WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Wisconsin's 2023 Open Water Sportfishing Effort And Harvest From Lake Michigan And Green Bay

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OVERVIEW

The Wisconsin Department of Natural Resources (DNR) documented the sport fishery in Wisconsin waters of Lake Michigan and Green Bay from March 2023 through November 2023. 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 2,485,275 hours fishing on Lake Michigan and Green Bay during 2023, with boat-angler effort at 2,094,621 hours or 84% of the total hours. The estimated angler hours for the pier fishery were 95,521 hours, 54,689 angler hours for the shore fishery and 240,444 hours for the stream fishery. Fishing effort during 2023 was within 1% of the ten-year average.

The estimated harvest of 545,841 fish was dominated by walleye (132,393) and Chinook salmon (130,811) followed by yellow perch (99,994). The combined walleye and yellow perch harvest was 43% of the total estimated harvest. Chinook salmon harvest made up 24% 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 493,572 fish or 90% of the total harvest and was led by Chinook salmon (116,111), followed by walleye (111,375). Pier anglers harvested 6,252 fish, primarily yellow perch (2,327), followed by coho salmon (2,085). Stream anglers harvested 41,876 fish, dominated by walleye (20,764) and followed by Chinook salmon (13,095). Shore anglers harvested 4,061 fish, primarily yellow perch (1,735), followed by coho salmon (1,037).

Overall harvest rates were highest for walleye at 0.0533 fish/hour, followed closely by Chinook salmon (0.0526 fish/hour) and yellow perch (0.0402 fish/hour). These three species have had the highest harvest rates for the past five years.

The 2023 Chinook harvest of 130,811 fish was the highest Chinook harvest on record since 2016 and approximately 23% above the ten-year average. Chinook harvest has increased in Wisconsin waters of Lake Michigan every year since 2019. The overall harvest rate for salmonids in 2022 was 0.1201, which is 6% above the ten-year average harvest rate.

Coho harvest in 2023 was 87,792 fish. Although this was lower harvest than 2022, it remained approximately 14% higher than the ten-year average and higher than harvest in 2019, 2020, and 2021. The 2023 rainbow trout harvest of 47,322 increased from 2022 and was approximately 20% below the ten-year average. Brown trout harvest in 2023 was 6,963 fish, 52% below the ten-year average. A total of 25,580 lake trout were harvested in 2023, an increase from 2022, but approximately 12% below the ten-year average. A total of 60 brook trout were harvested in 2023. Brook trout have been stocked in two Lake Michigan tributaries since 2020.

The 2023 harvest of yellow perch in Green Bay was 97,641, a decrease from 2022 but still above the ten-year average harvest. The Lake Michigan yellow perch harvest in 2023 was 2,353, a decrease from 2022. Perch harvest in Lake Michigan remains on an overall downward trend observed since 1993.

In 2023, the standard weight of a 30-inch Chinook was 9.9 pounds, which was approximately 3% below the ten-year average. There was not much change from 2022, when the standard weight of a 30-inch Chinook was 9.6 pounds. The standard weight of a 23-inch coho was 3.4 pounds, which was approximately 16% below the ten-year average. The standard weight of a 25-inch rainbow trout was 3.6 pounds, which was 12% below the ten-year average. The standard weight of a 27-inch lake trout was 5.8 pounds, a slight decrease from 2022.

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 2014 through 2023*. Standard deviations are in italics.

Location	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Kenosha Co.	129,736	101,058	108,874	90,700	92,655	99,315	91,284	113,635	87,191	90,693	100,514
	5,422	4,990	5,432	3,810	4,185	4,417	4,797	7,514	_{4,069}	4,210	4,991
Racine Co.	122,082	102,948	106,901	95,490	110,575	98,387	78,832	93 , 231	95,394	88,754	99,259
	7,073	_{9,243}	7,928	6,787	11,954	6,374	6,721	5,784	8,166	6,386	7,836
Milwaukee Co.	255 , 140	267,451	295,517	267,191	233,031	180,123	179,950	217,505	194,492	182,456	227 , 286
	10,894	10,279	12,743	14,736	13,192	8,028	10,877	8,552	12,092	16,513	12,053
Ozaukee Co.	189,524	172,896	215 , 153	179,360	167,683	156,411	160,473	175,610	194,123	141,007	175,224
	9,532	8,481	13,880	13,185	10,435	10,337	8,465	9,436	14,724	9,100	10,979
Sheboygan Co.	214,111	216,378	210,632	179,246	163,946	176,289	148,393	175 , 574	213,660	153,181	185,141
	10,191	11,974	11,803	9,027	9,813	16,500	9,720	10,928	_{12,679}	10,139	11,463
Manitowoc Co.	187,654	168,961	183,440	139 , 241	141,366	132,408	141,855	157,011	162,635	160,820	157 , 539
	9,404	8,303	10,233	7,010	8,009	6,735	12,574	9,201	9,750	9,796	9,244
Kewaunee Co.	352,498	367,149	288,935	318,589	327,150	222 , 088	236,238	255 , 212	248,542	290,840	290,724
	_{15,032}	15,581	13,131	13,337	13,794	9,598	11,413	11,511	13,922	18,614	13,800
E. Door Co.	172,324	218,354	204,769	193,014	187,941	181,342	127,333	200,707	161,460	153,592	180,084
	8,761	19,796	10,839	9,108	10,802	12,741	10,704	11,516	11,385	8,969	11,855
Green Bay	990,101	1,127,400	1,016,928	1,087,056	1,032,530	1,115,720	799,727	1,345,874	1,131,789	1,223,932	1,087,106
	46,164	36,334	35,232	40,209	34,218	38,818	30,260	43,556	41,711	41,376	39,053
Total Effort	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	2,734,359 51,171	2,489,286 52,586	2,485,275 52,457	2,502,877 49,245

^{*}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 2014 through 2023*. Standard deviations are in italics.

Species	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Coho Salmon	52,297	41,067	125,748	119,788	85,459	32,197	40,349	80,009	104,692	87,792	77,054
	6,577	4,339	5,572	7,135	5,176	2,003	2,585	4,716	6,842	11,700	4,784
Chinook Salmon	130 , 231	114,528	138,110	84,163	84 , 228	63,043	80,890	100,323	120,148	130,811	106,047
	3,562	3,549	4,725	3,132	3,262	4,012	3,782	3,552	_{4,701}	5,486	_{4,603}
Rainbow Trout	72,724	59,127	77,004	66,599	57,141	50,258	54 , 430	58,597	35 , 304	47,322	58,961
	2,259	1,714	2,962	2,661	2,011	3,105	1,996	2,814	1,644	3,245	2,452
Brown Trout	23,511	20 , 335	23,885	20,404	12,625	8,013	3,317	9,178	9,013	6,963	14,733
	1,813	1,894	2,632	1,715	1,116	969	⁵¹⁹	1,742	1,276	_{1,548}	1,642
Brook Trout	0	0	0	0	0	0	0	0	8	60 23	1 0
Lake Trout	25,424	35 , 778	19,046	20,345	26,747	34,197	38,271	40,145	23,067	25 , 580	29 , 027
	1,098	1,482	865	1,115	1,236	2,438	_{1,645}	1,859	1,216	1,346	1,470
Total Harvest	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	288,252 7,019	292,232 8,644	298,528 13,481	282,029 8,133
Harvest-Rate	0.1164	0.0988	0.1459	0.1221	0.1083	0.0795	0.1106	0.1054	0.1174	0.1201	0.1127

^{*}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 2014 through 2023*. Standard deviations are in italics.

Location	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Green Bay	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	258,025 19,871	151,037 13,538	97,641 10,118	149,051 15,794
Harvest-Rate	0.1182	0.0872	0.0750	0.1080	0.1122	0.0755	0.3167	0.1917	0.1334	0.0798	0.1481
Lake Michigan	9 , 277 1,108	5,257 1,000	2,089 586	2,481 537	4,026 787	3,600 882	2,013 674	3,676 1,232	5,843 2,336	2,353 400	5,033 1,123
Harvest-Rate	0.0057	0.0033	0.0013	0.0017	0.0028	0.0029	0.0017	0.0026	0.0043	0.0019	0.0028
Total Harvest	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	261,701 19,909	156,880 13,738	99,994 10,125	140,966
Harvest-Rate	0.0483	0.0377	0.0298	0.0470	0.0488	0.0372	0.1300	0.0957	0.0630	0.0402	0.0578

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 2023. Standard deviations are in italics.

Species	Harvest per hour	March/April	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0353	4,362 1,055	24,324 2,266	39 , 300 11,328	12,922 1,230	3,811 586	3,073 689	0	87,792 11,700
Chinook Salmon	0.0526	26 16	4,808 685	33,927 3,406	48,833 3,092	19,054 1,213	24,163 2,646	0	130,811 5,486
Rainbow Trout	0.0190	2,795	5,037	18,685	12,668	6,817	1,259	61	47,322
		585	972	2,807	844	784	190	0	3,245
Brown Trout	0.0028	4,286 1,399	246 72	97 17	1,858 644	166 56	295 128	15 0	6,963 1,276
Brook Trout	0.0000	37 0	0	0	0	0	23 23	0	60 23
Lake Trout	0.0103	45	1,551	8,960	7,749	5,253	2,022	0	25,580
		21	261	861	347	862	372	0	1,346
Northern Pike	0.0016	1,116	1,016	1,011	330	120	493	0	4,086
		698	470	667	167	98	193	0	1,108
White Perch	0.0027	0	955 499	333 209	886 849	4,230 2,776	364 350	0	6,768 2,974
Smallmouth Bass	0.0016	0	564 281	1,412 440	1,644 561	389 237	63 50	0	4,072 804
Yellow Perch	0.0402	8	1,096 488	5,771 1,252	29,820 7,419	17,709 3,166	44,266 5,912	1,324 839	99,994 10,125
Walleye	0.0533	29,595 11,829	28 , 200 4,349	1,715 475	56,918 8,673	12,697 2,377	2,771 746	497 202	132,393 15,509
Total Harvest	0.2196	42,270	67,797	111,211	173,628	70,246	78,792	1,897	545,841
		11,993	5,131	12,289	11,985	5,160	6,583	863	23,124
Angler Hours		326,087 27,821	392,186 21,034	408,132 22,853	628,781 23,214	344,151 16,098	375,694 14,600	10,244 1,348	2,485,275 52,457

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 2023. Standard deviations are in italics.

Species	Harvest per hour	March/April	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0399	3,061	23,619	39,103	12,332	3,798	1,758	0	83,671
Chinook Salmon	0.0554	965 26 16	2,254 4,791 685	11,327 33,905 3,406	1,215 48,167 3,081	586 18,890 1,212	476 10,332 1,901	0 0 0	11,678 116,111 5,162
Rainbow Trout	0.0212	62 31	5,013 972	18,676 2,807	12,645 844	6,808 784	1,061 133	61 0	44,326 3,189
Brown Trout	0.0031	3,851 1,374	205 64	95 17	1,858 644	153 55	260 125	15 0	6,437 1,525
Brook Trout	0.0000	0	0	0	0	0	0	0	0
Lake Trout	0.0122	45 21	1,551 261	8,952 861	7,749 ³⁴⁷	5,253 862	2,022 372	0	25,572 1,346
Northern Pike	0.0017	802 648	1,014 470	1,011 667	330 167	120 98	266 148	0	3,543 1,071
White Perch	0.0022	0	233 232	36 36	886 849	3,484 2,736	0	0	4,639 2,874
Smallmouth Bass	0.0017	0	507 278	1,144 414	1,584 560	389 237	18 18	0	3,642 787
Yellow Perch	0.0450	0	1,046 485	5,115 1,240	28,176 7,413	16,040 3,130	43,173 5,902	706 623	9 4,2 56 10,087
Walleye	0.0532	9,035 2,392	28,200 4,349	1,697 475	56,918 8,673	12,678 2,377	2,407 722	440 200	111,375 10,310
Total Harvest	0.2356	16,882 2,994	66,179 5,106	109,734 12,284	170,645	67,613 5,116	61,297 6,276	1,222 654	493,572 19,885
Angler Hours		216,604 23,553	364,693 20,935	378 , 866 22,645	588 , 248 22,944	317 , 537 15,978	222,947 13,079	5,726 1,148	2,094,621 49,598

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 2023. Standard deviations are in italics.

Species	Harvest per hour	March/April	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0218	581 241	460 158	197 105	590 191	13 13	244 141	0	2,085 388
Chinook Salmon	0.0135	0	0	22 14	666 259	164 58	433 ₁₄₇	0	1,285 304
Rainbow Trout	0.0004	0	0	9 8	23 20	9	0	0	41 23
Brown Trout	0.0009	34 21	41 33	2	0	13 14	0	0	90 41
Brook Trout	0.0000	0	0	0	0	0	0	0	0
Lake Trout	0.0001	0	0	8	0	0	0	0	8
Northern Pike	0.0004	0	0	0	0	0	35 16	0	35 16
White Perch	0.0002	0	0	0	0	0	20 19	0	20 19
Smallmouth Bass	0.0011	0	57 45	0	50 31	0	0	0	107 55
Yellow Perch	0.0244	0	0	478 155	907 308	712 300	230 197	0	2,327 498
Walleye	0.0027	254 168	0	0	0	0	0	0	254 168
Total Harvest	0.0655	869 295	558	716	2,236 447	911 306	962 284	0	6,252
Angler Hours		5,812 ₉₂₂	9,369 1,378	12,971 1,337	28 , 958 3,284	15,859 1,582	22,552 2,125	0	95,521 4,726

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 2023. Standard deviations are in italics.

Species	Harvest per hour	March/April	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0190	720 353	245 172	0	0	0	72 67	0	1,037 398
Chinook Salmon	0.0059	0	17 19	0	0	0	303 103	0	320 105
Rainbow Trout	0.0012	34 24	0	0	0	0	31 26	0	65 35
Brown Trout	0.0039	215 237	0	0	0	0	0	0	215 237
Brook Trout	0.0000	0	0	0	0	0	0	0	0
Lake Trout	0.0000	0	0	0	0	0	0	0	0
Northern Pike	0.0075	271 256	2	0	0	0	138 118	0	411 281
White Perch	0.0000	0	0	0	0	0	0	0	0
Smallmouth Bass	0.0051	0	0	268 148	10 6	0	0	0	278 148
Yellow Perch	0.0317	0	0	178 83	737 0	258 170	0	562 561	1,735 592
Walleye	0.0000	0	0	0	0	0	0	0	0
Total Harvest	0.0743	1,240	264 173	446	747	258 170	544	562 561	4,061
Angler Hours		7,521 1,065	5,872 940	4 , 298	6,739 ₉₉₁	5 , 232	24,854 2,173	173 173	54,689 2,970

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 2023. Standard deviations are in italics.

Species	Harvest per hour	March/April	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0042	0	0	0	0	0	999 473	0	999 451
Chinook Salmon	0.0545	0	0	0	0	0	13,095 1,831	0	13,095 1,831
Rainbow Trout	0.0120	2,699 584	24 18	0	0	0	167 133	0	2,890 599
Brown Trout	0.0009	186 118	0	0	0	0	35 24	0	221 121
Brook Trout	0.0002	37 0	0	0	0	0	23 23	0	60 23
Lake Trout	0.0000	0	0	0	0	0	0	0	0
Northern Pike	0.0004	43 29	0	0	0	0	54 38	0	97 48
White Perch	0.0089	0	722 442	297 206	0	746 472	264 350	0	2,129 764
Smallmouth Bass	0.0002	0	0	0	0	0	45 46	0	45 46
Yellow Perch	0.0070	8	50 53	0	0	699 325	863 280	56 34	1,676 433
Walleye	0.0864	20,306 11,583	0	18 19	0	19 12	364 186	57 29	20,764 11,585
Total Harvest	0.1742	23,279 11,598	796	315 207	0	1,464 573	15,909 1,958	113 45	41,876
Angler Hours		96,150	12,252	11,997	4,836	5,523	105,341	4,345	240,444
		14,740	1,167	2,702	822	806	5,733	684	16,143

Table 9. Average weight, average length and standard weight of salmonids from Wisconsin's Lake Michigan creel survey during 2013 through 2023, all areas and fishery types combined. std = standard deviation.

Average	6
	Standard
VAST	Standard Weight (lbs.)
(lbs.) Std Length (in.) Std	weight (tbs.)
Coho Salmon	
2013 5.3848 2.6743 23.6931 3.4848	4.0654
2014 3.9803 1.9275 21.2898 3.0179	3.9316
2015 4.0000 1.8299 21.4375 3.3676	3.8470
2016 4.7300 1.9033 23.3117 2.6028	3.9260
2017 4.0892 2.1177 22.4113 2.6747	3.6520
2018 4.7184 2.5656 22.0095 3.8256	4.2930
2019 6.5305 2.8447 23.3983 3.3888	4.4539
2021 3.6335 1.6999 20.8590 2.3806	4.2560
2022 6.4098 3.0389 24.8315 3.7971	4.4371
2023 2.8773 1.5352 19.3353 2.9078	3.3743
2025 2.67/3 1.5552 19.5553 2.90/6 Chinook Salmon	3.3/43
2013 10.4966 7.0121 28.1742 6.7792	10.2408
2013 10.4900 7.0121 28.1742 6.7792 2014 11.3915 5.0015 30.0012 4.8944	10.2321
2015 10.4108 4.5165 29.7477 5.4302	9.1940
2016 10.3154 6.0139 28.1910 5.9369	10.3142
2017 11.8211 6.0754 29.6128 5.8775	10.4097
2017 11.6211 0.0734 29.0128 3.6773 2018 13.1493 7.0864 30.6361 6.6760	10.0109
2019 13.0167 8.0081 29.9058 6.2441	10.9404
2021 11.5833 7.3158 28.7720 6.9710	10.6334
2022 11.9323 6.2615 29.4304 6.5854	9.5772
2022 11.9323 0.2013 29.4304 0.3834 29.2023 12.3257 5.0424 31.4328 4.9419	9.9060
Rainbow Trout	9.9000
2013 6.4838 2.6676 25.5596 3.7736	4.0376
2013 0.4636 2.0070 23.3390 3.7730 2014 6.7767 2.8838 25.9776 3.8120	4.1739
2015 5.7588 2.4129 25.2419 4.4224	3.9037
2016 5.8938 2.5324 24.7988 3.8542	4.2855
2017 6.5706 2.7022 25.8441 4.0113	4.0464
2018 6.4566 2.9929 25.6198 4.1660	3.7403
2019 7.8170 4.6551 25.1044 4.2576	4.3547
2021 6.8752 3.3082 25.3329 3.8655	4.4091
2022 6.6421 2.8727 24.8947 3.7643	4.5692
2023 6.2648 3.1368 25.7086 4.4061	3.5942
Brown Trout	3.37 12
2013 5.8537 3.0350 22.0303 3.6793	3.9190
2014 5.8459 3.3608 21.2050 4.6428	4.2392
2015 5.1532 3.1955 20.9572 4.3664	3.8568
2016 5.3826 4.0422 20.7914 5.2190	3.9606
2017 5.7685 3.2424 21.9807 3.9553	3.9659
2018 6.1024 3.8362 22.9790 4.4280	3.4505
2019 10.7946 5.2367 25.5988 3.9499	5.4836
2021 7.3147 4.6425 23.2017 5.2133	3.9345
2022 5.2743 4.0971 22.0500 4.8082	3.2207
2023 5.7174 3.8343 22.8522 4.4171	3.2599
Lake Trout	
2013 5.8791 2.7630 25.0904 3.1524	5.3559
2014 6.3332 3.4466 24.7813 4.0396	5.8595
2015 7.4777 3.7718 26.8174 4.1894	5.6124
2016 6.6598 3.4108 25.7354 3.8402	5.8303
2017 6.7796 3.3955 25.8882 3.9219	5.6707
2018 8.4836 4.4129 27.2497 4.0781	6.0765
2019 10.1448 5.9126 27.3294 4.4485	6.3484
2021 7.4925 5.9333 25.1929 4.7050	5.8878
2022 7.8774 4.3128 25.8641 4.2673	6.2779
2023 6.5764 2.6762 25.6774 2.9184	5.7983

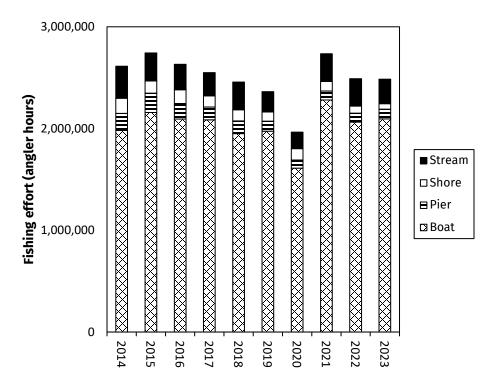


Figure 1. Fishing effort (angler hours) in Wisconsin waters of Lake Michigan and Green Bay from 2014 through 2023. *Note: Sport Fishing estimates for 2020 are for May – December only.

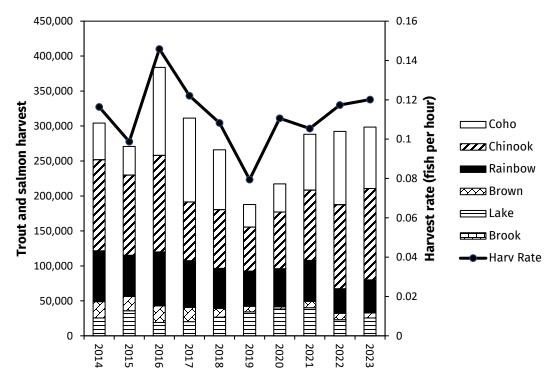


Figure 2. Trout and salmon harvest and harvest rate from Wisconsin waters of Lake Michigan and Green Bay from 2014 through 2023. *Note: Sport fishing estimates for 2020 are for May – December only.

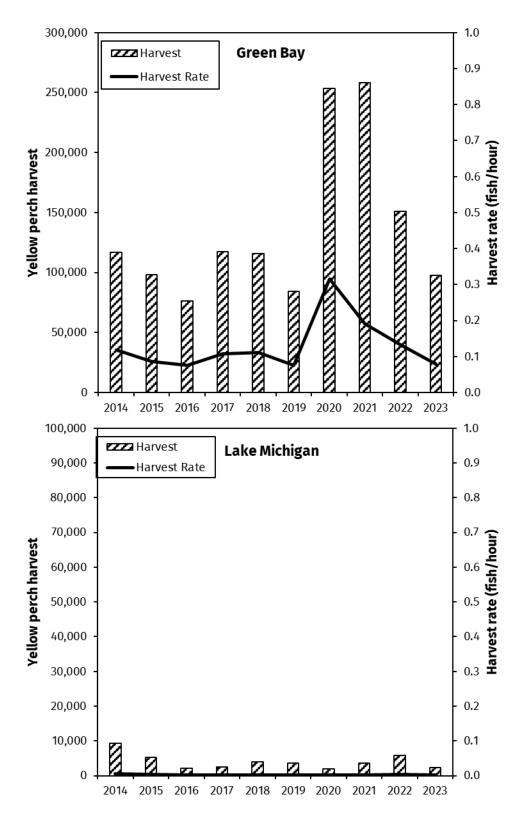


Figure 3. Yellow perch angler-harvest and harvest rate from Wisconsin waters of Green Bay and Lake Michigan from 2014 through 2023. Note: Figure 3 reflects that some Door County sites represent Green Bay for yellow perch harvest statistics. *Note: Sport fishing estimates for 2020 are for May – December only.