

# Wisconsin's 2005 open water sportfishing effort and harvest from Lake Michigan and Green Bay

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*Abstract* - This paper documents the sport fishery in Wisconsin waters of Lake Michigan and Green Bay from March 1, 2005 through December 31, 2005. 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 2,790,886 hours fishing on Lake Michigan and Green Bay during 2005 with boat-angler effort at 2,218,078 hours, or 79% of the total hours. The estimated harvest of 898,001 fish was dominated by Chinook salmon (418,918) and yellow perch (307,804), followed by coho salmon (59,244) and rainbow trout (48,490). The boat fishery, comprised of launched-boat, moored-boat and charter-boat anglers, dominated the fishery by harvesting an estimated 841,591 fish, which was 94% of the total harvest and was dominated by Chinook salmon (392,238), yellow perch (292,324), coho salmon (57,577), and rainbow trout (44,774). Pier, shore and stream anglers harvested primarily Chinook salmon, yellow perch, brown trout, and rainbow trout. Overall harvest-rates were highest for Chinook salmon at 0.1501 fish/hour and yellow perch at 0.1103 fish/hour.



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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 2005.

## 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 two randomly chosen days during the week. 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 follows.

#### 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 the 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. Biological information was taken on harvested fish, including species, length, weight, fin clip and tag numbers. 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 Sturgeon Bay Service Center. 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 Sturgeon Bay Service Center, entered and checked for errors.

## **RESULTS**

Fishing effort in Wisconsin waters of Lake Michigan and Green Bay was estimated at 2,790,886 ( $\pm$  58,007) hours during the 2005 open-water season of March 1 - December 31 (Table 1). Effort showed an increase from 2004, and was 1% above the ten-year average (Figure 2). Effort was 5% above the average in Green Bay, while in Lake Michigan, effort was nearly equal to the average. Green Bay anglers had the most fishing effort of any SMU, at 819,005 ( $\pm$  42,854) hours or 29% of all angler hours for 2005. Kewaunee County anglers were second at 463,532 ( $\pm$  22,719) hours.

Angler hours were disproportionately spread among

the four fishery types. Boat anglers spent 2,218,078 ( $\pm$  56,215) hours, or 79% of all angler hours, fishing on Lake Michigan or Green Bay (Figure 2). Stream anglers fished the second most at 243,208 ( $\pm$  10,305) hours or 9% of the total. This stream effort is below the ten-year average, and is likely due to low water levels in the tributaries, which caused poor returns of Chinook and coho salmon during their upstream spawning migration in the fall. Shore and pier anglers fished 158,003 ( $\pm$  7,209) and 171,597 ( $\pm$  6,819) hours respectively.

Anglers harvested an estimated 568,298 ( $\pm$  13,244) salmonids during the 2005 season (Table 2, Figure 3). Chinook salmon dominated the 2005 salmonid harvest, comprising 418,918 ( $\pm$  10,781) fish or 74% of the total. This was the highest Chinook harvest ever recorded. Coho salmon harvest was second to Chinook at 59,244 ( $\pm$  2,690), or 10% of the total. Rainbow trout harvest was 48,490 ( $\pm$  3,539) fish, or 9% of the total, followed by brown trout at 27,489 ( $\pm$  6,235), or 5% of the total. Lake trout declined to 2% of the harvest at 14,139 ( $\pm$  727), followed by brook trout harvest at 18 ( $\pm$  12).

The combined harvest-rate for salmonids of 0.2036 was well above the ten-year average of 0.1634 (Table 2, Figure 3).

Anglers harvested an estimated 307,804 ( $\pm$  21,015) yellow perch during 2005 (Table 3). Anglers harvested 260,128 ( $\pm$  19,231) yellow perch in Green Bay, the highest harvest in the Bay since 1996 (Table 3, Figure 4). The harvest-rate was 0.3176 fish/hour. Lake Michigan anglers harvested 47,676 ( $\pm$  8,472) yellow perch and had a harvest-rate of 0.0242 fish/hour (Table 3, Figure 4). Yellow perch harvest from all areas combined was second only to Chinook salmon, with an overall harvest-rate of 0.1103 fish/hour (Table 4). As usual, the majority of the perch harvest (95%) was from boats, with a harvest-rate at 0.1318 fish/hour. The majority of the harvest took place in the summer months from July through September.

Overall perch harvest was 13% higher than the ten-year average of 273,235 ( $\pm$  22,228, Table 3, Figure 4). On Lake Michigan perch harvest was 47,676 ( $\pm$  8,472), which was 31% below the ten-year average and 64% below the 2001 harvest. Green Bay experienced a 358% increase in perch harvest over 2004. The 2005 harvest increased to 260,128 ( $\pm$  19,231) from 56,772 ( $\pm$  6,261) a year before. This

was 27% above the ten-year average (Table 3).

Perch harvest in Lake Michigan is becoming less focused on the 1998 year-class, which first recruited to the sport fishery during 2000 at age 2. The 2002 year-class recruited to the fishery in 2004 and is now being caught by sport anglers. Age was assigned using the anal spines of 347 Lake Michigan angler-caught yellow perch during 2005. The 2002 year-class represented 40% of the total on Lake Michigan, and the 1998 year-class represented 37%. The 2001 year-class also made up an additional 20% of the harvest. This is corroborated by DNR's winter 2005-06 assessment catch of Lake Michigan perch, where 44% were from 2002, 41% from 1998 and approximately 5% from each 2001 and 2003 year-classes.

The 1998 year-class of yellow perch in Green Bay made up a relatively small proportion of the 2005 harvest. The anal spines of 381 Green Bay angler-caught perch were aged, and only 2% were from 1998. The majority (63%) were age 2 fish, which were the 2003 year-class.

Management actions currently in place to protect the remaining yellow perch population include: 1) closure of the Lake Michigan commercial season for yellow perch; 2) a 20,000 pound commercial quota for yellow perch in Green Bay (down from 200,000 pounds in 2000); and 3) a drop in the sport bag to five per day with a May 1 to June 15 closure on Lake Michigan and ten per day with a March 16 to May 19 closure on Green Bay. These measures are intended to protect the remaining yellow perch stocks by decreasing harvest of pre-spawn and spawning perch.

The estimated harvest of 12 major species was 898,001 ( $\pm 25,004$ ) fish for 2005 (Table 4). The majority of the harvest came from boat anglers (Table 5) who harvested 841,591 ( $\pm 24,801$ ) fish or 94% of the total. Pier, shore and stream anglers accounted for 16,395 ( $\pm 1,670$ ), 14,246 ( $\pm 1,540$ ) and 25,769 ( $\pm 2,213$ ) fish respectively (Tables 6-8).

The coho harvest of 59,244 ( $\pm 2,690$ ) was 23% lower than 2004 harvest and 24% below the ten-year average. Coho salmon were the second-most abundant salmonid and third-most abundant species harvested during 2005. Overall coho salmon harvest-rates were 0.0212 fish/hour (Table 4). Boat anglers harvested 97% of all coho salmon,

with 57,577 ( $\pm 2,663$ ) and had a harvest-rate of 0.0260 fish/hour (Table 5). The remaining harvest was divided among the pier, shore and stream anglers at 928 ( $\pm 344$ ), 413 ( $\pm 103$ ) and 326 ( $\pm 111$ ) fish, respectively (Tables 6-8). Biological data collected on angler-caught coho salmon during 2005 show a mean weight of 3.6 ( $\pm 1.7$ ) pounds, 18% below the ten-year average (Table 9). Mean length was 3% below the ten-year average at 21.5 ( $\pm 2.6$ ) inches, while the standard weight of a 22-inch coho was 3.8 pounds, just 1% below the ten-year average (Table 9).

Anglers harvested 418,918 ( $\pm 10,781$ ) Chinook salmon during 2005, 81% above the ten-year average of 230,873 (Table 2). The 2005 Chinook harvest was the best harvest since the creel survey was implemented in 1969. It beat the previous record-high of 396,478 in 1987. The harvest-rate in 2005 was 0.1501 fish/hour compared to 1987, which was 0.0829 fish/hour. Boat anglers in 2005 harvested 392,238 ( $\pm 10,609$ ) fish or 94% of all Chinook (Table 5). Boat angler harvest-rates were 0.1768. Pier, shore, and stream anglers saw mediocre harvests of Chinook, primarily during the fall run. Sparse rainfall and low fall streamflows in the tributaries caused poor returns of both Chinook and coho salmon. The 2005 average weight of 8.7 ( $\pm 4.4$ ) pounds was 19% below the ten-year average for Chinook salmon, and the average length of 27.9 ( $\pm 5.3$ ) inches was 4% below the ten-year average (Table 9). The standard weight of 9.2 pounds for a 30-inch Chinook was 6% below the ten-year average.

Rainbow trout harvest was 48,490 ( $\pm 3,539$ ), 32% below the ten-year average but 47% above the 2004 harvest (Table 2). The majority (92%) of the harvest occurred in the boat fishery with 44,774 ( $\pm 3,519$ ) fish (Table 5). Stream anglers harvested 2,267 ( $\pm 289$ ) steelhead with a harvest-rate of 0.0093 fish/hour (Table 8). Rainbow trout were just 5% shy of their ten-year average weight, at 6.2 ( $\pm 2.5$ ) pounds and slightly above their ten-year average length at 26.0 ( $\pm 3.8$ ) inches (Table 9). The standard weight of a 22-inch rainbow was 3.8 pounds, 3% below the ten-year average.

Wisconsin anglers harvested 14,139 ( $\pm 737$ ) lake trout in Lake Michigan, 63% below the ten-year average of 38,052 and the lowest harvest since 1970. The overall harvest-rate was 0.0051 fish/hour (Table 4). Boat anglers harvested all but

100 lake trout, with 14,039 ( $\pm$  735). The boat harvest-rate was 0.0063 fish/hour (Table 5). Lake trout average size was 4.8 ( $\pm$  2.0) pounds and 23.5 ( $\pm$  2.8) inches, 35% and 11% below their ten-year averages, respectively. The standard weight was 5.4 pounds for a 25-inch lake trout, which is 5% below the ten-year average (Table 9).

An estimated 27,489 ( $\pm$  6,235) brown trout were harvested during 2005 from all surveyed areas, with an overall harvest-rate of 0.0098 fish/hour (Table 4). This was 14% below the ten-year average but 31% above the harvest in 2004. Boat anglers harvested the majority of brown trout with 20,656 ( $\pm$  6,106), or 75% of the total harvest (Table 5). The remaining harvest was divided among the pier, shore and stream anglers at 2,005 ( $\pm$  555), 3,047 ( $\pm$  569) and 1,781 ( $\pm$  982) fish, respectively (Tables 6-8). Brown trout biological data for 2005 were slightly below the ten-year average, with a mean size of 5.5 ( $\pm$  3.9) pounds and 21.2 ( $\pm$  5.6) inches (Table 9). The 2005 standard weight of 3.7 pounds for a 20-inch fish is just above average.

Smallmouth bass harvest has declined considerably since 1997 and was 67% below the ten-year average at 8,471 ( $\pm$  1,751) fish (Table 4). Overall harvest-rates were 0.0030 fish/hour. Again, boat anglers harvested the majority of the smallmouth bass, with 7,198 ( $\pm$  1,723) fish or 85% of the total (Table 5). The boat harvest-rate was 0.0032 fish/hour.

Walleyes were the last species harvested in large numbers during the open-water fishing season. An estimated 9,402 ( $\pm$  1,755) walleyes were harvested (Table 4), 50% below the ten-year average but 11% above 2004 harvest. The overall harvest-rate for walleye was 0.0034 fish/hour. Boat anglers harvested 9,048 ( $\pm$  1,752) walleyes (Table 5), followed by stream anglers with 309 ( $\pm$  85, Table 6).

White perch harvest in 2005 remained low at 2,117 ( $\pm$  1,322), or 78% below the ten-year average harvest of 9,720 (Table 4). This is likely due to a cyclical drop in white perch population levels. Of the white perch harvested in 2005, 99% were in the boat fishery and the remaining 1% in the pier fishery (Tables 5 and 6).

The remaining species, northern pike, brook trout, and splake, comprised less than 0.2% of the total harvest and 0.3% of the non-yellow perch harvest

(Table 4).

## SUMMARY

In 2005 Lake Michigan anglers spent an estimated 2,760,287 hours fishing on Lake Michigan and Green Bay, with a boat-angler effort of 2,218,078 hours, or 79% of the total hours. The estimated harvest of 898,001 fish was dominated by Chinook salmon (418,918) and yellow perch (307,804).

Fishing effort during 2005 was just over the ten-year average (Table 1). Effort was 5% above average in Green Bay, and 22% above 2004. Green Bay effort in 2005 was the highest recorded since 1999. Lake Michigan effort was consistent with the ten-year average.

Perch harvest in 2005 declined again in Lake Michigan, but Green Bay saw its highest perch harvest since 1996. The harvest in Green Bay was 27% above the ten-year average and that in Lake Michigan was 31% below average (Table 3).

Differential year-classes (2003 in Green Bay, 1998 in Green Bay and Lake Michigan) play a large role in the harvests in these areas. A potential 2005 year-class of yellow perch in Lake Michigan could have a strong positive effect on the harvest in 2007 and 2008.

Harvest of Chinook salmon was 81% above the ten-year average and was the highest Chinook harvest since the beginning of the creel survey (Table 2). The harvest of other salmonids was below average. The standard weight of brown trout was just 1% above the ten-year average, while all other salmonids were slightly below their ten-year averages (Table 9).

Declines in standard weight of most species, especially Chinook salmon, combined with lower alewife abundance led Lake Michigan agencies to reduce Chinook stocking by 25% lakewide. Even though anglers harvested a record 418,918 Chinook salmon, many anglers reported underweight and skinny salmon, which was corroborated in the creel survey and weir analyses. Future stocking levels will continue to be adjusted to match the available environmental conditions.

Since 1983 stocking of lake trout has been heavily

concentrated on the midlake reef in Wisconsin waters of Lake Michigan. It appears those lake trout stocked nearshore between 1970 and 1982 are depleted, which is corroborated by a significant drop in lake trout harvest since 1999. When more lake trout became available in the late 1990s, nearshore stocking of lake trout was resumed at historical stocking and spawning locations. These include numerous onshore areas from Door to Kenosha County. Hopefully, with the resumption of nearshore stocking in 1997, lake trout harvest will increase in the future.

Nearshore fishing opportunities in Lake Michigan have declined with reduced yellow perch abundance and salmon and trout moving farther offshore. To augment the fishery, two different strains of nearshore rainbow trout have been stocked on an experimental basis in Lake Michigan in recent years. Arlee strain rainbows were first stocked in 2001 and Kamloops in 2003. Kenosha, Milwaukee, Sheboygan, Manitowoc, Algoma, and Sister Bay are the targeted stocking locations, with each receiving approximately 10,000 of both strains. These fish were given a specific fin clip, and they have continued to show up in the creel survey. Both Arlees and Kamloops will be stocked annually through at least 2006, and the extent these strains contribute to the fishery will be evaluated in coming years.

In addition to these nearshore strains, anglers harvested more brown trout in 2005 compared to 2004. Nearshore angling, especially in southeast Wisconsin, has increased in recent years and is becoming a more popular fishery.

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Table 1. Estimated angler effort (hours) by location in Wisconsin waters of Lake Michigan and Green Bay during March through December of 1996 through 2005. Standard deviations are in Italics.

Location	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average
Kenosha Co.	157,607 <i>6,705</i>	188,561 <i>8,937</i>	174,437 <i>8,351</i>	183,774 <i>11,478</i>	112,930 <i>4,728</i>	197,660 <i>9,626</i>	206,959 <i>9,676</i>	213,504 <i>11,531</i>	178,733 <i>6,785</i>	149,044 <i>6,744</i>	176,321 <i>8,715</i>
Racine Co.	238,052 <i>13,846</i>	302,364 <i>15,472</i>	232,660 <i>15,844</i>	260,600 <i>15,917</i>	201,774 <i>13,269</i>	256,390 <i>14,248</i>	225,067 <i>10,421</i>	154,568 <i>8,671</i>	166,653 <i>9,197</i>	157,571 <i>8,415</i>	219,570 <i>12,860</i>
Milwaukee Co.	280,704 <i>9,625</i>	283,356 <i>10,492</i>	295,991 <i>9,162</i>	244,605 <i>8,620</i>	212,570 <i>8,106</i>	360,474 <i>12,942</i>	382,873 <i>13,579</i>	338,672 <i>11,663</i>	323,797 <i>10,194</i>	277,583 <i>13,694</i>	300,063 <i>10,982</i>
Ozaukee Co.	242,963 <i>11,915</i>	229,387 <i>12,796</i>	244,186 <i>13,831</i>	233,549 <i>14,891</i>	169,828 <i>8,650</i>	250,035 <i>13,942</i>	253,817 <i>12,917</i>	245,038 <i>14,336</i>	199,405 <i>10,273</i>	219,929 <i>11,199</i>	228,814 <i>12,615</i>
Sheboygan Co.	262,948 <i>14,697</i>	216,834 <i>13,730</i>	219,642 <i>12,123</i>	244,929 <i>14,004</i>	156,989 <i>10,983</i>	225,484 <i>10,826</i>	272,311 <i>14,403</i>	254,426 <i>16,480</i>	183,880 <i>10,713</i>	224,373 <i>13,536</i>	226,182 <i>13,276</i>
Manitowoc Co.	204,487 <i>9,673</i>	227,955 <i>11,713</i>	196,492 <i>9,398</i>	204,714 <i>11,257</i>	191,168 <i>8,107</i>	213,887 <i>10,491</i>	229,205 <i>10,329</i>	187,928 <i>9,940</i>	244,227 <i>13,142</i>	246,770 <i>12,523</i>	214,683 <i>10,755</i>
Kewaunee Co.	334,736 <i>23,955</i>	327,253 <i>19,421</i>	342,260 <i>28,589</i>	355,612 <i>19,833</i>	329,938 <i>16,718</i>	337,767 <i>23,521</i>	423,035 <i>20,511</i>	401,840 <i>20,958</i>	428,023 <i>18,769</i>	463,532 <i>22,719</i>	374,400 <i>21,732</i>
E. Door Co.	278,601 <i>15,113</i>	205,964 <i>16,043</i>	259,020 <i>12,907</i>	240,897 <i>13,553</i>	247,268 <i>18,263</i>	230,256 <i>20,757</i>	249,042 <i>15,121</i>	255,264 <i>17,303</i>	222,330 <i>11,613</i>	233,079 <i>15,585</i>	242,172 <i>15,831</i>
Green Bay	972,938 <i>34,570</i>	886,873 <i>35,678</i>	905,762 <i>35,986</i>	856,591 <i>29,469</i>	645,608 <i>22,318</i>	668,297 <i>28,669</i>	703,539 <i>25,846</i>	650,571 <i>32,738</i>	671,652 <i>25,288</i>	819,005 <i>42,854</i>	778,084 <i>31,886</i>
Total Effort	2,973,036 <i>52,708</i>	2,868,547 <i>53,164</i>	2,870,450 <i>55,770</i>	2,825,271 <i>49,492</i>	2,268,073 <i>40,453</i>	2,740,250 <i>51,873</i>	2,945,848 <i>46,743</i>	2,701,811 <i>52,254</i>	2,618,700 <i>41,882</i>	2,790,886 <i>58,007</i>	2,760,287 <i>50,523</i>

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 1996 through 2005. Standard deviations are in Italics.

Species	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average
Coho Salmon	104,715 <i>4,546</i>	138,423 <i>6,039</i>	59,203 <i>2,706</i>	56,297 <i>2,929</i>	87,927 <i>3,769</i>	47,474 <i>2,296</i>	102,313 <i>3,546</i>	50,625 <i>2,052</i>	76,944 <i>2,792</i>	59,244 <i>2,690</i>	78,317 <i>3,526</i>
Chinook Salmon	183,254 <i>7,746</i>	130,152 <i>5,050</i>	136,653 <i>4,702</i>	157,934 <i>5,740</i>	136,379 <i>7,753</i>	191,378 <i>8,281</i>	275,454 <i>6,522</i>	317,619 <i>9,385</i>	360,991 <i>8,260</i>	418,918 <i>10,781</i>	230,873 <i>7,644</i>
Rainbow Trout	77,099 <i>4,192</i>	94,470 <i>4,436</i>	110,888 <i>4,268</i>	84,248 <i>4,362</i>	71,829 <i>3,177</i>	72,854 <i>2,957</i>	74,031 <i>2,250</i>	48,548 <i>2,077</i>	25,529 <i>1,194</i>	48,490 <i>3,539</i>	70,799 <i>3,416</i>
Brown Trout	38,093 <i>2,160</i>	43,224 <i>3,411</i>	27,371 <i>2,062</i>	37,187 <i>4,362</i>	40,966 <i>2,289</i>	26,421 <i>1,827</i>	35,220 <i>2,290</i>	23,654 <i>2,056</i>	20,918 <i>1,457</i>	27,489 <i>6,235</i>	32,054 <i>3,140</i>
Brook Trout	419 <i>112</i>	299 <i>76</i>	159 <i>40</i>	574 <i>472</i>	199 <i>60</i>	263 <i>90</i>	144 <i>61</i>	126 <i>54</i>	1 <i>0</i>	18 <i>12</i>	220 <i>162</i>
Lake Trout	36,849 <i>1,806</i>	57,954 <i>2,371</i>	82,247 <i>3,624</i>	39,819 <i>2,168</i>	31,151 <i>1,614</i>	40,408 <i>1,894</i>	39,865 <i>1,463</i>	23,881 <i>1,142</i>	14,209 <i>709</i>	14,139 <i>737</i>	38,052 <i>1,934</i>
Total Harvest	440,429 <i>10,304</i>	464,522 <i>9,945</i>	416,521 <i>8,064</i>	376,059 <i>9,193</i>	368,451 <i>9,605</i>	378,798 <i>9,462</i>	527,027 <i>8,220</i>	464,453 <i>10,106</i>	498,592 <i>8,948</i>	568,298 <i>13,244</i>	450,315 <i>9,806</i>
Harvest-Rate	0.1481	0.1619	0.1451	0.1331	0.1625	0.1382	0.1789	0.1719	0.1904	0.2036	0.1634

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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 1996 through 2005. Standard deviations are in Italics.

Location	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average
Green Bay	429,466 <i>34,274</i>	204,267 <i>16,429</i>	219,366 <i>20,528</i>	235,400 <i>22,037</i>	216,832 <i>22,625</i>	206,109 <i>21,110</i>	144,562 <i>15,661</i>	67,543 <i>6,819</i>	56,772 <i>6,261</i>	260,128 <i>19,231</i>	204,045 <i>20,025</i>
Harvest-Rate	0.4414	0.2303	0.2422	0.2748	0.3359	0.3084	0.2055	0.1038	0.0845	0.3176	0.2544
Lake Michigan	95,100 <i>14,985</i>	31,146 <i>4,103</i>	37,831 <i>3,527</i>	33,605 <i>4,186</i>	74,843 <i>14,679</i>	133,660 <i>10,903</i>	97,747 <i>7,578</i>	88,778 <i>13,023</i>	51,521 <i>5,105</i>	47,676 <i>8,472</i>	69,191 <i>9,647</i>
Harvest-Rate	0.0475	0.0157	0.0193	0.0171	0.0461	0.0645	0.0436	0.0433	0.0265	0.0242	0.0348
Total Harvest	524,566 <i>37,407</i>	235,413 <i>16,934</i>	257,197 <i>20,829</i>	269,005 <i>22,432</i>	291,675 <i>26,971</i>	339,769 <i>23,759</i>	242,309 <i>17,398</i>	156,321 <i>14,700</i>	108,293 <i>8,078</i>	307,804 <i>21,015</i>	273,235 <i>22,228</i>
Harvest-Rate	0.1764	0.0821	0.0896	0.0952	0.1286	0.1240	0.0823	0.0579	0.0414	0.1103	0.0988

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 2005. Standard deviations are in *Italics*.

Species	Harvest per Hour	Mar/Apr	May	June	July	August	Sept/Oct	Nov/Dec	Season
Coho Salmon	0.0212	71 <i>52</i>	17,500 <i>1,717</i>	21,032 <i>1,464</i>	10,152 <i>1,068</i>	7,336 <i>906</i>	3,120 <i>425</i>	33 <i>11</i>	59,244 <i>2,690</i>
Chinook Salmon	0.1501	4 <i>0</i>	5,378 <i>637</i>	61,178 <i>4,182</i>	179,170 <i>7,913</i>	115,198 <i>4,861</i>	57,927 <i>3,476</i>	63 <i>21</i>	418,918 <i>10,781</i>
Rainbow Trout	0.0174	4,602 <i>2,879</i>	3,390 <i>766</i>	16,885 <i>1,514</i>	12,687 <i>920</i>	6,720 <i>538</i>	4,054 <i>470</i>	152 <i>43</i>	48,490 <i>3,539</i>
Brown Trout	0.0098	15,878 <i>6,086</i>	1,566 <i>492</i>	2,572 <i>1,006</i>	2,995 <i>636</i>	2,041 <i>246</i>	2,258 <i>334</i>	179 <i>50</i>	27,489 <i>6,235</i>
Brook Trout	0.0000	12 <i>12</i>	0 <i>0</i>	3 <i>0</i>	1 <i>0</i>	1 <i>0</i>	1 <i>0</i>	0 <i>0</i>	18 <i>12</i>
Lake Trout	0.0051	208 <i>72</i>	1,119 <i>214</i>	3,651 <i>412</i>	4,311 <i>457</i>	3,768 <i>317</i>	1,081 <i>116</i>	1 <i>0</i>	14,139 <i>737</i>
Splake	0.0000	59 <i>45</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	59 <i>45</i>
Northern Pike	0.0007	178 <i>116</i>	0 <i>0</i>	167 <i>60</i>	0 <i>0</i>	972 <i>384</i>	533 <i>290</i>	0 <i>0</i>	1,850 <i>499</i>
White Perch	0.0008	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	44 <i>44</i>	287 <i>197</i>	1,786 <i>1,307</i>	0 <i>0</i>	2,117 <i>1,322</i>
Smallmouth Bass	0.0030	0 <i>0</i>	2,066 <i>645</i>	1,306 <i>471</i>	2,721 <i>1,445</i>	1,455 <i>391</i>	923 <i>433</i>	0 <i>0</i>	8,471 <i>1,751</i>
Yellow Perch	0.1103	11,135 <i>6,558</i>	2,692 <i>1,626</i>	27,363 <i>3,745</i>	90,048 <i>11,473</i>	98,680 <i>13,001</i>	77,886 <i>9,017</i>	0 <i>0</i>	307,804 <i>21,015</i>
Walleye	0.0034	1,246 <i>327</i>	2,726 <i>1,322</i>	1,904 <i>605</i>	985 <i>413</i>	1,099 <i>549</i>	1,442 <i>624</i>	0 <i>0</i>	9,402 <i>1,755</i>
Total Harvest	0.3218	33,393 <i>9,406</i>	36,437 <i>3,006</i>	136,061 <i>6,142</i>	303,114 <i>14,111</i>	237,557 <i>13,949</i>	151,011 <i>9,812</i>	428 <i>70</i>	898,001 <i>25,004</i>
Angler Hours		250,310 <i>22,520</i>	238,326 <i>31,253</i>	412,917 <i>17,438</i>	774,954 <i>30,947</i>	577,683 <i>18,997</i>	532,155 <i>16,064</i>	4,541 <i>395</i>	2,790,886 <i>58,007</i>

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 2005. Standard deviations are in *Italics*.

Species	Harvest	Mar/Apr	May	June	July	August	Sept/Oct	Nov/Dec	Season
	per hour								
Coho Salmon	0.0260	71 <i>52</i>	17,403 <i>1,716</i>	20,983 <i>1,463</i>	10,111 <i>1,068</i>	7,294 <i>905</i>	1,715 <i>212</i>	0 <i>0</i>	57,577 <i>2,663</i>
Chinook Salmon	0.1768	4 <i>0</i>	5,311 <i>636</i>	60,828 <i>4,182</i>	178,460 <i>7,912</i>	112,849 <i>4,841</i>	34,776 <i>2,939</i>	10 <i>0</i>	392,238 <i>10,609</i>
Rainbow Trout	0.0202	2,593 <i>2,863</i>	3,342 <i>766</i>	16,635 <i>1,511</i>	12,441 <i>918</i>	6,621 <i>536</i>	3,142 <i>434</i>	0 <i>0</i>	44,774 <i>3,519</i>
Brown Trout	0.0093	13,325 <i>6,059</i>	832 <i>189</i>	993 <i>215</i>	2,899 <i>635</i>	1,590 <i>216</i>	1,009 <i>208</i>	8 <i>0</i>	20,656 <i>6,106</i>
Brook Trout	0.0000	12 <i>12</i>	0 <i>0</i>	3 <i>0</i>	1 <i>0</i>	1 <i>0</i>	1 <i>0</i>	0 <i>0</i>	18 <i>12</i>
Lake Trout	0.0063	208 <i>72</i>	1,119 <i>215</i>	3,651 <i>412</i>	4,267 <i>455</i>	3,768 <i>317</i>	1,025 <i>111</i>	1 <i>0</i>	14,039 <i>735</i>
Splake	0.0000	59 <i>45</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	59 <i>45</i>
Northern Pike	0.0007	0 <i>0</i>	0 <i>0</i>	59 <i>60</i>	0 <i>0</i>	972 <i>384</i>	533 <i>290</i>	0 <i>0</i>	1,564 <i>485</i>
White Perch	0.0009	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	44 <i>44</i>	266 <i>196</i>	1,786 <i>1,307</i>	0 <i>0</i>	2,096 <i>1,322</i>
Smallmouth Bass	0.0032	0 <i>0</i>	1,804 <i>625</i>	1,161 <i>467</i>	2,377 <i>1,437</i>	992 <i>336</i>	864 <i>432</i>	0 <i>0</i>	7,198 <i>1,723</i>
Yellow Perch	0.1318	11,112 <i>6,558</i>	2,169 <i>1,559</i>	21,624 <i>3,457</i>	88,617 <i>11,462</i>	94,784 <i>12,974</i>	74,018 <i>8,953</i>	0 <i>0</i>	292,324 <i>20,910</i>
Walleye	0.0041	1,081 <i>317</i>	2,726 <i>1,322</i>	1,741 <i>603</i>	985 <i>413</i>	1,099 <i>549</i>	1,416 <i>624</i>		9,048 <i>1,752</i>
Total Harvest	0.3794	28,465 <i>9,382</i>	34,706 <i>2,930</i>	127,678 <i>5,888</i>	300,202 <i>14,100</i>	230,236 <i>13,915</i>	120,285 <i>9,563</i>	19 <i>0</i>	841,591 <i>24,801</i>
Angler Hours		154,684 <i>21,887</i>	209,139 <i>31,065</i>	343,766 <i>16,581</i>	719,007 <i>30,711</i>	514,218 <i>18,705</i>	277,238 <i>12,171</i>	26 <i>0</i>	2,218,078 <i>56,215</i>

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 2005. Standard deviations are in *italics*.

Species	Harvest	Mar/Apr	May	June	July	August	Sept/Oct	Season
	per hour							
Coho Salmon	0.0054	0 <i>0</i>	89 <i>54</i>	38 <i>21</i>	28 <i>20</i>	42 <i>43</i>	731 <i>336</i>	928 <i>344</i>
Chinook Salmon	0.0320	0 <i>0</i>	67 <i>33</i>	277 <i>68</i>	685 <i>174</i>	2,320 <i>440</i>	2,141 <i>425</i>	5,490 <i>640</i>
Rainbow Trout	0.0047	6 <i>6</i>	23 <i>18</i>	244 <i>89</i>	232 <i>60</i>	71 <i>36</i>	222 <i>101</i>	798 <i>153</i>
Brown Trout	0.0117	623 <i>237</i>	525 <i>451</i>	184 <i>99</i>	88 <i>34</i>	168 <i>72</i>	417 <i>178</i>	2,005 <i>555</i>
Brook Trout	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
Lake Trout	0.0004	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	44 <i>41</i>	0 <i>0</i>	19 <i>17</i>	63 <i>44</i>
Splake	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
Northern Pike	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
White Perch	0.0001	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	21 <i>21</i>	0 <i>0</i>	21 <i>21</i>
Smallmouth Bass	0.0031	0 <i>0</i>	60 <i>41</i>	118 <i>60</i>	54 <i>31</i>	261 <i>162</i>	44 <i>31</i>	537 <i>183</i>
Yellow Perch	0.0379	0 <i>0</i>	7 <i>7</i>	2,776 <i>982</i>	999 <i>472</i>	1,519 <i>587</i>	1,207 <i>600</i>	6,508 <i>1,375</i>
Walleye	0.0003	0 <i>0</i>	0 <i>0</i>	45 <i>41</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	45 <i>41</i>
Total Harvest	0.0955	629 <i>238</i>	771 <i>458</i>	3,682 <i>997</i>	2,130 <i>510</i>	4,402 <i>757</i>	4,781 <i>834</i>	16,395 <i>1,670</i>
Angler Hours		11,596 <i>1,798</i>	9,598 <i>1,735</i>	27,860 <i>2,509</i>	33,459 <i>3,043</i>	39,394 <i>2,796</i>	49,690 <i>4,110</i>	171,597 <i>6,819</i>

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 2005. Standard deviations are in *Italics*.

Species	Harvest per hour	Mar/Apr	May	June	July	August	Sept/Oct	Season	
Coho Salmon	0.0026	0 <i>0</i>	8 <i>8</i>	11 <i>11</i>	13 <i>8</i>	0 <i>0</i>	381 <i>102</i>	413 <i>103</i>	0.0026
Chinook Salmon	0.0279	0 <i>0</i>	0 <i>0</i>	73 <i>44</i>	25 <i>17</i>	29 <i>19</i>	4,282 <i>617</i>	4,409 <i>619</i>	0.0279
Rainbow Trout	0.0041	424 <i>177</i>	25 <i>18</i>	6 <i>6</i>	14 <i>9</i>	28 <i>21</i>	154 <i>69</i>	651 <i>192</i>	0.0041
Brown Trout	0.0193	1,765 <i>522</i>	112 <i>47</i>	138 <i>71</i>	8 <i>8</i>	283 <i>92</i>	741 <i>187</i>	3,047 <i>569</i>	0.0193
Brook Trout	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0.0000
Lake Trout	0.0002	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	37 <i>27</i>	37 <i>27</i>	0.0002
Splake	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0.0000
Northern Pike	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0.0000
White Perch	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0.0000
Smallmouth Bass	0.0047	0 <i>0</i>	202 <i>158</i>	27 <i>26</i>	290 <i>152</i>	202 <i>117</i>	15 <i>14</i>	736 <i>250</i>	0.0047
Yellow Perch	0.0313	23 <i>23</i>	516 <i>462</i>	2,828 <i>1,043</i>	432 <i>165</i>	567 <i>149</i>	587 <i>450</i>	4,953 <i>1,247</i>	0.0313
Walleye	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0.0000
Total Harvest	0.0902	2,212 <i>552</i>	863 <i>491</i>	3,083 <i>1,047</i>	782 <i>226</i>	1,109 <i>212</i>	6,197 <i>796</i>	14,246 <i>1,540</i>	0.0902
Angler Hours		17,965 <i>1,973</i>	9,240 <i>916</i>	20,052 <i>2,534</i>	14,182 <i>1,324</i>	14,855 <i>1,179</i>	81,709 <i>6,137</i>	158,003 <i>7,209</i>	

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 2005. Standard deviations are in *Italics*.

Species	Harvest	Mar/Apr	May	June	July	August	Sept/Oct	Nov/Dec	Season
	per hour								
Coho Salmon	0.0013	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	293 <i>111</i>	33 <i>11</i>	326 <i>111</i>
Chinook Salmon	0.0690	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	16,728 <i>1,698</i>	53 <i>21</i>	16,781 <i>1,698</i>
Rainbow Trout	0.0093	1,579 <i>253</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	536 <i>134</i>	152 <i>43</i>	2,267 <i>289</i>
Brown Trout	0.0073	165 <i>95</i>	97 <i>0</i>	1,257 <i>975</i>	0 <i>0</i>	0 <i>0</i>	91 <i>38</i>	171 <i>50</i>	1,781 <i>982</i>
Brook Trout	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
Lake Trout	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
Splake	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
Northern Pike	0.0012	178 <i>116</i>	0 <i>0</i>	108 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	286 <i>116</i>
White Perch	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
Smallmouth Bass	0.0000	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>	0 <i>0</i>
Yellow Perch	0.0165	0 <i>0</i>	0 <i>0</i>	135 <i>127</i>	0 <i>0</i>	1,810 <i>583</i>	2,074 <i>762</i>	0 <i>0</i>	4,019 <i>968</i>
Walleye	0.0013	165 <i>80</i>	0 <i>0</i>	118 <i>10</i>	0 <i>0</i>	0 <i>0</i>	26 <i>26</i>	0 <i>0</i>	309 <i>85</i>
Total Harvest	0.1060	2,087 <i>305</i>	97 <i>0</i>	1,618 <i>983</i>	0 <i>0</i>	1,810 <i>583</i>	19,748 <i>1,869</i>	409 <i>70</i>	25,769 <i>2,213</i>
Angler Hours		66,065 <i>4,582</i>	10,349 <i>2,803</i>	21,239 <i>4,052</i>	8,306 <i>1,894</i>	9,216 <i>1,348</i>	123,518 <i>7,440</i>	4,515 <i>395</i>	243,208 <i>10,305</i>

Table 9. Average weight, average length and standard weight of salmonids from Wisconsin's Lake Michigan creel survey during 1996 through 2005, all areas and fishery types combined. std = standard deviation.

Year	Average weight (lbs.)	± 1 std	Average length (in.)	± 1 std	Standard weight (lbs.)
Coho salmon					
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
2001	4.7353	1.9752	22.6677	3.0532	4.0207
2002	3.5174	2.0263	21.0377	3.5987	3.5289
2003	4.6807	1.8751	23.0807	2.9682	3.7452
2004	4.8908	2.1299	23.7228	3.1697	3.7264
2005	3.5859	1.7365	21.5351	2.5803	3.7625
Chinook salmon					
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
2001	13.1640	6.1913	31.0019	6.1715	9.9143
2002	12.2901	6.6454	30.7430	7.1419	9.4467
2003	9.7510	5.7925	28.5172	5.6862	9.6825
2004	10.8366	4.8605	30.3981	5.2144	9.1496
2005	8.6770	4.3969	27.9173	5.2664	9.1806
Rainbow trout					
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
2000	6.1574	3.1588	25.4504	4.2857	3.9674
2001	6.9539	3.0306	25.6720	4.7128	4.4443
2002	6.2470	2.8717	25.8321	4.4530	3.7924
2003	6.1235	2.9715	25.2357	4.8806	3.8857
2004	6.6084	2.5308	25.8536	4.3064	4.3897
2005	6.2049	2.4847	25.9888	3.7545	3.8343
Brown trout					
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
2001	7.2119	4.6059	23.4689	5.5950	3.8042
2002	5.4742	3.2102	21.5383	4.6496	3.6206
2003	5.9883	3.7869	22.0368	4.8654	3.9051
2004	5.5489	3.6353	21.5438	5.1509	3.6234
2005	5.4529	3.8649	21.2167	5.6031	3.7473
Lake trout					
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
2001	8.8205	3.9134	27.6734	3.7005	6.1112
2002	7.3412	3.2020	26.9199	3.3907	5.3355
2003	5.8656	3.1534	24.7221	3.8386	5.8727
2004	5.6370	2.7429	24.5108	3.5812	5.6315
2005	4.7568	2.0300	23.4632	2.8051	5.4412

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

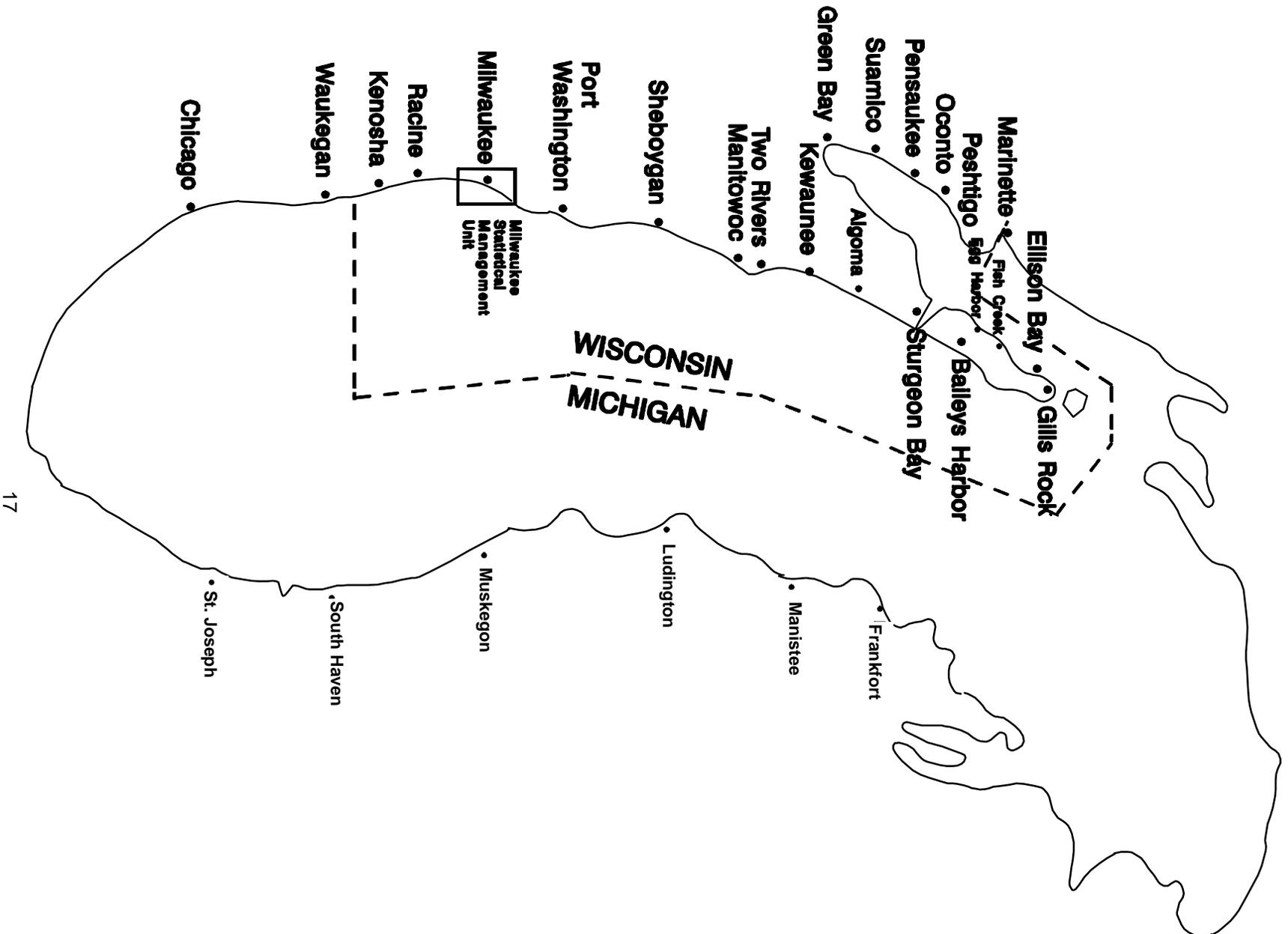


Figure 2. Fishing effort (angler hours) in Wisconsin waters of Lake Michigan and Green Bay from 1996 through 2005.

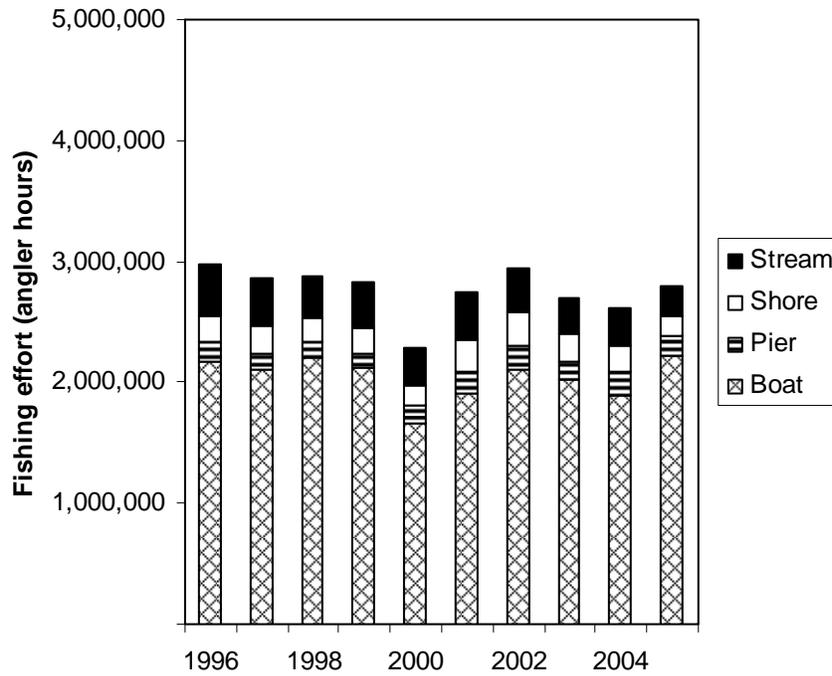


Figure 3. Trout and salmon harvest and harvest-rate from Wisconsin waters of Lake Michigan and Green Bay from 1996 through 2005.

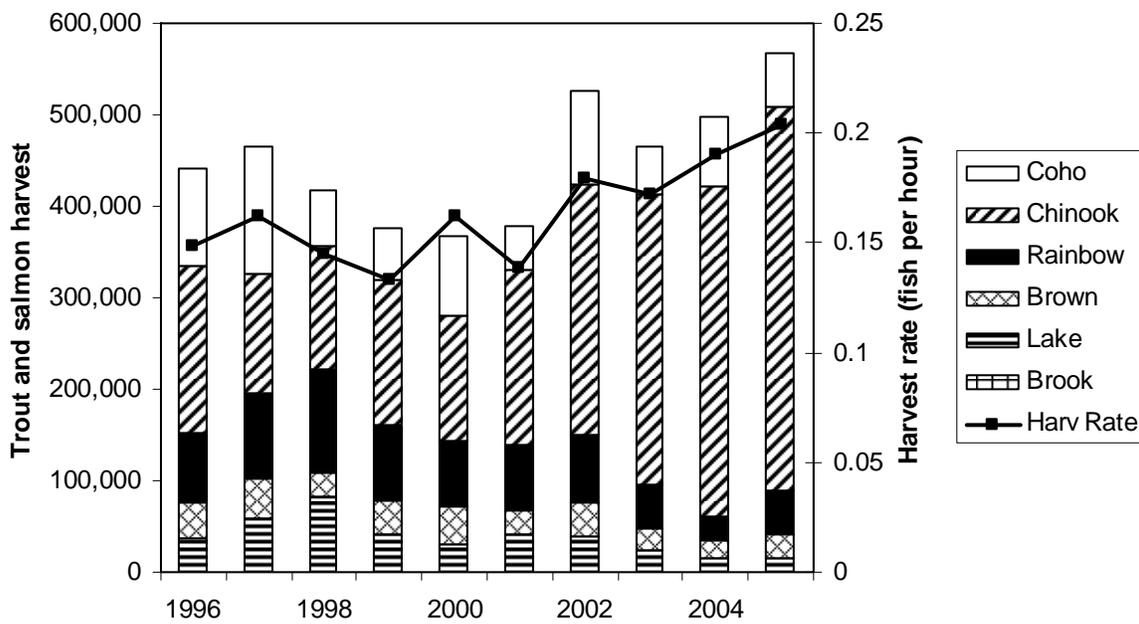


Figure 4. Yellow perch angler-harvest and harvest-rate from Wisconsin waters of Green Bay and Lake Michigan from 1996 through 2005.

