and when approved by membership and EXCOM, direct the completion of those projects through grant or contract mechanisms. The committee also partners with other regional panels, agencies, and non-governmental organizations to fund or assist in completion of research and risk assessment goals.

#### **Topic Selection**

The committee strives to respond to questions and topics put forward by other committees of the MRBP or by MICRA, but topics addressed by the committee may be brought forward by individual members of the committee, or by any member of the MRBP.

#### **Example Products of the Committee**

- Speakers provided at MRBP on many topics (Apple Snails and European Frogbit at September 2021 meeting)
- Workshop on eDNA for managers
- Invasive carp capture methods workshop (Available at [Bighead Carp Sampling Techniques | Wisconsin Sea Grant](#))
- Snakehead Symposium and proceedings published as AFS book
- Assessment of Buddhist live release as source of ANS introductions
- Invasive carp symposium and proceedings published as AFS book

#### **Current Projects**

- Microchemistry of Missouri River tributaries (for use in otolith microchemistry projects)
- Silver Carp Genetics project

## **Appendix F**

### **Mississippi River Basin Panel on Aquatic Nuisance Species**

#### **Prevention and Control Committee**

##### **Responsibilities**

Prioritize ANS for prevention, containment, and control within MRB and each sub-basin of MRB  
Facilitate rapid response plan for MRB invasions  
Identify integrated pest management for ANS within MRB  
Facilitate monitoring plan for ANS within MRB  
Develop ANS issue papers  
Develop MRB policy on introductions  
Recommend improvements to state and federal ANS regulations

##### **Actions**

Responsibility: Prioritize ANS for prevention, containment, and control within MRB and each sub-basin of MRB.

Goal: Develop prioritized list of ANS to control within MRB and each sub-basin of MRB.

Action (short): Review priority species lists for each sub-basin of MRB.

Action (short): Develop matrix for priority species categorizing them for prevention, containment, or control within the MRB and each sub-basin of MRB.

Responsibility: Facilitate rapid response plan for MRB invasions.

Goal: Rapidly respond to new ANS introductions in MRB.

Action (short): Invite representative from another ANS Panel with a rapid response plan to address the committee at an upcoming meeting.

Action: (short): Develop list of state ANS contacts.

Action: (short): Identify agency in each state responsible for pesticide regulations.

Action (long): Promote implementation of the rapid response recommendations for ANS introductions in MRB developed by the Research and Risk Assessment Committee.

Responsibility: Identify integrated pest management for ANS within MRB.

Goal: Minimize harmful effects of ANS in MRB by eradicating and controlling infestations.

Action (short): Support development of the Asian Carp Management Plan.

Action (short): Identify expert contacts for ANS eradication and control based on priority species.

Action (short): Identify tools (e.g., biological, chemical, and mechanical controls, control costs, agencies involved in control, biology of species) for ANS eradication and control based on priority species.

Action (long): Identify integrated pest management methods for each priority species to include in the priority species matrix.

Responsibility: Facilitate monitoring plan for ANS within MRB.

Goal: Detect and monitor ANS on a coordinated basis within MRB.

Action (long): Promote implementation of monitoring plan recommendations for ANS in MRB developed by the Research and Risk Assessment Committee.

Action (long): Provide data from monitoring effort in an easily-accessible format.

Responsibility: Develop ANS issue papers.

Goal: Promote effective ANS policy.

Action (short): Prepare issue paper discussing fish passage and fish barriers in MRB.

Action (short): Prepare issue paper discussing marketability of ANS in MRB.

Action (long): Provide input to the ANS Task Force on national projects and policies.

Action (long): Encourage individual state agencies to respond to federal notices and legislation.

Responsibility: Develop MRB policy on introductions.

Goal: Reduce the threat of ANS introductions into MRB.

Action (long): Identify methods to interrupt pathways of ANS introduction into MRB identified by the Research and Risk Assessment Committee.

Action (long): Cooperate with Education and Communication Committee to promote actions needed to reduce introductions of ANS into MRB.

Action (long): Develop clean list of species for MRB and recommend procedures for introducing nonindigenous species into MRB.

Responsibility: Recommend improvements to state and federal ANS regulations.

Goal: Promote effective and coordinated state and federal ANS regulations.

Action (short): Participate in NAISA re-authorization efforts.

Action (short): Promote federal regulation prohibiting ANS transport on public roads.

Action (long): Develop list of ANS legislation and regulations from each state in MRB identifying effective versus ineffective regulations.

Action (long): Support coordinated state and regional ANS policies, management plans, and regulations.

Action (long): Develop clean list of species for MRB and recommend procedures for introducing nonindigenous species into MRB.

Action (long): Elevate policy-makers' interest in addressing ANS prevention and management.

## **Appendix G**

### **Outreach and Education Committee Roles and Goals**

This committee is charged with assessing and developing methods, tools, and messaging that effectively communicate ANS issues in the Mississippi River Basin. Information sharing needs are assessed for public education as well as for within MRBP membership and may range from basic ANS biology information to applied management methods. This committee encompasses a wide variety of interests, from educators to managers.

Committees to develop ANSTF recommendations to come up through the committees

#### **NANPACA Goals**

To prevent unintentional introductions;

Disseminate research and control

Develop and carry out environmentally sound control methods;

Minimize economic and ecological impacts; and

Establish a research and technology program to benefit state governments.

#### **ANSTF Outreach Committee Goals**

Objective 6.1: Evaluate current ANS education and outreach efforts to ensure messaging is consistent and effective.

Objective 6.2: Develop processes to share information and consistently implement ANS outreach

Objective 6.3: Raise the profile and communicate shared priorities of the ANS Task Force

Previous principles and some future needs may include:

To be responsive to the needs of the other MRBP committees.

Facilitate AIS outreach programs in MRBP states by working to make outreach more accessible and consistent across MRBP states while engaging staff not usually working in outreach.

Incorporating ANSTF guidelines into MRBP-level work.

Developing tools and methods.

## **Appendix H**

### **Experts database quick survey of usefulness and knowledge**

Bouncing emails from experts database – 32 emails sent out, 8 bounced, 9 responded to email

Peter Thayer [pete.thayer@maine.gov](mailto:pete.thayer@maine.gov) ([pete.thayer@maine.gov](mailto:pete.thayer@maine.gov))

[draheun@pdx.edu](mailto:draheun@pdx.edu)

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[carol.dorsey@adph.state.al.us](mailto:carol.dorsey@adph.state.al.us)

[nicholas.zurlfluh@isda.idaho.gov](mailto:nicholas.zurlfluh@isda.idaho.gov) ([nicholas.zurlfluh@isda.idaho.gov](mailto:nicholas.zurlfluh@isda.idaho.gov))

Ron Brooks

[paul.wilkes@ky.gov](mailto:paul.wilkes@ky.gov) ([paul.wilkes@ky.gov](mailto:paul.wilkes@ky.gov))

Kenda Flores at MDC

Responding:

Rochelle Sturtevant – says she used to use it, does not now because developed her own contacts. Knew she was on it, doesn't know of being contacted through it.

Andrew Stump – does not use, he is not aware of being contacted because of it. Knew he was on it.

Pat Charleboise – does not recall being contacted through it, forgot it existed.

Edna Stetzar – Also a topic of conversation in Mid-Atlantic Panel. Did not know database existed until it came up in the panel. Reports that neither she or people she contacted in similar interview had ever been contacted through this database.

Steve Rider – No to all questions except he is fully aware of the database, notes that he has his own contacts for ANS questions

Jessica Inhof – no to all questions, including she was not aware of the database

Bill McAvoy – no to all questions, not aware of the database

Matt Phillips – does not know if it has been used to contact him. “have not used the directory, but would”.

James Ballard – not contacted ever (in 13 years)



Emails sent out:

Beth.Bisson@Maine.edu Beth.Bisson@Maine.edu  
rhs4@cornell.edu rhs4@cornell.edu  
karen.a.hahnel@maine.gov karen.a.hahnel@maine.gov  
john.mcphedran@maine.gov john.mcphedran@maine.gov  
jmiller@wellsnerr.org jmiller@wellsnerr.org  
[pete.thayer@maine.gov](mailto:pete.thayer@maine.gov) pete.thayer@maine.gov  
rick.j.boatner@state.or.us rick.j.boatner@state.or.us  
[draheim@pdx.edu](mailto:draheim@pdx.edu) draheim@pdx.edu  
sytsmam@pdx.edu sytsmam@pdx.edu  
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Ron Brooks

## **Appendix I**

### **Mississippi River Basin Panel on Aquatic Nuisance Species Research and Risk Assessment Committee**

#### **Roles and Responsibilities of Committee:**

- Identify research priorities for the Basin that address realized and potential biological and ecological effects of ANS.
- Foster research initiatives that further understanding of the biology, ecology, and potential impacts of ANS; address pathways by which these invaders are dispersed; and promote control, eradication, baseline monitoring, and prevention of ANS.
- Be aware of and communicate to the MRBP on-going ANS research in the Basin.
- Review scientific proposals that researchers will submit to external funding agencies and identify those warranting a letter of support from the MRBP. Suggest supporting worthy proposals and draft letter of support for worthy proposals including its relation to the research priorities identified by the MRBP.
- Maintain and promote use of ANS Experts Database

#### **Priorities, short term:**

- Fee-fishing Lakes (AKA Paylakes or Put-and-Take Fisheries)
  - Provide for better understanding of risk resulting from paylake activities
  - Identify regulations currently applicable to paylake activities and generate recommendations for regulatory agencies
  - Promote identification of entities (paylake operators, fish providers, users, others?) to be addressed by education and outreach, and promote identification of methods to reach those entities
  - Approach Gulf, Atlantic, and Great Lakes Panels for collaboration and assistance towards these goals.
- Barges, commercial transport
  - Support Coast Guard efforts regarding elimination of risk of transport of Asian carp upstream through CSSC barrier in bilge or ballast
- Continue development of Risk Assessment/Risk Management Framework
- Support symposium on genetic control of ANS

#### **Priorities, long term:**

- Continue ANS Experts database, and periodically (approximately yearly) send out notifications and reminders to ANS coordinators and to experts, to keep database current. (would automated message to experts be possible?)
- Continue in committee to identify and prioritize ANS issues (including new invaders, unaddressed vectors and pathways, potential control methods) that require attention in the basin.

## Appendix J

### LIVE AQUATIC BAIT PATHWAY ANALYSIS FOR THE MISSISSIPPI RIVER BASIN



*The Prevention and Control Committee of the Mississippi River Basin Panel on Aquatic Nuisance Species (ANS) commissioned a report detailing the current state of the live aquatic bait industry in the Mississippi River Basin. This fact sheet summarizes that report's findings.*

#### OVERVIEW OF THE BAIT INDUSTRY

The bait industry is comprised of several components and can be complex. The diagram below shows a general overview of how the bait industry works. However, steps may be skipped or repeated, based on the situation. Production estimates were not feasible for the basin, as some fish that are produced or harvested are used as feeder fish for other species (generally sport fish), and records were sparse.



#### REPORT SUMMARY

- The Mississippi River Basin (MRB) spans 28 states.
- 42 species were sold as live aquatic bait.
- Potential ANS and pathogen risks include:
  - Viruses (golden shiner, fathead minnow nidovirus, viral hemorrhagic septicemia, and unknown)
  - Parasites (Asian tapeworm and ovarian parasites)
  - Non-native transplants (western mosquitofish and three crayfish species)
- Significant movement of bait in the MRB
  - 50% of states receive bait from Arkansas, which boasts a robust certification program.
  - 5 states export to other MRB states, 4 of which export wild-harvested bait.
  - Bait is transported in small quantities (single mail shipments of a few pounds) up to large semi-loads (up to 5,500 pounds).
- Federal regulations are restricted to:
  - Reportable aquatic pathogens
  - Lacey Act injurious species
  - Bird depredation permits
- State regulations vary considerably
  - Reporting requirements are inconsistent and records are often not readily available.
  - Most states have some restrictions to limit the spread of ANS or pathogens.
- See reverse side for full state comparisons.

#### CONCLUSIONS AND NEXT STEPS

There is much inconsistency across the MRB in terms of live aquatic bait use and regulations. Angler practices and bait availability drive many of the discrepancies. Most states have some measures in place to reduce the risk of spreading ANS or fish pathogens. However, consistent regulations are likely not feasible due to the large differences in bait use practices across the MRB.

The Live Aquatic Bait Pathway Analysis: State of the live bait industry and its laws, regulations, and policies in the Mississippi River Basin was prepared as a report by Jeffrey Gunderson on 4/30/2019, and can be found on the MRBP website under [Resources>Funded Research](#).

#### WHAT'S BEING SOLD

28 minnow species		
Top species include: golden shiner, white sucker, emerald shiner, fathead minnow (aka rosy red), goldfish (aka black salty), and sunfish (bluegill, green sunfish, and their hybrids)		
12 aquatic invertebrate species	2 amphibians	Other bait
Top species include leeches and 5 species of crayfish	Frogs (grouped into one category) and tiger salamanders	11 live non-aquatic baits and 27 frozen or preserved baits

## STATE OVERVIEWS

Note: Only states in red(\*) export to other MRB states

State	Importation	Miscellaneous	Wild bait harvest	Commercial
Alabama	Y, R	E	P, C, CL	CP, CPL, HR, FH
*Arkansas	Y, R, FH	E, RR	P, C, CL, AR	CP, CPL, HR, FH, REP
Colorado	Y, R, FH, ANS, REP	E, RR, IWR	P, C, CL, AR	CP, CPL, HR, FH, TR
Georgia	Y	E, RR	P, C, CL, AR	CP, CPL, HR
Illinois	Y, R, FH, ANS, REP	E, RR, IWR	P, C, CL	CP, CPL, HR, FH, REP, TR
Indiana	Y, R, FH	E	P	CP, CPL, FH, REP
Iowa	Y, R, REP	E, RR, IWR	P, C, CL	CP, CPL, HR, FH, REP, TR
Kansas	Y, R, FH	E, RR, IWR	P, C, CL	CP, CPL, HR, TR
Kentucky	Y, R, FH, REP	E, RR	P, C, CL, AR	CP, CPL, HR, REP, TR
Louisiana	Y, R	E	P, C, CL, SR	CP, CPL, HR, FH, REP
*Minnesota	No importation	E, RR, IWR	P, C, CL, AR, SR	CP, CPL, HR, FH, REP, TR
Mississippi	Y, R	E, RR	P, C, CL	CP, CPL, HR, REP, TR
Missouri	Y, R, REP	E, RR	P, C, CL	CP, CPL, HR, REP
Montana	Y, R, ANS	RR	P, C, CL, AR	HR, ANS, REP
Nebraska	Y, R, FH, REP	E, RR, IWR	P, C, CL, AR	CP, CPL, HR, REP
New York	Y, R, FH, REP	E, RR	P, C, CL	CP, CPL, HR, FH, TR
North Carolina	Y, R	E, RR	P, C, CL, AR, LR	CP, CPL, HR
*North Dakota	Y, R, ANS, REP	E, RR, IWR	P, C, CL	HR, ANS, REP, TR
Ohio	Y, R, FH, REP	E, RR	P, C, CL, AR	CP, CPL, HR, FH, TR
Oklahoma	Y, R, REP	E, IWR	P, C, CL, AR, SR	CP, CPL, HR, REP
Pennsylvania	Y, R, FH	E, RR	P, C, CL, AR	CP, CPL, HR, FH, ANS, REP, TR
*South Dakota	Y, R, FH	E, RR	P, C, CL	CP, CPL, HR, FH, REP, TR
Tennessee	Y, R, REP	E, RR, IWR	P, C, LR	CP, CPL, HR, REP, TR
Texas	Y, R, REP	E, IWR	P, C, CL, AR	CP, CPL, HR, REP, TR
Virginia	Y, R	E, RR	P, C, CL, AR	CP, CPL, HR, REP
West Virginia	Y, R, REP	E, RR	P, C, CL	CP, CPL, HR
*Wisconsin	Y, R, FH, ANS, REP	E, RR	P, C, CL	CP, CPL, HR, FH, ANS, REP, TR
Wyoming	Y, R, FH, ANS, REP	E, RR	P, C, CL, AR	CP, CPL, HR, FH, ANS, REP, TR

### Importation:

Y = import allowed  
 R = species restrictions  
 FH = fish health requirements  
 ANS = ANS-free requirements  
 REP = reporting requirements

### Miscellaneous:

E = export allowed  
 RR = bait release restricted  
 IWR = restrictions on bait used in infested waters

### Wild bait harvest:

P = personal harvest allowed  
 C = commercial harvest allowed  
 CL = license required for commercial harvest  
 AR = restrictions for angler use of harvested bait for fish health or ANS  
 SR = seasonal restrictions on commercial wild harvest  
 LR = limit/quota restrictions on commercial wild harvest

### Commercial bait:

CP = commercial production  
 CPL = production license needed  
 HR = commercial harvest restrictions (species or waters)  
 FH = fish health requirements  
 ANS = ANS-free requirements  
 REP = reporting requirements (harvested or production)  
 TR = transport restrictions