



North Central Division American Fisheries Society



## Esocid Technical Committee

Chair – Jonathan Meerbeek (IA DNR; [jonathan.meerbeek@dnr.iowa.gov](mailto:jonathan.meerbeek@dnr.iowa.gov))  
Immediate Past Chair – Rod Pierce (MN DNR; [Rodney.Pierce@state.mn.us](mailto:Rodney.Pierce@state.mn.us))  
Chair-elect – Jonathan Meerbeek (IA DNR; [jonathan.meerbeek@dnr.iowa.gov](mailto:jonathan.meerbeek@dnr.iowa.gov))

### **2011 Winter Business Meeting Minutes**

*Midwest Fish and Wildlife Conference, Marriott Downtown, Des Moines, Iowa, December 4-7*

The following notes highlight discussions from the ETC business meeting held 4 December 2011 at the Des Moines Marriott Downtown. ETC members in attendance at the business meeting were C. Wagner, J. Koch, J. VanDeHey, D. Rowe, and J. Meerbeek.

Summer Minutes and Update to North Central Division (NCD): No corrections were made to minutes from the July 2011 ETC meeting. Those meeting minutes were provided to ETC members on 4 August 2011. In November, Jonathan Meerbeek provided an Annual Report of ETC Activities to the NCD. The report follows a new format from the American Fisheries Society.

Sales of the International Pike Symposium: In 2008, the ETC re-published proceedings of the International Pike Symposium (held in Lake Placid, 2006). We published 101 copies at \$50.50 each with the intent to sell them at \$60 each (US) and \$70 ea (CAN). We borrowed \$5100.50 from the NCD to pay for publishing. To date, we have sold 32 copies at \$60 each (\$1,920), 1 copy at \$70 (\$70), 1 copy at \$35 (\$35) and 55 copies at \$30 (\$1650) for a total of \$3,675.00 in sales. Therefore, the ETC still owes \$1,425.50 to the NCD. Twelve copies are still available for purchase @ \$30/copy and have been advertised on the ETC website as well as at Iowa AFS meeting.

Past and Future Leadership: J. Meerbeek was nominated for another year term and was unanimously voted chair-elect for 2012 at the summer 2011 meeting.

Themes/Location/Dates for 2012 Summer Meeting: Committee members agreed to continue the joint technical committee meeting format for next year's meeting. Topics suggested: GIS, sampling and evaluating recruitment, new tagging methodologies (and hands-on workshop), angler retention and human dimensions, quantitative techniques, and long term databases and trend analyses.

Location and date of 2012 meeting: WTC/ETC/CTC members suggested both Hayward or La Crosse, WI, and Chicago, IL (Shedd Aquarium) as potential meeting locations for the July 2012 summer meeting. At the winter WTC meeting, Paul Christel told members that he has been exploring options near Hayward, WI. One of those options included a casino as a meeting location. ETC members were concerned that they would not be able to get travel authority for this type of location. Technical committee chair-elects will discuss options and finalize meeting location.

Budget: The ETC account (managed by NCD Treasurer Jason Goeckler) had a balance of \$2,121.34 through October 2011.

We will continue to market the remaining 12 copies of the pike symposium book, but will have to consider other ways to generate some income at the summer 2011 meeting. It was suggested that the ETC should host the 2012 summer meeting workshop and use those proceeds to repay the NCD. Also, J. VanDeHey suggested that ETC ask the WTC for the funds to pay off the remaining balance since the WTC account has been receiving all the proceeds from the joint meetings. J. Meerbeek agreed to investigate these options.

New Items: The University of Wisconsin – Stevens Point is in the process of establishing a Fishery Analysis Center, and one of the objectives of the center is to build a gallery of structures from known-age fish. An on-line version would allow people to sharpen their fish ageing skills.

Muskies, Inc. will be sponsoring the 2016 Hugh C. Becker International Muskie Symposium in March 2016 in the Twin Cities area. There will be various committees established including a Technical Steering Committee, and an Advisory Committee which will consist of key industry leaders, DNR personnel and managers, noted muskie researchers and educators, and public relations individuals.

Website Items:

Chapter Representatives – Updates

- Dakotas: Steve Chipps
- Illinois: Steve Pallo
- Indiana: Chair (2007-2008), Ed Braun
- Iowa: Chair (2010-2011), Jonathan Meerbeek
- Michigan: Chair (2008-2009), Jim Diana
- Michigan: Patrick Hanchin
- Minnesota: Chair (2009-2010) Rod Pierce
- Missouri: Craig Fuller
- Nebraska: Keith Koupal
- Ohio: Curt Wagner
- Ontario: Steve Kerr
- Wisconsin: Jordan Weeks

J. Meerbeek suggested adding Kansas to the list. J. Koch agreed to be the state representative.

New Project Ideas:

J. Meerbeek suggested that State and Provincial Muskellunge Management Plans should be made available online. Currently, 6 of the 12 states/provinces have a management plan for esocids. Committee members also suggested working on a “Midwest muskellunge fishing guide” booklet that could be distributed/sold at the 2016 muskellunge symposium in St. Paul (J. Meerbeek will investigate).

## State and Provincial Reports:

### **Dakotas (B. Blackwell)**

Increased water levels in recent years have resulted in high northern pike production across the Dakota's. Northern pike currently are abundant in many waters across each state.

#### North Dakota

1. North Dakota is considering opening dark house spearing through the ice for northern pike and rough fish to lakes statewide, excluding only lakes with muskies in them, and the Red River.

2. North Dakota is considering an increase in the daily limit of northern pike from 3 to 5 fish.

Both of these changes, if adopted, would take effect beginning on April 1, 2012.

#### South Dakota

1. South Dakota's musky program expanded during 2011 with the stocking of Lake Sinai in Brookings County.

2. Two new waters were opened to game fish spearing in northeast South Dakota with dark house spearing of northern pike through the ice the primary objective. The new lakes were Mud and Cottonwood in Roberts County.

3. Illegal stockings of northern pike within South Dakota's Black Hills Trout Management Area may be affecting catchable trout stockings. In recent years, anglers have commented on increasing difficulty of catching rainbow trout from Pactola Reservoir. The only noticeable change in the fishery over the past few years has been an increase in density of the northern pike population that started from illegal stockings. In the 2011 summer, an Angler Use Survey and a northern pike food habits study were conducted at Pactola Reservoir.

Preliminary creel data has confirmed lower angler catch rates of trout. Over 70 northern pike stomachs were collected in 2011. Preliminary food habits results show 47% of the pike to have empty stomachs and 28% the pike with prey in their stomachs had at least one stocked trout. The next most common prey was rainbow smelt (23% of the stomachs).

4. Six million northern pike eggs were collected from Bitter Lake in 2011 by Blue Dog State Fish Hatchery. These eggs had exceptionally low percent hatch and we are unsure of the exact cause, but it may be related to a lack of temperature units. Many of the eggs appeared to be fertilized and early stages of "cleavage", (i.e., embryo formation) were present. However, nearly all of the eggs were misshaped and would not water harden. This low percent hatch has been common with northern pike eggs collected in northeast South Dakota in recent years. Eggs from Lake Oahe and waters in the southeast corner of the state have produced much higher percent hatches under the same spawning techniques.

**Illinois** (S. Pallo) – No State report provided.

**Iowa** (J. Meerbeek)

Ten lakes and impoundments are currently being managed as muskellunge fisheries. In lakes where muskellunge are used as broodstock, populations are monitored via annual spring gillnetting and population metrics are estimated using the Jolly-Seber model. In 2011, 372 muskellunge were captured ranging from 24-50 inches in these lakes. In these lakes, spring-stocked yearlings were found to have the best survival. In 2011, 2,160 yearlings were stocked into Iowa's natural lakes.

Muskellunge emigration from Iowa's natural lakes and reservoirs continues to be a hot muskellunge management topic. Cost estimates provided by Biomark to evaluate the extent of muskellunge loss via installation of remote PIT tag readers were rather expensive (\$25,000 – 55,000 per site). Recently, Asian Carp (bighead and silver) have been documented by both fisheries staff during routine field samples and by commercial fisherman in four of Iowa's natural lakes (East Okoboji, Elk, Virgin, and Lost Island Lake). These fish migrated up the Little Sioux River from the Missouri River this past summer. Although extremely unfortunate, the presence of these fish has alarmed local residents and business owners in the Okoboji area and barrier options are being discussed. Smith-Root was contacted to provide a cost estimate of an electrical barrier at the outlet of the Spirit Lake/Okoboji chain of lakes. Smith-Root is asking for us to host a site visit (our expense) for one of their engineers before they can move further on an electric barrier proposal. The electric barrier would be designed to prevent BOTH upstream and downstream fish migration.

A new muskellunge and northern pike management plan is being developed for Iowa and should be completed this winter.

Northern pike as biomanipulation tool: Iowa is using northern pike as a top level predator in renovated shallow lake systems. Currently, fry, spring stocked (2-3") and fall stocked (8-10") northern pike are being stocked and evaluated. Diamond Lake in Northwestern Iowa was renovated in 2008, stocked with yellow perch in 2009 and 2010 and northern pike in 2010, and averaged 15" by that fall. This past fall, northern pike averaged 22 inches and natural recruitment for both northern pike and yellow perch was observed. Two other renovated lakes will be re-stocked with yellow perch and northern pike in 2011. A northern pike stocking contribution study comparing fry, 2", and 8-10" fish is being conducted on Lost Island Lake. This past summer, 92% of northern pike sampled were from the large fingerling stocking.

## **Indiana (D. Kittaka)**

The Indiana Department of Natural Resources, Division of Fish and Wildlife are in the middle of the strategic planning cycle involving predators stockings objectives. The associated work plans, including the Esocid plan, will map out hatchery production goals, stocking locations, success criteria for stocked lakes and angler participation. The statewide muskie plan will be completed by 2012.

Northern pike are native to Indiana and are located mostly in our natural lakes region of the state. In 2011, a study was conducted involving historic northern pike Record Fish (RF) and Fish-of-the-Year (FOTY) entries. The objectives of this research were to summarize (RF) and (FOTY) pike by: (1) length and weight; (2) condition; (3) length-weight relationships; (4) county and waterbodies; (5) month and decade; (6) bait or lure type; (7) lunar phase; and (8) present a statistical prediction for the next state record pike in Indiana. This report was submitted in late 2011, but has not been approved yet (Steve B. Donabauer 2011).

Donabauer, S.B 2011, A Historical review of northern pike (*esox lucius*) in the record fish and Fish-of-the-year programs and recommendations for future research. Approval pending

## **Kansas (J. Koch)**

Kansas currently manages northern pike in one lake. Jeff Koch is the management biologist and has expressed interest in joining our group. He can be reached at [jeff.koch@ksoutdoors.com](mailto:jeff.koch@ksoutdoors.com).

## **Michigan (K. Smith)**

Michigan is working with constituents and angler groups on changes to northern pike and muskellunge regulations that will be implemented by spring 2013. Organized groups have made their own proposals and Fisheries Division will present the positives/negatives of each proposal along with state recommended changes to the regulations. Review will include discussion at our Warmwater Resources Steering Committee (internal/external members) as well as a public comment period beginning December 14, 2011 and commencing in February, 2012 so that regulation changes can be implemented during the following spring fishing season.

The Michigan DNR in collaboration with Michigan State University has initiated a study on the genetic structure of remnant and naturalized populations of Great Lakes muskellunge and the introgression between stocked northern and Great Lakes strain muskellunge. There is concern that stocking efforts may not be compatible with maintenance of the genetic integrity or sustainability of remnant populations of a native muskellunge subspecies. Presently, little information is available on the genetic characteristics of suspected remnant Great Lakes

muskellunge populations, evidence for spatial genetic structure among these populations, or evidence for mixing and inter-breeding between resident and stocked muskellunge. The general objective is to characterize levels of diversity within and among populations of Great Lakes muskellunge and to quantify evidence for mixing and introgression between native Great Lakes and stocked Northern muskellunge. For more information, please contact Kim Scribner ([scribne3@msu.edu](mailto:scribne3@msu.edu)).

Michigan raised only Great Lakes muskellunge this year and is beginning a Great Lakes brood source program for inland lakes. The donor population was from our largest Great Lakes source of muskellunge in Lake St. Clair (LSC) and the connecting waterway of the Detroit River. Fish health samples were collected from all fish spawned and from 8 fish from LSC and 11 fish from Detroit R. All samples were negative for VHS and reportable pathogens. A total of 174,000 eggs collected on 5/26, 5/31, and 6/2 were transferred to Wolf Lake SFH. An estimated 29,984 fry hatched with a low survival contributed to one poor lot. Spring fingerlings (14,345) were transferred to a lined rearing pond when they reached 4.0-4.5 in (late August). A total of 7,026 fall fingerlings were PIT tagged and stocked into two broodstock lakes in early November at an average length of 7.5 inches. We managed to stock one inland lake with surplus fish and retained 500 fall fingerlings within our lined ponds to conduct a study on overwinter survival to yearlings and monitor the percent survival between the two life stages. Wisconsin DNR assisted with egg collection efforts for several days in early May and received a couple thousand spring fingerlings to establish their broodstock lake. For more information, please contact Kregg Smith ([smithk34@michigan.gov](mailto:smithk34@michigan.gov)).

### **Minnesota (R. Pierce)**

A study of habitat overlap among species in a coolwater fish community was initiated in Elk Lake, Itasca State Park, in spring 2011. Ultrasonic transmitters were implanted in muskellunge, northern pike, walleye, and ciscoes, whose temperatures and depths will be transmitted to automated hydrophones in the lake. Researchers are Andy Carlson, Jerry Younk, Peter Jacobson, and Rod Pierce. Elk Lake is also the site of a long-term muskellunge PIT tagging study by Jerry Younk.

Archival tags recording fish temperatures and depths were also implanted in northern pike in Shingobee Lake in spring 2011. We will attempt to retrieve the archival tags during spring 2012. Researchers are Bruce Carlson, Dallas Hudson, and Rod Pierce.

We received a notable tag return from a northern pike in Lake of the Woods during spring 2011. The fish was tagged in spring 1996, so it was “at large” for 15 years and was likely to be over 20 years old this spring. Total length of the fish was 33 inches when it was tagged and 38 inches

when recovered 15 years later. The tag return provided a unique glimpse into the potential longevity of northern pike.

The Minnesota DNR proposed muskellunge introductions in five new waters and held public reviews of the proposals. After an extensive (and sometimes contentious) public comment process, only two of the waters were recommended for stocking.

The state legislature initiated bills to 1) reduce the number of lakes with special regulations for northern pike, and to 2) eliminate the ban on darkhouse pike spearing at Cass Lake. The intent of the Cass Lake spearing ban when implemented in 1987 was to protect muskellunge. Both bills were rejected by Governor Dayton who argued that the legislature had not allowed for adequate public input. Beginning July 1, 2011, Minnesota State Government (including the DNR) was shut down for three weeks due to a major budget impasse between legislators and the Governor. At the end of three weeks, emergency budget legislation finally broke the impasse, and somehow, both northern pike bills were forced into the budget legislation. As a result, spearing was re-allowed in Cass Lake and the Minnesota DNR reduced the number of lakes with special length regulations to 100 beginning November 1, 2011.

Respectfully submitted by Rod Pierce (June 2011).

### **Missouri** (C. Fuller)

This past fall, 12-14 inch muskie fingerlings were stocked at a rate of 1 fish/acre at Fellow Lake, Hazel Creek Lake and Lake 35, Busch CA. Pomme de Terre Lake were stocked with 4000, 12-14 inch fingerlings (0.5 muskies/acre).

Completed a newsletter to share with our "Show-Me Muskie Project" cooperators (See appendix).

### **Nebraska** (K. Koupal)

Nebraska has limited use of esocids within our systems. Even this limited use has come with some headaches. One main issue has been the focus of our efforts this past year.

Northern pike production has hit a real snag. There has been a steady decline in hatch percentage of broodstock spawned from our National Refuge lakes near Valentine Nebraska. Our hatchery staff has tried multiple combinations to try and isolate the specific problem. Several variables have been isolated and tested in separate lots including salinity, broodstock male and female sources and little success has been found to date. At the present time, we have enlisted the help of federal research facilities to specifically look at potential toxicants within the system, warming trends within the system, impacts of water level adjustments and who knows

what else. Currently staff from the USFWS is attempting to procure funding for a multiple state project to look at this issue as it apparently is more widespread than Nebraska. Will keep folks updated on our efforts.

An addition to our hatchery production this year will be an attempt to make our own muskie cross although we may use the reverse combination considering the difficulties with male northern we have encountered. These fish are being produced mainly for Wyoming, Montana, Colorado and Utah in this case and we still plan on using predominantly northern and muskie for our management.

### **Ohio** (C. Wagner)

Ohio has an online muskie angler log website that they developed in partnership with the Ohio Muskie Anglers as a resource for Ohio Muskie anglers and to support muskie management efforts in Ohio by providing valuable muskie catch data to the Ohio Division of Wildlife (<http://www.ohiodnr.com/muskielog/welcome.aspx>). This data has been useful for general catch statistics; however, some biases in catch rate data are apparent due to non-entry of “no fish” trips. Escapement of muskellunge from reservoirs continues to be an issue for managers. Small common carp are being used for Ohio’s hatchery production of muskellunge as a food base. Ohio has a daily bag limit of 1 muskellunge with no current size regulations and have had very few ever reported as harvested.

### **Ontario** (S. Kerr)

Provided an updated report on the Lake Simcoe muskellunge restoration project (see appendix).

**Washington** (B. Bolding) – No State report provided.

### **Wisconsin** (J. Weeks; D. Rowe)

1. Act 21 in Wisconsin has changed the process of creating Administrative Code (including fishing and hunting regulations). The new regulation development process has additional review by the Governor at the beginning and the end of the process, a legislative review and an economic impact analysis. These are in addition to the existing Natural Resources Board, Department staff review, and spring hearing process where Wisconsinites vote on proposed regulation changes. Essentially, the process will be lengthened, so no proposals will be ready in time for spring 2012. All proposals for this cycle will be taken to public hearings in spring 2013. In the future, Fisheries Management rule change proposals will be on an alternate (odd) year cycle.
2. The Statewide 40 inch minimum length limit was passed and will be implemented in 2012. This reduces the lake specific regulations to 8% of musky waters in the state. These

exemptions from the statewide 40 inch minimum are for twenty high density slow growth lakes, which will be managed with a 28 inch minimum length limit, and twenty-five trophy waters including brood stock lakes that will be managed with a 45 or 50 inch minimum length limit.

3. Propagation/Stocking - 2011 was one of the worst springs ever, in terms of spawning, with fairly low numbers of adults. However, hatching and survival of fish in the hatcheries was excellent and we stocked all quotas and had a small surplus.
4. Musky Waters – Several musky waters were dropped from the 1996 list and the total is now 660 lakes, down from 794 in 1996 (see table, below). With the new classifications, we now have a list of designated trophy waters (class A1 waters). There are currently 61 inland lakes that are designated as “trophy” waters, with 41 lakes and 20 chains or systems of lakes (the number in the table accounts for all individual lakes in the chains). A review of these designations also allowed a more accurate accounting of waters that are actually stocked, which should be an improvement over the 1996 list.

Comparison of designated musky lakes, by class and category, between the 1996 and 2011.

	Year	
	1996	2011
<b>Class</b>		
A1 “Trophy opportunity”	104	125
A2 “Action opportunity”	252	185
B “Intermediate”	222	225
C “Present”	216	125
Total	794	660
<b>Reproductive Category</b>		
1 - Natural Reproduction	140	298
2 - Supplemental stocking	364	179
3 - Maintenance stocking	149	114
0 - Not Stocked connected water	151	69
Total	804	660

5. Matt Faust, UWSP, presented his modeling results on the Impact of exploitation on musky size-structure. His project focused on the extent to which harvest affects muskellunge size-structure. Establishing and maintaining a trophy fishery is dependent upon the growth potential of the population and the risk of mortality. Matt found that low levels of mortality can have a profound impact on the number of large fish in the population. **Abstract** - Muskellunge management is often aimed at producing large trophy individuals. However, the muskellunge is a long-lived species that occurs naturally at low population densities, which makes it susceptible to the effects of harvest mortality. Muskellunge populations within Wisconsin's ceded territory are exposed to both angling and spearing fisheries. Our objective is to determine the extent that harvest mortality affects muskellunge population size

structure in Wisconsin's ceded territory. We developed a simulation model to predict the effect of varying levels of harvest mortality from angling and spearing fisheries on size structure of muskellunge populations producing large-, medium-, and small-bodied fish. We found that muskellunge size structure decreased as harvest mortality increased, and identified specific combinations of angling and spearing harvest mortality that prevented trophy muskellunge populations from producing large individuals. Some levels of harvest mortality are detrimental to muskellunge size structure, so changes may need to be made to current muskellunge management in Wisconsin. Here is a link to Matt's Poster that was presented at the AFS meeting on the Growth Potential of Muskellunge in Wisconsin [http://dnr.wi.gov/fish/musky/muskymanteam\\_products.html](http://dnr.wi.gov/fish/musky/muskymanteam_products.html).

6. Dan Isermann, UWSP, presented the results from the 2010-11 Musky Angler Survey, which was conducted by he and Kristen Flores, a social scientist at UWSP – College of Natural Resources. This survey is one in a series of musky angler surveys that have been repeated every 10 years since 1989. The results are available on the Musky Management Team web page at <http://dnr.wi.gov/fish/musky/documents/muskellungeanglersurvey.pdf>.
7. The DRAFT Green Bay Great Lakes Spotted Musky Management Plan 2010 has been written, discussed with the public and circulated widely. A copy of the Draft plan can be found at [http://dnr.wi.gov/fish/musky/muskymanteam\\_products.html](http://dnr.wi.gov/fish/musky/muskymanteam_products.html). Please review and return comments to Steve or Mike.
  - a. Egg take/fingerlings from Lake St. Clair – In terms of implementation, we have been fortunate this year to have received 3,000 fingerlings GLS muskies from the State of Michigan. They had a difficult year (as we did) with spawning, but they ended up spawning a few individuals and had good success with the eggs they did get. The fingerlings arrived at the Wild Rose State Fish Hatchery on August 31, 2011 with 100% survival. The plan is to hold them over winter and rear them to a size that will allow them to be PIT tagged before stocking in our selected inland brood lakes.
  - b. WDNR is also having a pretty good year with GLS muskies at the CD Besadny Facility in Kewaunee. They stocked about 5,000 fingerlings from Fox River brood fish. These fish were stocked directly back into the Green Bay/Fox River to supplement the population.

*These minutes are respectfully submitted by J. Meerbeek.*

# **Appendix**