

# Walleye Technical Committee Business Meeting Minutes

## Ak-Sar-Ben Aquarium, Gretna, Nebraska

July 28<sup>th</sup>, 2016

- Meeting was called to order at 9:05 am by Walleye Technical Committee chair, John Bruner.
- 54 people were in attendance for the Walleye Technical Committee business meeting.
- Before the three technical committees split off for their separate business meetings, the location of the 2017 summer meeting was discussed.
- Chair-elect, Jeff Koch brought up the idea of holding the meeting in Minnesota. Dale Logsdon said that MN DNR would be supportive of it.
- Bruce Bolding (WA) mentioned possibly hosting the meeting in Spokane, WA. But discussed travel difficulties with getting multiple people out west to Washington.
- Jeff Koch pointed out that since MN is a good possible location within the NCD, we can discuss holding the meeting in WA in the future.
- Steve Gilbert brought up our reporting for the technical committee meeting. We currently report twice a year, at the summer meeting and at the winter meeting. Steve suggested that we only report once a year at the winter meeting, instead of twice a year. A lot of the information winds up being redundant. In addition, field staff generally has more time to work on getting reports written up during the fall and winter months.

### Secretary Report

- Secretary report (Hilary Meyer): we had an excess of approximately \$2300 from the 2016 meeting. We are planning on donating around \$300 to UNK students that assisted with the meeting set-up, and will “donate” the rest of the profits (~\$2,000) to the ETC since Keith Koupal is the one who did the local arrangements this year.

## Treasurers Report

08/15/2016 2016 WTC	Description	Expenses	Deposits	Balance
01-Jan				\$12,771.59
24-Jan	sander award summer	\$100.00		
02-Aug	meeting	\$2,471.18	\$2,740.00	
		\$2,571.18	\$2,740.00	12,940.41

## Presentation of Past-Chair Plaque

- Chair-Elect Jeff Koch presented past-chair Randy Schultz with a plaque of appreciation for serving as the Walleye Technical Committee Chair for 2015.

## Report of Chair

- Chair, John Bruner gave an update. The Walleye Technical Committee has ~250 members on our email listserv. Randy, Hilary and John updated the operations manual in 2015, which is posted up on the website. John also discussed how the NCD website lost a number of documents during the switch from their old website onto the new website that is hosted by the parent society. The majority of the files on the WTC webpage have been recovered.
- NCD archives are currently located at DC Booth fish hatchery in Spearfish, SD. These files were supposed to be digitally archived, but have not been converted yet. Eventually, these files will be transferred to Brian Borkholder in northern MN to include on the website.
- Chair Bruner reported that he's had a number of conference calls with Melissa Wuellner (NCD President) and that she's trying to get more and better communication between groups in the NCD (WTC, ETC, CTC, State Chapter presidents, etc.)
- Chair Bruner wanted to remind everyone about the Sander travel grant deadline of October 1<sup>st</sup>, 2016. He also wanted to remind students that apply, to include how their research pertains to walleyes. The WTC generally tries to match funds (\$100 from WTC and then \$100 from the students state chapter), but it's not guaranteed.

## State Reports

### **Michigan, Seth Herbst**

1) Recently there have been two manuscripts published that evaluated the contribution of production in the Detroit River to overall walleye recruitment in western Lake Erie. One of the major findings from this work illustrated that annual production from riverine stocks could stabilize the Lake Erie fishery by dampening inter-annual recruitment variation. For additional information on walleye recruitment in Lake Erie please see the manuscripts on the WTC webpage. Further questions can be directed to Ed Roseman ([eroseman@usgs.gov](mailto:eroseman@usgs.gov)).

2) Research scientists and managers continue to collaborate on acoustic telemetry projects in the Great Lakes to address life history and management questions related to spatial ecology. These projects are utilizing the Great Lakes Acoustic Telemetry Observation System (GLATOS) receiver network and provide valuable insight into the spatial ecology of walleye populations in Lake Huron and Lake Erie. Primary questions being approached are determining the environmental triggers to spring spawning migrations, characterizing the scope and scale of adult migrations in the Great Lakes, and estimating the degree of spawning site fidelity. Telemetry data for the Tittabawassee River spawning stock in Lake Huron suggest more than half of tagged walleye moved out of Saginaw Bay after spawning and migrated either to northern or southern Lake Huron, returned to Saginaw Bay by December, and then back to the Tittabawassee River to spawn the following spring. Annual spawning site fidelity of walleye to the Tittabawassee River was 95%. Other results from telemetry suggest less than 5% of walleye tagged in the Tittabawassee River moved from Lake Huron into the Huron-Erie corridor and only one individual was briefly (less than 1 week) detected in western Lake Erie before returning to Lake Huron. GLATOS is supported by the Great Lakes Restoration Initiative funds provided to the Great Lakes Fishery Commission and operates collaboratively with many agencies such as the Michigan Department of Natural Resources, USGS, and US Fish and Wildlife Service. Any questions related to this work can be directed to Todd Hayden ([thayden@usgs.gov](mailto:thayden@usgs.gov)).

3) The spatial ecology information that is being gleaned from telemetry data has highlighted that Walleye in Lake Huron are an intermixed stock. Michigan State University has conducted analysis and recently published a paper on the mixed stock analysis in Saginaw Bay, Lake Huron. The work combined age and genetics data for “mixed stocks” to develop a population recruitment estimator from age and genetic samples collected during non-spawning seasons when fish are mixed. Please see the manuscript

that was uploaded to the WTC website. For further information please contact Travis Brenden (Brenden@anr.msu.edu).

4) New walleye regulations have been implemented on Saginaw Bay, Lake Huron. Saginaw Bay is well known for its walleye fishery and achieved recovered status in 2009. That recovery traces back to the disappearance of alewives which were a huge impediment to walleye reproductive success. A Statistical Catch at Age (SCAA) model for the bay indicates that the walleye population age-2 and older is about 2.5 million fish. The burgeoning walleye population, however, has greatly increased predation on yellow perch and the perch population (while also enjoying great reproductive success in the absence of alewives) is deeply depressed and the recreational and commercial fisheries are collapsed (for perch). In an effort to address that, and to ensure more full utilization of the recovered walleye population, the DNR fishery managers and Natural Resource Commission this last year decided to liberalize the recreational fishery moving from a daily bag limit of five to eight per angler per day. The 15" Minimum Length Limit was also reduced to 13". This was predicated on a simulation analysis and decision analysis that was recently detailed in a new article in the NAJFM. The overall objective is to try and tie management to the annual assessment and modeling with the expectation that the recreational regulations will be adjusted annually like they do on Lake Erie. Any questions related to the SCAA work can be directed to Dave Fielder (Fielderd@michigan.gov).

5) As part of Governor Snyder's 2017 Budget the MDNR Fisheries-Division has received \$12.2 million to perform upgrades to steelhead production facilities at the Little Manistee Weir and Thompson Hatchery and coolwater upgrades at Thompson Hatchery geared toward increasing walleye and muskellunge production. The upgrades include a new coolwater incubation facility and 4- ½ acre and 4- one acre ponds at the old hatchery location. When complete we expect the 8 new lined ponds to produce approximately 250,000 additional walleye fingerlings for stocking statewide. The price tag for the coolwater upgrades is just over \$6 million. Construction is at least a year out with expected completion a year or two after that.

6) The DNR and tribal agencies continue to collaborate on co-managed waters within the ceded territory. As an example, the DNR and two tribal agencies partnered to implement a walleye mark-recapture population assessment on Walloon Lake in the northwestern portion of the Lower Peninsula. Similar collaborative efforts are planned for sampling other waters throughout the 1836 ceded territory.

7) Stocking update: During 2016 there were three walleye brood stock sources used. The sources included fish from the Muskegon River, St. Marys River, and Bay de Noc. Overall, this spring the DNR stocked ~2.3 million spring fingerlings and ~24.2 million fry (sac and swim-up combined) into public waters across the state. A more specific Muskegon River walleye egg take and stocking summary report is available if interested, please contact Seth Herbst (Herbsts1@michigan.gov) for that report. In addition to the regular operations, the Thompson Hatchery is experimenting with OTC marking concentrations to address concerns of high mortality rates of marked fish. The concentrations being evaluated are lower than levels the MDNR has been using (700 ppm), but are more in line with concentrations other mid-west states use (500 ppm). MDNR is also curious if mark detection at lower treatment levels is adequate, but experimental results have not been summarized yet.

8) The Michigan DNR is in the early stages of drafting an Inland Walleye State Management Plan. The plan will be developed internally by the Fisheries Division's Walleye Committee. The Walleye Committee will keep the NCD WTC informed on the status of these efforts, but will likely have the plan's first draft completed early next spring. Any questions related to this work can be directed to Seth Herbst ([Herbsts1@michigan.gov](mailto:Herbsts1@michigan.gov)).

### **Minnesota-Dale Logsdon**

#### Stocking and production:

##### 2015 stocking:

- 256,407,150 fry
- 131,880 small fingerlings
- 1,316,248 large fingerlings
- 276,575 yearlings
- 19,331 adults

##### 2016 egg take:

- 4,772 quarts = 562,154,761 eggs

#### General:

An inadequate license fee increase and unfunded mandates are putting strain on Fisheries budget. New hires and out of state travel will likely be limited for the foreseeable future. More drastic cost saving measure may follow.

New MNDNR Staff: Gretchen Hansen (DNR research scientist), John Hansen (St. Paul fisheries specialist), Casey Schoenebeck (DNR long-term monitoring project coordinator), Andrew Scholten (Waterville Hatchery manager), Brandon Eder (Waterville Asst. Area Sup.)

Retirements: Tim Goeman and Bruce Pittman

Stocking evaluation is currently underway. Includes statewide analysis of stocking and survey data and development of standardized worksheet functions to help managers better evaluate individual lakes.

Current suite of walleye regulations (toolbox) is also being reviewed.

#### Large Lakes:

Mille Lacs continues to experience poor survival beyond age 1 without a clear explanation of why or what can be done about it. Understanding walleye dynamics is confounded by spiny water flea, zebra mussel, and Eurasian water milfoil infestations, reduced nutrient loading and increased water clarity, increasing temperatures and reduced Tullibee abundance, as well as increased abundance of northern pike and smallmouth bass. Ten million OTC-marked (eggs collected from lake) were stocked this spring to help quantify natural reproduction. The walleye fishing has been good on Mille Lacs this year but it is restricted to catch and release only and no night fishing (10:00PM-6:00AM). The restrictions are intended to protect the 2013 year-class which is the only reasonably strong year-class in quite some time.

Red Lake walleye population continues to do well following recovery. Over 7 million pounds have been harvested since re-opening the fishery in 2006.

Cormorant control was suspended in Vermilion and Leech lakes following USFWS permitting changes in response to court ruling in Washington.

#### Current research and recent publications:

Paul Venturelli (UofM) - Continued research on use of growing degree-days to describe life history and predict sustainable exploitation rates. Paper on fish community changes in Shoal Lake following collapse of walleye population recently published in Journal of Freshwater Ecology. Paper on water level effects on walleye spawning habitat availability in Namakan Reservoir under review in Lake and Reservoir Management. Paper extending Lester's biphasic growth model to predict age and length at maturity from longitudinal length-at-age data in final review in Ecological Applications.

Jake Graham (BSU) – Completed Master's thesis on effects of pelican predation on spawning success of walleyes in the Tamarac River and its effects on the Red Lakes fishery

Phil Oswald (BSU) – Influences of dissolved oxygen on walleye fry production in tributaries to Upper Red Lake

Tyler Ahrenstorff (MNDNR) - Bioenergetics of predator species in Mille Lacs

Tim Cross (MNDNR) –Influence of substrate characterization and water movement on spawning habitat

Dale Logsdon (MNDNR) - Impacts of walleye stocking in lakes with walleye egg take operations (presentation given at meeting in Gretna). Red Lakes stocking evaluation recently published on-line in NAJFM

Melissa Trembl (MNDNR) - Population modeling on Mille Lacs

Steve Shroyer (MNDNR) - Assessment of fall electrofishing data

David Staples (MNDNR) - Mixed-effects year-class strength models

Loren Miller (MNDNR) - Walleye strain identification and spawning assessment

Andrew Carlson (MNDNR) - Gill-net selectivity and factors affecting catch rates.

Tom Jones (MNDNR) - Hooking mortality in Mille Lacs

Patrick Schmalz (MNDNR) Paper on trade-offs between yield and spawners per recruit recently published in NAJFM

### **Missouri- Paul Cieslewicz**

On average, the Missouri Hatchery Program produces ~1.5 million walleye fingerlings (2") each year. These fingerlings are stocked into sixteen impoundments (110 – 55,000 A) throughout the State. In 2016, a committee was established to begin revising the 2009 Missouri Walleye Plan.

#### Individual Region Reports:

##### Southwest Region

##### Table Rock Lake:

Table Rock Lake supports a low density Walleye population. Walleye were first stocked as fry in 1957 as the lake was filling. It is believed that many of these Walleye escaped through Table Rock Dam during a flood prior to the dam's completion. Fry and fingerlings have been stocked periodically in subsequent years by both the MDC and the Arkansas Game and Fish Commission (AGFC). The AGFC currently stocks Walleye annually in the Arkansas portions of Table Rock Lake (Cricket Creek and/or Kings River) and the Kings River is the main source of the AGFC's Walleye broodstock. There is a strong Walleye spawning run each spring up the Kings River. Early spring electrofishing capture rates typically range from 50 to 125 fish per hour in the Kings River.

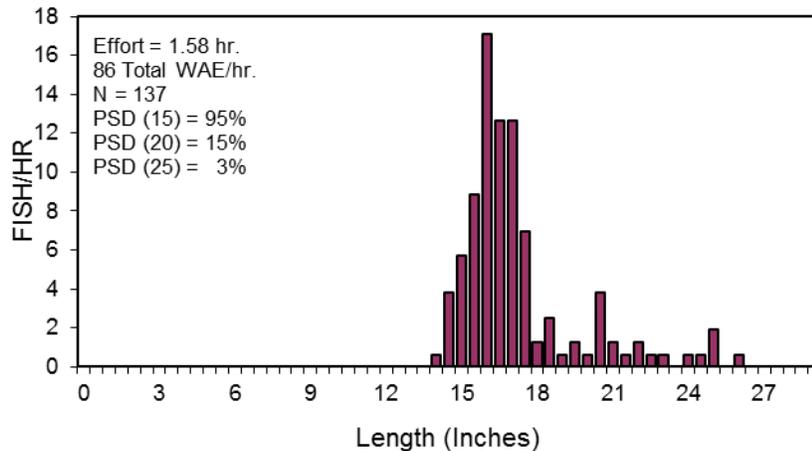
Walleye have been sampled periodically near Table Rock Dam in the past as well. These samples typically yielded very few individuals and were terminated in 2010. A fair Walleye population exists in the White River Arm from Eagle Rock up to Beaver Lake Dam. This population has never been sampled, but anglers have reported catching a fair number of Walleye in this stretch throughout the year. Reports of Walleye being caught throughout the rest of the main stem portions of Table Rock Lake are scattered at best. Angler creel data from the Mid-White River Arm indicated very low fishing pressure and catch rates, however a few Walleye of various sizes are collected throughout the lake each year during spring black bass electrofishing sampling.

In an effort to establish a Walleye spawning run in the James River, Walleye fingerlings were stocked in the James River Arm at approximately 10 per acre (9,000 acres) per year from 2003 to 2005. These Walleye were produced from broodstock that were collected from the Kings River and raised in the MDC hatchery system. The first documented natural reproduction of these stocked fish occurred in 2008. Early spring nighttime electrofishing is conducted annually in the James River from Cox Access to Blunk's

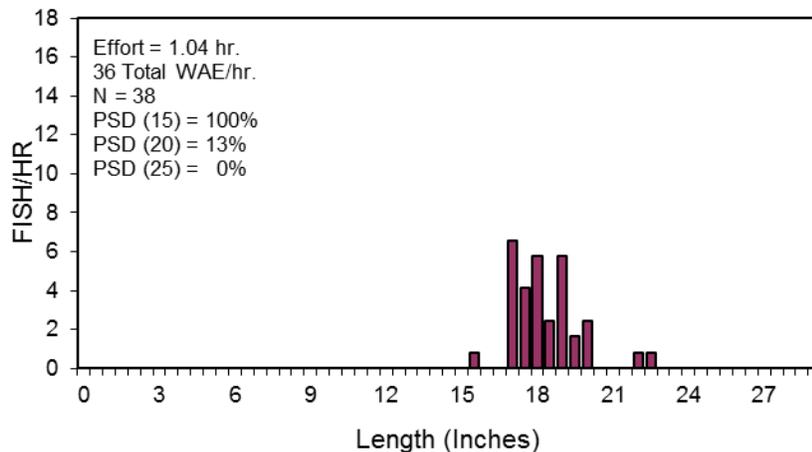
Access. Catch rates are variable among years and inconsistent data makes it difficult to determine the contribution of natural reproduction to the population. Table Rock Lake is currently scheduled to only receive surplus Walleye fingerlings. Surplus Walleye were stocked in the James River Arm in 2010, 2013, and 2014. Electrofishing catch rates from two years post stocking indicate that these surplus stockings are greatly contributing to the Walleye population in the James River Arm. The highest electrofishing catch rate to date occurred in 2015 at 86 Walleye per hour, with the majority of Walleye in the sample from the 2013 surplus stocking. Continued monitoring will be necessary to determine if stocking in the James River Arm ever yields catch rates approaching those in the Kings River Arm.

Table Rock Lake Walleye exhibit very good growth rates, with males and females averaging in excess of 18 and 21 inches, respectively, at age 3. Walleye harvest is regulated by an 18-inch minimum length limit and a four fish daily limit. Due to the dense black bass population, there are currently no plans to aggressively manage for Walleye in Table Rock Lake.

### 2015 WALLEYE LENGTH FREQUENCY JAMES RIVER - EF



### 2016 WALLEYE LENGTH FREQUENCY JAMES RIVER - EF



### Stockton Lake:

In mid-May of 2016, Stockton Lake was stocked with approximately 300,014 Walleye fingerlings (12 fish per surface acre). This met our annual stocking request of 300,000 Walleye fingerlings (<4"). Spring electrofishing surveys indicate that the current Walleye stocking regime continues to produce consistent year classes. Walleye growth continues to be good with most fish reaching the 15 inch minimum length limit as age two fish. Mean average length of age three male Walleyes has been almost 17 inches, which falls within our objective of 16-18 inches.

Currently, we are in our second year of the 2015-2016 Stockton Lake Creel Survey. This is the first angler survey conducted on Stockton Lake since 2005. The access portion of this survey was designed to target Walleye harvest in the lower portion of the lake near the dam. The dam area consistently produces large concentrations of spawning fish. No data is currently available, but the results of this study should provide up to date information in regards to Walleye catch rates, harvest and angler preferences on Stockton Lake. Results from this study, along with the continuation of standardized Walleye population sampling, should provide support for future Walleye management recommendations.

### Ozark Region

#### Bull Shoals and Norfolk Reservoir:

In March, Ozark Region Fisheries staff coordinated with Southwest Region Fisheries staff as well as Arkansas Game and Fish Commission staff to collect Walleye broodstock from Bull Shoals Lake near Powersite Dam for Chesapeake Fish Hatchery (Figure 1). These fish were spawned and fingerlings were stocked back into Norfolk and Bull Shoals Lake in May. Bull Shoals received 437,437 fingerlings which met both the production goal of 352,000 and the surplus goal of 90,000 fish. Norfolk received 268,269 fingerlings which met both the production goal of 220,000 and the surplus goal of 50,000 fish. Walleye broodstock total Catch Per Unit Effort (CPUE) for males and females combined was 20.3 fish per hour (Figure 1). For ease of collection, staff made a special operations request to Southwest Power Administration and U.S. Army Corps of Engineers for Table Rock to generate specific water releases. The request was not fulfilled because of high lake levels, which may have caused a decline in catch rates compared to previous years.

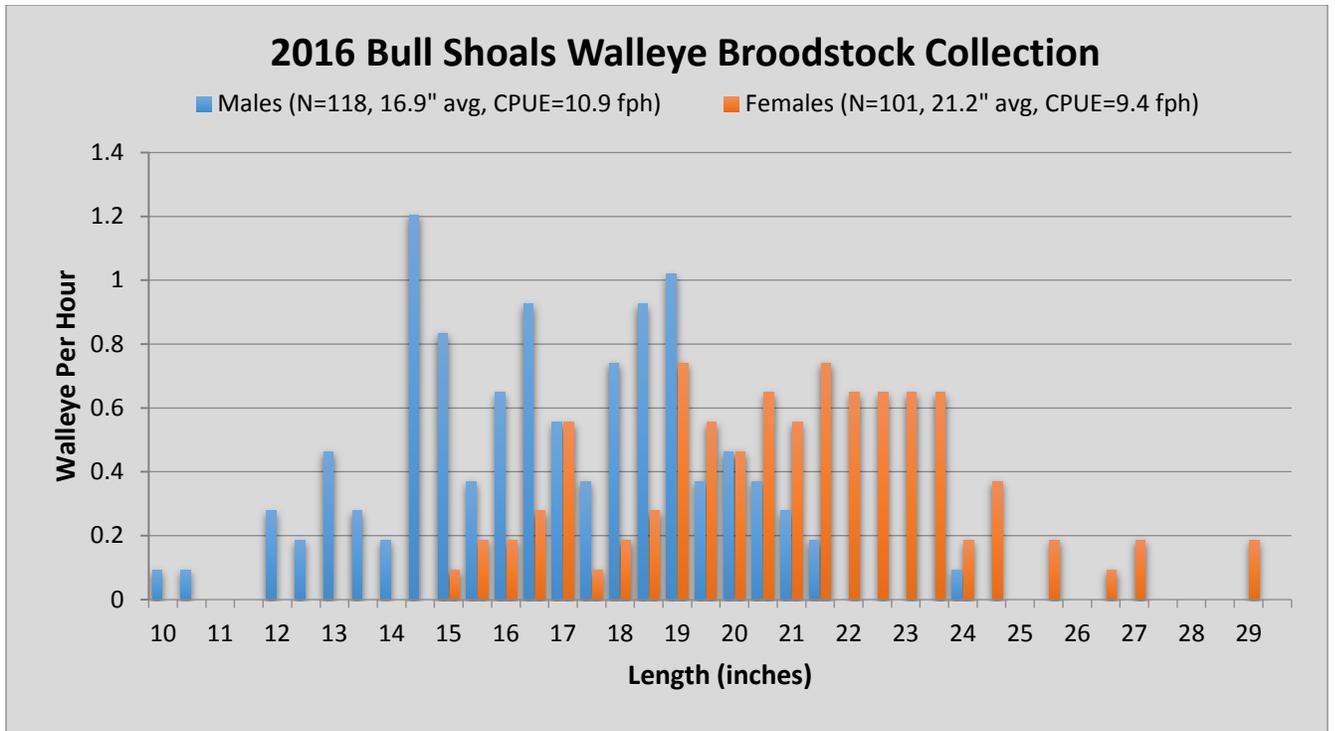


Figure 1. 2016 Bull Shoals Walleye Broodstock Collection.

Southeast Region

Black River Walleye Strain Research Project: Ongoing Project: Identification of Factors Limiting Hatchery Production and Post-Stocking Survival of Black River Strain Walleye Fingerlings

Goals:

- **Increase fingerling returns from ponds to 20 - 25%**
- Stock rivers on four year rotation
- Stocked fingerlings > 50% of year class
- Conduct exploitation studies
- Conduct angler mail surveys to estimate angler interest, effort, and catch (on going)

In March, 20 males and 7 female walleye were collected from the Black River. All walleye underwent genetic testing to determine haplotype. A total of 10,000 fingerlings (1.5") were produced and stocked into the Current River.

Paul is also looking for information on walleye management plans if anyone has any templates/ideas/protocol to send to him.

## **Kansas-Jeff Koch**

- Major administration changes has led to changes in walleye regulations, stocking procedures and changes in the culture systems. Kansas has very fast growing walleye populations and can be very susceptible to angling pressure. They tend to have very restrictive regulations. These regulations were greatly opposed by anglers.
- Kansas is starting to get into larvaculture, and would be appreciative of any information anyone might have. The state did some work looking at tournament fishermen vs. regular fisherman. Found that most regular anglers had more of an impact on the walleye populations than did tournament anglers.
- The state of Kansas is currently looking into refining their egg take methods.

## **North Dakota-Todd Caspers**

The walleye population in Devils Lake is doing well. There are many age-classes of walleye in the lake and some of the fish can become quite old, as a 21 year old was sampled in 2013.

We conducted our Standard Adult Sampling on Devils Lake earlier this month. The overall CPUE of walleye rose to 24 walleye/net-night in our 125' variegated gill nets. (18.2 last year) This year's catch is a bit above the long-term average of 20.6 walleye/net-night. Results are still preliminary, but size structure seemed to be well-balanced. Due to lower walleye reproduction the past few years, we resumed walleye stocking in Devils Lake this year. About 1.7 million walleye fingerlings were stocked which is about 11.7 fingerlings per acre. We are also conducting a creel survey this year, so far, fishing effort seems to be lower than during the last survey in 2013.

The North Dakota Game and Fish Department has continued working with the US Fish and Wildlife Service and local angling groups to open up the Lake Alice National Wildlife Refuge to ice fishing. Ice fishing is now allowed on the roughly 15,000-acre lake that supports walleye, pike, perch and white bass. Anglers definitely took advantage of this new fishing opportunity this winter as our ice fishing season had gotten off to a slower start than normal. The Lake Irvine/Lake Alice complex had fishable ice for much longer than other areas in the Devils Lake system, and reports of a good walleye bite brought anglers to the lakes. However, test netting results indicate that the anglers seem to have had a negligible impact on the walleye population overall. The most serious threat to the fish populations in these two lakes is probably winterkill because water levels have been declining over the past few years.

In the Northeast District of the state, some of our most impressive walleye waters continue to be new fisheries that were formerly duck-marsh type habitats. Some of these waters are also able to produce good numbers of walleye over 24" long.

Across the rest of the state, the good old days of walleye fishing, and fishing in general, continue to be right now. We are still relatively wet and the fish populations have responded very well to the abundance of water. Statewide, there are about 430 waterbodies that are being managed for fishing. This is a great increase from only about 175 managed fisheries in the early 1990's. Since 1997 we have added about 95 new walleye fisheries. State-wide there are currently about 150 waters that have fishable walleye populations and we seem to be able to add a few on to the total each year. Even since 2012, we have added 35 new walleye lakes. About the only place where walleye are not doing so well is the Missouri River system below Lake Sakakawea. This is due to habitat degradation and poor forage production since the flood of 2011. Conditions are improving, but there are still some areas where the walleye populations are still in tough shape, such as in the Garrison Reach where growth and size structure are still poor.

Our department stocked walleye in 154 lakes in 2016. The 11 million fingerlings stocked were generally about 30 days old and were around 1.25" long.

Previous to last year, zebra mussel veligers were sampled in small numbers periodically in the Red River near the confluence with the Otter Tail River near Wahpeton, ND. However, last year there were large numbers of veligers sampled throughout the North Dakota portion of the Red River. There were also adult zebra mussels discovered for the first time last year as well. Department personnel looked for zebra mussels in the fall and were able to document that adults were present in many different locations with suitable attachment substrate, so it is likely that adults were present along the entire North Dakota portion of the Red River. We will likely visit the same areas this fall to see if the adult population has changed. In response to the Zebra mussel situation on the Red River, the Department enacted additional ANS regulations in addition to the previous regulations. The new regulations included making sure all drain plugs, etc. are removed during transport, and on the Red River it is now illegal to leave the river with any water, which includes water in bait containers.

#### **Texas-Charlie Munger**

Texas had a good year with rain last year and had a boost to its fisheries, but is going back into drought.

#### **South Dakota-Hilary Meyer**

The Fort Pierre office in South Dakota is partnering with the university in Brookings (SDSU) on a number of collaborative projects. They have been working with graduate students on natal origins of Walleye in the Missouri River impoundments, natal origins of sport fish in Lake Sharpe, a lake-wide Lake Oahe Walleye tagging project as well as a rainbow smelt population abundance project. A number of projects have just wrapped up, or will be wrapping up in the near future. Many of these results will be published soon.

## New Business

- Charlie Munger (TX) - Mentioned that there is a way to record all the presentations given at a meeting. They can make pod-casts of the slides and audio so that folks can go back to review presentations if they cannot travel to meetings.
- Dale Logsdon – Mentioned using the possibility of doing remote presentations (similar to Doug Schultz’s phone presentation yesterday). This might be a way to accommodate more presentations in the future for folks that can’t travel
- Dan Isermann mentioned that he has taught workshops and classes using the program Zoom, and that it works really well to do distance work.
- Dan Isermann discussed the difficulty in publishing smaller case studies of more management driven work in the current fisheries related journals. He has discussed with Jeff Koch about being able to publish more qualitative smaller scale studies. The discussion is more about whether a new peer-reviewed publication should go through the NCD or through the parent society, or should it be from work done at the Midwest. Lots of questions up in the air.
- Charlie Munger mentioned that it’s possible to do more of a local peer-reviewed outlet. The State of Texas publishes proceedings of all of their meetings, and makes them available to the public/fisheries professionals.
- John Bruner asked Dan Isermann to form a committee on the topic. Dan agreed.
- Dan said that he would go to the parent society meeting and talk to some folks at the FMS meeting as well as at the editorial board.
- Steve Gilbert said that management biologists in WI would likely be very interested in an outlet like that.
- Dan Dembkowski (CTC-WI) mentioned that the CTC discussed doing a block of speed talks, mostly for folks that have preliminary data or have a project proposal they would like to include, at their next meeting.
- Dan Isermann was supportive of having a block of speed presentations. Jason DeBoer was also very supportive of having speed presentations available for both students and professionals.

**Call for chair-elect**-no volunteers. If anyone is interested, please contact John Bruner

([jbruner@ualberta.ca](mailto:jbruner@ualberta.ca)) or Hilary Meyer ([Hilary.Meyer@state.sd.us](mailto:Hilary.Meyer@state.sd.us))

- Dale Logsdon mentioned doing a workshop on Mille Lacs and the current state of the fishery and different issues that fisheries managers are facing.
- There was support from Isermann, Schultz and Koch about showcasing Mille Lacs.

Meeting was adjourned at 10:22am