

# Wisconsin's 2000 open water sportfishing effort and harvest from Lake Michigan and Green Bay



Wisconsin Department of Natural Resources  
Bureau of Fisheries Management and Habitat Protection

# Wisconsin's 2000 open water sportfishing effort and harvest from Lake Michigan and Green Bay.

John Kubisiak

*Wisconsin Department of Natural Resources  
Bureau of Fisheries Management and Habitat Protection  
Plymouth Field Station  
P.O. Box 408  
Plymouth, Wisconsin 53073  
February, 2001*

*Abstract* - This paper documents the sport fishery in Wisconsin waters of Lake Michigan and Green Bay from March 1, 2000 through December 31, 2000. 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. Anglers spent an estimated 2,282,763 hours fishing on Lake Michigan and Green Bay during 2000 with boat-angler effort at 1,665,842 hours or 73% of the total hours. The estimated harvest of 705,952 fish was dominated by yellow perch (291,675), chinook salmon (136,986), coho salmon (88,203) and rainbow trout (72,278). The boat fishery, comprised of launched-boat, moored-boat and charter-boat anglers, dominated the fishery by harvesting an estimated 634,004 fish which was 90% of the total fish harvested and was dominated by yellow perch (268,673), chinook salmon (116,911), coho salmon (85,124) and rainbow trout (68,142). Pier, shore and stream anglers harvested primarily yellow perch, chinook salmon and brown trout. Overall harvest-rates were highest for yellow perch at 0.1278 fish/hour and chinook salmon at 0.0600 fish/hour.

Before the 1920s, fish biomass and abundance in Lake Michigan was dominated by lake whitefish (*Coregonus clupeaformis*), lake trout (*Salvelinus namaycush*), bloater chubs (*C. hoyi*), and yellow perch (*Perca flavescens*). During the 1920s to 1950s, the accidental introductions of several exotic species, including the rainbow smelt (*Osmerus mordax*), sea lamprey (*Petromyzon marinus*) and alewife (*Alosa pseudoharengus*), had a major impact on the fish populations in Lake Michigan. These exotic species, along with a deterioration of spawning habitat and increased commercial fishing pressure, were responsible for the decline of native fish populations (Hansen *et al.* 1990).

In response to the increasing alewife population and declining Lake Michigan fishery, the Wisconsin Department of Natural Resources (WDNR) in 1963 experimentally introduced 9,000 rainbow trout into

several Door Co. tributaries with a twofold purpose: 1) to control or limit the abundant alewife population and 2) to provide a sport fishery. This initial stocking, and efforts by other states (see Keller *et al.* 1990) proved to be very successful and Wisconsin's Lake Michigan stocking program expanded to include trouts (*Salmo* spp.), chars (*Salvelinus* spp.) and other pacific salmon (*Oncorhynchus* spp.). The stocking of non-native salmonids provided a practical way to control the alewife population and created a valuable sport fishery.

In order to manage the Lake Michigan sport fishery, assessments are conducted on both forage and predator-fish stocks. Since 1973, the US Fish and Wildlife Service has conducted bottom-trawl surveys in Lake Michigan to estimate the abundance of forage fish. These trawl estimates are based on a

series of ten-minute tows along the contour of nine depths at each of seven index-stations (Eck 1992). Since 1969, WDNR has monitored the Lake Michigan sport fishery with a contact creel-survey. This provides a continuous record of harvest, harvest rates and biological data of the harvest.

This paper reports the results of the annual survey of anglers fishing the Wisconsin waters of Lake Michigan. Data were collected from anglers at ramps, piers, shores and streams and from moored-boat and charter-boat anglers. Estimates were then calculated for fishing effort, harvest and harvest rates for 2000.

## STUDY AREA AND METHODS

### *Geographical Area*

Wisconsin's share of Lake Michigan is second only to Michigan and encompasses 495 miles of shoreline and 25 tributaries (Figure 1). The Wisconsin waters of Lake Michigan include Green Bay and portions of distinct north and south lake basins. For a complete description see Eggold (1995).

### *Creel-Survey Design*

The open-water creel survey was conducted using a modified access-point design called the Wisconsin Hybrid. It differs from a true access-point design in that creel clerks visit several sites per site group.

The fishing season for the open-water creel survey from March 15th to October 31st is stratified by statistical management unit (SMU) (i.e. counties), fishery types (i.e. ramp, pier, shore and stream), statistical survey periods (i.e. months or groups of months) and day type (i.e. weekday, weekend/holiday). Statistical management units were assigned based primarily on county lines and include units such as Kenosha, Racine, Milwaukee, etc. Survey sites within each SMU were placed into site groups. There may be one or several site groups in each SMU, depending on the time of year and SMU size. Site groups were selected randomly without replacement on a daily basis, and survey sites within a site group were visited randomly. Surveys were conducted on every weekend day and

holiday and on either two or three days during the week, depending on the month. Each workday was comprised of two shifts, an AM and PM shift. Combined together, the two shifts covered the entire angling day. The clerk worked one shift per workday. The shifts were equal in duration, did not overlap and were sampled with equal probability. An example is shown below.

### EXAMPLE:

Statistical Management Unit:	MILWAUKEE
Site Groups	MILW. SOUTH      MILW. NORTH
Survey Sites	S. Shore Ramps      McKinley Ramps
	S. Shore Pier      McKinley Pier
	Oak Creek      Milwaukee River
	Grant Park      Riverfront Ramp
	S. Metro Pier      N. City Shoreline

Three types of data were collected for each site sampled: counts of anglers, boat trailers or cars for effort, interviews of anglers or parties for harvest rates and biological data on harvested fish.

Instantaneous counts were made by creel clerks at all sites in the survey. The type of count was dependent on the type of fishery. At most ramp sites, boat trailers were counted. At most pier, shore and stream sites, anglers were counted. However, due to poor access points on some tributaries, car counts were used. Car and trailer counts were corrected by the average number of anglers per car or boat from interview data. The time the count was completed and count per site were recorded on the activity-count form.

Angler parties were interviewed at the completion of their fishing trips. Anglers were asked if they were state residents, what time they started their fishing trip, what they fished for and the number of caught and harvested fish. These data were recorded on the angler-interview form (Figure 2). Biological information such as species, length, weight, fin clip and tag numbers was collected on harvested fish (Figure 3). Standard-weight calculations follow Hansen (1986).

*Fishing-effort calculations.* Fishing-effort estimates (expressed in angler hours) were derived from instantaneous counts of anglers at pier, breakwater, shore and stream sites and from counts of boat trailers at boat ramps and from counts of cars at

stream sites. Counts were made at randomly-computed times at each site during each visit. We estimated angler effort and its variance within each stratum (SMU, fishery type, month and day type). The variance of angler effort includes variability among days and variability within days. Formulas for two-stage surveys were used to calculate variance. For a complete description see Eggold (1995).

*Harvest and harvest-rate calculations.* Harvest estimates were derived from interviews of anglers at all sites. The number of fish harvested and the hours fished from each interview were summed over all interviews in a stratum. The ratio of the two sums and the variance of the ratio were then calculated. The ratio was expanded by effort and summed across day types to estimate harvest. The harvest rate was obtained by dividing harvest by effort. For a detailed description see Eggold (1995).

#### *Moored-Boat Survey Design*

Anglers who moored their boat on Lake Michigan (including Green Bay) were surveyed by questionnaire beginning in 1988. The earlier surveys (1982-1985) were based on voluntary information from moored-boat owners who received their survey form from sport-fishing clubs. However, during 1988, creel clerks were asked to compile a list of boat-registration numbers from boats moored on Lake Michigan during a day of bad weather. These numbers were used to develop a list of boat owners from the WDNR master file of registered boats. Beginning in 1988, a mail survey was sent to all moored-boat owners to obtain information on 1) whether they moored their boat on Lake Michigan; 2) the port of call; 3) whether the boat was used for fishing during that week; 4) the number of days fished; 5) number of anglers in the fishing party; 6) number of hours fished; and 7) the number of each species caught on each day during the past seven-day period.

*Fishing effort and harvest calculations.* Fishing effort was calculated by harbor and month for each month of the survey. Party size and number of hours fished on each trip were multiplied, summed for each month and harbor, and divided by the number of responses received for the month. This

total was multiplied by the boat count and the number of days in the month to obtain estimated angler-hours for the entire moored-boat population. Harvest estimates were calculated by harbor and month for each species based on harvest per boat. The harvest data were expanded similarly to effort estimates.

*Harvest-rate calculations.* Harvest rate, the number of fish harvested per angler hour, was obtained by dividing the reported harvest of each species by fishing effort.

This type of survey is biased because interested and successful anglers tend to return the survey at a higher rate than other moored-boat owners. Therefore, estimated harvest will tend to be an overestimate of actual harvest but should be comparable among years and locations. For a detailed description of the calculations and formulas see Eggold (1993).

#### *Charter-Boat Census Design*

At the beginning of the fishing season, a packet of information was sent to each licensee. This packet included instructions on how to properly report chartered trips, a sample of a completed monthly report, grid map of Lake Michigan, list of wardens, coded-wire tag collection stations, fin-clip list, sea lamprey information and a supply of monthly-report forms.

Each license holder was required by law to report all paid charters. The report for each calendar month was due by the 10th of the following month to the WDNR Plymouth Field Station. If a report was late or incorrectly filled out a warning letter was sent. Subsequent violations were referred directly to a Wisconsin Conservation Warden.

The information obtained from each trip included: license number, fishing port, date of fishing trip, grid fished, number of resident and nonresident anglers, number of fish harvested, time trip started (a.m., p.m., evening), number of lines fished and number of hours fished. This information had to be recorded within half an hour after completing each trip and returning to the dock or shore. The number of lake trout, coho salmon, brown trout, steelhead, chinook

salmon and other species harvested, any tag numbers and the number of lampreys attached to chinook salmon and lake trout had to be recorded prior to midnight of the day of each trip. The data were received at the Plymouth Field Station, entered and checked for errors.

## RESULTS

Fishing effort in Wisconsin waters of Lake Michigan and Green Bay was estimated at 2,282,763 ( $\pm$  40,585) hours during the 2000 open-water season of March 1 - December 31 (Table 1). Effort was 27% below the ten-year average overall (Figure 4), and was more than 30% below in Kenosha, Racine, Milwaukee and Green Bay SMUs. Much of the decline can be attributed to a 53% reduction in effort by moored boat anglers compared to the ten-year average. Low water conditions in Lake Michigan resulted in reduced availability of mooring slips and delayed launches of boats. Despite a steady decline in effort since 1994 and effort during 2000 at the lowest level of the past ten years, Green Bay anglers had the most fishing effort of any SMU, at 645,608 ( $\pm$  22,318) hours or 28% of all angler hours for 2000. Kewaunee Co. anglers were second at 329,938 ( $\pm$  16,718) hours.

Angler hours were disproportionately spread among the four fishery types. Boat anglers spent 1,665,842 ( $\pm$  38,339) hours or 73% of all angler hours fishing on Lake Michigan or Green Bay (Table 5). Stream anglers fished the second most at 307,604 ( $\pm$  10,809) hours or 13% of the total (Table 8). Shore and pier anglers fished 169,673 ( $\pm$  5,546) and 139,644 ( $\pm$  5,446) hours respectively (Tables 6-7).

Fishermen harvested an estimated 370,137 ( $\pm$  9,617) salmonids during the 2000 season (Table 2). Chinook salmon were the most-numerous salmonid species harvested in all years since 1988 except 1993 and 1994 (rainbow trout dominated) and 1997 (coho salmon). Chinook salmon dominated the 2000 salmonid harvest, comprising 136,986 ( $\pm$  7,759) fish or 37% of the total. Coho salmon harvest was second to chinook, with 88,203 ( $\pm$  3,774) fish or 24% of the total. Rainbow trout harvest was 72,278 ( $\pm$  3,785), 19% of the total. Brown trout harvest was 41,111 ( $\pm$  2,294), 11% of the total. Lake trout declined to 8% of the harvest at

a record-low 31,360 ( $\pm$  1,620), followed by brook trout at 199 ( $\pm$  60).

The combined harvest-rate for salmonids of 0.1621 was the highest of the past ten years, and well above the ten-year average of 0.1348. The low total harvests were due to reduced effort, especially by moored-boat anglers, not low catches by the anglers who actually fished.

Anglers harvested an estimated 291,675 ( $\pm$  26,971) yellow perch during 2000 (Table 3, Figure 6). Anglers harvested 216,833 ( $\pm$  22,625) yellow perch in Green Bay with a harvest rate of 0.3359 fish/hour. Lake Michigan anglers harvested 74,843 ( $\pm$  14,679) yellow perch and had a harvest rate of 0.0457 fish/hour (Table 3, Figure 6). Yellow perch comprised the majority of the harvest from all areas combined with an overall harvest-rate of 0.1278 fish/hour (Table 4). Yellow perch were the most numerous species harvested for the boat, pier and shore fisheries, although the majority of the harvest (92%) was from boats (Table 5). Yellow perch harvest-rates were highest for the boat fishery at 0.1613 fish/hour. The majority of the harvest took place in the summer months from June through September.

Perch harvest has increased each year since 1997, but was still considerably (81%) below the 1992-1995 average of 1,496,923. A decline in Green Bay perch harvest during 2000 was offset by a Lake Michigan harvest more than double the 1999 estimate. The decline in Green Bay perch harvest may be a result of decreased effort: the perch harvest/hour on Green Bay increased by 22% over 1999, despite the decline in total numbers. Recent management actions to protect the dwindling yellow perch population include: 1) closure of the Lake Michigan commercial season for yellow perch; 2) a drop in the sport bag to five per day with a June closure on Lake Michigan; and 3) a reduction in the commercial quota for yellow perch in Green Bay. Additional restrictive measures for Green Bay are proposed for 2001. These measures are intended to protect the remaining yellow perch stocks by decreasing harvest.

The total harvest of 13 major species was 705,952 ( $\pm$  28,954) fish for 2000 (Table 4). The majority of the harvest came from boat anglers (Table 5) who

harvested 634,004 ( $\pm 28,671$ ) fish or 90% of the total. Pier, shore and stream anglers accounted for 17,256 ( $\pm 2,138$ ), 23,310 ( $\pm 2,361$ ) and 31,382 ( $\pm 2,482$ ) fish respectively or 2.4%, 3.3% and 4.4% of the total (Tables 6-8).

Coho length and weight declined from the exceptional values observed during 1999, but were right at the ten-year averages. The harvest of 88,203 was up from 1999 by 57% and was 9% above the ten-year average. Overall coho salmon harvest-rates were 0.0386 (Table 4). Boat anglers harvested 97% of all coho salmon (85,124) and enjoyed harvest rates of 0.0511 fish/hour (Table 5). The remaining harvest was divided among the pier, shore and stream anglers at 351, 1,046 and 1,682 fish, respectively (Tables 6-8). Biological data collected on coho salmon show a mean weight of 4.1 ( $\pm 2.1$ ) pounds, identical to the ten-year average (Table 9). Mean length was 22.0 ( $\pm 4.1$ ) inches, while standard weight of a 22-inch coho was 4.2 pounds, 9% above the ten-year average (Table 9).

Anglers harvested 136,986 ( $\pm 7,759$ ) chinook salmon during 2000, down 13% from the exceptional 1999 harvest, and 2% above the ten-year average of 133,764 (Table 2). The overall harvest-rate was 0.0600. Boat anglers harvested 116,911 ( $\pm 7,574$ ) fish or 85% of all chinook salmon (Table 5). Boat-angler harvest rates were 0.0702. Stream anglers saw a strong harvest of chinook, their dominant species in the creel during 2000, although less than during 1999. The stream harvest rate was 0.0385 (Table 8). Compared to the previous ten years, the average weight and length for chinook salmon were second only to 1999, at 12.2 ( $\pm 6.7$ ) pounds and 29.4 ( $\pm 6.8$ ) inches. Standard weight of 10.7 pounds for a 30-inch chinook was the highest of the past ten years (Table 9).

Harvest of rainbow trout was the lowest since 1991, but they continue to contribute heavily to the salmonid fishery. Rainbow trout were the third-most abundant salmonid and fourth-most abundant species harvested during 2000 at 72,278 ( $\pm 3,185$ ) fish (Table 4). The majority (94%) of the harvest occurred in the boat fishery with 68,142 ( $\pm 3,135$ ) fish (Table 5). Stream anglers harvested 3,484 ( $\pm 522$ ) steelhead with a harvest rate of 0.0113 fish/hour (Table 8). Rainbow trout averaged 6.1 ( $\pm$

3.1) pounds and 25.4 ( $\pm 4.3$ ) inches with a standard weight of a 22-inch rainbow equal to 4.0 pounds, the second-highest standard weight of the last ten years, after 1999 (Table 9). The reduced harvest was mostly due to decreased effort by moored boats, as evidenced by a harvest rate of 0.0317 fish/hour, compared to 0.0298 rainbows per hour during 1999. Nevertheless, harvests by all fishery types were somewhat down from the ten-year average. The recent declining trend in rainbow trout harvest is being addressed by Team Nearshore, a group of Wisconsin DNR Biologists charged to improve the nearshore salmonid-fishery in Lake Michigan.

Wisconsin anglers harvested 31,360 ( $\pm 1,620$ ) lake trout in Lake Michigan, the lowest harvest recorded over the last 15 years and 45% below the ten-year average of 57,119. This is attributed to the low moored boat effort, combined with low harvest rates overall. Boat anglers likely reduced their lake trout effort in response to good catches of coho and chinook salmon. The overall harvest-rate was 0.0137 fish/hour (Table 4). Boat anglers harvested all but 96 lake trout (reported from pier and shore), with 31,264 ( $\pm 1,619$ ). Boat harvest-rates were 0.0188 fish/hour, identical to the 1999 rate (Table 5). Lake trout size was calculated at 8.1 ( $\pm 3.5$ ) pounds and 27.4 ( $\pm 3.5$ ) inches with a standard weight of 5.8 pounds for a 25-inch lake trout. These values are similar to the 10-year averages (Table 9).

An estimated 41,111 ( $\pm 2,294$ ) brown trout were harvested during 2000 from all surveyed areas, with an overall harvest-rate of 0.0180 fish/hour (Table 4). This reflects an increase over 1998 and 1999, but is still 11% below the ten-year average. Brown trout harvest by boat anglers was 30,712 ( $\pm 2,105$ ) fish or only 75% of the total (Table 5). Pier anglers harvested 2,762 ( $\pm 461$ ) brown trout and had harvest rates of 0.0198 fish/hour (Table 6). This total was the highest of any species except yellow perch and comprised 43% of the non-yellow perch pier harvest. Brown trout harvest by shore anglers was behind yellow perch and chinook salmon, at 5,198 ( $\pm 641$ ) brown trout or 33% of the non-yellow perch shore harvest (Table 7). Shore harvest-rates were 0.0306 fish/hour. Brown trout biological data for 2000 were the highest of the past ten years, with a mean size of 6.2 ( $\pm 3.5$ ) pounds, 22.7 ( $\pm 3.9$ ) inches. However, the 2000 standard weight of 3.6

lbs for a 20-inch fish is slightly below the average (Table 9).

Smallmouth bass were numerous in the harvest, but down from previous years at 18,195 ( $\pm$  2,593) fish (Table 4). Overall harvest-rates were 0.0080 fish/hour. Again, boat anglers harvested the majority of the smallmouth bass, with 16,343 ( $\pm$  2,537) fish or 90% of the total (Table 5). Boat harvest-rates were slightly higher (0.0098) than the overall harvest-rate.

White perch were also present in the harvest at 9,087 ( $\pm$  2,860), slightly down from the 1999 harvest of 11,135. Overall harvest-rates were fairly low at 0.0040 fish/hour (Table 4). The harvest was spread among boat (41%), stream (39%), shore (14%) and pier (5%). This is unlike 1999, where 81% of the harvest occurred in the stream fishery.

Walleyes were the last species harvested in large numbers during the open-water fishing season. An estimated 11,319 ( $\pm$  1,650) walleyes were harvested (Table 4). This represents a substantial decrease from recent years, which averaged 21,171 during 1996 to the present. Like smallmouth bass, walleye harvest-rates were lower than most salmonids at 0.0050 fish/hour. Boat anglers harvested 8,546 ( $\pm$  1,575) walleyes (Table 5) while stream anglers harvested 2,610 ( $\pm$  475) (Table 8).

The remaining species, brook trout, splake and northern pike, comprised less than 1% of the total harvest and 1.4% of the non-yellow perch harvest (Table 4).

## SUMMARY

Lake Michigan anglers spent an estimated 2,282,763 hours fishing on Lake Michigan and Green Bay with boat-angler effort of 1,665,842 hours or 73% of total hours. The estimated harvest of 705,952 fish was dominated by yellow perch (291,675) and to a lesser degree by chinook salmon (136,986) and coho salmon (88,203).

Fishing effort during 2000 was 27% below the ten-year average. The moored-boat fishery saw the most dramatic decline in effort, with 2000 estimated at 53% below the ten-year average. This was

mainly due to low lake levels, which reduced slip availability and delayed launch dates.

Salmonid harvest-rates for 2000, the average number of trout and salmon harvested per hour, were the highest recorded over the last ten years. Average length and weight were about average for most salmonids, but standard weight was at or near the highest recorded for the last ten years for coho, chinook and rainbow trout (Table 9), an indication that the fish were in good condition. Total harvest of most salmonids was somewhat low compared to recent years, mostly due to the reduction in effort. Harvests of smallmouth bass and walleye were poor during 2000, even when the lower effort is considered.

The 2000 harvest of 291,675 yellow perch increased for the fourth year in a row (Table 3) since more-restrictive regulations were put in place for Lake Michigan. Perch harvest in Lake Michigan more than doubled over 1999. However, while the Green Bay portion of this harvest declined, the harvest rate on Green Bay actually increased relative to 1997, 1998 and 1999 (Table 3). Nevertheless, harvest rates were still well below values from the early 1990s, and assessment catches of recent year-classes have been very poor. This suggests a recruitment problem for yellow perch in Green Bay, paralleling what has already occurred in Lake Michigan. With negligible numbers of small yellow perch in Green Bay to produce tomorrow's fishery, a continued decline is likely for the near future.

## REFERENCES

Eck, G.W. 1992. Status of alewives, bloaters, rainbow smelt, slimy sculpins, deepwater sculpins and yellow perch in Lake Michigan. U.S. Fish and Wildlife Service. Ann Arbor.

Eggold, B.T. 1993. Wisconsin's 1993 Lake Michigan Moored-Boat Fishery. Wisconsin Department of Natural Resources, Bureau of Fisheries Management, Madison, Wisconsin.

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.

Hansen, M.J. 1986. Size and condition of trout and salmon from the Wisconsin waters of Lake Michigan, 1969-84. Fish Management Report 126. Wisconsin Department of Natural Resources, Fisheries Management, Madison, Wisconsin.

Hansen, M.J., Schultz, P.T., and Lasee, B.A. 1990. Changes in Wisconsin's Lake Michigan salmonid sport fishery, 1969-1985. North American Journal of Fisheries Management 10:442-457.

Keller, M., K. D. Smith and R. W. Rybicki [Editors]. 1990. Review of salmon and trout management in Lake Michigan. Michigan Department of Natural Resources, Fisheries Special Report No. 14. Charlevoix, Michigan.

Table 1. Estimated angler effort (hours) by location in Wisconsin waters of Lake Michigan and Green Bay during March through December of 1991 through 2000. Standard deviations are in brackets.

Location	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
Kenosha Co.	184,570 [10,815]	196,298 [10,102]	195,609 [9,665]	189,877 [8,195]	164,111 [9,934]	157,607 [6,705]	188,561 [8,937]	174,437 [8,351]	183,774 [11,478]	112,930 [4,728]	174,777 [9,093]
Racine Co.	332,412 [20,585]	411,704 [21,114]	327,379 [19,740]	315,927 [13,911]	335,535 [18,995]	238,052 [13,846]	302,364 [15,472]	232,660 [15,844]	260,600 [15,917]	201,774 [13,269]	295,841 [17,103]
Milwaukee Co.	465,734 [19,160]	491,750 [19,696]	368,467 [13,736]	404,704 [14,303]	343,545 [12,115]	280,704 [9,625]	283,356 [10,492]	295,991 [9,162]	244,605 [8,620]	212,570 [8,106]	339,143 [13,121]
Ozaukee Co.	175,813 [9,630]	211,667 [11,331]	139,075 [8,437]	206,470 [11,873]	232,899 [16,115]	242,963 [11,915]	229,387 [12,796]	244,186 [13,831]	233,549 [14,891]	169,828 [8,650]	208,584 [12,192]
Sheboygan Co.	191,250 [10,632]	211,947 [11,732]	152,770 [8,747]	244,500 [13,999]	249,426 [16,183]	262,948 [14,697]	216,834 [13,730]	219,642 [12,123]	244,929 [14,004]	156,989 [10,983]	215,124 [12,858]
Manitowoc Co.	260,313 [12,589]	303,214 [15,706]	298,533 [15,475]	266,866 [11,121]	235,990 [9,038]	204,487 [9,673]	227,955 [11,713]	196,492 [9,398]	204,714 [11,257]	205,858 [8,742]	240,442 [11,714]
Kewaunee Co.	328,171 [21,383]	295,724 [13,318]	342,852 [17,627]	338,864 [18,617]	329,637 [16,500]	334,736 [23,955]	327,253 [19,421]	342,260 [28,589]	355,612 [19,833]	329,938 [16,718]	332,505 [20,013]
E. Door Co.	344,292 [16,485]	390,178 [38,245]	310,454 [16,293]	331,851 [19,768]	304,201 [17,298]	278,601 [15,113]	205,964 [16,043]	259,020 [12,907]	240,897 [13,553]	247,268 [18,263]	291,273 [19,645]
Green Bay	1,324,911 [40,786]	1,188,588 [38,041]	1,112,877 [39,002]	1,191,252 [34,804]	1,078,522 [32,379]	972,938 [34,570]	886,873 [35,678]	905,762 [35,986]	856,591 [29,469]	645,608 [22,318]	1,016,392 [34,671]
Total Effort	3,607,466 [60,536]	3,701,072 [67,348]	3,248,017 [56,181]	3,490,310 [53,615]	3,273,866 [53,193]	2,973,036 [52,708]	2,868,547 [53,164]	2,870,450 [55,770]	2,825,271 [49,492]	2,282,763 [40,585]	3,114,080 [54,655]

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 1991 through 2000. Standard deviations are in brackets.

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
Coho Salmon	44,195 [2,435]	70,876 [3,890]	74,304 [4,151]	110,001 [5,857]	65,647 [3,107]	104,715 [4,546]	138,423 [6,039]	59,203 [2,706]	56,297 [2,929]	88,203 [3,774]	81,186 [4,117]
Chinook Salmon	139,081 [5,318]	103,568 [6,571]	87,366 [3,707]	99,754 [4,424]	162,888 [5,953]	183,254 [7,746]	130,152 [5,050]	136,653 [4,702]	157,934 [5,740]	136,986 [7,759]	133,764 [5,839]
Rainbow Trout	67,878 [3,408]	79,525 [6,029]	104,765 [3,998]	114,774 [4,455]	117,508 [4,416]	77,099 [4,192]	94,470 [4,436]	110,888 [4,268]	84,248 [4,362]	72,278 [3,785]	92,343 [4,335]
Brown Trout	59,164 [4,182]	51,554 [2,794]	64,546 [3,735]	52,398 [2,695]	49,654 [2,630]	38,093 [2,160]	43,224 [3,411]	27,371 [2,062]	37,187 [4,362]	41,111 [2,294]	46,430 [3,135]
Brook Trout	1,661 [397]	4,432 [458]	1,967 [311]	7,482 [797]	1,914 [332]	419 [112]	299 [76]	159 [40]	574 [472]	199 [60]	1,911 [381]
Lake Trout	85,842 [3,279]	52,854 [2,504]	60,943 [2,776]	53,989 [2,337]	69,332 [2,797]	36,849 [1,806]	57,954 [2,371]	82,247 [3,624]	39,819 [2,168]	31,360 [1,620]	57,119 [2,595]
Total Harvest	397,821 [8,615]	362,809 [10,438]	393,891 [8,290]	438,397 [9,332]	466,943 [8,913]	440,429 [10,304]	464,522 [9,945]	416,521 [8,064]	376,059 [9,193]	370,137 [9,617]	412,753 [9,303]
Harvest Rate	0.1103	0.098	0.1213	0.1256	0.1426	0.1481	0.1619	0.1451	0.1331	0.1621	0.1348

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 1992 through 2000. Standard deviations are in brackets.

Location	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
Green Bay	1,275,392	775,117	1,091,837	802,668	429,466	204,267	219,366	235,400	216,833	583,372
	[83,981]	[67,693]	[69,029]	[57,516]	[34,274]	[16,429]	[20,528]	[22,037]	[22,625]	[50,080]
	1.073	0.6965	0.9165	0.7442	0.4414	0.2303	0.2422	0.2748	0.3359	0.5505
Lake Michigan	959,925	545,901	289,905	246,945	95,100	31,146	37,831	33,605	74,843	257,245
	[43,456]	[30,016]	[18,389]	[20,677]	[14,985]	[4,103]	[3,527]	[4,186]	[14,679]	[21,192]
	0.3821	0.2557	0.1261	0.1125	0.0475	0.0157	0.0193	0.0171	0.0457	0.1135
Total Harvest	2,235,317	1,321,018	1,381,742	1,049,613	524,566	235,413	257,197	269,005	291,675	909,234
	[94,558]	[74,049]	[71,436]	[61,119]	[37,407]	[16,934]	[20,829]	[22,432]	[26,971]	[54,379]
Harvest Rate	0.604	0.4067	0.3959	0.3206	0.1764	0.0821	0.0896	0.0952	0.1278	0.2554

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 2000. Standard deviations are in brackets.

Species	Harvest								
	per Hour	Mar/Apr	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0386	453	16,347	26,767	24,108	14,266	5,971	291	88,203
		[136]	[2,013]	[1,466]	[1,801]	[1,655]	[1,428]	[65]	[3,774]
Chinook Salmon	0.0600	78	597	10,915	50,654	41,987	32,431	324	136,986
		[45]	[113]	[954]	[2,819]	[6,858]	[2,069]	[121]	[7,759]
Rainbow Trout	0.0317	2,862	4,421	22,787	29,889	9,188	2,890	241	72,278
		[506]	[898]	[1,796]	[2,298]	[620]	[430]	[66]	[3,185]
Brown Trout	0.0180	13,199	1,807	2,837	8,621	5,673	8,665	309	41,111
		[1,384]	[353]	[699]	[998]	[614]	[1,164]	[57]	[2,294]
Brook Trout	0.0001	83	2	14	31	19	47	3	199
		[56]	[0]	[0]	[0]	[0]	[22]	[0]	[60]
Lake Trout	0.0137	205	2,576	7,214	11,671	8,345	1,299	50	31,360
		[99]	[556]	[607]	[883]	[1,056]	[209]	[0]	[1,620]
Splake	0.0007	1,259	0	0	197	0	30	0	1,486
		[313]	[0]	[0]	[120]	[0]	[16]	[0]	[336]
Northern Pike	0.0018	1,380	346	0	713	863	751	0	4,053
		[473]	[257]	[0]	[442]	[407]	[244]	[0]	[843]
White Perch	0.0040	220	488	3,464	557	2,646	1,712	0	9,087
		[163]	[303]	[2,231]	[243]	[1,559]	[769]	[0]	[2,860]
Smallmouth Bass	0.0080	0	3,601	1,409	4,487	5,762	2,936	0	18,195
		[0]	[1,236]	[784]	[975]	[1,664]	[928]	[0]	[2,593]
Yellow Perch	0.1278	3,138	4,572	32,198	59,387	104,528	87,852	0	291,675
		[1,484]	[1,523]	[7,152]	[16,459]	[12,851]	[15,352]	[0]	[26,971]
Walleye	0.0050	2,571	2,455	1,438	1,274	1,983	1,598	0	11,319
		[549]	[807]	[688]	[417]	[827]	[660]	[0]	[1,650]
Total Harvest	0.3093	25,448	37,212	109,043	191,589	195,260	146,182	1,218	705,952
		[2,249]	[3,156]	[8,023]	[17,045]	[14,929]	[15,670]	[163]	[28,954]
Angler Hours		214,202	175,715	314,188	657,249	437,714	474,224	9,471	2,282,763
		[10,340]	[17,346]	[12,367]	[24,344]	[15,196]	[16,168]	[1,197]	[40,585]

Table 5. Estimated harvest rate (harvest per hour), harvest and effort for the boat fishery with all survey areas combined for Wisconsin waters of Lake Michigan and Green Bay during 2000. Standard deviations are in brackets.

Species	Harvest								
	per hour	Mar/Apr	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0511	362	16,090	26,707	23,999	14,266	3,603	97	85,124
		[98]	[2,011]	[1,465]	[1,799]	[1,655]	[1,361]	[0]	[3,745]
Chinook Salmon	0.0702	35	588	10,915	50,577	41,738	12,892	166	116,911
		[33]	[113]	[954]	[2,819]	[6,857]	[1,216]	[0]	[7,574]
Rainbow Trout	0.0409	277	4,337	22,473	29,714	9,126	2,173	42	68,142
		[177]	[897]	[1,790]	[2,297]	[617]	[365]	[0]	[3,135]
Brown Trout	0.0184	8,727	1,439	2,497	8,157	5,660	4,109	123	30,712
		[1,240]	[340]	[689]	[993]	[614]	[971]	[0]	[2,105]
Brook Trout	0.0001	57	2	14	31	19	25	3	151
		[49]	[0]	[0]	[0]	[0]	[0]	[0]	[49]
Lake Trout	0.0188	205	2,559	7,168	11,660	8,345	1,277	50	31,264
		[99]	[555]	[605]	[883]	[1,056]	[208]	[0]	[1,619]
Splake	0.0008	1,055	0	0	197	0	0	0	1,252
		[297]	[0]	[0]	[120]	[0]	[0]	[0]	[320]
Northern Pike	0.0019	965	39	0	692	823	601	0	3,120
		[409]	[39]	[0]	[441]	[406]	[233]	[0]	[764]
White Perch	0.0023	0	0	2,664	273	22	807	0	3,766
		[0]	[0]	[2,212]	[195]	[22]	[579]	[0]	[2,294]
Smallmouth Bass	0.0098	0	2,518	1,249	4,114	5,664	2,798	0	16,343
		[0]	[1,129]	[781]	[965]	[1,663]	[925]	[0]	[2,537]
Yellow Perch	0.1613	235	3,867	31,062	50,113	100,697	82,699	0	268,673
		[236]	[1,506]	[7,117]	[16,409]	[12,812]	[15,249]	[0]	[26,812]
Walleye	0.0051	1,600	1,986	1,111	869	1,801	1,179	0	8,546
		[472]	[788]	[668]	[358]	[816]	[630]	[0]	[1,575]
Total Harvest	0.3806	13,518	33,425	105,860	180,396	188,161	112,163	481	634,004
		[1,458]	[3,074]	[7,981]	[16,994]	[14,811]	[15,447]	[0]	[28,671]
Angler Hours		93,048	137,367	271,032	571,998	385,029	205,476	1,892	1,665,842
		[9,159]	[17,132]	[11,914]	[23,849]	[14,818]	[12,736]	[0]	[38,339]

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 2000. Standard deviations are in brackets.

Species	Harvest							
	per hour	Mar/Apr	May	June	July	August	Sept/Oct	Season
Coho Salmon	0.0025	0	167	60	14	0	110	351
		[0]	[79]	[44]	[14]	[0]	[47]	[102]
Chinook Salmon	0.0058	11	0	0	27	9	769	816
		[12]	[0]	[0]	[27]	[9]	[156]	[159]
Rainbow Trout	0.0026	0	21	109	109	62	65	366
		[0]	[16]	[78]	[42]	[67]	[34]	[117]
Brown Trout	0.0198	1,253	143	280	326	0	760	2,762
		[314]	[46]	[107]	[84]	[0]	[305]	[461]
Brook Trout	0.0002	0	0	0	0	0	22	22
		[0]	[0]	[0]	[0]	[0]	[22]	[22]
Lake Trout	0.0006	0	17	46	0	0	22	85
		[0]	[11]	[49]	[0]	[0]	[22]	[55]
Splake	0.0009	124	0	0	0	0	0	124
		[87]	[0]	[0]	[0]	[0]	[0]	[87]
Northern Pike	0.0011	96	0	0	0	40	22	158
		[57]	[0]	[0]	[0]	[29]	[22]	[67]
White Perch	0.0035	0	259	177	58	0	0	494
		[0]	[204]	[107]	[37]	[0]	[0]	[233]
Smallmouth Bass	0.0081	0	772	41	129	98	90	1,130
		[0]	[491]	[27]	[57]	[55]	[65]	[502]
Yellow Perch	0.0772	2,202	297	1,102	5,966	738	480	10,785
		[1,432]	[156]	[715]	[1,101]	[347]	[232]	[1,993]
Walleye	0.0012	163	0	0	0	0	0	163
		[121]	[0]	[0]	[0]	[0]	[0]	[121]
Total Harvest	0.1236	3,849	1,676	1,815	6,629	947	2,340	17,256
		[1,475]	[562]	[738]	[1,107]	[359]	[425]	[2,138]
Angler Hours		15,462	11,323	18,479	41,775	22,771	29,834	139,644
		[1,492]	[1,640]	[1,895]	[3,252]	[1,706]	[2,768]	[5,446]

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 2000. Standard deviations are in brackets.

Species	Harvest							
	per hour	Mar/Apr	May	June	July	August	Sept/Oct	Season
Coho Salmon	0.0062	91	90	0	95	0	770	1,046
		[94]	[41]	[0]	[80]	[0]	[227]	[262]
Chinook Salmon	0.0436	32	9	0	50	240	7,073	7,404
		[27]	[5]	[0]	[38]	[143]	[1,040]	[1,051]
Rainbow Trout	0.0017	35	0	21	41	0	189	286
		[35]	[0]	[21]	[20]	[0]	[155]	[162]
Brown Trout	0.0306	2,934	225	60	113	13	1,853	5,198
		[523]	[79]	[44]	[62]	[7]	[353]	[641]
Brook Trout	0.0002	26	0	0	0	0	0	26
		[27]	[0]	[0]	[0]	[0]	[0]	[27]
Lake Trout	0.0001	0	0	0	11	0	0	11
		[0]	[0]	[0]	[10]	[0]	[0]	[10]
Splake	0.0000	0	0	0	0	0	0	0
		[0]	[0]	[0]	[0]	[0]	[0]	[0]
Northern Pike	0.0004	0	41	0	21	0	0	62
		[0]	[36]	[0]	[29]	[0]	[0]	[46]
White Perch	0.0075	0	0	0	0	1,280	0	1,280
		[0]	[0]	[0]	[0]	[1,482]	[0]	[1,482]
Smallmouth Bass	0.0015	0	190	26	46	0	0	262
		[0]	[93]	[27]	[38]	[0]	[0]	[104]
Yellow Perch	0.0456	355	268	34	2,980	2,611	1,487	7,735
		[283]	[138]	[24]	[623]	[920]	[648]	[1,325]
Walleye	0.0000	0	0	0	0	0	0	0
		[0]	[0]	[0]	[0]	[0]	[0]	[0]
Total Harvest	0.1374	3,473	823	141	3,357	4,144	11,372	23,310
		[605]	[192]	[61]	[634]	[1,750]	[1,304]	[2,361]
Angler Hours		33,313	10,224	9,652	25,850	17,292	73,342	169,673
		[1,985]	[1,069]	[1,083]	[2,198]	[1,680]	[4,105]	[5,546]

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 2000. Standard deviations are in brackets.

Species	Harvest								
	per hour	Mar/Apr	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0055	0	0	0	0	0	1,488	194	1,682
		[0]	[0]	[0]	[0]	[0]	[363]	[65]	[369]
Chinook Salmon	0.0385	0	0	0	0	0	11,697	158	11,855
		[0]	[0]	[0]	[0]	[0]	[1,303]	[121]	[1,308]
Rainbow Trout	0.0113	2,550	63	184	25	0	463	199	3,484
		[472]	[44]	[127]	[18]	[0]	[164]	[66]	[522]
Brown Trout	0.0079	285	0	0	25	0	1,943	186	2,439
		[90]	[0]	[0]	[24]	[0]	[440]	[57]	[453]
Brook Trout	0.0000	0	0	0	0	0	0	0	0
		[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]
Lake Trout	0.0000	0	0	0	0	0	0	0	0
		[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]
Splake	0.0004	80	0	0	0	0	30	0	110
		[49]	[0]	[0]	[0]	[0]	[16]	[0]	[52]
Northern Pike	0.0023	319	266	0	0	0	128	0	713
		[230]	[252]	[0]	[0]	[0]	[68]	[0]	[348]
White Perch	0.0115	220	229	623	226	1,344	905	0	3,547
		[163]	[223]	[274]	[139]	[486]	[506]	[0]	[815]
Smallmouth Bass	0.0015	0	121	93	198	0	48	0	460
		[0]	[72]	[58]	[115]	[0]	[42]	[0]	[154]
Yellow Perch	0.0146	346	140	0	328	482	3,186	0	4,482
		[129]	[94]	[0]	[193]	[207]	[1,641]	[0]	[1,673]
Walleye	0.0085	808	469	327	405	182	419	0	2,610
		[254]	[175]	[167]	[214]	[135]	[197]	[0]	[475]
Total Harvest	0.1020	4,608	1,288	1,227	1,207	2,008	20,307	737	31,382
		[628]	[400]	[350]	[341]	[545]	[2,246]	[163]	[2,482]
Angler Hours		72,379	16,801	15,025	17,626	12,622	165,572	7,579	307,604
		[4,106]	[1,889]	[2,497]	[2,902]	[2,372]	[8,642]	[1,197]	[10,809]



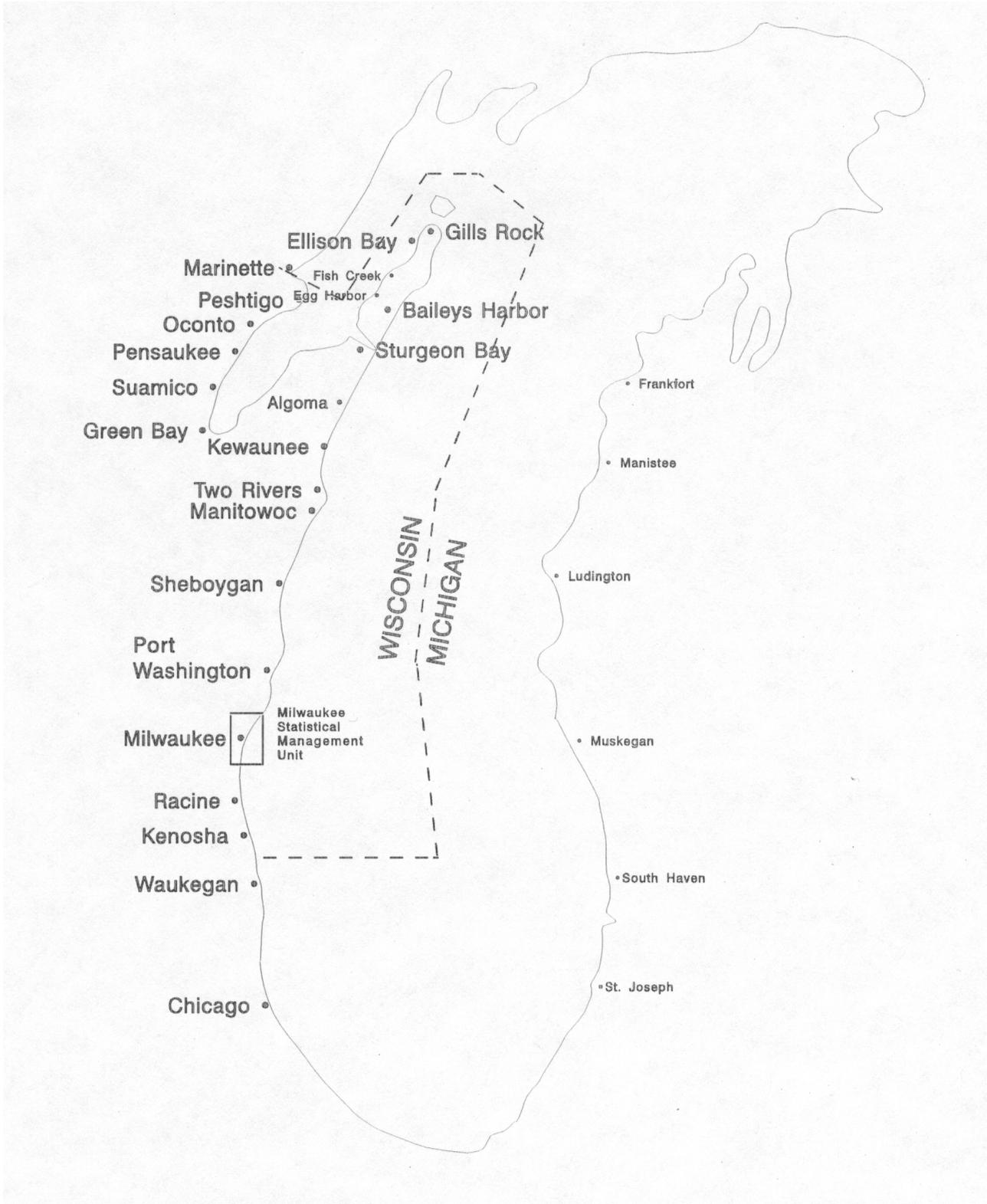
Table 9. Average weight, average length and standard weight of salmonids from Wisconsin's Lake Michigan creel survey, all areas and fishery types combined during 1990 through 2000. std = standard deviation.

Year	Average weight	± 1 std	Average length	± 1 std	Standard weight
<b>COHO SALMON</b>					
1990	4.4919	1.9875	22.6016	3.1850	3.9176
1991	4.0689	2.4381	21.6905	3.4396	3.9455
1992	4.1493	1.8694	21.9365	3.2360	3.8052
1993	3.7333	1.7396	21.2199	2.6774	3.9410
1994	3.3084	2.2217	20.1049	3.2844	3.8168
1995	3.1598	1.9908	20.3647	3.4795	3.6060
1996	4.6377	2.0180	22.5823	3.1358	3.8673
1997	3.0543	1.4843	20.2170	2.7918	3.5368
1998	3.3491	1.6776	21.0745	2.6494	3.5612
1999	7.1347	3.6900	25.1350	5.1092	4.2368
2000	4.0721	2.1511	22.0099	2.8268	4.1604
<b>CHINOOK SALMON</b>					
1990	9.5136	6.5206	27.6409	7.2053	9.8052
1991	8.1385	6.5538	25.7534	6.9683	10.2605
1992	10.2518	7.2367	27.9216	7.7320	9.8032
1993	10.5038	8.3701	27.4037	8.3374	10.1905
1994	10.4453	8.3485	27.0273	8.7192	9.9749
1995	9.8882	8.1733	26.3952	8.1126	10.4336
1996	8.0482	6.7959	25.7176	7.1099	9.7475
1997	9.1569	6.2956	27.3781	6.7461	9.7349
1998	9.9393	6.1881	27.9896	6.3117	9.8589
1999	12.5209	6.0866	31.0947	5.7288	9.9412
2000	12.2476	6.7192	29.3772	6.8487	10.7068
<b>RAINBOW TROUT</b>					
1990	6.7851	2.9583	26.2191	4.9188	3.8427
1991	6.6434	2.7961	26.3469	4.2241	3.8274
1992	7.1852	2.8828	27.0546	4.4753	3.7915
1993	6.8907	3.4246	26.2585	4.6655	3.5624
1994	6.2132	3.0697	25.5027	4.3581	3.8532
1995	6.2328	2.9497	25.4630	4.1472	3.8015
1996	6.7903	2.8603	25.8947	4.0637	3.8888
1997	6.8474	2.8552	26.6210	4.0443	3.7207
1998	6.1913	2.6461	25.9667	3.6238	3.5888
1999	7.2340	3.3254	25.9069	5.2089	3.9814
1999	7.2340	3.3254	25.9069	5.2089	3.9814
2000	6.1574	3.1588	25.4504	4.2857	3.9674

Table 9 (continued). Average weight, average length and standard weight of salmonids from Wisconsin's Lake Michigan creel survey, all areas and fishery types combined during 1990 through 2000. std = standard deviation.

Year	Average weight	± 1 std	Average length	± 1 std	Standard weight
<b>BROWN TROUT</b>					
1990	4.9623	2.7813	20.3590	3.7698	4.0124
1991	5.1182	2.8120	20.5944	3.3968	4.1454
1992	4.3926	2.7494	19.7675	4.0670	3.8560
1993	4.8219	2.9352	20.3673	3.9857	3.7333
1994	5.5798	3.9554	21.1341	4.7054	3.9035
1995	5.2797	3.4391	21.1004	3.9226	3.9589
1996	5.5350	3.8506	21.1594	4.2634	3.8506
1997	4.8983	2.8484	21.1254	4.0540	3.4188
1998	5.9500	3.9901	21.9235	5.1606	3.7211
1999	6.0660	3.4702	22.1970	4.5156	3.9397
2000	6.2217	3.5200	22.7410	3.8632	3.6338
<b>BROOK TROUT</b>					
90	1.3494	1.4965	13.5329	2.2660	1.0251
91	3.1302	2.8800	17.2930	3.8984	0.7325
92	1.1237	1.2872	12.6987	3.1266	0.8676
93	1.3758	1.3667	13.9435	3.6014	0.8770
94	1.0979	1.2143	12.8191	2.7277	0.8912
95	1.2459	1.0356	12.9365	2.6004	1.0370
<b>LAKE TROUT</b>					
1990	8.8930	3.6846	28.1648	3.3898	5.7870
1991	9.3689	3.9124	28.5284	3.5305	6.0374
1992	9.0558	3.9286	28.6493	3.4675	5.6921
1993	7.7916	4.0955	26.8924	3.8634	5.8126
1994	7.1624	3.8173	26.3183	4.0057	5.7156
1995	8.7428	4.3848	27.3754	3.9492	6.5910
1996	7.5237	4.5938	26.3436	4.8990	5.4196
1997	7.3469	3.7751	26.5681	3.9708	5.6513
1998	8.4252	4.0276	27.4861	3.8883	5.6712
1999	9.2469	3.9323	28.0260	3.8194	6.0907
2000	8.1437	3.5085	27.4146	3.4736	5.7744

Figure 1. Outline of Lake Michigan, with Wisconsin waters bounded by a dashed line.



ANGLER INTERVIEW FORM

Survey Site \_\_\_\_\_ County \_\_\_\_\_ Clerk \_\_\_\_\_

Date 1 2 3 4 5 6 County 7 8 Survey Site 9 10 11 Fishery Type Ramp 1 Pier 2 Shore 3 Stream 4 Ice 5 12  
M M D D Y Y

Activities	PARTY RECORD			BROWN			RAINBOW			LAKE			COHO			CHINOOK			PERCH		
	No. Anglers Res.	No. Anglers NonRes.	Time Interview	% Time Started Fishing	% Time	No. Caught	No. Kept	% Time	No. Caught	No. Kept	% Time	No. Caught	No. Kept	% Time	No. Caught	No. Kept	% Time	No. Caught	No. Kept	% Time	
1.																					
2.																					
3.																					
4.																					
5.																					
6.																					
7.																					

Activities	WALLEYE			OTHER SPECIES			OTHER SPECIES			OTHER SPECIES		
	% Time	No. Caught	No. Kept	% Time	No. Caught	No. Kept	% Time	No. Caught	No. Kept	% Time	No. Caught	No. Kept
1.												
2.												
3.												
4.												
5.												
6.												
7.												



Figure 4. Fishing effort (angler hours) in Wisconsin waters of Lake Michigan and Green Bay during 1991 through 2000.

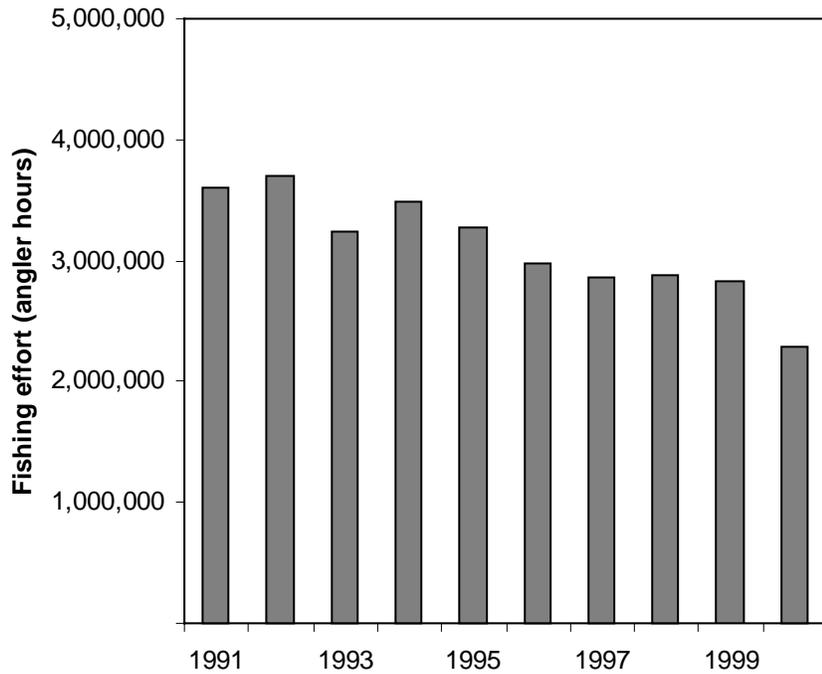


Figure 5. Trout and salmon harvest and harvest rate from Wisconsin waters of Lake Michigan and Green Bay during 1991 through 2000.

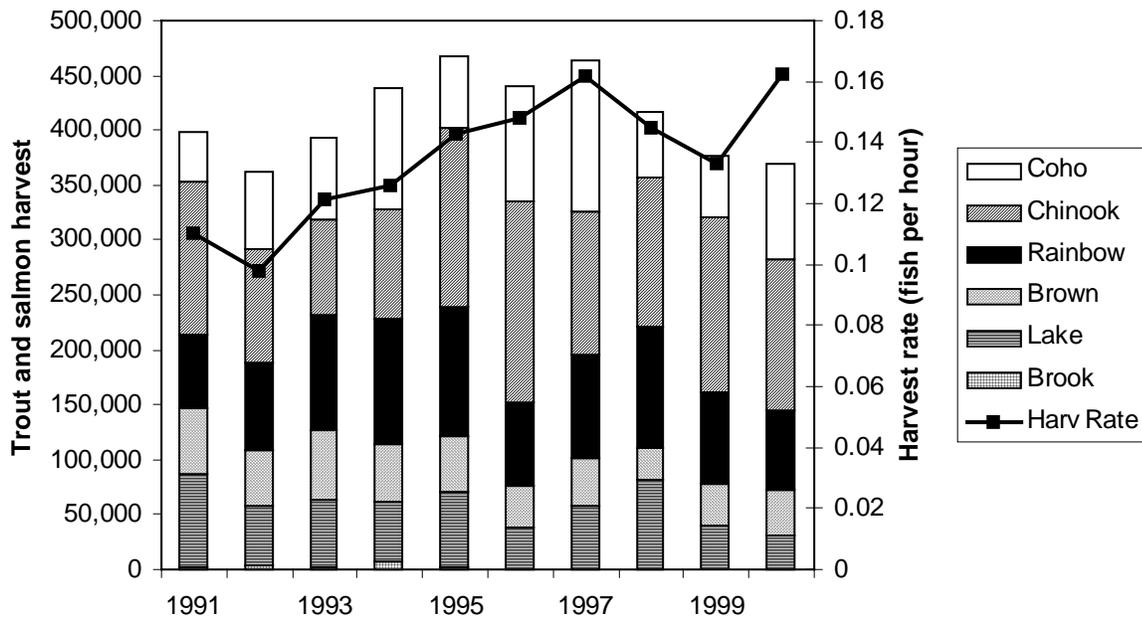


Figure 6. Yellow perch angler-harvest and harvest rate from Wisconsin waters of Green Bay and Lake Michigan during 1992 through 2000.

