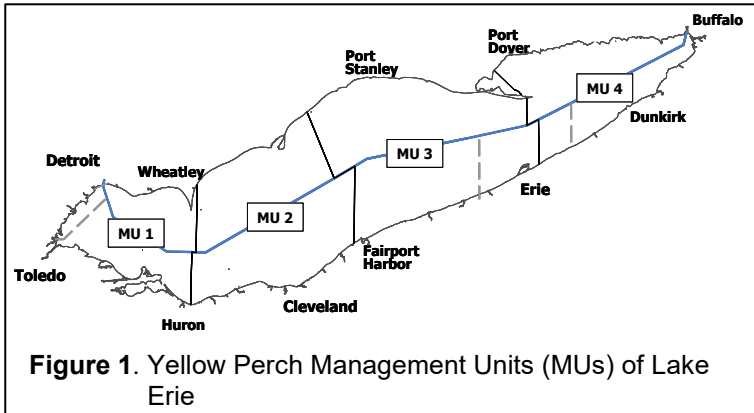


# YELLOW PERCH TASK GROUP EXECUTIVE SUMMARY REPORT MARCH 2024



## 2023 Fisheries Review

The lakewide total allowable catch (TAC) of Yellow Perch in 2023 was 6.573 million pounds. This allocation represented a 9% decrease from a TAC of 7.185 million pounds in 2022. For Yellow Perch assessment and allocation, Lake Erie is partitioned into four management units (MUs; Figure 1). The 2023 TAC allocation was 2.430, 0.477, 3.082, and 0.584 million pounds for MUs 1 through 4, respectively. The lakewide harvest of Yellow Perch in 2023 was 4.305 million pounds, or 65% of the total 2023 TAC. This was a 27% increase from the 2022 harvest of 3.400 million pounds. Harvest from MUs 1 through 4 was 2.376, 0.287, 1.236, and 0.406 million pounds, respectively (Table 1). The portion of TAC harvested was 98%, 60%, 40%, and 70%, in MUs 1 through 4, respectively. In 2023, Ontario harvested 2.523 million pounds, followed by Ohio (1.554 million lbs.), Michigan (0.104 million lbs.), New York (0.069 million lbs.), and Pennsylvania (0.056 million lbs.).



In 2023, targeted (i.e., small mesh) commercial gill net effort in Canadian waters decreased from 2022 effort in MU1 (-16%) and increased in units MU2, MU3 and MU4 by 8%, 19%, and 25% respectively. Sport angling effort in U.S. waters during 2023 was highest in MU1 and lowest in MU2. Angler effort in 2023 increased 39% compared to 2022 in MU1, and decreased 85%, 22%, and 34% in MU2, MU3 and MU4. In 2023, angling effort in U.S. waters of MU3 hours was at its lowest in the time series, while effort in MU2 was the second lowest in time series. Fishing effort by jurisdiction and gear type is presented in Table 2.

Ontario targeted commercial gill net harvest rates in 2023 increased by 58% and 15% relative to 2022 rates in MU1 and MU2 respectively, while decreasing in MU3 by 12%, and MU4 by 15%. Trends in angling harvest rates (fish harvested per angler hour) for 2023 compared to 2022 were not consistent across states within MUs. Harvest per angler hour increased in Michigan (+101%) and Ohio (+43%) waters of MU1. In the central basin, the sport angler harvest rate increased in the Ohio waters of MU2 (+35%) although the rate of 0.7 fish/hour is still one of the lowest in the time series. In MU3, the sport harvest rate increased (+209%) from the second lowest catch rate in the time series in Ohio waters, while decreasing in Pennsylvania (-89%) waters of MU3 to the lowest value observed in the time series. In MU4, harvest rates increased in New York waters (+34%) and Pennsylvania waters, where the catch rate increased from near 0 fish/hour to 1.3 fish per/hour. In 2023, trap net harvest rates in U.S. waters increased from 2022 rates by 62%, 261%, 26%, and 4% in MU1, MU2, MU3 and MU4, respectively.

**Table 1. Lake Erie Yellow Perch harvest by jurisdiction and gear type for 2023.**

MU	Harvest by jurisdiction (lbs)								Total (lbs)		
	Michigan		Ontario		Ohio		Pennsylvania			New York	
	sport	all commercial*	sport	commercial trap net	sport	commercial trap net	sport	commercial trap net		sport	commercial trap net
1	104,388	1,016,545	840,199	414,728							2,375,860
2		210,716	11,415	64,854							286,985
3		959,420	3,680	218,689	1,329	53,209					1,236,327
4		336,237				1,035	0	54,855	13,836		405,963
<b>Total</b>	104,388	2,522,918	855,294	698,271	2,364	53,209		54,855	13,836		4,305,135

\*Small mesh gill net, large mesh gill net, trap net (MU1), and incidental trawl (MUs 2-4) harvest combined.

**Table 2. Lake Erie Yellow Perch fishing effort by jurisdiction and gear type for 2023.**

MU	Effort by jurisdiction									
	Michigan		Ontario		Ohio		Pennsylvania		New York	
	sport (angler hours)	commercial (km gill net)*	sport (angler hours)	commercial (trap net lifts)	sport (angler hours)	commercial (trap net lifts)	sport (angler hours)	commercial (trap net lifts)	sport (angler hours)	commercial (trap net lifts)
1	97,889	7,212	923,523	6,696						
2		1,593	4,011	289						
3		5,872	2,566	1,784	2,214	277				
4		1,652			453	0	33,059		214	
<b>Total</b>	97,889	16,330	930,100	8,769	2,667	277	33,059		214	

\*Targeted small mesh gill net effort only.

## Abundance Estimate for 2024

Population size for 1975 to 2023 for each MU was estimated by statistical catch-at-age analysis (SCAA). The SCAA model incorporates a recruitment index that is used to project total abundance estimates to 2024. Using the model, 2024 age-2-and-older Yellow Perch abundances are projected to decrease in all management units, by 19%, 16%, 23% and 3% in MU1, MU2, MU3 and MU4 respectively, relative to the 2023 abundance estimates. The 2024 Age-2-and-older Yellow Perch abundance projections are 59.552, 44.314, 56.598, and 8.210 million fish in management units 1 through 4, respectively. Using mean weight-at-age information from assessment surveys, 2024 age-2-and-older biomasses are projected to decrease in MU1-MU4 by 18%, 12%, 7% and 3%, respectively, compared to 2023 estimates.

## Recommended Allowable Harvest (RAH) for 2024

Harvest control rules (HCR) are comprised of:

- Target fishing mortality as a percent of the fishing mortality at maximum sustainable yield ( $F_{msy}$ )
- Limit reference point of the biomass at maximum sustainable yield ( $B_{msy}$ )
- Probabilistic risk tolerance,  $P^*=0.20$
- A limit on the annual change in TAC of  $\pm 20\%$  (when  $P(SSB < B_{msy}) < P^*$ )

Target fishing rates and limit reference points are estimated annually using results from the SCAA models. Limit reference points and target fishing rates for each management unit are presented in Table 3. Target fishing rates are reduced when the probability of the projected spawning stock biomass being equal to or less than the limit reference point ( $B_{msy}$ ) is greater than 0.20 ( $P^*$ ). Fishing rates are applied to population estimates and their standard errors, to determine minimum, mean, and maximum RAH values for each management unit (Table 4).

In 2024, the P value in MU2 is 0.11, marking the first year that MU2 has not invoked the  $P^*$  rule since the YPMP took effect in 2019. However, there is evidence of retrospective patterns in SCAA abundance estimates. Also, there are conflicting poor status indicators in MU2 and no evidence of a large year class recruiting to the fishery. Therefore, a precautionary approach is warranted in MU2, and the YPTG recommends holding the 2024 MU2 TAC at the 2023 level or increasing by 20%.

**Table 3.** Parameters used in the harvest control rule 2024. F actual may be reduced from F target if  $P(SSB < B_{msy}) \geq P^*$ .

MU	Spawning Stock Biomass			Limit Reference Point		Fishing Rate			
	SSB <sub>0</sub>	2024	2025 <sup>(a)</sup>	B <sub>msy</sub>	P	F <sub>msy</sub>	% F <sub>msy</sub>	F <sub>target</sub>	F <sub>actual</sub>
MU1	8,014,090	5,218,700	5,774,530	2,192,760	0.00	1.54	28%	0.431	0.431
MU2	14,152,966	6,365,940	5,401,060	3,987,859	0.11	1.77	35%	0.620	0.620
MU3	13,297,953	6,279,750	6,009,320	3,704,558	0.03	1.80	32%	0.576	0.576
MU4	1,626,858	1,052,110	1,062,740	461,961	0.00	1.60	34%	0.544	0.544

(a) Spawning stock biomass (kg) when population is fished at target fishing rate.

**Table 4.** Lake Erie Yellow Perch fishing rates and RAH (in millions of pounds) for 2024 by management unit.

MU	Fishing Rate	Recommended Allowable Harvest (millions lbs.)		
		MIN	MEAN	MAX
1	0.431	2.149	2.861	3.569
2		See text above		
3	0.576	2.104	2.654	3.200
4	0.544	0.323	0.458	0.592

The complete YPTG report is available from the GLFC's Lake Erie Committee Yellow Perch Task Group website at: <http://www.glfrc.org/lake-erie-committee.php>, or upon request from an LEC, Standing Technical Committee (STC), or YPTG representative.