Lake Huron Citizens
Fishery Advisory Committee

Established by the Department of Natural Resources
to improve and maintain fishery resources
of Lake Huron through better communication and partnership.

Lake Huron Citizens Fishery Advisory Committee
Sea Grant assisted Zoom Meeting
February 21, 2024
10:00 am - 3:00 pm

Attendees:

Frank Krist, Randy Claramunt, Chuck Bronte, Blaise Pewinski, Randy Terrian, April Simmons, Meaghan Gass, Brandon Schroeder, Tom Andris, Judy Ogden, Julie Shafto. Tom Keerl, Bryan Darland, Kendra Kozlauskos, Christian Lesage, Tess Nelkie, Nick Torsky, Tim Cwalinski, David Cozad, Tom Frontjes, Matt Kornis, Ed Retherford, Tim Slezsak, Jeff Jolley, Ed Blissick, Fred Sterns, Eric Morrow, Laura Ogar, Seth Herbst, Andrew Briggs, Mike Veine, Jim Johnson, Mathew Klungle, Robert Reider, Dana Serafin, Dennis Eade, Bill Gunther, Brandon Schroeder, Chuck Matlock, Craig Milkowski, Dan O'Keefe, Doug Schultz, Dana Serafin, David Fielder, Jay Wesley, Jerry Ellis, Joe Lukaslewicz, Karl Burnside, LaKon Williams, Lawrence Nick Atkin, Michael Kelly, Paul Nienaltowski, Peter Esselman, Sarah Mansfield.

Welcome the New Basin Coordinator and Introductions. (Frank Krist and Doug Schultz, DNR Lake Huron Basin Coordinator).

Frank began by thanking Meaghan Gass, Brandon Schroeder, and others from Michigan Sea Grant for their extensive assistance in facilitating this hybrid meeting. It was noted that the meeting will be recorded to assist with the meeting minutes.

Frank then introduced the new Lake Huron Citizens Fishery Advisory Committee Basin Coordinator, ***Doug Schultz***: Currently, Doug is in the process of selling his home in Minnesota and finding housing in Alpena. In addition, he is moving his two children to the new school district in Alpena. Despite his busy schedule, Doug has been communicating with me regularly and he goes out of his way to follow-up. We spent time together in Alpena discussing the many topics occurring in Lake Huron and how the Advisory Committee has been providing input to the DNR managers.

Frank asked Doug to provide an overview of his previous work: Doug spent 18 years working for the Minnesota Natural Resources. He began by working on trout streams in the southeast area of the State. He then moved to work on the big walleye lakes including Leech and Mille Lacs. These are huge inland lakes and for example, Leech Lake is over 111,500 acres in size and has about 230 miles of shoreline. Doug headed up the Cormorant Program in Minnesota and worked with Dave Fielder, Chuck Bronte and others dealing with this issue over the years.

Randy Claramunt: added that Doug will be heading up the DNR policy aspects of the ***Cormorant Program*** and working with Dave Fielder on the technical aspects of the program. They will make a good team. Doug will be working in the Alpena Office.

Frank asked if Doug would share background on his family: Doug mentioned that his son is 8 years old and his daughter is 5. His son enjoys fishing and is an active hunter and especially likes Turkey Hunting. Doug enjoys taking his son and other kids out hunting. Doug spent time as a varsity football coach but probably will not have time to do that here. He likes to be involved with the community and he and the family love the town, and everyone is looking forward to moving to Alpena.

Randy Terrian: mentioned that he had an opportunity to meet with Doug and discuss the many issues that are being addressed throughout Lake Huron. Randy is looking forward to ***forming a new partnership*** with Doug.

Goby-Bot Project, an update on providing a dependable measurement of the Round Goby abundance in the Great Lakes. (Dr. Peter Esselman, USGS Great Lakes Science Center Fisheries Research Biologist).

Frank introduced ***Dr. Esselman*** and explained that the Advisory Committee became very interested in the Goby-Bot project since it was potentially an accurate assessment method for estimating the Round Goby abundance and mapping the bottom of the Great Lakes. We were very encouraged when Kurt Newman at USGS worked with the Michigan DNR to establish a partnership and the program began. It is very positive that the program is continuing, and much progress is being made. Since the Round Goby prefers rocky bottom areas, the existing standard survey equipment is not able to sample these sites effectively resulting in unreliable estimates of Goby abundance. Because Round Goby could be a major forage species in several areas of the Great Lakes, it is critical for managers to have a reliable estimate of the amount of Goby in these waters.

Dr. Esselman described the Goby-Bot Unit. It is about 9 feet long, weighs about 110 pounds, and can be deployed by two persons. The Unit contains 3 cameras which allow the capture of high resolution 3-dimensional photos (images) as the Goby-Bot travels accurately 6 feet above the bottom. Lights that produce 30,000 lumens each allow images to be taken even in dark waters. Each image is tagged with the latitude and longitude within about 2 to 3 meters accuracy with the use of a gyroscope and other equipment. An upgrade with side scan sonar will allow the cameras to work down to 300 meters (985 feet) so the entire lake bottom can be mapped. This robot is due for delivery in June.

There is a team of 6 to 7 biologists that work with this and other projects on each of the Great Lakes during April through October. On average annually about 250 Kilometers (155 miles) have been surveyed in Lake Huron. Work began here in 2021 and has continued since. Covid prevented assessments in some areas but eventually work has been conducted in sections of the entire Lake including Canadian waters. In addition to Lake Huron, two years of data have been obtained from Lake Ontario and 4 years of data from Lake Michigan. The results from each of these lakes are comparable so the similarities and differences between these lakes can be made.

The method of interpreting the images is described next. During the first attempts in 2020, people described what they saw by putting traces (shapes) around fish they felt they identified. Next, computer software was developed to do this job by determining the patterns, coloration, eye spots, dorsal fin spots and other aspects of each fish. This makes it possible to distinguish Round Goby from other features on the lake bottom. The digital models then determine the lengths of each fish, and these are converted to weights of each fish allowing the abundance of Goby to be expressed as kilograms per hectare (0.89 pounds per acre).. This method is vastly better than the conventional methods that have been used over the years. There is room for improvement, however, which will produce even higher quality estimates of Round Goby abundance.

Once the Goby-Bot data are obtained for numerous specific locations, there are techniques that allow the information to be extrapolated out lakewide. When interpreting images with people there are biases at every step that cannot be managed well. For example, it must be determined if a fish is present, how large the fish is along with other factors. With the computer the biases are consistent, predictable, and can be managed. The software will also determine the bottom type or substrate at the site and these specific data can be used to project substrate type over a region. So instead of the conventional gear that has been used over the years, computer software with the use of the Goby-Bot collects data that are interpreted with highly advanced digital models. This is a major benefit. With conventional fishing gear, there is only one chance to collect the data but with the computer models the images are saved forever and as the software improves the images can be reevaluated and the data improved.

Mapping the bottom is progressing very well. The computer models are analyzing 9 classes of substrate including fine sand, gravelly, pebble, boulder, bedrock and others. These are standard classes used throughout the Great Lakes. If some of the similar classes are grouped, the accuracy of a correct prediction increases greatly. For example, if 6 classes are grouped, there is an 86% accuracy and if only the fine and coarse classes are used the accuracy is 96%.

To greatly increase usefulness, the images are then connected to NOAA's Lake Level Viewer that provides the lake levels and the United States Geological Survey Lindar Elevation database that provides the ground elevation and lake depths up to a vertical accuracy of 4 inches. Canada is also providing Lindar data to the models. These tools will provide substrate types and water depths to 200 feet depending on water clarity.

Currently, the program has thousands of images that provide data on the habits of the Round Goby. Few Gobies are found from 0 to 5 meters (16 feet). The majority of gobies are found in depths from 5 to 20 meters (65 feet). The trend is for the smaller fish to be found in the shallower water and the larger fish occurring more frequently in the deeper water. The work with the Round Goby has stopped at the 50 meter (165 feet) depth because Slimy Sculpins become dominant. Slimy Sculpins are small 2-3 inch forage fish that live on the bottom. With the hard substrate being common in the north, gobies were very numerous in the Alpena and Hammond Bay sampling sites.

The conventional bottom survey method out to 120 meters (395 feet) was conservatively compared to the results of the new digital modeling method and the digital results showed that the idea that there were many more gobies in the lake was correct since there are approximately 10 to 12 times more gobies present than what has been predicted over the last several years.

As an extension of the Goby-Bot Project, work is beginning by modeling Quagga and Zebra Mussels in relation to nutrient cycling, Cladophora, other bottom algae and Round Goby. The Mussels are filtering the water column and concentrating the nutrients in the bottom. The Round Goby thrives by consuming the Mussels and hiding in the Cladophora. This process makes the water column clearer and the bottom richer. All these factors are connected, and much can be learned over the coming years if this entire Project continues and expands even more incorporating the impacts of the dynamic food web.

If funding continues, the plan is to conduct the annual surveys on a timeline like what is occurring currently with conventional bottom and mid water trawls in Lakes Michigan, Huron and Ontario beginning in 2024. An automated system is being developed that will take the raw data and output the final usable friendly results. The work with Sculpins in deep water will continue.

The work was made possible by a lot of funding and individuals including, the Great Lakes Fishery Commission, Council of Lake Committees, EPA, and USGS along with inspiration from Randy Claramunt. In addition, much assistance and collaboration were provided by several contributors from Michigan Technical University and Chuck Madenjian.

Comment Randy Claramunt: Randy knew the initial approach that he took measuring goby abundance before the Goby-Bot Project began would not work but he wanted to get the project moving.

Question Randy Claramunt: Randy mentioned that Chuck Madenjian published a paper that showed that ***Round Goby*** experienced about a ***90% mortality rate*** which is a huge bottleneck each year. Is there evidence that the larger fish have a strong affinity for the rocky areas, and are there any recommendations that you can provide managers as it pertains to the size structure of goby? This new technology is remarkable. ***Response: Peter:*** We have a very qualified technician working on this project during the offseason. He is studying the seasonal movement of when goby arrive at the spawning grounds and their movement through the summer and fall. Some of the highest densities are found in late September over soft sediment in water depths of 20 meter (65 feet) to 30 meters (98 feet). Possibly, the gobies are gathering for their offshore migration during the winter. The investigation of the seasonal migration of gobies will continue and mild winters like this would even allow vessel trips during the winter.

Several Comments in Chat thanked Peter for the excellent presentation.

Question: Can Saginaw Bay be surveyed with the Goby-Bot? ***Response: Peter-*** Currently, the Goby-Bot assessments are done in the Main Basin ***outside of the Bay*** because that is where the conventional surveys are undertaken. The Goby-Bot could be used in the Bay if there is at least 15 feet of clear water at the bottom. ***Participant Response:*** The water is clear except near heavily flowing rivers during March and April but as May approaches algae blooms begin to form. Gobies are found in fish stomachs the entire year. ***Peter's follow-up:*** Normally, the Goby-Bot work is conducted during the summer, however, it could be possible to do some work in the Bay. As technology evolves, it is possible that winter surveys will be conducted and even working through the ice is possible. During the winter, water clarity is exceptional, and much can be learned.

Question: Are there sculpins in shallow water and does that make ***separation of gobies and sculpins*** difficult? ***Answer: Peter:*** When the surveys are conducted in the summer, we rarely see sculpins in shallow water. At that time, the Slimy Sculpins mostly begin peaking at about 30+ meters (100 feet) and the deepwater sculpins are common at 120+ meters (200 ft).

Question: Round Goby is becoming common in some of the larger ***inland lakes,*** could this new technology be used in these lakes? ***Response Peter:*** If there is clear enough water, the inland lakes could be surveyed but there is no funding available for this type of work. If the Great Lakes Fisheries Commission Council of Committees approved the work and obtained funding that would be a doable project.

Question: How long will this project continue? ***Response Peter:*** We are in the 5th year of the project and to continue it must be refunded. The results of this project will be published shortly, and the information will be presented to the Great Lakes Fishery Commission Council of Lake Committees. If the Council approves the continuation of the project and obtains funding the work will continue.

Question: What are the results of the Goby-Bot Project used for: Is the information used for maintaining fisheries or other management decisions? ***Response Peter:*** It could be used to assist in management decisions, but it would be best if I deferred that answer to the managers. ***Follow-up Randy Claramunt:*** The goal of the Lake Huron Salmon and Trout Plan is to balance the stocking and wild production of predators with the available forage fish. The Challenge with gobies is that they spawn several times each year complicating knowing how much prey fish are produced. With the other prey species, they spawn once each year and calculating their abundance is more reliable. The goby biology is challenging and there are some gaps. This Project helps greatly to comprehend the

complexities and continuing the work will result in a better understanding of all aspects of goby biology.

Question: How will this data be used for stocking lake trout? Response Randy Claramunt: The new information assists in understanding the lake trout dynamics and the prey availability but there are other issues. The DNR does not have the capacity to raise and stock lake trout, so Michigan depends on the US Fish and Wildlife Service to provide lake trout. This agency will not stock lake trout unless there is approval of the Great Lakes Fishery Commission Council of Lake Committees. The Committee has refused to approve any additional stocking of lake trout in Lake Huron but they have agreed to allow other species to be substituted if there is enough prey fish available to support any additional stocking. A major issue is the Michigan Hatcheries are near capacity.

Question: Is the new technology practical and can the surveys be completed in 3 months? Response Peter: It is not only feasible to complete the prey surveys during 3 months in the summer in Lakes Huron, Michigan, and Ontario but the results will provide an incredible amount of habitat details at high resolution. In addition, spawning reefs for lake trout, walleye, ciscoes, and other species are being mapped with much accuracy. This is a remarkable tool that can produce a huge amount of high-quality data. Over time, the existing data will get better and better as the models improve and the data collected in previous surveys are reevaluated.

Comment Frank: The Goby-Bot Program is increasing knowledge of the Great Lakes at an exponential rate, and it is critical that the work continues. All of us need to advocate intensely for the continuation and expansion of this program by communicating with the Great Lakes Fishery Commission Council of Lake Committees. Frank thanked Dr. Esselman for his innovative work and the Committee is very much looking forward to future updates.

Converting the MDNR CWT data so that both the Fish and Wildlife Service (FWS) and State data are compatible and can be used together along with other aspects of the CWT program. (Dr. Matt Kornis and Chuck Bronte, US Fish and Wildlife Service).

Frank introduced Dr. Matt Kornis and Chuck Bronte: We will be discussing the Mass Marking Program that is used to mark fish and is jointly implemented by the DNR and the United States Fish and Wildlife Service (USFWS). Dr. Matthew Kornis, as I mentioned before, is a genius at compiling Coded Wire Tag (CWT) return data and then showing stocking success and fish movements throughout the Great Lakes. Chuck Bronte, the Program manager, and Matt are always willing to share their results and will be working together during the presentation. We are looking forward today to learning the results of combining the CWT returns from both agencies and reviewing other aspects of the Program.

Matt: I will begin on the process of merging the data between our two agencies. The discussions began about a year ago between Chuck, me, Randy and Tracy Claramunt, Kendra Kozlaukos, and Randy Terrian.

Before going into the details, I have four introductory slides directly below for those that may not be familiar with the Program. The work is a collaboration among the many agencies and we have a very dedicated crew. The Program is funded by the Great Lakes Restoration Initiative. I want to thank all the anglers that cooperated with our work crews and of course, everyone that worked with the DNR and provided samples.

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Great Lakes Tagging and Recovery Lab (Mass Marking Program) Update

Matthew Kornis, Tom Blowers, Shannon Cressman, Brooks Harp, Allen Lane, Sarah Mansfield, Kevin Pankow, Anthony Rieth, James Webster, and Charles Bronte

Great Lakes Fish Tagging and Recovery Lab
US FWS Green Bay Fish and Wildlife Conservation Office

Lake Huron Citizens Fishery Advisory Committee, February 21, 2024

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The Great Lakes Fish Tagging and Recovery Program

- A collaboration among federal, state, and tribal agencies coordinated by the U.S. Fish and Wildlife Service
- Began in 2010 in response to a Council of Lake Committees request to recommend mass marking methods for Great Lakes salmon and trout
- Program seeks to address questions on survival and contribution of hatchery fish, natural reproduction and other measures for salmonines.
- Funded by the Great Lakes Restoration Initiative (EPA).

Thanks to angler support we have ten years of data on over 146,000 fish from open-water angling.

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The Great Lakes Fish Tagging and Recovery Program

- Tagging and marking of hatchery fish
- Data collection and tag recovery from sport fishery
- Tag extraction (>130K so far), wild fish aging, and other lab activities
- Data analysis and support for fisheries and management

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Great Lakes Tagging and Recovery Lab

Multifaceted Operation – 28 Contributors

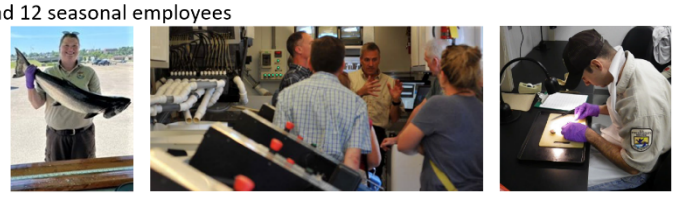
Program Founder and Director Chuck Bronte

Biotech Supervisor and Data Analyst: Matt Kornis

Trailer Operators: Allen Lane, Kevin Pankow, Anthony Rieth, Jim Webster, Thomas Blowers

Fin Clippers: Martha Adams, John Anderson, Ed Bernard, Nancy Edney, Terry Edney, Deb Frostman, Pat McGrail

Biotechs: Shannon Cressman (lead tech), Sarah Mansfield (deputy lead tech), and 12 seasonal employees



The following is an outline of the topics that we will be covering today:

- ***2023 Tagging and Field Recovery Effort***
- ***Review of Incorporating FWS and MI DNR Data***
- ***Preliminary Findings***
- ***Next Steps***

During 2023 we marked about 10 million fish and the two slides directly below show the number of each species tagged from 2010-2023 and the crew that did the work. Not all hatchery fish receive tags but every hatchery fish released into Lakes Michigan and Huron receives an adipose fin clip to distinguish between hatchery and wild fish. Besides tagging, samples are collected for diet, stable isotope, epi-DNA aging, and spring spawning lake trout studies.

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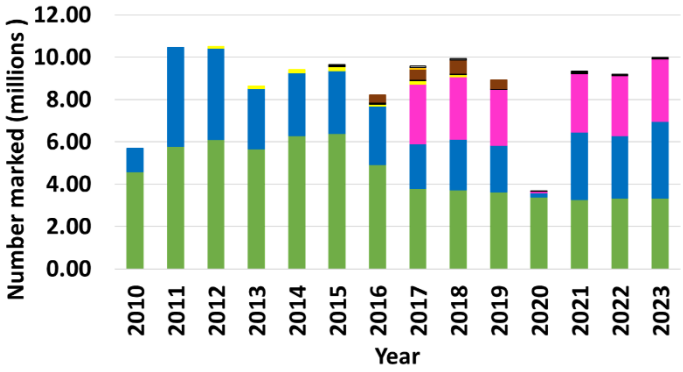
2023 Marking and Tagging Season

- In 2023, we marked 3.3 million lake trout, 3.6 million Chinook salmon, 3.0 million steelhead, and 0.1 million brook trout **(10 million total)**



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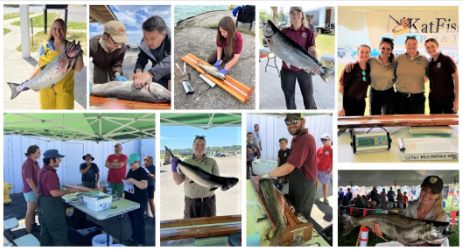
2023 Tag and Data Recovery Field Operations



- 13,399 fish surveyed by FWS biotechs in 2023
- Partnership with Student Conservation Association (SCA) provided experiential opportunities for 7 interns, and allowed our field work to begin earlier than the past few years.
- Specimens collected for diet, stable isotope, epi-DNA aging, and spring spawning lake trout studies.

The highlighted column below in the left slide shows that 2,030 fish were examined by our FWS crew during 2023. The DNR creel recoveries are not available for 2023 yet, but a comparison was made between the DNR and FWS data for 2022 in the slide on the right. As you can see, the totals for both agencies are close to the same amount which almost doubles the amount of data that can be used with the new method that I will be describing.

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2023 Tag and Data Recovery Field Operations

Number of fish examined from Lake Michigan and Lake Huron in 2023

Species	Illinois	Indiana	Michigan – L. Huron	Michigan – L. Michigan	Wisconsin	Totals
Chinook Salm.	329	58	194	1,929	2,970	**5,480**
Lake Trout	128	337	1,372	925	514	**3,276**
Steelhead	177	115	143	308	905	**1,648**
Coho Salmon	423	314	137	322	1,518	**2,714**
Brown Trout	5	1	3	15	70	**94**
Atlantic Salm.			53		1	**54**
Pink Salmon		1	128	3	1	**133**
Total	**1,062**	**826**	**2,030**	**3,502**	**5,979**	**13,399**

84 sampling days across 16 ports in Lake Huron

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Lake Huron Recoveries by Method (2012 – 2023*)

* FWS data through 2023; Creel data through 2022

Species	FWS Total	FWS w/CWT	Creel Total	Creel w/CWT
Atlantic Salmon	254	83	772	288
Brown Trout	42	0	102	0
Chinook Salmon	1915	665	2403	815
Coho Salmon	569	0	105	0
Lake Trout	7889	1127	5048	627
Pink Salmon	297	0	62	0
Steelhead	923	76	1731	101
Total	**12,084**	**1,951**	**10,223**	**1,831**

Joint data – 22,307 observations and 3,782 coded-wire tags

The left slide below shows sources where FWS obtains the CWTs. There are 2 methods, the Biotech snouts are obtained by our field workers and the assessments snouts are obtained from survey netting data. The 94% rate in the tables represents a 3% hatchery tagging error and a 3% wand detection error. All these fish were first verified with a wand so the amount with tags is very high. In the slide below on the right you can notice the angler returned snouts have a CWT rate of about 68%.

This is of course, because anglers do not have wands and most of the Chinook Salmon and many of the Steelhead have an Adipose fin clip but with no tag.

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2023 Tag and Data Recovery Field Operations

2023 Number of CWTs extracted and snouts examined by collection method

Collection Method	Total Snouts	Tags Extracted	No Tag Detected	% with tag
Biotech	1,933	1,709	115	94%
Assessments	2,114	1,895	128	94%

- Collection methods that always use a wand
- % with tag rate consistent with ~3% hatchery error and ~3% false positive field detections

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2023 Tag and Data Recovery Field Operations

2023 Number of CWTs extracted and snouts examined by collection method

Collection Method	Total Snouts	Tags Extracted	No Tag Detected	% with tag
Biotech	1,933	1,709	115	94%
Assessments	2,114	1,895	128	94%
Angler Return	2,291	1,468	723	68%

- Method that does not use a wand in the field
- Lower % with tag rate reflects fish that are deliberately stocked with an AD clip but without a CWT

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2023 Tag and Data Recovery Field Operations

2023 Number of CWTs extracted and snouts examined by collection method

Collection Method	Total Snouts	Tags Extracted	No Tag Detected	% with tag
Biotech	1,933	1,709	115	94%
Assessments	2,114	1,895	128	94%
Angler Return	2,291	1,468	723	68%
Creel	1,002	743	212	79%
Weir	976	830	123	87%
Total	8,324	6,652	1,302	

- Methods that sometimes use a wand and sometimes do not have % with tag rates in the middle.

The slide on the left shows the percentage of error when comparing the FWS data and the DNR Angler, Creel and Weir samples. The DNR's results have more error because the wand is not used all the time to verify if tags are present in the heads. Often Creel Clerks and workers at the weir are very busy and do not have time to use the wand.

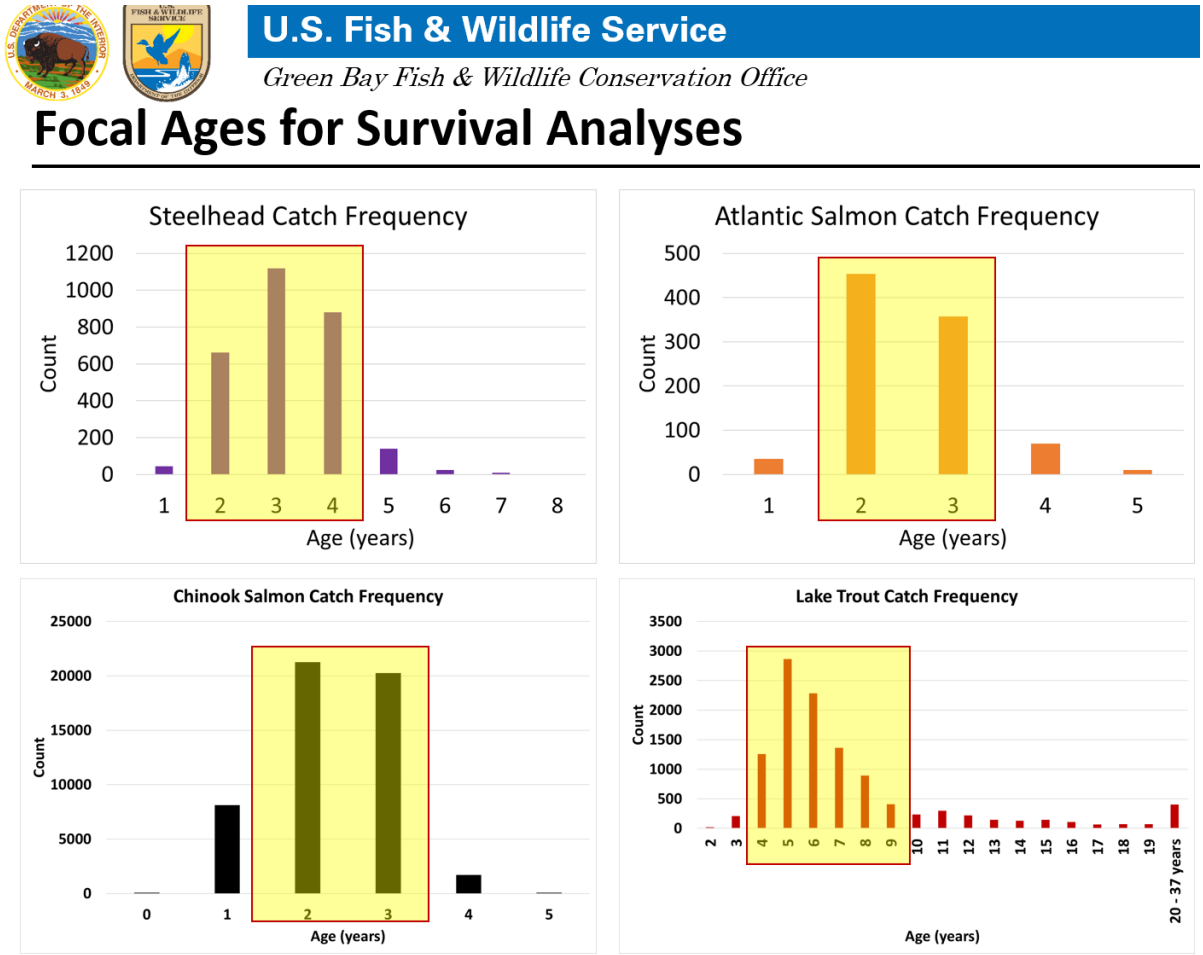
Next, we are moving to reviewing the progress of combining FWS and MI DNR Data into one database for analyzing results:

- **FWS Effort**
  - FWS Biotechs record effort as the number of sampling days, with a modifier for tournament vs. non-tournament days
  - Relative abundance expressed as fish/sampling day
- **Creel Effort**
  - Michigan DNR conducts 9.5 sampling days per port each month

We can compute a similar metric of effort for fish observed by creel with the following is detailed information incorporated into the model:

Incorporating MI Creel Data Into the Analysis

- Creel data, including measures of effort, have been received from MI DNR
- All creel data has been converted to catch per effort by coded wire tag lot
- 9.5 days per sampled port per month for creel per MI DNR was incorporated
- Effort was computed as number of hours within each statistical district (see map page 10) during each month, based on number of sampled ports
- Tag lots with zero returns were added to the dataset
- Ages appropriate for survival analysis are determined for each species, and tag lot returns at these ages, including zeros, were compiled



The Slide to the left shows the ages we are seeing in angler catches of the various species. I must stress that this does not represent the number of fish in the lakes since no doubt there are a lot more Age 1 fish, but they are too small for the anglers to harvest. It is apparent that the lake trout live many years and the oldest documented lake trout was 37 years old, but they can live longer in favorable conditions. Lake trout ages 5 to 9 are the most common in the recreational fishery.

Z-Scoring Make Data Comparable

- Creel and FWS data are put on same scale for comparison using standardization procedures.
- A z-score is a measurement that describes where a value falls relative to the average value in a set group.
- This is a common method that has been used by others for incorporating data from multiple sampling approaches into an analysis. This method has made the DNR and FWS data comparable.

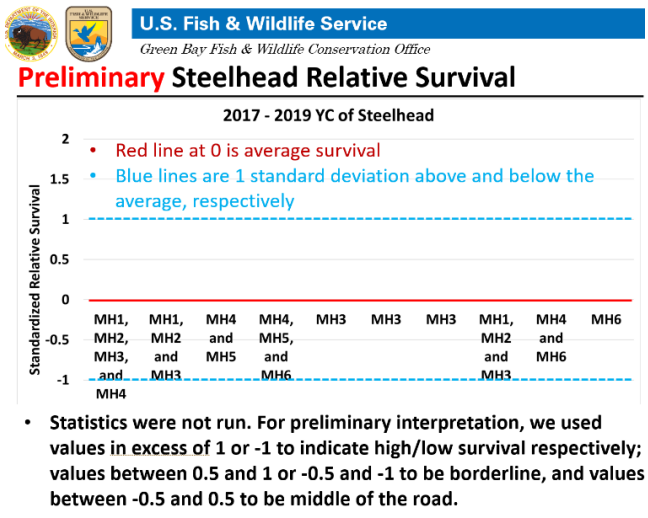
Preliminary Findings of Steelhead and Atlantic Salmon:

So far we have examined relative survival patterns for Steelhead and Atlantic Salmon. The steelhead will be examined first in the slides below and then the analysis will focus on Atlantic Salmon.

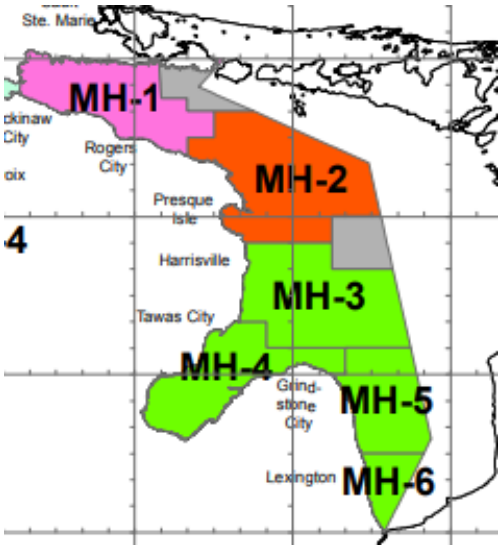
Steelhead:

The Steelhead used in the analysis were both stocked and harvested in Lake Huron and were from the mass-marked year classes of 2017 – 2019 with survival based on recoveries at ages 2 – 4 years. All these steelhead had an adipose fin clip and most had CWTs. The 2021 year class will be incorporated when we receive the 2023 MI Creel data. The next slides will focus on Steelhead returns then switch to Atlantic Salmon. Survival success is shown on the Y vertical axis and the X horizontal axis lists the management units where the fish were stocked. Each vertical bar represents a different stocking lot. See map of the Units directly below on the right.

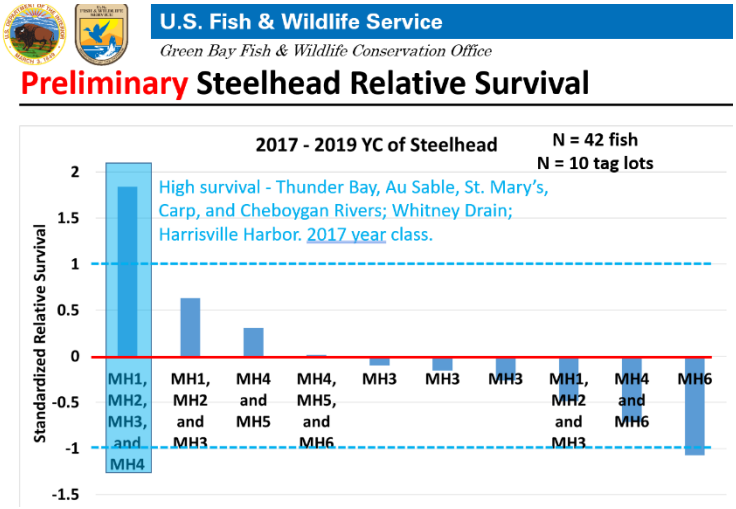
All the steelhead slides will have the same approach, see the slide directly below on the left. The red line is at zero, which is actually the average for that dataset. The dashed horizontal blue lines above and below the red line are 1 standard deviation above and below the average. When statistical analysis is done about 68% of the data falls within 1 standard deviation. This has not been undertaken yet, but more statistical work will be done as we move forward.

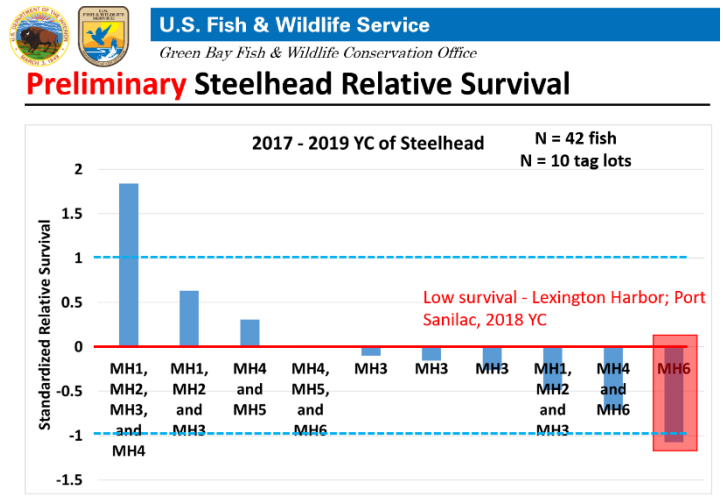


- **Statistics were not run. For preliminary interpretation, we used values in excess of 1 or -1 to indicate high/low survival respectively; values between 0.5 and 1 or -0.5 and -1 to be borderline, and values between -0.5 and 0.5 to be middle of the road.**

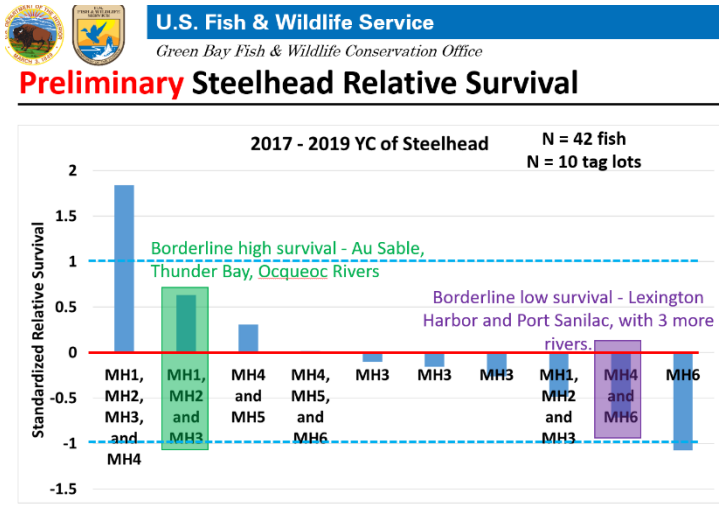


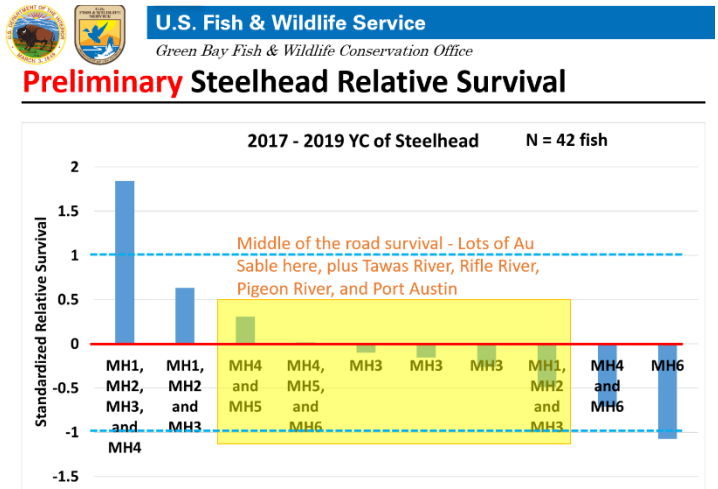
YC = Year Class





The results are very preliminary and could change when statistical calculations are run as more data are obtained. The tall bars show a trend that is more reliable while currently no differences can be determined with any certainty with the smaller bars. The notes in each slide explain the significance.

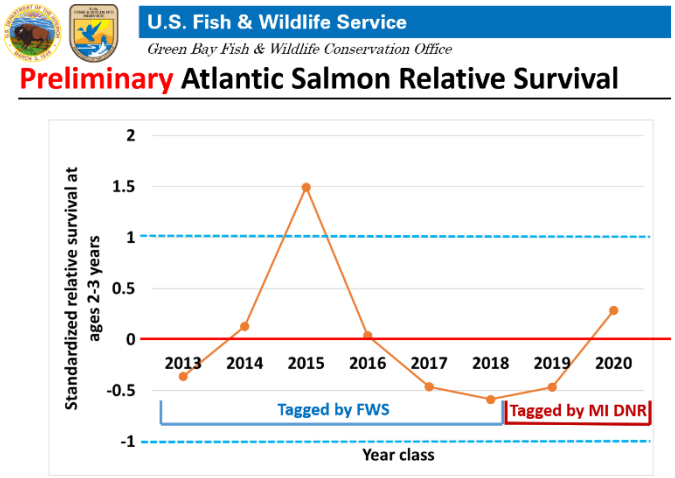




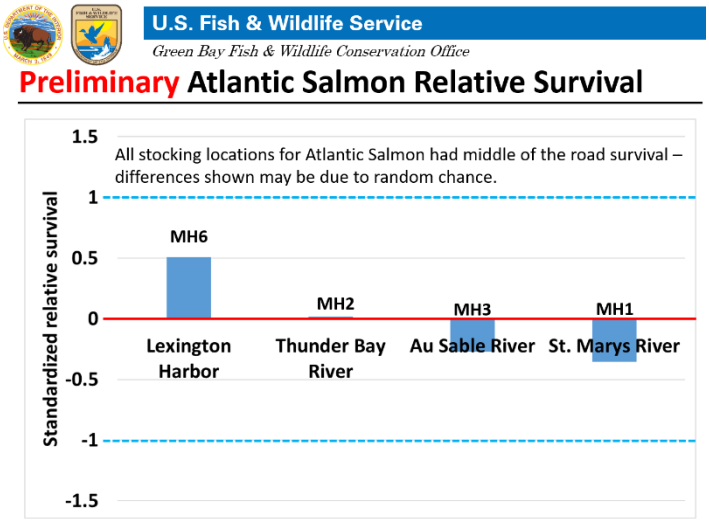
Atlantic Salmon Results

Examined returns of Atlantic salmon from the tagged year classes of 2013 – 2020 and examined survival based on recoveries at ages 2 – 3 years. The 2021 year class will be incorporated when the 2023 MI Creel data is sent to us. One point that is becoming apparent, by combining data sets from the DNR and FWS more information will be available producing more robust results.

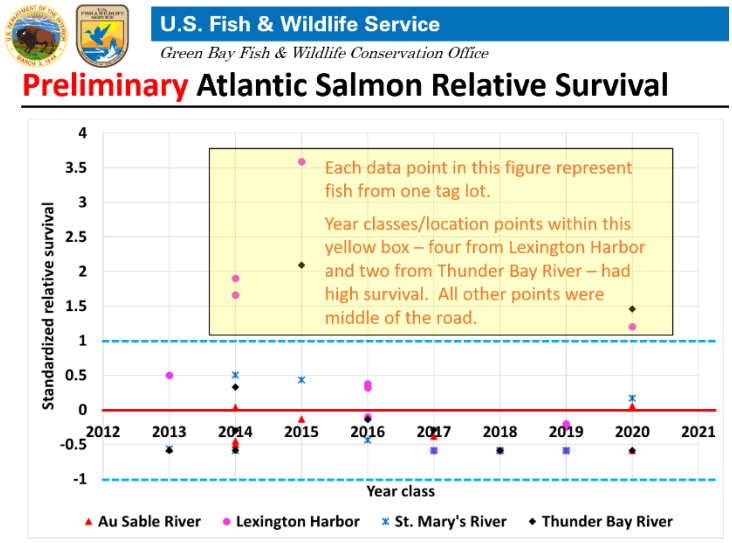
The slide directly below on the left shows that there is variability of Atlantic Salmon survival by the year stocked but survival does not appear to be related to which agency did the tagging. There has been some debate about this concern, but the results are showing both agencies are about equally effective with stocking Atlantic Salmon. Even though the slide directly below on the right shows that MH6 in southern Lake Huron has a higher rating, with the limited amount of data available so far that could be just due to chance.



There is variability in Atlantic salmon survival by year class, but it does not appear to be related to which agency completed the tagging.



The slide directly below on the left shows Each data point in this figure represent fish from one tag lot. The year classes and location points within this yellow box with four from Lexington Harbor and two from Thunder Bay River show high survival. The other points were middle of the road.



Next steps:

Coordinate with MI DNR biologists to move forward on joint objectives including movement patterns among management units and lakes, contribution and survival of fish stocked at different locations, different strains, and stocking at different times of year. Efforts will be made to determine the abundance of wild produced fish.

Lake trout and Chinook salmon be added in addition to track steelhead and Atlantic Salmon

Frank asked Kendra Kozlaukos if she want to add information:

Response Kendra: We are working to complete all the CWT data and will be transferring the information to FWS.

Frank asked Randy Terrian if he wanted to add information:

Response Randy T: I noticed there are no data from years 2022 and 2023. Obviously, steelhead were not stocked in 2021 so that will be a year with a hole in the data. ***Is this the last year for Mass Marking steelhead? Response Matt:*** Yes and No. This year will be the last year of marking steelhead, but we will be tracking the fish through 2028. Occasionally we see 10-year-old steelheads so at least some tags will be found during the next decade. There will be a shift moving forward to tagging Coho Salmon to learn more about that species. ***Comment Randy Terrian:*** I hate to keep bringing this point up but many of the anglers that are collecting heads will become very discouraged and left out if they do not receive a ***letter acknowledging the results*** of the heads they turned in. ***Response Matt:*** We completed and ***sent the FWS data back to the DNR last week*** and Kendra or possibly Randy Claramunt can comment on the next steps. ***Comment Randy Claramunt:*** Excellent presentation Matt. I appreciate the work to combine the data and almost double the sample size. I encourage Matt to work with Frank and Doug to provide these updates annually. We are learning much and need to take a hard look at the data and possibly make some stocking changes. It might be beneficial to ***redesign the steelhead study*** with our updated knowledge and repeat it. Besides working with the Charter Boat industry, Kendra has new responsibilities managing the new Inland Fishing Guide Law, https://www.michigan.gov/dnr/managing-resources/fisheries/business/guides She will no longer be working in the CWT program. We have some special limited funding so we will be replacing John Clevanger's position, and that ***person will be working with the Coded Wire Tag Program and coordinating the Creel Program***. That new person will be working with Randy Terrian and others in the field to help pick up heads and do other work. If the position is successful and ongoing funding becomes available, then the position will be continued.

Question: Does the year class being followed include both the yearlings and fingerling stocking sizes? Response Matt: We include both sizes but in the worked conducted in Lake Huron I did not see fingerlings returning but in Lake Michigan, fingerling steelhead return at 1/3 the rate as yearlings.

Question: When submitting snouts should the entire head be submitted or is just the snout enough? Response Matt: The upper jaw with the entire snout is adequate.

Comment: Possibly using ***emails to send the results*** to the anglers might save time. They are using that approach in Indiana.

Comment Tim Cwalinski: Since there is ***no regular creel in the St. Marys River*** and possibly no FWS sampling there, it seems like that would bias that stocking site return results downward. Also, many of the ***steelhead in the Au Sable River are caught late in the fall and winter*** when there is no creel and that would seem to impact the results. ***Response Matt:*** We will see some of those fish because they are included as fish stocked within each management unit and the fish move around Lake Huron. The FWS workers are only checking fish harvested in the open water and not in the rivers. This is an issue that could tilt the results somewhat. We should continue the discussion about better measuring the actual returns and quality of the fishery at such sites like the St Marys and Au Sable Rivers.

Comment: Why are the Atlantic Salmon surviving better when stocked at Lexington? Response Matt: I do not have any reasons for the higher indication of Atlantic Salmon survival at

Lexington but because the amount of data used in the calculations are limited at this time, it will take more data to confirm if that is an ongoing assumption.

Question: Are other factors other than stocking times and sites that impact the analysis?
Response Matt: Yes, there are several other factors that are difficult to quantify and control like water temperatures, river flow, muddy conditions, number of predators at the stocking site along with other items. Sometimes there are trends at stocking time that extend over a wide area in a lake that provides trends for the season that can help explain return results.

Frank thanked Matt for the excellent discussion, and we all are looking forward to expanding this project to better understand the fishery so the resource can be more effectively managed resulting in more stocked fish living to be adults.

Matt always appreciates his visits to the Committee and working with the DNR and all the stakeholders. Matt is looking forward to visiting us regularly on an annual basis.

Review of the draft Saginaw Bay Walleye and Yellow Perch Plan in preparation to present at the Spring Sea Grant Workshops. (Dr Jeff Jolley, DNR Southern Lake Huron Unit Manager; Dr. Dave Fielder, Research Fisheries Biologist) and Doug Schultz Lake Huron Basin Coordinator.

Frank began this session by turning the meeting over to ***Doug Schultz*** to provide an introduction of the Plan. ***Doug:*** I am very interested in hearing the input. The previous plan expired and needs to be updated to guide especially the management of walleye and yellow perch in the Bay. There are other species sought by anglers such as smallmouth bass and northern pike, but walleye and yellow perch provide the most interest to the anglers. This updated plan was compiled by a focus group of different interests. The work was compiled with Jeff Jolley leading the discussions and Dave Fielder assisting with the extensive survey data and modelling. After much work and a slowdown with Covid, the workgroup ***sent the Plan to the managers for the internal review during the winter***. The Plan is nearly ready for public review and input at the Sea Grant Spring Workshops, but we first wanted this Advisory Committee to provide input. To minimize the number of draft versions circulating in public, this version of the Plan was only sent to the Advisors. The input provided today will be reviewed by the managers and be used to formulate the draft Plan that will be shared broadly with the public this spring. Your comments will be greatly appreciated.

Meaghan Gass and Brandon Schroeder assisted with coordinating the comments. The Advisors would be first and were asked to keep their comments to about 2 minutes and if there was extra time then the comments would be open to all participants. In addition, anyone that was interested could enter their input into the Chat and that information would be saved and shared with the managers. ***Frank*** indicated that two Advisors sent their comments to him before the meeting and their comments are listed first below. Since the Committee has been debating minimizing the use of an Advisor's name during discussions, instead a number is used to designate each Advisor. The comments from each Advisor are placed directly under their number even if the comments are made at different times during the discussion.

Advisor 1 Comment: Public Access.

While I don't have any major concerns with the whole of the management plan, I did notice that ***access*** to the Bay and it's fisheries is mentioned multiple times, and is a priority action item. That makes it all the more outrageous that the DNR has decided to close down one of the largest, most heavily used, state owned access sites (boat launches) on the Bay at ***Au Gres during the winter ice fishing season***. Last year gates were installed by the DNR there and the gates were locked when the first significant snow occurred this year. I tried to contact the DNR decision maker and none of

my calls were answered or returned. Several other people that I know also could not reach the park supervisor either, so it seems he does not want to talk about this situation. Rumor has it that he closed the site because he was afraid that snow plowing would damage the pavement there. The pavement was never damaged there before from plowing and I've never heard of any other DNR access sites closed in this state due to that reason either. In fact, I read where the DNR is stepping up plowing of many access sites in a bunch of areas to improve winter accessibility. The Au Gres launch is the only access site to the Bay at the mouth of the Au Gres River and it sees tons of use during the winter. Closing it resulted in people either fishing elsewhere or driving around the gates . All are not good options. I spoke to Frank Krist about this problem and would like to discuss it further at the next LHCFAC meeting as an action item on that plan that needs to be rectified if access is indeed important to the decision makers. Thank you for your attention with this mater.

Follow-up comment at the meeting: I want to emphasize that the Au Gres Site is closed during the winter when there is snow on the ground. Apparently, there is concern that the pavement will be damaged if the lot has to be plowed in the winter. The site has an excellent breakwall in the summer to fish from and launch boats. Because of the lack of maintenance, the breakwall is overgrown with brush preventing anglers from fishing off it. This site has ***tremendous potential if it is regularly maintained*** and left open the entire year. Natural Resources Commission David Cozad was very concerned about the problems at this access site and exchanged information with the Advisor to coordinate efforts to improve access at the site.

Comment Natural Resources Commissioner David Cozad: Frank mentioned that Commissioner Cozad was instrumental in working with the Commission and this Committee to extend for a year the opening of the walleye season the entire year in the Lower Saginaw River to prepare for the change and educate the public. Commission Cozad indicated that he enjoyed working with the Committee and he is looking forward to the harvest results this winter and spring. Randy Claramunt, Fishery Chief, indicated that there is full time creeling of anglers along the river and a good presence of Law enforcement so there should be lots of reliable data available to measure the results. If the weather cooperates it should be an excellent spring.

Advisor 2 Comment: Commercial Fishing Concerns.

Greetings fellow advisors and Dnr, there are a few concerns I have with this draft for Saginaw Bay. We, the commercial fishermen in Michigan, cannot support this plan as it is written for the following reasons.

1. This draft plan does not include all vested fishermen with ownership in Saginaw Bay. A plan cannot be made for the management of Saginaw Bays' future as a whole if it does not incorporate all licenses. It also does not include all possibilities that are able to fix an ecological imbalance in an efficient way. A possible name change could be: "Recreational Walleye and Yellow Perch Management Plan.." I simply do not see how this is a plan for the whole of Saginaw Bay. It's a plan of nothing new, no new ideas for the ecological balancing of the Bay.

2. On pg. 14, there are some confusing statements that read incorrectly for folks that don't know the law. It starts by saying, "The state retains certain authorities that are in statute as law and those include only certain species being designated as eligible as for commercial harvest. Walleyes are not an allowable species for commercial harvest in Saginaw Bay." This is correct in a way, but you are misleading the reader by omitting facts.

It states in our commercial fishing law what species are allowable. Lake Trout and Walleye are approved commercial species in Michigan law for harvest. This is where the draft is misleading. It is DNR order number 19 from 1970 that was implemented to stop all commercial harvest of Walleye because of the sea lamprey devastation and the poor water quality during that time. It is not law that prohibits Walleye for commercial harvest because the DNR is not the legislature.

However, there is added confusion for many because with the act 154 of 1959, the DNR with approval of the NRC are able "to suspend, abridge, extend, or modify the provisions on any statute or law concerning commercial fishing when such action is necessary for the protection, preservation, maintenance, or harvesting of fish in the Great Lakes."

Perhaps this should be reworded in the draft and explained better as to why Walleye are still prohibited when their species is flourishing so well that it is causing a great ecological imbalance. The reasoning why the DNR refuses to lift their DNR order number 19, and give commercial fisheries in Saginaw Bay a quota for Walleye is not due to the " protection, preservation, maintenance, or harvesting of fish in the Great Lakes."

In our opinion, DNR rule 19 is unconstitutional because in todays' fishery there is no biological reason why commercial harvest should not be included in the Dnrs plan for the Walleye of Saginaw Bay. Recreational fishing represents approximately 10% of the Michigan public. The other 90% of Michigan buy their fish. We represent the 90% of Michigan that cannot or do not fish for themselves. The DNR is being discriminatory toward the non-fishing public by not allowing state licensed Michigan commercial harvest of Walleye. It would lower all prices of Walleye across Michigan for all purchasing parties as well if everyone didn't have to rely on the Canadian fishermen.

3. Lastly, on pg. 14 again. It states that commercial harvest is annually reported by the industry. It was reported monthly until recently, and now it is reported twice a month by law.

Thank you for your time in reading this. Looking forward to hearing any comments.

Follow-up Comments during the meeting:

I did not receive the response from the DNR with my written comments that I was hoping for. I view the plan as one sided and the Plan ***cannot indicate that the commercial fisheries support it***. ***Sport fishing for walleye is mostly for the rich*** because a boat and lots of expensive gear is needed. Except for a limited seasonal fishery, a family cannot not fish from shore for walleye like they can for yellow perch. Money is driving this Plan and emphasis is on the recreational fishery. Many people ask me that visit my business why more is not being done to improve the yellow perch fishery. Why are yellow perch so costly? Ninety percent of Michigan residents that do not attend these meetings want the yellow perch back. They do not care about the walleye, they want their yellow perch back. I completely disagree that yellow perch would not create major economic benefits. Action was taken to bring back walleye so why not undertake serious action to bring back yellow perch.

Advisor 3 Comment: The Plan is well done.

The Canadians are taking some of the fish originating from the Bay so there ***should be some avenue for the commercial fishers*** in the Bay. ***Question:*** Before the walleye were recovered in Saginaw Bay were the Salmon keeping the yellow perch population low? ***Response Dave Fielder:*** There was never evidence that Salmon were eating yellow perch and controlling their numbers. There was a healthy yellow perch fishery until the 1980s when the zebra and quagga mussels arrived and caused drastic changes in the food web. During this early period of the mussel invasion, reproductive success of yellow perch was poor but after the alewife crashed wild reproduction of the yellow perch exploded like the walleyes did. Now the problem facing yellow perch is the heavy predation from walleyes before the yellow perch reach age one. Having good reproduction is usually easier to manage than the lack of reproduction. ***It is clear in the data that if alewives recover in Lake Huron the recovery of walleye in the Bay will be lost.***

Advisor 4 Comment: Heavy monitoring of the fishery is occurring, pan fishing, and access.

During every trip I made to the river I was checked by a Creel Clerk and Conservation Officer. I appreciated their presence, and it shows that the fishery is being closely monitored. The DNR is doing a great job. Pan fishing for crappie, and bluegills on the shelf ice in the river has been good.

Could these booming populations be suppressing the yellow perch numbers? I support the Plan and strongly support the expansion of access and ***fish cleaning facilities***.

Advisor 5 Comment: A short emergency commercial harvest of walleye.

The Plan indicates the current abundance of walleye is exceptional, but it is not clear if the population is sustainable. The Plan also describes the walleye as the main predator of yellow perch. Would it be possible to consider an emergency commercial harvest of walleye for a year or two to determine if that would have any impact on the walleye and yellow perch populations. ***Response Dave Fielder:*** There are several items incorporated into the Plan that measure the sustainability of the walleye population including the Metrics Table and Dashboard. ***Advisor-5 Reply:*** The Plan does discuss several actions taken to increase the yellow perch population and nothing has worked. So, what about trying a 1 or 2 year emergency commercial harvest of walleye to determine if that would have a positive impact. ***Response Dave Fielder:*** The Plan manages the walleye population optimally that best ensures a sustainable fishery. When we discussed the Stock Recruitment Curve in the past, the population is approaching the point of recruitment overfishing. If the population is fished more intensely, then there is a risk of overfishing, which is dangerous from a management position. The new Plan manages the walleye population to best ensure sustainability and fishing opportunities. Under the current biological conditions in the Bay, yellow perch will probably not rebound until there is an adjustment in the food web like the an increase in yellow perch predation buffers. ***Response Doug Schultz:*** Doug provided a similar discussion about yellow perch providing a major source of prey for the predators like walleye in the large Minnesota lakes which also keep the yellow perch down. Since walleye often pursue cisco as a food source, there is a chance that if the reintroduction efforts of cisco into the Bay are successful or another prey species expands and can buffer predation on young yellow perch, the yellow perch numbers may increase substantially. When walleye, yellow perch, and ***cisco*** coexisted in the Bay decades ago all 3 species flourished together.

Advisor 6 Comment: Would closing the spawning season or restricting yellow perch harvest help improve the fishery?

Response Jeff Jolley: Reproduction numbers are great since plenty of eggs and fry are produced, however, there is an early predation bottleneck that prevents the fry from getting to age 1. Adjusting or closing the seasons would have no impact. We do appreciate that comment and it will be saved and added to the list of comments.

Advisor 7 Comment: Walleye fishery is a huge economic benefit to the Saginaw Bay Region

There is a very healthy robust walleye fishery driving a huge economic benefit throughout the entire Saginaw Bay region that supports hundreds of jobs and numerous charter operations in the Bay. It would be great to have a balanced fishery with lots of yellow perch but if that jeopardizes the walleye fishery that would be risky. If the walleye population declines significantly, then the early season fishery could be closed and that is becoming popular. Anglers from all over the state are traveling to the Bay area to enjoy the walleye fishery and spend lots of money. The yellow perch fishery would never do that. Other Advisors agreed with this comment.

Advisor 8 Comment: Should humans as predators on yellow perch have more limits on harvest?

Response Dave Fielder: The yellow perch daily bag limit was reduced to 25 in the Bay during 2015 and that regulation was eventually adapted around the State. We do not believe that the fishery is limited by the number of yellow perch spawners since plenty of eggs are produced as Jeff noted, but they are not surviving beyond Ages 0-1. Changing the bag limit probably would not make a difference in overall abundance.

Advisor 9 Comment: The walleye metrics, and dashboard in Appendix 2 and the objectives in related other sections.

Appendix 2 that contains the Walleye Population Metrics and Dashboard are doing a good job of monitoring the status of the walleye population and everyone working on the Plan deserves a lot of credit. ***Response Dave Fielder:*** Please everyone, do not hesitate to comment on the metrics and other items in Appendix 2 since they determine how management should proceed when changes are occurring with the walleye status.

Advisor 10 Comment: Having a large wall of walleye predators in Central Lake Huron provides stability to the Lake Huron ecosystem.

I appreciate the comments made about the excellent experience of fishing off the docks for yellow perch because when I was young growing up in the Bay area, I enjoyed that activity often. I dearly miss that opportunity. It was a tragedy to see yellow perch dock fisheries collapse throughout most of Lake Huron. It is important now to look at this in the context of how the ecosystem has changed. When I was young my grandfather was a commercial fisher at Port Sanilac harvesting cisco. Alewives were almost like a thick soup providing some predation buffer for the yellow perch but the Alewives were decimating the walleye. Currently, the lake has changed immensely, and the conditions are no longer favorable for supporting an expanding population of yellow perch. It would be beneficial to indicate in the Plan that there will probably be no realistic improvement in the yellow perch abundance until cisco are reestablished in the Bay. On the other hand, I am comfortable that there is a strong population of walleye predators in Lake Huron to keep the alewives at very low levels. ***If the alewives return, they will threaten not only the walleye population in Saginaw Bay and other areas but will also threaten the slowly recovering lake trout population in the north and the declining lake trout population in the south.*** In addition to the threat of alewives returning, the predators in the lake will be threatened by the large expansion of gill nets and the targeting of lake trout and walleye under the new Consent Decree being implemented in the north. ***Having a strong wall of walleyes centered in Saginaw Bay and migrating up and down the lake, guards against the next invader and helps protect the entire ecosystem throughout Lake Huron.***

Advisor 11 Comment: Agrees with the Plan and Advisor 10's comments about ecosystem and the importance of keeping a strong predator population of walleye in the Bay.

Comment Jeff Jolley: You may send us comments at anytime either sending them to Frank or any of the managers and your input will be included in the review. You do not have to wait until we meet again.

Advisor 12 Comment: Maintain a strong walleye population in the Bay.

I supported the several comments on the importance of maintaining a strong population of walleye in Saginaw Bay for both the economic importance but also to maintain a better biological balance of the ecosystem throughout Lake Huron. The Michigan Steelhead and Salmon Association approves the plan and nearly all of us look forward to visiting the Bay often.

Tim Cwalinski Comment: Such a terrible problem to have, a top notch walleye fishery with currently depressed yellow perch numbers. Someday it will flip and so will the conversation.

Advisor 13 Comment: The Plan needs to be made much more user friendly for the average reader.

The graphs, charts, and other figures need to be more clearly labeled and all abbreviations need to be defined. It would be very useful to have a table of abbreviations in the document since abbreviations are used extensively throughout the Plan. All the pages need to be numbered well with

a detailed table of contents. Some of the terminology in the dashboard is difficult for some to understand and should be clarified. ***It is a good Plan and should become even better.***

Comment Doug Schultz: Thank you for your input and the patience of those that did not receive a copy of the Plan before the meeting. We will be distributing the next version to anyone interested once it is ready for the spring meetings. ***Frank*** agreed to send that copy out to everyone once it is ready for distribution.

Comment Jeff Jolley: We received lots of comments today and I appreciate the information very much. I want to thank everyone for their input and be sure to take advantage of the fishing in the Bay area. There was not a lot of ice fishing but at times the fishing was excellent this winter.

Status of the unique acoustic telemetry study of newly stocked Steelhead. (Matthew Klungle, Senior Fisheries Biologist, Northern Lake Huron Management Unit).

Frank provided a brief introduction of the acoustic study that enables newly stocked steelhead to send digital signals to receivers when eaten by other fish. ***Matt Klungle*** then began a detailed discussion of this innovative research project.

This project has many ***collaborators*** including Tom Binder from USGS, Matt Kornis from USFWS, David Fielder DNR Modeler, Randy Espinosa Thompson State Fish Hatchery and others.

The Au Sable River steelhead plant is the largest in Lake Huron and probably in Lake Michigan. This is a very important fishery because when the Chinook salmon crashed, the steelhead catch increased. The steelhead is more of a general feeder and is adapting better to the food web changes. There are several predators that prey on the steelhead including walleye and cormorants in the river and lake trout at or near the river mouth and in shallow water along the lake shore. The timing of the stocking is important to ensure favorable flows, temperatures, and other factors.

A study was conducted to try different stocking windows from April to early June. An early effort stocked nearly ½ of the steelhead in mid-April with fish originating from the Wolf Lake Hatchery in Kalamazoo and a little over half of the steelhead stocked late in the season with those fish coming from the Thompson Fish Hatchery in the Upper Peninsula.

It was often difficult to interpret the data because the Coded Wire Tag (CWT) system was not working because many of the tags were not specific to a river. The Wolf Lake CWTs had a specific tag but fish with identical Thompson Hatchery CWTs were stocked in several rivers so it was impossible to tell which rivers and stocking times were producing the best returns. There were also complications with not enough volunteers at all sites to return the tagged heads. It is not possible to mark each stocking site with unique CWTs spanning the extensive area from southern Lake Huron to the Saint Marys River.

Because of these challenges, it was decided to attempt using innovative digital technologies. We did receive a special grant for a small pilot study but the money arrived late in the year so there was not a lot of time to prepare. The study consisted of Tom Binder and his crew from the Hammond Bay Biological Station tagging 15 steelhead at Thompson with transmitters. When a fish is consumed by another fish the tag dissolves and sends a signal that is picked up by the receivers placed in the river and along shore. These 15 tagged steelhead were stocked with another 38,000 fish from Thompson. The Hammond Bay crew installed 11 receivers in the river and 9 in the near shore area in the lake.

The results showed that all the fish were detected at the stocking site. Three fish successfully migrated through the river and nearby shoreline. There were 4 predation signals, 2 immediately, 1 mid river and 1 at the mouth. Eight fish were not detected post release and their fate is not known. They might still be in the river or possibly perished.

The full study will be much more extensive and collect a great deal of information that will provide much feedback on the survival of the stocked fish. This work could assist significantly in improving stocking strategies. One hundred tags will be requested that will be emitting a signal up to 137 days. A mobile tracker will also be used to explore various areas.

The funding request will be made to the Great Lakes Fishery Commission for the tags only and all the work will be covered by the cooperating agencies. There will be an interview with the Commission in March and decisions will be made in late spring. If the grant is approved the study would take place in 2025.

Question: Is there any chance of getting funding for another pilot study? Response Matt: The pilot study completed last year was a rare opportunity and there are ***no others available***.

Question: Can the receivers detect a signal if a bird eats the fish? Response Matt: No, the receivers can only pick up a signal when the fish is consumed by another fish that is in the water. ***Response David Fielder***: it is assumed that the fish that disappear from detection are either consumed by birds or mammals.

Question: Which way did the 3 fish that escaped the river travel? Response Matt: Two steelhead went south but later turned around and headed north and one just moved north.

Comment David Fielder: there are many telemetry studies occurring in the Bay and around the lake so if a fish survives for many days a lot of information should be learned about its migration pattern.

Brief progress report on improving the recreational fishery at Harrisville Harbor. (Jim Johnson, Retired Great Lakes Fisheries Research Biologist).

Frank introduced Jim Johnson: Jim is a retired DNR Research Biologist that managed the Alpena, Lake St. Clair, and Lake Erie DNR Research Stations. Jim has been working with several community leaders from Harrisville to explore options that may improve the quality of the fishery at this port. Instead of leading the discussion Jim turned the presentation over to representatives from Harrisville. Jim stressed that the community has been investigating working intensely to produce a positive plan. Jim introduced ***Tom Keerl, the Committee Advisor representing Harrisville and Alcona County Great Lakes Fisheries***.

Comment Tom Keerl: began by thanking everyone from the community that came together and put a lot of time and effort into this project. The ***Plan*** reviews in detail the history of the port and the potential options to improve the fishery. This will be a **positive guide** for the community over the coming years.

One point that stands out is the lack of a creel survey being conducted at the port for the last several years. For example, with the lack of ice forming in the Harbor, the ***steelhead fishing off the docks has been very good,*** yet this information is not being recorded or shared on a state-wide basis.

A ***Charter Boat operator*** that fished out of Harrisville last year did well and is returning this coming season along with another Charter Boat operation moving to the port. We are encouraged that the word is getting out about good fishing and Harrisville being a very welcoming community.

It will be a challenge, but we need to continue to work toward ***stocking lake trout*** at Harrisville and the other central and southern Lake Huron ports. We know there are several obstacles but we will keep visiting this effort.

We appreciated the fall ***Coho Salmon plant*** last fall, however, if there is a surplus of ***spring yearling Coho***, the fish could be held in the old hatchery's raceways to imprint them. This would assist in providing a good Coho return to Harrisville and greatly increase fishing opportunities.

We are hoping to ***continue this discussion at future meetings*** of the Advisory Committee. Also, Brandon ***Schroeder from Michigan Sea Grant*** has been working with the Community to promote the fishery, and assist the youth interested in fishing. I will turn the discussion over to Brandon.

Comment Brandon Schroeder: I am very interested in the Harrisville area since I live in the County with my family. A few years ago, the local charter captain passed, and it is good to learn that there are charter captains interested in the community again. Aspects of the diverse fishery are recovering and by working together the quality and interest in the fishing will improve.

Sea Grant can coordinate to provide maps, signs and other educational materials. For example, Tim Cwalinski and others worked with Sea Grant to install signage at the Black River Launch Site. We can also work to get fishing reports out to the DNR and the public. There are opportunities to work with the local students that are excited about the fishery and have a fishing club. School officials are interested in leveraging this student enthusiasm toward educational opportunities, which is very positive for the community.

Comment: Jim Johnson: Jim wants to hear from Tim Slezsak, Alternate Advisor for Tom Keerl. Tim put intense effort into organizing the community and bringing the workgroup together.

Response Tim Slezsak: I just got off the phone with the ***Mayor, Jeff Gehring***, and he wanted to thank the Advisory Committee, Jim Johnson, Randy Terrian, Frank and all the others that have worked with the community to compile the Plan. The ***City Council*** has been very supportive of the efforts and requests progress reports at each of its meeting. We are not trying to take fish from any other site but if there is any **surplus fish**, we would appreciate it whether it is 30,000 or just 2 fish. It is remarkable how excited the ***school kids*** are when they stop at my tackle shop on the way to the Harbor to fish. Other positive activities include the Harrisville Lions Club bringing back the week long Lake Trout Festival with a Super Tournament that will piggyback on the weekend. Finally, I want to thank ***Chuck Matlock, Black River Waterways Commissioner*** for his assistance and guidance with the efforts to refurbish the hatchery raceways just upstream from the Harbor. As a side note, it has been 82 years as noted in the local paper that the State turned the hatchery over to the City.

Comment Frank Krist: I fortunately, had a chance to visit the community about 2 weeks ago and it is obvious that they are coming together and working intensely to make the community angler friendly. With Jim Johnson's assistance they did a lot of work reviewing the fishery history and investigating what fishery opportunities have the best chances of success. ***The Community is definitely going in the right direction*** and deserves much consideration.

Comment Randy Terrian: During recent visits I was greatly encouraged and impressed by how well the community is organized and active working to improve the fishery. During the last 15 years or so, I have visited the community regularly during stocking events and cormorant harassment work and rarely did I see even one person at the Harbor. This effort by the community is a huge turnaround. I am looking forward to working with them over the coming years.

Comment Matt Klungle: Please keep in touch with Matt during the spring and he will work to get the ***fishing reports out weekly*** to biweekly.

Comment Jim Johnson: The reason the Harrisville Fishery Plan was not released sooner is that we have been working intensely on it right up until the meeting. We wanted to share the most up-to-date work, and everyone involved in developing the Plan are hoping that it can be discussed in more detail at the next Lake Huron Citizens Fishery Advisory Committee meeting and exchange, recommendations, concerns and other input.

Comment Brandon Schroeder: Much work has been done but there is much exploring of ideas from all points of view to be done. We are looking forward to continuing the discussions.

Comment Tim Cwalinski: I reviewed the Plan and as the Supervisor of the Northern Lake Huron Management and Harrisville being in my area, I do have some comments. Over the years I have spent a lot of time encouraging the Community to allow anglers to fish off the docks and be more welcoming to fishing without any success. It is ***excellent to see the Community come together*** and make major changes. I want to share some of the challenges encountered when determining where the hatchery raised fish are stocked. For example, when determining to stock the ***Atlantic Salmon***, after lengthy discussions with the DNR managers, the Lake Huron Citizens Fishery Advisory Committee, and the public, ***it was decided to stock a larger number of fish at fewer*** but the most promising sites. I see Jim Johnson is agreeing with my comments. Not only was this type of discussion used with Atlantic Salmon but also with ***Coho Salmon***. ***It is not Tim making the decision where the fish are stocked*** but it is a process which involves the Lake Huron Citizens Fishery Advisory Committee, the managers and public. For a number of years, recreational fishing at Harrisville was not an organized goal for the Community. Randy Claramunt, Fishery Chief; Matt Klungle, Senior Biologist covering this area and I have discussed Harrisville, and we are open to talk about options, but it will not happen overnight. ***We need to have ongoing conversations, which we are willing to have***. One last point, the ***goal is to creel Harrisville*** this coming season but one problem that has been occurring is the difficulty of hiring and keeping creel clerks throughout the season. Eric Morrow, the person in charge of the program has indicated there is every intention of creeling Harrisville during 2024 if there are staff available to do the work.

Comment Randy Claramunt Fishery Chief: I appreciate the document and the work. It is important for success to have local support for any local stocking and fishery. This has been proven at the Ports around the State. A couple of years ago we reviewed the Lake Huron Salmon and Trout Plan and what the predator stocking level was in relation to the prey base. There appeared to be room to stock more predators, but it was decided to increase Coho stocking because Coho were adapting to the food web changes and Coho have the least impact on the prey base. The next challenge is finding room in the hatcheries to produce more fish, which is a space and cost issue rather than a predator/prey issue. Even though Coho stocking did not move the fishery completely to the next prey base consumption level, during the next State of the Lake review if the data are favorable then changes can be made. If additional stocking of predators is favorable, then that will be the time to have a discussion about surplus production and an increase in prescriptions (managers deciding where to stock fish) when comparing the capabilities of the hatcheries.

Comment Tim Slezsak: We know we have been out of the game for a while, and we realize this will take some time. We are very much looking forward to working with everyone to make this effort a success.

Updates Agency Representatives.

Update Brandon Schroeder and Meaghan Gass Spring Sea Grant Assisted Workshops: As most of you know, we have been working with the Lake Huron Citizens Fishery Advisory Committee over the years to take the most pertinent fishery issues to the public through spring workshops. The following meeting dates have been established for Lake Huron:

April 23 Open Water Fisheries located in Port Huron

April 25 Saginaw Bay Fishery located in Bay City

April 30 Cedarville Area Fisheries located in Cedarville

The exact meeting buildings have not been verified yet. Since ***all these meetings will be both virtual and in-person*** it is critical that the meeting sites have excellent access to ***Wi-Fi services***. For future reference, if you know of such facilities, please let us know. Registration is not ready yet, but we will send Frank the information to register as soon as all the logistics are completed.

We are also working on establishing dates for the ***DNR Coffee and Conservation meetings*** and again we will send the meeting information to Frank so he can share it.

Dan O'keefe at Michigan Sea Grant is working with ***Fishery Chief***, Randy Claramunt on a virtual meeting only that ***will cover topics that pertain to both Lakes Huron and Michigan***. Once that registration link is available, we will ask Frank to share it.

Comment: The workshops have been covering mostly the same issues with one more year of data over the years. ***Are you looking to add more variety to the agenda? Response:*** there will be a status of the fishery report and Management updates at each meeting but there is room for specific topics that impact certain ports. For example, this year at the Saginaw Bay workshop there will be emphasis on the Walleye and Yellow Perch Plan. If anyone has a suggestion for the agenda, please let Meaghan or me know.

Update Fishery Chief Claramunt: The ***Fisheries Division has a huge funding problem***. A variety of stakeholders met at MUCC Headquarters on February 5th to discuss and exchange ideas on developing new methods of reliable and sustainable funding. After intense brainstorming it was decided that everything and everyone needs to be incorporated into the discussion. Some ideas that surfaced are, the Great Lakes Salmon Initiative's proposal of having a special fishing license designated only to be spent on fishery management, an inland trout stamp, a family youth license, unique ways of increasing general fund input and many other ideas. ***This new funding source is needed to manage, promote, and provide fishing opportunities into the future*** with an ongoing reliable funding mechanism.

The Division is running off a Cliff. For example, the all-species license still costs $26, which is the same cost when it was implemented in 1997. Another remarkable issue for Michigan is our biologists have ½ million acres of fresh water to manage while the average number of acres in the other states is only15,000 acres. The goal is to obtain as many ideas as possible from individuals, groups, and anyone interested. To assist in accomplishing that goal during the next 90 days, a ***survey will be sent to all 1.1 million licensed anglers.*** Please get involved and provide comments and motivate others to do the same.

Frank's Comment: There is a funding debate email chain circulating and the variety of the ideas surfacing is extensive. There seems to be a lot of interest in providing suggestions and debating the challenges.

Update Law Enforcement Lt Nickolas Torsky: Frank introduced Lieutenant Torsky who manages the Great Lakes Law Enforcement Unit but also communicates regularly with the inland conservation officers. Lt Torsky has been a strong supporter of the Advisory Committees and we are looking forward to his update. ***David Shaw retired after 35 years*** of distinguished service, and he will be terribly missed but he has earned his retirement and is looking forward to it. He was replaced by ***Chief Jason Haines*** who retired from the DNR Law Enforcement Unit about 4 years ago and went to work for the Mt Pleasant Police Department. He returned to the DNR Law Enforcement as Chief. ***Four patrol vessels*** that work mostly on Lake Huron ***are being refurbished*** this winter and spring and when they return, they essentially will be new vessels. There are other vessels available to fill in until those boats return to service. With the lack of ice this winter there is still some tribal and state ***commercial fishing*** happening, but no significant issues have occurred. The last item is that there is a new reporting system for Charter Boat Captains, Wholesalers, and State Commercial Fishers so be sure to send those reports in.

Franks Comment: The Committee ***greatly appreciates Chief David Shaw's*** support of the Committee. He regularly attended the meetings and encouraged other officers to attend and exchange experiences and ideas. This process has helped the meeting participants understand the challenges and dangers encountered by the officers and as Chief Shaw often said, it also helped the Officers better understand the fishery biology and the challenges encountered by the managers, anglers and others interested in the fishery. We also ***greatly appreciate Lt Torsky's*** regular visits to both the Great Lakes and Inland Advisory Committees and look forward to his future visits.

Update Tim Cwalinski, Northern Lake Huron Unit Manager: The staff workplan for the upcoming season is being completed. So far because of poor unsafe ice conditions the Black Lake ***Sturgeon Season was cancelled***. There are several groups and individuals that are very interested and doing work on the ***Upper Au Sable River*** so I organized an ***Advisory Committee*** that is Co-Chaired by Matt Klungle, one of our Northern Unit's Senior Biologists. Matt has spent a lot of time on these waters so he is familiar with the fishery and the issues. Finally, the Trout River Dam, just a mile upstream from Lake Huron in Rogers City is aging and it needs extensive work. The Dam is owned by the Conservation District, and they have hired consultants to study the options.

Update Dr. Jeff Jolley, Southern Lake Huron Unit Manager: Last year during the first early opening of the Saginaw River walleye season the fishing conditions were bad with much high dirty water so it was not a good test of this new early season fishery. We will be ready this year and if the fishing conditions are good in the river, we will be ready to monitor it well. The staff members are compiling data that were collected last season. This is a normal winter activity. There have been a lot of meetings and outreach work this winter. We are all looking forward to another season.

Update Kendra Kozlaukos on the new Inland fishing guide rules and licensing: This new rule will impact all Inland fishing guides and some charter captains. There is a DNR webpage that has all the requirements, forms, my contact information, and it can be reached at this link https://www.michigan.gov/dnr/managing-resources/fisheries/business/guides

I will be happy to work with anyone, so please do not hesitate to contact me.

Update Eric Morrow Creel Program Manager: We are working to hire a staff person to ***creel Harrisville*** this year. The staff member that was scheduled to work in Harrisville left but we are working with management to make adjustments, so hopefully there will be a person working at the Port during the entire season. Special funding did come available to hire a full-time clerk to ***creel*** the

Lower Au Sable River at Oscoda. With the mild winter and probably an early run of fish, this work has a good chance of producing a lot of information.

Update Julie Shafto, Creel Program: The discussion on Saginaw Bay focused around the poor yellow perch fishing, yet in the Thunder Bay River during the fall I was catching lots of 8 to 12 inch yellow perch fishing from shore.

Update Doug Schultz, Lake Huron Basin Coordinator: I very much enjoyed the presentations, constructive feedback, all the comments and seeing some of you. The input on the Saginaw Walleye and Yellow Perch Plan will be compiled, reviewed and incorporated into the next draft version that will be released to the public in about 6 weeks. The following is my email address in case anyone has suggestions on improving funding for the Fisheries Division, schultzD11@michigan.gov Feel free to send me your ideas and I will share them with Randy Claramunt. I am very much looking forward to working with the Committee and the many participants that attend the meetings.

Meeting Adjourned at 3:00 pm

Completing work 3-1-2024 12: 30 am