

**MICRA Paddlefish-Sturgeon Committee Meeting Minutes**  
**Kansas City, Missouri, January 29, 2014**

**MICRA Paddlefish-Sturgeon Committee Action Items and Decisions**

1. Roe harvesting states are to check data in harvest tables and provide corrections or updated harvest numbers to Marie Maltese by Feb 7<sup>th</sup>.
2. Ad Hoc Online Commercial Reporting Subcommittee will meet at the 2014 LMRCC meeting.
3. States wanting additional paddlefish modeling assistance from Alexi Sharov should contact and coordinate through Jeff Quinn.
4. Incoming leadership will work to set up NOAA Fisheries Toolbox modelling workshop.

**Call to Order by the Chairperson** – Chairperson Jeff Quinn welcomed everyone and passed out agendas. Jeff thanked the Missouri DOC for providing the meeting accommodations. A roll call and round of introductions was held. It was determined that a quorum was achieved as 15 state delegates were present. The agenda and minutes of the 2013 Meeting in Paducah, KY were approved (Motions by Gerald Mestl, seconded by Kirk Hansen). Jeff Quinn reported on the activities of the committee over the past year.

Jon Lyons reported to the committee that a 4-5 ft Siberian sturgeon was captured from Lake Michigan. At this time they believe it was probably an isolated single release from an aquarium source, but they would continue to monitor.

**OLD BUSINESS**

**Basin Tag Coordinator Reports**

Lower Miss – Jason Schooley: Most data is from OK, getting data from AL. Old blue wands have not been working well. They had not been finding coded wire tags but recently switched to T-scanner and are finding lots of coded wire tags. T scanners cost approximately \$3,500.

Upper Miss – Kirk Hansen for Royce Bowman: Everything for the Upper Miss basin is up to date except a few coded wire tags that are left to read.

Missouri – Dan Pauly: Read around 60 CWT this year. Will be getting reservoir tags from MO.

Ohio – Chris Obara: No data collected within the basin this year

**CITES Report** – Marie Maltese supplied the following report:

**Report to the MICRA Paddlefish and Sturgeon Sub-committee**  
**January 29, 2014**  
**U.S. Fish & Wildlife Service, Division of Scientific Authority, Marie Maltese**

### **Paddlefish**

- For the period January 1, 2013 through December 31, 2013, 128 permits were issued by the Division of Management Authority (DMA); all for processed caviar (see note below regarding total exports).
- The total weight of paddlefish caviar exported by the U.S. in 2012 was 8,081 kg (17,820 lbs.). This is an increase of 1,890 kg (4,170 lbs.) of caviar from 2011.

Note: The number of permits issued does not necessarily equal the total number of exports, as applicants may find that they don't need a specific permit because a shipment has been cancelled, or other reasons prevail. Total exports are found in the CITES Annual Report which is compiled each fall, with a one year lag-time; therefore, total exports for 2013 will be available in late fall 2014.

### **Shovelnose sturgeon**

- For the period January 1, 2013 through December 31, 2013, 7 permits were issued by DMA; all for processed caviar (see note above regarding total exports).
- The total weight of shovelnose sturgeon caviar exported by the U.S. in 2012 was 843 kg (1,858 lbs.). This is a reduction in the number of permits (22 in 2011) and total exports of 818 kg. (1,804 lbs.) of caviar.

Please provide their harvest data in kg and lbs for future seasons. Please check the data that for your State in the Table Dr. Gnam has provided and contact me if there are any data gaps or errors. Also, please inform us if there have been any regulatory changes.

DSA's Chief, Dr. Rosemarie Gnam, and I would like to thank the States that worked closely and shared data and current literature for paddlefish with our partner, Dr. Alexei Sharov. Alexei's report on the status of paddlefish throughout its range is an important report for all of us to use in making future management decisions for the conservation of the species. He can be reached at: [ASHAROV@dnr.state.md.us](mailto:ASHAROV@dnr.state.md.us).

I regret missing the meeting this year, however, if you have questions, literature, reports or any other matters to share with me, or if I can be of any assistance, please contact me at [Marie\\_Maltese@fws.gov](mailto:Marie_Maltese@fws.gov), or by telephone at: 703-358-2486.

**ACTION ITEM – States should check data in harvest table and get updated numbers to Marie by Feb 7th.** Also please define the date range for harvest table. Some states will need to shift numbers one year (MO, ND).

### **Ad hoc Committee on Tagging Protocols**

Gerald Mestl reported that states had been surveyed on field data sheet use. There was a wide range of different uses (used MICRA sheets, used agency sheets and transcribed to MICRA sheets, used agency sheets, didn't collect any data, other?) The number of states submitting to the database has been declining every year (4 states in 2011). The question of the need to keep up the database with so few states participating was discussed. Sub-basins would probably keep up theirs individually. The MICRA datasheets are pretty data intense and include more data than most people use or need. More states may contribute if the datasheets were revised. Mestl pointed out that the strength of database is it allows queries for multiple recaptures and data formats. If you don't enter certain critical variables the queries won't work. Keeping the database going is critical for known age fish study. Obara – what

do we want or what are we getting from the database. What do we plan on using it for in the next 5 years? Some states use it extensively. Discussion is tabled to keep on schedule.

### **Ad hoc Lake Sturgeon Subcommittee**

Quinn – many state reports this year included lake sturgeon. Herzog – MO lake sturgeon plan has been updated and genetics plan included. MICRA lake sturgeon plan has not moved much. Plan was to take pallid sturgeon plan and use as template. Need to get a group together and put plan together. Quinn – are states that have lake sturgeon management interested in putting plan together? Lyons – WI is currently revising their lake sturgeon management plans, have genetic data they can share. Schoenung – IN has genetic data on white river. DeLonay – contacted by Native American tribe about propagation and reintroduction effort in upper Ohio basin (Upper Alleghany River, New York). Ohio River states have held off on reintroductions until more could be learned about White River population.

### **Ad Hoc online commercial reporting**

Jeff Quinn did some research and took proposal to the Executive Committee for a system. It was declined. TN was finalizing their system. TN has 4 reports depending on license. They are currently entering a lot of older unentered data. Hopefully in time when it is completed they will be able to share the system and code with other states. Eric Ganus would like to have a smaller meeting with interested parties and showcase the system. They are working on allowing commercial harvesters to enter their reports online.

**ACTION ITEM – Ad Hoc Online Commercial Fishing Subcommittee will be at the 2014 LMRCC meeting**

### **AFWA Stock Assessment Report Discussion**

Alexi's report, when finalized, will serve as a stock assessment for non-detriment findings. Sub-basin reports need to be updated or written. Rose thinks that paddlefish could be subject to a Significant Trade Review in the near future. Also the EU countries may put paddlefish imports more stringent review. She suspects they will want to review non detriment findings in the next year. Discussion over why is the right to export and get the highest egg price the top or a high priority objective. Some people don't like the EU telling us what to do. EU might prefer a national plan, but a sub-basin model is more appropriate. Gnam – it's not what we need to do for the EU, what we need to show is that the fisheries are sustainable. Scholten – we have most of what we need with Alexi's report. Just assemble that and show how our fisheries match that. Brooks – how do we put together a program where we can emulate something similar to Oklahoma where we can require commercial fishermen to sell first to the state agency. We could use a percentage of the sales to support paddlefish management. It would be a no net gain money program. It would also help stop poaching if they can only sell to state agencies. Is there any reason we should not go this way? Bottom line is we have to do something otherwise it's going to get shut down. AL looked at this model when they opened, but their administrators and lawyers said no. Other potential option would be an excise tax on roe, but doesn't address illegal trade. Perhaps a registration/certification process like ginseng and tax there. Perhaps certified listened egg brokers that must report and tax at that point. Anyone that exports must get a license from CITES, but only \$25 and paperwork. Declared values at customs is often grossly under the actual value. When MT/ND set up their program there was not any commercial fishery, so they weren't stepping on anyone's toes. Fish eggs were mostly being discarded. OK is different because they run the processing and sell directly themselves.

Eric requests Alexi rerun models with some new data they have. Deb says there may be more money available to do that and if other states have more data available. **ACTION ITEM If states want additional modeling assistance send Jeff Quinn an email to coordinate.** Alexi – If you have additional

comments please tell him. Please don't try to be polite just let us know what issues you have. Would like to see the database kept going. We should sit down and design a good coordinated sampling program. Tagging can give us reliable estimates of mortality rates and movement, but it must be done in a well designed and coordinated sampling. This would serve us well in the future to estimate many of the parameters we need to manage paddlefish. The set of models they used are available free online at NOAA Fisheries Toolbox. Manual are included for all the programs. Alexi also shared picture of beluga sturgeon and thanked everyone for their help and input. Scholten – maybe we should spend funds to have Alexi give workshop on Fisheries Toolbox models. Alexi – day or two workshop maximum length. **ACTION ITEM Incoming leadership will work on setting up modeling workshop.**

### **Installation of Jason Sorenson as New Chairperson**

Jeff Quinn introduced Jason Sorenson as the new Chairperson. Jason thanked Jeff for his service the past two years as Chairperson.

### **NEW BUSINESS**

**2014-15 Meeting Location** – Request to have meeting in South Dakota. Moving the meeting earlier would have benefits for taking agenda items to exec board. Gerald would set up shuttles for anyone from Omaha airport to meeting location in Yankton or Ponca State Park in NE. Field trip to see snag fishery and tour hatchery. Could also piggy back onto the Midwest, but registration fees can be issue for travel. Jeff Quinn – Motion to hold meeting at Yankton in October. Kirk Hansen – second. Discussion: Maybe set up a doodle poll to see best date options. Is there another set of dates that somebody would want us to throw out. If we want to view the fishery we need to be there the first few days. Motion passes unanimously.

**Nominations for Chair Elect** – Nominations are not needed until the next meeting. The Ohio River basin is next in the rotation.

### **Break for lunch**

### **STATE REPORTS**

#### **Alabama Report – Steve Rider**

A provisional commercial paddlefish season was opened in the Alabama River (Mobile Basin) in 2013 and continues for 2014. This was the first commercial harvest of paddlefish in Alabama since 1988. The recreational harvest of paddlefish in Alabama is still prohibited. A proposed commercial paddlefish season for the Tennessee River was canceled due to an opinion issued by the State of Alabama Attorney General that the use of gill nets and trammel nets are illegal in the Alabama portions of the Tennessee River. The lower Tombigbee River (Mobile Basin) paddlefish stock assessment continues in 2014. Lake sturgeon angler reports continue to increase in the Coosa River (Mobile Basin). Several lake sturgeon reports have been received from commercial fishers in Gunterville Reservoir (Tennessee River). In 2014, ADCNR will begin stocking lake sturgeon in the Tennessee River.

#### **Arkansas Report – Jeff Quinn**

We started our White River paddlefish population assessment during November 2013, and this population has not been assessed in detail since 1990. Silver and bighead carp appear to have reached

problematic densities in the White River. The Arkansas River stock assessment has been ongoing since 2002-2003, and this year Ozark Lake is being sampled. Last year we captured 170 fish from Pool 13, and catch per unit effort appeared similar to values from previous years. A report is available upon request. We have started the process of revising our roe taker commercial harvest reporting forms. We plan to develop waterbody-specific management plans for the commercial harvest of paddlefish and sturgeon in the upcoming year.

Shovelnose sturgeon genetic samples are being processed by Krista Boysen and Dr. Rob Wood for the MICRA range-wide shovelnose sturgeon genetics and morphology project. The project investigator, Lee Holt, is now with the USFWS, so Jeff Quinn will now be coordinating the project for AGFC. The Mississippi Natural History Museum has agreed to voucher the fish in their collection, and half of the samples will likely go to Dr. Eric Hilton at VIMS.

The current Code of Regulations are available online at:

<http://www.agfc.com/enforcement/Pages/EnforcementRegulations.aspx>

### **Louisiana Report – Melissa Kaintz**

Louisiana Dept. Wildlife and Fisheries (LDWF) field crews continue to collect paddlefish broodstock for the agencies "Native Fishes in the Classroom Program". Paddlefish eggs and fry are produced annually at Booker Fowler Fish Hatchery for the students to learn the early development and life history of this ancient river fish by raising them in tanks in their classroom each spring. In 2013, a total of five female paddlefish were artificially spawned to obtain eggs for incubation. The average length and weight of the females spawned were 973 mm and 11.19 kg, respectively. Seventeen male paddlefish, averaging 834 mm in total length and 7.20 kg in weight were used in the artificial insemination of the five females. A total of 18 family groups were produced in the matings, resulting in 397,135 paddlefish fry. Teachers and students alike participate and observed the entire spawning process. Four to six hour old fertilized eggs were distributed to the educators at the end of the day for return to their classrooms rearing tanks. There were approximately 30 teachers participating in the program from throughout the state during the 2013 year.

2013 Paddlefish stockings: (the broodstock, fry and fingerlings are returned to the source river each year - Mermentau)

87,656 sac fry

178,383 advanced fry

12,609 fingerlings

1,187 fingerlings

1,590 fingerlings



Louisiana Dept. Wildlife and Fisheries (LDWF) field crews continue to monitor paddlefish and sturgeon populations in Louisiana waters through their annual standardized, big river and coastal marsh sampling.



### **West Virginia Report – Chris Obara**

Fishing the edge asian carp program. Concerns about paddlefish bycatch. Used contract fishers. Observers on board. 2 hr set times on gill nets. Didn't see much paddlefish mortality. Showed them they probably have more paddlefish in their waters than they thought.

### **Indiana Report – Brian Schoenung**

Continue SNS work on the Wabash. Commercial anglers are getting creative with hoop net leads on Wabash shovelnose fishery. Working on changing rules to eliminate leads on hoop nets.

### **Iowa Report – Kirk Hansen**

#### Cedar River

1,334 sturgeons were collected in 2013 (96 recaptures) bringing the total of tagged fish to over 8,000 since the program started in 2006. The tagging effort was assisted by other fisheries personnel as well as local law enforcement personnel and other volunteers.

#### Mississippi River

A total of 845 shovelnose sturgeon were sampled with drifted trammel nets in Pool 13. The 2008 and 2011 year classes dominate the catch. Limited paddlefish sampling was conducted. 85 fish were sampled of which 66 were tagged, six were recaptures, and 13 were too small to jaw tag.

#### Missouri River

A total of 124 paddlefish were collected in 2013. Spring sampling spanned from March 7 to June 12. Forty seven floating gill net sets (5" mesh) were fished for an average effort of 1.7 hours resulted in 75 fish. The majority of fish (61) were collected early in the season. March/April CPUE was 0.93 (fish/hr/1000sqft mesh) and fell to 0.18 in May/June. Spring netting will scheduled to be completed in April in future years. Fall sampling utilizes 3" sinking nets fished over night and targets multiple species. Eighteen samples collected 49 paddlefish. One hundred and nine fish were jaw tagged. Four jaw tags were recovered, two from Iowa and one each from South Dakota and Nebraska. Two coded wire tags were recovered.

### **Nebraska Report – Gerald Mestl**

In 2013, Nebraska crews successfully jaw tagged paddlefish throughout the upper portion of our sampling reach of the Missouri River. Crews distributed 339 jaw tags which included; 83 in the tailwaters of Fort Randall Dam, 144 in the tailwaters of Gavins Point Dam and 112 downstream near the confluence of the James River. This was the first time in three years that we were able to sample at Fort Randall and the James River confluence. Mean length of captured fish at Fort Randall was 974 mm, 910 mm at Gavins Point and 828 mm in the lower unchannelized reach below Gavins Point. We recaptured 5 jaw tags and 67 coded wire tags among all sites.

The Lewis and Clark Lake paddlefish trawl monitoring program, which began in the 1960s, was conducted for its 42nd year. 2013 sampling resulted in 15 age-0 paddlefish collected, which was an improvement from the previous year where no paddlefish were collected. During this effort, 51,000

larval drum were collected, an increase from 4,000 collected in 2012. Age-0 walleye and sauger captures also increased from previous years.

Nebraska's intensive pallid sturgeon broodstock collection continued for its 6th straight year. Crews were assisted by volunteers from agencies, academia, and the public. This year's effort resulted in 194 pallid sturgeon collected, of those 153 were of hatchery origin and 33 fish were sent to Blind Pony State Fish Hatchery for potential propagation. Of the 33 fish sent to the hatchery, 5 were reproductive females and 17 reproductive males. Over the last 6 years, this effort has collected 23,373 total fish, 1,087 pallid sturgeon with 111 of those being reproductive ready status.

### **Wisconsin Report – John Lyons**

Wisconsin has two species of sturgeon, lake and shovelnose, plus paddlefish. The paddlefish is a state-threatened species and no harvest is allowed. The lake sturgeon is a state special-concern species that supports a highly regulated sport fishery in a few large rivers and lakes. The shovelnose sturgeon is the most common of the three and supports a commercial and sport fishery in the Mississippi River and a sport fishery in the lower reaches of the Wisconsin River, the largest tributary to the Mississippi in the state. A number of fisheries management and research activities are ongoing for all three species.

#### **Paddlefish**

Paddlefish research continues on Pools 6 and 5a of the Mississippi River under the direction of Dr. Josh Lallaman, St. Mary's University, Winona, MN. Netting is ongoing to locate habitats with concentrations of paddlefish and lake sturgeon, and all captured fish have been pit tagged. Eight paddlefish were implanted with combination radio/acoustic tags in 2012 and are being tracked to identify key summer and winter habitats.

#### **Lake Sturgeon**

The relatively small but popular sport fishery for lake sturgeon in Wisconsin is carefully monitored by the Wisconsin Department of Natural Resources (WDNR). In 2013, the hook and line season, which ran from September 7-30 and had a minimum size limit of 60 inches TL, a bag limit of one fish per year, and a requirement to purchase a special license and to tag and register each harvested fish with the state, yielded 34 lake sturgeon from five river systems tributary to the Mississippi River and 4 from two systems in the Great Lakes basin. In contrast, the winter (ice) spearing season on Lakes Winnebago, Butte des Morts, Winneconne, and Poygan in the Lake Michigan Basin, which ran from February 9-25 with a special license and a registration requirement, a minimum size of 40 inches TL, and a bag limit of one fish per year, produced 567 lake sturgeon. The largest was 80 inches and weighed 179 lbs. Lake sturgeon restoration efforts by the WDNR continue in the middle reaches of the Wisconsin River. Gametes are collected each year from spawning lake sturgeon below the Kilbourn Dam in Wisconsin Dells (River Mile 139), which retains a healthy population, transferred to the WDNR Wild Rose Fish Hatchery, raised to fall fingerlings or spring yearlings, and stocked at multiple locations between RM 217 and RM 296. This restoration effort has been ongoing since 1996, and survival and growth of stocked fish has been good.

Further downstream on the Wisconsin River in the Prairie du Sac Dam tailwater (RM 92), WDNR biologists continue population monitoring and radio tracking of the lake sturgeon population that began in the early 2000's. Short-set gill bottom gill netting takes place twice weekly from late September through late October, and all captured lake sturgeon are pit tagged. Adult population size in the fall averages about 200, and many fish appear to be migrants from either above the dam or from the

Mississippi River. Radio-tagged lake sturgeon may remain in the tailwater for many months or even years, but most eventually move downstream to the Mississippi River.

An upstream fish passage facility planned for the Prairie du Sac Dam is on hold while the U.S. Fish and Wildlife Service completes an Environment Assessment that considers the risk that passage will allow the upstream spread of aquatic invasive species, especially Asian Carp and the fish disease Viral Hemorrhagic Septicemia (VHS). The EA should be completed by early 2015.

#### Shovelnose Sturgeon

The sport fishery for shovelnose sturgeon in Wisconsin remains poorly understood. No recent quantitative creel survey data are available. Most shovelnose sturgeon appear to be taken incidentally by anglers fishing for other species, but during spring sturgeon spawning there is a targeted sport fishery below some of the dams on the Mississippi River. Shovelnose sturgeon angling harvest regulations are fairly liberal; there is no closed season or length limit and a daily bag limit of 3 fish on the Wisconsin River, 10 fish on the Mississippi River bordering Minnesota, and no daily bag limit on the Mississippi River bordering Iowa.

The commercial fishery for shovelnose sturgeon on the Mississippi River is much better known than the sport fishery. Commercial fishers must have a special harvest permit, and in 2013 eleven were issued but only six were actually used. All fish harvested must be reported to the WDNR. Total harvest in 2013 was 4,778 lbs of flesh and 667.7 lbs of roe. These values are down from the recent peak in 2012 (7,125 lbs flesh, 744.8 lbs roe), probably in response to a drop in roe prices (\$100-\$45/lb in 2012, \$55-\$45/lb in 2013). Nearly all harvest comes from Iowa border waters (95.5% in 2013) because of limitations on fishing gear in Minnesota border waters. In Minnesota border waters the only legal commercial capture technique is trot lines and the minimum size for harvest is 25" FL, whereas in Iowa border waters, gill nets, trammel nets, hoop nets, seines, and trot lines may be used, but only fish between 27" and 34" may be kept.

WDNR research biologists continue studying the spawning ecology of shovelnose sturgeon in the 92 miles of the Lower Wisconsin River. There nearly all the shovelnose sturgeon reproduce within a 3-mile reach with numerous gravel-cobble shoals. This reach is monitored weekly and all captured shovelnose sturgeon are PIT-tagged. Spawning fish typically begin gathering on these shoals in late April, peak in numbers in mid-May, and begin dispersing by early June. Spawners range from 20-31" FL and 5-20 years in age.

#### **Missouri Report – Joe McMullen**

Lake Sturgeon (LKSG) - Nothing to Report

Shovelnose Sturgeon (SNSG)

Commercial Fisheries - Missouri Commercial Fish Harvest 2000-2012 – Commercial harvest of SNSG since 1945 has been minimal, relative to other commercial species and on average accounts for less than 2% of the total pounds harvested each year. From 1945 to 2012 commercial harvest of SNSG remained fairly consistent with an average of 10,901 lbs. harvested yearly. From 2000-2012, a total of 258,949 lbs. of SNSG were commercially harvested from MO waters. SNSG harvest peaked in 2001, at 77,811 lbs. and steadily declined thereafter; the lowest recorded harvest (159 lbs.) occurred in 2012. Before SOA (2010), the open river portion of the Mississippi River accounted for 88% of the pounds of SNSG harvested from 2000 through 2009. Since SOA was instated, there has not been an observed shift in harvest effort from the open rivers portions to the pooled portion of the Mississippi River.

Pallid Sturgeon (PDSG)

Culture & Stocking - Blind Pony State Fish Hatchery (BPSFH) transported and held 42 potential PDSG broodstock during the 2013 production year. Of the 42 potential broodstock, five females and 22 males were determined to be in a reproductive state. Of the 27 reproductive fish, one male was a SNSG x PDSG hybrid and two females and nine males were determined to be genetically similar to hatchery produced PDSG. BPSFH shipped six reproductive males to Gavin's Point National Fish Hatchery (GPNFH) and four reproductive males to Neosho Nation Fish Hatchery (NNFH). During the fall of 2013 BPSFH received eight PDSG to be used as broodstock in 2014, each were hauled to NNFH. BPSFH staff injected 3 females and 17 males with LH-RHa to induce ovulation and spermiation. Spawning did not occur; females never released eggs even after a second injection of LH-RHa. Semen from all 18 males was sent to William Wayman (U.S. Fish and Wildlife Service, Warm Springs Fish Technology Center) for cryopreservation. Of the 18 males only semen from 14 were cryopreserved. BPSFH received 10,111 eggs from NNFH. From these eggs, BPSFH produced 10,533 fry. BPSFH produced 9,361 PDSG during the 2013 production year. BPSFH stocked 1,533 PDSG into the Missouri River and transferred 3,527 PDSG to NNFH in September 2013. All PDSG stocked from BPSFH had the seventh left scute removed and were elastomer marked. The remaining 4,301 PDSG were ranavirus positive (Specific FV-3) and therefore euthanized.

#### Research

Dispersal of Stocked PDSG - Just over 144,000 PDSG have been stocked into the Missouri River since 1992. Over 1,100 of these hatchery-stocked fish have been recaptured. Dispersal of PDSG showed no pattern based on the age the fish was stocked into the system. PDSG traveled further from the stock site the longer they were in the Missouri River, with a 58 mile average increase between year at-large five and six. Fish stocked in the spring dispersed further than fish stocked in the fall. Additionally, fish released from the boat ramp dispersed further from the stock site, as opposed to fish which were stocked in a specific habitat type (often in slow, shallow water).

Population Sizes of PDSG in the Lower Missouri River near Kansas City, MO – The robust-design approach within Program MARK was used to estimate the population size of PDSG within a 43.3 river kilometer (rkm) reach of the Missouri River downstream of Kansas City, MO using mark-recapture data of fish sampled from 2011 to 2013. Annual population estimates of wild PDSG varied from 0.6 to 0.9 fish/rkm; whereas, the population estimates of known hatchery-origin PDSG varied from 5.5 to 10.2 fish/rkm.

Seasonal Diet Composition of Juvenile and Adult PDSG in the Channelized Lower Missouri River and the Role of Habitat Restoration in Species Recovery Efforts - We evaluated PDSG food habits within the lower channelized Missouri River using non-lethal pulsed gastric lavage. Stomach contents included fish (Cyprinidae and Ictaluridae), aquatic insects, copepods, leeches, and mussels. Cyprinids were the most important prey item of PDSG; Ictalurids were also of high nutritional importance. Our results support the need for management of native cyprinids, especially *Macrhybopsis* spp. which have been in decline, within the entire range of the PDSG. There may be some relief, however, in the fact that PDSG are able to sustain their growth by also consuming Ictalurids, species which have remained in high abundance.

#### Paddlefish (PDFH)

Culture & Stocking - In 2013 Blind Pony State Fish Hatchery (BPSFH) collected 17 female and 15 male PDFH broodstock from Table Rock Lake and Lake of the Ozarks. BPSFH spawned 12 female and 12 male PDFH collecting 3,472,232 fertilized eggs; eight ponds were set with a total of 546,074 fry, producing 1,235 fingerlings that were stocked into Table Rock Lake. MDC plans to raise and stock PDFH in 2014.

Regulations & Enforcement - Operation Roadhouse was a cooperative undercover investigation by MDC and the USFWS which resulted in more than 100 suspects from Missouri and eight other states being issued citations and/or arrest warrants for state and federal crimes related to PDFH poaching.

#### Research

Assessing Long-term Coded Wire Tag Retention in Hatchery-reared PDFH – PDFH fingerlings were injected with a binary coded-wire tag (CWT) in the tip of the rostrum and stocked into impoundments from 2005 to 2007 to estimate the proportion of tagged PDFH that retain CWTs after 3.5, 5.5, 7.5 and 10.5 years and apply those retention rates to reservoir PDFH populations. To date, 58 PDFH have been recaptured; 42 and 16 PDFH were caught 3.5 and 5.5 years after tagging, respectively. Recaptured PDFH have demonstrated 100% CWT retention thus far. Evaluating long-term CWT retention rates will help determine if natural reproduction is occurring at Lake of the Ozarks, Truman Reservoir and Table Rock Lake where tagged PDFH are stocked annually.

PDFH Population Characteristics in Reservoirs and Rivers in Missouri - Ryan N. Hupfeld - The objective of this graduate research/pilot project is to assess baseline demographic information for PDFH in Missouri reservoirs (Lake of the Ozarks, Harry S. Truman Reservoir and Table Rock Lake) and rivers (Mississippi and Osage rivers) and to evaluate the current reproductive potential of the population, given total annual mortality rates. This will provide a suite of information needed to properly manage PDFH populations throughout the Mississippi River Basin.

Statewide PDFH Reproduction and Exploitation in Missouri's Large Rivers and Reservoirs - This project will help MDC estimate PDFH exploitation rates and natural reproduction, as well as, additional contributions to mortality (delayed hooking, netting, handling or gaffing) in the Mississippi River and reservoirs (Lake of the Ozarks, Harry S. Truman Reservoir and Table Rock Lake) and is currently being proposed and reviewed internally.

Commercial Fisheries - Missouri Commercial Fish Harvest 2000-2012 –Missouri's commercial fishers harvest, on averaged, 9,021 lbs. of PDFH annually. PDFH harvest was fairly consistent among years from 1945 through 1962. After the mid 1960's there was a general increase in PDFH harvest which peaked in 1989 at 57,180 lbs. After the record high harvest in 1989, harvest drastically declined to a low of 2,324 lbs. in 1997. Harvest increased slightly peaking again in 2002 at 21,427 lbs. harvested and has continued to decline since reaching a record low of 1,590 lbs. harvested in 2012. In the 45 years leading to the closure of PDFH harvest on the Missouri River in 1990, the majority of PDFH harvest occurred on the Mississippi River except for 6 years. However after the closure, the harvest that was occurring on the Missouri River did not appear to shift to the Mississippi River. In the 20 years prior to prohibition of commercial PDFH harvest on the Missouri river, the average yearly harvest on the Mississippi River was 11,698 lbs. and in the 21 years after prohibition it was 9,235 lbs.

#### **Kentucky Report – Ron Brooks**

Paddlefish—Due to time constraints and limited state funds paddlefish sampling did not occur in 2013.

#### Lake Sturgeon

Telemetry—On 10 April 2012, 30 lake sturgeon were surgically implanted with ultrasonic transmitters at the Pfeiffer Fish Hatchery. These 3.0 to 6.5 lb sturgeon were held at the hatchery for two weeks to allow surgery wounds to heal and recovery. Twelve stationary receivers (Vemco VR2W) were deployed at sites upstream and downstream of the two stocking sites (mouth of Laurel River and Turkey Run Ramp) in the Big South Fork and Cumberland River to determine movement out of the stocking areas. On April 24, 2012, 15 of the implanted lake sturgeon were stocked at the mouth of the Laurel River, and

15 were stocked at the Turkey Run Ramp on the Big South Fork. All fish have been accounted for throughout the study and all stationary receivers have detected fish. Some of the lake sturgeon have been detected moving over 35 miles, while others appear to be staying in the areas where they were stocked. Fish that displayed movement, moved downstream into Lake Cumberland during the summer and early fall, and current tracking data and stationary receiver logs indicate that the majority of fish are still in Lake Cumberland below the KY Route 90 Bridge. It is also apparent that some tagged fish have remained upriver of stocking sites (specifically in the Big South Fork). Half of the ultrasonic transmitters had short battery lives and have now expired; no additional data will be available from those fish. Six months of manual tracking has yielded four detections, all of which were recorded near the edges of the study site. Although not enough manual detections exist to quantify habitat use or selection, all four detections occurred in inside bend habitats which provide sandy substrate and low velocity habitats often preferred by lake sturgeon. Trotlining efforts will likely begin in early winter 2014 to gather CPUE, survival, and age/growth data and assess the success of the Department's stocking efforts.

Culture—KDFWR typically receives eggs from Wild Rose Hatchery. A late thaw in the ice caused egg collection to be delayed. By the time lake sturgeon had been spawned and egg collected, the water temperature at Pfeiffer Hatchery in Frankfort, KY had become too high to successfully rear lake sturgeon. As a result, no lake sturgeon were produced and stocked into Kentucky waters in 2013.

USGS – Aaron Deloney – Know locations and habitat characteristics of pallid sturgeon spawning sites. Their focus has shifted in earlier life stages. Egg adhesion, dispersion modeling, etc. Working with microminiature transmitters to determine exact locations of egg deposition. Also examining spawning habitat in upper MO in more natural river. Larval pallid sturgeon have been collected in the Yellowstone/MO River. In upper MO they see males congregating on spawning grounds. Effects Analysis for Missouri River beginning. Interested parties may request more details from Aaron DeLonay.

### **Texas Report – Craig Bonds**

The USFWS Texas Fish and Wildlife Conservation Office, supported by Inland Fisheries personnel of the Texas Parks and Wildlife Department and other partners, will be conducting a paddlefish telemetry study beginning in March 2014. This project proposes to evaluate habitat restoration efforts for 40 river miles of Big Cypress Bayou and their impacts on reintroduction efforts for the Texas state-threatened species. It also proposes to use the reintroduction experiment as a tool for education on the values of healthy environmental flows. The project may also lead to a large scale reintroduction of paddlefish in Big Cypress and Caddo Lake.

In 2008, US Army Corps of Engineers (USACE) completed a project that installed 1,500 linear-feet of gravel shoal in the Big Cypress Bayou, just upstream of Jefferson. It is intended to serve a suite of 35 fish species, including the paddlefish. In 2011, the USACE and the Northeast Texas Municipal Water District (ETMWD) agreed to revise their pattern of releases of water from Lake O' the Pines to provide, for a five-year period, flows to Big Cypress Bayou that would meet the flow regimes recommended by scientists and other partners. Recently adopted provisions for the management of water releases from Lake O' the Pines and the installment of a gravel shoal spawning area as part of a river restoration project have addressed two of the main reasons believed to be responsible for decline and loss of American Paddlefish from Big Cypress Bayou and Caddo Lake.

The plan is to stock 50 paddlefish, each about 2 feet in length (Red-River-strain fish from Tishomingo Federal Fish Hatchery), with radio transmitters in early 2014 as an experimental reintroduction. This work will also include efforts to evaluate the value of the newly implemented hydrological regime and newly constructed spawning bar for other fish species. For a future large-scale reintroduction of

paddlefish to the area to be successful, this project proposes to obtain the data needed about paddlefish movements in conjunction with the new water release strategies for Lake O' the Pines. The data for this project will be used to determine whether the newly implemented hydrological regime and habitat modifications are sufficient to cause fidelity of paddlefish within the Big Cypress Bayou.

### **Projected Timeline**

Monitoring of gravel bar: December 2013 – December 2014  
Establish towers: Fall 2013  
Stock paddlefish: March 2014  
Collect ground telemetry: March 2014 - August 2014  
Final report: April 2015

### **Oklahoma Report – Jason Schooley**

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- 1) Collections
  - a) Larvae netting in the Neosho and Spring rivers yielded poor catch
  - b) Trawling failed to encounter larvae but encountered fertilized eggs at a suspected spawning location
  - c) Winter netting
    - i) Oologah Lake, 144 fish/net/24hrs
    - ii) Hudson Lake, 93 fish/net/24hrs
    - iii) Grand Lake, 69 fish/net/24hrs
- 2) Angler Harvest (Grand Lake)
  - a) 4,512 fish were harvested and checked at the Paddlefish Research Center (PRC)
  - b) 56% male, 44% female
  - c) Continued increase in fish size (both sexes) since 2008
  - d) Harvest still dominated by 1999 cohort
  - e) Caviar: the PRC produced 18,000 lbs, avg. 12.5 lbs per female (25.5% of body weight)
- 3) Conservation
  - a) Completed the Oklahoma Paddlefish Management Plan in 2013 (will e-distribute via MICRA list)
    - i) Statewide stock assessment and harvest management
    - ii) Habitat management plan (habitat changes, invasive species, contamination)
    - iii) Law enforcement plan
    - iv) Public education
- 4) Harvest Management
  - a) New regulations in 2014
    - i) Individual annual harvest limit (2 fish for 2014)
    - ii) Mandatory harvest reporting via e-check
- 5) Research
  - a) Continued long-term telemetry monitoring of adult females in Grand Lake
    - i) Examined spawning frequency... suggests annual spawning in Neosho/Spring rivers
    - ii) Ends 2014... 4 of 30 fish remain active
  - b) Completed short-term catch and release mortality study

- i) Acoustic telemetry... evaluated movements post-snag
- ii) Evidence indicates low immediate mortality and most fish (15 of 19) continued to make “typical” spawning movements for a minimum of 2 weeks up to 5 months (avg. 3 months)
- iii) Movements of tagged fish were generally coordinated to each other and to river flows
- iv) Three study fish were likely immediately caught a second time and removed.
- c) Completed MS project (A. Nealis) comparing age structure, relative abundance, condition, growth, mortality, fishing pressure and angler use of two Northeast Oklahoma reservoir paddlefish stocks
- d) Completed initial genetic diversity evaluation on Grand Lake stock
  - i) Compared diversity and parental contribution of multiple cohorts
  - ii) Evaluated source and influence of large 1999 cohort
- e) New for 2014, statewide paddlefish genetic evaluation
  - i) Compare genetic structure of Grand River lakes
  - ii) Examine statewide genetic structure and make recommendations on management practices (establish management units, relocation, stocking, etc.)

### **Minnesota Report – Nick Schlessler**

- No targeted population monitoring for sturgeon or paddlefish was conducted in 2013 in the Mississippi River Basin.
- Incidental catches of juvenile paddlefish (<20”) continue to increase in Pool 4/Lake Pepin but remain rare (<12 year).
- As part of a study evaluating fish passage through Upper Mississippi Locks and Dams to predict of impacts from potential electric/sonic fish barriers for Asian carp the MN DNR has implanted sonic tags in 2 adult paddlefish and 5 lake sturgeon and has intentions of implanting 13 more paddlefish as well as 10 more lake sturgeon in the spring of 2014. Passage will be monitored with an array of Vemco receivers deployed in above and below Lock and Dam 1 and spread around the upper pools of the Mississippi River as funding allows.
- In response to increasing incidental catch rates among a number of reintroduced stocks of lake sturgeon in Minnesota the MN DNR is pursuing a statewide catch and release angling season for lake sturgeon that would also apply to the MN portion of the Mississippi River.

### **Montana Report – Mike Backes**

#### **Paddlefish - Yellowstone River /Sakakawea Population**

The recreational harvest season closed on the tenth harvest day (May 31) after a total of 747 fish were processed at the Intake fish cleaning station. When adjusting for non-reported fish the estimated total harvest was 934 fish. This is the third consecutive year of staying below the target harvest of 1,000 paddlefish from the Sakakawea population in Montana. An additional 684 paddlefish were jaw tagged from 918 paddlefish caught during a total of 16 catch and release days (Sunday, Monday and Thursdays and 10 consecutive days following the harvest closure).

Paddlefish roe was collected by the Glendive Chamber of Commerce from 364 female paddlefish processed at the Intake cleaning station. The Chamber is a local non-profit organization permitted by the State to collect roe to fund a community grant program. A total of 1,316 pounds of processed caviar

was generated from the 2,634 pounds of raw eggs collected. Thanks to Brent Gordon for his assistance training the new caviar processors at Intake!

The continued expansion of oil drilling in the Bakken Shale in Eastern Montana/Western North Dakota appears to be changing the composition of paddlefish anglers. The boom is attracting people from all corners of the United States. The paddlefish fishery is a new opportunity for many of the oil workers. Analysis of the angler creel data has not been completed for 2013 but from observations during the season it appears that the oil field workers are participating in the fishery. This is reflected in a substantial number of new and inexperienced anglers to the fishery. Another indication, only using paddlefish harvested and processed at Intake, is angler residency from 17 states. The states and number of anglers in parentheses were: Montana (507), Wyoming (140), North Dakota (21), South Dakota (15), Colorado (12), Idaho (7), Minnesota (6), Wisconsin (6), Washington (5), Texas (4), Utah (4), Nebraska (3), New Mexico (3), Arizona (2), Oklahoma (2), Saskatchewan (2), and Alaska (1).

### **Missouri River – Fort Peck Population**

The Upper Missouri River paddlefish fishery is classified as a recreational fishery. There is no commercial harvest of either paddlefish roe or flesh on this population. In 2008, a harvest cap of 500 fish was established and the season was set from May 1<sup>st</sup> to June 15<sup>th</sup>. In 2013, the harvest season was closed May 10 when the on-site creel estimated harvest at 475 fish. A total of 285 fish were reported by anglers; 165 (58%) were males and 120 (42%) were females. Catch and release fishing was continued for 36 days following closure of the harvest cap.

### **Mississippi Report – Larry Pugh, Garry Lucas**

#### **Paddlefish Commercial Harvest – Current Regulations**

Key Components of Mississippi's regulated commercial paddlefish fishery for 2013-2014:

- Persons must have special permits to take paddlefish and permits for the initial handling and processing of paddlefish. The state has a limit on the number of harvesters allowed to take paddlefish for roe: The quota is only 10 permits per zone, except for MS River Zone where 20 permits can be issued.
- All harvested paddlefish must be at least 37" EF length (35" in border waters with Arkansas, per Arkansas regulations) and paddlefish must be tagged upon possession.
- Eggs must remain within fish till reach a processing facility.
- Sale/exchange of paddlefish must be reported to MDWFP within 24 hours, with tag numbers and individual harvested fish length.
- There are seven zones open to paddlefish harvest, but only one zone is open at a time.
- Only portions of the available water associated with the river system, targeted as a zone, are open to harvest. This is expected to give a refuge to non-spawning paddlefish within that system.
- Harvesters are limited to using 6" mesh nets, that can only be run during daylight hours, and some zones require use of multifilament net that cannot be set overnight
- Violations of paddlefish regulations are a serious Class 1 misdemeanor violation. And a history of past violations can prevent a person from being eligible to get a permit.

**PADDLEFISH HARVEST IN MISSISSIPPI FOR PAST 5 SEASONS**

The values in ( ) for the 2010-2011 season is the harvest without the harvest for Moon Lake.

Harvest of Paddlefish in Mississippi During the 2012-2013 Roe Harvest Season				
	Zone			
	MS River	Delta	Sunflower R.	Yazoo River
No. Harvested	561	213	19	58
Avg. length	36.7	40.9	38.9	41.2
Wt. egg sacs	2,532	1,640	73	398
Wt. caviar (lbs.)	2,079	1,100	59	266
% harvest males	5%	29%	0%	14%
No. released	2,019	301	62	81
No. released w/ eggs	227	40	23	11

**PADDLEFISH HARVEST IN MISSISSIPPI FOR 2012-2013 SEASON BY ZONES**

Four Harvest Zones were open to harvest. Participation – 15 Harvester Permits, 11 Helper Permits, 9 Processor Permits, and 1 Buyer Permits

	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Paddlefish Harvested	26	175	2,405 (1,328)	1,574	851
Wt. egg sacs	73	n/a	17,136 (7,168)	6,041	4,643
Wt. screened eggs (lbs.)	64	602	11,186 (5,457)	4,532	3,504
No. released	29	988	9,405 (7,954)	8,304	2,215
No. released w/ eggs	4	70	1,087 (1,076)	1,328	301

**2013-2014 Paddlefish Commercial Fishery update**

Seven zones are open to harvest. Participation (as of 12/31/2013) – 10 Harvester Permits, 4 Helper Permits, 3 Processor Permits

As of January 20, 2014, 167 Paddlefish have been harvested; substantially less than what was harvested

by this time the last two seasons. A lot of females with Salt & Pepper eggs are being caught this season. Many of these S&P paddlefish are being harvested for the meat to pay the bills of the fishers.

### **Paddlefish Summer Harvest**

MS has a summer fishery where up to 5 paddlefish per day can be harvested, but all fish have to be tagged at time of possession. Two persons chose to participate in 2012. They harvested 10, released 15 alive and 47 dead paddlefish. Five persons chose to participate in 2013, but none reported that they harvested any Paddlefish using their summer Paddlefish tags.

### **Paddlefish Sampling**

Commercial Paddlefish harvesters were accompanied by MDWFP biologist and the paddlefish they could not keep or wished not to keep were given to the biologist to measure and tag with a jaw tag prior to release. During the 2012-2013 roe harvest season and the 2013-2014 season prior to January, biologist collected data on 231 paddlefish collected by paddlefish harvesters. This number does not include the additional data from fish that were harvested the days of the sampling: Harvesters recorded lengths for each harvested fish and reported that to MDWFP and that information was incorporated into stock length assessments. No CWT were detected in any fish scanned for these tags. Teams of biologists set nets in 7 lakes and collected data on 74 paddlefish and other fishes. Since 2010, and as of December 2013, 436 Paddlefish have been tagged with jaw tags.

### **Paddlefish Movement**

A Paddlefish tagged by the South Dakota Game and Fish Commission at the Gavins Point Dam on the Missouri River was captured January 2013 in Lake Whittington. The fish was 35 inches when retrieved, but although the contact number on the tag was recorded the tag number was not recorded. A Paddlefish tagged on Moon Lake in December 2010 was caught by a person from Yankton, South Dakota, but the location of the catch cannot be confirmed (although the day it was reported caught, 10/1/2012, was the opening day of the Gavins Point Tailwater snag fishery, and those who took the call were of the understanding that the caller was in Yankton at the time). A Paddlefish tagged in the Sunflower River January 2012 was also caught in the Gavins Point Tailwater snag fishery on October 2, 2013. This 33" EFL fish only grew about ¼ inch since tagging and recapture. Another fish tagged in the Sunflower River January 2012 was caught in the Sunflower almost a year later. This fish's recorded length at re-capture was similar to that at release. Another Paddlefish tagged in January 2012 was captured in Steele Bayou July 30, 2013. That fish grew from 32.75 in to 37.8 in. And a paddlefish tagged by the Alabama Game and Fish Commission in the Alabama River was captured in the tailwater of Okatibbe Reservoir June 15, 2013. Although the contact number on the tag was recorded, the tag number was not recorded. It seems that with very high flows in both watersheds of the Pascagoula and Alabama Rivers, the fish was able to remarkably jump between basins

### **Pascagoula River Paddlefish Restoration (SWG grant)**

Objective of this State Wildlife Grant is increase paddlefish population via a stocking program using brood stock collected from Pascagoula River watershed: Spawn fish at National Fish Hatchery at Tupelo and grow-out at North MS Fish Hatchery. During Spring 2013 -

- Collected 12 paddlefish that included 2 females with eggs. Unfortunately, during the run to collect fish for the hatchery, only males and an immature female were captured. Whereas last year only females with eggs and no males were captured.
- The low number of paddlefish encountered raised concerns that stocking may adversely alter the genetic composition of the Pascagoula drainage Paddlefish stocks. As such, the project was modified to include a genetic evaluation of the Paddlefish of the Pascagoula River drainage to guide

MDWFP in augmentation efforts for the paddlefish stock. Fin clips from sixteen Paddlefish have been sent to Southern Illinois University for genetic analysis.

#### **ALLIGATOR GAR**

MDWFP has established a quota of 200 alligator gar for the commercial fishery. All gar have to be tagged to be retained. For 2012, 8 persons requested tags, with 90 tags being issued. Three of those persons harvested nineteen (19) Alligator Gar that ranged from 34 to 144 inches in length. Four persons reported that they did not harvest any Alligator Gar and one person failed to submit a report. For 2013, 10 persons received tags. Reports on harvest are now being received.

#### **STURGEON WORK in MISSISSIPPI –**

Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) has been sampling sturgeon in the Lower Mississippi River annually since 2010. During 2012-2013 our sampling objectives included implanting pallid and shovelnose sturgeon >700mm with ultrasonic transmitters and assisting with data collections for other sturgeon studies. From November 2012 to May 2013 a total of 136 trotlines were fished at Mhoon Bend (RM 684-690), 130 trotlines were fished near Vicksburg, MS, (RM 429-443), and 15 trotlines were fished at Catfish Point (RM 575-567). Eleven different species of fish were collected with shovelnose sturgeon and blue catfish dominating the catch. Pallid sturgeon CPUE was similar to past years and similar across sampling sites. Shovelnose CPUE was higher at Mhoon Bend than at Vicksburg, but CPUE at both sites were lower than in past years. A total of 73 sturgeon were implanted with sonic tags including 16 pallid and 28 shovelnose at Mhoon Bend, 12 pallid and 15 shovelnose at Vicksburg, and 2 pallid sturgeon at Catfish Point. Since 2010, MDWFP crews have captured a total of 2,565 shovelnose, 110 pallid, and 55 intermediate sturgeon in the LMR. Of those, 58 pallid, 88 shovelnose, and 3 intermediate sturgeon have been implanted with sonic tags. We've also assisted with several other research projects including collecting fish for a LMR *Scaphirhynchus* ID study, collecting fin ray samples for age and growth analysis, taking tissue samples for stable isotope analysis, and collecting gonad samples for sex ratio and reproduction studies. Final results from these studies should be forthcoming and lead to a better understanding of habitat selectivity, movement patterns, population dynamics, and life history characteristics of sturgeon in the LMR.(source: Investigation of Sturgeon Population Demographics in the Lower Mississippi River Annual Report for 2012 – 2013. by Nathan Aycock, Jerry Brown, Darrin Hardesty, Don Henke, and Ryan Jones)

#### **North Dakota Report – Fred Ryckman**

There are two mostly discrete stocks of paddlefish in North Dakota. One stock inhabits Lake Sakakawea and the Missouri River upstream to the tailwaters of Ft. Peck Dam and the Yellowstone River upstream from its Confluence with the Missouri River; the other stock resides in Lake Oahe and the Missouri River downstream from Garrison Dam.

Paddlefish were first reported as being commercially harvested in ND in 1961 from Lake Sakakawea. Their harvest was allowed only as incidental take by commercial fishermen who were targeting other commercial fish species. Slightly over 100,000 pounds of paddlefish were thus harvested over a 21 year period, with the last commercial harvest of paddlefish in North Dakota occurring in 1981. NDG&F first permitted a sport harvest of paddlefish from the YR/SAK stock in 1976. This “snag” fishery has been permitted annually ever since, with an annual harvest cap of 1,000 fish imposed since 2003. A total of 4,166 tags were sold in 2013; a snagger is limited to only one tag/year. Extrapolated post-season phone survey results were that 3,641 active snaggers expended 8,758 snag & harvest days of effort during a total of 11 mandatory snag & harvest days during which an estimated 892 paddlefish were harvested.

Slightly over 1,300 additional days of effort were expended during 13 days of mandatory snag & release. A single entity is permitted to process the roe from female paddlefish into caviar, in exchange for cleaning all harvested fish at no cost to snaggers. In 2013 the caviar operation processed a total of 771 fish, of which 198 were females (26%) from which 1,177 pounds of caviar were processed.

Neither commercial nor recreational harvest of paddlefish has ever occurred in the MR/Oahe stock. NDG&F began intensive monitoring of paddlefish in this stock in 2006. Since 2006, 4,512 unique adult paddlefish have been captured and marked with individually numbered jaw tags. An additional 490 adult paddlefish were sampled and tagged in 2013. An ongoing natal origin study was undertaken to determine the source of fish in this stock. No natural reproduction has been documented, and microchemistry results to date have been inconclusive. Since the extremely high flow even of 2011, however; a total of 69 jaw tagged adult paddlefish have been sampled below Garrison Dam that were previously tagged in either ND or MT in the Missouri or Yellowstone rivers upstream of Lake Sakakawea. Although Garrison Dam is a total barrier to upstream fish movements, recapture of these jaw tagged paddlefish has documented that considerable numbers of YR/SAK stock paddlefish do pass downstream through this dam during period of very high flow, and thus that the MR/Oahe stock is augmented in this manner.

No harvest of any sturgeon species has been allowed in North Dakota for nearly 20 years. Pallid and shovelnose sturgeon inhabit the Missouri and Yellowstone rivers; MN has successfully reintroduced lake sturgeon into the Red River (Hudson Bay drainage).

### **South Dakota Report – Jason Sorenen**

#### **Paddlefish Tagging/Stocking**

South Dakota Game, Fish and Parks personnel conducted paddlefish tagging operations on the Missouri River below Gavins Point Dam during 2013. A total of 232 adult paddlefish were tagged with monel jaw tags in 16.5 hours of netting effort during June, 2013.

During May, 2013 broodstock paddlefish were collected from the Missouri River near Running Water, SD and transported to Gavins Point National Fish Hatchery near Yankton, SD for artificial propagation. This joint effort between South Dakota Game Fish & Parks and the United States Fish & Wildlife Service resulted in 5,062 paddlefish being stocked in Lake Francis Case in September 2013. All fish were tagged with 1.5 length decimal coded wire tags during August 2013 as per MICRA stocking/tagging protocols.

#### **Paddlefish Sport Fisheries**

South Dakota currently has three sport fisheries for paddlefish. A spring snagging season occurs in May on Lake Francis Case, a mainstem Missouri River reservoir. Additionally, a summer archery season (July/August) and a fall snag fishery (October) take place in the Missouri River below Gavins Point Dam. Both Gavins seasons are jointly managed with the Nebraska Game and Parks Commission. Anglers harvested an estimated 190 paddlefish while fishing for an estimated 2,748 hours during the 2013 Lake Francis Case season. Anglers caught and released an estimated 856 paddlefish during 2013. This season runs the entire month of May and there are 350 resident-only tags issued. Anglers harvested an estimated 730 paddlefish while fishing for an estimated 12,159 hours during the 2013 Gavins Point snagging season. Anglers caught and released an estimated 10,732 paddlefish during 2013. This season runs the entire month of October and there are 1,550 resident and 50 non-resident tags issued.

Archers harvested an estimated 41 paddlefish while hunting for an estimated 2,468 hours during the 2013 Gavins Point archery season. This season runs for 30 days from mid-July to mid-August and there are 255 resident and 20 non-resident tags issued.

#### Paddlefish Proposal

South Dakota Game, Fish & Parks staff at the Ft. Pierre office currently has a proposal to stock paddlefish in Lake Sharpe in an attempt to create a sport fishery. The proposal calls for up to 15,000 advanced fingerlings to be stocked annually over the next 12 years. Population evaluation would occur a few years after the first stocking event. Evaluation for potential as a sport fishery would occur a minimum of eight years after the first stocking event. All stocked fingerlings will be tagged with CWTs as per MICRA protocols.

#### Lake Sturgeon

South Dakota Game, Fish and Parks is helping fund a lake sturgeon reintroduction project in Big Stone Lake (SD/MN borderwater) and the Minnesota River. The project is a cooperative effort with the Minnesota Department of Natural Resources.

#### **Tennessee Report – Eric Ganus**

Eric briefly discussed turtles. They have not had any significant regulations for many years. He showed a turtle gauge he had fabricated for law enforcement to measure turtles in the field. Tennessee has established a season and a quota for licenses. They are also in the process of rewriting management guidelines and sampling protocols. 12 turtle species can be harvested from Realfoot Lake.

#### **USFWS, Arkansas Ecological Services Office – Lindsey Lewis**

Arkansas Ecological Services office working with the Arkansas Game and Fish Commission have continued to maintain VR2 receivers in the lower Arkansas and White Rivers for the past three years. We also added a receiver to the lower St. Francis River in late 2012. In April 2013 we had our first detection of a single female pallid on the lower St. Francis River. We have now had three consecutive years of pallid sturgeon detections on the lower Arkansas River downstream of Wilbur D. Mills Dam. We have not had any detections so far on the White River. We believe our VR2s may have been obstructed and had low detection efficiency up until now. We have reconfigured our placement of the VR2s in hopes of substantially increasing their effectiveness. Sensors are currently in place and we hope to retrieve the data around late May to early June of 2014.

We are also in the process of establishing a camper/field station at the St. Francis National Forest Headquarters in Marianna, AR to facilitate increase surveys and research on the lower St. Francis, Mississippi, and L'Anguille Rivers in this area. We anticipate increased efforts through this station and our Merrisach Field Station on the lower Arkansas and White Rivers toward pallid sturgeon and other large river species in the coming years.

## Technical Presentations

### **Jason Schooley presented “Harvest Management Regulation Options for Oklahoma’s Grand Lake Stock of Paddlefish *Polyodon spathula*”**

Discussion: Hooking mortality was discussed and has been determined to be virtually nonexistent as determined with acoustic tagging study. Anecdotally biologist from other states agreed. Alexi discussed that declines in population appear that harvest is probably at too high a rate currently. Although the large 2009 year class nearing the end of its lifespan is also a compounding factor to the observed population declines.

### **Dennis Scarnecchia presented “Beneath the VPA: age-based paddlefish management and monitoring in relation to life stage, recruitment, and behavior”**

Discussion: Scarnecchia – we need to look to federal partners or foundations to seek funding to gather this kind of data from commercial states. Upper Missouri work is a low level of funding annually, but consistent. If we had long term data from other areas we would be able to model with much greater precision and make more informed management decisions. Alexi – the low slope is probably the estimate of natural mortality rate. You cannot maintain the same age structure with fishing mortality. You can maintain the age structure with low fishing mortality. Scarnecchia – it could be either. We still see 50 year old fish every year. Large year classes “protect” the older age classes. Alexi thinks the Grand River 1995 year class will live much longer than they expect. Quinn – We are trying to find grant money to do this sort of work on a more natural river system. They have very old fish in the White River which is very hard to fish because it is a snaggy river system and not a reservoir. Arkansas is interested in trying to work with commercial harvesters and buyers to try and collect similar life history data in several locations in the basin. Gnam – We don’t have funding. The group should discuss this idea with Deb and she may be able to find funding through their sources. Scarnecchia – I’ve talked with many of the commercial states. It would be ideal if we could all be gathering the same type of data that we could compare throughout the basin. MICRA is still a good framework for bringing this all together. He will be seeking funding. Gnam – Bring in the dealers to our meetings and present our concerns. If they know they won’t be able to export they may be willing to fund some of these sorts of endeavors. Ryckman – is relation to the age structure truncation. The way our fish are harvested we probably won’t see what Alexi predicts because the fishery is focused more on the smaller age classes. Also the larger fish are much less susceptible to harvest because they are harder to catch (spooling reels when hooked, etc.). DeLonay – Is low frequency episodic recruitment a natural phenomenon or the result of fragmentation and flow changes. Scarnecchia – The reservoir serves as a large rearing pond that holds the booms when they happen. Episodic recruitment is probably the norm in acipensars and blue suckers. This type of recruitment in these long lived fishes is probably the norm. Imprecision in aging probably masks year classes in the older aged fish, but is easy to see in the younger fish, like OK.

Motion to adjourn - Jeff Quinn, Second – Gerald Mestl, unanimous. Meeting adjourned.