

LAKE MANAGEMENT STATUS REPORT

Date of Report: 2/17/2023 **Fisheries Manager:** Rob Hilsabeck
District No.: 4 **LAKE NAME:** McMaster Lake **County:** Knox
Water No.: 2269 **Ownership:** State **Acreage:** 165

1. All Fish - 2 pole and line fishing only.

Large or Smallmouth Bass:

- Protected Slot Length Limit from 14 to 18 inches with 3 fish daily harvest limit.

Bluegill or Redear Sunfish:

- 25 fish Daily Harvest Limit.

White, Black, or Hybrid Crappie:

- 25 Fish Daily Harvest Limit with no more than 10 fish greater than or equal to 10 inches.

Pure Muskellunge:

- Harvestable slot from 36 to 42 inches, and 48 inch minimum length limit with 1 fish daily harvest limit.

Channel Catfish:

- 6 fish daily harvest limit.

Walleye, Sauger, or Hybrid Walleye:

- 3 fish daily harvest limit.

Recreational Use Restrictions:

- Waterfowl Refuge or Hunting Area (all use other than waterfowl hunting prohibited from 14 days prior to duck season through the end of the central zone Canada goose season). All live bait greater than 8 inches must be rigged with a quick set rig.

2.

- Spring trapnet survey was completed on 4/15/2022.

- Spring DC boat electrofishing survey was completed on 5/19/2022.

- Phragmites near the boat ramp and access was treated with 2.5 gallons of Aquaneat herbicide by gas powered sprayer on 8/25/2022.

-Little Grassy hatchery stocked 3000 channel catfish at 6.8 inches on 8/1/2022.

-Jake Wolf hatchery stocked 9,180 walleye at 1.5 inches on 5/31/2022.

-Jake Wolf hatchery stocked 143 muskie at 12.5 inches on 9/28/2022.

-Lake McMaster was used as an IHSA Bass Fishing Sectional site on 5/5/2022.

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Black Crappie													LMP Obj
Stock#		76	93	93	100	133	122	72	69	13	36	15	
PSD		93	76	65	49	63	86	58	77	92	94	53	30-50
RSD9		36	53	24	22	35	43	32	35	77	89	53	
RSD10		5	25	9	6	17	25	13	19	62	61	40	20-40
RSD11		3	3	1	1	3	9	4	10	23	22	20	5-10
Wr > 8"		96	99	94	88	85	87	84	89	87	84	96	90-100
CPUE f/m		0.16	0.6	1	0.7	0.4	0.3	0.1	0.3	0.3	0.4	0.2	
CPUE f/n		2.3	2.7	2	2.4	3.5	5.2	3.8	1.9	--	0.6	0.6	
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Channel Catfish													LMP Obj.
Stock#		3	4	11	6	26	24	9	7	2	30	32	
PSD		100	75	73	83	100	96	100	86	100	93	100	
RSD18		100	25	73	67	81	96	100	86	100	87	100	10-20
Wr		106	99	99	108	111	112	109	108	104	124	103	90-110
CPUE f/m		0	0.03	0.07	0.03	0	0.01	0.02	0.03	0.02	0.01	0.02	
CPUE f/n		0.11	0.11	0	0.2	1.1	1.2	0.4	0.2	--	1.5	1.6	
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Walleye													LMP Obj.
Stock#		24	28	31	26	66	54	33	48	0	17	44	
PSD		75	61	90	89	92	94	100	100		100	100	50-60
RSD18		42	43	65	54	67	69	79	83		100	89	20-40
WR		85	88	98	91	88	90	94	91		88	86	90-110
CPUE f/m		0.09	0.11	0.05	0.12	0.09	0.25	0.1	0.1	0	0.1	0	
CPUE f/n		0.6	1.1	1.6	1	2.3	1.9	1.5	2.1	--	0.9	2.2	
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Mue													
Stock#		21	22	22	26	47	19	12	7	0	13	4	
PSD		100	96	100	96	98	100	100	100		100	50	
RSD42		14	18	9	23	4	26	17	29		8	0	
Wr		82	70	87	85	83	82	86	86		90	90	90-110
CPUE NN		0.75	1.2	1.1	1.6	2	1	0.8	0.4	--	0.7	0.2	.3/netN

4. In 2022, spring trapnetting and spring D.C. electrofishing were used to survey the fish population. The largemouth bass population was evaluated by 154 bass from electrofishing.

The largemouth bass population appears to be defined by a high percentage of fish from 8 to 16 inches in length with good average Relative weights. In 2017, the bass regulation for McMaster Lake was changed from a 3 fish daily harvest limit with only 1 fish greater than or equal to 15 inches, to a protected slot length limit from 14 to 18 inches with 3 fish daily harvest limit. The goal of the new bass regulation is to increase the density of the bass population from 14 to 18 inches.

The 5 year averages from 2011 to 2015 were RSD15 of 23, RSD16 of 15, and RSD18 of 5. And a 5 year average CPUE 1.6 fish per minute over 8 inches with pulse D.C. eletrofishing.

The 2022 electrofishing survey showed a decline in the RSD15 through RSD 18 values. The 2022 values were: PSD of 60, RSD15 of 8, RSD16 of 4 and the RSD18 of 2. The average body condition was at a Wr of 93. Future surveys will need to evaluate further why the bass population has not started to restructure into the 14 to 18 inch size range.

The goal of the protected slot length limit is to create a high density bass population that is composed of fish large enough to be efficient predators upon the panfish and gizzard shad population. The benefit to bass anglers will be more fish surviving past 15 inches to catch, and for the anglers wanting to harvest bass will be the opportunity to still harvest fish under 14 inches.

The online IFISH tournament registration and result system was started in 2015. 5 bass tournaments and 1 muskie tournament were held on Lake McMaster in 2022. The tournament results showed these anglers spent 638 hours in 2015, 520 hours in 2016, 352 hours in 2017, 196 hours in 2018, 400 hours in 2019, 572 hours in 2020, 308 hours in 2021, and 786 hours in 2022 on McMaster Lake. They reported 139 legal fish in 2015 for .22 fish per angler hour. They reported 51 legal fish in 2016 for .10 fish per angler hour. They reported 99 legal fish in 2017 for .28 fish per angler hour. They reported 132 legal fish in

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2018 for .67 fish per angler hour. They reported 140 legal fish in 2019 for .35 fish per angler hour. They reported 145 legal fish in 2020 for .25 fish per angler hour. They reported 121 legal fish in 2021 for .39 fish per angler hour. They reported 224 legal fish in 2022 for .28 fish per angler hour. In 2021 and 2022, Lake McMaster was used as an IHSA High School Bass Fishing Sectional Site.

The bluegill population was sampled by 127 fish in the spring electrofishing survey. The current bluegill population is rated as good with the larger fish up to 8.3 inches in length. This population is of moderate density and in good body condition with a Wr average of 100.

The redear sunfish population was sampled by 61 fish in the spring electrofishing survey. The current redear population is rated as very good with the larger fish up to 11.1 inches in length. This population is of low density and in excellent body condition with a Wr average of 116. The redear sunfish population started to show very good growth and increases in the size structure at about the same time that zebra mussels were documented in 2021 in McMaster Lake.

In 2017, the bluegill and redear sunfish regulation was changed from a 10 fish daily harvest limit to a 25 fish daily harvest limit. This change will allow anglers the ability to harvest more bluegill and redear sunfish per daily visit to Snakeden Hollow SFWA waters.

The black crappie population has had an average rating in recent years. The 5 year averages from 2011 to 2015 were an RSD10 of 14 for black crappie. In 2017, the crappie regulation was changed from a 5 fish daily harvest limit, to a 25 fish daily harvest limit with no more than 10 fish greater than or equal to 10 inches. The goal of the new regulation is to allow the harvest of more of the slower growing black crappie, while maintaining and promoting the population structure of crappie over 10 inches in length.

In 2022, the black crappie population was sampled by 15 fish in the spring electrofishing survey. The PSD value was a 53, RSD9 of 53, RSD10 of 40 and RSD11 of 20. The average WR value was

96. The RSD 10 and RSD 11 values showed a marked increase in 2020 and have stayed high thru 2022. The new regulation will continue to be evaluated to these indices.

The walleye population was sampled by 44 fish in spring trap nets in 2022. The current walleye population is rated as good with the larger fish up to 27.3 inches in length. The CPUE for trapnets was at 2.2 fish per net night in 2022. This population is of low density and in good body condition with a Wr average of 86. No walleye were stocked in 2015 or in 2016, but 8,032 were stocked in 2017, 11,160 were stocked in 2018, 8,351 were stocked in 2019, 8,090 were stocked in 2020, 13,628 in 2021, and 9,180 at 1.5 inches long in 2022.

Only a total of 4 muskie were sampled by the spring trapnet survey in 2022. These fish ranged from 28.5 to 39.4 inches long. The body condition of these fish was at an average Wr of 90. The sample was composed of 3 males and 1 female. In 2019, 1 of the females had a PIT tag from a historical tagging event. She was originally tagged on 4/3/2006 at a length of 37 inches and 13.5 pounds. On 4/16/2019 she was recaptured at a length of 43.7 inches long and 21.9 pounds. She grew approximately .5 inches and .65 pounds per year over those 13 years.

In 2017, the muskie harvest regulation was changed from a 1 fish daily harvest limit over 48 inches, to a harvestable slot from 36 to 42 inches, and 48 inch minimum length limit with 1 fish daily harvest limit. This regulation is an attempt to allow anglers to reduce the density of very slow growing male muskie in McMaster Lake. The following data helps explain the current male and female muskie growth rate in McMaster Lake.

Muskie have been PIT tagged since 2002 in Lake McMaster. The 2015 fish recaptures showed that males grew on average .52 inches per year and .5 lbs per year which was based on 3 fish at least 13 years old each. Females grew on average .84 inches per year and .78 lbs per year which was based on 4 fish at least 13 years old each.

The 2016 fish recaptures showed that males grew on average .53 inches per year and .42 lbs per year which was based on 16 fish at least 13 years old each. Females grew on average .3 inches

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per year and .58 lbs per year which was based on 2 fish at least 13 years old each. In 2016 the average Wr for male muskie(29) over 36" was 77 and the average Wr for female muskie(7) over 36" was 85. From 16 PIT tagged male muskie, the length range was 37.5 to 42.3 inches long for fish 13 to 17 years old. 58% (22/38 fish) of the males were from 36 to 40 inches in length. While only 11% (1/9 fish) of the females were from 36 to 40 inches in length. In 2017, only 3 male recaptures were collected.

137 muskie at 11.9 inches in length were stocked in 2015. No muskie were stocked in 2016, 2017 or 2018. Jake Wolf hatchery stocked 136 muskie at 13.5 inches on 9/18/2019. A triennial stocking is now scheduled to maintain a moderate density of healthy muskie.

The online IFISH tournament registration and result system was started in 2015. 1 muskie tournament was held on Lake McMaster in 2022. The tournament results showed these anglers spent 198 hours in 2022 and caught 2 fish for a catch rate of .01 fish per hour.

The channel catfish population was sampled by 32 fish in the 2022, spring trap net survey. The current channel catfish population is rated as good with the larger fish up to 28.7 inches in length. This population is of moderate density and in good body condition with a Wr average of 103. Little Grassy hatchery stocked 3,000 fish at 6.8 inches in 2022. An annual stocking of non-vulnerable channel catfish has occurred in the recent past. These stockings have established a moderate density population, and the stocking can be adjusted to an every other year stocking starting in 2021.

4 bluegill x redear hybrids and were also sampled in 2022. They are present in a low density population in McMaster Lake.

Recommended Lake Management Activities with Rationale for Implementation:

Supplemental stocking is required for the following species due to no natural recruitment currently occurring in McMaster Lake.

Walleye: 6700/year at 2 inches which is 50/acre.
Muskie: 140/every third year at 12 inches which is 1/acre.
Channel Catfish: 1500 every other year at 8 inches which is 10/acre.

Biological Surveys - Conduct annual surveys to measure trends in fishery population dynamics, angling regulations and progress toward management goals. In the spring, utilize D.C. electrofishing to sample a target number of at least 100 stock-size largemouth bass and the other sportfish. In the spring, assess the walleye, muskie, black crappie, bluegill, redear and channel catfish populations by a trap net survey.

Aquatic Vegetation Control - IDNR Fisheries will apply aquatic herbicides as needed to manage exotic or nuisance aquatic plants for fishing access or sportfish management.

Lake Access - Coordinate with the site staff on the development of shoreline fishing areas and maintenance for the boat dock and ramp. In 2022, a total of 6 fishing tournaments were registered at McMaster Lake. In 2021, Lake McMaster was added as an IHSA High School Bass Fishing Sectional Site.

Water Level - coordinate with the site staff on the documentation of the water level utilizing the installed staff gauge.

Site Map - update the site map of the water bodies as needed.

Fish stocking Record:

Waterbody	Species	Size (in)	Count	Delivery Date	Source
McMaster, Lake - SHFWA (02269)	Muskellunge	12.5	143	9/28/2022	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	6.8	3000	8/1/2022	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1.5	9180	5/31/2022	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1.5	13628	5/25/2021	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	7.7	3000	8/4/2020	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1.4	8090	5/28/2020	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	13.5	136	9/18/2019	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	8.7	2100	8/20/2019	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1.5	8351	6/1/2019	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	7	3135	8/15/2018	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1.1	6290	6/22/2018	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	11160	6/7/2018	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Channel Catfish	9.3	3149	8/30/2017	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1.8	8032	6/2/2017	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Channel Catfish	8	1500	7/26/2016	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	11.9	137	9/3/2015	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	8	800	8/31/2015	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1.2	12000	6/11/2015	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	8154	6/11/2015	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Walleye	2	8154	6/11/2015	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	8	3000	8/26/2014	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	8710	6/13/2014	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	10000	6/13/2013	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	5896	6/7/2013	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Walleye	8	283	8/28/2012	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	11	135	8/24/2012	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	6900	6/7/2012	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	6000	6/7/2012	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	11	164	8/26/2011	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	8	2347	7/18/2011	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	6000	6/16/2011	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	11	90	9/9/2010	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	7	2589	7/8/2010	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	6000	6/9/2010	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1	5850	5/21/2010	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	7	2589	7/8/2009	#1 Little Grassy Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	12000	6/22/2009	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1	17940	6/3/2009	#3 LaSalle Fish Hatchery (09010)

McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	12000	6/27/2008	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1	11700	6/4/2008	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	11	270	9/12/2007	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	19056	6/11/2007	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	10000	6/5/2007	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	6300	6/1/2007	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Muskellunge	11	150	9/20/2006	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	2	6000	6/13/2006	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	9768	6/7/2006	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Walleye	1	6984	6/3/2005	#3 LaSalle Fish Hatchery (09010)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	0	2976	6/3/2005	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Channel Catfish	3	4000	10/18/2004	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	2	6000	6/16/2004	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	2	5850	6/3/2004	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	6	405	7/24/2003	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Smallmouth Bass	1	8007	6/18/2003	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1	11932	6/4/2003	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Muskellunge	11	213	8/30/2002	#2 Jake Wolf Hatchery (09000)
McMaster, Lake - SHFWA (02269)	Walleye	1	5850	5/30/2002	#2 Jake Wolf Hatchery (09000)

Lake McMaster Fish Tournament Results 2022:

Start Date	ID	Fish Hours	Total Boats	Total Anglers	Species 1	Total Fish	Total Pounds
10-01-2022	<u>21376</u>	9	12	22	MUE	2	0.00
07-09-2022	<u>20343</u>	5	10	20	LMB	3	6.50
06-25-2022	<u>20048</u>	8	9	17	LMB	46	72.63
06-05-2022	<u>19876</u>	7	20	40	LMB	83	158.38
05-14-2022	<u>21293</u>	12	12	17	LMB	79	0.00
04-30-2022	<u>21954</u>	6	8	11	LMB	13	12.38

Bass Totals: Angler Hours 786 # Fish 224