2020 Annual Report on Implementation of the 2000 Consent Decree for 1836 Treaty-Ceded Waters of the Great Lakes

Prepared for:

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Table of Contents

Preface

Calendar year 2020 was unlike any other over the course of the past two decades. The 2000 Consent Decree was set to expire in August of 2020, and the spread of COVID-19 dramatically altered all aspects of people's lives. Negotiations for a successor Consent Decree were ongoing in various forms throughout 2020, but for numerous reasons a settlement was not reached, and the 2000 Consent Decree was extended by the Federal court on two separate occasions. It was first extended through the end of the 2020 calendar year, and then it was again extended until June 30, 2021. The spread of COVID-19 led to numerous responses by government, individuals, businesses, and markets. All of these had differing impacts on recreational and commercial fishing. Governments were unable to collect data in the same manner as usual, leading to changes in estimation techniques for recreational fisheries and fewer agency surveys. Markets for commercial fishers were dramatically altered, impacting fishing effort and thus overall catch. Harvest values reported for 2020 should be treated cautiously when viewed as part of long-term trends in a fishery. Despite the unprecedented challenges of 2020, some of which continue into early 2021, the Consent Decree parties continue to implement the 2000 Decree to the best of their ability, while negotiating a new long-term agreement. This report provides detailed information regarding the implementation of the 2000 Consent Decree in the 1836 Treaty-ceded waters of the Great Lakes during 2020, as required by the September 27, 2001 Memorandum of Understanding between the State of Michigan, Department of Natural Resources (MDNR) and the Michigan United Conservation Clubs, Inc., Michigan Fisheries Resource Conservation Coalition, and Bay de Noc Great Lakes Sportfishermen, Inc.

FISHERIES

I. General Information

A. Large-mesh gill-net retirement

To reduce the amount of large-mesh gill net fished by Tribal fishers, the Consent Decree called for the Sault Ste. Marie Tribe to remove at least 14 million feet of large-mesh gill-net effort from lakes Michigan and Huron by 2003. Removal of large-mesh gill-net effort by other Tribes also counted towards this commitment. The amount of gill net retired was to be based on a

comparison with the average effort during the base years 1993 through 1998 (Table 1). Gill-net retirement has been accomplished through the trap-net conversion program and other methods.

The removal of large-mesh gill-net effort in lakes Huron and Michigan was successfully completed by 2003 when Tribal fishers used approximately 25.5 million feet less than the 1993-1998 average. Large-mesh gill-net effort in 2020 was the lowest it has been since 2006 at only 16.5 million feet. Effort was reduced as the COVID-19 pandemic roiled markets, suppressing usual demand. In addition, individual circumstances differed for each fisher, some of whom were unable or unwilling to fish given the uncertainty of all that occurred in 2020. The amount of effort fish was artificially low in 2020, but it represented nearly 30 million feet of gill net less than the 1993-1998 baseline years.

Table 1. Large-mesh gill-net effort (1,000s ft) in the 1836 Treaty-ceded waters of the Great Lakes during base years 1993 to 1998 and final effort in 2020.

Lake	Management Unit	Effort		Change[a]
		1993-98	2020	
Michigan	MM-123	17,912	5,469	(12,443)
	MM-4	1,794	757	(1,037)
	MM-5	240	15	(225)
Huron	MH-1	16,470	4,977	(11,493)
	MH-2	6	0	(6)
Superior	MI-6	780	643	(137)
	MI-7	2,028	589	(1,439)
	MI-8	6,578	4,097	(2,481)
Totals		45,808	16,547	(29,261)

[a] Change in effort from the average during the base years 1993-1998.

B. Report from Modeling Subcommittee and modeling process description

The Modeling Subcommittee (MSC) of the Technical Fisheries Committee (TFC) prepares an annual report entitled "Status of Lake Trout and Lake Whitefish Populations in the 1836 Treaty-ceded waters of Lakes Superior, Huron, and Michigan, with Recommended Yield and Effort Levels" (referred to as the Status of the Stocks Report). The report detailing populations and

harvest limits for fishing year 2020 was completed in August 2020. This and all previous versions are available on the 2000 Consent Decree page of the MDNR's Tribal Coordination Unit (TCU) website:

https://www.michigan.gov/dnr/0,4570,7-350-79136_79236_84834_84838---,00.html

Statistical catch-at-age (SCAA) models are used to describe population status of Lake Trout and Lake Whitefish and to recommend harvest limits for each species. Where sufficient information exists, models are developed for the stocks in each defined Management Unit using data from both agency surveys as well as commercial and recreational fisheries. The modeling process begins by estimating parameters that describe each of the Lake Trout and Lake Whitefish stocks over time. The agreement between model predictions and observations is measured by statistical likelihood and the set of model parameters that minimizes the difference between the observed and predicted values is considered the best estimate. The model produces age-specific abundance and mortality estimates for each year that data are available, which are then used to project the population forward through the next fishing season by applying management targets set forth in the Consent Decree, such as target mortality rates and spawning stock biomass, to produce the recommended harvest levels.

All fish populations are regulated by three key rates: growth, mortality, and recruitment. Growth is described using either raw mean length- or weight-at-age data or is estimated using well-established regression models that assume that growth slows as fish approach a maximum size. Mortality is estimated from age structure data by examining the catch (at age) of individual cohorts (fish hatched in a given year) over time. Total mortality is comprised of fishing and natural mortality. Fishing mortality results from recreational, subsistence, and commercial harvest, as well as from mortality associated with capture by hooking or netting for fish that are not otherwise retained. Harvest is calculated annually for each fishery through either direct reporting, wholesale reporting, or interviews (creel surveys). Natural mortality is comprised of losses due to old age, disease, and predation. Natural mortality is generally estimated from an equation that relates the growth parameters of Lake Trout and Lake Whitefish to water temperature; however, in recent years the MSC is evaluating alternative means to estimate this parameter. In a special case, mortality associated with sea lamprey attacks is estimated in a

separate modeling process using observed wounds and the assumed probability of surviving an attack. Finally, recruitment is the process of reproduction and growth to a certain size class that is beyond some initial period of high mortality. Recruitment may also imply the entry of individuals of legal size into a fishery. Most exploited fisheries demonstrate variable recruitment due to an assortment of abiotic or biotic conditions. Recruitment variability can be measured by assessing the relative abundance of a given age class using a standard effort, location, and time of year. For example, managers may use the relative abundance of age-5 fish in spring gill-net surveys as an index of year-class strength. In the case of a fishery that relies almost entirely on stocking (e.g., Lake Trout in Lake Michigan), recruitment to fisheries, though still variable due to differences in post-stocking survival, is less uncertain than instances where recruitment is governed by natural processes.

Currently, in Lake Michigan, Lake Trout recruitment is defined as the number of yearlings stocked or migrating into an area less those migrating out of the area, though natural reproduction of Lake Trout has increased in recent years and future recruitment modeling processes may need to be reevaluated, as they were for Lake Trout in Lake Huron, where recruitment is now estimated for both naturally reproduced and stocked fish using the proportion of wild fish captured in surveys, commercial nets, and recreational fishing gear. For fully wild stocks, such as Lake Trout in Lake Superior and all Lake Whitefish stocks, recruitment is estimated from either 1) a stock-recruit relationship which describes how the number of young fish (recruits) relates to the number of spawning adults that produced them; or 2) annual deviations from an assumed average recruitment level estimated from the catch-at-age data.

After model estimates of abundance and mortality have been obtained, a projection model is used to obtain harvest limits for the next fishing season. Harvest limits are established so as not to exceed target mortality rates set forth in the Consent Decree and are derived by applying fishery multipliers to the fishing mortality rates estimated in the last year of the model until the projected rates match the mortality and allocation targets described in the Decree. These rates are then applied to the age-specific abundance estimates to produce an estimate of the harvestable number at each age for the year. The harvestable numbers are then multiplied by age-specific weights to obtain a total harvest limit, in pounds of fish, for each Party. The target

mortality rates are either specified to achieve a maximum rate for the most vulnerable age (Lake Whitefish) or, for Lake Trout, to achieve a desired amount of "spawning stock biomass per recruit": the amount of spawning biomass that an average recruit is expected to produce in its lifetime given mortality rates and maturity schedules. This provision is designed to ensure that there is an adequate amount of spawning stock per recruit and that more than one age class is contributing considerably to the spawning population. A more extensive and technical description of the entire modeling process is contained in the *Stock Assessment Models* section of the 2012 Status of the Stocks Report (this section was removed from the 2013 and subsequent Status of the Stocks Report).

C. Model estimates used during negotiation

During the final stages of negotiations in 1999, model estimates of harvest limits and total allowable effort were projected under presumed likely scenarios for the commercial and recreational fisheries over the life of the Consent Decree. For Lake Trout, the projections were separated into a phase-in period (where applicable) and a rehabilitation or sustainable management period. Phase-in periods were intended to allow for a more gradual transition to target mortality rates and final allocation percentages. For numerous reasons, many of these projections were not accurate and the fisheries operates under harvest limits and regulations that differ considerably from the projections. These projections for Lake Trout and Lake Whitefish can be found in the appendices of past implementation reports, which are posted on the TCU website here:

https://www.michigan.gov/dnr/0,4570,7-350-79136_79236_84834_84838---,00.html

II. Harvest Limits and TAE's (Total Allowable Effort)

A. Lake trout

As required by the Consent Decree, the MSC calculates annual harvest and effort limits for Lake Trout and provides these recommendations to the TFC. After reviewing the recommendations, the TFC must approve harvest and effort limits by April 30 of each year to be submitted to the Parties for final approval. In 2020, stipulations to the Consent Decree set harvest limits at some minimum level in units MM-123, MM-4, MM-5, and MH-1. In MM-123,

the parties agreed to a stipulation in May 2017 that set harvest limits through 2020. The MM-4 and MM-5 stipulations have been in place since the mid-2000s and were the result of high levels of sea lamprey-induced mortality being experienced at the time. With such high sea lamprey-induced mortality, fisheries would have had to be severely limited if the "fully-phased" mortality targets were used to establish limits at the time. Recent sea lamprey induced mortality rates have been well below the rates experienced when the stipulations were established; however, the parties have not decided to change the stipulated harvest levels. In the case of MM-5, the 2020 model-derived limit exceeded the stipulated limit for a second consecutive year. For unit MH-1 in 2020, the Parties stipulated harvest limits of 489,879 lb for the Tribes and 66,802 lb for the State.

The Consent Decree includes a provision that harvest limits in fully-phased units should not deviate more than 15% from the previous year's limit unless all the Parties agree a greater change is appropriate (referred to as the "15% rule"). In 2020, the model-generated harvest limits for units MI-6, MI-7, and MH-2 deviated more than 15% from the 2019 limits and the actual 2020 limits were established by utilizing this 15% rule. A map of the Lake Trout management units is provided at the end of this document (Figure 1), and the 2020 Lake Trout harvest and effort limits for each management unit are provided in Table 2.

Table 2. Model-generated harvest limits (HL, pounds), actual harvest limits and total allowable effort (TAE, linear feet of gill net) for Lake Trout, by management unit, in 1836 Treaty-ceded waters of the Great Lakes for the 2020 fishing season (NA = not applicable).

		Model HL		Final HL		
Lake	Unit	State	Tribal	State	Tribal	Tribal TAE
Michigan	MM-123 [a]	79,924	549,476	550,000	80,000	7,423,000
	MM-4 [a]	72,523	88,640	77,200	108,265	903,000
	MM-5 [b]	72,955	48,637	72,955	48,637	314,000
	MM-67	400,720	44,524	400,720	44,524	NA
Huron	MH-1[a]	42,943	314,913	66,802	489,879	13,394,000
	MH-2[c]	270,185	14,220	207,695	10,932	NA
Superior	MI-5	118,342	6,229	118,342	6,229	NA
	MI-6[c]	139,052	139,052	124,090	124,090	3,067,000
	MI-7[c]	28,299	66,030	37,483	87,461	8,953,000

[a] Final harvest limits resulted from stipulations to amend the Consent Decree.
[b] Final Harvest limits from model after comparison with stipulated limits.
[c] TFC invoked the 15% rule, limiting the change to 15% from the prior year's limit.

B. Lake Whitefish

As required by the Consent Decree, the MSC calculates annual Lake Whitefish harvest limits for management units where the allocation of lake whitefish is shared between the State and the Tribes and provides these recommendations to the TFC. For each whitefish management unit that is not shared, the Tribes set a harvest regulation guideline (HRG) in accordance with their Tribal Management Plan. The MSC also generates model-based recommendations that are considered during the HRG-setting process for the non-shared units. After reviewing and discussing recommended harvest limits for Lake Whitefish, the TFC submits these harvest limits to the Parties for final approval by December 1, with the limits becoming effective the following year. The TFC reached consensus on harvest limits for all shared whitefish management units for the 2020 fishing season. A map of lake whitefish management units is provided at the end of this document (Figure 2), and the 2020 lake whitefish harvest limits for each management unit are provided in Table 3.

The MSC was able to generate model recommended harvest limits in all shared units and most non-shared units. The Leland/Frankfort unit (WFM-06) and the Muskegon unit (WFM-08)

have been managed with constant harvest limits since 2011 and 2013, respectively. In 2017, these limits were substantially reduced, which was reflective of lower Lake Whitefish recruitment throughout Lake Michigan. Despite model-calculated harvest limits that were below the constant harvest limits, the constant catch policy was continued for 2020. In non-shared units, the final Tribal HRG was set either at or below the model limit in all units except WFS-08 (Brimley). The MSC does not calculate recommended harvest limits in WFM-07 and WFS-06 due to limited fishery data. The 2019 HRG for WFM-07 was unchanged from 2018 while the 2019 HRG for WFS-06 was reduced by 17% from the 2018 HRG.

Table 3. Final harvest limits (lb) or Harvest Regulation Guideline (lb) for Lake Whitefish, by management unit, in 1836 Treaty-ceded waters of the Great Lakes for the 2019 fishing season (NA = not available).

Lake	Unit	Final State HL	Final Tribal HL	Model Limit Tribal	Final Tribal HRG
Michigan	WFM-01[a]	152,400	1,371,600		
	WFM-02			620,700	204,000
	WFM-03			906,900	450,225
	WFM-04			467,500	240,300
	WFM-05			183,000	198,000
	WFM-06[b]	37,500	87,500		
	WFM-07			NA	225,000
	WFM-08[c]	225,000	275,000		
Huron	North Huron			478,600	379,900
	WFH-05			NA	394,000
Superior	WFS-04[a]	10,500	94,500		
	WFS-05[a]	33,300	174,700		
	WFS-06			NA	137,700
	WFS-07			451,400	451,000
	WFS-08			71,600	165,800

[a] Harvest limits based on model.

[b] Harvest limits from conditional constant catch policy. Model limits were 58,800 lb Tribal and 25,200 lb State.

[c] Harvest limits from conditional constant catch policy. Model limits were 214,600 lb Tribal and 175,600 lb State.

III. Harvest and Effort Reporting

A. State-licensed commercial and recreational fishing

1. Lake Trout

Lake Trout harvest by the State of Michigan consists entirely of harvest by sport anglers. The harvest limits and reported harvest in Lake Superior represent lean Lake Trout only. Throwback mortality from the State recreational fishery (Lake Trout caught by hook and line that are returned to the water and subsequently die; 41% of released fish) was also estimated for each management unit and added to the weight of Lake Trout harvested for comparison to harvest limits.

Lake Trout harvest by sport anglers in 2020 was below harvest limits in all management units in 1836 Treaty waters, except for MH-1. The Lake Trout bag limit had been reduced in MH-1 from 3 fish to 2 fish during 2019, as a result of recreational fishers exceeding recent harvest limits. In 2020, the limit was increased back to 3 fish, and the total yield by recreational fishers was 70,374 lb, surpassing the 66,802 lb limit. The harvest did not exceed the limit by enough to trigger a penalty for the 2021 fishing season, but it will warrant further scrutiny in the future. In MM-4, the recreational bag limit increased in 2020 from 1 fish to 2 fish. Harvest increased by approximately 22,000 lb as a result of this bag limit change; however, overall the yield by recreational fishers remained approximately 8,000 lb below the stipulated limit.

The MDNR creel program was modified in 2020 as a result of restrictions put in place during the COVID-19 pandemic. Soon after State employees were ordered to work from home in March 2020, Executive Orders were issued that froze spending and hiring within State government. Creel clerks were unable to perform their field-based tasks to estimate harvest during April and May, and some areas within the 1836 Treaty waters could not be sampled at all during the fishing season due to staffing shortages (and the aforementioned hiring freeze). No estimates were made for Grand Marais (MI-7) or Au Train (MI-6). Estimates for offshore sites in Lake Superior (Stannard Rock and Big Reef) could not be made. In addition, clerks were directed to not take biological data from recreational anglers. During the early phases of the pandemic, concern over surface transmission of COVID-19 ruled out the possibility of biological data collection. Late in the fishing season, when biodata collection may have become a possibility, the decision was

made not to collect data, as it would be biased to potentially a single month. State-licensed recreational harvest of primary species and total recreational fishery effort is provided in Table 4, with the caveats that average weight is carried forward from 2019 and estimates are unavailable from some areas. These values should be interpreted with caution and are not comparable to past estimates that span a full fishing season. The Tribal Coordination Unit created estimates for the full year Lake Trout harvest based on the most recent 5-year monthly harvest patterns and used projected average weight from stock assessment models to compare total harvest to the harvest limits for 2020. The values in Table 4 for Lake Trout weight (lb) represent total harvest reported to the TFC, which includes hooking mortality.

Table 4. Total effort, number, and weight (pounds) of estimated State-licensed recreational harvest for both creel and charter anglers, by Lake Trout management unit in 1836 Treaty-ceded waters of the Great Lakes during the 2020 fishing season. Note text on page 11 above citing limitations of the 2020 creel program, which caused all of these estimates to only include a partial year.

Lake	Management Unit	Total effort (angler hours)	Lake Trout[a]		Walleye		Yellow Perch		Chinook Salmon		Coho Salmon	
			Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
Michigan	MM-123	205,491	8,860	63,240	6,072	11,537	29,568	11,827	2,925	46,508	77	377
	MM-4	109,442	12,862	69,345	0	0	6,497	2,599	835	13,277	146	715
	MM-5	94,105	9,126	52,726	0	0	0	0	6,554	104,209	2,157	10,569
	MM-67	401,167	26,046	161,292	181	344	31	12	23,376	371,678	7,477	36,637
Subtotal		810,205	56,894	346,603	6,253	11,881	36,096	14,438	33,690	535,672	9,857	48,298
Huron	MH-1	157,956	11,908	70,374	1,511	3,626	32,413	12,965	2,337	26,876	231	716
	MH-2	46,557	9,927	59,784	1,204	2,890	0	0	226	2,599	147	456
Subtotal		204,513	21,835	130,158	2,715	6,516	32,413	12,965	2,563	29,475	378	1,172
Superior	MI-5[b]	27,794	2,490	8,094	0	0	0	0	81	365	355	710
	MI-6[c]	17,032	4,288	15,509	0	0	96	29	64	288	565	1,130
	MI-7[d]	1,016	2,307	7,326	0	0	0	0	2	9	2	4
Subtotal		45,842	9,085	30,929	0	0	96	29	147	662	922	1,844
Grand Total		1,060,560	87,814	507,690	8,968	18,397	68,605	27,432	36,400	565,809	11,157	51,314

[a] Weight of Lake Trout harvest shown in the table includes hooking mortality and is a full-year estimate. Lake Superior data do not include Siscowets.

[b] Includes recreational harvest from entire unit for species other than Lake Trout (Lake Trout harvest is 1836 only); harvest from 1842 Treaty-ceded area was not removed.

[c] Missing harvest and effort for Au Train.

[d] No creel estimate, charter only is reported.

2. Lake Whitefish

Lake whitefish harvest by State-licensed commercial fishers was below the harvest limit in all shared Lake Whitefish management units in 1836 Treaty waters. Values reported in Table 5 includes harvest and effort associated with the principal gear used to target Lake Whitefish in the unit, in most cases trap nets. Catch of Lake Whitefish from small-mesh gill nets targeting chubs in 1836 Treaty waters, minimal in most years, was zero in 2020.

The largest monitored recreational fishery for whitefish historically occurred in the Grand Traverse Bay area (WFM-05). In 2011, the recreational harvest from Grand Marais (WFS-06) exceeded that from Grand Traverse Bay for the first time and that pattern has continued each year since. However, a creel survey was not conducted in Grand Marais in 2020, due to a staff vacancy and the aforementioned State hiring freeze. The other area in Lake Superior where recreational harvest of whitefish is common is Munising, but only 329 fish were estimated to have been taken recreationally in 2020. For a second consecutive year, a recreational creel was conducted in fall of 2020 at Muskegon (WFM-08) and the resulting harvest estimate (4,522 fish) was slightly lower than the estimate in 2019 (5,915 fish).

Table 5. Summary of State-licensed commercial Lake Whitefish harvest (pounds) and effort by Lake Whitefish management unit in 1836 Treaty-ceded waters of the Great Lakes for the 2020 fishing season.

Lake	Unit	Harvest	Effort[a]
Michigan	WFM-01	9,450	10
	WFM-06	5,722	75
	WFM-08	50,122	231
Subtotal		65,294	316
Superior	WFS-04[b]	10,110	32
	WFS-05	31,140	198
Subtotal		41,250	230
Grand total		106,544	546

[a] A purse seine is the principal gear type used by the State-licensed fisher to target whitefish in WFM-01 and effort represents the number of seine hauls. In all other units, fishing effort represents the number of trap-net lifts.
[b] Includes 1836 waters only.

B. Tribal commercial and subsistence fishing

Data in this section are as reported to the MDNR from the Chippewa Ottawa Resource Authority (CORA). The harvest values for 2020 have been reported as final. In 2015, Sault Tribe and the Grand Traverse Band removed the fisher identification numbers from their harvest data that is shared with the State and Federal governments. The claim was that the State and Federal government had violated a confidentiality clause of the Consent Decree. The State disagreed with that position as these identification numbers are specifically required by the Consent Decree to identify fishers from one year to the next. Despite numerous efforts by the State to find common ground with the Tribes to allow for reinstatement of the identification numbers, they continue to be withheld. Their removal prevents the State from 1) evaluating patterns in the fishery, 2) conducting detailed analysis on harvest at the level of the individual fisher, and 3) comparing Tribal catch reports to wholesale reports.

1. Lake Trout

In contrast to previous years, there were no bag limits in place for Lake Trout in Tribal gill-net fisheries conducted in 1836 Treaty waters, so the values in Table 6 below represent landed harvest only. Tribal harvest of Lake Trout was below established harvest limits in all management units, except for MM-4.

Table 6. Summary of preliminary Tribal commercial harvest (pounds) of lean Lake Trout by management unit in 1836 Treaty-ceded waters of the Great Lakes for the 2020 fishing season. Gill-net harvest includes that from small-mesh and large-mesh gill nets.

Lake	Unit	Trap-net harvest	Gill-net harvest	Total harvest
Michigan	MM-123	0	402,606	402,606
	MM-4	54	121,835	121,889
	MM-5	0	2,562	2,562
	MM-67	348	0	348
Lake total		402	527,003	527,405
Huron	MH-1	925	172,124	173,049
	MH-2	0	0	0
Lake total		925	172,124	173,409
Superior	MI-5	0	0	0
	MI-6	0	11,660	11,660
	MI-7	0	4,958	4,958
	MI-8	1,839	34,213	36,052
Lake total		1,839	50,831	52,670
Grand total		3,166	749,958	753,124

2. Lake Whitefish

Lake whitefish harvest by Tribal commercial fishers was below the approved harvest limit or HRG in all management units in 2020. In management units that are not shared, the Tribes manage the fishery in accordance with the Tribal Plan and no penalty is incurred for overharvest. In shared zones, overharvest penalties are incurred if a party exceeds the harvest limit by greater than 25%, although this provision of the Decree has never been triggered. In WFM-01, the Little Traverse Bay Bands licensed a fisher to conduct a gill-net assessment fishery in Big Bay de Noc. This effort began in 2017 and is permitted through the end of the 2000 Consent Decree. The fisher is limited to 6,000 ft of gill net per day and is subject to onboard monitoring by Tribal personnel for biological data collection. Summaries of these efforts are periodically provided to the TFC.

Table 7. Summary of preliminary Tribal commercial Lake Whitefish harvest (pounds) and targeted effort (trap-net lifts or 1,000 feet of large-mesh gill net) by management unit in 1836 Treaty-ceded waters of the Great Lakes for the 2020 fishing season. Minor harvest from small-mesh gill nets is included in gill-net harvest, but not effort.

		Trap Nets		Gill nets		Total
Lake	Unit	Harvest	Effort	Harvest	Effort	harvest
Michigan	WFM-01	163,813	1,309	7,474	67	171,287
	WFM-02	15,700	56	33,790	788	49,490
	WFM-03	38,856	396	65,875	2,075	104,731
	WFM-04	6,954	64	31,726	706	38,680
	WFM-05	842	5	8,327	254	9,169
	WFM-06	0	0	756	4	756
	WFM-07	36,070	11	0	0	36,070
	WFM-08	0	0	0	0	0
Lake totals		262,235	1,841	147,948	3,894	410,183
Huron	Northern	81,175	531	41,497	2,082	122,672
	WFH-05	9,280	24	0	0	9,280
Lake totals		90,455	555	41,497	2,082	131,952
Superior	WFS-04	0	0	0	0	0
	WFS-05	0	0	24,996	629	24,996
	WFS-06	0	0	947	38	947
	WFS-07	141,030	236	180,179	4,074	321,209
	WFS-08	57,991	460	27,649	530	85,640
Lake totals		199021	696	233771	5271	432,792
Grand totals		551,711	3,092	423,216	11,247	974,927

3. Walleye

Targeted commercial fishing for Walleye is permitted in and around Grand Traverse Bay and the Manitou Islands, in northeastern Lake Michigan (Naubinway to Gros Cap), and around St. Martin's Bay and the Les Cheneaux Islands in Lake Huron. There are gear, season, depth, size, and area restrictions on the various Walleye fisheries, though no harvest limits for the fishing season are set forth in the Consent Decree. In August 2018, the Consent Decree Parties agreed to a stipulation that allowed higher daily bag limits for Walleye in particular grids and time periods in all three lakes. The specifics of the stipulation can be reviewed from the TCU website: https://www.michigan.gov/dnr/0,4570,7-350-79136_79236_84834_84838-463908--,00.html

Walleye are occasionally harvested as incidental catch; thus, sometimes there is harvest with no effort listed for a unit because the fishers were targeting other species. As is typically the case, the largest reported Walleye harvest in 2020 occurred in Lake Huron unit MH-1 (33,473 pounds).

Table 8. Summary of preliminary Tribal commercial Walleye harvest (pounds) and targeted effort (trap-net lifts or 1,000 feet of small or large mesh gill net) by management unit in 1836 Treaty-ceded waters of the Great Lakes for the 2020 fishing season.

		Trap nets		Gill nets		Total harvest
Lake	Unit	Harvest	Effort	Harvest	Effort	
Michigan	MM-123	85	0	3,121	27	3,206
	MM-4	0	0	971	2	971
Lake totals		85	0	4,092	29	4,092
Huron	MH-1	1,560	0	31,913	1,094	33,473
Superior	MI-7	0	0	2	0	2
	MI-8	124	0	1,815	19	1,939
Lake totals		124	0	1,817	19	1,941
Grand totals		1,684	0	37,822	1,142	39,506

4. Yellow Perch

Commercial fisheries for Yellow Perch exist in Lake Michigan around Grand Traverse Bay and the Manitou Islands, around the Beaver Islands, and near the northeastern shore. A Yellow Perch fishery also exists in Lake Huron around the Les Cheneaux Islands. These fisheries have gear, depth, area, season, and size restrictions; though no harvest limits for the fishing season are set forth in the Consent Decree. Yellow Perch harvest was lower in 2020 than in recent years. The largest harvest in 2020 was in MM-123 where 2,472 pounds were reported (Table 9). Yellow Perch are occasionally harvested as incidental catch, which is why there may be harvest, but no effort, listed for a unit because the fishers were targeting other species.

Table 9. Summary of preliminary Tribal commercial Yellow Perch harvest (pounds) and targeted effort (trap-net lifts or 1,000 feet of large-mesh and small-mesh gill net) by management unit in 1836 Treaty-ceded waters of the Great Lakes for the 2020 fishing season.

		Trap nets		Gill nets		Total
Lake		Harvest	Effort	Harvest	Effort	Harvest
Michigan	MM-123	60	0	2,412	260	2,472
	MM-4	0	0	1,018	76	1,018
Lake totals		60	0	3,430	336	3,490
Huron	MH-1	0	0	1,472	260	1,472
Superior	MI-8	0	0	28	0	28
Grand totals		60	0	4,930	596	4,990

5. Chinook and Coho Salmon

Tribal commercial fisheries for salmon exist in northeastern Lake Michigan near shore from McGulpin Point south to Seven Mile Point, around the tip of the Leelanau Peninsula, and in Suttons Bay. Fisheries in northern Lake Huron exist in St Martin Bay, and near shore from Cordwood Point to Hammond Bay Harbor light. There is no target fishery for salmon in Lake Superior, but gill-net fishers can harvest these species as incidental catch. Fishing is restricted by season, gear, depth, and area; though no harvest limits are set. As in most years, the targeted Chinook Salmon fishery in MH-1 dominated the harvest in 2020 (Table 10). In recent years, Coho Salmon have been primarily harvested from Lake Superior, and in 2020 Coho Salmon harvest was 166 lb in MI-7 and 2,562 lb in MI-8.

Table 10. Summary of preliminary Tribal commercial Chinook Salmon harvest (pounds) and targeted effort (trap-net or 1,000 feet of gill net) by management unit in 1836 Treaty-ceded waters of the Great Lakes for the 2020 fishing season.

		Trap nets		Gill nets		Total
Lake	Unit	Harvest	Effort	Harvest	Effort	harvest
Michigan	MM-123	0	0	786	0	786
	MM-4	0	0	5,396	4	5,396
Lake Total		0	0	6,182	4	6,182
Huron	MH-1	0	0	88,851	1,319	88,851
Grand totals		0	0	95,033	1,323	95,033

6. Subsistence fishing

Subsistence fishing as defined in the Consent Decree means taking fish for personal or family consumption and not for sale or trade. Tribal subsistence fishing is allowed in all 1836 Treaty-ceded waters with some exceptions. These exceptions include 1) no gill nets in Lake Trout refuges; 2) no nets within 100 yards of a break wall or pier; 3) no nets within a 0.3-mile radius of certain stream mouths (listed in section IV.C.8 of the Consent Decree); 4) no prevention of fish passage into and out of streams that flow into 1836 Treaty waters; 5) no gill nets or Walleye possession in portions of the Bays de Noc during March 1 - May 15; and 6) no gill nets within 50 feet of other gill nets. Fishers are limited to 100 pounds aggregate catch of all species in possession, and catch may not be sold or traded. Subsistence fishers may use impoundment gear, hooks, spears, seines, dip nets, and gill nets. Gill netting is limited to one 300-ft or smaller net per vessel, per day, though in the St. Marys River a gill net may not exceed 100 ft. All subsistence gear must be marked clearly with floats and Tribal identification numbers. Tribal fishers must obtain subsistence licenses issued from their respective Tribe and a permit is required when subsistence fishing with a gill net or impoundment net. The Consent Decree states that MDNR is to be provided with copies of all subsistence licenses and permits and that data from the subsistence harvest reports of Tribal fishers shall be compiled by CORA and provided to the Parties within six (6) months. Final data for 2020 has been reported by the Tribes for subsistence gill netting (Table 11), and all other gears (Table 12).

Table 11. Summary of Tribal subsistence harvest, by species (round pounds), with gill nets for each management unit for the 2020 fishing season.

Species / Unit	MH-1	MM-123	MM-7	MI-5	MI-6	MI-7	MI-8	St. Marys River	Grand Total
Bass	2	128	0	0	2	0	0	0	132
Burbot	52	46	0	0	24	0	10	0	132
Bullhead	0	18	0	0	0	0	0	0	18
Brown Trout	0	9	0	0	189	0	0	2	201
Catfish	0	9	0	0	0	0	0	0	9
Carp	0	110	0	0	0	0	0	100	210
Drum	0	0	1	0	0	0	0	0	1
Cisco	0	0	0	0	69	0	14	113	196
Lake Trout	28	1,154	0	38	774	0	38	0	2,032
Menominee	275	0	0	0	0	0	2	5	282
Northern Pike	133	858	0	5	21	0	42	465	1,524
Rainbow Trout	0	1,156	284	0	431	79	62	129	730
Rock Bass	11	21	0	0	0	0	0	0	31
Salmon	97	253	0	60	1,129	272	575	12	2,396
Splake	0	0	0	0	239	0	0	0	239
Sucker	6	78	7	0	229	0	56	124	500
Walleye	116	5,024	25	0	8	0	10	631	5,816
Whitefish	8	462	0	0	489	0	294	48	1,300
Yellow Perch	173	2,145	0	0	0	0	6	35	2,360
TOTAL	899	103	3,604	351	1,110	11,470	317	1,664	19,518
Gill net lifted (ft)	14,350	87,225	900	600	13,970	600	12,750	7,650	138,045

Table 12. Summary of Tribal subsistence harvest (round pounds) via snagging, traditional hook and line, tip-ups, dip nets, and spears (combined) for each management unit by species for the 2020 fishing season.

Species / Unit	MH-1	MI-6	MI-7	MI-8	MM-123	St. Marys River	Total
Atlantic Salmon	21	4	0	0	0	128	153
Bass	0	0	0	0	174	75	249
Burbot	12	0	0	0	0	7	18
Brown Trout	0	0	0	18	0	0	18
Catfish	0	0	0	0	0	3	3
Carp	0	0	0	0	0	107	107
Drum	0	0	0	0	0	5	5
Gar	0	0	0	0	0	24	24
Cisco	76	0	0	0	0	179	255
Lake Trout	792	38	90	0	96	374	1,390
Menominee	22	0	0	6	0	0	28
Northern Pike	79	0	0	24	353	1,335	1,791
Rainbow Trout	16	0	0	126	0	32	47
Salmon	472	597	33	477	81	650	2,311
Smelt	0	0	0	25	0	5	30
Splake	34	0	0	41	0	0	76
Sucker	0	0	0	0	0	10	10
Walleye	74	136	0	14	762	2,755	3,743
Whitefish	0	25	460	10	0	685	1,180
White Bass	0	0	0	0	0	6	6
Yellow Perch	154	0	0	1	916	1,272	2,343
Totals	1,753	799	583	744	2,398	7,651	13,928

IV. Fisheries Contacts for 2000 Consent Decree

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LAW ENFORCEMENT

I. Introduction and Staffing

The Great Lakes Enforcement Unit (GLEU) is housed within the MDNR Law Enforcement Division (LED). The Unit is tasked with the monitoring and enforcement of aquatic species commercialization within the state as well as other Great Lakes protection issues.

Areas of oversight include:

- 2000 Consent Decree
- State commercial fishery
- The wholesale fish industry
- Michigan's bait industry (wholesale, retail, and harvesters)
- Transportation and commercialization of aquatic invasive species
- Coastal zone management
- General marine enforcement
- Homeland security

The 2000 Consent Decree details the allocation, management, and regulation of fishing in 1836 Treaty waters. The Decree also establishes a Law Enforcement Committee (LEC) as the primary body for consultation and collaboration on enforcement issues pertaining to the fishery in 1836 Treaty Waters of the Great Lakes. The LEC is composed of the chief law enforcement officer or designee of each Tribe and the chief law enforcement officer or designee of the MDNR.

Under the Decree, each of the Tribes and the State shall commit one position as available to work with a mutual-aid enforcement team pool each year. The team shall engage in group patrols at least eight times per year, and those patrols are scheduled by the LEC. The State participated in all eight mandated patrols. The LEC is required to meet four times a year with the first meeting taking place in January where each agency's annual summary report is reviewed.

This report provides a summary of enforcement activity for the MDNR Law Enforcement Division GLEU for 2020.

Personnel

In 2020, GLEU was staffed by nine Commercial Fish Specialists (CFS), two Commercial Fish Investigators (CFI), two 2nd/Lt. Unit Supervisors and one 1st/Lt. Unit Supervisor.

Also, in 2020 the Great Lakes Enforcement Unit (GLEU) and the Special Investigations Unit (SIU) were separated into their own Districts. GLEU is now District 25 and SIU is now District 24.

COVID-19 Pandemic Impact

On 02/28/2020, Michigan Governor Gretchen Whitmer announced that the State of Michigan was activating its emergency operations center to prepare for potential COVID-19 cases. The first two cases of COVID-19 were confirmed in Michigan on 03/10/2020 and a state of emergency was declared.

The following months of 2020 resulted in an escalating number of COVID-19 cases in Michigan and the issuance of various Executive Orders that affected both the personal lives and businesses of the people of Michigan. The commercial fishing industry was deemed essential and not shut down due to the pandemic; however, the industry suffered due to declined demand for their catch worldwide.

COVID-19 continued to impact the lives and livelihoods of individuals in Michigan, the United States, and the rest of the world for the remainder of 2020. Adjustments were made by GLEU officers to adapt to new safety protocols and additional work priorities during the pandemic while continuing to serve the people of the State of Michigan in its traditional role.

II. Equipment/Maritime Activity

For the 2020 season, the Great Lakes Enforcement Unit's vessels were operated a total of 698.6 sea service hours. A total of 162 patrols were conducted along with an additional 15 patrols on vessels from outside of the Unit. A total of 7,138.43 gallons of fuel was purchased for a total cost of $18,546.03.

The Unit's larger vessels and specialized equipment has always been an asset to the local districts and in 2020 our officers were requested to render enforcement and security assistance at the following maritime events:

- Security Detail for Peace March at Belle Isle
- Top O' Michigan Hydroplane Races
- Presidential Security Detail for President Trump at Marinette Marine
- Hot Boat Weekend Hardy Dam on Muskegon River
- Security Detail for President Joe Biden (Presidential candidate then) at Belle Isle
- Mighty Mac Swim at the Straits of Mackinac

Many of the special events, trainings, and meetings GLEU normally participates in were cancelled or conducted online due to the COVID-19 pandemic in 2020.

Table 13. District 25 Metrics – Annual Totals 2020

OBJ #	DIRECTIVE & STRATEGY	COMPLETED		QUANTITY
		YES	NO	
1.1.2	Conduct dedicated patrols to meet targeted resource protection goals			347
1.2.1	Conduct joint enforcement investigations, operations, and training sessions			39
1.2.2	Participate in multi-agency work groups, committees and conferences that focus on the protection of natural resources			28
1.2.3	Regularly share information and updates with law enforcement partners			42
1.4.2	Use the Records Management System to improve and track equipment maintenance and use	YES		---------
2.1.4	Expand engagement and interaction with consumptive and non-consumptive users			4
3.1.4	Expand engagement and interaction with users through attendance and presentations at user group events			6
4.1.1	Maintain current lists of constituent groups and key partners in each district and engage with them frequently			14
4.2.1	Develop performance objectives to ensure collaboration with conservation and law enforcement partners in each district and section			66
4.3.2	Collect information and report on collaborative efforts within each district			205
5.3.1	Use performance management to identify and implement areas for professional growth and training	YES		--------
	2020 ANNUAL TOTALS			751

III. Enforcement – Complaints and Violations

Commercial fish operations for the State include State licensed commercial fishers, wholesale fish dealers, and bait dealers. Tribal fishing activity includes Tribally licensed commercial fishers, subsistence fishing, and Tribal recreational fishing.

Inspections of State and Tribal fishing include the following:

- On-the-water vessel boarding
- Dockside vessels and harvest
- Wholesale fish processing facilities
- Retail markets

- Fish haulers
- Commercial fishing gear and nets (gill, trap, seine, and trawl)
- Subsistence fishing harvest and nets

Investigations and patrols focus on illegal harvest, illegal commercialization, net marking compliance, unattended and abandoned fishing gear, false reporting, and reporting compliance.

Table 14. 2020 Summary of LED Actions Regarding State Commercial Fishing Activities.

	Contacts	Complaints: Delinquent Reporting	Complaints: Other	Inspections	Arrests	Warnings: Delinquent Reporting	Warnings: Other
Bait Dealers	57	1	6	35	0	3*	3
Commercial Fishing	309	4	14	338	0	4*	3
Wholesale	147	7	1	38	0	163*	2

*Due to the COVID-19 pandemic and the governor's emergency orders many facilities were closed or had reduced employees. Reporting capabilities were impacted.

Table 15. 2020 Summary of LED Actions Regarding Tribal Fishing Activities.

	Contacts	Complaints	Inspections	Arrests	Warnings	Referrals
1836 Treaty	496	15	142	4	7	2
1842 Treaty	0	0	3	0	0	1

IV. Aquatic Invasive Species and Aquatic Disease

The GLEU is the primary AIS Law Enforcement Agency in the State of Michigan charged with the handling of all complaints and violations. Its goal is the monitoring of known pathways and vectors, preventing the entry of AIS into the Great Lakes Basin Region.

The unit maintains seats on the following AIS committees within the DNR and EGLE:

- AIS CORE Team
- DNR Invasive Species Team Leads
- DNR OIT (Organisms in Trade) Committee
- AIS Task Force
- RIPPLE (Reduce Invasive Pets and Plants Escapes) Committee
- Invasive Species Education/Outreach and Boater Workgroup
- Michigan Invasive Species Coalition
- State of Michigan Invasive Species Program

The GLEU also participates with the following AIS Great Lakes Basin Organizations and holds committee seats with some:

- Great Lakes Fisheries Commission Law Enforcement Committee (*Hold Committee Seat)
- Great Lakes Panel on ANS (Aquatic Nuisance Species)
- Great Lakes Detector of Invasive Aquatics in Trade (GLDIATR) Advisory Committee (*Hold Committee Seat)
- Michigan Sea Grant
- Asian Carp Task Force

The GLEU provides training to other law enforcement agencies as well as outreach programs for the public in regarding the identification, detection, and interdiction of aquatic invasive species.

Table 16. 2020 Summary of LED Actions Regarding Aquatic Invasive Species.

	Contacts	Complaints	Inspections	Arrests	Warnings	Presentations	Trainings
Aquatic Invasive Species	829	4	36	0	12	1	3

V. Training, Education, and Public Outreach

GLEU officers are involved in training and education efforts in water rescue operations, underwater antiquity protection, treaty fishing education, commercial fishing net identification and safety, and aquatic invasive species. In addition, the GLEU provides training and expertise in many of these areas to LED academy recruits and to field officers around the State. Unit officers are also members and LED representatives on various committees and groups associated with Great Lakes fisheries protection and maritime safety and attend regular meetings.

Agencies and groups provided training and/or education by unit officers include the following:

- Prosecuting Attorney Association of Michigan
- Oceana County Sheriff's Department
- Mason County Sheriff's Department
- Lake County Sheriff's Department
- Newago County Sheriff's Department
- Ludington Police Department
- Mason/Oceana County Water Safety Coalition
- United States Coast Guard Stations
- Northern Michigan University Regional Police Academy
- Detroit Walleye Federation
- Becoming and Outdoors Woman (BOW)

Committees and groups with GLEU officer representation include the following:

- Lakes Huron, Michigan, Superior, Erie & St. Clair Citizens Fishery Advisory Committees
- Canadian Council on Invasive Species
- Michigan Sea Grant Workshop – Saginaw Bay
- Underwater Cultural Resource Conference
- Great Lakes Panel on Aquatic nuisance Species
- Underwater Salvage Committee
- NMU Regional Police Academy Interview Panel
- RIPPLE (Reduce Invasive Pet & Plant Escapes)
- Lake Huron Fisheries Workshop – Open Water Webinar
- "Clean Boats, Clean Waters" Aquatic Invasive Species Initiative
- Quarterly Chippewa Ottawa Resource Authority Law Enforcement Committee
- Southeast Lake Michigan Regional Fisheries Workshop
- North American Invasive Species Management Association
- Michigan Aquaculture Association
- Various United States Coast Guard meetings
- Various Port Security and Maritime Safety committee meetings
- Aquatic Nuisance Species Task Force
- 2020 Consent Decree State Negotiation Core Team
- Citizens Waterfowl Advisory Committee
- On the Doorstep of the Great Lakes, Tench
- Great Lakes Fisheries Commission Law Enforcement Committee
- Various local sport fishing and sportsmen clubs across the State

Many of the meetings attended by GLEU officers during 2020 were done virtually through online meetings due to the COVID-19 pandemic.

VI. Assistance to Other Agencies and Districts

The GLEU often works with officers from other agencies and jurisdictions and routinely assists Conservation Officers from local Districts. In addition to the numerous land-based requests for assistance, GLEU officers responded to and/or assisted in 8 incidents on the Great Lakes involving water rescue, vessel assist, and drowning victim recovery.

VII. Commercial Fishing Net/Vessel Entanglement and Net Removal:

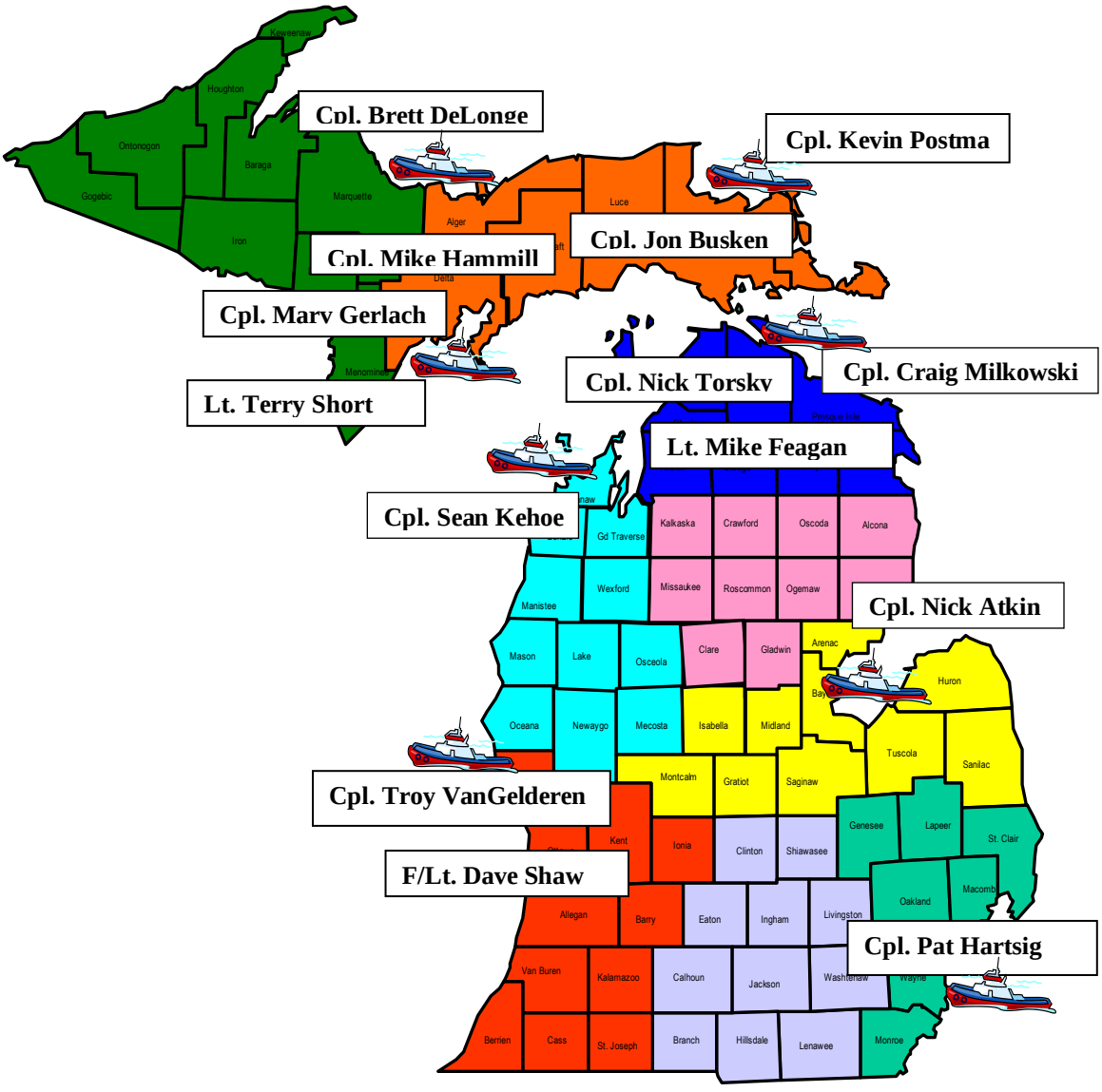
Commercial fishing nets can pose a potential maritime navigational hazard to the boating public. GLEU officers dedicate a large amount of marine safety enforcement effort to monitoring commercial nets for safety markings and responding to vessel/net entanglement complaints. Unit officers also search for and remove lost/abandoned nets and often seize

improperly marked or illegal nets. In 2020, GLEU officers removed or assisted in the removal of 12 nets (4 trap nets and 8 gill nets). The amount of gill net removed totaled over 5,000 feet.

Table 17. Additional GLEU Statistics 2016 – 2020.

	2020	2019	2018	2017	2016
GLEU Assists to Other LED Districts	65	59	29	27	Not Recorded
Marine Hours Dedicated to Net Enforcement	1,379	675	739	337	368
Net Entanglement Complaints Received by GLEU	12	Not Recorded	Not Recorded	Not Recorded	Not Recorded

Michigan Department of Natural Resources
Great Lakes Enforcement Unit



VIII. Law Enforcement Contacts

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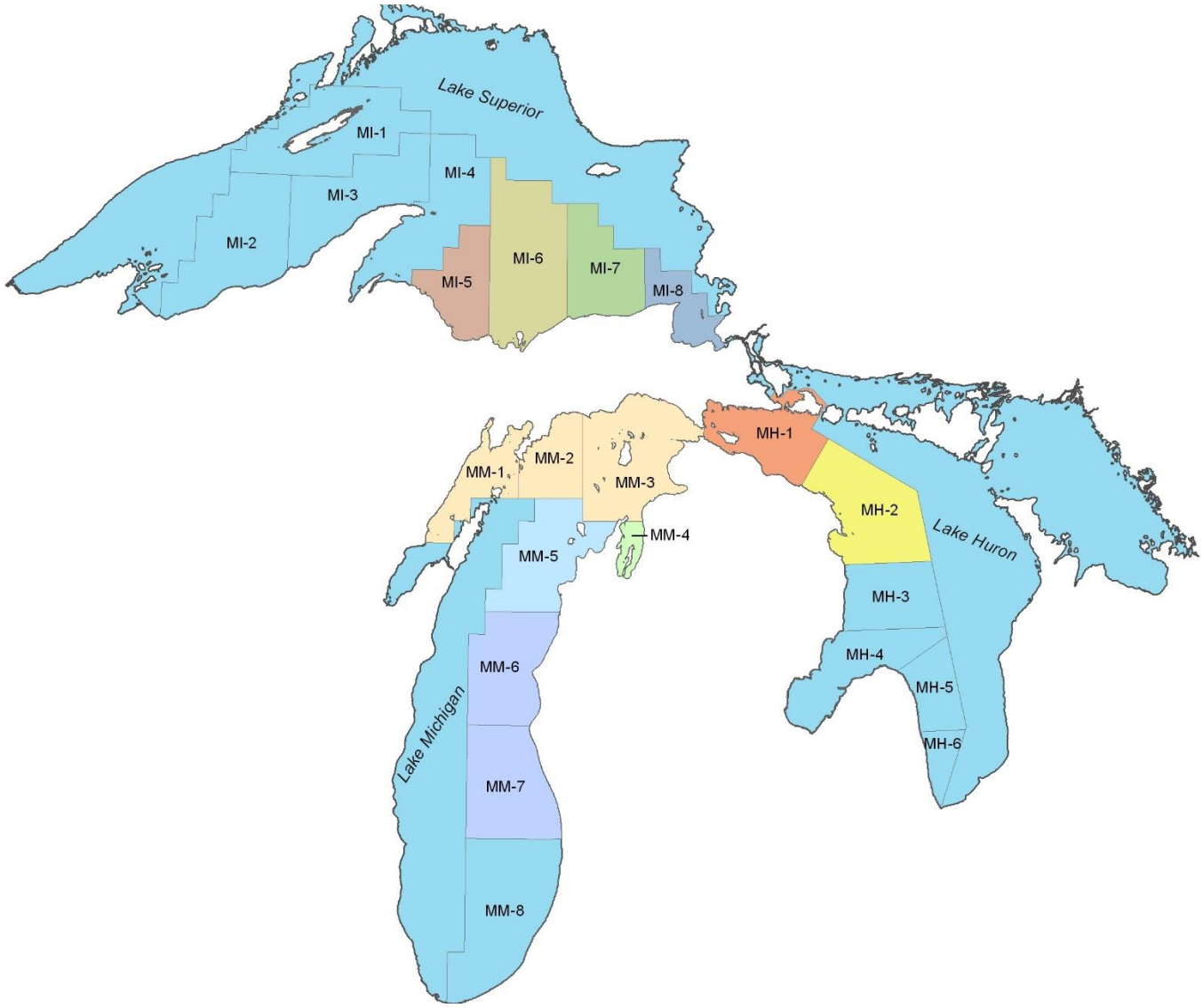

Figure 1. Lake Trout Management Units for Lakes Superior, Michigan and Huron.

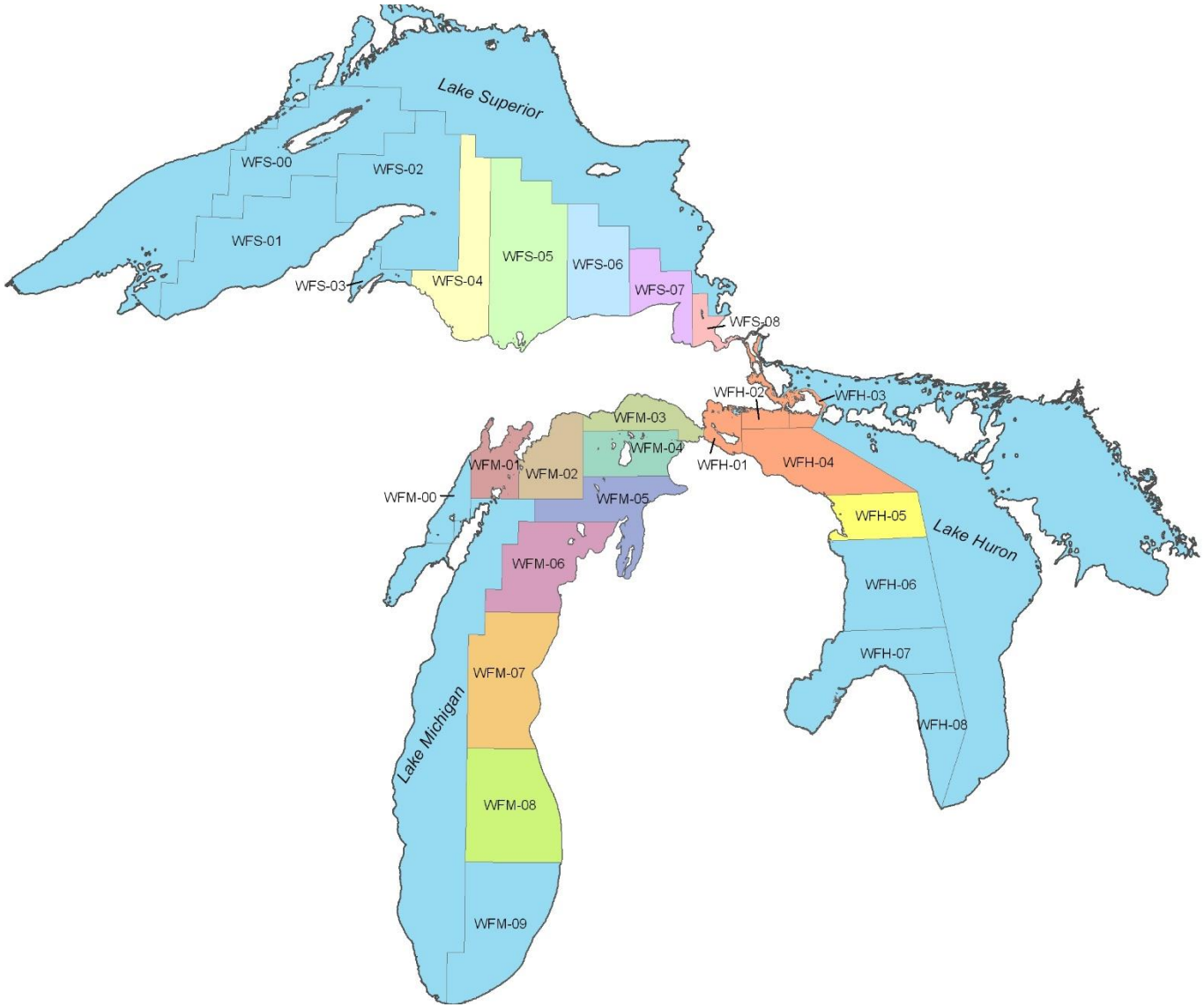

Figure 2. Lake Whitefish Management Units for Lakes Superior, Michigan and Huron.