WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Wisconsin's 2020 Open Water Sportfishing Effort And Harvest From Lake Michigan And Green Bay

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OVERVIEW

The sport fishery in Wisconsin waters of Lake Michigan and Green Bay was documented from May 2020 through November 2020. Due to the COVID-19 pandemic, charter fishing trips began in May, along with the moored-boat survey. Wisconsin DNR creel clerks began the creel survey in July. Therefore, 2020 results are for May through November only, and this should be considered when comparing 2020 to previous years.

Fishing effort, harvest and harvest-rates were determined from 1) a stratified-random creel survey of launched-boat, pier, shore and stream anglers; 2) a randomized mail survey of moored-boat anglers; and 3) mandatory charter-boat reporting. For a detailed description of methods, see Eggold, 1995.

RESULTS

Anglers spent an estimated 1,964,085 hours fishing on Lake Michigan and Green Bay during 2020 with boat-angler effort at 1,609,924 hours or 82% of the total hours. Estimated angler hours for the pier fishery was 81,437 hours, 111,130 angler hours for the shore fishery and 161,594 hours for the stream fishery. Note that the stream fishery estimates do not include the spring.

The estimated harvest of 573,214 fish was dominated by yellow perch (255,291) followed by walleye (90,142). Walleye and yellow perch harvest combined was 60% of the total estimated harvest. The boat fishery, comprised of launched-boat, moored-boat and charter-boat anglers, dominated the fishery by harvesting an estimated 519,699 fish or 91% of the total harvest, and was again led by yellow perch (232,014) followed by walleye (86,943). Pier anglers harvested 7,726 fish, primarily yellow perch (6,461) and Chinook salmon (685), followed by rainbow trout (181). Stream anglers

harvested 29,452 fish, dominated by Chinook salmon (18,206) and followed by yellow perch (5,314) and walleye (3,161). Shore anglers harvested 16,337 fish, primarily yellow perch (11,502) followed by Chinook salmon (3,316).

Overall harvest-rates were highest for yellow perch at 0.1300 fish/hour, followed by walleye (0.0459 fish/hour) and Chinook salmon (0.0412 fish/hour). These three species also had the highest harvest-rates in 2019.

The 2020 Chinook harvest of 80,890 fish was higher than 2019's harvest, but approximately 42% below the ten-year average. The overall harvest rate for salmonids in 2020 was 0.1106, which is only slightly below the ten-year average harvest rate of 0.1311.

Coho harvest in 2020 was 40,349 fish, which was an increase from the 2019 harvest. The 2020 rainbow trout harvest of 54,430 fish was also an increase from 2019, but approximately 16% below the ten-year average. Brown trout harvest in 2020 was 3,317, which was 79% below the ten-year average. A total of 38,271 lake trout were harvested in 2020, which was 39% above the ten-year average.

The 2020 harvest of yellow perch in Green Bay was 253,278, which was 56% above the ten-year average and the highest harvest since 2013. The Lake Michigan yellow perch harvest in 2020 was 2,013 fish. Perch harvest in Lake Michigan remains on an overall downward trend observed since 1993.

Biological data was not collected from sport-caught fish in 2020. Biological data collection has resumed for 2021, and average weight, length, and standard weight of sport-caught salmonids will be calculated after the end of the creel season.

REFERENCES

Eggold, B.T. 1995. Wisconsin's 1995 open water sportfishing effort and catch from Lake Michigan and Green Bay. Wisconsin Department of Natural Resources, Plymouth, Wisconsin. 18 pages.

Table 1. Estimated angler effort (hours) by location in Wisconsin waters of Lake Michigan and Green Bay during March through December of 2011 through 2020*. Standard deviations are in italics.

Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
Kenosha Co.	116,032	135,980	128 , 467	129,736	101,058	108,874	90,700	92,655	99,315	91,284	109,410
	5,801	2,851	5,199	5,422	4,990	5,432	3,810	4,185	4,417	4,797	4,766
Racine Co.	151,135	131,342	121,473	122,082	102,948	106,901	95,490	110,575	98,387	78,832	111,917
	7,225	10,091	8,394	7,073	₉₂₄₃	7,928	6,787	11,954	6,374	6,721	8,352
Milwaukee Co.	276,843	324,011	290,544	255 , 140	267,451	295,517	267,191	233,031	180,123	179,950	256,980
	15,204	_{14,704}	11,332	10,894	10,279	12,743	14,736	13,192	8,028	10,877	12,395
Ozaukee Co.	256 , 961	208 , 450	203,861	189,524	172,896	215 , 153	179,360	167,683	156,411	160,473	191,077
	19,364	12,203	9,749	9,532	8,481	13,880	13,185	10,435	10,337	8,465	11,982
Sheboygan Co.	199,350	225,384	205,563	214 , 111	216,378	210,632	179,246	163,946	176,289	148,393	193,929
	9,537	11,503	9,122	10,191	11,974	11,803	9,027	9,813	_{16,500}	9,720	11,124
Manitowoc Co.	179,525	212,739	177,336	187,654	168,961	183,440	139,241	141,366	132,408	141,855	166 , 453
	8,336	10,796	8,230	9,404	8,303	10,233	7,010	8,009	6,735	12,574	9,125
Kewaunee Co.	323 , 860	311,407	372,305	352,498	367,149	288,935	318,589	327,150	222,088	236,238	312,022
	12,740	7,780	_{14,837}	15,032	15,581	13,131	13,337	13,794	9,598	11,413	_{12,941}
E. Door Co.	151,136	204,549	195,887	172,324	218,354	204,769	193,014	187,941	181,342	127,333	183,665
	7,001	23,159	12,008	8,761	19,796	10839	_{9,108}	10,802	12,741	10,704	13,387
Green Bay	886,143	771,724	1,084,541	990,101	1,127,400	1,016,928	1,087,056	1,032,530	1,115,720	799,727	991,187
	40,835	26,553	45,814	46,164	36,334	35,232	40,209	34,218	38,818	30,260	37,913
Total Effort	2,540,985 52,261	2,525,586 45,010	2,779,977 54,178	2,613,170 53,991	2,742,595 49,548	2,631,149 47,145	2,549,887 49,597	2,456,877 45,624	2,362,083 48,065	1,964,085 40,880	2,516,639 48,793

^{*}Note: Sport Fishing estimates for 2020 are for May – December only.

Table 2. Estimated harvest and total harvest-rate (number per hour, all anglers combined) of salmonids in Wisconsin waters of Lake Michigan and Green Bay during March through December of 2011 through 2020*. Standard deviations are in italics.

Species	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
Coho salmon	157,367	73,395	88 , 933	52,297	41,067	125,748	119,788	85,459	32,197	40,349	81,660
	11,432	3,114	3,922	6,577	4,339	5,572	7,135	5,176	2,003	2,585	18,366
Chinook salmon	169,752	390,385	144,807	130,231	114,528	138,110	84,163	84,228	63,043	80,890	140,014
	4,083	9,058	_{4,330}	3,562	3,549	4,725	3,132	3,262	4,012	3,782	14,694
Rainbow trout	75,442	75,981	58,429	72,724	59 , 127	77,004	66,599	57,141	50,258	54,430	64,714
	2,588	2,592	1,978	2,259	1,714	2,962	2,661	2,011	3,105	1,996	7,674
Brown trout	9,936	21,337	17,052	23,511	20,335	23,885	20,404	12,625	8,013	3,317	16,042
	846	1,768	1,273	1,813	1,894	2,632	1,715	_{1,116}	969	519	4,966
Brook trout	26 0	18 0	0	0	0	0	0	0	0	0	4 0
Lake trout	17,788	29,094	27,246	25 , 424	35,778	19,046	20,345	26,747	34,197	38 , 271	27,394
	1,236	1,261	1,003	1,098	_{1,482}	865	1,115	1,236	2,438	1,645	_{4,438}
Total Harvest	430,311 12,502	590,210 10,158	336,467 _{6,406}	304,187 8,104	270,835 <i>6,285</i>	383,793 8,356	311,299 8,484	266,200 6,652	187,708 6,052	217,257 5,286	329,827 25,619
Harvest-Rate	0.1693	0.2337	0.1210	0.1164	0.0988	0.1459	0.1221	0.1083	0.0795	0.1106	0.1311

^{*}Note: Sport Fishing estimates for 2020 are for May – December only.

Table 3. Estimated harvest and total harvest-rate (number per hour, all anglers combined) of yellow perch in Wisconsin waters of Lake Michigan and Green Bay during March through December of 2011 through 2020*. Standard deviations are in italics.

Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
Green Bay	254,942 24,973	148,980 13,685	221,158 18,974	117,012 12,283	98 , 263 10,029	76,281 9,289	117,412 12,404	115,896 11,044	84,200 15,389	253,278 21,751	148,742 15,794
Harvest-Rate	0.2877	0.1930	0.2039	0.1182	0.0872	0.0750	0.1080	0.1122	0.0755	0.3167	0.1577
Lake Michigan	16,982 2,296	9,115 1,071	8,796 1,221	9 , 277 1,108	5,257 1,000	2,089 ₅₈₆	2,481 537	4,026 787	3,600 882	2,013 674	6,364 1,123
Harvest-Rate	0.0103	0.0052	0.0052	0.0057	0.0033	0.0013	0.0017	0.0028	0.0029	0.0017	0.0040
Total Harvest	271,924 25,078	158,095 13,727	229,954 19,013	126,289 12,333	103,520 10,079	78,370 9,307	119,893 12,416	119,922 11,072	87,800 15,414	255,291 21,761	173,606 16,238
Harvest-Rate	0.1070	0.0626	0.0827	0.0483	0.0377	0.0298	0.0470	0.0488	0.0372	0.1300	0.0631

Note: Table 3 reflects that some Door County sites represent Green Bay for yellow perch harvest statistics.

*Note: Sport Fishing estimates for 2020 are for May – December only.

Table 4. Estimated harvest-rate (harvest per hour), harvest and effort for all survey areas and **ALL FISHERY TYPES** for Wisconsin waters of Lake Michigan and Green Bay during 2020. Standard deviations are in italics.

Species	Harvest per hour	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho salmon	0.0205	5,325 2,110	15,864 ⁵¹⁸	10,152 ₉₂₇	6,617 988	2,391 355	0	40,349 2,585
Chinook salmon	0.0412	934 546	9,175 485	18,359 1,374	18 , 234 1,266	34 , 188 3,208	0	80,890 3,782
Rainbow trout	0.0277	1,624 ³⁹⁷	15,076 ₆₁₀	17,580 1,411	18,055 1,181	2,095 257	0	54,430 1,996
Brown trout	0.0017	306 266	225 64	920 270	862 182	1,004 298	0	3,317 ⁵¹⁹
Brook trout	0.0000	0	0	0	0	0	0	0
Lake trout	0.0195	1,908 268	6,659 415	12,125 1,033	14,907 1,165	2,672 189	0	38 , 271 1,645
Northern pike	0.0008	0	0	197 107	536 247	759 199	95 68	1,587 335
White perch	0.0005	0	0	94 83	648 ₅₄₀	178 138	0	920 564
Smallmouth bass	0.0041	206 173	263 137	3,604 1,635	3,634 1,003	310 112	0	8,017 1,934
Yellow perch	0.1300	57 39	260 113	29,764 6,773	113 , 219 17,846	107,198 13,928	4,793 1,749	255,291 23,630
Walleye	0.0459	0	323 142	54,509 5,405	27,757 4,321	6,110 1,464	1,443 ⁵¹⁶	90,142 7,075
Total Harvest	0.2918	10,360 2,254	47,845 1,051	147,304 9,146	204,469 18,544	156,905 14,381	6,236 1,824	573,214 25,309
Angler Hours		24,066 4,270	136,858 5,164	651,881 23,224	634,639 28,245	504 , 132 16,786	12,509 2,704	1,964,085 40,789

Table 5. Estimated harvest-rate (harvest per hour), harvest and effort for the **BOAT FISHERY** with all surveys combined for Wisconsin waters of Lake Michigan and Green Bay during 2020. Standard deviations are in italics.

Species	Harvest per hour	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho salmon	0.0239	5,325 2,110	15,864 518	10,152 927	6,479 ⁹⁷⁸	705 246	0 0	38,525 2,568
Chinook salmon	0.0365	934 ₅₄₁	9,175 485	18,321 _{1,374}	18,022 1,261	12,231 2,728	0	58,683 3,384
Rainbow trout	0.0335	1,624 ³⁹⁷	15,076 610	17,554 1,411	18,041 1,181	1,668 ²¹⁹	0	53,963 1,991
Brown trout	0.0016	306 265	225 64	762 247	862 182	488 91	0	2,643 420
Brook trout	0.0000	0	0	0	0	0	0	0
Lake trout	0.0238	1,908 268	6,659 415	12,125 1,033	14,907 1,165	2,672 189	0	38,271 1,645
Northern pike	0.0008	0	0	144 102	514 246	521 182	95 68	1,274 322
White perch	0.0004	0	0	0	648 540	33 33	0	681 541
Smallmouth bass	0.0042	206 173	263 137	3,583 1,635	2,457 995	193 98	0	6,702 1,929
Yellow perch	0.1441	57 39	260 113	27,011 6,761	111,372 17,833	90,546 13,571	2,768 1,747	232,014 23,408
Walleye	0.0540	0	323 ₁₄₂	54,509 5,405	27,757 4,321	3,720 ₉₅₇	634 516	86,943 6,987
Total Harvest	0.3228	10,360 2,253	47,845	144,161 9,136	201,059 18,530	112,777 13,883	3,402 1,822	519,699 25,015
Angler Hours		24,066 4,270	136,858 5,165	605,760 22,981	583,896 27,908	251,781 13,851	7,563 2,290	1,609,924 39,290

Table 6. Estimated harvest-rate (harvest per hour), harvest and effort for the **PIER FISHERY** with all survey areas combined for Wisconsin waters of Lake Michigan and Green Bay during 2020. Standard deviations are in italics.

Species	Harvest per hour	July	August	Sept/Oct	Nov/Dec	Season
Coho salmon	0.0005	0	0	42 30	0	42 30
Chinook salmon	0.0084	38 24	98 49	549 228	0	685 234
Rainbow trout	0.0022	26 21	0	155 79	0 0	181 82
Brown trout	0.0019	158 110	0	0	0	158 110
Brook trout	0.0000	0	0	0	0	0
Lake trout	0.0000	0	0	0	0	0
Northern pike	0.0008	0	0	65 0	0	65 0
White perch	0.0000	0	0	0	0	0
Smallmouth bass	0.0012	0	0	96 50	0	96 50
Yellow perch	0.0793	2,267 173	269 179	3,925 ₃₄₈	0	6,461 428
Walleye	0.0005	0	0	38 41	0	38 41
Total Harvest	0.0949	2,489 ₂₀₇	367 186	4,870	0	7,726 512
Angler Hours		22,706 2,273	25,556 2,945	33 , 175 3,847	0	81,437 5,352

Table 7. Estimated harvest-rate (harvest per hour), harvest and effort for the **SHORE FISHERY** with all survey areas combined for Wisconsin waters of Lake Michigan and Green Bay during 2020. Standard deviations are in italics.

Species	Harvest per hour	July	August	Sept/Oct	Nov/Dec	Season
Coho salmon	0.0071	0	138 141	656 176	0	794 226
Chinook salmon	0.0298	0	114 98	3,202 352	0	3,316 365
Rainbow trout	0.0022	0	14 14	231 106	0	245 107
Brown trout	0.0009	0	0	105 67	0	105 <i>67</i>
Brook trout	0.0000	0	0	0	0	0
Lake trout	0.0000	0	0	0	0	0
Northern pike	0.0014	53 33	22 15	84 52	0	159 63
White perch	0.0000	0	0	0	0	0
Smallmouth bass	0.0020	21 23	195 132	0	0	216 ₁₃₄
Yellow perch	0.1035	235 236	92 71	9,222 2,784	1,953 57	11,502 2,796
Walleye	0.0000	0	0	0	0	0
Total Harvest	0.1470	309 239	575 229	13,500 2,815	0	14,384 2,834
Angler Hours		18,399 2,324	16,484 2,983	74,234 4,307	2,013 ₉₂₇	111,130 5,731

Table 8. Estimated harvest-rate (harvest per hour), harvest, and effort for the **STREAM FISHERY** with all survey areas combined for Wisconsin waters of Lake Michigan and Green Bay during 2020. Standard deviations are in italics.

Species	Harvest per hour	July	August	Sept/Oct	Nov/Dec	Season
Coho salmon	0.0061	0	0	988 183	0	988 183
Chinook salmon	0.1127	0	0	18,206 1,634	0	18,206 _{1,634}
Rainbow trout	0.0003	0	0	41 22	0	41 22
Brown trout	0.0025	0	0	411 276	0	411 276
Brook trout	0.0000	0	0	0	0	0
Lake trout	0.0000	0	0	0	0	0
Northern pike	0.0006	0	0	89 64	0	89 64
White perch	0.0015	94 83	0	145 135	0	239 ₁₅₈
Smallmouth bass	0.0062	0	982 0	21 15	0	1,003 ₁₅
Yellow perch	0.0329	251 278	1,486 661	3,505 1,398	72 56	5,314 1,572
Walleye	0.0196	0	0	2,352 1,107	809 0	3,161 1,107
Total Harvest	0.1823	345 290	2,468	25,758 2,446	0	29,452 2,551
Angler Hours		5,016 821	8,703 1,184	144,942 7,523	2,933 1,101	161,594 7,654

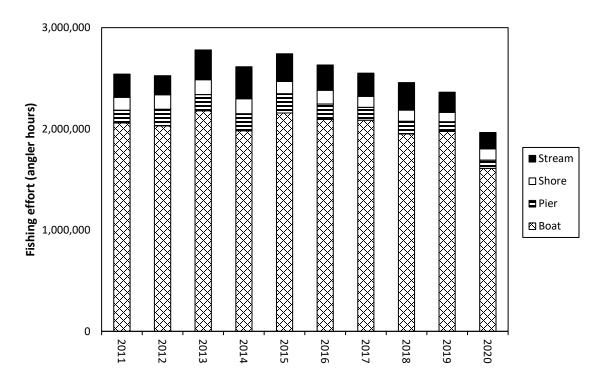


Figure 1. Fishing effort (angler hours) in Wisconsin waters of Lake Michigan and Green Bay from 2011 through 2020. *Note: Sport Fishing estimates for 2020 are for May – December only.

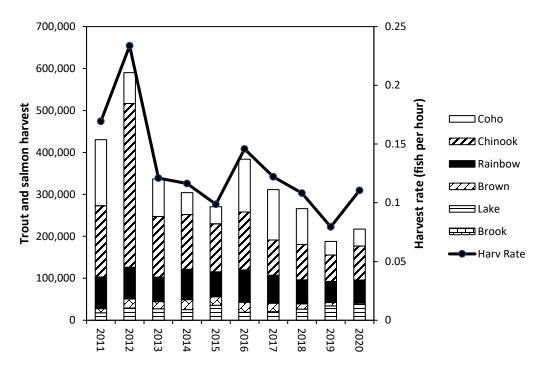


Figure 2. Trout and salmon harvest and harvest-rate from Wisconsin waters of Lake Michigan and Green Bay from 2011 through 2020. *Note: Sport Fishing estimates for 2020 are for May – December only.

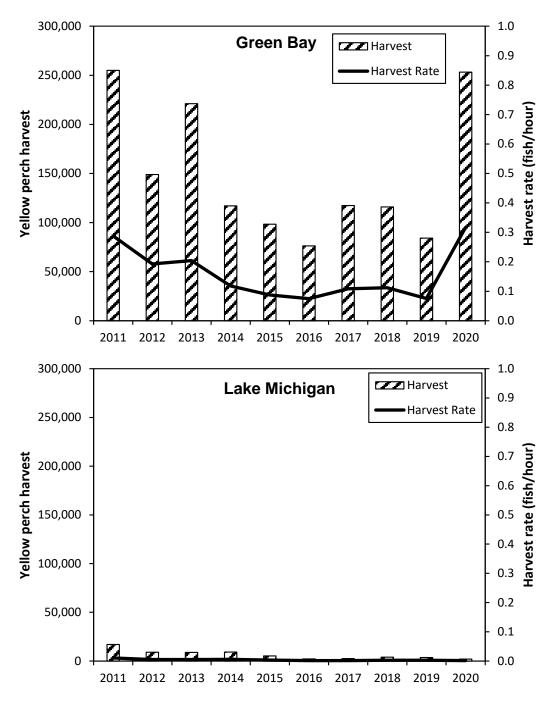


Figure 3. Yellow perch angler-harvest and harvest-rate from Wisconsin waters of Green Bay and Lake Michigan from 2011 through 2020. Note: Figure 3 reflects that some Door County sites represent Green Bay for yellow perch harvest statistics. *Note: Sport Fishing estimates for 2020 are for May – December only.