



# WISCONSIN DEPARTMENT OF NATURAL RESOURCES

## Fisheries Information Sheet

**LAKE:** MISSION

**COUNTY:** MARATHON

**YEAR:** 2021

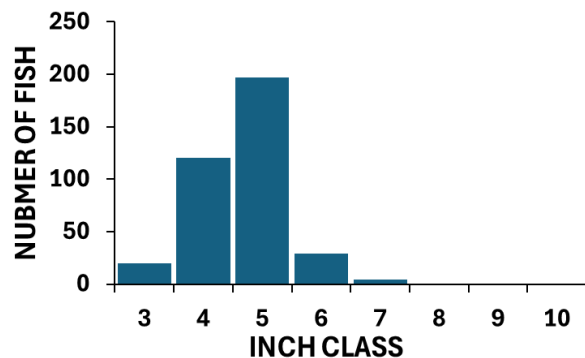
### Introduction

Mission Lake is a small, 106-acre seepage lake in eastern Marathon County, WI with an abundant panfish fishery. Muskellunge were introduced in the early 1970s in hopes to control an abundant, slow growing panfish population. Several decades later, survey data show that this experiment did not accomplish its goal. In another attempt to increase predation on panfish, a largemouth bass slot limit was implemented in 2008. An early spring fyke netting survey was conducted from April 1 to April 9, 2021 to assess the muskellunge population as part of a follow up to a study conducted by the UWSP COOP looking at survival of stocked muskellunge raised on different feed. Six fyke nets were fished for a total of 49 net-nights. All muskellunge captured were PIT tagged to calculate a population estimate. Although these early spring netting surveys primarily target walleye, northern pike and muskellunge, other species collected included bluegill, black crappie, pumpkinseed, yellow perch, warmouth, largemouth bass, yellow bullhead and white sucker. Comparisons were made to a previous spring fyke netting survey conducted in 2004.

### BLUEGILL



There were 396 bluegills captured; length ranged from 3.0 to 7.4 inches. Bluegill catch rate was more than twice as much in 2021 compared to 2004. Since the 2004 survey, the bluegill catch rate has increased, average length remained constant and size structure has decreased.

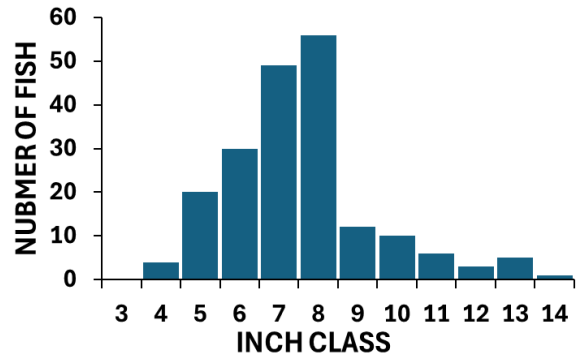


Year	2004	2021
# Per Net-Night	2.9	8.1
Quality Size ( $\geq 6''$ )	17%	9%
Mean Length (in)	5.1	5.1

## BLACK CRAPPIE



There were 199 black crappie captured; length ranged from 4.3 to 14.2 inches. Since the 2004 survey, the black crappie catch rate increased slightly, average length remained constant and size structure decreased slightly.

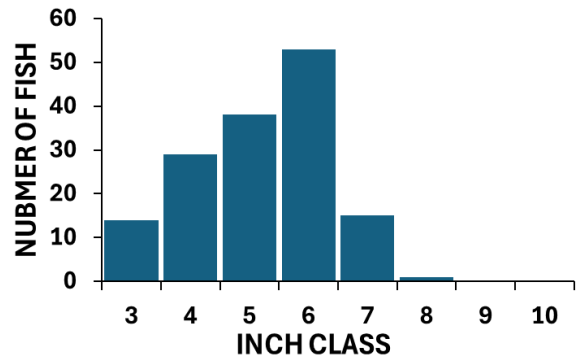


Year	2004	2021
# Per Net-Night	3.6	4.1
Quality Size ( $\geq 8''$ )	64%	48%
Mean Length (in)	8.2	7.9



## PUMPKINSEED

There were 158 pumpkinseed captured; length ranged from 3.4 to 8.0 inches. Pumpkinseed catch rates have decreased slightly since 2004, while size structure has increased along with mean length.



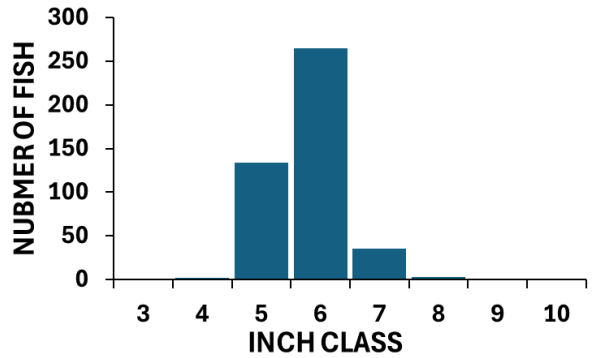
Year	2004	2021
# Per Net-Night	4.7	3.2
Quality Size ( $\geq 6''$ )	10%	46%
Mean Length (in)	4.7	5.6



### YELLOW PERCH

There were 449 yellow perch captured; length ranged from 4.9 to 10.8 inches. Perch catch rates have increased substantially since 2004, while size structure and mean length have remained the same.

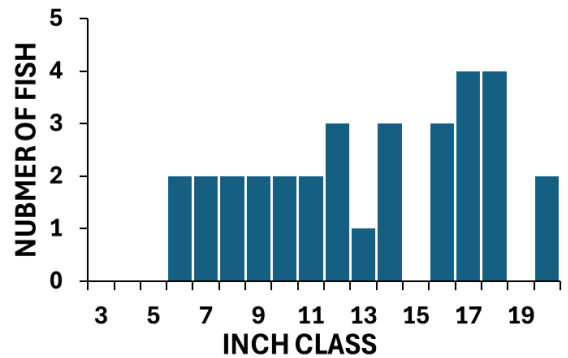
Year	2004	2021
# Per Net-Night	1.0	9.2
Quality Size ( $\geq 8"$ )	0%	1%
Mean Length (in)	5.9	6.2



### LARGEMOUTH BASS

There were 32 largemouth bass captured; length ranged from 6.3 to 20.9 inches. Largemouth bass catch rate remained similar to 2004. Mean length increased by nearly two inches and the number of fish observed  $>12$  inches increased by 3 times.

Year	2004	2021
# Per Net Night	0.5	0.7
Quality Size ( $\geq 12"$ )	20%	71%
Mean Length (in)	11.5	13.6

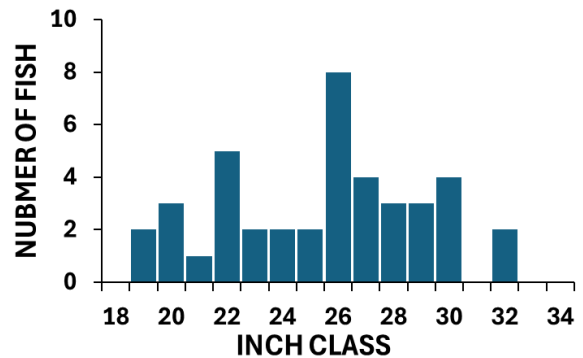




### NORTHERN PIKE

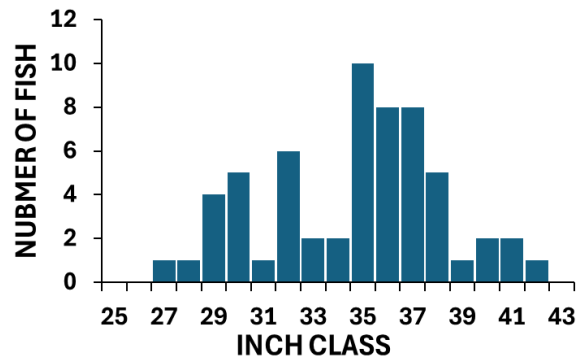
There were 41 northern pike captured; length ranged from 19.4 to 32.7 inches. Since 2004 the northern pike fishery has seen little change in catch rates and overall size structure.

Year	2004	2021
# Per Net Night	0.4	0.8
Quality Size ( $\geq 21"$ )	100%	88%
Preferred Size ( $\geq 28"$ )	21%	29%
Mean Length (in)	26.6	25.9



### MUSKELLUNGE

There were 59 muskellunge captured; length ranged from 27.2 to 42.0 inches. Muskellunge catch rate decreased by half since the 2004 survey. The number of muskellunge greater than 38 inches increased from 1 to 19% of the observed catch and mean length increased by 4.4 inches. Average length at 8 years old is 36.5 inches, which falls well below the statewide average (38.9 inches) for similar lake types.



Year	2004	2021
# Per Net Night	2.3	1.2
Quality Size ( $\geq 30"$ )	64%	90%
Preferred Size ( $\geq 38"$ )	1%	19%
Mean Length (in)	30.7	35.1
Population Estimate (# per acre)	1.27	1.25

## OTHER SPECIES

There were 47 pumpkinseed x bluegill hybrid captured; length ranged from 3.6 to 6.4 inches as well as 33 warmouth. Other species captured in low numbers include golden shiner, white sucker and yellow bullhead.

## Summary

Mission Lake features an abundant panfish fishery with low size structure. The attempt to increase size structure by introducing muskellunge and implementing the largemouth bass slot appears to not be working as planned. The largemouth bass fishery has seen an increase in size structure since the new regulation has been in place, indicating that the new regulation is having a positive effect on the population. The northern pike fishery remains comparable to the 2004 survey results; low density but still offers opportunities to harvest fish. The muskellunge fishery is still considered high density (1.25 fish per acre) which has fostered their low size structure and slow growth. The fishery provides an action fishery for anglers with the rare opportunity for a fish greater than 40 inches. Stocking of muskellunge was discontinued after 2017.

*General fishing regulations for Mission Lake in Marathon County, Wisconsin.*

SPECIES	SEASON DATES	DAILY BAG LIMIT	SIZE LIMIT
Largemouth Bass	1 <sup>st</sup> Saturday in May to 1 <sup>st</sup> Sunday in March	5	No minimum length, Fish 14-18" must be released One over 18 inches
Northern Pike	1 <sup>st</sup> Saturday in May to 1 <sup>st</sup> Sunday in March	5	None
Panfish	Open all year	25	None
Muskellunge	Last Saturday in May to December 31st	1	40 inches

For fisheries management questions about Mission Lake, contact:

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