

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

LAKE SUPERIOR STATE-LICENSED COMMERCIAL FISHERY REPORT 2020

SCOTT SAPPER and DRAY CARL

DNR Lake Superior Fisheries Management Team

April 6, 2021

BACKGROUND

Wisconsin waters of Lake Superior are relatively shallow with a high degree of habitat complexity (e.g., Apostle Islands) compared to much of Lake Superior, and this habitat supports a highly productive ecosystem and successful commercial fishery. Over the past 25 years, the Wisconsin Department of Natural Resources (DNR) and Red Cliff and Bad River Bands of Lake Superior Chippewa have moved toward a smaller and better-regulated commercial fishery. Today, the Lake Whitefish and Cisco (“Lake Herring”) fisheries make up the majority of the catch and value of the Lake Superior commercial fishery, and these species are targeted using a combination of trap nets and gill nets. Since reaffirmation of Treaty fishing rights in the Ceded Territory, the DNR has maintained a Lake Superior Fishing Agreement with both Red Cliff and Bad River Bands of Lake Superior Chippewa, which stipulates several management practices for fisheries in Wisconsin waters of Lake Superior. The agreement includes methods for harvest limitations, commercial gear limitations, commercial fishing seasons, designated refuges, restrictive use areas, law enforcement patrols, commercial monitoring, exchange of data and information, etc. for all parties.

State-licensed commercial fishers in Wisconsin waters of Lake Superior chiefly operate out of ports in Bayfield, Cornucopia and Port Wing. Commercial fishers report all harvest and fishing efforts to our team, and in addition, team members collect fish biological data aboard commercial fishing vessels and dockside at commercial fishing facilities. Wisconsin commercial fishing management is built on three principles: limited entry, annual harvest and gear limitations and individual transferable quotas.

Since 1997, there have been 10 total licenses available for commercial fishing on Lake Superior. A commercial fishing license is required for any commercial fishing activity, which restricts the size of the commercial fleet (i.e., “limited entry”) and helps maintain the value of a commercial fishing license.

Commercial fishers are limited by how, when and where they can target and harvest Lake Superior fish. Three main types of gear are allowed in depths less than 330 feet: small-mesh gill nets, large-mesh gill nets and trap nets. Small-mesh gill nets are generally used to target Cisco (“Lake Herring”) and Chub species and can be between 2 3/8” and 3” mesh size. Large-mesh gill nets are generally used to target Lake Whitefish and Siscowet (“Fats”) and can be 4 7/16” mesh size or greater. Trap nets are generally used to target Lake Whitefish and can be fished with the pot end of the net in 90 feet or shallower. Rules also apply to the height of gill nets, how often nets should be checked or emptied, how nets should be marked and labeled, and more. Small-mesh gill nets may be fished all year. However, for other gears the commercial fishing season is split into three periods: Period 1 (November 28 to March 31), Period 2 (April 1 to May 31), and Period 3 (June 1 to September 30). Large-mesh gill nets are only allowed during these periods (i.e., excludes Lake Trout spawning season), and trap nets are only allowed in Periods 2 and 3. Pound nets (smaller, entrapment-style nets) and 1.5-inch gill nets are sometimes used for targeting Rainbow Smelt in the spring. Commercial fishing operations are prohibited within the boundaries of two large fishing refuges, Gull Island and Devils Island Refuges, and either prohibited or limited within 10 Restricted Sport Fishing Areas (Figure 1).

The amount of harvest and targeted fishing effort is also limited for commercial fishing in Wisconsin waters of Lake Superior. Fishers may only operate 10 total trap nets at a time, and the amount of large-mesh gill net footage they are allowed to set annually is determined by Lake Trout catch rates observed by onboard commercial monitoring. This provides incentive for commercial fishers to avoid catching Lake Trout in gill nets (more Lake Trout = less gill net footage allowed in following years) but ultimately, creates an upper limit to the amount of other fish (e.g., Lake

Whitefish) harvested with gill nets. Lake Trout must also be less than or equal to 25 inches to harvest out of trap nets. Annually, a total allowable catch (TAC) is set for Lake Trout in both management units (WI-1 and WI-2), which represents the maximum number of Lake Trout that can be harvested by all fisheries (i.e., commercial, recreational, home-use, assessment). One-third of the state (non-tribal) allotment of Lake Trout is allocated to commercial fishers, and each commercial fisher receives a specific number of individual Lake Trout jaw tags. When individual commercial fishers run out of either Lake Trout jaw tags or allowable gill net footage, they can not set any more large-mesh gill net in depths less than 330 feet for the remainder of the commercial fishing season. Lake Whitefish have a minimum size limit of 17 inches. Cisco harvest is limited with an annual TAC and commercial fishing quota. The TAC is determined using hydroacoustic survey estimates of Cisco spawning stock biomass. Targeted commercial Cisco harvest (defined as harvest between October 1 and December 31) is limited to the commercial fishing quota and is monitored closely. A portion of the overall Cisco TAC is set aside as an allowance for recreational harvest and commercial bycatch throughout the other times of the year. Total effort for large-mesh and small-mesh gill nets fished in depths greater than 330 feet is not regulated and may be fished at any time of the year.

Wisconsin state-licensed commercial fishing is managed using individual transferable quotas (ITQs). This is a common strategy in commercial fishing management and means that the total commercial fishing quota (e.g., Lake Trout, Cisco) or total allowable large-mesh gill net footage is split evenly among the 10 commercial fishing licenses. Afterward, fishers are free to trade or sell their individual shares to other license-holders. This strategy avoids a “derby” style fishery and produces a fishery that is safer for fishers, is more profitable and has a longer fishing season.

METHODS

This report only includes state-licensed commercial fishing effort and harvest. Daily harvest and effort (feet of gill net or trap net lifts) are reported by state-licensed commercial fishers. Additional information provided in reports includes the area fished (Statistical Grid; Figure 1), gear specifications and depths fished.

All effort and harvest statistics were summarized by calendar year, with the exception of the Lake Trout harvest number and quota in Figure 5. The Lake Trout harvest number and quota in Figure 5 are summarized by “fishing year,” which runs from November 28 to September 30 the following year and is used to track harvest of the Lake Trout quota. Commercial fishers generally report harvest in dressed weight, and dressed weights are used in this report. Any harvest reported by commercial fishers as round weight was converted to dressed weight using known conversion factors for this report, with the exception of Cisco Eggs and Rainbow Smelt. Cisco harvest during the targeted Cisco season (October-December) is tracked and reported in round weight in Figure 6 because the Cisco quota is calculated in round weight.

Effort for gill nets is reported in total feet of net lifted. Effort for trap and pound nets is reported as the number of lifts, and a lift is defined as lifting and emptying the entire pot end of the net.

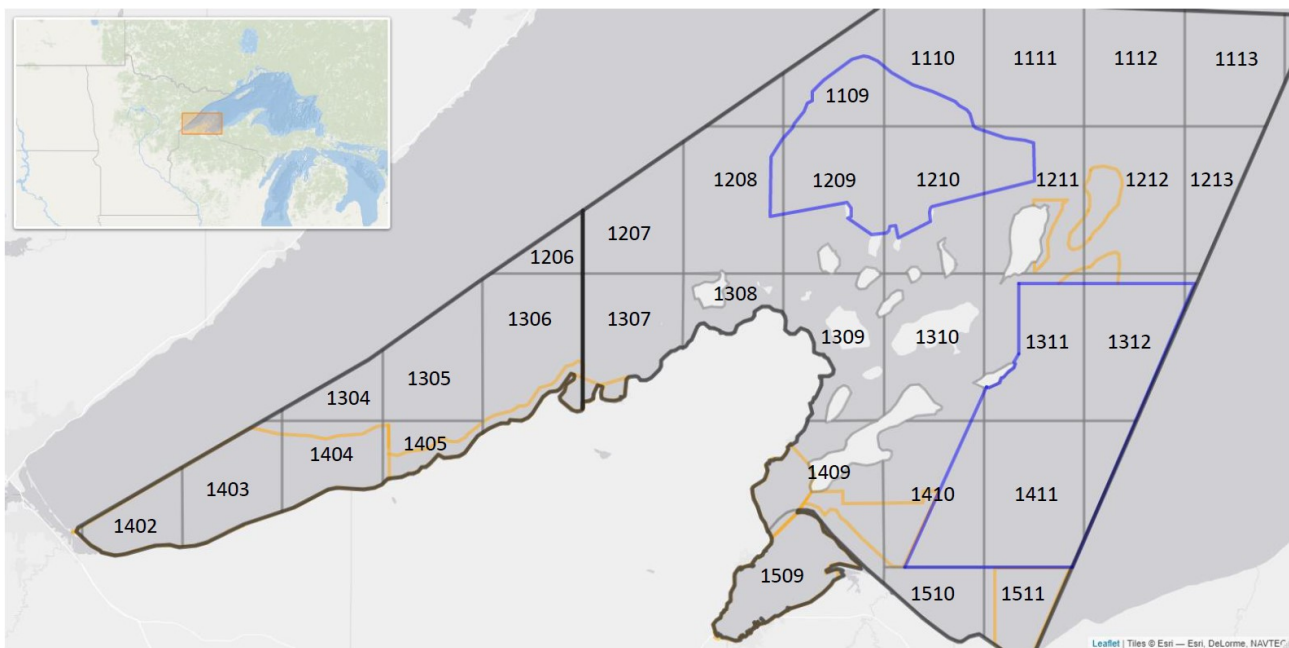


Figure 1. Wisconsin waters of Lake Superior and management units WI-1 (Western Arm) and WI-2 (Apostle Islands Region; black lines), statistical grids used for commercial harvest reporting (grey lines and 4-digit numbers), fish refuges (commercial fishing prohibited, blue lines), and restricted sport fishing areas (commercial fishing prohibited or limited, orange lines).

RESULTS

During the 2020 calendar year, state-licensed commercial fishermen reported catching annual totals of 424,097 pounds of Lake Whitefish, 34,545 pounds of Lake Trout, 90,866 pounds of Siscowet, 532,375 pounds of Cisco, 9,276 pounds of Cisco Eggs, 49,080 pounds of Chubs, 1,135 pounds of Rainbow Smelt, and 1,285 pounds of Burbot (Figure 2, Table 1).

Large-mesh gill net effort targeting Lake Whitefish (< 330 ft. depth) totaled 690,375 feet and caught 109,460 pounds of Lake Whitefish and 12,505 pounds of Lake Trout (Figure 3, Table 2). Large-mesh gill net effort targeting Siscowet (> 330 ft. depth) totaled 497,000 feet of gill net with a resulting harvest of 62,449 pounds (Figure 3, Table 2).

Small-mesh gill net effort targeting Cisco totaled 623,500 feet and caught 506,780 pounds of Cisco and 9,276 pounds of Cisco Eggs (Figure 3, Table 2). Small-mesh gill net effort targeting Chubs (> 210 ft. depth) totaled 1,568,400 feet with a resulting catch of 48,714 pounds of Chubs (Figure 3, Table 2). Small-mesh gill net effort targeting Rainbow Smelt (1.5-inch mesh) totaled 30,300 feet and produced 1,135 pounds (Figure 3, Table 2).

State-licensed trap net fishers made 851 lifts, producing 313,095 pounds of Lake Whitefish, 19,530 pounds of Lake Trout, 1,989 pounds of Siscowet, 820 pounds of Cisco, and 1,058 pounds of Burbot (Figure 3, Table 3). There were no pound nets fished for Rainbow Smelt during 2020.

Commercial fishers harvested 2,943 of the 4,000 Lake Trout quota in management unit WI-1 and 8,394 of the 8,500 Lake Trout quota in management unit WI-2 in 2020 (Figure 5). Commercial fishers also harvested 700,488 round pounds of the 1,317,900 round pounds Cisco quota in 2020 (Figure 6).

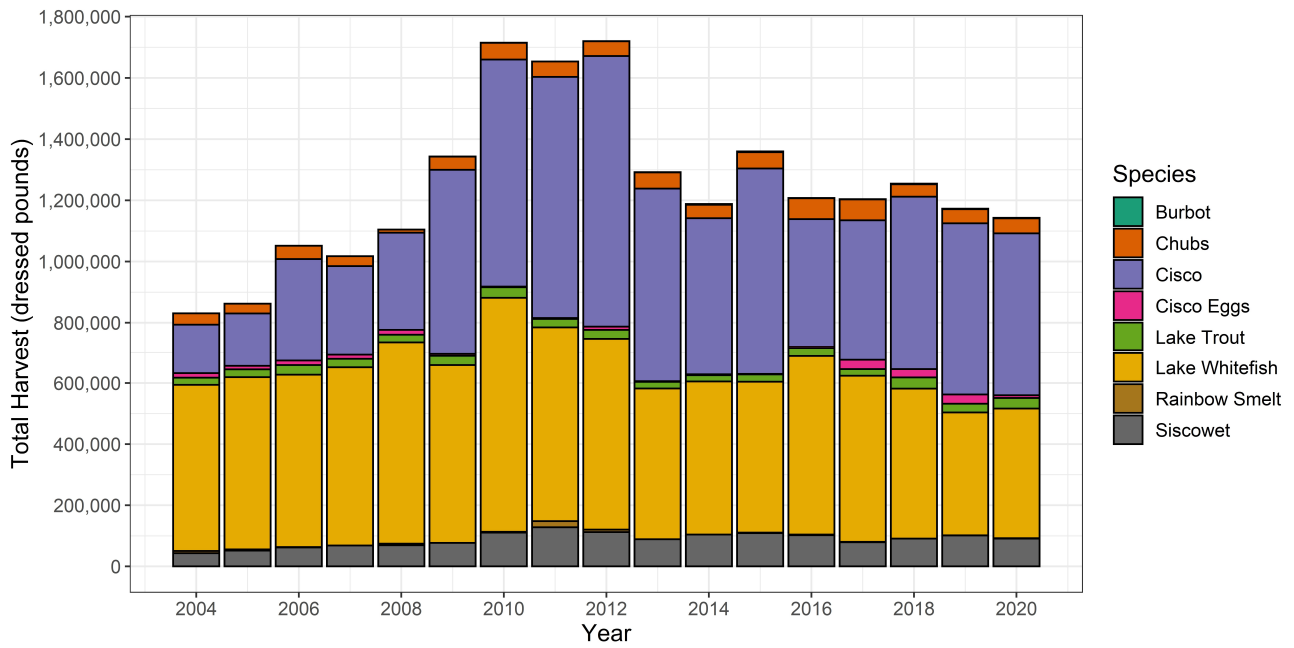


Figure 2. Total reported state-licensed commercial harvest of the chief eight commercially viable species (represented by different colors) in Wisconsin waters of Lake Superior from 2004 to 2020 from all allowable gear types. Harvest is expressed in dressed pounds, except for Cisco Eggs and Rainbow Smelt.

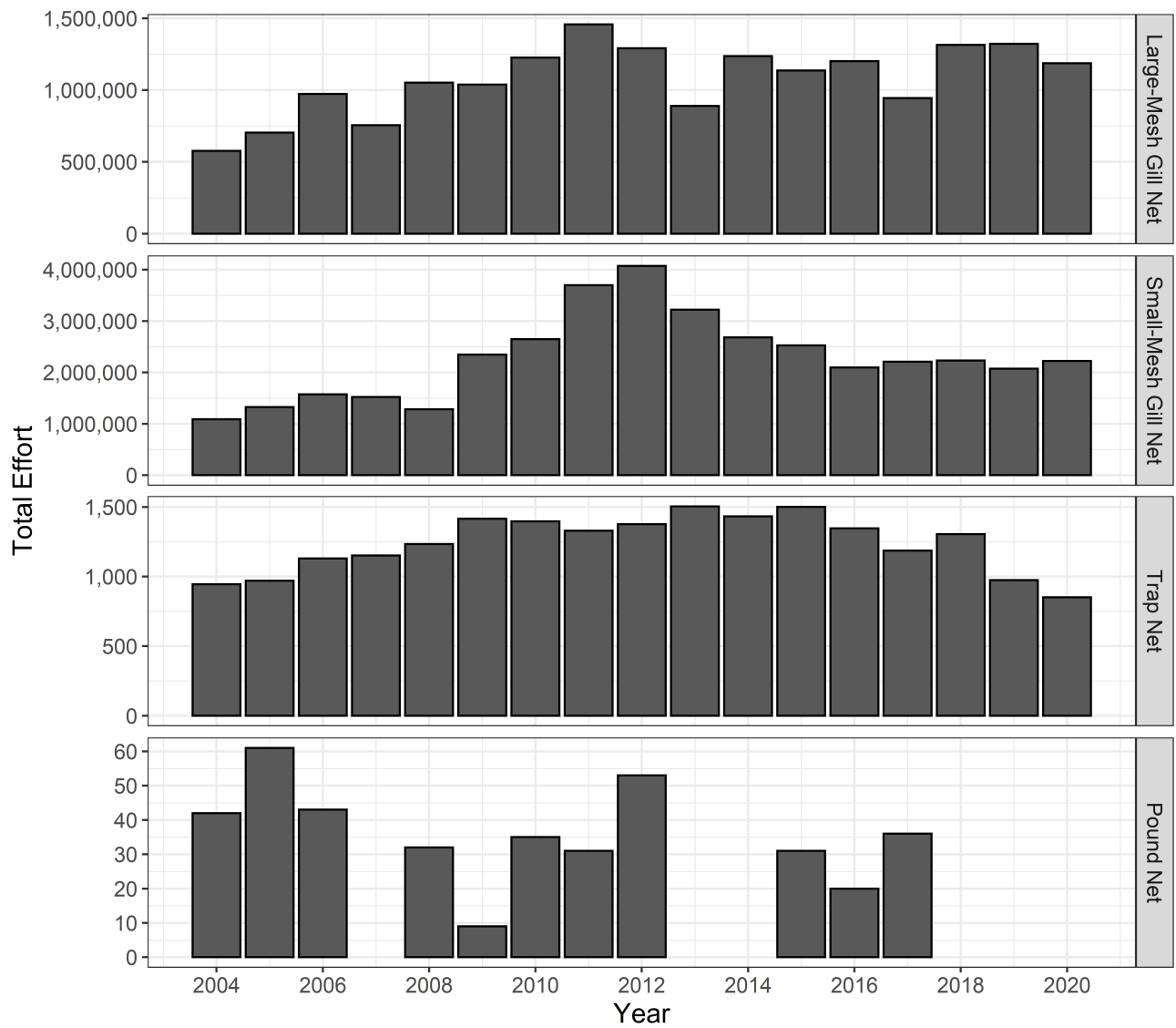


Figure 3. Total reported effort fished by state-licensed commercial fishers in Wisconsin waters of Lake Superior from 2004 to 2020 by gear categorization. Effort for large-mesh gill nets and small-mesh gill nets is represented in total footage of gill net, and effort for trap and pound nets is represented as number of lifts. A lift is defined as the act of lifting up and emptying the pot-end of the trap or pound net.

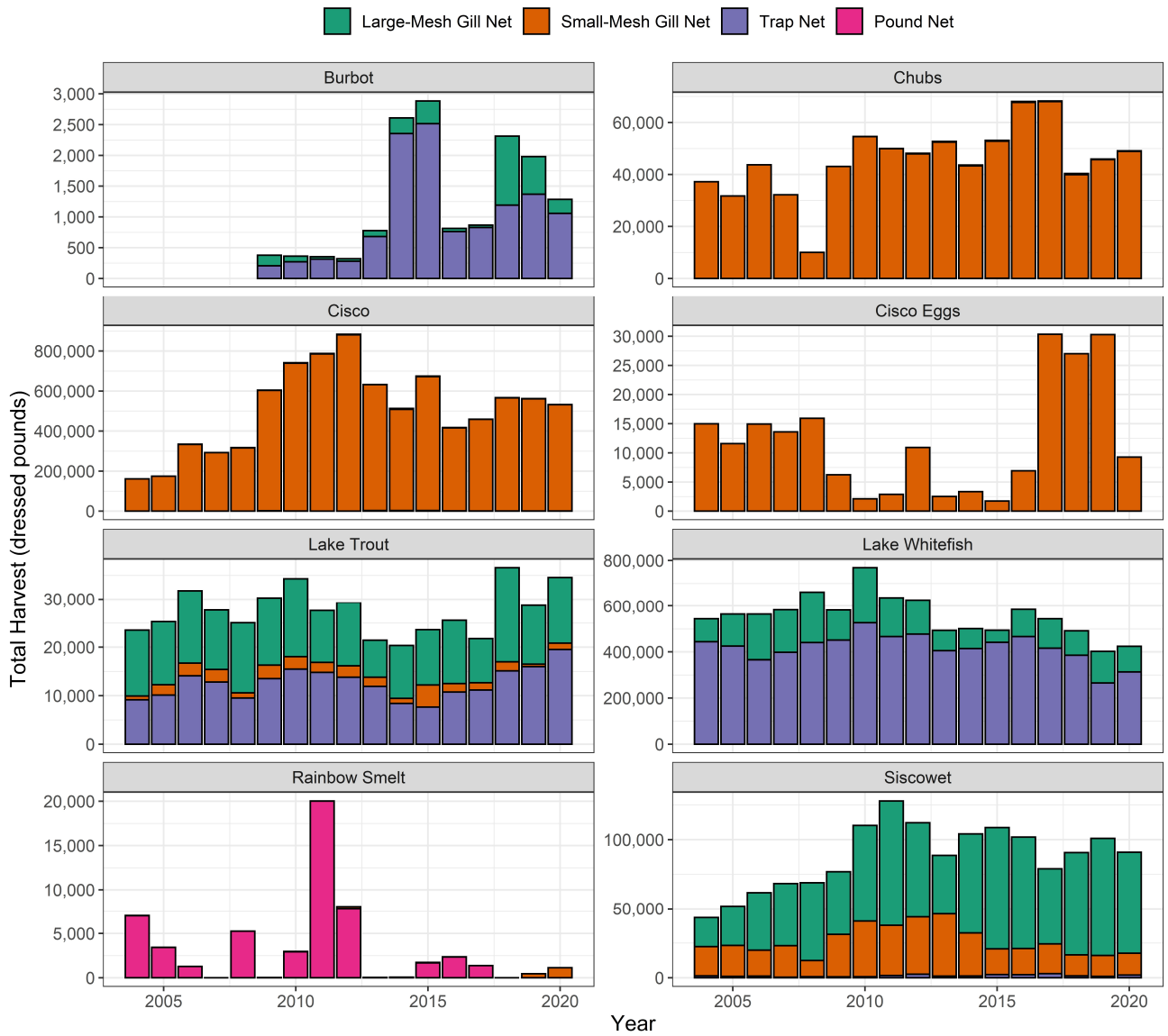


Figure 4. Total reported state-licensed commercial harvest of the chief eight commercially viable species in Wisconsin waters of Lake Superior from 2004 to 2020. Colors represent the gear type used during harvest. Harvest is expressed in dressed pounds, except for Cisco Eggs and Rainbow Smelt.

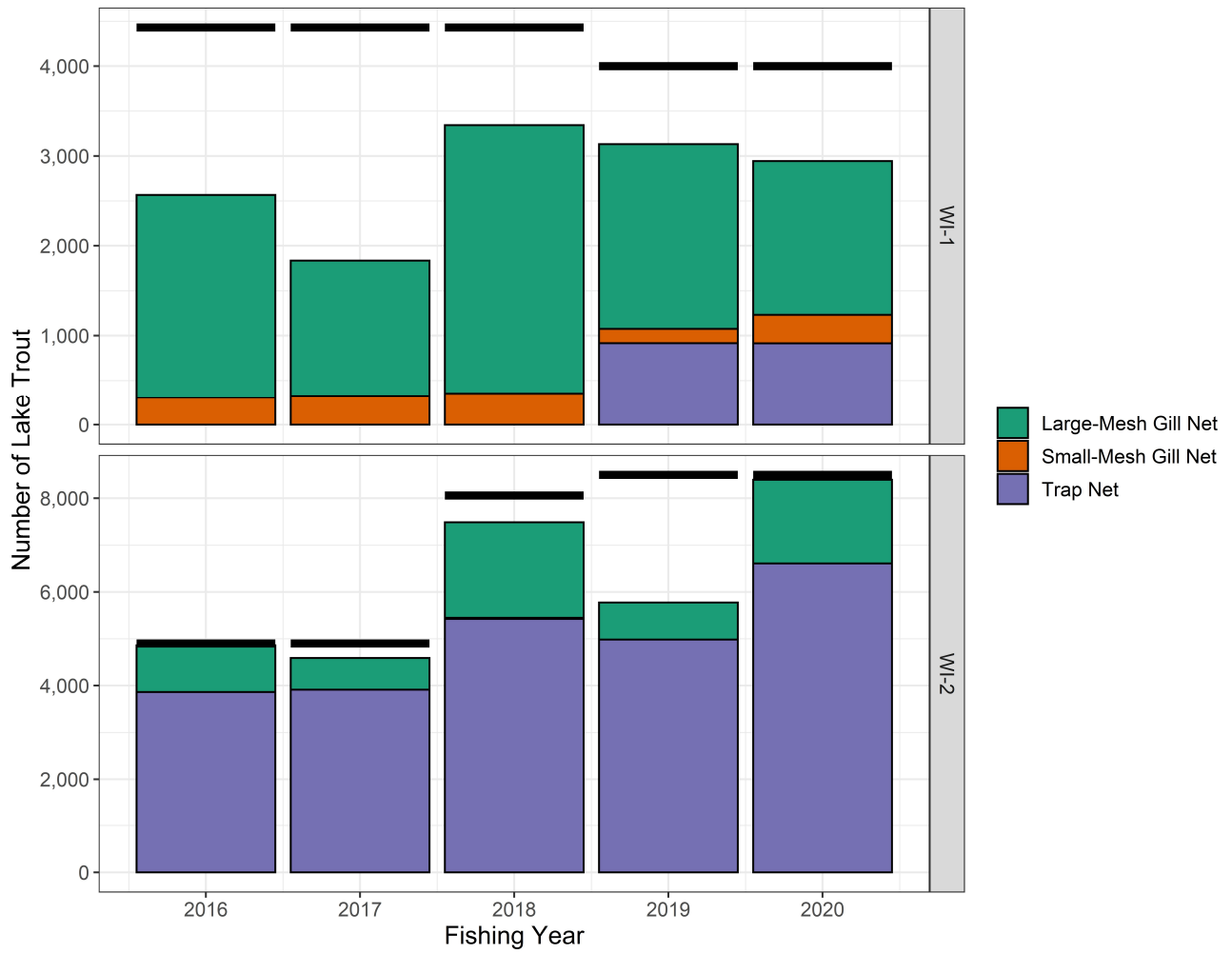


Figure 5. Total reported state-licensed commercial harvest of Lake Trout in Wisconsin waters of Lake Superior from fishing year 2016 (November 28, 2015 - September 30, 2016) to 2020 (November 28, 2019 - September 30, 2020) within each management unit. Harvest is expressed as the actual number of Lake Trout. Colors represent the gear type used during harvest. Black lines represent the quota allotted to the commercial fishery in a given year within each management unit.

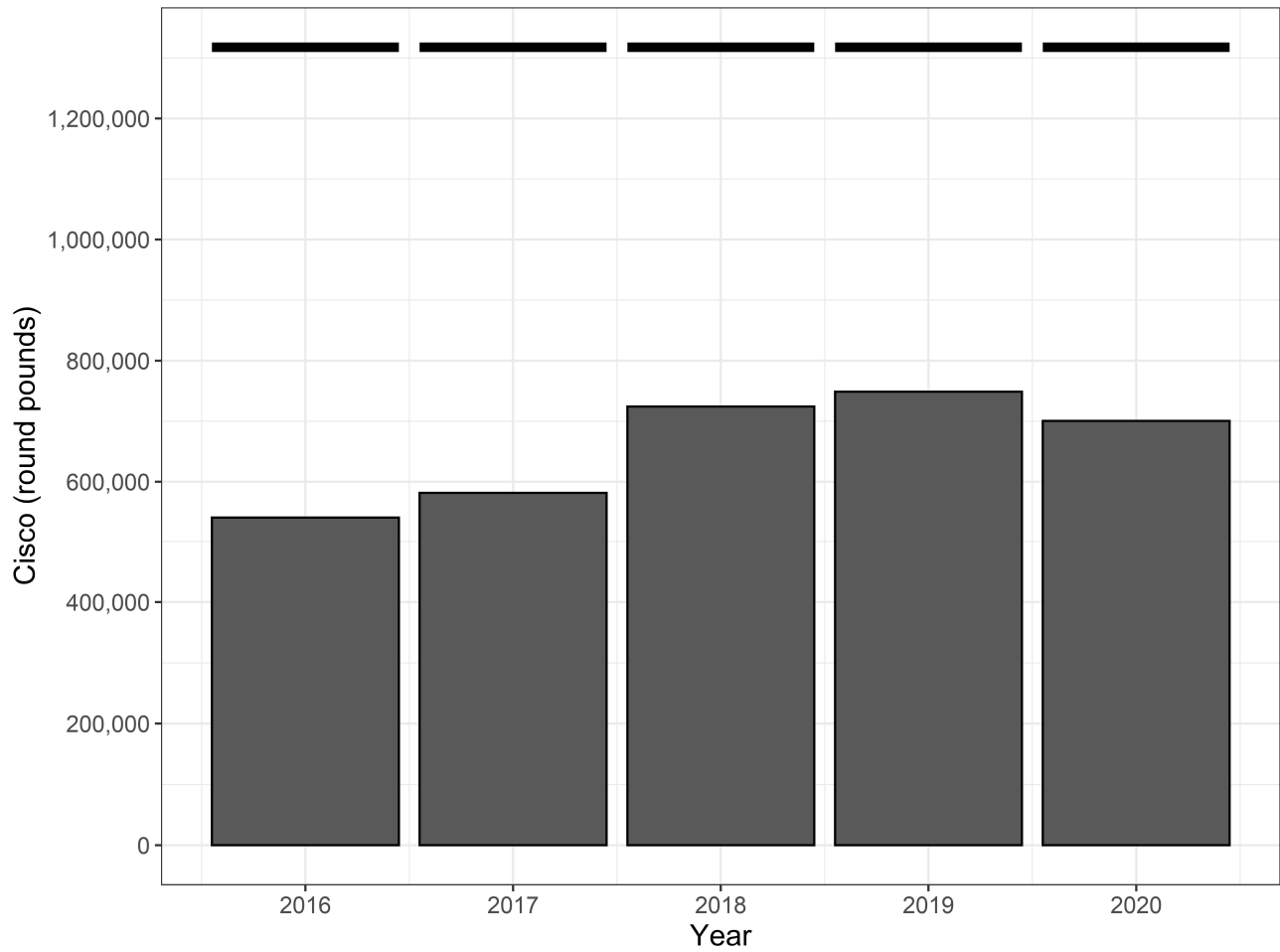


Figure 6. Total reported state-licensed commercial harvest of Cisco (Lake Herring) during the targeted Cisco season (October to December) in Wisconsin waters of Lake Superior from 2016 (first year of quota) to 2020. Harvest is expressed as round pounds of Cisco. Black lines represent the quota allotted to the commercial fishery in a given year in round pounds.

Table 1. Total reported state-licensed commercial harvest of Lake Whitefish, Cisco (Lake Herring), Lake Trout, Siscowet, Chubs, Cisco Eggs (Roe), Rainbow Smelt, and Burbot from all gears in Wisconsin waters of Lake Superior during calendar year 2020. All harvest is expressed in dressed weight, except for Cisco Eggs and Rainbow Smelt. See Figure 1 for locations of Statistical Grids.

Gear	Month	Grid	Lake Whitefish	Cisco	Lake Trout	Siscowet	Chubs	Cisco Eggs	Rainbow Smelt	Burbot
All Gears	January	All Grids	48,364	52	1,789	1,764	70	--	--	78
	February	All Grids	1,147	3	52	4	--	--	--	--
	March	All Grids	5,339	2,392	1,010	3,230	3,710	--	--	--
	April	All Grids	14,867	6,105	3,492	11,494	14,508	--	622	70
	May	All Grids	20,834	3,751	5,554	8,258	6,784	--	513	13
	June	All Grids	27,303	3,201	2,219	7,713	3,566	--	--	44
	July	All Grids	81,360	610	5,096	8,188	592	--	--	57
	August	All Grids	86,609	673	6,318	10,014	1,598	--	--	205
	September	All Grids	125,293	1,430	7,933	10,491	3,778	--	--	752
	October	All Grids	--	6,330	--	15,276	8,658	55	--	--
	November	All Grids	--	418,763	--	7,925	5,816	8,371	--	--
	December	All Grids	12,981	89,065	1,082	6,509	--	850	--	66
All Months	1208		28,777	26,810	1,084	3,495	2	--	--	40
	1209		52,160	--	3,172	235	--	--	--	195
	1210		5,063	--	758	25	--	--	--	51
	1211		54,551	17	4,580	1,923	1	--	--	59
	1304		10	13,985	895	9,226	31,602	152	--	--
	1305		2,215	62,497	3,189	38,795	15,867	2,876	--	--
	1306		16,837	20,987	3,328	19,057	1,544	1,198	--	99
	1307		73,989	247,909	6,114	14,833	58	3,501	1,135	319
	1308		70,116	109	2,706	504	--	--	--	341
	1309		35,450	85	1,301	500	--	--	--	151
	1310		18,663	15,355	1,027	1,978	--	--	--	5
	1405		4,750	38,274	2,865	295	6	1,242	--	--
	1409		34,817	1,215	1,166	--	--	--	0	25
	1410		26,698	105,131	2,360	--	--	307	--	--
		All Grids	424,097	532,375	34,545	90,866	49,080	9,276	1,135	1,285

Table 2. Total reported state-licensed commercial effort (feet of gill net) and harvest of Lake Whitefish, Cisco (Lake Herring), Lake Trout, Siscowet, Chubs, Cisco Eggs (Roe), Rainbow Smelt, and Burbot from gill nets in Wisconsin waters of Lake Superior during calendar year 2020. All harvest is expressed in dressed weight, except for Cisco Eggs and Rainbow Smelt. See Figure 1 for locations of Statistical Grids.

Gear	Month	Grid	Effort	Lake Whitefish	Cisco	Lake Trout	Siscowet	Chubs	Cisco Eggs	Rainbow Smelt	Burbot
Gill Net	January	1208	52,500	19,554	--	564	844	--	--	--	--
		1306	3,600	--	--	--	--	64	--	--	--
		1307	92,250	28,810	52	1,225	920	6	--	--	78
		All Grids	148,350	48,364	52	1,789	1,764	70	--	--	78
	February	1307	3,375	1,147	3	52	4	--	--	--	--
	March	1305	88,500	280	2,382	715	2,641	3,710	--	--	--
		1306	4,000	--	--	10	540	--	--	--	--
		1307	2,250	818	10	182	49	--	--	--	--
		1310	17,500	3,864	--	100	--	--	--	--	--
		1409	4,000	377	--	3	--	--	--	--	--
		All Grids	116,250	5,339	2,392	1,010	3,230	3,710	--	--	--
	April	1304	170,000	10	3,445	616	714	10,656	--	--	--
		1305	131,500	575	2,250	1,086	5,313	3,696	--	--	--
		1306	30,500	799	306	463	1,171	135	--	--	2
		1307	73,675	9,002	104	923	3,939	21	--	622	28
		1309	43,625	2,762	--	96	327	--	--	--	35
		1310	1,500	10	--	12	5	--	--	--	5
		1405	5,000	375	--	155	25	--	--	--	--
		1409	13,000	1,334	--	141	--	--	--	0	--
		All Grids	468,800	14,867	6,105	3,492	11,494	14,508	--	622	70
		May	1211	3,375	299	--	12	--	--	--	--
	1304		123,000	--	979	138	867	4,086	--	--	--
	1305		148,000	735	1,561	758	4,769	2,655	--	--	--
	1306		29,200	907	186	292	864	14	--	--	4
	1307		62,450	5,007	1,022	1,188	1,194	23	--	513	9
	1309		75,000	6,840	--	139	110	--	--	--	--
	1310		32,125	1,911	--	84	162	--	--	--	--
	1405		46,750	4,368	2	2,685	270	6	--	--	--
	1409		12,000	371	--	224	--	--	--	--	--
	All Grids		531,900	20,438	3,751	5,520	8,236	6,784	--	513	13
	June	1304	84,000	--	596	75	352	1,891	--	--	--
		1305	87,000	85	1,490	211	3,140	1,000	--	--	--
		1306	58,000	5	290	54	2,247	670	--	--	--
		1307	32,000	2,681	38	413	743	5	--	--	--
		1310	39,875	1,806	--	219	1,220	--	--	--	--
		1409	3,375	190	--	--	--	--	--	--	--
		All Grids	304,250	4,767	2,414	972	7,702	3,566	--	--	--
	July	1210	2,600	404	--	169	--	--	--	--	--
		1211	19,800	1,592	5	521	1,844	1	--	--	--
		1305	11,000	155	265	69	435	--	--	--	--
		1306	77,000	--	315	48	4,897	591	--	--	--
		1310	18,000	556	--	--	591	--	--	--	--
		1405	2,600	7	--	25	--	--	--	--	--
		All Grids	131,000	2,714	585	832	7,767	592	--	--	--
	August	1208	13,500	--	--	17	1,425	2	--	--	--

Table 3. Total reported state-licensed commercial effort (trap net lifts) and harvest of Lake Whitefish, Cisco (Lake Herring), Lake Trout, Siscowet, Chubs, and Burbot from entrapment nets in Wisconsin waters of Lake Superior during calendar year 2020. All harvest is expressed in dressed weight. See Figure 1 for locations of Statistical Grids.

Gear	Month	Grid	Effort	Lake Whitefish	Cisco	Lake Trout	Siscowet	Chubs	Burbot
Entrapment Net	May	1308	1	158	--	15	11	--	--
		1309	1	158	--	12	11	--	--
		1409	2	30	--	3	--	--	--
		1410	4	50	--	4	--	--	--
		All Grids	8	396	--	34	22	--	--
	June	1209	10	972	--	135	--	--	--
		1211	9	1,276	12	319	--	--	1
		1307	14	2,063	169	61	4	--	5
		1308	21	5,803	101	145	5	--	19
		1309	11	1,902	82	69	2	--	4
1409		36	7,343	235	223	--	--	15	
1410		17	3,177	187	295	--	--	--	
All Grids		118	22,536	787	1,247	11	--	44	
July		1209	20	6,868	--	213	--	--	--
		1211	18	3,161	--	1,173	11	--	--
	1306	18	3,503	--	875	51	--	6	
	1307	27	8,806	16	306	216	--	13	
	1308	42	27,890	5	536	130	--	29	
	1309	19	6,635	--	237	13	--	4	
	1310	5	1,149	--	137	--	--	--	
	1409	40	10,834	4	241	--	--	5	
	1410	31	9,800	--	546	--	--	--	
	All Grids	220	78,646	25	4,264	421	--	57	
August	1209	25	11,536	--	468	6	--	2	
	1211	24	13,857	--	1,223	26	--	2	
	1306	12	1,896	--	1,061	70	--	21	
	1307	27	4,816	1	723	276	--	38	
	1308	44	22,988	2	1,104	166	--	89	
	1309	23	12,712	1	509	22	--	48	
	1310	18	3,902	--	381	--	--	--	
	1409	24	9,937	--	247	--	--	5	
	1410	24	4,749	--	520	--	--	--	
	All Grids	221	86,394	4	6,236	566	--	205	
September	1209	67	32,784	--	2,356	229	--	193	
	1210	17	4,659	--	589	25	--	51	
	1211	58	34,366	--	1,332	42	--	56	
	1306	20	9,727	--	493	167	--	66	
	1307	28	7,081	1	661	299	--	122	
	1308	32	13,276	1	906	192	--	204	
	1309	14	4,441	2	239	15	--	60	
	1310	12	5,465	--	94	--	--	--	
	1409	11	4,401	--	84	--	--	--	
	1410	25	8,922	--	995	--	--	--	
All Grids	284	125,123	4	7,749	969	--	752		
All Months	1209	122	52,160	--	3,172	235	--	195	
	1210	17	4,659	--	589	25	--	51	
	1211	109	52,660	12	4,047	79	--	59	
	1306	50	15,126	--	2,429	288	--	93	
	1307	96	22,766	187	1,751	795	--	178	
	1308	140	70,116	109	2,706	504	--	341	
	1309	68	25,848	85	1,066	63	--	116	
	1310	35	10,516	--	612	--	--	--	
	1409	113	32,545	239	798	--	--	25	
	1410	101	26,698	187	2,360	--	--	--	
All Grids	851	313,095	820	19,530	1,989	--	1,058		