

North Central Division American Fisheries Society

Esocid Technical Committee

March 13, 2016



Chair – Cory Kovacs: MDNR (kovacsc@michigan.gov)
Immediate Past Chair – Dave Kittaka: IDNR (dkittaka@dnr.IN.gov)
Chair Elect - TBD

The following meeting minutes are from the Esocid Technical Committee (ETC) meeting held on March 13, 2016 in Minnetonka, MN. The business meeting was held in conjunction with the Muskellunge Symposium.

Attendance

Jon Meerbeek (IA)	Brian Blackwell (Dakotas)
Justin VanDeHey (Univ. of WI Stevens Point)	Dave Woods (MO)
Keith Koupal (NE)	Curt Wagner (OH)
John Paul Leblanc (ON)	Mike Habrat (MN)
Michael Vaske (Univ. of WI Stevens Point)	Jeff Hansbarger (WV)
Janice Kerns (WI fish Coop Unit)	Todd Kaufman (SD)
Jim Moore (Muskies Inc.)	Cory Kovacs, Chair (MI; minutes)

Call to order (6:00pm)

Dave motioned to start meeting; Justin seconded.

Approval of 2015 Summer Meeting Minutes

Dave motioned to accept 2015 Summer Meeting minutes; Jon seconded. Minutes approved.

2015 Budget

Keith motioned to accept 2015 Budget; Dave seconded. Discussion: Since current budget summary did not contain purchase of plaque for Dave Kittaka, Cory will insure that invoice is taken care of with Jasmine Sewell of AFS. Budget approved.

Committee Status

Chair-Elect 2016 was briefly discussed. In recent years the ETC Chair position has been filled by an individual from the state where the Midwest Fish and Wildlife Conference was being held in that term year. Members suggested continuing with the Midwest Conference rotation. One of the Chair's responsibilities is to plan for the summer and winter meetings in the coming year. Cory will retain the Chair position for 2016 until the 2017 Midwest Conference in Nebraska. The Chair-Elect position will be solicited during the coming year.

Chapter Representatives – Updates

Dakotas: Brian Blackwell	Minnesota: Mike Habrat	Missouri: Dave Woods
Nebraska: Keith Koupal	Ohio: Curt Wagner	Ontario: John Paul Leblanc
Wisconsin: Jordan Weeks	Illinois: Dr. Rob Colombo	Indiana: Dave Kittaka
Iowa: Jonathan Meerbeek	Kansas: Jeff Koch	
Michigan: Chair-Cory Kovacs, Jim Diana		

Southern Division AFS-Formation of an Ad-hoc ETC

States represented in Southern Division AFS (SDAFS) have expressed interest in forming an Esocid Technical Committee. In recent years, interests in Esocid management (especially Muskellunge) have grown and SDAFS states have not been able to efficiently communicate their science with other states across the region and United States. By having a formal committee in SDAFS, scientists feel that communication efficacy would be stronger. Jeff Hansbarger of West Virginia DNR explained that

forming a SDAFS Technical Committee is not a separation from what NCD is already currently doing, but an opportunity to potentially share more information with clearer communication. Esocid Technical Committee By-laws state there is no limit to the states that are represented as voting members. A suggestion was made to invite one representative from a SDAFS state to represent on the ETC in order to understand how logistics and communications have been working. From here that representative would disseminate information back to other SDAFS state representatives. Dave motioned to add a SDAFS representative to the ETC as a voting member; Justin seconded. ETC members voted and approved to add a SDAFS representative to the ETC. Cory will add SDAFS to the Chapter Representatives list. Jeff Hansbarger volunteered to be the representative.

ETC By-laws Update

History of the ETC has not been updated since 2006. Chair-Elect section should include some language about how the rotation of the Chair seat has been filled. In the By-laws, the listing of Chairs needs to be updated with year of their terms. Cory will put together a straw-dog of his edits and then send out to the ETC members for their comments and updates. Cory expects to get a draft completed for the 2016 Summer Business Meeting in Nebraska.

2016 Summer Business Meeting

Meeting is being held in conjunction with WTC/CTC in Gretna, Nebraska at Ak-Sar-Ben Aquarium. Time is yet to be determined for business meetings. Meeting dates are July 25-28 with continue education workshops on the 26th. Workshops in planning right now are an aquatic habitat improvement workshop, developing methods of sportfish controls discussion forum, and float trip. Keith is working with John Bruner on program and workshop logistics. More details to come for this event.

State/Provincial Updates

Provided: Indiana, Michigan, Missouri, Ohio, Iowa, South Dakota, Nebraska, Minnesota, Ontario, WI-Stevens Point (WI)

No updates: Illinois and Kansas

(See attached for updates provided and shared at the business meeting.)

Dave motioned to adjourn the meeting; Curt to second.

Meeting adjourned (7:15p)

State/Provincial Updates

Nebraska Prepared by Keith Koupal

The following report of activities will be submitted to the Esocid Technical Committee meeting in March 2016 at the Muskie Symposium being held in Minnetonka, MN. Nebraska has limited use of esocids within our systems. We are managing to stock both muskie and northern pike in the requested systems at 2-3 year intervals. Space to culture esocids to a desirable size and the expense involved with raising them to this size are limiting factors for increased production and stocking. Many waters seem unable to successfully recruit these species. Thus, a statewide 40 inch minimum is in effect for muskie and many stocked waters have a 30" minimum on northern pike. Recently, an interest in enhanced use of northern pike in our systems has been developed and future management may try to incorporate this esocid into our lentic communities. Stocking of advanced fingerling northern pikes (approximately 300 mm long) in October is being employed with the hopes of achieving a better return to creel. Two main items are being investigated concerning esocids in Nebraska.

Northern pike production has hit a snag. There has been a decline in hatch percentage of broodstock spawned from our National Refuge lakes near Valentine Nebraska. An experimental design to test the efficacy of using saline and a buffer/saline mixture to enhance northern pike egg fertilization and subsequent eye-up in our Production Sections northern pike was employed this past spring. Eye-up percentage generally increased with the use of buffer solutions but was still below optimum values that were desired for management production (<60%) and variability of eye-up is still too high for staff to feel comfortable with the protocol. Additional trials are planned that will attempt to isolate the impacts of buffer solutions by splitting eggs from larger females into control and experimental units as well as reducing the amount of milt used for fertilization so milt source for both experimental units are from similar parent stock. Adult collection may move to Dewey Lake because individuals from this water have shown greater relative condition the past few years.

A northern pike tagging project was started at Lake Wanahoo in March 2012 to determine angler exploitation by biologist Jordan Katt (questions can be referred to him). This study plans to determine northern pike growth and survival in Lake Wanahoo. Northern pike are being collected with trap nets in the spring and are floy tagged. Mean growth of male northern pike was 78 mm/year while mean growth for females was 114 mm/year. Tagging is scheduled to continue in 2016.

The only other esocid mention in research activity was a compilation of muskellunge sampling, growth and condition for all Nebraska waters by a graduate student at University of Nebraska-Kearney. This exercise used the existing sampling database from the Nebraska Game and Parks Commission Fisheries Division to determine growth curves, relative weights. The lack of individuals captured by standard sampling techniques indicates a need to specifically sample for this species or potentially cooperate with anglers who may be handling more individual fish than sampling gear.

Dakotas Prepared by Brian Blackwell

South Dakota currently uses large fyke nets in the spring to sample musky. However, issues with bycatch (primarily black bullheads) at West 81 Lake have made musky sampling difficult. This spring plans are to place a PVC pipe in the cod end of the fyke nets to provide an opening for black bullheads to escape.

Hopefully this will allow a high percentage of the black bullheads to swim out making working with the large fyke nets easier.

Northern pike can be speared year-round in South Dakota waters that are not managed for musky. Mid-Lynn Lake was added to the waters managed for musky in 2015. Because of the addition of musky into Mid-Lynn Lake, anglers will no longer be able to spear northern pike there.

North Dakota

No Report

Indiana

Prepared by Nicholas Haurert

Indiana DNR Fish Management District 6 Update - Rebecca Pawlak

During March 2015, District 6 conducted the first Muskellunge survey on Bluegrass and Loon Pits on the Bluegrass Fish and Wildlife Area (FWA) since they were first stocked in 2006. Muskellunge have been stocked annually since then. Bluegrass FWA is the closest wildlife area to the city of Evansville, and therefore receives high fishing pressure. No Muskellunge were sampled from Bluegrass Pit, but a total of 7 Muskellunge were caught from Loon Pit that ranged in length from 33.8 to 40.1 in. Ages 5-7 were represented in the sample, and mean length-at-age was 0.4 to 1.7 inches faster than mean length-at-age of muskellunge sampled from northern Indiana. Faster growth was expected in the southern part of their distribution. A creel survey is planned from March through October 2016, which will help us get a better understanding of how their population is doing and how heavily they are exploited.

Indiana DNR Muskellunge Stockings and Regulation Changes - Brian Schoenung

Muskellunge eggs were collected from 12 adult females in Webster Lake during April of 2015. All eggs were buffered with TRIS (hydroxymethylaminomethane) during fertilization. East Fork State Fish Hatchery reported a hatch rate of 78%, which is greater than their historic 70+% average. All muskellunge stocked from East Fork SFH are forage finished on Fathead Minnows for 30 days. A total of 20,509 Muskellunge (average length of 9.7 inches) was stocked in 14 lakes throughout Indiana during 2015. Also, the Hoosier Muskie Hunters (Muskie Inc. Chapter) pledged to purchase 2,000 pounds of forage to overwinter Muskellunge at East Fork SFH. A total of 2,000 Muskellunge will be overwintered in order to increase recruitment. The fish will be PIT tagged and stocked into Webster Lake in mid-May of 2016.

Additionally, an experimental 44-inch minimum size limit was enacted at Webster Lake in 2015. The previous regulation was the state-wide 36-inch minimum size limit.

Iowa

Prepared by Jonathan Meerbeek

Thirteen lakes and impoundments are currently being managed as Muskellunge fisheries in Iowa. In 2015, yearling muskellunge will be stocked into a 130-acre County Conservation managed gravel quarry in southeast Iowa to provide another unique angling opportunity for Iowans.

Big Creek/Brushy Creek Muskellunge Emigration Study (Principle Investigators: Ben Dodd Ben.Dodd@dnr.iowa.gov, Ben Wallace Ben.Wallace@dnr.iowa.gov, and Michael Weber mjw@iastate.edu)

Reservoir fish populations are often supplemented or maintained through stocking to provide anglers with angling opportunities. Anecdotal information from many states including Minnesota, Iowa, and Illinois suggests that a substantial number of these fish do not stay in the systems where they are stocked but instead escape downstream over spillways and through dams. To better retain walleye and muskellunge in Big Creek Lake, the Iowa DNR has installed a physical barrier at the spillway. The barrier consists of eight chain link top rails stacked in a horizontal fashion with 2" openings between rails. The barrier may

be effective at stopping escapement of adult fish but escapement rates of smaller juveniles could still be high, negatively impacting biologists' ability to increase predator densities. The effectiveness of this barrier at reducing fish escapement has not been evaluated; yet this information is needed before similar barriers can be constructed in other locations.

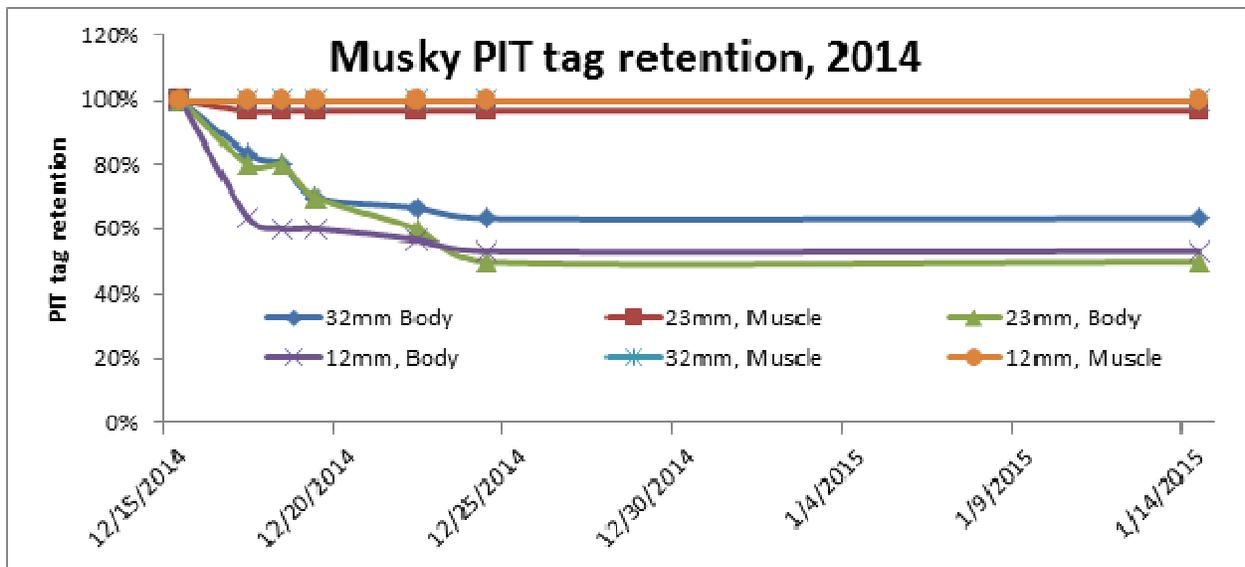
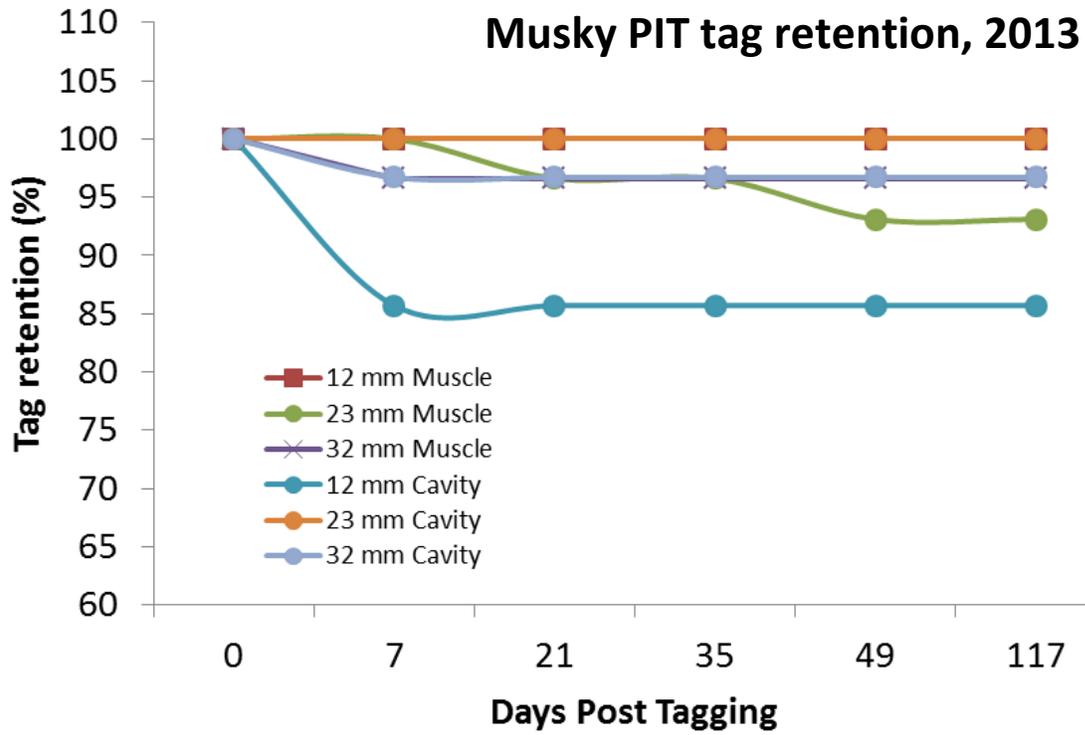
To quantify walleye muskellunge escapement from Iowa reservoirs with and without a barrier, we propose to install passive integrated transponder (PIT) tag antennas on the Brushy Creek (no barrier) and Big Creek (spillway has a barrier) spillways during the summer of 2015. Each year, stocked age-0 walleye and age-1 muskellunge will be injected with a PIT tag for individual recognition and stocked into both Brushy and Big Creek. Additionally, adult walleye and muskellunge will be collected in springtime from each reservoir using a combination of gill nets, trap nets, and electrofishing. Captured fish will be measured for length, weight, and gender and a PIT tag will be implanted before the fish is released. The PIT tag antenna will then be used to identify individual fish that pass over the spillway of each reservoir. Environmental data (e.g., temperature, water level, flow rates, time, etc.) will be monitored continuously and used to evaluate factors influencing muskellunge escapement. Escapement rates and influential factors will be compared between the reservoir with a physical barrier (Big Creek) and the control reservoir without a physical barrier (Brushy Creek). PIT tagging and recapture events will take place for 5 years from spring 2016 through fall 2020, providing sufficient time to collect information about escapement under a wide range of environmental conditions. This information will then be used to guide management decisions about barrier installation at the study reservoirs and other reservoirs throughout Iowa.

To complement our PIT tagging study and better understand walleye and muskellunge behavior, we propose to monitor movements and habitat use of these species through the use of radio telemetry in Big Creek. Fish will be tagged and then located during the open water and safe ice seasons using a radio receiver. Fish locations will be marked with GPS and transmitter frequency, time of day, water depth, and surface temperature will be recorded. Fish locations and habitat use will be overlaid onto topographic maps and exported into GIS databases. Using GIS, movement rates, habitat use, home range size, etc. will be calculated. Additionally, the number of fish implanted with acoustic tags will provide an independent estimate of escapement and fish attributes (e.g., species, size) and environmental conditions (e.g., flow, temperature) will provide insights into mechanisms influencing escapement.

Effects of passive integrated transponder (PIT) tag size and implantation site on tag retention, growth, and survival of juvenile muskellunge - (Principle Investigators: Mark Flammang

Mark.Flammang@dnr.iowa.gov and Michael Weber mjw@iastate.edu)

Iowa DNR and Iowa State have been investigating the effects (survival and tag retention) of implanting three different sizes of PIT tags in two locations (body cavity and dorsal musculature) of small (6-10 in) Muskellunge. Mortality has been very low, but tag retention rates did differ substantially among tag sizes and locations (Figure 2). These results will be used to guide fisheries managers as they design projects to evaluate emigration.



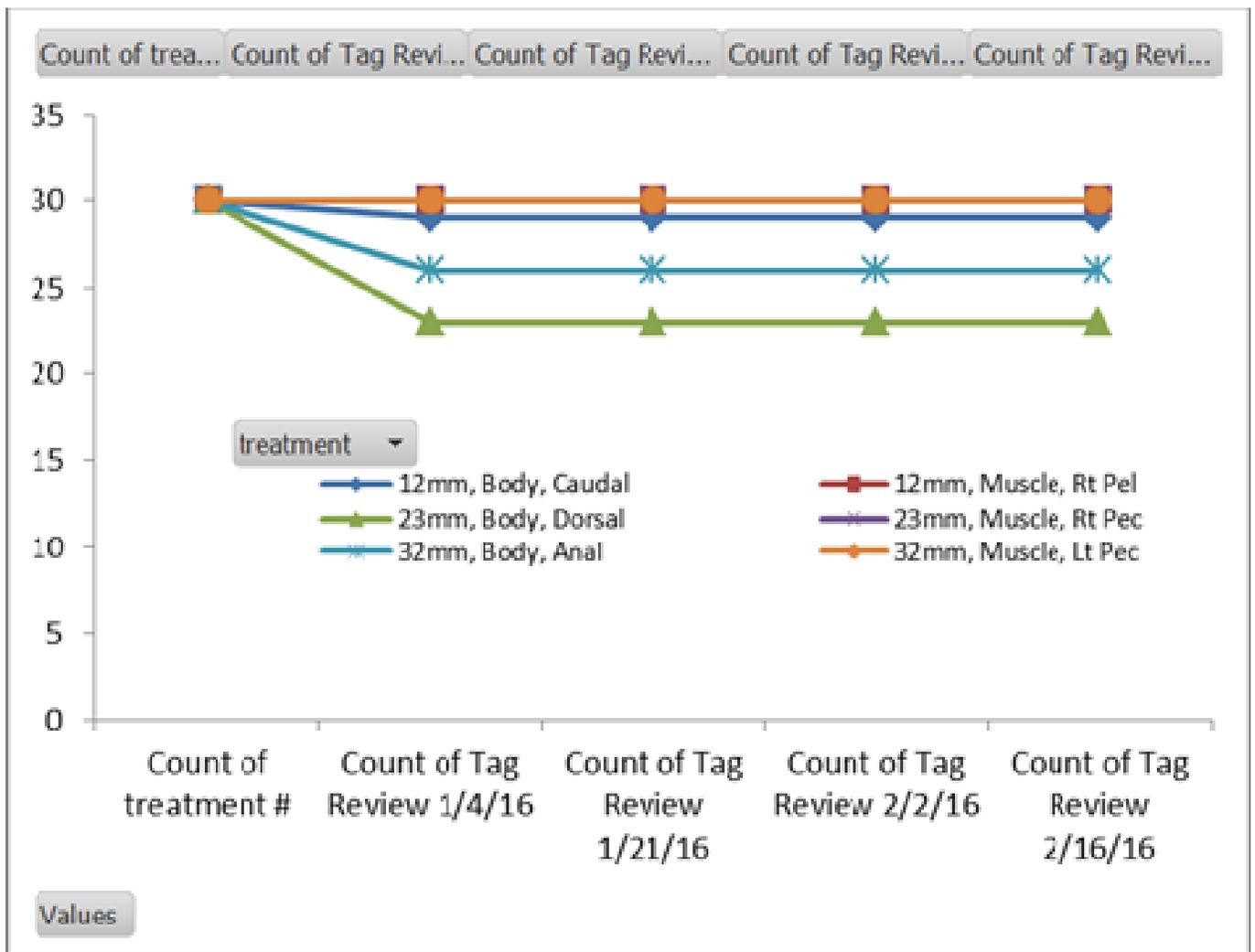


Figure 2. Effects of PIT tag size and tagging location on tag retention in juvenile muskellunge, 2013 (top), 2014 (middle), and 2015 (bottom; graph represented by number of fish that retained tag over time – 30 fish per treatment).

Movement and survival (initial and short-term) of stocked yearling Muskellunge in Spirit Lake, Iowa - (Principle Investigators: Jonathan Meerbeek jonathan.meerbeek@dnr.iowa.gov and Michael Weber mjw@iastate.edu)

Muskellunge angling opportunities in Iowa are a direct result of Muskellunge stocking since Muskellunge natural reproduction in Iowa is extremely limited. Hence, previous research in Iowa has focused on Muskellunge propagation techniques and stocked fish survival. Research studies conducted between 1991 and 1999 found that spring stocked minnow-finished yearling Muskellunge survived much better than those stocked in fall. Therefore, since 2002, only spring-stocked yearling Muskellunge have been stocked in Iowa, of which, all are reared via a three-stage method. Initially, Muskellunge are raised on dry food until 4-inches at the Spirit Lake Fish Hatchery. This stage of rearing is critical to consistently produce the number of Muskellunge needed to reach stocking commitments. Next, these fish are switched to Fathead Minnows until they are about 10-11-inches. Last, these fish are transported to cement lined ponds at the Rathbun Fish Hatchery in September and fed minnows until they are stocked in spring (May). This method has proven to be the most cost-effective and most reliable to reach stocking commitments across the state.

Initially, the success of spring-stocked yearling Muskellunge greatly improved population densities in many of Iowa’s managed Muskellunge lakes. For example, adult Muskellunge population densities in the Iowa Great Lakes (i.e., Spirit Lake, East and West Okoboji Lakes) in Northwest Iowa increased nearly threefold after switching from fall fingerlings to spring yearling Muskellunge stockings. However, since this initial surge in Muskellunge population densities, adult populations in these lakes have decreased to levels below management objectives. This decrease in adult densities has not been a result of reduced stocking quotas. The normal stocking regime for the Iowa Great Lakes Muskellunge program has been

1,700 fish stocked every other year. Recently, yearlings have been stocked every year at rates 50% higher than stocked historically and yet, population densities have not rebounded to levels within the management objective.

The Iowa DNR has estimated stocked yearling survival to age-4 and adult population densities over the past 13 years by recapturing tagged adult Muskellunge during broodstock gillnetting efforts. Since capture probabilities for adult Muskellunge are high during this netting effort, very precise estimates of population density, survival, and recruitment can be obtained via the Jolly-Seber open population. Using this data, the Iowa DNR has found that individual stocked yearling cohort survival to age-4 is highly variable and has been as low as 10% survival in recent years. This variability in yearling Muskellunge survival has made managing these populations very difficult and has resulted in less than desired population levels.

Understanding the individual factors that influence yearling Muskellunge survival is necessary to efficiently manage these fish. To this end, all yearling Muskellunge stocked into the Iowa Great Lakes have been PIT tagged prior to stocking since 2011 to identify factors such as total length or condition that may be contributing to increased/reduced survival. However, it is also important to note that since the documentation of zebra mussels in Lake Rathbun, the Iowa DNR has been treating any transported water off the facility via the Edwards Treatment procedure. This additional treatment in conjunction with a 6 hour transport time in a stocking truck distribution tank to the Iowa Great Lakes (from Lake Rathbun) may have potential negative effects on the survival of stocked yearling Muskellunge. In addition, stocking yearling Muskellunge directly at boat ramps may be contributing to increased predation (avian and/or fish) and hence, reduced cohort survival. Therefore, it is important to understand which factors may be contributing most to the reductions in yearling Muskellunge survival. Specifically, managers want to know if the reductions are a result of hauling stress, predation, or fish condition or a combination of all the factors. The objective of this project is to evaluate post-stocking survival of stocked yearling Muskellunge in Spirit Lake, Iowa and to compare cohort survival via three stocking techniques: (1) stocked directly at ramp; (2) transported to holding tanks at Spirit Lake Hatchery for 24-48 hours (to allow for hauling stress recovery) then stocked at boat ramp; (3) transported off-shore via boat and stocked. To accomplish this, twenty yearling Muskellunge from each stocked cohort will be affixed with radio transmitters at least 1 week prior to stocking. The three cohorts will be kept in separate stocking distribution compartments and stocked according to the above techniques. Fish will be tracked daily up to 2 weeks post-stocking and tracked weekly until August 31st. Tracked individuals will be considered dead if no movement is detected in four consecutive encounters (i.e., initial survival estimate). Short-term survival will be estimated via detection probability models developed in program MARK. In addition, all fish stocked will be tagged via PIT tags prior to stocking and survival to age-4 for each stocked cohort will be estimated via recaptured fish during spring broodstock gillnetting. Results of this study will be used to develop stocking protocols that would enhance yearling Muskellunge survival not only in the Iowa Great Lakes, but across the state of Iowa.

Missouri

Prepared by Dave Woods, Muskellunge Program Coordinator

Currently, five lakes in Missouri are managed for muskies: Pomme de Terre Lake (7,820 ac.), Fellows Lake (820 ac.), Hazel Creek Lake (530 ac.), Henry Sever Lake (158 ac.) and Lake 35, Busch Conservation Area (62 ac.). Henry Sever Lake is included in the program as a surplus stocking location only.

The Show-Me Muskie Project is a volunteer reporting program in which the Missouri Department of Conservation invites conservation-minded muskie anglers to help evaluate Missouri's muskellunge management program. Volunteers include a wide cross-section of muskie anglers at all levels of skill and experience. Missouri's Muskellunge Plan sets muskie angler catch-rate objectives, which can be documented most efficiently by anglers themselves. The 2015 Show-Me Muskie Project data is currently being received from anglers across the state. That data will be summarized and a report will be available in the Show-Me Muskie Project newsletter in the spring of 2016.

In the fall of 2015, most program lakes received their annual commitment stocking rate. Busch Lake 35 only received 50% of its commitment due to lack of fish. As Henry Sever Lake is classified as a “surplus only” lake, it did not receive fish in 2015.

Fellows Lake.....	820
Pomme de Terre	4,702
Hazel Creek.....	533
Busch Lake 35.....	32
Henry Sever.....	0
TOTAL.....	6,087

The Missouri Department of Conservation partnered with the Pomme de Terre Chapter Muskies Inc. to teach a Muskie Management and Fishing workshop at the Springfield Conservation Nature Center in the fall of 2015. MDC Fisheries Biologist Dave Woods opened the workshop with an overview of Missouri’s Muskellunge Program and management techniques. Later, three members of Muskies Inc. presented information about fishing, including methods, tackle and where to fish.

Spring fyke-net survey data and Show-Me Muskie Project data from 2015 was provided during the ETC Summer Business Meeting and can be found in those meeting minutes.

Michigan
Prepared by Cory K. Kovacs

Great Lakes Muskellunge Production and stocking 2015:

- 782,460 eggs taken; hatchery experienced 69.9% eye-up
- 27,443 Great Lakes (GL) strain fall fingerlings were stocked out; MI production section targets 40,000 fall fingerlings (8-10”)
- Mean TL of fall fingerling 9.1 inches
- 2,125 PIT tagged fish stocked to establish our two broodstock lakes (Lake Diane and Thornapple)
- 79,948 surplus GL strain spring fingerling stocked into two lakes
- 1,500 Northern strain fall fingerlings from WI stocked into 4 locations in Southern Michigan

Stocking evaluations:

- Zero muskellunge were collected in the 2015 spring sample in Big Bear Lake. As a result of the 2015 spring sample in Big Bear Lake, it was decided to cease stocking as a potential broodstock lake and establish Lake Diane as our second broodstock lake.
- A spring 2016 survey is planned for Thornapple Lake (broodstock) to evaluate stocking efforts.

Muskellunge Population Evaluations

- Muskellunge in the Inland Waterway in northern Michigan are being evaluated with long term tagging project. Fish will be evaluated through netting gear, e-fish efforts, and creel reporting. External tags will be used.
- Round Lake, in southern Michigan has been stocked with Muskellunge since 1998. Contributions of stocked and wild fish are unknown. Using PIT tags, stocked fish will be tagged in order to evaluate the Muskellunge population and contribution from stocked and wild fish.

Regulations:

- Tahquamenon River, Luce County, Upper Peninsula-Muskellunge minimum size limit lowered to 38 inches. Population with slow growth, high recruitment, and low mortality. Statewide regulation 42 inches.
- Muskellunge Harvest tag summary
2013-(Tags issued=51,257)
 - Six anglers reported, all instate anglers
 - Two anglers responded with catch data (both instate anglers)
 - Both anglers caught their fish by trolling
 - One fish was Barred, other fish was Clear in description
 - Both anglers fishing for Muskie at the time of capture

- Fish harvested were 41 inches, and 48.5 inches

2014-(Tags issued=108,225)

- Four anglers reported, all instate anglers
 - One angler responded with catch data (in-state angler)
 - Angler caught fish by trolling
 - Fish harvested was 53 inches, Spotted in description

2015-(Tags issued=186,866)

- Six anglers reported, 1 out-of-state angler
 - Two anglers responded with catch data (in-state anglers)
 - Both anglers trolling
 - One fish 50 inches and one at 45.5 inches
 - Fifty inch fish Barred
 - Forty-five and half inch fish Spotted

Muskellunge Angler Survey postcards and online (cooperative with Michigan Muskie Alliance):

2014

- 15 waters surveyed
- Poor responses by postcard, better with addition of online survey (n=94)
- Lower Peninsula experienced more angler effort than Upper Peninsula
- Ninety-eight percent of anglers released their fish.
- Anglers who released fish on their trip, 88% released them as a personal choice to release it.
- Anglers who released fish on their trip, 12% released them because they were sublegal.
- Three fish were caught and released pre-season.
- Thirty-one anglers did not report any catch.
- Catch per effort: 0.12 fish per angler hour

2015

- 15 waters surveyed (postcard); opened all inland waters to online survey
- Poor responses by postcard, total responses between online and postcard (n=294)
- 100% of anglers released their fish.
- Anglers who released fish on their trip, 68% released them as a personal choice to release it.
- Anglers who released fish on their trip, 29% released them because they were sublegal.
- One fish was caught and released pre-season.
- 155 anglers did not report any catch.
- Catch per effort: 0.09 fish per angler hour

Survey in 2016 will go completely online. Rewording some questions to hopefully clear up some of the vague and nonspecific responses by anglers.

Esocid Committee

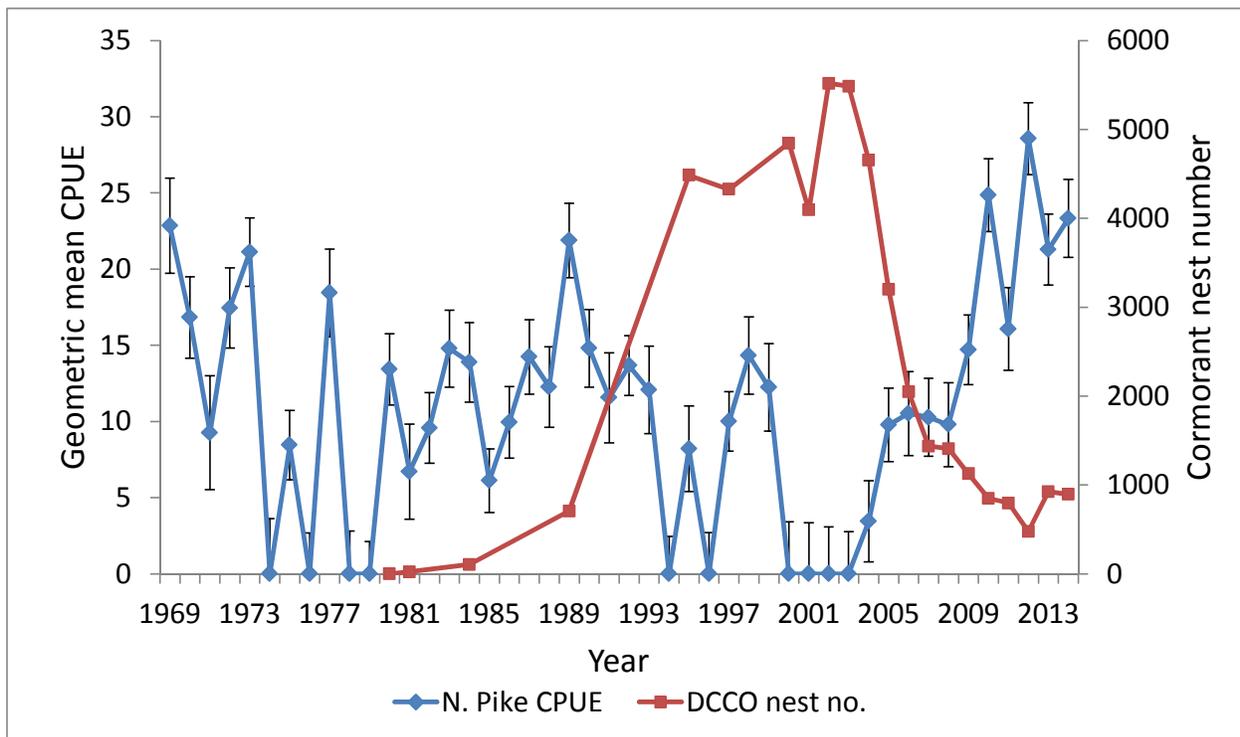
- Muskellunge and Northern Pike management plan finalized and going to publishing
- Muskellunge stocking guidelines update completed and going to publishing

Governor's Budget FY2017

- Funding for improvements to hatchery infrastructure were proposed
- If approved the capital outlay funding will allow construction of 8 acres of coolwater production ponds at Thompson SFH which would allow production of up to 15,000 fall fingerling Great Lakes Muskellunge. Ponds would also improve production numbers of spring fingerling walleye.

Lake Huron Northern Pike populations:

No specific project, but northern pike numbers have seemed to have rebounded in recent years of while previously being depressed in Les Cheneaux Islands region. Recent high water levels, cormorant control efforts, and improved yellow perch numbers are believed to be reasons for the improved northern pike numbers. See figure below:



Error bars are two SEs of the geometric mean

Saginaw Bay Northern Pike Population

- Densities are unusually low compared with historical numbers. The bay has considerable coastal wetlands so seemingly no lack of pike spawning habitat, yet they are a rare occurrence. Not sure of the cause, but triggering more interest by the Research Section in Michigan. Currently, the Walleye population has exploded and regulations in 2015 have been liberalized as a result.

Ontario

Prepared by John Paul Leblanc

Muskellunge

Lake Simcoe:

- The only stocking underway in Ontario involves a restoration project in Lake Simcoe to re-establish a self-sustaining muskellunge population that became extirpated. Current stocking levels are at extremely low densities (e.g., ~ 4000 fingerlings stocked in 2015). Results from this project are preliminary.
- Besides Lake Simcoe, there are currently no stocking efforts for any of 407 lakes and rivers that support muskellunge populations and all populations are considered to be stable and supported by natural reproduction.

Georgian Bay:

- Since 2012 muskellunge and northern pike have been caught and surgically implanted with radio-transmitters to better understand habitat use, spawning site fidelity and sympatric relationships of these esocids. At present, 45 muskellunge have been tagged with a radio-transmitter, while 10 northern pike have been tagged. Through collaboration with the Ontario Ministry of Natural Resources and Forestry, McMaster University, the Georgian Bay Musky Association and Muskies Canada Inc., 30 more esocids are hoped to be tagged with radio-transmitters, to continue the telemetry work.
 - An additional project in Georgian Bay was to quantify suitable muskellunge nursery habitat, to promote muskellunge populations that are self-sustaining through natural reproduction.
- Results from both of the Georgian Bay projects have either been published/accepted to peer-reviewed journals (i.e., Leblanc et al. 2014 – Journal of Great Lakes Research; Weller et al. 2016 – Transactions of the American Fisheries Society), are under review at peer-review journals (i.e.,

Leblanc and Chow-Fraser at Transactions of the American Fisheries Society), or are in preparation for submission for peer-review (presentations given at the symposium by Weller and by Leblanc)

3. Muskellunge populations in Georgian Bay continue to be assessed to determine their genetic structure. At present, there are at least 12 genetically distinct muskellunge populations in Georgian Bay, and these genetically distinct populations are separated by as little as 50 km of shoreline.

Spanish River:

- The Ontario Ministry of Natural Resources and Forestry has suggested tentative plans to survey the recently re-established muskellunge population at the Spanish River to update survey records.

General:

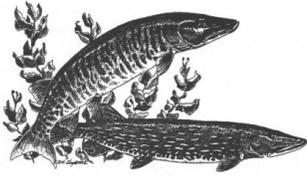
Muskies Canada Inc. will likely be lobbying for increasingly biologically based fishing regulations for muskellunge throughout Ontario. Their concern stems from some populations being exposed to different harvest restrictions as muskellunge move between Fishery Management Zones connected by various waterways.

West Virginia Prepared by Jeff Hansbarger

- Gearing up for collection/spawning activities at our hatcheries, Scott Morrison has been in contact with Michigan DNR about using a buffered solution to increase hatching/survival which we will try this spring.
- Telemetry project on a pool of the Kanawha River, and the New River to investigate movement, and identification of spawning areas. Also a fin ray validation project with collaboration from researchers in VA, PA, and Dr. Derek Crane (Coastal Carolina University).
- 4 muskellunge clubs currently call WV home: WV Husky Musky Club, Elk River Muskie Club, and two chapters of Muskies Inc - ch 9, and the newly formed ch 63. We (the WVDNR) continue to work with these groups to maintain working relationships through various cooperative activities. A number of club anglers are equipped with 'angler recap kits' w PIT tag readers to supplement recaptures for specific projects.
- We are currently evaluating natural reproduction in native river systems to: 1) reduce stocking over areas with adequate natural reproduction, and 2) maximize hatchery contributions by placing fingerlings where they are most needed.
- Investigating the formation of a 'southern Esocid' technical committee and future Esocid symposium within 2017 SEAFWA or SDAFS. Interest is mainly due to travel limitations to the NC ETC for many researchers.
- In the early stages of a WV muskellunge management plan.

Wisconsin Notes from Justin VanDeHey and Janice Kerns

- Mark and recapture project on six lakes to better evaluate Muskellunge population estimates; problem: population estimates made using Walleye methods are typically high
- Experimenting with pelleted versus minnow reared Muskellunge to evaluate growth and survival
- Rearing cost of fall fingerling Muskellunge: \$5.20-\$5.80 per fish
- Working on adult density estimations; building a model



North Central Division American Fisheries Society

Esocid Technical Committee

Chair – Cory Kovacs: MDNR (kovacsc@michigan.gov)
Immediate Past Chair – Dave Kittaka: IDNR (dkittaka@dnr.IN.gov)
Chair Elect - TBD



March 13, 2016

2016 Winter Business Meeting Agenda

Meeting at Hugh C. Becker Muskellunge Symposium, Minnetonka, Minnesota

Meeting Place: Minnetonka Room

Meeting Time: 5:50pm-6:30pm

- Call to order

- Approval of Summer Business Meeting minutes (see ETC Webpage)

- Budget (see below)

- Committee Status
 - Solicitation for Chair Elect 2017
 - Membership

- South Division AFS- Formation of an Ad-hoc ETC

- ETC By-laws update
 - History of ETC-last update was 2006
 - Include Chairs from each year (term)
 - Update selection for Chair-Elect

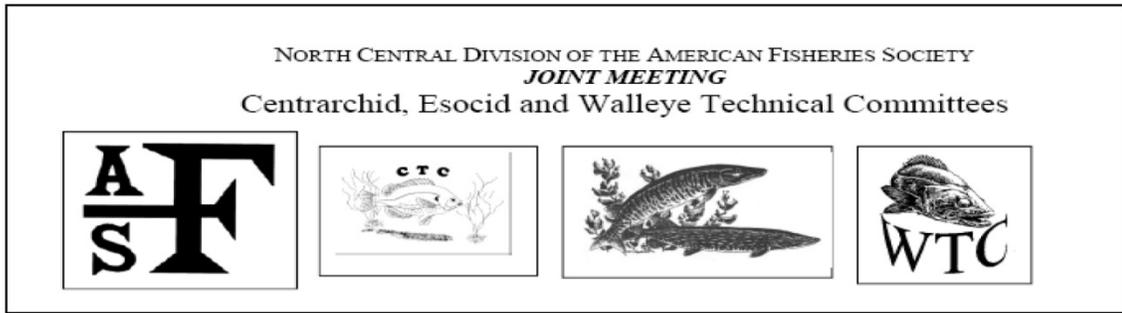
- 2016 Summer Business Meeting
 - July 25-28 joint meeting with WTC/CTC in Gretna, Nebraska at Ak-Sar-Ben Aquarium

- State Updates (brief)
 - Complete summary of state reports will be completed and included with the minutes following the meeting

- Adjourn

Budget Summary

<u>2015</u> Esocid	Description	Expenses	Deposits	Balance
01-Jan				\$3,015.73
07-Jul	MM interest		\$4.55	
		\$0.00	\$4.55	\$3,020.28*



2016 Joint Meeting of the Centrarchid, Esocid, and Walleye Technical Committees – North Central Division of the American Fisheries Society

ANNOUNCEMENT AND CALL FOR PAPERS

Dates: July 25-28, 2016

Location: Ak-Sar-Ben Aquarium, Gretna, Nebraska

Lodging Location: Super 8 14355 NE-31, Gretna, NE (1 402 332-5188)

<http://www.super8.com/hotels/nebraska/gretna/super-8-gretna/hotel-overview>

Lodging

A block of rooms have been reserved until June 25, 2016 at a rate of Single (\$61.99/night + tax), and Double (\$71.99/night + tax), Available under the name Fisheries Technical Committee Meeting (holding 30 rooms)

Registration Cost

Cost is anticipated at \$60 for the entire meeting, which includes a fish fry or BBQ social Tuesday; morning and afternoon breaks, lunch and dinner on Wednesday; morning break on Thursday. Students are half price. A continental breakfast is available at the Super 8 in Gretna.

Continuing Education

A continuing education workshop is planned for Tuesday, July 26th. The topic options will include: Habitat Improvement Workshop (Site Visit Included), Developing Methods for Sportfish Control, an Optional Float Trip, and Fish Fry. Cost is anticipated at \$50 per person.

Registration and Presentation Submittal

If you have a paper for inclusion please forward the abstract to John Bruner (jbruner@ualberta.ca). Meeting registration will be via email to Hilary Meyer at Hilary.Meyer@state.sd.us. We will accept payment by cash or check at the door. Sorry, we are not equipped to accept credit cards or other forms of electronic payment. Deadline for registration is **June 17th, 2016**.

Hope to see you there!