

# Mississippi River Basin ANS Regional Panel Annual Report

## A Report to the Aquatic Nuisance Species Task Force for (9/1/05 to 8/31/06)

### 1. Summary

The Mississippi River Basin Panel (MRBP) on Aquatic Nuisance Species held its fourth meeting as a joint MRBP/Western Regional Panel meeting on September 7-9, 2005 in Wichita, KS, and its fifth meeting in Peoria, IL in conjunction with an MRBP sponsored Asian Carp Symposium on August 24, 2006. The MRBP covers the largest geographic area (all or portions of 31 states in the Mississippi River Basin) of any of the ANS Panels in the nation. The MRBP includes 50 official members plus alternates, and 21 other interested parties, including members representing 26 states and provinces and six sub basins (i.e. Upper Mississippi River, Lower Mississippi River, Missouri River, Ohio River, Tennessee River, and Arkansas/Red River). Panel meeting attendance remains good despite travel restrictions by state agencies across the Basin. Despite these travel restrictions, only a small number of our members have requested travel assistance from the panel. The panel developed and adopted on July 15, 2006 a new set of Operational Guidelines to direct panel activity and operations. Under these new Guidelines we have shifted from leadership by one Chairperson and a Vice Chairperson to that of three Co-Chairs (i.e. First Term Co-Chair, Second Term Co-Chair, and Immediate Past Co-Chair). We also maintain a Web Site (<http://www.waux.cerc.cr.usgs.gov/micra/MRB%20Panel%20on%20ANS.htm>) and Coordination Directory which is updated bi-annually. Copies of our Operational Guidance document and our Coordination Directory are available on our Web Site.

Asian carp are the top basin-wide ANS problem, followed by the zebra mussel. Other priority species of the sub-basins are: round goby, Eurasian milfoil, hydrilla, white perch, New Zealand mud snail, purple loosestrife, curly-leaf pondweed, and salvinia species. In addressing the Asian carp issue, many of our members participated in development of the Task Force sponsored Asian Carp Management and Control Plan and in preparing and presenting papers for the Asian Carp Symposium.

Issues of concern to the MRBP are:

- Development of state ANS plans,
- Increasing federal funding to implement plans already developed and those being prepared,
- Development of National Asian carp regulations,
- Development of a National Asian carp plan,
- Passage of NAISA (NISA reauthorization) S. 770, and other national ballast bills S. 363, and
- Increasing awareness and skills in conducting risk assessments due to the increasing need and the fact that there are a limited number of individuals that are qualified to complete them.

### 2 Major Accomplishments <sup>1</sup>

A. The MRBP met with the Western Regional Panel (WRP) in Wichita, KS on September 7-9, 2005 and identified the following as shared concerns and potential joint efforts:

- **Risk Assessment Workshop** - Plan and convene a Risk Assessment Workshop. - **CM**  
*The MRBP has the lead for this activity. The planning team includes Mike Hoff, Cindy Kolar*

(USGS - Washington, D.C.), Tina Proctor (WRP Coordinator), Ron Lukens (Gulf and South Atlantic Panel Coordinator), Pam Fuller (USGS - Gainesville) and Jerry Rasmussen. Speakers have been lined up, and we anticipate holding this Workshop in January 2007 somewhere in the Kansas City, MO vicinity. Announcements will come out in the fall

- **Saltcedar** - Determine if an adequate website exists on saltcedar, and develop a website if needed. - **EPS**  
*There appear to be adequate websites addressing this issue. They can be accessed through: <http://www.invasivespeciesinfo.gov/profiles/saltcedar.shtml>*
- **100th Meridian Boater Survey** - Extend 100th Meridian boater survey to states east of the meridian. - **DM/P/CM/EPA**  
*This task was forwarded to the separate 100<sup>th</sup> Meridian Initiative Committee. Tina Proctor is a member and will keep the WRP and MRBP informed of its progress.*
- **Classroom Programs** - Develop a policy on classroom programs including live release of organisms, how *Habitattitude*<sup>TM</sup> might be integrated, and submit policy to the ANSTF. - **EPA/DM/P/CM/**  
*Robyn Draheim (Portland State University) volunteered to be the lead for this with the WRP. She will convene a subcommittee.*
- **Coast Guard Auxiliary** - Brief them, as invited, and provide packages of outreach materials. - **EPA**  
*Karen McDowell, San Francisco Estuary Project, agreed to be the WRP contact for this. The MRBP provided the Coast Guard Auxiliary with 6000 copies of our Help Aquatic Hitchhikers brochure for use in their training programs for boaters.*
- **Stock Recruitment Models** - Develop list of species of common concern, and provide expertise to develop models. - **R/CM**  
*Mike Hoff was the driving force behind this at the WRP-MRBP meeting. He thinks that stock recruitment models can be used to reduce populations of unwanted fish species and would like to pursue this as a management tool. We need to query the entire panel to find someone interested in pursuing this with him. A fisheries biologist might be the best fit.*
- **Injurious Species Listing** - Develop and maintain lists of state-regulated species, add to Panel websites, and provide data and recommendations to the USFWS that will assist in injurious wildlife listings. - **CM/P**  
*According to Erin Williams (USFWS - Washington, D.C.), the Task Force/USFWS will be requesting panel involvement in assembling this information. There have been several requests for this in the past few years.*
- **Interpanel Communications** - Panel EXCOMs should communicate on activities, issues, and species of common concern. - **CM/P/DM**  
*Tina Proctor, Kevin Anderson (Puget Sound Action Team) and Eileen Ryce (Montana) will take the lead for this. Activities will include e-mail updates, keeping the website updated, and conferences calls as needed.*
- **Aquatic Animal Species Control** - Develop a more organized effort on how to control aquatic animal species, including development of a control symposium/workshop. - **CM**  
*Kevin Anderson and Tina Proctor will find a WRP lead for this. It will help with rapid response capability.*
- **AIS Control Database** - Review what is being done, where, how and by whom. - **CM/DM**  
*Kevin Anderson and Tina Proctor will find a WRP lead for this. The animal portion could be addressed at a workshop. The plant portion may evolve from a Freshwater Plant Research Symposium (Sytsma 2005), but if not, it will be an identified research need.*
- **Experts Database** - Integrate with USGS data base on species. - **CM/DM/P**  
*Robyn Draheim has already worked on this. Tina Proctor will assist with future actions*
- **Global warming** - A risk assessment may be needed. - **R**

*Tina Proctor did a quick google search and found that lots of organizations, including international ones, are addressing this issue and there is a lot of research ongoing. She suggested that a practical course of action is to include pertinent links on our website. This could be tackled by the WRP website committee.*

- **Survey Needs on Shared Waters** - Coordinate baseline (ecological) survey needs on shared waters. - **DM/CM/P**

*The two panels will work together as necessary on shared issues.*

- **Tribal Involvement** - Improve tribal involvement by developing a model for panel use. - **EPA/CM/P**

*Susan Ellis (California) will be attending a workshop entitled “ Building Effective Government and Business Relations with American Indian Tribes” on February 24. She will see if there are any models currently being used for this type of coordination activity.*

- **Shared Resource Priorities** - Coordinate on research priorities for shared waters. - **R**  
*The two panels will work together as necessary on shared issues.*

B. The MRBP continued to use portions of its meetings to educate members on the various ANS problems across the Basin. Titles of formal presentations made at the September 7-9, 2005 joint WRP/MRBP and the August 24, 2006 meetings included the following:

- *Brush Management* - Thomas Flowers, U.S. Department of Agriculture, National Resource Conservation Service - **CM**
- *Eradication of Giant Salvinia and South American Spongeplant from California* - Robert Leavitt, California Department of Food and Agriculture - **CM**
- *Rapid increase in the lower Great Lakes Population of feral Mute Swans: A review and a recommendation* - Scott Petri, Bird Studies Canada - **DM**
- *The National Invasive Species Council - Update* - Chris Dionigi, National Invasive Species Council - **EPA**
- *Injurious Wildlife Provisions of the Lacey Act (18 USC 42 ~ 50 CFR 16)* - Erin Williams, U.S. Fish and Wildlife Service - **EPA**
- *Management Implications from a Stock-Recruitment Model for Bighead Carp in the Illinois and Mississippi Rivers* - Mike Hoff, U.S. Fish and Wildlife Service - **CM**
- *Contaminant burdens and migration patterns of scaup using the lower Great Lakes* - Scott Petri, Bird Studies Canada - **R**
- *White Perch* - Tom Mosher, Kansas Wildlife and Parks - **DM**
- *Raising Awareness on Aquatic Invasive Species in Mexico* - Roberto Mendoza, Universidad Autonoma De Nuevo Leon - **EPA**
- *Aquatic Invasive Species Awareness: Ideas and Results* - Jay Rendall, Minnesota Department of Natural Resources - **EPA**
- *Proposed Statewide Awareness Campaign on Invasive Species - Marketing and Outreach Strategy* - Robyn Draheim, Center for Lakes and Reservoirs, Portland State University - **EPA**
- *Dealing With Invasive Species - Prevention Through Education* - Marshall Meyers, Pet Industry Joint Advisory Council - **EPA**
- *Invasive Species Risk Assessment Workshop - Gulf and South Atlantic Regional Panel on Aquatic Invasive Species - August 23-24, 2005, Tampa, Florida* - Cindy Kolar, USGS/BRD La Crosse, WI - **CM**
- *ANS Task Force Update* - Kari Duncan, U.S. Fish and Wildlife Service - **EPA**
- *Using HACCP Protocols to Prevent New Introductions - Reducing the spread of New Zealand mudsnails by field researchers* - Robyn Draheim, Center for Lakes and Reservoirs, Portland State University - **CM**
- *Aquatic Nuisance Species Program in Illinois* - Mike Conlin, Director, Illinois Department of Natural Resources, Office of Resource Conservation - **CM**

- *Aquatic Nuisance Species Dispersal Barriers, Illinois*, David Weir, U.S. Army, Corps of Engineers, Chicago - **CM**
- *Aquatic Invasive Education and Outreach*, Nick Schmal, USDA, Forest Service, Milwaukee, WI - **EPA**
- *Aquatic Invasive Species: From Park to Region*, Byron Karns, National Park Service, St. Croix National Scenic Riverway, St. Croix Falls, WI

C. Outreach and partnerships continue to be an MRBP focus as we try to leverage funding from various sources to address ANS issues. The following presentations by invited speakers and MRBP members were made at the August 24, 2006 meeting to assist in this effort:

- *Strategies for Expanding Industry Involvement in Aquatic Invasive Species Management Initiatives*, Jim Bean, BASF Corporation - **EPA/CM/R**
- *Proposed MRBP Strategies to Work with Corporations*, Michael Hoff, U.S. Fish and Wildlife Service, Fort Snelling, Minnesota - **EPA/CM/R**
- *Public Awareness Partnerships*, Jay Rendall, Minnesota Department of Natural Resources, St. Paul, Minnesota - **EPA**
- *Coordinating Comprehensive Wildlife Conservation Strategies with AIS Program Activities*, Kim Bogenschutz, Iowa Department of Natural Resources, Boone, IA - **CM/DM/P**

D. An Asian Carp Symposium was held in Peoria, IL on August 22-23, 2006. The two-day symposium included 26 platform presentations and numerous poster presentations on Asian carp biology, impacts, harvest, management, control, regulations, and information and outreach. Presenters came from states, agencies, universities and the private sector from across the U.S. and two foreign countries (i.e. China and Australia). More than 200 persons attended representing a cross-section of Asian carp researchers, managers and consumers. Plans are being made to publish the proceedings in a peer review journal.

Titles of formal platform presentations at the Asian Carp Symposium included the following:

- *Using Harvest Data to Monitor the Asian Carp Invasion in the Illinois and Mississippi Rivers: Applications and Policy Implications*. Nicholas Brozovic, Cameron Speir, and Jason Wright, Agricultural and Consumer, University of Illinois, 326 Mumford Hall, MC 710, Urbana, IL 61820 - **DM**
- *Asian Carp Outreach: Past, Present and Future*. Patrice M. Charlebois and Kristin M. TePas, Illinois-Indiana Sea Grant and Illinois Natural History Survey, 400 17th Street, Zion, IL 60099 - **EPA**
- *Asian Carps and the Canadian Live Food Fish Trade*. Becky Cudmore and Nicholas E. Mandrak, Fisheries and Oceans Canada, Centre of Expertise for Aquatic Risk Assessment, Great Lakes Laboratory for Fisheries and Aquatic Sciences, 867 Lakeshore Rd., Burlington, ON L7R 4A6 - **DM**
- *Habitat Selection and Dispersal Rates of Bighead and Silver Carp in the Lower Illinois River*. Kelly L DeGrandchamp and James E. Garvey, Southern Illinois University Life Science II, Rm 173, Mailcode 6511, Carbondale, IL 62901 - **R**
- *Dynamic of Fish Larvae Amount of the Four Famous Chinese Carps in the Middle Reach of the Yangtze River from 1997-2005*. Xingbing Duan, Shaoping Liu, Mugui Huan, Shunling Qiu and Daqing Chen, Key Laboratory of Freshwater Fish Germplasm & Biotechnology of Ministry of Agriculture, Yangtze River Fisheries Research Institute, Chinese Academy of Fishery Sciences, Jingzhou 434000 China - **R**
- *Management and Regulation of Asian Carps in Arkansas: Status and Historical Perspectives*. Carole R. Engle, University of Arkansas at Pine Bluff, Mail Slot 4912, 1200 N. University Drive, Pine Bluff, AR 71601; Mike Armstrong, Arkansas Game and Fish Commission, 2 Natural Resources Drive, Little Rock, AR 72205; and Mike Freeze, Keo Fish Farm, Keo, AR 72083 -

**CM**

- *The Australian Approach to Invasive Fish Species Research.* Wayne Fulton, Department of Primary Industries, Victoria Snobs Creek Centre, Private Bag 20, Alexandra, Victoria 3714, Australia - **R**
- *Reproduction of Asian carp in Time and Space: Utility of a Source-sink Approach.* James E. Garvey, Laura Csoboth, Kelly L. DeGrandchamp, and Adam Lohmeyer, Southern Illinois University, Fisheries and Illinois Aquaculture Center, Carbondale, IL 62901 - **R**
- *Use of stable isotopes to compare the trophic status of bighead, silver carp, and filter-feeding fishes native to the United States.* Binhe Gu, South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, FL 33406; Duane Chapman, U.S. Geological Survey Columbia Environmental Research Center, Columbia, MO 65201; Yang Wang, Florida State University, Tallahassee, FL 32306-4100; Xin Li, Florida State University, Tallahassee, FL 32306-4100; and Kevin Irons, Illinois River Biological Station, Illinois Natural History Survey, 704 N. Schrader Ave, Havana, Illinois 62644 - **R**
- *Management Implications from a Stock-recruit Model for Bighead Carp in Portions of the Illinois and Mississippi Rivers.* Michael H. Hoff, U.S. Fish and Wildlife Service, BHWFB, Fisheries Division, 1 Federal Drive, Fort Snelling, MN 55122; Mark Pegg, University of Nebraska, School of Natural Resources, 12 Plant Industry, Lincoln, NE 68583-0814; and Kevin S. Irons, Illinois Natural History Survey, Illinois River Biological Station, 704 N. Schrader Ave. Havana, IL 62644 - **R/CM**
- *Value of Asian Carp Data Collection by the Long Term Resource Monitoring Program to Large Rivers of the U.S.* Kevin Irons, Illinois River Biological Station, Illinois Natural History Survey 704 N. Schrader Ave, Havana, Illinois 62644 - **DM/CM**
- *Alternative Methods of Snail Control.* Anita M. Kelly, Southern Illinois University, Fisheries & Illinois Aquaculture Center, Mailcode 6511, Carbondale, IL 62901-6511 - **R/CM/P**
- *Introduction and Status of the Grass Carp in Fresh waters of Pakistan.* Abdul Majid Khan and Muhammad Shafiq Ahmad, Department of Zoology, University of the Punjab, Quaid-i-Azam Campus, Lahore, Pakistan - **R**
- *Environmental Effects of Black, Bighead, Grass, and Silver Carps in Areas Outside of Their Native Ranges.* Cindy Kolar, U.S. Geological Survey, 12201 Sunrise Valley Drive, MS-301, Reston, VA 20192 - **R**
- *Characterization and development of pheromones to control invasive bighead and silver carp.* Edward E. Little and Robin D. Calfee, U.S. Geological Survey, Columbia Environmental Research Center, Columbia, MO 65201 - **R/CM**
- *History and Status of the Chicago Sanitary and Ship Canal Dispersal Barrier.* Philip B. Moy, University of Wisconsin, Sea Grant Institute, 705 Viebahn Street, Manitowoc, WI 54220 - **CM**
- *The Black Carp in North America: An update.* Leo G. Nico and Howard Jelks, U.S. Geological Survey, Florida Integrated Science Center, 7920 NW 71st Street, Gainesville, FL 32653 - **R/DM**
- *Reproductive Condition and Occurrence of Intersex in Bighead Carp and Silver Carp in the Missouri River.* Diana M. Papoulias, Duane C. Chapman, Donald E. Tillitt, U.S. Geological Survey, Columbia Environmental Research Center, Columbia, MO 65201 - **R**
- *Reproductive potential and verification of ploidy in triploid black carp (*Mylopharyngodon piceus*) and grass carp (*Ctenopharyngodon idella*).* Diana M. Papoulias, James Candrl, and Donald E. Tillitt, U.S. Geological Survey, Columbia Environmental Research Center, Columbia, MO 65201; and Jill A. Jenkins, U.S. Geological Survey, National Wetlands Research Center, 700 Cajundome Boulevard, Lafayette, LA 70506 - **R/CM**
- *Establishing Biosecurity Barriers to Prevent Unintentional Spread of Asian carp.* Robert W. Pitman, U.S. Fish & Wildlife Service, PO Box 1306, Rm 3118, Albuquerque, NM 87103 - **CM**
- *Toxicity of Rotenone and Antimycin to Silver and Bighead Carps.* Jeff J. Rach, Micheal Boogaard, Jason Veldboom, U.S. Geological Survey, 2630 Fanta Reed Road, La Crosse, WI

- 54603 - **R/CM**
- *Regulations as a Tool in Asian Carp Management.* Jerry L. Rasmussen, Mississippi Interstate Cooperative Resource Association, P.O. Box 774, Bettendorf, IA 52722 - **P/CM**
  - *To Catch a Carp.* Steven J. Shults, Illinois Department of Natural Resources, Jake Wolf Memorial Fish Hatchery, 25410 Fish Hatchery Road, Topeka, IL 61567 - **P/CM/EPA**
  - *Integrated and Pheromonal Control of Common Carp,* Peter W. Sorensen, Przemek Bajer, Haude Levesque, Matthew Hennen, University of Minnesota, 1980 Folwell Avenue, St. Paul, MN 55108 - **R/CM**
  - *Field Assessment of the Electric Dispersal Barrier in the Chicago Sanitary and Ship Canal.* Richard E. Sparks, National Great Rivers Research & Education Center, 5800 Godfrey Road, SC110, Godfrey, IL 62035-2466; Traci L. Barkley, Prairie Rivers Network, 809 South Fifth Street, Champaign, IL 61820; , Sara M. Creque, Illinois Natural History Survey, Lake Michigan Biological Station, 400 17th Street, Zion, IL 60099; John M. Dettmers, Great Lakes Fishery Commission, 2100 Commonwealth Blvd., Suite 100, Ann Arbor, MI 48105; and Karen M. Stainbrook, Illinois Natural History Survey, IL Dept. of Natural Resources, Lake Michigan Program, 9511 Harrison Street, Des Plaines, IL 60016 - **R/CM**
  - *Asian Carp in Louisiana.* R. Glenn Thomas, LSU AgCenter/Sea Grant Advisory, 500 Main Street, Franklin, LA 70538; Jill A. Jenkins, U.S. Geological Survey, National Wetlands Research Center 700 Cajundome Blvd., Lafayette, LA 70506; Jody David, Dept. of Wildlife and Fisheries, 5652 Hwy. 182, Opelousas, LA 70570; Lynn M. Hannaman, Louisiana; LSU Dept. of Biological and Agricultural Engineering, 149 E.B. Doran Building, Baton Rouge, LA 70803-4505; G. Scott Longman, Louisiana Department of Wildlife and Fisheries, P.O. Box 98000, Baton Rouge, LA 70898-9000 - **R/DM**

Titles of poster presentations at the Asian Carp Symposium included the following:

- *Use of long-term monitoring data to evaluate potential impacts of Asian carp on native filter-feeding fishes in the Upper Mississippi River system.* Valerie A. Barko, Missouri Department of Conservation, Open Rivers and Wetlands Field Station, Jackson, MO 63755; John H. Chick, Great Rivers Field Station, Illinois Natural History Survey, Brighton, IL 62012; Martin T. O'Connell, and Ann M. Uzee O'Connell, Pontchartrain Institute for Environmental Sciences, University of New Orleans, New Orleans, LA 70148 - **DM**
- *Wing dike morphology and habitat use by bighead and silver carps.* Duane C. Chapman and Joseph E. Deters, U.S. Geological Survey Columbia Environmental Research Center, Columbia, MO, 65201 - **R**
- *Morphometrics for the determination of sex and hybridization in Hypophthalmichthys species.* Duane C. Chapman and Joseph E. Deters; U.S. Geological Survey, Columbia Environmental Research Center, Columbia, MO, 65201 - **R**
- *Draft Management and Control Plan for Asian Carps in the United States.* Greg Conover; U.S. Fish and Wildlife Service, Carterville Field Research Office, 9053 Route 148, Marion, IL 62959 - **CM**
- *The U.S. Fish and Wildlife Service Triploid Grass Carp Inspection and Certification Program.* Greg Conover; U.S. Fish and Wildlife Service, Carterville Field Research Office, 9053 Route 148, Marion, IL 62959 - **CM**
- *Implementing the Draft Management and Control Plan for Asian Carps in the United States, U.S. Fish & Wildlife Service, Region 3 Fisheries Program's 2006 Asian Carp Projects.* Greg Conover, U.S. Fish and Wildlife Service, Carterville Field Research Office, 9053 Route 148, Marion, IL 62959 - **CM**
- *Zooplankton diet of bighead and silver carp in the lower Missouri River and one of its tributaries.* Bruce M. Davis and Patrick L. Hudson, U.S. Geological Survey/Great Lakes Science Center, 1451 Green Road, Ann Arbor, MI 48105; and Duane C. Chapman, U.S. Geological Survey,

- Columbia Environmental Research Center, Columbia, MO, 65201 - **R**
- *Invasive Animals CRC – Freshwater Products and Strategies Program*. Bradley Tucker, Invasive Animals CRC, Private Bag 20, Alexandra VIC 3714; Wayne Fulton, Primary Industries Research Victoria, Private Bag 20, Alexandra VIC 3714; Kerryn Molloy, Invasive Animals CRC, University of Canberra, Bruce, ACT 2617 - **CM**
  - *Habitat Availability Study of Asian Carp on the Lower Missouri River and Tributaries*. Harold E. Johnson, III, Robert B. Jacobson, and Duane C. Chapman; U.S. Geological Survey, Columbia Environmental Research Center, Columbia, MO, 65201 - **R**
  - *Hybridization between silver and bighead carp in the Mississippi and Illinois Rivers*. James T. Lamer, Chad R. Dolan, and John H. Chick, Illinois Natural History Survey, Great Rivers Field Station, 8450 Montclair Ave., Brighton, IL 62012; and John M. Epifanio, Illinois Natural History Survey, Center for Aquatic Ecology and Conservation, 1816 S. Oak St., Champaign, IL 61820 - **R**
  - *Silver carp (*Hypophthalmichthys molitrix*) and bighead carp (*H. nobilis*) in the Mississippi River Basin: Occurrence data and dispersal patterns*. Martin T. O’Connell and Ann M. Uzee O’Connell, Pontchartrain Institute for Environmental Sciences, University of New Orleans, New Orleans, LA 70148; Valerie A. Barko, Missouri Department of Conservation, Open Rivers and Wetlands Field Station, Jackson, MO 63755; and John H. Chick, Great Rivers Field Station, Illinois Natural History Survey, Brighton, IL 62012 - **R**
  - *Chemical Contaminants in Invasive Bigheaded Carp of the Missouri River at Easley Missouri, 2005*. Carl Orazio, Duane Chapman, Thomas May, John Meadows, and Michael Walther; U.S. Geological Survey, Columbia Environmental Research Center, Columbia, MO, 65201 - **R**
  - *Use of a BioAcoustic Fish Fence to Prevent the Spread of Asian Carp to the Great Lakes: Importance of Acoustic Signal Specificity*. Mark Pegg, School of Natural Resources, University of Nebraska, 12 Plant Industry, Lincoln, NE 68583-0814; and John Chick, Great Rivers Field Station, Illinois Natural History Survey, 8450 Montclair Ave., Brighton, IL 62012 - **CM/P**
  - *Carping for conservation*, Robert Rice, The Native Fish Conservancy, 302 South Sergeant Avenue, Joplin, MO 64801 - **CM/EPA**
  - *Dietary overlap of Asian carp and native filter feeding fishes in the Upper Mississippi River System*. S.J. Sampson, Nebraska Game and Parks Commission, Fisheries Division, 2200 N 33rd St., Lincoln, NE 68503; J. H. Chick, Great Rivers Field Station, Illinois Natural History Survey, 8450 Montclair Ave., Brighton, IL 62012; and M. A. Pegg, University of Nebraska-Lincoln, School of Natural Resources, 12B Plant Industry, Lincoln, NE 68583 - **R**
  - *A model for directed extinction of exotic fish in the wild using a Trojan fish bearing multiple Y chromosomes*. John L. Teem, Florida Department of Agriculture and Consumer Services, Division of Aquaculture, 1203 Governor’s Square Blvd., Suite 500, Tallahassee, FL 32301; and Juan B. Gutierrez, Florida State University, Department of Mathematics, 208 Love Building, Tallahassee, FL 32306-4510 - **CM**
  - *A video for public outreach regarding silver carp and bait bucket transfer*. Tennessee Wildlife Resources Agency, P.O. Box 40747, Nashville, TN 37204 - **EPA**

E. Other Panel activities included:

- Development of a position statement on barriers and fish passage. This is posted on the MRBP Web site. - **CM**
- Development of A Field Guide to Aquatic Invasive Species in Mississippi River and Great Lakes basins. - **CM**
- The Panel cooperated on a risk assessment workshop with the Gulf and South Atlantic Panel and is planning another such workshop for January 2007. - **CM**
- Revision, printing and distribution to all members of the Stop Aquatic Hitchhikers brochure. - **CM**
- MRBP research priorities were be determined and sent to NOAA for the next RFP. - **R**

F. The three MRBP committees (listed below) continued to sort out and identify their responsibilities, develop individual work plans, and project budget needs. Examples of committee projects include the following:

- **Information and Education Committee Projects**
  - Identify products, messages, audiences
  - Coordinate with other panels
  - Inventory of Information and Education products on ANS
  - List regulated invasives in each state
  - Encourage additional states to conduct model boater surveys
- **Research and Risk Assessment Committee Projects**
  - Held an Asian Carp Symposium
  - Develop a database of experts and current research
  - Conduct a risk assessment workshop in 2007
  - Develop a research priority list
  - Sponsor a symposium on ANS research at the 2005 Midwest Fish and Wildlife Conference
- **Prevention and Control Committee Projects**
  - Develop a list of priority species/matrix status
  - Prepare a position statement on barriers and fish passage
  - Prepare an ANS harvest issue paper
  - Develop a position statement supporting a national screening process for intentional importation into United States
  - Request clarification of the Lacey Act from the U.S. Fish and Wildlife Service

### 3 Recommendations to the ANSTF

- There needs to be a minimum level of funding given to the states in order to support establishment and maintenance of ANS programs. States have a difficult time establishing ANS specific programs and positions when grant funds allocated to each state continue to decrease each year.
- States should only have to prepare one report annually detailing the use of ANS grant funds. The report required by the USFWS as the funding agency should also be used by the ANSTF. The ANSTF should use the same report periods as the USFWS.
- Provide updated information to the states regarding timing of grant funds disbursement. There was a delay this year in receiving contracts and funds, and the states would appreciate being informed of when they could expect funds to be available for use.

<sup>1</sup> **P = Prevention; DM = Detection & Monitoring; CM = Control & Management; EPA = Education & Public Awareness; R = Research**

# MRBP Committee Reports

## (9/1/05 to 8/31/06)

### Education and Outreach Committee (EOC)

EOC Chairman, Steve Schainost (NE) led the Committee through several projects, including development and distribution of the Stop Aquatic Hitchhikers brochure, a listing of state threatened, endangered and nuisance species, and a listing of agency ANS outreach tools. The Committee may hire a private consultant to work on final editing of the ANS Field Guide. A proposal is also being developed to poll the Mississippi River Basin states for ANS and boating surveys. The Committee is evaluating the development and use of ANS educational posters to target elementary school children. Activities such as *Habitatitude* may be sought as a partner on this activity. The Committee is also looking at a brochure information pack to send to schools or labs using ANS in their programs. There is also an interest in printing a large batch of the Asian carp watch cards developed earlier by Illinois-Indiana Sea Grant. The Committee is also looking into partnering with boat manufacturers on getting the ANS message out. Work is also underway with outdoors catalogs like *Bass Pro Shops* and *Cabelas* to see if they might include an ANS message in their catalogs. The Committee will look into establishing an ANS video footage library that all could use. A copy of the Committee's 2007 Work Plan is displayed below:

#### EOC Work Plan for 2007

Activity	Description	Milestones	Deliverables	Dollar Request
"Field Guide to Aquatic Nuisance Species".	Hire an independent contractor to finalize the text, get publishing approvals for the various graphics, and to collate orders.	January 1, 2007	Finalized text, approvals for graphics, printed document and compiled orders of 2,000 copies to each MRBP state.	\$2,000.00
"Aquatic Nuisance Species and Boating Survey"	Poll MRBP states to find out how many would be willing to participate in a survey of people's awareness of ANS and how/where they get their information.	January 1, 2007	Additional data.	\$30,000.00
Brochure or information packet for elementary schools.	Develop a poster for display in elementary schoolrooms with information on how to handle or dispose of ANS species on the back.	January 1, 2007	Poster design ideas but no date.	None
Asian carp watchcards.	Print cards already developed by Illinois-Indiana Sea Grant.	March 1, 2007	Print and distribute 10,000 cards to each MRBP state.	\$15,000.00

Investigate partnering with NGOs on ANS projects.	Correspond with various boating manufacturers and groups such as <i>B.A.S.S.</i> and <i>Wildlife Forever</i> to seek out projects of mutual interest.	None at this time.	Identification of level of interest.	None
Investigate opportunities for including ANS messages in major sporting goods retailer catalogs.	Correspond with various retailers such as <i>Cabelas</i> and <i>Bass Pro Shop</i> to seek out projects of mutual interest.	None at this time.	Identification of level of interest.	None
Video stock footage library.	Poll the states to introduce the idea of a stock video library and to find out what might be available for inclusion in such a library.	None at this time.	Identification of level of interest and available footage.	None
Bill Dance Video.	Poll the MRBP states for their interest and suggestions on making and distributing copies of the video.	None developed.	Ideas for distribution.	\$500.00

### Research and Risk Assessment Committee (RARC)

Cindy Kolar (USGS), Chairperson, relocated to Reston, VA and stepped down from her leadership roll. Duane Chapman (USGS, Columbia, MO) took over in mid-year and will focus on publication of the Proceedings of the Asian Carp Symposium as the first item on the Committee's agenda. This document will be a peer reviewed, high quality publication. Papers are to be submitted by the end of November, and the first draft completed by February. The Committee is also working on an Experts Data base, and they will work with Pam Fuller (USGS, Gainesville, FL) on this project. The Committee will also put together an email survey for research priorities for the most troubled species we have on our web site. The Committee will also host a Risk Assessment Workshop in January 2007 in the Kansas City, MO area. The workshop will bring together experts in the field of risk assessment and train up to 60 persons from the MRBP and its sister panels. Over the next several years the Committee would also like to host a symposium on ANS issues in the Basin. The Committee is also planning to develop a pathways analysis to identify areas of concern, to determine which species are of most concern, and to develop methods of looking at Asian carp population recruitment. The Committee also recognizes the need to develop information on control strategies. One strategy might be to investigate the use of locks and dams to slow the spread of invasives. The Committee is also interested in developing more information on the economics of invasives. More information is also needed on the location and distribution of invasive species and when the invasion of an area occurred. The USGS database will be used to determine the latter, and the Panel will assist in keeping it updated. The Committee's 2007 work plan follows:

**RARC Work Plan for 2007**

Activity	Description	Milestones	Deliverables	Dollar Request
Proceedings	Asian carp symposium proceedings Peer-reviewed, high quality document. Probably published by the American Fisheries Society (AFS).	Chapman will talk to AFS to work out details at Lake Placid meeting. Papers submitted by end of November 2006 First round review done February 28 Finished drafts submitted to AFS	Proceedings	\$9000  (If people want color they pay additional page charges)
Plan Risk Assessment Training Workshop	Training workshop	January 7-9, 2007	Workshop Training materials and about 60 trainees	Cost probably about \$15K.
Experts database	Chapman is contact point for Pam Fuller's effort. Chapman will report to committee.	Work with Pam on her schedule	Database	?
Put together email survey for research priorities for our most troublesome species	Mike Hoff will send email out requesting research priority opinions by state. Jerry Rasmussen will collate responses	Email request by end of August. Collate by March 07	List of priorities to be published on web site	\$0

**Prevention and Control Committee (PCC)**

Kim Bogenschutz (IA), Chairperson, stepped down from her roll as chair when she was elected as First Term Co-Chair of the Panel. Steve Shults (IL) assumed the roll of Committee chair. The Committee defines its roles and responsibilities as follows:

*Roles and Responsibilities of PCC:*

- 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 recommendations to submit to ANS Task Force
- Develop MRB policy on introductions
- Recommend improvements to state and federal ANS regulations

The table below summarizes PCC accomplishments for 2005-2006.

**PCC Accomplishments for 2005-2006**

Activity	Milestones	Deliverables	Funding Used
Developed spreadsheet of state ANS program contacts within MRB states to facilitate rapid response plans.	August 2006	Spreadsheet containing most current contact information for ANS personnel in each MRB state to be posted on MRBP website.	\$0
Supported development of the Asian Carp Management and Control Plan.	May 2006	Final Asian Carp Management and Control Plan. Many MRBP members were on the planning and drafting teams and many more reviewed the final draft.	\$0
Prepared draft issue paper discussing the harvest and marketing of ANS in the MRB (e.g., positive and negative impacts of developing markets for Asian carp).	September 2005	Draft issue paper submitted to PCC.	\$0
Promoted participation in IAFWA meetings to highlight ANS issues and NAISA reauthorization to state directors.	March 2006	ANSTF and MRBP members attended initial IAFWA Invasive Species Committee meeting to discuss ANS issues.	\$0

The Committee's 2007 Work Plan follows:

**PCC Work Plan for 2007**

Activity	Milestones	Deliverables	Funding Request
Develop model rapid response plan for MRBP.	September 2007	Model rapid response plan that states can use to prepare their own state-specific or species-specific plan(s).	\$0
Develop list of control options and control needs for priority ANS in MRB.	September 2007	Database of current control options for priority ANS in MRB and list of research needs for additional ANS control.	\$10,000
Explore possible expansion of acoustic and habitat surveys for Asian carp in the Illinois River to use as predictive tool for uninfested rivers in the MRB.	September 2007	Grant to the Illinois Natural History Survey and subsequent report on the utility of using acoustic and habitat surveys to predict future expansion of Asian carp with the intent of trying to prevent that expansion.	\$10,000- \$15,000
Explore use of sonic disruption as a control method for zebra mussel veligers in MRB.	September 2007	Grant to the Illinois Natural History Survey and subsequent report on the utility of using sonic	\$10,000- \$15,000

		disruption to prevent the recruitment and spread of zebra mussel veligers from established populations into uninfested downstream waters.	
Prepare final issue paper discussing the harvest and marketing of ANS in the MRB.	May 2007	Issue Paper reported to ANS Task Force.	\$0
Promote discussion on the use of boat washes as a method to prevent the spread of ANS in the MRB.	December 2006	Wisconsin Department of Natural Resources Boat Washing Facility Guidance posted on MRBP website.	\$0
Encourage AFWA Invasive Species Committee to assist with coordination of CWCS and ANS Plans and to support NAISA reauthorization.	September 2006	MRBP representative in attendance at AFWA Invasive Species Committee meeting to deliver recommendations on CWCS and ANS Plan coordination and NAISA reauthorization.	\$0

# Status of State Management Plan Development in the MRBP

**Alabama:** No input provided.

**Arkansas:** No input provided.

**Colorado:** During the 2006 Fiscal Year, Robin Knox served as the Colorado Division of Wildlife (CDOW) representative to the Western ANS panel and the Mississippi River Basin ANS panel. He was the point person for all ANS information requests. He prepared and distributed a specific New Zealand Mud Snail Status and Management Plan; developed and conducted training workshops on ANS topics for biologists working in Colorado; presented ANS training at in-service to non-commissioned employees; responded to numerous requests for ANS information from the public, worked with fly fishing industry to raise awareness of anglers about the dangers of spreading ANS; developed informational brochures and posters for distribution across the state; worked with regional biologists to develop signs for posting along streams; worked with Colorado Department of Agriculture to register pesticides used for WD and NZMS control with appropriate federal agencies. Robin retired June 30, 2006. Vicki Milano is serving as interim ANS coordinator until Robin's position is filled. She has been working on an ANS survey throughout Colorado. Her plans are to develop a Colorado Statewide ANS Management and Control Plan for the upcoming fiscal year. Mardy Nelson, CU graduate student, has authored a book titled "Field Guide to the Mollusks of Colorado" which will be a useful tool for future ANS identification. Surveys of approximately 42 sites have been completed and Asian clam were found at 5 sites. Nothing else of significance found.

**Illinois:** The State of Illinois has had an approved ANS management plan for 6 years which provides guidance for ANS activities in the state. We are currently working on a revision to our management plan and expect that to be completed sometime this fall.

**Indiana:** Indiana's plan was approved by the ANS Task Force on November 5, 2004. The Indiana ANS Coordinator's position was created and filled in January 2005 to begin implementing the plan.

**Iowa:** The Iowa ANS Task Force began development of a state ANS management plan in 1997. The "Plan for the Management of Aquatic Nuisance Species in Iowa" was approved by the Iowa Department of Natural Resources (IDNR) on 17 July 1999 and by the ANS Task Force on 13 January 2000. An ANS coordinator of Iowa's ANS Program was hired on 10 November 2000. The Conservation and Recreation Division/Fisheries Bureau of the IDNR administers the Iowa ANS Program with state funding in addition to the annual ANS grant received from the USFWS. Beginning in 2007, boat registration fee revenue will be used to expand the Iowa ANS Program.

**Kansas:** The Kansas Aquatic Nuisance Species Management Plan was approved by the ANSTF in May 2005. Although requested and approved, we have not yet received any funding for implementation.

**Kentucky:** Kentucky has an MOA with the University of Kentucky to write the state plan. Progress is being made with the plan and a Task Force meeting has been scheduled for August 8, 2006. It is anticipated that a draft of the plan will be completed in about one year.

**Louisiana:** The “State Management Plan for Aquatic Invasive Species in Louisiana” was signed by Governor Kathleen B. Blanco on March 13, 2006. The management plan was then presented to the NANSTF on May 24, 2006 where it was approved. The State of Louisiana is now prepared to seek funding in order to adequately implement the goals of the management plan. The Plan has the following five objectives:

1. Coordinate all AIS management activities or programs within Louisiana and collaborate with regional, national, and international AIS programs.
2. Prevent and control the introduction/reintroduction of nonindigenous invasive species through education about species and pathways, targeting the general public (including schools), industries and user groups, government agencies, and nongovernmental organizations.
3. Eliminate locally established invasive species through monitoring, early detection, rapid response, and early eradication.
4. Control the spread of established invasive species through cooperative management activities designed to minimize impacts when eradication is impossible.
5. Prevent the introduction of non-native species, or the spread of existing ones, through legislation and regulation.

**Minnesota:** Over the past year, several state, federal, and private entities developed a draft Minnesota invasive species plan for aquatic and terrestrial invasive species. Several members of the Minnesota Invasive Species Advisory Council (MISAC), such as DNR, MDA, and Minnesota Sea Grant, led the development of the draft statewide invasive species management plan. A full-day workshop, “A Workshop to Develop a Comprehensive State Plan on Invasive Species for Minnesota,” was held on October 24, 2005. The workshop was funded by Minnesota Sea Grant through a grant from the Great Lakes Commission and was held in collaboration with MISAC, DNR, and MDA. Seventy participants represented businesses and their associations, academia, local, county, state, tribal, and federal government, and non-governmental entities gathered to address invasive species issues in Minnesota. Workshop participants attended breakout sessions according to their interests and disciplines, and filled out implementation tables indicating how their agencies would address invasive species prevention, early detection, management, and coordination efforts. Information from the tables will be used as input for the comprehensive state plan. The workshop attendance and productivity were evidence of a strong desire for stakeholder connection regarding Minnesota’s response to the increasing number of non-native species on our doorstep. According to workshop evaluations, it was very successful -- 89% of attendees felt the workshop was useful in addressing their organization’s invasive species-related mission, goals, and objectives; 71% thought that the draft plan is on track to become a viable approach; 79% felt it brought together diverse stakeholders; and 78% were more than likely to implement aspects of the plan. Comments received on the draft plan are being considered as a revised draft is being prepared by the MISAC team in summer 2006. Once new draft plan is ready, it will be distributed for public comment. The plan should be finalized later this year.

**Mississippi:** Mississippi state agencies continued meeting to develop a State ANS Management Plan. The first meeting was held in October 2003. Authors of the LA ANS plan (Tulane Univ.) were hired to modify the LA ANS plan to suit Mississippi’s needs. The draft plan was reviewed in June 2006, and the next meeting is set for September 2006. Hopefully a draft final plan will be available by the end of 2006. To date \$25,000 of the \$60,000 cost of the plan has been secured. Future funding sources include the EPA and State Wildlife Grant funds. Mississippi Department of Wildlife, Fisheries and Parks and Mississippi Department of Marine Resource personnel have been attending the Gulf and South Atlantic Panel of Aquatic Invasive Species meetings and recently attended a one-day HACCP training workshop sponsored by SARP in Memphis. In September 2006 state and USGS personnel will visit tilapia aquaculture facilities that were damaged by Hurricane Katrina to devise rotenone application plans to kill tilapia on those facilities and some that have escaped into public waters. Agency staff surveyed the following invasive aquatic plant infestations: Hydrilla in Pickwick Lake; Giant Salvinia in the Pascagoula

River Marshes. Agency staff also treated alligator weed in Cassidy Bayou by stocking flea beetles; applied Aquathol K to Hydrilla in Ross Barnett Reservoir; and habitat for alligator weed in Lake Tom Bailey. Mississippi Dept. of Wildlife, Fisheries & Parks personnel also printed Stop Aquatic Hitchhiker Cards for inclusion in boat renewal registration card mailings.

**Missouri:** Missouri's state plan for Aquatic Nuisance Species is in final internal review and will be signed and endorsed by the Governor of Missouri, hopefully by the end of 2006.

**Montana:** The Montana ANS Management Plan was completed in October of 2002, and a state ANS Coordinator was hired in February 2004 to implement the plan. Montana is now in the third field season of ANS Management. Montana's Plan will be revised during fall/winter of 2006/7.

**Nebraska:** Nebraska does not yet have an ANS management plan as the state ANS Coordinator has not had time to sit down and write one. ANS activities over the past year have included monitoring the Missouri River for adult zebra mussels with substrate samplers. One of our electric utilities has been running substrate samplers for several years. During 2005, one utility and one other party sampled the lower river (below Sioux City) for veligers. At least one of them continued veliger sampling in 2006. In the spring of 2006, an established population of zebra mussels was discovered in a lake owned by the U.S. Air Force as part of Offutt Air Force Base south of Bellevue, Nebraska. State officials are working with Air Force environmental staff on an information campaign in the short term and a possible eradication effort in the long term.

**North Carolina:** North Carolina is recommending that an ANS task force be formed with representation from several government agencies to develop a comprehensive invasive species management plan. But that task force has not yet been approved or formed.

**North Dakota:** North Dakota has a statewide aquatic nuisance species (ANS) plan (ND-Plan) in place, a state law for ANS prevention was enacted, and the North Dakota Game and Fish Department (Department) is undertaking activities described in the ND-Plan. Some of the achievements or projects being done include: (1) appointment of an ANS Coordinator for the Department and for state activities; and (2) formation of the Aquatic Invasive Species Committee (AISC) which includes members from state entities, private organizations, recreational service providers, and tribal representation. The AISC serves as an advisory committee to the Department's Director on ANS prevention activities. The AISC has developed: (1) North Dakota's ANS list, (2) a matrix to rank ANS, and (3) classification of ANS for permitting purposes. The AIS is also drafting regulations for: (1) prohibition or restrictions for possession of ANS; (2) cleaning boats and equipment; and (3) inspection of construction equipment used in aquatic situations. North Dakota's major recreational waters are also being inspected for the presence of ANS infestations, and a data base is being developed to record the information.

Two new infestations of Eurasian watermilfoil were found at Dead Colt Creek Reservoir near Lisbon, ND and in the Sheyenne River near Valley City, ND. The infestation in Dead Colt Creek Reservoir was successfully controlled by lowering water levels in the winter and freezing out the plants. The infestation in the Sheyenne River has been difficult to control. It is a riverine system with municipal water intakes located downstream. Control options are being investigated.

Curlyleaf pondweed was also found in the Sheyenne River near Valley City and has also been difficult to control. Curlyleaf pondweed is also well established in the Missouri River System.

Education continues to be an important aspect of preventing infestations. North Dakota is also identifying new partners in ANS prevention.

**Ohio:** Ohio's State ANS Management Plan has been in existence since 1999. Plans are being made to start the revision process in the fall of 2006.

**Oklahoma:** Jeff Boxrucker has been assigned ANS duties (10% of time commitment) along with continuing research duties. No progress has been made on a state plan and none is slated for the near future.

**South Dakota:** Pages have been included in the South Dakota fishing handbook regarding current and potential ANS threats in the state. Information on the identification and threats of current ANS (e.g. Asian carp, Eurasian watermilfoil, *Didymosphenia geminata*) was included along with a list of water bodies with established ANS populations. A list of potential ANS (e.g. zebra mussels) that threaten South Dakota waters was also included along with prevention measures boaters and stream anglers can take to aid in the control of exotic species. Five hundred signs were purchased by SD Department of Game Fish and Parks (SDGFP) using 100th Meridian Project funds and were placed at all state and federally owned boat ramps along the Missouri River in South Dakota. Additionally, 50 signs were distributed to each regional SDGFP office in South Dakota and placed at various lakes. A Traveler Information System (TIS) was purchased in 2005 using 100<sup>th</sup> Meridian funds for installation at Downstream Oahe State Park as a tool to communicate ANS prevention messages to park guests. The TIS is currently in the process of licensing and installation. Multimedia (newspaper, radio, television) has been used as a means of releasing information on specific threats as well as an education tool for resource users to promote vigilance and self policing. Both salt cedar and purple loosestrife have been listed as noxious weeds by the South Dakota Weed and Pest Commission. This listing has been accompanied by increased public education efforts through pamphlets and news media announcements throughout the state. An ongoing cooperative partnership between SDGFP and South Dakota Bass Anglers Sportsman Society (SD B.A.S.S), and car wash facilities throughout the state. Facilities must have a pull-through bay large enough for easy access by a vehicle towing a boat and trailer and a high pressure, hot wash system. Facilities are provided with a sign indicating their participation. A list of participating facilities is advertised in the South Dakota Fish Handbook. Three additional car wash facilities joined the program in 2006. A set of specific protocols has been established for boat and assessment gear use and treatment by division personnel in order to prevent ANS introduction or spread as a result of normal work activities. The U.S. Geological Survey's EROS data center has been contracted to develop remote sensing techniques to map colonies of curly pondweed on Lake Sharpe (a Missouri River Reservoir). Results will be used to better understand present impacts and as an aid to managing the fisheries resource in the reservoir. Zebra mussel monitoring was conducted on the 39- and 59-Mile reaches of the Missouri National Recreational River in 2005. Substrates were placed at various high-use boat ramps and are currently being assessed for the presence of zebra mussel veligers. Regulations have been established to make it illegal for bait harvested in the Missouri River below Gavins Point Dam (upstream limit to Asian carp distribution) from being transported away from the river and used elsewhere. Cooperative agreements between federal agencies and the state of Nebraska have facilitated the establishment of numerous insectories in both states to provide biocontrol insects to help control purple loosestrife in these relatively inaccessible borderwater marshes. In recent years, helicopter applied herbicide treatment has been added to an integrated management approach. Photographic comparisons of the wetland vegetation show substantial control of purple loosestrife over the past several years, elsewhere in the state, purple loosestrife is still being discovered and is now known to occur in fifteen counties, mostly in the southeastern portion of the state. SD Department of Agriculture, has used herbicide treatments to control or eliminate current salt cedar (*Tamarix* spp.) distributions and is currently testing directed biological control measures with the release of small populations of a defoliating beetle specific to salt cedar. The Great Plains U.S. Fish and Wildlife Service Office in Pierre, SD has been conducting studies of nursery habitat and diets of larval and juvenile, bighead, and silver carp in the Missouri River and their relationship on the native YOY fish community. Sampling above and below Gavin's Point dam on the Missouri river (current upstream limit of Asian carp distribution) was used to compare potential differences in larval fish densities, diets and community composition. Lab work and analysis continues with reporting scheduled before FY 2007. A SD Game, Fish and Parks study is currently being developed to examine the impact of *Didymosphenia geminata* on benthic and fish community composition of Rapid Creek below Pactola Dam. Research will also study the effects of control measures (localized nutrient enrichments) on *Didymosphenia geminata* distribution and overall stream biological community composition.

**Tennessee:** Tennessee has been in the process of developing a State ANS Management plan for over a year now. Since the first meeting in March of 2005, the group has met three other times. During the course of those meetings and the time between the meetings, the task force has described and prioritized the ANS species of concern; developed goals and objectives; and developed strategies and proposed actions. We are now in the writing stage of the plan and are almost finished with the first draft. Our long term goal is to have the final plan submitted to the National ANS task force by August 2007.

**Texas:** Although the number of giant salvinia infestations in large public water bodies had not changed for six years, this summer the plant was discovered in three more public water bodies including Caddo Lake (27, 472 acres) on the border with Louisiana, Lake Pinkston (447 acres), and Center City Lake (89 acres). Texas Parks and Wildlife Department is working with Louisiana Department of Wildlife and Fisheries to help control the problem in Caddo Lake. A whole lake eradication program is being planned for Center City Lake, and the infestation in Lake Pinkston is still small enough to make eradication possible. The use of triploid grass carp to control hydrilla without lake wide eradication of all aquatic vegetation in Lake Austin is still going very well. Hydrilla has been reduced from 320 acres to less than 30 acres, and has hovered from 2-26 acres over the last year and a half. Plans to form a Texas Invasive Species Council (TISC) are proceeding slowly, but well. Former opponents seem to have agreed it is a workable idea. However, there have been delays somewhat by minor legal issues we hope to have resolved within the next few months. Texas' Comprehensive Management Plan for Aquatic Invasive Species should be ready for submittal to the ANS task force sometime in late 2006 or early 2007. We are hoping to have the document reviewed by a new TISC before final submittal.

**Virginia:** No input provided.

**West Virginia:** West Virginia does not have a plan nor are they working on one. They do, occasionally, discuss the feasibility of developing a plan but are unlikely to do so in the foreseeable future.

**Wisconsin:** Wisconsin's funding level for FY 06 is \$20,000 for implementing the St. Croix interstate plan and \$47,740 for implementing the state comprehensive management plan. Funding for the St. Croix plan is being used to hire 2 seasonal watercraft inspectors for boats on the St. Croix and adjacent waters, to conduct dives as part of the zebra mussel monitoring efforts, and to provide support for outreach and educational efforts. Funding for the state comprehensive management plan is being utilized to hire one two-year project position. That person is responsible for examining the various pathways that ANS are coming into the state via the bait industry, aquaculture and aquarium sources and water gardening, and develop recommendations on how to reduce the threat of introduction from these sources.

**Wyoming:** The Wyoming Game and Fish is not actively working on a state ANS plan due to lack of available personnel and resources. Given budget constraints, it is not a priority for us to develop a plan at license buyer expense to compete for a static funding pool nationwide. Benefits from plan development from our perspective are limited with respect to cost. Given the amount of time and coordination required to properly develop a state ANS plan, we feel it is inappropriate to attempt a plan as an add-on assignment for existing personnel with full time duties. We are waiting until alternative funding resources are available to do the job properly and in a timely manner once begun, and have included ANS plan development in alternative funding proposals (unsuccessful to date) for our agency.