



Walleye Technical Committee

Paul Christel, Chair pchristel@cheqnet.net

Dan Isermann, Chair-elect Dan.Isermann@uwsp.edu

Andy Jansen, Immediate Past Chair andrew.jansen@ksoutdoors.com

Donna Hanen Muhm, Secretary donna.muham@dnr.state.ia.us

Web site is: <http://www.ncd-afs.org>

2012 Summer Business Meeting Minutes

WTC-ETC-CTC Joint Meeting, Lac Courte Oreilles Casino Lodge, Hayward, WI July 24-26, 2012

Chair Christel called the meeting to order at 9:28 AM to the 8 members in attendance. There were no changes to the agenda noted, motion was made and carried to accept the agenda as written.

Approval of the 2011 winter business meeting minutes:

No changes to the 2011 winter meeting minutes were noted; therefore motion was made and carried to accept the meeting minutes as written.

State and Provincial Reports:

Michigan, Patrick Hanchin (via e-mail):

Walleye production was poor this year due to a strange spring with early ice-out followed by a cold snap in the late spring. The State, Tribes, and MSU are continuing a comprehensive study of the Inland Waterway in the northern Lower Peninsula that includes diet evaluation, forage assessment, stable isotopes, acoustic telemetry, and jaw tagging. We hope this study will shed light on the changes in the walleye populations as well as aid us in setting appropriate harvest limits for the State and Tribes. Walleye are also part of the large GLATOS acoustic array in northern Lake Huron and Saginaw Bay and some information from this study will be presented at the AFS Annual Meeting. As with many others, we are very interested to see what happens in Mille Lacs with the zebra mussel invasion. We seem to see effects on walleye recruitment about 10 years after invasion, though our systems were not as productive as Mille Lacs. We are trying to educate people about keeping Quagga mussels out of inland lakes, but it may be a matter of time. The "rehabilitated" Saginaw Bay walleye population is expanding and spilling out northward with good fishing all the way up to Thunder Bay (near Alpena in northern Lake Huron). Fisheries Division staffing is at an all-time low and we are completing a Strategic Plan for moving forward with less resources over the next 5 years.

Max Field and Kevin Haynes (both with Little Traverse Bay Bands of Odawa) added that a Tribal Wildlife Grant was received to continue walleye research with the Inland Waterway and expand to include more lakes in the study.

Missouri, Tory Mason:

"Small" impoundment walleye exploitation study complete at Mozingo Lake (1000 acres) (LMB CPUEs average 120/hr for duration of study). 848 walleye from 14-29 inches were tagged with \$25 orange floy tags, with 218 of those returned from 2008-2012. Corrected (tag loss and non-reporting) annual exploitation was 15.5% in 2008, 14.8% in 2009, 13.5% in 2010, and 29.1% in 2011, for an average of 18.2% annual exploitation. Corrected cumulative exploitation was 34% for 2008, 41.9% for 2009, 33.9% for 2010, and 37.5% for 2011, for an average of 36.9% total corrected cumulative over 5 years. Walleye were targeted by 60% of successful anglers, 19% were targeting bass, 17% were targeting crappie, and 4% were targeting other species. Twenty-seven percent of tag returned fish were caught in May, followed by June (21%), April (15%), March (14%), July (10%), August and September (6%), October (1%), and November (<1%). Non-resident anglers accounted for 14% of tag returns.

Mozingo Lake currently meets all five objectives of MO's walleye management plan: 1) increase variety of walleye angling opportunities in Missouri (MWMP primary objective); 2) provide supplementary walleye angling opportunity; 3) provide a harvest-oriented walleye fishery with a PSD of at least 75; 4) provide a high-quality walleye fishery with a population characterized by a PSD of at least 50; and 5) provide an opportunity to catch and harvest 8 lb or larger walleye (longer than 28 inches). These objectives were achieved with 109,913 <2 inch fingerling walleye stocked over a 15-year period from 1996-2010.

Conclusion: Walleye fisheries can be created and maintained in suitable MO small impoundments with bi-annual fingerling stockings, even with LMB populations with CPUEs>100/h.

AJ Pratt (Bull Shoals): I'm working with Twin Lake Walleye Club to collect walleye otoliths from walleye they've harvested from Bull Shoals Lake in 2012. To date I've removed over 180 otoliths from heads they've kept. The group is also keeping fishing diaries from their 2012 walleye trips. Through the MO Conservation Heritage Foundation, I've provided Bass Pro gift cards as incentives for their efforts. This should result in good age/growth data for long-term trends and special projects.

Drew Burdick (Lost Valley Hatchery): Total fry produced was 1,842,000 and total fingerling produced was 569,776. All in all, it was a tough year with warmer than usual pond/lake temps, we managed to "getter done".

Quinton Phelps (MDC researcher, Sauger, MO River):

- 1) An undergraduate student/technician (Kasey Yallaly) has been analyzing some sauger data that we collected out of the "best" pool in the lower portion of the Upper Mississippi River (ie. Pool 22). Kasey and I have evaluated the simple baseline demographics (recruitment, growth, and mortality) and reproductive ecology of this population. First and foremost the size structure and relative condition (plumpness) of this population was amazing!! Lots of "fat" fish over 22 inches. After aging all these saugers, we determined that recruitment was highly variable with the 2008 year class dominating the population age structure. Mortality was high with 52% annual mortality. Female sauger were highly fecund (ie. 80,000 eggs) and eggs were large. Although the data we collected were simplistic, we hope that this study has provided more exposure to lay the framework for additional research to be conducted in this unique population of the Upper Mississippi River.
- 2) We have also performed some intensive sampling in the New Madrid Floodway...Here is some background: The New Madrid Floodway in southeast MO was created to divert part of the Mississippi River flow during catastrophic floods and thus alleviate flood risk on nearby population centers. The Floodway extends from Birds Point, MO south to New Madrid, MO and encompasses the area between the Birds Point-New Madrid secondary levee and the Mississippi River primary levee. The surface area of the New Madrid Floodway is approximately 475 square kilometers. Prior to development, the New Madrid Floodway was dominated by bottomland hardwoods that periodically provided aquatic habitats used by fishes. This area has subsequently been cleared for agriculture related uses. As such, land use in the area is primarily agricultural with bottomland hardwoods and wetlands constituting the minority. Since its creation, it was opened once during the extreme 1937 flood. However, during 2011 the floodway was again opened and provided an unprecedented opportunity to evaluate the influence of floodplain inundation on fishes. Specifically, we sampled the floodplain and the adjacent river at three stratified random locations (with replication) biweekly from the commencement of inundation (early June) through September. We found age-0 saugers were more abundant in the floodplain (~10X higher) than in the main river. We attribute these results to the forage rich (highly abundant gizzard shad and age-0 silver carp), low velocity, shallow area (ie. nursery habitats) formed through inundation of the floodplain. Not surprisingly, our data supports many previous examinations that suggest floodplain inundation may be important for riverine fishes (including sauger).

John Ackerson (SW MO): Will be sending an angler mail survey on walleye fishing out ~January 2013 to anglers in counties surrounding the Eleven Point, Current, Black, and St. Francis Rivers. We also spent time with broodstock collection, hatchery rearing and stocking of ~70,000 fingerlings in the Current River in 2012.

Mike Anderson (NE MO): In August 2001, fisheries staff nominated 573-acre Forest Lake as the highest priority lake in the NE Region for evaluating the potential of stocking large fingerling walleye (6-8 inches) into a small impoundment to create a walleye sport fishery. Reasons for this decision were quality habitat, a forage base consisting of gizzard shad and yellow perch, and limited natural recruitment of walleye originating from early 1980's stockings. Advanced walleye fingerlings (≥ 6 inches) were stocked in the fall of 2002, 2005, 2007, and 2010 at a rate of approximately 10 fish per acre. With the exception of the 2005

year class, all fish were marked with a vertical brand using liquid nitrogen in order to distinguish stocked fish from natural recruits in the lake. Stocking of advanced walleye fingerlings has produced a manageable walleye fishery at Forest Lake. Forest Lake has historically contained a small, naturally reproducing walleye fishery, but low natural recruitment seldom provided a quality fishery. Interestingly, a large year class of walleye occurred in 2001, a year before the first stocking of advanced fingerlings as evidenced by our 2005 electrofishing survey. This was the only substantial year class produced within the lake over the course of the 10 year study. Stocked walleye made up the majority of captured fish in each electrofishing survey. By 2011 and 2012, stocked walleye made up 90 and 74 percent of the total walleyes (≥ 15 inches) captured during those two years, respectively. Stocking will have to continue to maintain a population because natural recruitment of walleyes did not increase as a result of increased adult abundance.

Adam Boman (Stockton Lake): Given the species preference of anglers and the changes in the Stockton Lake fish community which have occurred since the early 1990's, considering a change in the walleye stocking regime is appropriate. Data from Lake of the Ozarks and Pomme de Terre add support for an adjustment to stocking strategies at Stockton Lake. The proposed adjustment could bring more balance and consistency to the MDC hatchery system. In addition, with an angler creel survey for Stockton Lake scheduled in 2015-2016, the timing is favorable to evaluate a shift in the Stockton Lake walleye stocking regime if implemented. The adjustment is changing from a biennial stocking of 750,000 walleye fingerlings to an annual stocking of 300,000 walleyes. Data show that Stockton Lake objectives for walleye and being exceeded while those for crappie are not being met. The Stockton Lake management objective of 15-30 combined white and black crappie ≥ 5 inches/net day has been met only one year since 1994. Prior to 1995, the Stockton Lake management objective of 10-20 white crappie ≥ 5 inches/net day was met in 18 of 21 years. These data along with the observed trend of decreasing crappie abundance with walleye stockings seen at Stockton Lake and documented in various studies, demonstrate an imbalance of the fishery as a result of the current management of Stockton Lake. The goals of transitioning to the proposed stocking regime are 1) to improve crappie angling opportunities, CPUE, and creel statistics; 2) to create more consistent walleye angling and harvest opportunities; 3) continue to meet walleye objectives set forth in Missouri's Walleye Management Plan; and 4) add efficiency and balance to the hatchery system. An additional potential benefit is an increase in largemouth bass growth rates. The end result will be a more balanced Stockton Lake.

Nebraska, Jason DeBoer:

Due to low winter snowpack and summer rains, water levels in many reservoirs across Nebraska are on the decline in the last 8 months. Likely no effect on our fisheries this summer, but if the dry weather continues for a period of years, like it did just recently, our fisheries will be negatively affected.

Daryl Bauer (NGPC): Our annual Fishing Forecast has been hugely popular with anglers, walleye anglers in particular. I am always "preaching" that walleye populations are dynamic and I believe some of our anglers are starting to understand that there will always be ups and downs, good years and not as good. So, they can use something like a fishing forecast to plan their strategies each year. Which brings up the point that walleye anglers in particular are very mobile, and if you "build it, they will come".

Jordan Katt (NGPC): Walleye broodstock collections were conducted at Sherman Reservoir, Merritt Reservoir, and Lake McConaughy during March-April 2012. A total of 97 quarts of eggs were collected in 2012, with 266 (28%) being collected at Sherman Reservoir. Broodstock collection crews at Sherman Reservoir consisted of personnel from the Nebraska Game and Parks Commission (NGPC) district offices in Kearney and Lincoln and the University of Nebraska-Kearney Biology Department (UNK). Additional work conducted at Sherman Reservoir during March 2012 included assessment of the catch-per-unit-effort (CPUE) of male and female walleye, estimation of the sexually mature male walleye population size and development of length frequency histograms for sexually mature male and female walleye. This research was conducted in cooperation with the NGPC district offices in Kearney, Lincoln, and UNK.

Chris Uphoff and Dr. Casey Schoenebeck (UNK): Chris recently completed his master's thesis on seasonal food habits and variability in length of age-0 walleye in Harlan County Reservoir, Nebraska. Length of age-0 fishes can affect their recruitment and future life history characteristics. Intracohort and interannual variability in length of age-0 walleye have been observed in Harlan County Reservoir, Nebraska. Specific objectives for this study focused on age-0 walleye and included, 1) describing food habits and 2) intracohort variability in length, 3) determining if differences in length of stocked and natural age-0 walleye occurred, 4) determining if size-dependent variability in the timing of the ontogenetic diet

shift to piscivory occurs, and 5) determining factors that affect the variability in growth of age-0 walleyes among years in Harlan County Reservoir, Nebraska. Based on gut content analysis calanoid copepods and gizzard shad often contribute the most to the diets (by weight) of age-0 walleye. Individual variation in length was positively related to hatch date in May 2010, but individual variation in growth rates overcame this relationship and length was no longer associated with hatch date in June 2010. Most age-0 walleye collected in 2011 were stocked and intracohort variability in length still occurred. Intracohort variability in length led to size-dependent differences in the timing of the ontogenetic shift to piscivory among age-0 walleye, with larger age-0 walleye shifting to piscivory earlier than smaller individuals of the same cohort. A set of a priori candidate models were used to assess the relative support of explanatory variables in describing interannual variability in length of age-0 walleye using Akaike's information criterion (AIC). A temperature model using the growing degree days metric was the best supported model, describing 65 percent of the variability in annual mean lengths of age-0 walleye. This research highlights that environmental and biological interactions within the reservoir have more influence on walleye growth during their first growing season than hatch date.

Seth Lundgren and Dr. Casey Schoenebeck (UNK): OTC-marked yellow perch were released in September into eight I-80 lakes (each had varying bass densities, surface areas, depths, and vegetation features) in order to try and find suitable lakes to establish a yellow perch fishery. Stocking mortality and water quality parameters were assessed to determine if anything other than largemouth bass predation contributed to mortality. Largemouth bass were then electrofished after dark and lavaged to determine yellow perch mortality due to predation. Results forthcoming.

Jason DeBoer and Dr. Kevin Pope (University of Nebraska—Lincoln; UNL): We are trying to identify recruitment bottlenecks for walleye (and white bass) in irrigation reservoirs of SW Nebraska. We have completed 5 years of sampling on this project. We are still processing zooplankton, larval fish, and juvenile fish samples, with the intent of determining hatch dates, growth rates, and diet for walleye (and white bass).

Environmental factors regulating the recruitment of walleye *Sander vitreus* and white bass *Morone chrysops* in irrigation reservoirs.

Understanding the environmental factors that regulate fish recruitment is essential for effective management of fisheries. Generally, first-year survival, and therefore recruitment, is inherently less consistent in systems with high intra- and interannual variability. Irrigation reservoirs display sporadic patterns of annual drawdown, which can pose a substantial challenge to recruitment of fishes. We developed species-specific models using an 18-year data set compiled from state and federal agencies to investigate variables that regulate recruitment of walleye *Sander vitreus* (earlier spawning) and white bass *Morone chrysops* (later spawning) in irrigation reservoirs in southwest Nebraska, USA. The candidate-model set for walleye included only abiotic variables (water-level elevation, minimum daily air temperature during winter prior to hatching, annual precipitation, spring warming rate, and May reservoir discharge), and the candidate-model set for white bass included primarily biotic variables (CPUE of black crappie *Pomoxis nigromaculatus*, CPUE of age-0 walleye, CPUE of bluegill *Lepomis macrochirus*, and CPUE of white bass age-3 and older), each of which had a greater relative importance than the single abiotic variable (minimum daily air temperature during winter after hatching). Our findings improve the understanding of the recruitment of fishes in irrigation reservoirs and the relative roles of abiotic and biotic factors.

DeBoer, J.A., K.L. Pope and K.D. Koupal. 2012. *In press*. Environmental factors regulating the recruitment of walleye *Sander vitreus* and white bass *Morone chrysops* in irrigation reservoirs. *Ecology of Freshwater Fish*.

Robert Kill (M.S.) and Dr. Kevin Pope (UNL): Reservoir-specific walleye population models have been built. Post-yearling age-specific annual survival has been estimated for the reservoirs using historic gill net data provided by the Nebraska Game and Parks Commission, and is low compared to other systems in North America. Age-specific fecundity has been estimated using growth trends from other regional populations and a range of theoretical mass-specific fecundities. Combining age-specific annual survival and our derived range of fecundities, we intend to predict how often a strong year class of walleye must be produced to maintain the populations. Preliminary results reveal that some of the reservoirs cannot maintain walleye populations without year-class production stronger than what has been observed in other systems outside of this region, while others may be able to maintain populations for several years without a

strong year class being produced. Thus, some of the reservoirs may be required supplemental stocking of more individuals more often than other reservoirs in the Republican River watershed in Nebraska.

Mark Kaemingk (Ph.D.) and Dr. Dave Willis (South Dakota State University):

Mensurative approach to examine potential interactions between age-0 yellow perch (*Perca flavescens*) and bluegill (*Lepomis macrochirus*).

Bluegill (*Lepomis macrochirus*) and yellow perch (*Perca flavescens*) populations are often sympatric in the Great Plains region of the U.S.A. and portions of Canada; however, very little attention has been given to potential interactions between these species for available resources, especially during the early life stages. Relationships between age-0 bluegill and yellow perch growth and relative abundance were explored across multiple lakes and years within the Nebraska Sandhill region, USA. In addition, four habitat patch types (open water, *Phragmites* spp., *Typha* spp., *Scirpus* spp.) were sampled for age-0 bluegill and yellow perch, and food habits were examined for each species during August, September, and October of 2009 in one of these lakes. Age-0 yellow perch growth was negatively related to age-0 bluegill relative abundance across a spatiotemporal scale. Age-0 bluegill and yellow perch exhibited similar habitat use (moderate-high overlap), but generally consumed different important and dominant prey taxa (bluegill consumed both macroinvertebrates—56% and zooplankton—44%, while yellow perch consumed more zooplankton—66%), which resulted in low overall diet overlap between species. Previous research indicates that age-0 yellow perch diet ontogeny often results in feeding predominately on macroinvertebrates and positively selecting them (and avoiding zooplankton prey) at sizes observed in our study. Therefore, yellow perch growth rates may be compromised by the presence of bluegill because of the need to consume less energetically profitable prey items such as zooplankton.

Kaemingk, M.A., and D.W. Willis. 2012. Mensurative approach to examine potential interactions between age-0 yellow perch (*Perca flavescens*) and bluegill (*Lepomis macrochirus*). *Aquatic Ecology*.

Wisconsin, Steve Gilbert:

- 1) Wisconsin had an early ice out. Interestingly, the walleye spawn in the shallow lakes was normal, but in the deep lakes the peak walleye spawn was 2-3 weeks later. It will be interesting to see what the results of the fall recruitment surveys.
- 2) Hatchery production was good this year. Small walleye fingerling goal was met and even had some surplus. The demand for priority-1 lakes continues to rise, but it is difficult to meet demands since feeder minnows must be purchased from certified VHS-disease free vendor at a cost of around \$9000 per week.
- 3) WAE/Black Bass interactions continues to be a hot topic. Received \$7000 USGS grant to support UW-Madison and UW-Stevens Point students to further investigate this topic.
- 4) UW-Stevens Point has new fisheries analysis center. Aging structures have been requested from throughout the state to get a handle on growth rates of different fishes. The center is working with the Tribes to collect aging structures from fish captured during spearing and within areas where collection is not otherwise possible.
- 5) Brian Sloss at UW-Stevens Point is finishing a walleye genetics project. His research findings may be presented at the Annual AFS Meeting. The findings are similar to the results of genetics studies conducted in the past on Wisconsin waters.
- 6) Black bass regulations have been exempted from some Wisconsin waters to see what affect they may have on walleye populations. Changes to fishery regulations must undergo extensive review process which results in longer-time frame to get changes enacted.
- 7) Overall the outlook for fisheries staff is positive. Eight new biologists and three technicians have been hired recently. Greg Sass has been promoted to fisheries research biologist at Escanaba. Unfortunately, limited term employee budgets have been cut by 2/3 due to shortfalls in license revenues.

Kansas, Andy Jansen:

Walleye production was poor this spring. Fortunately, Nebraska was able to provide surplus eggs to make up the deficit in our production quota. We continue to work on our triploid saugeye production project using the new pressure chamber. However, this spring we had some issues with the security of the broodstock and equipment malfunction at the hatchery and subsequently no triploid saugeye were able to be produced. The project will be continued in 2013.

Jason Goeckler was promoted from Aquatic Nuisance Species Coordinator to the Statewide Fisheries Research Coordinator this spring. Jason will be looking into conducting additional percid research as time allows.

Financial Report: Donna Hanen Muhm

	INCOME	EXPENSES	BALANCE
Balance, July 1, 2011			\$12,538.07
December - Sander Award		\$100.00	\$12,438.07
Plaque for Andy		\$25.00	\$12,413.07
Interest through July 2012	\$43.18		
Ending Balance as of July 2012			\$12,456.25

Sander Travel Award:

Chair Christel announced that the Sander Travel Award will be available for students this year. The Sander travel award gives \$100.00 for student travel to the Midwest Fish and Wildlife Conference in December, and a matched amount is requested from the student’s state chapter AFS for an award total of \$200.00. The deadline for application for this award is September 30th. Chair Christel will work on getting an announcement posted on the website. If you are interested or know an interested student please send applications to Chair Christel at pchristel@cheqnet.net

Chair-Elect Nominations:

Before the summer meeting, Dan Isermann (University of Wisconsin—Stevens Point) expressed interest in the position. Paul Christel will check with Dan to make sure he is still up for the task. The membership agreed that Dan would be a good fit for the position.

WTC 2012 Winter Meeting and 2013 Summer Meeting

The winter business meeting will be held in conjunction with the 2012 Midwest Fish and Wildlife Conference at the Hyatt Hotel in Wichita, KS. The associated meetings are generally scheduled on the Sunday before the conference welcoming social. It was decided that a late afternoon meeting would be best for those traveling long distances and/or the possibility of inclement weather delaying travel plans. Andy Jansen will look into reserving the room for 5:00pm on Sunday, December 9, 2012 for the winter business meeting. Locations and themes of the 2013 summer meeting were discussed with the ETC and CTC before the breakout. Possible locations of the 2013 summer meeting included: La Crosse, WI, Dubuque, IA, Wausau, WI, and the Kemp Station on Lake Tomahawk, WI. Workshop and theme ideas discussed included age and growth, fish identification, molecular techniques (such as stable isotope analysis), population genetics, and broodstock management. The incoming 2013 Chairs of the WTC, ETC, and CTC will continue to discuss location, workshop, and theme of the summer meeting.

Old Business:

No old business to discuss.

New Business:

No new business to discuss.

A motion was made for adjournment, seconded, and passed. The meeting was adjourned at 10:25 A.M.

Respectively submitted by Andy Jansen on behalf of Donna Hanen Muhm