

# WISCONSIN'S 2007 LAKE SUPERIOR CREEL SURVEY REPORT

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## INTRODUCTION

A creel survey was conducted on Wisconsin waters of Lake Superior during the winter ice fishery (Dec. 28, 2006 to March 25, 2007) and during the open water fishery (Ice-out April 13, 2007 to September 30, 2007).

These surveys were designed to collect data on angler pressure, harvest and biological statistics. Five fishery types were surveyed.

1. Open water cold private (salmonids caught by non-charter parties).
2. Open water cool private (cool water species caught by non-charter parties).
3. Ice shallow water (less than 60 feet of water).
4. Ice cool water (targeting cool water species, i.e. northern pike, walleye, yellow perch).
5. Ice deep water, "bobbing" (60 feet and deeper).

Two additional fisheries were monitored using the results from mandatory reporting.

1. Charter fishery.
2. Sturgeon fishery.

This creel survey was designed to put special emphasis on the lake trout harvest in Wisconsin waters of Lake Superior. Due to budget restraints and to insure accuracy in the lake trout harvest, certain predominately cool water sites, as well as the shore fishery, were dropped from the survey to allow more time at cold water (lake trout) access areas. The data in this report is considered minimum numbers because of this.

## METHODS

### OPEN WATER PRIVATE

In 2007, a single loop time interval creel survey was conducted during the open water fishing season on Wisconsin waters of Lake Superior. Four creel clerks worked seven different routes (Figure 1):

- One Route: Full Time. ½ Time - Ashland (Second Landing, Kreher Park and Ashland Marina),  
½ Time - Washburn (and Washburn Marina).
- One Route: Full Time. ½ Time - Little Sand Bay, ¼ Time Bayfield, ¼ Time Red Cliff (starting 6/21/07).
- One Route: ½ Time. Saxon
- One Route: Full Time. Superior (Barker's Island).

Due to budget restraints several routes could not be surveyed including Cornucopia / Bark Point / Herbster / Port Wing (one route), and the December open water fishery. Data (angler trips, angler hours, and lake trout harvest) from 2006 for Cornucopia / Port Wing route was used in this report. December open water numbers were not extrapolated from known numbers due to the variability of the fishery. Each route consisted of various pressure sites the creel clerk checked. The sites selected and the amount of time spent at any given location was based on pressure counts from past years. The sites with the highest pressure were allotted a higher percentage of time to be checked during a route.

In a single loop time-interval creel, the clerk started and finished a route at the initial pressure site (i.e. one complete circuit). The initial pressure site, as well as the direction of travel, changed randomly according to computer generated schedules (Appendix I).

Using the time interval procedure, vehicles with boat trailers and harbor boats were counted at each access site. Boats going out to fish or coming in from fishing were counted as a fraction of the time the clerk spent at the site (i.e. boat pressure = amount of time the clerk has remaining at the site / total time spent at the site). A boat starting to fish was added to the initial pressure and a boat stopping or coming in from fishing was subtracted from the initial pressure. An example of a time interval pressure worksheet is shown in Appendix II.

The open water creel routes, start times, stop times, etc. are shown in Appendix III.

Boats returning from fishing were interviewed at the site. Total number of anglers on board was treated as an angler party. The type of fishery they were involved in was recorded. If the boat was fishing for cool water species such as northern pike, walleye, perch, smallmouth bass in a predominately cool water area, it was recorded as "open water cool private". If the boat was fishing trout or salmon, it was recorded in "open water cold private". If the boat was fishing for "anything that bites", the area the boat fished would determine which category to place the boat in. Finally, if the boat did not fish at all it was placed in the category "pleasure". Charter boats were not counted in pressure at a site due to mandatory reporting. Sailboats were also excluded from the pressure unless fishing gear (downriggers or rods) was present. The state waters that the boat fished in were determined. Areas such as Saxon Harbor and Superior are adjoining boundary waters. Computer programming in the final estimation of total harvest eliminated fish caught in waters other than Wisconsin. Boats that fished both states' waters had half the total catch assigned to Wisconsin waters.

The fish caught (if any) by the boat were identified and measured to the nearest tenth of an inch. Fin-clips were recorded as well as any tags that were present. An interview sample sheet is shown in Appendix IV.

Pressure and harvest estimates were calculated by route, month, weekday and weekend variables, as well as the type of fishery the anglers were involved in (i.e. open water cold, open water cool etc.). The open water creel survey data was calculated using SAS statistical computer program.

**ICE CREEL**

An ice fishery creel survey was conducted from the main shore from Ashland through the northern most area of fishing activity (Bayfield / Red Cliff / Cornucopia) (Figure 1). The pressure estimate was done by the stratified creel survey method (Appendix V). Two separate vehicle counts were made daily at approximately 9:00 AM and 2:00 PM for each site in a given random route. Vehicles present in morning and afternoon checks were not counted twice. An ice pressure sample sheet is shown in Appendix VI. Interviews for the ice fishery creel were conducted in the same manner as the open water method. The number of anglers in a vehicle was considered an angling party. Anglers involved in the ice fishery were separated into three different fisheries: ice shallow water, ice cool water and ice "bobbing". Ice shallow water is considered fishing in waters less than 60 feet for salmonids, coregonids and smelt. Ice cool water is considered fishing for cool water species (yellow perch, walleye, northern pike, etc.). Ice "bobbing" is considered fishing in water deeper than 60 feet or more (mainly for lake trout and whitefish).

The ice fishing pressure and harvest rates were separated by month, weekend and weekday variables, as well as the type of fishery in which the anglers were involved.

**CHARTER**

Harvest estimates for guided charters came from mandatory monthly reports that were initiated in 1973. Information on number of anglers, hours fished, location (grid), and number of various species harvested was included in the monthly catch report (Appendix VII).

**STURGEON**

Harvest estimates on lake sturgeon were taken from mandatory registration. Pressure estimates were not available due to the incidental nature of the fishery. Starting Jan. 1, 2005 hook and line Sturgeon angler tags were issued through the ALIS license system replacing the old metal tag system.

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The total number of lake trout harvested during the 2007 fishing year by sport angling was calculated using a weighted mean. Extraction of this number was done by fishery type, fishing port, harvest estimate, month, average length and percent of native origin fish. Weight extrapolated from the total harvest of this species was calculated using the length-weight regression equations from the DNR 2004-2007 spring lake trout assessment and summer index assessment. The regression equations are as follows:

<p><b>NATIVE ORIGIN</b>  <math>\text{Ln}(\text{weight grams}) = -13.099 + 3.222(\text{Ln length mm})</math></p>	<p><b>HATCHERY ORIGIN</b>  <math>\text{Ln}(\text{weight grams}) = -13.155 + 3.237 (\text{Ln length mm})</math></p>
<p><b>NATIVE AND HATCHERY ORIGIN</b>  <math>\text{Ln}(\text{weight grams}) = -13.011 + 3.210 (\text{Ln length mm})</math></p>	

Weights for other species were calculated using regression equations from data collected on the R/V Hack Noyes during 1986-2007 field surveys, as well as DNR stream survey work. Weights for Chinook salmon were estimated using the Minnesota DNR Investigational Report # 382, Growth and Fecundity of Chinook salmon in Western Lake Superior (July 1985). Please see Appendix VIII for individual regression equation.

## RESULTS

### **OPEN WATER COLD PRIVATE**

**EFFORT** – During 2007, an estimated 28,833 individual angler trips and 146,566 angler hours were spent pursuing cold water species (trout and salmon) in Wisconsin waters of Lake Superior (Table 1.) Of the seven areas surveyed Superior (Barker's Island) had the highest pressure with 5,108 angler trips and 25,126 angler hours. This was higher than last years (2006) effort (3,462 angler trips and 16,263 angler hours) but consistent with 2002 – 2005 effort. Bayfield's effort was second with 4,762 angler trips and 27,124 angler hours, this was similar to the last time Bayfield was surveyed in 2000 (4,818 angler trips and 24,895 angler hours). Saxon's effort was third with 3,882 angler trips and 19,571 angler hours consistent with previous years. Washburn's effort was fourth with 3,534 angler trips and 18,472 angler hours, both were all time lows (since 1992). Ashland was fifth with 2,869 angler trips and 15,120 angler hours down from 2005 (4,233 angler trips, 20,556 angler hours) the last time Ashland was surveyed. Little Sand Bay was sixth with 1,766 angler trips and 10,463 angler hours, up significantly from 1994 (317 angler trips and 1,345 angler hours) the last time Little Sand Bay was surveyed. Red Cliff had the lowest effort 759 angler trips and 4,622 angler hours. The survey out of Red Cliff did not start until June 21. This is part of the reason for low effort numbers (Table 2). Red Cliff should be considered in the future for a full season survey.

**HARVEST** – An estimated 20,523 fish were harvested in the seven areas surveyed. Lake trout continues to be the most abundant species harvested accounting for 55.7% of the total harvest with 11,428 (Table 3). Lake trout harvest was the highest out of the Bayfield with a harvest of 2,382, followed by Superior (2,220), Saxon (2,003), Ashland (1,938), Washburn (1,042), Little Sand Bay (1,005) and Red Cliff (788)(Table 1).

Coho salmon were the second most harvested species accounting for 27.3% of the harvest with 5,595 Coho. Average size coho in this fishery was 16.3". Brown trout ranked third with 1,634 fish harvested accounting for 8.0% of the harvest. Average size of brown trout was 20.2". Chinook salmon ranked fourth with 952 fish harvested accounting for 4.6% of harvest. Average size Chinook was 20.8". Walleye ranked fifth with 638 fish for 3.1% (Table 3).

Brown trout harvest from Bayfield (566) and Little Sand Bay (404) accounted for 59.4% of the total (1,634) harvest in this fishery and 43.2% of the overall (2,246) harvest of all fishery's in 2007 (Table 1). Both locations were surveyed for the first time in several years (Bayfield 2000, Little Sand Bay 1994).

Harvest of native origin lake trout in all areas surveyed accounted for 91.0% of the total lake trout harvest in this fishery, up slightly from last years 89.8%, but consistent with previous years. Percent native lake trout harvest was highest out of Saxon Harbor with 99.7%, followed by Ashland / Bayfield / Washburn (98.4%) and Superior (67.1%) (Table 4). In this fishery the average size lake trout was 22.6" (Native origin average size was 22.6", Hatchery origin average size was 22.3") (Table 5).

Separating the estimated lake trout harvest of 13,329 by management zone in this fishery, 3,634 lake trout were harvested in WI-1 and 9,695 lake trout were harvested in WI-2 (Table 5).

**HARVEST RATES** - The overall harvest rate for all species was highest out of Little Sand Bay and Red Cliff (0.19 fish/hour), followed by Superior (0.18 fish/hour), Ashland (0.17 fish/hour) and Bayfield, Saxon, Washburn (0.16 fish/hour). Superior's overall harvest rate was at a 10 year high. Washburn, Ashland, Bayfield and Little Sand Bay were higher than previous years. Saxon's overall harvest rate is at a 10 year low. Red Cliff had the highest lake trout harvest rate with 0.17 LT/hour, followed by Ashland 0.13 LT/hour, Little Sand Bay and Saxon 0.10 LT/hour, Bayfield and Superior 0.09 LT/hour and Washburn last with 0.06 LT/hour. (Table 6-13). Superior, Ashland and Bayfield LT harvest rates were consistent with previous years. While Saxon and Washburn LT harvest rates were at 10 year lows.

Lake trout harvest rates (LT/angler hour) during the months of June – August (the peak of the LT season) was highest out of Ashland (0.155) followed by Saxon (0.140), Bayfield (0.106), Superior (0.100) and Washburn (0.079). All areas recorded lower rates than previous years except Superior which matched its highest rate since 1990. All areas surveyed (except Little Sand Bay and Red Cliff) including Corny/Port Wing (2006) had a combined LT harvest rate of 0.108 LT/hour (Table 14).

### **OPEN WATER COOL PRIVATE**

**EFFORT** – During 2007, an estimated 13,328 individual angler trips and 56,031 angler hours were spent pursuing cool water species (walleye, smallmouth bass, northern pike, yellow perch) in the surveyed areas (Table 1). The majority of this fishery in the Wisconsin waters of Lake Superior occurs in Chequamegon Bay and the Superior (Barker's Island) entry. Of the seven areas surveyed Ashland had the highest cool water effort with 6,303 angler trips and 29,008 angler

hours, this was down slightly from the last time Ashland was surveyed in 2005 (7,577 angler trips and 35,983 angler hours). Superior had the second highest effort with 5,144 angler trips and 18,230 angler hours. Consistent with last year's effort. Washburn's effort was third with 1,755 angler trips and 7,849 angler hours, the fourth year in a row with increased effort. Bayfield's effort was 126 angler trips and 944 angler hours. There was no cool water effort surveyed out of Red Cliff and Little Sand Bay (Table 15). The cool water effort surveyed out of Saxon occurred from anglers fishing the Bad River; this effort was not reported in this report.

**HARVEST and HARVEST RATES** – During 2007, an estimated 5,902 fish were harvested in the cool water fishery. Superior had the highest harvest with 3,017 fish followed by Ashland (2,390), Washburn (248) and Bayfield (247) (Table 1). Walleyes (3,229; 54.7%) and Yellow Perch (1,853; 31.4%) accounted for 86.1% of the harvest (Table 16). Superior recorded the highest walleye harvest with 2,687 fish followed by Ashland (469) and Washburn (73) (Table 1). Bayfield recorded the highest harvest rate at 0.26 fish / hour, followed by Superior 0.17 fish / hour, Ashland 0.08 fish / hour and Washburn 0.03 fish / hour (Table 17-22). Harvest rates out of Ashland and Washburn is not an indicator of catch rates due to many anglers targeting smallmouth bass. The smallmouth bass fishery is virtually catch and release due to the 22" minimum size limit.

## **ICE FISHERY**

The 2007 ice fishing season had a late start due to a very mild December (2006). Safe ice conditions in some areas off Ashland and south of Washburn were as late as 3-4 weeks from "traditional" starting dates. Ashland (Second Landing west through the Pig Iron Dock) was surveyed for the first time since 1994. Superior and Saxon had limited safe ice conditions but were not surveyed due to budget restraints. Fishing started from various locations off of Ashland on Dec. 28, 2006, "S" curve Jan. 12, 2007, Washburn Coal Dock on Jan. 17, 2007, "bobbing" started about Jan. 24, 2007. All fishing activity went through about March 25, 2007. Bobbing out of Cornucopia occurred from about Feb. 1, 2007 to Feb. 24, 2007. Caution should be used when comparing ice fishery data from year to year due to the variability of ice formation / conditions from one year to the next.

## **ICE SHALLOW WATER**

**ASHLAND-** The ice fishing season started on Dec. 28, 2006 and ended on approximately March 25, 2007. An estimated 3,118 angler trips and 17,487 angler hours resulted in an estimated harvest of 8,850 fish (Table 1). Smelt (4,235) and Coho salmon (3,166) dominated the harvest accounting for 83.6% of the harvest. The overall harvest rate in this fishery was 0.51 fish/hour. For other species comparisons refer to Table 1.

**WASHBURN / BAYFIELD-** An estimated 2,854 angler trips and 15,266 angler hours resulted in an estimated harvest of 5,132 fish (Table 1). Coho salmon (1,611) was the number one species harvested. Whitefish (1,054) was second, smelt (739) third, splake (717) fourth, yellow perch (370) fifth and brown trout sixth (356). The overall harvest rate in this fishery was 0.34 fish/hour. For other species comparisons refer to Table 1.

The shallow water ice fishery (Cheq. Bay; Ashland, Washburn and Bayfield) in 2007 was compared to previous years for the same areas surveyed. Effort in 2007 (5,972 angler trips and 32,753 angler hours) was slightly lower than the 13 year (1976, 77, 82-90, 93, 94) average of 6,915 angler trips and 34,206 angler hours. But was significantly down from the effort recorded during the 1980's when the brown trout and splake harvest was at their peak. The 1982-1990 average effort was 8,262(range 5,199-10,328) angler trips and 40,661(range 26,837-47,884) angler hours. Harvest in 2007 of 13,982 was higher than any other year this area was surveyed. During the 1980's harvest was driven by the abundance of splake and brown trout, both supported by stocked fish. The average harvest from 1980-1990 of brown trout was 1,108 (range 188-2,738) and for splake 4,021 (range 2,262 -5,373). This compares to 449 brown trout and 876 splake harvested in 2007. Stocking survival of these two species started to decline in the mid to late 1990's. Anglers switched their target species. The higher harvest in 2007 was mainly due to anglers targeting smelt (4,974), coho salmon (4,777 a record harvest) and lake whitefish (1,313). For other species comparisons refer to Table 23. The harvest rate in 2007 (0.427 fish / hour) was higher than in any other year surveyed. Caution should be used when comparing ice fishery data from year to year due to the variability of ice formation / conditions from one year to the next.

**CORNUCOPIA / BARK BAY-** A limited shallow water fishery occurred in Bark Bay this year. An estimated 4 angler trips and 8 angler hours resulted in no harvest (Table 1).

## **ICE COOL WATER**

**ASHLAND-** An estimated 2,234 angler trips and 10,540 angler hours resulted in an estimated harvest of 8,075 fish (Table 1). Yellow perch (7,069) dominated the harvest accounting for 87.5% of the harvest. Coho (470) was the second most harvested species followed by smelt (224) and northern pike (139). The overall harvest rate in this fishery was 0.77 fish/hour.

**WASHBURN / BAYFIELD-** A limited cool water fishery exists off the Washburn / Bayfield areas. An estimated 160 angler trips and 750 angler hours resulted in an estimated harvest of 550 fish. Yellow perch (502) was the number one species harvested followed by whitefish (31) and Coho (17). The overall harvest rate in this fishery was 0.73 fish/hour.

The cool water ice fishery (Cheq. Bay; Ashland, Washburn and Bayfield) in 2007 was compared with the previous 12 years (1973, 76-79, 86-90, 93, 94) at the same areas were surveyed. Effort in 2007(2,394 angler trips and 11,290 angler hours) was similar to the average of 2,170 angler trips and 10,024 angler hours during the previous 12 years these areas were surveyed. The harvest in 2007 was 8,625 fish. The harvest during the previous 12 years averaged 11,269 fish with a range of 2,728 - 27,490 fish. Yellow perch is the number one species harvested in the fishery. During 2007, 7,571 yellow perch were harvested. The yellow perch harvest during the previous 12 years averaged 10,823 with a range of 2,413 – 27,342. For other species comparisons refer to Table 24. The harvest rate in 2007 was 0.764 fish / hour. The harvest rate during the previous 12 years ranged from 0.361 – 2.063. Caution should be used when comparing ice fishery data from year to year due to the variability of ice formation / conditions from one year to the next.

**CORNUCOPIA / BARK BAY-** A limited cool water fishery occurred in Bark bay this year. An estimated 10 angler trips and 41 angler hours resulted in no fish harvested.

## **ICE DEEP WATER BOBBING**

**APOSTLE ISLANDS (INCL. MADELINE ISLAND)** - Overall, ice conditions for “bobbing” were very good - excellent with anglers traveling as far out as Stockton and Michigan Islands. An estimated 3,480 angler trips and 19,287 angler hours resulted in an estimated harvest of 6,472 fish in this deep-water fishery (Table 1). Angler trips and angler hours were both higher than last year’s pressure and higher than the average since 1990 (Table 25). Lake trout (2,740) was the number one species harvested in this fishery. This accounted for 42.3% of the “bobbing” harvest. Whitefish ranked second with 1,688 fish harvested for 26.1% of the harvest and lake herring third with 598 fish (9.2%), coho salmon fourth 510 fish (7.9%) and siscowets(fats) fifth with 447 fish (6.9%) (Table 26). Overall harvest rate of 0.336 fish per hour was the highest all time (since 1995) and the second record harvest rate in two years (Table 27). The lake trout harvest rate 0.142 LT / hour was consistent with recent years (Table 17). The average size lake trout in this fishery for native origin lake trout was 22.9” and for hatchery origin lake trout 22.4” (Table 5).

**CORNUCOPIA / BARK BAY-** There was approximately three weeks (2/1/07 – 2/24/07) of safe fishable ice conditions in the Cornucopia / Bark Bay area. An estimated 156 angler trips and 764 angler hours and resulted in an estimated harvest of 23 fish (19 LT and 4 siscowets). The overall harvest rate of 0.030 fish per hour and 0.025 LT / hour were both all time lows. (Table 27).

## **CHARTER FISHERY**

**EFFORT** - Twenty five licensed charter captains were active during the 2007 open water season on the Wisconsin waters of Lake Superior. The number of anglers (1,422) and the number of angler hours (8,571.5) was the lowest since 1973 when mandatory Charter reporting started (Table 28).

**HARVEST RATES** - The overall harvest rate of 0.28 fish per hour and the lake trout harvest rate of 0.23 fish per hour were consistent with previous years (Table 28). Cornucopia / Port Wing had the highest overall harvest rate with 0.31 fish per hour. Superior and Ashland / Bayfield / Washburn areas were second with 0.29 fish / hour. Followed by Saxon with 0.19 fish / hour. All areas had harvest rates consistent with previous years except Saxon which had the third straight year the harvest rate declined. Cornucopia / Port Wing had the highest lake trout harvest rate with 0.25 LT/hour, Ash. / Bayfield / Washburn areas was second with 0.24 LT/hour, Superior was third with a LT harvest rate of 0.23 LT/hour, Saxon was last with 0.18 LT/hour. Superior and Corn. / Port Wing areas had consistent LT harvest rates with previous years. While Ash. / Bayfield / Washburn were down slightly and Saxon was down for the third straight year (Table 29-32).

**HARVEST** – The overall harvest of 2,368 fish and the lake trout harvest of 1,972 were both all time lows. Lake trout remain the number one harvested fish in this fishery, compromising 83.3% (1,972) of the overall harvest of 2,368. Coho salmon were distant second with 252 fish for 10.6% of the harvest. Brown trout was third with 60 fish for 2.5% of the harvest (Table 33).

## **LAKE STURGEON FISHERY**

Very few fishermen actually target sturgeon in Wisconsin waters of Lake Superior. The bulk of the harvest is incidental and occurs in Chequamegon Bay when angler pressure is at its height (ice fishery and the first month of open water). Harvest information is obtained from mandatory registration of angler caught sturgeon. In 2007, one sturgeon was registered, 51.0” and 38 lbs (Table 34). Effort is unknown.

## **ACKNOWLEDGEMENTS**

I would like to give thanks to the creel clerks. They not only work hard at obtaining accurate data for the census, but they play an important role in public relations for the Department. Their efforts are greatly appreciated. The creel clerks involved for this report were: Scott Sapper (winter creel), Dean Kolpin (Saxon Harbor), Mark Hanson (Ashland and Washburn), Erik Bonde (Bayfield, Little Sand Bay, Red Cliff) and Brian Minor (Superior). I would also like to thank Scott Sapper and Mike Seider for editing this report.

**TABLE 1. 2007 CREEL SURVEY STATISTICS (ESTIMATED ANGLER TRIPS, ANGLER HOURS AND HARVEST BY FISHERY)**

FISHERY TYPE	ANGL. TRIPS	ANGL. HOURS	BRWN						BROOK			MEN.				BUR			BLK. ROCK			BLHD		TOTAL HRVST
			LKT	COHO	CHIN.	TROUT	SPLK	RBT	TROUT	FATS	WF	WF	HERR	BOT	SMELT	NOP	WAE	YEP	CRP	BASS	PSEED	CATF		
ASHLAND SHAL.	3,118	17,487	22	3,166	12	93	159	8			259		71	78	4,235	3	76	668					8,850	
ASHLAND COOL	2,234	10,540		470		32	5				15		24		224	139	41	7,069	56			8,075		
WSHB/BYF SHAL.	2,854	15,266	68	1,611		356	717		11		1,054	27	142	13	739	6	18	370				5,132		
WSHB/BYF COOL	160	750		17							31						502					550		
BOBBING APOS.ISL.	3,480	19,287	2,740	510		22	38			447	1,688		598	43	386							6,472		
CORNY. SHAL.	4	8																				0		
CORNY. COOL	10	41																				0		
CORNY. BOBB.	156	764	19							4												23		
<b>TOTAL</b>	<b>12,016</b>	<b>64,143</b>	<b>2,849</b>	<b>5,774</b>	<b>12</b>	<b>503</b>	<b>919</b>	<b>8</b>	<b>11</b>	<b>451</b>	<b>3,047</b>	<b>27</b>	<b>835</b>	<b>134</b>	<b>5,584</b>	<b>148</b>	<b>135</b>	<b>8,609</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29,102</b>	
AVE. LENGTH(INCH)			22.8	14.2	18.8	18.1	18.1	24.0	19.0	23.5	19.0		16.9	24.2	6.7	30.8	21.5	8.3	11.0					
<b>CHARTER</b>																								
ASH.BAYF.WASH.	871	5,004.5	1,206	163	20	51	6	4									3						1,453	
CORN. - PORT W.	116	725	180	26	4	7		3									2						222	
SAXON	194	1,235	219	11				1															231	
SUPERIOR	241	1,607	367	52	30	2		1								2	8						462	
<b>TOTAL</b>	<b>1,422</b>	<b>8,571.5</b>	<b>1,972</b>	<b>252</b>	<b>54</b>	<b>60</b>	<b>6</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,368</b>	
<b>OPEN WATER COLD</b> ** NUMBERS DERIVED FROM PREVIOUS YEARS**																								
ASHLAND	2,869	15,120	1,938	446	56	129	11										46						2,626	
BAYFIELD	4,762	27,124	2,382	1,163	185	566	41		20														4,357	
*CORN.-PORT W.*	6,153	26,068	1,901																				1,901	
L. SAND BAY	1,766	10,463	1,055	341	130	404	5	23		43													2,001	
RED CLIFF	759	4,622	788	87																			875	
SAXON	3,882	19,571	2,003	749	149	132		17				7											3,057	
SUPERIOR	5,108	25,126	2,220	1,348	310	72	3	23		29							576						4,581	
WASHBURN	3,534	18,472	1,042	1,461	122	331	19	17								18	16						3,026	
<b>TOTAL</b>	<b>28,833</b>	<b>146,566</b>	<b>13,329</b>	<b>5,595</b>	<b>952</b>	<b>1,634</b>	<b>79</b>	<b>80</b>	<b>20</b>	<b>72</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>638</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22,424</b>	
AVE. LENGTH(INCH)			22.6	16.3	20.8	20.2	18.7	22.1	19.9	23.5			17.2			28.8	20.2							
<b>OPEN WATER COOL</b>																								
ASHLAND	6,303	29,008	15			29											18	469	1,363	262	216		18	2,390
BAYFIELD	126	944															10		237				247	
SUPERIOR	5,144	18,230															72	2,687	180	74	2	2	3,017	
WASHBURN	1,755	7,849				20											70	73	73			12	248	
<b>TOTAL</b>	<b>13,328</b>	<b>56,031</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>170</b>	<b>3,229</b>	<b>1,853</b>	<b>336</b>	<b>218</b>	<b>12</b>	<b>20</b>	<b>5,902</b>	
AVE. LENGTH(INCH)			19.8			22.3										29.1	18.5	9.4	10.8	8.3				
<b>WI - 1 TOTALS</b>	15,168	64,911	4,142	1,422	340	79	3	27	0	29	0	0	0	0	0	74	3,273	180	74	2	0	2	9,647	
<b>WI - 2 TOTALS</b>	40,431	210,400.5	14,023	10,199	678	2,167	1,001	70	31	494	3,047	27	842	134	5,584	264	742	10,282	318	216	12	18	50,149	
<b>GRAND TOTAL</b>	<b>55,599</b>	<b>275,311.5</b>	<b>18,165</b>	<b>11,621</b>	<b>1,018</b>	<b>2,246</b>	<b>1,004</b>	<b>97</b>	<b>31</b>	<b>523</b>	<b>3,047</b>	<b>27</b>	<b>842</b>	<b>134</b>	<b>5,584</b>	<b>338</b>	<b>4,015</b>	<b>10,462</b>	<b>392</b>	<b>218</b>	<b>12</b>	<b>20</b>	<b>59,796</b>	
<b>AVE. LENGTH (IN)</b>			22.6	15.4	20.8	19.8	18.2	22.6	19.6	23.5	19.0	--	16.9	24.2	6.7	29.5	18.9	8.5	10.8	8.3	--	--		
<b>AVE. WEIGHT (LBS)</b>			3.54	1.34	3.16	2.98	2.12	4.48	--	3.94	2.15	--	1.24	4.18	--	5.74	2.27	0.27	--	--	--	--		
<b>TOTAL WEIGHT</b>			64,304	15,572	3,217	6,693	2,128	435	--	2,061	6,551	--	1,044	560	318	1,940	9,114	2,824	--	--	--	--		
<b>SAMPLE SIZE</b>			1,848	1,544	173	293	114	12	2	113 <sup>7</sup>	305	--	88	21	60	57	814	529	32	1	--	--		

STURGEON: 1 FISH REGISTRATED. EFFORT UNKNOWN.

**TABLE 2  
ESTIMATED ANGLER EFFORT (ANGLER TRIPS AND ANGLER HOURS) BY AREA IN WISCONSIN WATERS  
OF LAKE SUPERIOR OPEN WATER COLD PRIVATE. 1991-2007.**

<b>ANGLER TRIPS</b>																		
<b>AREA</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>AVERAGE</b>
ASHLAND		3,467	1,021	2,941						2,193					4,233		2,869	<b>2,787</b>
BAYFIELD				3,815						4,818							4,762	<b>4,465</b>
CORN. - PORT W.	3,506	5,554	6,295	6,646	6,486	4,030	3,392	6,888	5,792	3,664	6,913	6,351	6,848	6,979		6,153		<b>5,700</b>
LITTLE SAND BAY				317													1,766	<b>1,042</b>
RED CLIFF																	759	<b>759</b>
SAXON HARBOR	3,256	2,242	4,020	4,462	3,587	3,015	4,510	3,454	3,641	3,758	3,391	3,708	3,308	4,976	4,882	3,607	3,882	<b>3,747</b>
SUPERIOR	8,892	7,630	9,728	7,640	7,745	6,495	4,500	4,300	5,271	4,050		6,586	5,387	5,883	6,831	3,462	5,108	<b>6,219</b>
WASHBURN		9,252	6,891	7,925	7,256	6,120	5,967	8,257	12,337	9,744	7,774	8,463	5,232	5,812	5,130	4,190	3,534	<b>7,118</b>
BAYF.-WASHB.	15,105																	<b>15,105</b>
<b>TOTAL</b>	<b>30,759</b>	<b>28,145</b>	<b>27,955</b>	<b>33,746</b>	<b>25,074</b>	<b>19,660</b>	<b>18,369</b>	<b>22,899</b>	<b>27,041</b>	<b>28,227</b>	<b>18,078</b>	<b>25,108</b>	<b>20,775</b>	<b>23,650</b>	<b>21,076</b>	<b>17,412</b>	<b>22,680</b>	

<b>ANGLER HOURS</b>																		
<b>AREA</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>AVERAGE</b>
ASHLAND		16,658	5,940	16,186						11,943					20,556		15,120	<b>14,401</b>
BAYFIELD				21,528						24,895							27,124	<b>24,516</b>
CORN. - PORT W.	16,003	26,707	25,798	28,284	26,971	18,493	15,295	26,983	26,891	15,489	29,656	29,443	31,388	31,070		26,068		<b>24,969</b>
LITTLE SAND BAY				1,345													10,463	<b>5,904</b>
RED CLIFF																	4,622	<b>4,622</b>
SAXON HARBOR	17,157	10,257	21,627	23,423	17,714	15,566	22,653	16,196	17,921	18,436	17,358	15,791	16,152	23,479	22,185	17,993	19,571	<b>18,440</b>
SUPERIOR	51,945	43,734	58,215	41,718	41,424	37,674	23,454	21,634	25,692	19,219		33,027	25,434	29,773	31,569	16,263	25,126	<b>32,869</b>
WASHBURN		48,185	36,428	37,729	35,750	26,588	26,133	35,275	56,503	48,631	38,769	37,015	24,277	29,253	25,849	20,402	18,472	<b>34,079</b>
BAYF.-WASHB.	77,534																	<b>77,534</b>
<b>TOTAL</b>	<b>162,639</b>	<b>145,541</b>	<b>148,008</b>	<b>170,213</b>	<b>121,859</b>	<b>98,321</b>	<b>87,535</b>	<b>100,088</b>	<b>127,007</b>	<b>138,613</b>	<b>85,783</b>	<b>115,276</b>	<b>97,251</b>	<b>113,575</b>	<b>100,159</b>	<b>80,726</b>	<b>120,498</b>	

**TABLE 3  
WISCONSIN'S LAKE SUPERIOR. OPEN WATER COLD PRIVATE ESTIMATED HARVEST 1995 - 2007.**

(PERCENT OF TOTAL HARVEST PER YEAR IN PARENTHESES)

YEAR	LAKE	COHO	CHINOOK	BROWN		RAINB.	ATL.	BROOK		WHITE		PINK								TOTAL
	TROUT	SALMON	SALMON	TROUT	SPLAKE	TROUT	SAL.	TROUT	FATS	FISH	HERR	MULE	BURBOT	SAL.	MUSKY	NOP	SMB	WAE	YEP	HRVST
<b>1996</b>	10,727	1,989	1,528	501	68	115	9	18	206	6	5					12		713		<b>15,897</b>
<b>D</b>	(67.5%)	(12.5%)	(9.6%)	(3.2%)	(0.4%)	(0.7%)	(0.1%)	(0.1%)	(1.3%)	(0.0%)	(0.0%)				(0.1%)		(4.5%)			
<b>1997</b>	12,035	3,121	1,234	594	335	50			247	6	38					56		481		<b>18,197</b>
<b>D</b>	(66.1%)	(17.2%)	(6.8%)	(3.3%)	(1.8%)	(0.3%)			(1.4%)	(0.0%)	(0.2%)				(0.3%)		(2.6%)			
<b>1998</b>	18,281	1,442	719	541	213	65	11		608	3	19					97		737		<b>22,736</b>
<b>D</b>	(80.4%)	(6.3%)	(3.2%)	(2.4%)	(0.9%)	(0.3%)	(0.0%)		(2.7%)	(0.0%)	(0.1%)				(0.4%)		(3.2%)			
<b>1999</b>	13,243	8,267	1,885	1,099	503	135			330	35	23					215		578		<b>26,313</b>
<b>D</b>	(50.3%)	(31.4%)	(7.2%)	(4.2%)	(1.9%)	(0.5%)			(1.3%)	(0.1%)	(0.1%)				(0.8%)		(2.2%)			
<b>2000</b>	14,001	3,596	1,219	1,227	374	101	18	18	150	25	12					138		220		<b>21,099</b>
<b>E</b>	(66.4%)	(17.0%)	(5.8%)	(5.8%)	(1.8%)	(0.5%)	(0.1%)	(0.1%)	(0.7%)	(0.1%)	(0.1%)				(0.7%)		(1.0%)			
<b>2001</b>	9,339	2,230	552	732	158	127			59	9						71		53		<b>13,330</b>
<b>F</b>	(70.1%)	(16.7%)	(4.1%)	(5.5%)	(1.2%)	(1.0%)			(0.4%)	(0.1%)					(0.5%)		(0.4%)			
<b>2002</b>	9,954	3,223	1,492	441	87	75			371	12	5	21				63		2,271	102	<b>18,117</b>
<b>D</b>	(54.9%)	(17.8%)	(8.2%)	(2.4%)	(0.5%)	(0.4%)			(2.0%)	(0.1%)	(0.0%)	(0.1%)			(0.3%)		(12.5%)	(0.6%)		
<b>2003</b>	8,647	1,242	1,012	336	66	51			163	85	34					68		2,474		<b>14,178</b>
<b>D</b>	(61.0%)	(8.8%)	(7.1%)	(2.4%)	(0.5%)	(0.4%)			(1.1%)	(0.6%)	(0.2%)				(0.5%)		(17.4%)			
<b>2004</b>	12,797	2,793	1,231	453	72	132		12	669							26		1,804		<b>19,989</b>
<b>D</b>	(64.0%)	(14.0%)	(6.2%)	(2.3%)	(0.4%)	(0.7%)		(0.1%)	(3.3%)						(0.1%)		(9.0%)			
<b>2005</b>	13,877	2,551	716	271	132	56			61		16					86		793		<b>18,559</b>
<b>G</b>	(74.8%)	(13.7%)	(3.9%)	(1.5%)	(0.7%)	(0.3%)			(0.3%)		(0.1%)				(0.5%)		(4.3%)			
<b>2006</b>	7,204	1,751	368	480	99	97			409	22				33		33		403		<b>10,899</b>
<b>D</b>	(66.1%)	(16.1%)	(3.4%)	(4.4%)	(0.9%)	(0.9%)			(3.8%)	(0.2%)				(0.3%)		(0.3%)		(3.7%)		
<b>2007</b>	11,428	5,595	952	1,634	79	80		20	72		7					18		638		<b>20,523</b>
<b>H</b>	(55.7%)	(27.3%)	(4.6%)	(8.0%)	(0.4%)	(0.4%)		(0.1%)	(0.4%)		(0.0%)				(0.1%)		(3.1%)			

**A** - ASHLAND(KREHER PARK, MARINA), CORN./PORT WING, SAXON SUPERIOR, WASHBURN.

**B** - ASHLAND(KREHER PARK, MARINA, SECOND LAND.), CORN./PORT WING, SAXON, SUPERIOR, WASHBURN.

**C** - ASHLAND(KREHER PARK, MARINA, SECOND LAND.), BAYFIELD, CORN./PORT WING, SAXON, SUPERIOR, WASHBURN.

**D**- CORN./PORT WING, SAXON, SUPERIOR, WASHBURN.

**E**- ASHLAND(KREHER PARK, MARINA), BAYFIELD, CORN./PORT WING, SAXON, SUPERIOR, WASHBURN.

**F**- CORN./PORT WING, SAXON, WASHBURN.

**G**- ASHLAND(KREHER PARK, MARINA, SECOND LAND.), SAXON, SUPERIOR, WASHBURN.

**H**- ASHLAND(KREHER PARK, MARINA, SECOND LAND.),BAYFIELD, LITTLE SAND BAY, RED CLIFF, SAXON, SUPERIOR, WASHBURN.

**TABLE 4**  
**PERCENT HARVEST OF NATIVE LAKE TROUT BY AREA, 1990 - 2007.**  
**OPEN WATER COLD PRIVATE.**

<b>YEAR</b>	<b>ASHLAND BAYFIELD WASHBURN</b>	<b>CORNUCOPIA/ PORT WING</b>	<b>SAXON HARBOR</b>	<b>SUPERIOR</b>	<b>TOTAL</b>
<b>1990</b>	62.3	67.2	95.5	27.0	<b>60.7</b>
<b>1991</b>	85.8	36.1	94.9	25.8	<b>66</b>
<b>1992</b>	82.4	66.8	92.0	25.3	<b>64</b>
<b>1993</b>	80.0	49.8	97.4	40.6	<b>64</b>
<b>1994</b>	82.1	49.4	98.0	48.8	<b>76</b>
<b>1995</b>	65.2*	72.1	94.3	46.9	<b>67</b>
<b>1996</b>	80.9*	75.6	98.1	57.0	<b>79</b>
<b>1997</b>	46.0*	44.4	96.9	56.3	<b>68</b>
<b>1998</b>	52.8*	45.6	98.8	57.8	<b>63</b>
<b>1999</b>	72.8*	57.9	96.3	49.4	<b>70</b>
<b>2000</b>	90.3	66.7	96.4	44.4	<b>82.6</b>
<b>2001</b>	88.3*	68.8	99.3	N/A	<b>83.1</b>
<b>2002</b>	92.1*	73.1	98.7	63.2	<b>82.1</b>
<b>2003</b>	91.8*	80.1	99.2	60.3@	<b>84.8</b>
<b>2004</b>	95.9*	84.3	99.2	75.7	<b>91.2</b>
<b>2005</b>	98.4	84.3^	99.9	75.1	<b>91.9</b>
<b>2006</b>	97.2	85.2	100.0	67.1	<b>89.8</b>
<b>2007</b>	98.4	85.2^	99.7	67.1	<b>91.0</b>

\* WASHBURN ROUTE ONLY

@ 2003 SUPERIOR % NATIVE DERIVED USING 2002 NUMBERS

^Corn/Port Wing not surveyed in 2005 used 2004 data and 2007 used 2006.

**TABLE 5 - 2007 LAKE TROUT EXTRACTION BY MANAGEMENT UNIT BY FISHERY**

	ANGLR	ANGLR	EST. LT	%	EST. #	AVE SIZE	WGHTED		EST #	AVE SIZE	WGHTED	SMPLE
WI-1	TRIPS	HOURS	HARVEST	HATCH.	HATCH.	HATCH.	HATCH.	%NATIVE	NATIVE	NATIVE	NATIVE	SIZE
<b>CHARTER</b>												
CORN.-PORT WING	98	559	141	13.45	19	24.0	455.15	86.55	122	22.5	2745.80	
SUPERIOR	241	1,607	367	32.86	121	21.2	2556.64	67.14	246	24.2	5962.97	
<b>TOTAL</b>	<b>339</b>	<b>2,166</b>	<b>508</b>	<b>27.47</b>	<b>140</b>	<b>21.6</b>	<b>3011.79</b>	<b>72.53</b>	<b>368</b>	<b>23.6</b>	<b>8708.77</b>	
<b>OPEN WTR-COLD</b>												
CORN. - PORT W.	4,577	19,389	1,414	13.45	190	24.0	4564.39	86.55	1,224	22.5	27535.88	0
SUPERIOR	5,108	25,126	2,220	32.86	729	21.2	15465.23	67.14	1,491	24.2	36070.29	537
<b>TOTAL</b>	<b>9,685</b>	<b>44,515</b>	<b>3,634</b>	<b>25.29</b>	<b>919</b>	<b>21.8</b>	<b>20029.62</b>	<b>74.71</b>	<b>2,715</b>	<b>23.4</b>	<b>63606.18</b>	<b>537</b>
<b>OPEN WTR-COOL</b>												
CORN. - PORT W.	0	0	0		0		0.00		0		0.00	
SUPERIOR	5,144	18,230	0		0		0.00		0		0.00	
<b>TOTAL</b>	<b>5,144</b>	<b>18,230</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	<b>0.0</b>	<b>0.00</b>		<b>0</b>		<b>0.00</b>	<b>0</b>
<b>WI-1 TOTAL</b>	<b>15,168</b>	<b>64,911</b>	<b>4,142</b>	<b>25.56</b>	<b>1,059</b>	<b>21.8</b>	<b>23,041</b>	<b>74.44</b>	<b>3,083</b>	<b>23.5</b>	<b>72,315</b>	<b>537</b>
<b>WEIGHT (LBS)</b>			15629.57			3.23	3419.15			3.96	12210.42	
<b>WI-2</b>												
<b>ICE</b>												
ASHLAND SHAL.	3,118	17,487	22	0.00	0	0.0	0.00	100.00	22	24.5	539.00	22
ASHLAND COOL	2,234	10,540	0	0.00	0	0.0	0.00	100.00	0	0.0	0.00	0
WSHBN SHAL.	2,854	15,266	68	9.19	6	22.2	138.73	90.81	62	23.0	1420.27	6
WSHBN COOL	160	750	0	0.00	0	0.0	0.00	100.00	0	0.0	0.00	0
APOS. ISL. BOBB.	3,480	19,287	2740	8.21	225	22.4	5038.97	91.79	2,515	22.9	57594.55	521
CORNY. SHAL.	4	8	0	0.00	0	0.0	0.00	100.00	0	0.0	0.00	0
CORNY. COOL	10	41	0	0.00	0	0.0	0.00	100.00	0	0.0	0.00	0
CORNY. BOBB.	156	764	19	33.33	6	31.5	199.48	66.67	13	18.1	229.28	3
<b>TOTAL</b>	<b>12,016</b>	<b>64,143</b>	<b>2,849</b>	<b>8.32</b>	<b>237</b>	<b>22.7</b>	<b>5377.18</b>	<b>91.68</b>	<b>2,612</b>	<b>22.9</b>	<b>59783.10</b>	<b>552</b>
<b>CHARTER</b>												
ASH.-BYF.-WSH.	871	5,004.5	1,206	1.65	20	23.1	459.67	98.35	1,186	22.5	26687.27	
CORN.-PRT WING	18	166	39	12.20	5	19.9	94.68	87.80	34	21.3	729.35	
SAXON	194	1,235	219	0.33	1	23.2	16.77	99.67	218	22.7	4954.89	
<b>TOTAL</b>	<b>1,083</b>	<b>6,405.5</b>	<b>1,464</b>	<b>1.78</b>	<b>26</b>	<b>22.0</b>	<b>571.12</b>	<b>98.22</b>	<b>1,438</b>	<b>22.5</b>	<b>32371.52</b>	
<b>OPEN WTR-COLD</b>	<b>** NUMBERS DERIVED FROM PREVIOUS YEARS**</b>											
ASHLAND	2,869	15,120	1,938	4.01	78	23.5	1826.27	95.99	1,860	22.9	42600.55	87
BAYFIELD	4,762	27,124	2,382	0.26	6	18.0	111.48	99.74	2,376	22.3	52980.49	110
CORNUCOPIA	1,576	6,679	487	12.20	59	19.9	1182.34	87.80	428	21.3	9107.58	0
LITTLE SAND BAY	1,766	10,463	1,055	5.75	61	28.2	1710.68	94.25	994	24.1	23963.53	89
RED CLIFF	759	4,622	788	4.10	32	28.2	911.09	95.90	756	23.9	18061.04	30
SAXON	3,882	19,571	2,003	0.33	7	23.2	153.35	99.67	1,996	22.7	45318.06	343
WASHBURN	3,534	18,472	1,042	0.46	5	23.5	112.64	99.54	1,037	22.1	22922.27	99
<b>TOTAL</b>	<b>19,148</b>	<b>102,051</b>	<b>9,695</b>	<b>2.55</b>	<b>248</b>	<b>24.3</b>	<b>6007.85</b>	<b>97.45</b>	<b>9,447</b>	<b>22.8</b>	<b>214953.53</b>	<b>758</b>
<b>OPEN WTR-COOL</b>												
ASHLAND	6,303	29,008	15	100.00	15	19.8	297.00	0.00	0	0.0	0.00	1
BAYFIELD	126	944	0									
CORNUCOPIA	0	0	0									
LITTLE SAND BAY	0	0	0									
RED CLIFF	0	0	0									
SAXON	0	0	0									
WASHBURN	1,755	7,849	0									
<b>TOTAL</b>	<b>8,184</b>	<b>37,801</b>	<b>15</b>	<b>100.00</b>	<b>15</b>	<b>0.0</b>	<b>0.00</b>		<b>0</b>	<b>0.0</b>	<b>0.00</b>	<b>1</b>
<b>WI-2 TOTAL</b>	<b>40,431</b>	<b>210400.5</b>	<b>14,023</b>	<b>3.75</b>	<b>526</b>	<b>22.7</b>	<b>11,956</b>	<b>96.25</b>	<b>13,497</b>	<b>22.8</b>	<b>307,108</b>	<b>1,311</b>
<b>WEIGHT (LBS)</b>			50530.11			3.69	1939.81			3.60	48590.30	
<b>WI-1, WI-2 TOT.</b>	<b>55,599</b>	<b>275311.5</b>	<b>18,165</b>	<b>8.72</b>	<b>1,584</b>	<b>22.1</b>	<b>34997.56</b>	<b>91.28</b>	<b>16,581</b>	<b>22.9</b>	<b>379423.09</b>	<b>1,848</b>
<b>WEIGHT (LBS)</b>			65874.50			3.38	5354.78			3.65	60519.72	

TABLE 6. SAXON HARBOR OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST, AND HARVEST RATES. 1998-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1998	3,454	17,921	3,327	0.19	5.39	2,889	0.16	6.20
1999	3,641	16,196	4,450	0.27	3.64	2,224	0.14	7.28
2000	3,758	18,436	3,130	0.17	5.89	2,313	0.13	7.97
2001	3,391	17,358	3,499	0.20	4.96	2,593	0.15	6.69
2002	3,708	15,791	2,471	0.16	6.39	1,968	0.12	8.02
2003	3,308	16,152	3,081	0.19	5.24	2,606	0.16	6.20
2004	4,976	23,479	5,791	0.25	4.05	4,843	0.21	4.85
2005	4,882	22,185	4,333	0.20	5.12	3,844	0.17	5.77
2006	3,607	17,993	2,943	0.16	6.11	2,407	0.13	7.48
2007	3,882	19,571	3,057	0.16	6.40	2,003	0.10	9.77
<b>TOTAL</b>	<b>38,607</b>	<b>185,082</b>	<b>36,082</b>			<b>27,690</b>		
<b>AVE.</b>	<b>3,861</b>	<b>18,508</b>	<b>3,608</b>	<b>0.19</b>	<b>5.13</b>	<b>2,769</b>	<b>0.15</b>	<b>6.68</b>

TABLE 7. WASHBURN OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST, AND HARVEST RATES. 1998-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1998	8,257	56,503	5,543	0.10	10.19	4,119	0.07	13.72
1999	12,337	35,275	10,520	0.30	3.35	3,635	0.10	9.70
2000	9,744	48,631	7,046	0.14	6.90	3,716	0.08	13.09
2001	7,774	38,769	4,513	0.12	8.59	2,797	0.07	13.86
2002	8,463	37,015	4,662	0.13	7.94	2,432	0.07	15.22
2003	5,232	24,277	2,416	0.10	10.05	1,614	0.07	15.04
2004	5,812	29,253	4,750	0.16	6.16	2,730	0.09	10.72
2005	5,130	25,849	3,977	0.15	6.50	2,418	0.09	10.69
2006	4,190	20,402	2,196	0.11	9.29	1,406	0.07	14.51
2007	3,534	18,472	3,026	0.16	6.10	1,042	0.06	17.73
<b>TOTAL</b>	<b>70,473</b>	<b>334,446</b>	<b>48,649</b>			<b>25,909</b>		
<b>AVE.</b>	<b>7,047</b>	<b>33,445</b>	<b>4,865</b>	<b>0.15</b>	<b>6.87</b>	<b>2,591</b>	<b>0.08</b>	<b>12.91</b>

TABLE 8. ASHLAND OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST, AND HARVEST RATES. 1990, 92-94, 2000, 2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1990	3,956	17,191	1,219	0.07	14.10	889	0.05	19.34
1992	3,467	16,658	1,645	0.10	10.13	844	0.05	19.74
1993	1,021	5,940	701	0.12	8.47	656	0.11	9.05
1994	2,941	16,186	1,910	0.12	8.47	824	0.05	19.64
2000	2,193	11,943	2,432	0.20	4.91	1,843	0.15	6.48
2007	2,869	15,120	2,626	0.17	5.76	1,938	0.13	7.80
<b>TOTAL</b>	<b>16,447</b>	<b>83,038</b>	<b>10,533</b>			<b>6,994</b>		
<b>AVE.</b>	<b>2,741</b>	<b>13,840</b>	<b>1,756</b>	<b>0.13</b>	<b>7.88</b>	<b>1,166</b>	<b>0.08</b>	<b>11.87</b>

TABLE 9. LITTLE SAND BAY OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 1994, 2000, 2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1994	317	1,345	239	0.18	5.63	191	0.14	7.04
2007	1,766	10,463	2,001	0.19	5.23	1,055	0.10	9.92
<b>TOTAL</b>	<b>2,083</b>	<b>11,808</b>	<b>2,240</b>			<b>1,246</b>		
<b>AVE.</b>	<b>1,042</b>	<b>5,904</b>	<b>1,120</b>	<b>0.19</b>	<b>5.27</b>	<b>623</b>	<b>0.11</b>	<b>9.48</b>

TABLE 10. CORNUCOPIA / PORT WING OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 1998-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1998	6,888	26,891	4,716	0.18	5.70	3,161	0.12	8.51
1999	5,792	26,983	4,979	0.18	5.42	2,515	0.09	10.73
2000	3,664	15,489	2,453	0.16	6.31	1,768	0.11	8.76
2001	6,913	29,656	5,318	0.18	5.58	3,949	0.13	7.51
2002	6,351	29,443	5,341	0.18	5.51	3,166	0.11	9.30
2003	6,848	31,888	4,589	0.14	6.95	3,111	0.10	10.25
2004	6,979	31,070	4,944	0.16	6.28	3,494	0.11	8.89
2005*								
2006	6,153	26,068	3,704	0.14	7.04	1,901	0.07	13.71
2007*								
<b>TOTAL</b>	<b>49,588</b>	<b>217,488</b>	<b>36,044</b>	<b>0.17</b>	<b>6.03</b>	<b>23,065</b>	<b>0.11</b>	<b>9.43</b>
<b>AVE.</b>	<b>6,199</b>	<b>27,186</b>	<b>4,506</b>	<b>0.17</b>	<b>6.03</b>	<b>2,883</b>	<b>0.11</b>	<b>9.43</b>

\* NO CREEL SURVEY CONDUCTED IN 2005 and 2007

TABLE 11. PORT OF SUPERIOR OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 1998-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1998	4,300	25,692	2,477	0.10	10.37	1,359	0.05	18.91
1999	5,271	21,634	3,049	0.14	7.10	1,554	0.07	13.92
2000	4,050	19,219	2,513	0.13	7.65	1,681	0.09	11.43
2001								
2002	6,586	33,027	5,643	0.17	5.85	2,388	0.07	13.83
2003	5,387	25,434	4,092	0.16	6.22	1,316	0.05	19.33
2004	5,883	29,773	4,504	0.15	6.61	1,730	0.06	17.21
2005	6,831	31,569	4,773	0.15	6.61	3,073	0.10	10.27
2006	3,462	16,263	2,056	0.13	7.91	1,490	0.09	10.91
2007	5,108	25,126	4,581	0.18	5.48	2,220	0.09	11.32
<b>TOTAL</b>	<b>46,878</b>	<b>227,737</b>	<b>33,688</b>			<b>16,811</b>		
<b>AVE.</b>	<b>5,209</b>	<b>25,304</b>	<b>3,743</b>	<b>0.15</b>	<b>6.76</b>	<b>1,868</b>	<b>0.07</b>	<b>13.55</b>

NO CREEL CONDUCTED DURING 2001.

TABLE 12. BAYFIELD OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 1994, 2000, 2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1994	3,815	21,528	2,660	0.12	8.09	1,391	0.06	15.48
2000	4,818	24,895	3,258	0.13	7.64	2,341	0.09	10.63
2007	4,762	27,124	4,357	0.16	6.23	2,382	0.09	11.39
<b>TOTAL</b>	<b>13,395</b>	<b>73,547</b>	<b>10,275</b>			<b>6,114</b>		
<b>AVE.</b>	<b>4,465</b>	<b>24,516</b>	<b>3,425</b>	<b>0.14</b>	<b>7.16</b>	<b>2,038</b>	<b>0.08</b>	<b>12.03</b>

TABLE 13. RED CLIFF. OPEN WATER COLD PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
2007	759	4,622	875	0.19	5.28	788	0.17	5.87
<b>TOTAL</b>	<b>759</b>	<b>4,622</b>	<b>875</b>			<b>788</b>		
<b>AVE.</b>	<b>759</b>	<b>4,622</b>	<b>875</b>	<b>0.19</b>	<b>5.28</b>	<b>788</b>	<b>0.17</b>	<b>5.87</b>

**TABLE 14**

**LAKE TROUT HARVEST RATES (LAKE TROUT PER ANGLER HOUR) JUNE - AUGUST, BY AREA, 1990 - 2007. OPEN WATER COLD PRIVATE.**

YEAR	ASHLAND	BAYFIELD	CORNUCOPIA/	SAXON	SUPERIOR	WASHBURN	TOTAL
			PORT WING	HARBOR			
1990	0.103	N/A	0.038	0.201	0.075	0.084*	0.085
1991	N/A	N/A	0.084	0.124	0.063	0.086*	0.080
1992	0.073	N/A	0.097	0.104	0.057	0.080	0.076
1993	0.115	N/A	0.058	0.121	0.064	0.080	0.075
1994	0.081	0.081	0.058	0.145	0.039	0.062	0.071
1995	N/A	N/A	0.043	0.116	0.060	0.085	0.069
1996	N/A	N/A	0.075	0.118	0.041	0.119	0.078
1997	N/A	N/A	0.071	0.171	0.036	0.145	0.105
1998	N/A	N/A	0.127	0.280	0.050	0.139	0.133
1999	N/A	N/A	0.120	0.203	0.066	0.087	0.101
2000	0.225	0.106	0.136	0.172	0.095	0.122	0.131
2001	N/A	N/A	0.168	0.176	N/A	0.101	0.140
2002	N/A	N/A	0.102	0.141	0.070	0.077	0.091
2003	N/A	N/A	0.111	0.157	0.058	0.078	0.099
2004	N/A	N/A	0.122	0.242	0.063	0.121	0.130
2005	0.253	N/A	0.122^	0.175	0.100	0.136	0.147
2006	N/A	N/A	0.088	0.147	0.083	0.082	0.100
2007	0.155	0.106	0.088^	0.140	0.100	0.079	0.108

\* WASHBURN AND BAYFIELD ROUTES COMBINED

^Corn/Port Wing not surveyed in 2005 used 2004 data and 2007 used 2006.

**TABLE 15**

**ESTIMATED ANGLER EFFORT (ANGLER TRIPS AND ANGLER HOURS) BY AREA IN WISCONSIN WATERS OF LAKE SUPERIOR OPEN WATER COOL PRIVATE. 2000-2007.**

ANGLER TRIPS									
AREA	2000	2001	2002	2003	2004	2005	2006	2007	AVERAGE
ASHLAND	2,422					7,577		6,303	5,434
BAYFIELD	14							126	70
CORN. - PORT W.	53	45	21	210	221		106		109
LITTLE SAND BAY								0	0
RED CLIFF								0	0
SAXON HARBOR	15	0	36	0	0	0	0	0	6
SUPERIOR	4,673		8,877	5,508	4,854	4,300	5,721	5,144	5,582
WASHBURN	1,166	789	645	1,267	766	885	1,197	1,755	1,059
TOTAL	8,343	834	9,579	6,985	5,841	12,762	7,024	13,328	

ANGLER HOURS									
AREA	2000	2001	2002	2003	2004	2005	2006	2007	AVERAGE
ASHLAND	11,348					35,983		29,008	25,446
BAYFIELD	60							944	502
CORN. - PORT W.	180	129	101	936	1,112		273		455
LITTLE SAND BAY								0	0
RED CLIFF								0	0
SAXON HARBOR	158	0	431	0	0	0	0	0	74
SUPERIOR	14,674		31,606	17,813	15,115	9,870	19,015	18,230	18,046
WASHBURN	4,675	3,018	2,258	5,483	2,508	3,175	4,498	7,849	4,183
TOTAL	31,095	3,147	34,396	24,232	18,735	49,028	23,786	56,031	

**TABLE 16**

**WISCONSIN'S LAKE SUPERIOR. OPEN WATER COOL PRIVATE ESTIMATED HARVEST 2000 - 2007.**

(PERCENT OF TOTAL HARVEST PER YEAR IN PARENTHESES)

YEAR	LAKE TROUT	COHO SALMON	CHINOOK SALMON	BROWN TROUT	SPLAKE	BROOK TROUT	CARP	WHITE FISH	BLHD / CATFISH	PSEED	ROCK BASS	BLK CRAP.	MUSKY	NOP	SMB	WAE	YEP	TOTAL HRVST
<b>2000</b>	34	18		10				15			5			360		538	37	<b>1,017</b>
<b>A</b>	(3.3%)	(1.8%)		(1.0%)				(1.5%)			(0.5%)			(35.4%)		(52.9%)	(3.6%)	
<b>2001</b>														107		399	6	<b>512</b>
<b>B</b>														(20.9%)		(77.9%)	(1.2%)	
<b>2002</b>	26						6					12		162		6,687	65	<b>6,958</b>
<b>C</b>	(0.4%)						(0.1%)					(0.2%)		(2.3%)		(96.1%)	(0.9%)	
<b>2003</b>	14		10						8		31			93		5,012	74	<b>5,242</b>
<b>D</b>	(0.3%)		(0.2%)						(0.2%)		(0.6%)			(1.8%)		(95.6%)	(1.4%)	
<b>2004</b>	84						8		22			9		66		2,410	34	<b>2,633</b>
<b>D</b>	(3.2%)						(0.3%)		(0.8%)			(0.3%)		(2.5%)		(91.5%)	(1.3%)	
<b>2005</b>		26		48					57		77	46		390		3,839	528	<b>5,011</b>
<b>E</b>		(0.5%)		(1.0%)					(1.1%)		(1.5%)	(0.9%)		(7.8%)		(76.6%)	(10.5%)	
<b>2006</b>				11	8	18		11	15		47	29		145		3,003	465	<b>3,752</b>
<b>D</b>				(0.3%)	(0.2%)	(0.5%)		(0.3%)	(0.4%)		(1.3%)	(0.8%)		(3.9%)		(80.0%)	(12.4%)	
<b>2007</b>	15			49				20	12	218	336			170		3,229	1,853	<b>5,902</b>
<b>F</b>	(0.3%)			(0.8%)				(0.3%)	(0.2%)	(3.7%)	(5.7%)			(2.9%)		(54.7%)	(31.4%)	

**A** - ASHLAND(KREHER PARK, MARINA), BAYFIELD, CORN./PORT WING, SAXON, SUPERIOR, WASHBURN.

**B** - CORN./PORT WING, WASHBURN.

**C** - CORN./PORT WING, SAXON, SUPERIOR, WASHBURN.

**D** - CORN./PORT WING, SUPERIOR, WASHBURN.

**E** - ASHLAND(KREHER PARK, MARINA), BAYFIELD, SUPERIOR, WASHBURN.

**F** - ASHLAND(KREHER PARK, MARINA, SECOND LAND.),BAYFIELD, SUPERIOR, WASHBURN.

TABLE 17. ASHLAND OPEN WATER COOL PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 2000-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH
2000	2,422	11,348	640	0.06	17.73
2001					
2002					
2003					
2004					
2005	7,577	35,983	3,235	0.09	11.12
2006					
2007	6,303	29,008	2,390	0.08	12.14
<b>TOTAL</b>	<b>16,302</b>	<b>76,339</b>	<b>6,265</b>		
<b>AVE.</b>	<b>5,434</b>	<b>25,446</b>	<b>2,088</b>	<b>0.08</b>	<b>12.18</b>

NOT SURVEYED 2001-2004,2006.

TABLE 18. WASHBURN OPEN WATER COOL PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 2000-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH
2000	1,166	4,675	253	0.05	18.48
2001	789	3,018	502	0.17	6.01
2002	645	2,258	184	0.08	12.27
2003	1,267	5,483	58	0.01	94.53
2004	766	2,508	53	0.02	47.32
2005	885	3,175	171	0.05	18.57
2006	1,197	4,498	538	0.12	8.36
2007	1,755	7,849	248	0.03	31.65
<b>TOTAL</b>	<b>8,470</b>	<b>33,464</b>	<b>2,007</b>		
<b>AVE.</b>	<b>1,059</b>	<b>4,183</b>	<b>251</b>	<b>0.06</b>	<b>16.67</b>

TABLE 19. BAYFIELD OPEN WATER COOL PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES.2000-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH
2000	14	60	12	0.20	5.00
2001					
2002					
2003					
2004					
2005					
2006					
2007	126	944	247	0.26	3.82
<b>TOTAL</b>	<b>140</b>	<b>1,004</b>	<b>259</b>		
<b>AVE.</b>	<b>70</b>	<b>502</b>	<b>130</b>	<b>0.26</b>	<b>3.88</b>

NOT SURVEYED IN 2001-2006.

TABLE 20. CORNUCOPIA / PORT WING OPEN WATER COOL PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 2000-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH
2000	53	180	0	0.00	0.00
2001	45	129	10	0.08	12.90
2002	21	101	14	0.14	7.21
2003	210	936	71	0.08	13.18
2004	221	1,112	123	0.11	9.04
2005*					
2006	106	273	0	0.00	0.00
2007*					
<b>TOTAL</b>	<b>656</b>	<b>2,731</b>	<b>218</b>		
<b>AVE.</b>	<b>109</b>	<b>455</b>	<b>36</b>	<b>0.08</b>	<b>12.53</b>

\* NOT SURVEYED 2005 and 2007

TABLE 21. PORT OF SUPERIOR OPEN WATER COOL PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 2000-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH
2000	4,673	14,674	112	0.01	131.02
2001					
2002	8,877	31,606	6,640	0.21	4.76
2003	5,508	17,813	5,113	0.29	3.48
2004	4,854	15,115	2,457	0.16	6.15
2005	4,300	9,870	1,605	0.16	6.15
2006	5,721	19,015	3,214	0.17	5.92
2007	5,144	18,230	3,017	0.17	6.04
<b>TOTAL</b>	<b>39,077</b>	<b>126,323</b>	<b>22,158</b>		
<b>AVE.</b>	<b>5,582</b>	<b>18,046</b>	<b>3,165</b>	<b>0.18</b>	<b>5.70</b>

NOT SURVEYED IN 2001.

TABLE 22. SAXON HARBOR OPEN WATER COOL PRIVATE. ESTIMATED EFFORT, HARVEST AND HARVEST RATES. 2000-2007.

YEAR	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH
2000	15	158	0	0.00	0.00
2001	0	0	0		
2002	36	431	120	0.28	3.59
2003	0	0	0		
2004	0	0	0		
2005	0	0	0		
2006	0	0	0		
2007	0	0	0		
<b>TOTAL</b>	<b>51</b>	<b>589</b>	<b>120</b>		
<b>AVE.</b>	<b>6</b>	<b>74</b>	<b>15</b>	<b>0.20</b>	<b>4.91</b>

**TABLE 23**

**WISCONSIN'S LAKE SUPERIOR. ICE SHALLOW WATER ESTIMATED EFFORT, HARVEST AND HARVEST RATES 1975-2007.**

(INCLUDING CHEQUAMEGON BAY, WASHBURN, BAYFIELD )

YEAR	ANGL. TRIPS	ANGL. HOURS	OVERALL	LAKE TROUT	COHO SAL.	CHIN. SAL.	BROWN TROUT	BROOK		WHITE FISH	MEN. WF	MULE WF	LAKE HERR.	ATL. SAL.	BUR BOT	SMELT	NOP	WAE	YEP	other	TOTAL HRVST	
			HRVST RATE FISH/HOUR					SPLAKE	RBT													FAT
1975-A	6,807	N/A	N/A		198		11,176	795	144													12,313
1976-A	2,114	10,649	0.067	63	46		410	106	51	7			22				7	5				717
1977-A	980	4,060	0.061		8		101	13	74				53									249
1978-A	2,816	N/A	N/A	14	27		545	63	73	32			135									889
1979-A	N/A	N/A	N/A	39	5		1,189	34	80	346			580									2,273
1980-A	N/A	N/A	N/A	797	72		1,219	3,854	51	24			12									6,029
1981-A	N/A	N/A	N/A	376	98		1,146	4,635	142	7			74									6,478
1982-A	5,199	26,837	0.147	133	139		270	3,342	49	6			6									3,945
1983-A	8,433	42,558	0.137	441	641		1,647	2,986	42	23			5								51	5,836
1984-A	8,215	38,802	0.123	191	375		649	3,319	29	43											159	4,765
1985-A	8,568	41,506	0.170	84	53		1,307	5,272	37	254											53	7,060
1986-A	8,807	45,945	0.135	229	354		188	5,373	11	56												6,211
1987-A	8,792	46,556	0.130	223	701	39	815	3,949	70	34			27				90	6	84			6,038
1988-A	7,875	38,714	0.216	29	2,145		1,839	4,275							14		33	14				8,349
1989-A	10,328	47,884	0.129	143	303		2,738	2,262	115	26		24	58	15			87	24	366			6,161
1990-A	8,138	37,150	0.208	61	222		373	4,959				73	1,874				42	67	46			7,717
1991-BC	2,973	15,105	0.165		65	18	83	702				76	1,525				11		14			2,494
1992-BC	3,422	16,845	0.302		520		2,224	374				69	1,808		34							5,080
1993-A	7,682	41,021	0.149	168	114	15	1,951	2,067				265	22	1,150	31	124	51	25	19	107		6,109
1994-A	4,768	22,991	0.128	197	119	12	749	788		0		106	24	641		81	158	21	21	25		2,942
1995-B	4,651	25,049	0.463	93	176	13	644	874				85	23	2,557		7	7,096	2	19			11,589
1996	NO SHALLOW WATER SURVEY																					0
1997	NO SHALLOW WATER SURVEY																					0
1998-B	2,607	12,174	0.594	108	240	23	135	598		5		103		299		54	5,321	14	17	320		7,237
1999-B	5,902	28,423	0.591	424	154		205	1,322		5		678	13	422		62	13,263	29	33	192		16,802
2000-B	4,924	24,184	0.290	333	174	15	231	628		6	6	1,271	48	128		83	3,687	75	29	292		7,006
2001-B	3,481	16,897	0.189	151	187	16	296	1,058				573	31	8	590		50	52	8	78	90	3,188
2002-BC	2,497	13,064	0.226	126	204	11	110	467				798	24	287		37	881			9		2,954
2003-BC	1,681	7,965	0.130	133		25	44	221		11		328	13	37		46	177					1,035
2004-BC	1,744	7,676	0.055	73	10		25	118				76		71		15				38		426
2005-BC	2,791	13,266	0.183	195	113		135	500	19	5	6	712	13	80		25	570			50		2,423
2006-BC	1,351	6,451	0.259	86	50	5	83	365	5			580	5	25		13	362			93		1,672
2007-A	5,972	32,753	0.427	90	4,777	12	449	876	8	11		1,313	27	213		91	4,974	9	94	1,038		13,982

A = 1975-1990, 1993,1994,2007 CHEQUAMEGON BAY, WASHBURN, BAYFIELD

other= WAL,NOP,YP

B = 1991, 1992, 1995, 1998-2006 ONLY WASHBURN SIDE OF CHEQUAMEGON BAY SURVEYED

C = 2002-2006 MINIMUM DATA SHALLOW WATER SURVEY STARTED WHEN "BOBBING" BEGAN.

**TABLE 24**  
**WISCONSIN'S LAKE SUPERIOR. ICE COOL WATER ESTIMATED EFFORT, HARVEST AND HARVEST RATES 1973-2007.**  
 (INCLUDING CHEQUAMEGON BAY, WASHBURN, BAYFIELD )

YEAR	ANGL. TRIPS	ANGL. HOURS	OVERALL HRVST RATE FISH/HOUR	LAKE TROUT	COHO SALMON	CHINOOK SALMON	BROWN TROUT	SPLAKE	WHITE FISH	MEN. WF	HERR	BURBT	SMELT	NOP	WAE	YEP	BLK CRAP.	other	TOTAL HRVST		
1973	1,307	7,946	1.295				91							319		9,857		21	10,288		
1974	2,084	N/A	N/A				95							95		8,033			8,223		
1975	2,433	N/A	N/A		30		32							141		12,471		30	12,704		
1976	1,281	5,478	1.329				28							327		6,926		2	7,283		
1977	1,542	15,612	0.361											23		5,612			5,635		
1978	3,224	16,442	1.085				177									17,668			17,845		
1979	2,313	7,107	2.063													14,662			14,662		
1980	INSUFFICIENT DATA																				
1981	INSUFFICIENT DATA																				
1982	2,875	N/A	N/A													10,211		1,013	11,224		
1983	CHEQUAMEGON BAY NOT SURVEYED																				
1984	CHEQUAMEGON BAY NOT SURVEYED																				
1985	CHEQUAMEGON BAY NOT SURVEYED																				
1986	2,575	10,841	0.915		96			1,433						874		7,515			9,918		
1987	3,386	16,163	1.701					110						38		27,342			27,490		
1988	2,210	8,743	0.768											290	17	6,408			6,715		
1989	2,522	9,129	1.460				8							159	354	12,811			13,332		
1990	2,389	8,600	1.708		10		27	198						41	89	14,326			14,691		
1991	CHEQUAMEGON BAY NOT SURVEYED																				
1992	CHEQUAMEGON BAY NOT SURVEYED																				
1993	2,252	9,620	0.483		9		124	120						38	8	4,346			4,645		
1994	1,040	4,602	0.593				9	11						12	9	214	32	28	2,413		
1995	CHEQUAMEGON BAY NOT SURVEYED																				
1996	CHEQUAMEGON BAY NOT SURVEYED																				
1997	CHEQUAMEGON BAY NOT SURVEYED																				
1998	CHEQUAMEGON BAY NOT SURVEYED																				
1999	CHEQUAMEGON BAY NOT SURVEYED																				
2000	CHEQUAMEGON BAY NOT SURVEYED																				
2001	CHEQUAMEGON BAY NOT SURVEYED																				
2002	CHEQUAMEGON BAY NOT SURVEYED																				
2003	CHEQUAMEGON BAY NOT SURVEYED																				
2004	CHEQUAMEGON BAY NOT SURVEYED																				
2005	CHEQUAMEGON BAY NOT SURVEYED																				
2006	CHEQUAMEGON BAY NOT SURVEYED																				
2007	2,394	11,290	0.764		487		32	5	46					24		224	139	41	7,571	56	8,625

**TABLE 25**

**ESTIMATED ANGLER EFFORT (ANGLER TRIPS AND ANGLER HOURS) BY AREA IN WISCONSIN WATERS OF LAKE SUPERIOR ICE FISHERY. 1990-2007.**

ANGLER TRIPS																			
AREA	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	AVERAGE
ASHLAND SHALLOW WTR																		3,118	3,118
ASHLAND COOL WATER																		2,234	2,234
WASHBURN SHALL. WTR		2,973	3,422			4,651		1,857	2,607	5,902	4,924	3,481	2,497	1,681	1,744	2,791	1,351	2,854	3,053
WASHBURN COOL WATER										192	145	164	185	16	27	187	6	160	120
ASHL.+WSHB. SHAL. WTR	8,138			7,682	4,768														6,863
ASHL.+WSHB. COOL WTR	2,389			2,252	1,040														1,894
APOS. ISL. - BOBBING	1,526	947	1,451	1,904	1,768	1,512	1,695	2,835	1,758	5,074	3,873	5,525	1,228	5,313	3,178	6,008	1,062	3,480	2,785
MAD. ISL. - BOBBING							813	741											777
CORNOCUPIA SHALLOW												10		16	8	1		4	8
CORNOCUPIA COOL											6	8		20	12			10	11
CORNOCUPIA - BOBBING	1,462	791	63		1,070	326	1,172	1,546			212	563		1,274	586	138		156	720
WESTERN END					2,280														2,280
DECEMBER BOATS									133	124	107								121
<b>TOTAL</b>	<b>13,515</b>	<b>4,711</b>	<b>4,936</b>	<b>11,838</b>	<b>10,926</b>	<b>6,489</b>	<b>3,680</b>	<b>6,979</b>	<b>4,498</b>	<b>11,292</b>	<b>9,267</b>	<b>9,751</b>	<b>3,910</b>	<b>8,320</b>	<b>5,555</b>	<b>9,125</b>	<b>2,419</b>	<b>12,016</b>	

ANGLER HOURS																			
AREA	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	AVERAGE
ASHLAND SHALLOW WTR																		17,487	17,487
ASHLAND COOL WATER																		10,540	10,540
WASHBURN SHALL. WTR		15,105	16,845			25,049		10,614	12,174	28,423	24,184	16,897	13,064	7,965	7,676	13,266	6,451	15,266	15,213
WASHBURN COOL WATER										1,097	761	946	812	96	106	528	22	750	569
ASHL.+WSHB. SHAL. WTR	37,150			41,021	22,991														33,721
ASHL.+WSHB. COOL WTR	8,600			9,620	4,602														7,607
APOS. ISL. - BOBBING	8,604	5,403	8,171	10,382	10,096	8,741	9,414	16,653	9,430	27,949	20,699	30,753	6,834	30,924	16,975	32,365	5,958	19,287	15,480
MADLINE ISLAND							4,273	4,473											4,373
CORNOCUPIA SHALLOW												16		50	15	3		8	18
CORNOCUPIA COOL											17	37		65	47			41	41
CORNOCUPIA - BOBBING	8,724	5,052	337		6,113	1,561	6,881	8,098			1,183	2,918		6,495	3,086	736		764	3,996
WESTERN END					14,698														14,698
DECEMBER BOATS									465	506	385								452
<b>TOTAL</b>	<b>63,078</b>	<b>25,560</b>	<b>25,353</b>	<b>61,023</b>	<b>58,500</b>	<b>35,351</b>	<b>20,568</b>	<b>39,838</b>	<b>22,069</b>	<b>57,975</b>	<b>47,229</b>	<b>51,567</b>	<b>20,710</b>	<b>45,595</b>	<b>27,905</b>	<b>46,898</b>	<b>12,431</b>	<b>64,143</b>	

**TABLE 26**  
**WISCONSIN'S LAKE SUPERIOR ICE FISHERY DEEP WATER "BOBBING"**  
**(APOSTLE ISLAND) ESTIMATED HARVEST 1989-2007.**

(PERCENT OF TOTAL HARVEST PER YEAR IN PARENTHESES)

YEAR	LAKE	COHO	CHINOOK	BROWN				WHITE	MEN							MULE	TOTAL
	TROUT	SALMON	SALMON	TROUT	SPLAKE	RBT	FATS	FISH	WF	HERR	HOYI	BURBOT	SMELT	NOP	WAE	WF	
<b>1989</b>	733			9	9												<b>751</b>
<b>1990</b>	539	9		11	13												<b>572</b>
<b>1991</b>	762			4	9		4										<b>779</b>
<b>1992</b>	1,343 (98.3%)						23 (1.7%)										<b>1,366</b>
<b>1993</b>	1,766 (88.2%)	21 (1.0%)	12 (0.6%)	12 (0.6%)	13 (0.6%)		67 (3.3%)	14 (0.7%)	44 (2.2%)			54 (2.7%)					<b>2,003</b>
<b>1994</b>	1,385 (67.0%)	11 (0.5%)					650 (31.5%)	5 (0.2%)				15 (0.7%)					<b>2,066</b>
<b>1995</b>	1,224 (73.3%)	68 (4.1%)	8 (0.5%)	10 (0.6%)	65 (3.9%)		62 (3.7%)	17 (1.0%)	76 (4.6%)			65 (3.9%)		75 (4.5%)			<b>1,670</b>
<b>1996</b>	1,016 (75.3%)	24 (1.8%)	22 (1.6%)				207 (15.3%)	20 (1.5%)	11 (0.8%)			43 (3.2%)	7 (0.5%)				<b>1,350</b>
<b>1997</b>	2,755 (68.2%)	8 (0.2%)	33 (0.8%)		52 (1.3%)		663 (16.4%)	23 (0.6%)	96 (2.4%)			275 (6.8%)	132 (3.3%)				<b>4,037</b>
<b>1998</b>	1,620 (69.9%)	68 (2.9%)	76 (3.3%)	51 (2.2%)	83 (3.6%)	3 (0.1%)	10 (0.4%)	86 (3.7%)	147 (6.3%)			167 (7.2%)	7 (0.3%)				<b>2,318</b>
<b>1999</b>	4,065 (58.5%)	187 (2.7%)	6 (0.1%)	42 (0.6%)	239 (3.4%)		216 (3.1%)	1,487 (21.4%)	216 (3.1%)			244 (3.5%)	240 (3.5%)	3 (0.0%)	7 (0.1%)		<b>6,952</b>
<b>2000</b>	2,857 (47.6%)	88 (1.5%)	3 (0.0%)	18 (0.3%)	73 (1.2%)		174 (2.9%)	2,125 (35.4%)	503 (8.4%)			85 (1.4%)	80 (1.3%)				<b>6,006</b>
<b>2001</b>	5,074 (65.8%)	262 (3.4%)	33 (0.4%)	42 (0.5%)	56 (0.7%)	6 (0.1%)	752 (9.7%)	1,029 (13.3%)	242 (3.1%)			158 (2.0%)	54 (0.7%)			6 (0.1%)	<b>7,714</b>
<b>2002</b>	531 (33.1%)	88 (5.5%)	36 (2.2%)	15 (0.9%)	20 (1.2%)		81 (5.0%)	280 (17.4%)	98 (6.1%)			36 (2.2%)	421 (26.2%)				<b>1,606</b>
<b>2003</b>	2,824 (57.7%)	10 (0.2%)	54 (1.1%)		11 (0.2%)		1,470 (30.0%)	415 (8.5%)	48 (1.0%)	5 (0.1%)		40 (0.8%)	16 (0.3%)				<b>4,893</b>
<b>2004</b>	1,791 (62.1%)	6 (0.2%)					552 (19.2%)	458 (15.9%)	46 (1.6%)			29 (1.0%)					<b>2,882</b>
<b>2005</b>	4,533 (60.6%)	92 (1.2%)		5 (0.1%)	11 (0.1%)		421 (5.6%)	2,020 (27.0%)	258 (3.4%)			127 (1.7%)	13 (0.2%)				<b>7,480</b>
<b>2006</b>	869 (43.8%)	17 (0.9%)		4 (0.2%)	8 (0.4%)		42 (2.1%)	941 (47.5%)	14 (0.7%)			88 (4.4%)					<b>1,983</b>
<b>2007</b>	2,740 (42.3%)	510 (7.9%)		22 (0.3%)	38 (0.6%)		447 (6.9%)	1,688 (26.1%)	598 (9.2%)			43 (0.7%)	386 (6.0%)				<b>6,472</b>

**TABLE 27**

**ICE DEEP WATER "BOBBING" ESTIMATED EFFORT, HARVEST AND HARVEST RATES BY AREA 1995-2007.**

\* NO / LIMITED FISHING PRESSURE  
NOT CREELED

**APOSTLE ISLANDS**

	ANGL. TRPS	ANGL. HRS.	TOTAL FISH HRVST.	FISH / HOUR	LAKE TROUT HARVEST	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1995	1,412	8,741	1,670	0.191	1,224	0.140	7.141
1996	2,508	13,687	2,237	0.163	1,453	0.106	9.420
1997	3,576	21,126	4,956	0.235	3,280	0.155	6.441
1998	1,758	9,430	2,318	0.246	1,620	0.172	5.821
1999	5,074	27,949	6,952	0.249	4,065	0.145	6.876
2000	3,873	20,699	6,006	0.290	2,857	0.138	7.245
2001	5,525	30,753	7,714	0.251	5,074	0.165	6.061
2002	1,228	6,834	1,606	0.235	531	0.078	12.870
2003	5,313	30,924	4,893	0.158	2,824	0.091	10.950
2004	3,178	16,975	2,882	0.170	1,791	0.106	9.478
2005	6,008	32,365	7,480	0.231	4,533	0.140	7.140
2006	1,062	5,958	1,983	0.333	869	0.146	6.856
2007	3,480	19,287	6,472	0.336	2,740	0.142	7.039
<b>TOTAL</b>	<b>43,995</b>	<b>244,728</b>	<b>57,169</b>		<b>32,861</b>		
<b>AVE.</b>	<b>3,384</b>	<b>18,825</b>	<b>4,398</b>	<b>0.234</b>	<b>2,528</b>	<b>0.134</b>	<b>7.447</b>

**CORNUCOPIA / BARK BAY**

	ANGL. TRPS	ANGL. HRS.	TOTAL FISH HRVST.	FISH / HOUR	LAKE TROUT HARVEST	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1995	326	1,561	237	0.152	184	0.118	8.484
1996	1,172	6,881	1,035	0.150	844	0.123	8.153
1997	1,546	8,098	1,371	0.169	1,209	0.149	6.698
1998*							
1999*							
2000	212	1,183	255	0.216	251	0.212	4.713
2001	563	2,918	650	0.223	616	0.211	4.737
2002*							
2003	1,274	6,495	1,017	0.157	994	0.153	6.534
2004	586	3,086	516	0.167	485	0.157	6.363
2005	138	736	139	0.189	125	0.170	5.888
2006*							
2007	156	764	23	0.030	19	0.025	40.211
<b>TOTAL</b>	<b>5,973</b>	<b>31,722</b>	<b>5,243</b>		<b>4,727</b>		
<b>AVE.</b>	<b>664</b>	<b>3,525</b>	<b>583</b>	<b>0.165</b>	<b>525</b>	<b>0.149</b>	<b>6.711</b>

**WESTERN END**

	ANGL. TRPS	ANGL. HRS.	TOTAL FISH HRVST.	FISH / HOUR	LAKE TROUT HARVEST	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1995*							
1996*							
1997*							
1998*							
1999*							
2000*							
2001*							
2002*							
2003							
2004*							
2005*							
2006*							
2007*							
<b>TOTAL</b>							

**TOTAL - ALL AREAS**

	ANGL. TRPS	ANGL. HRS.	TOTAL FISH HRVST.	FISH / HOUR	LAKE TROUT HARVEST	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1995	1,738	10,302	1,970	0.191	1,408	0.137	7.317
1996	3,680	20,568	3,272	0.159	2,297	0.112	8.954
1997	5,122	29,215	6,327	0.217	4,489	0.154	6.508
1998	1,758	9,430	2,318	0.246	1,620	0.172	5.821
1999	5,074	27,949	6,952	0.249	4,065	0.145	6.876
2000	4,085	21,882	6,261	0.286	3,108	0.142	7.041
2001	6,008	33,671	8,364	0.248	5,690	0.169	5.918
2002	1,228	6,834	1,606	0.235	531	0.078	12.870
2003	6,587	37,419	5,910	0.158	3,918	0.105	9.551
2004	3,764	20,061	5,910	0.295	2,276	0.113	8.814
2005	6,146	33,101	7,619	0.230	4,658	0.141	7.106
2006	1,062	5,958	1,983	0.333	869	0.146	6.856
2007	3,636	20,051	6,495	0.324	2,759	0.138	7.267
<b>TOTAL</b>	<b>49,888</b>	<b>276,441</b>	<b>64,987</b>		<b>37,688</b>		
<b>AVE.</b>	<b>3,838</b>	<b>21,265</b>	<b>4,999</b>	<b>0.235</b>	<b>2,899</b>	<b>0.136</b>	<b>7.335</b>

\* NO OR LIMITED FISHING PRESSURE / NOT CREELED

**TABLE 28  
WISCONSIN'S LAKE SUPERIOR CHARTER EFFORT, HARVEST RATES AND LAKE TROUT  
HARVEST RATES, 1973-2007.**

<b>YEAR</b>	<b># OF ACTIVE GUIDES</b>	<b># OF ANGLERS</b>	<b># OF ANGLER HOURS</b>	<b># OF TOTAL FISH</b>	<b>FISH / HOUR</b>	<b>ANGL. HRS / FISH</b>	<b># OF LAKE TROUT</b>	<b>LAKE TROUT / HOUR</b>	<b>ANGLR. HRS / LKT</b>
1973	25	3,907	26,695	4,680	0.18	5.70	4,108	0.15	6.50
1974	24	2,986	19,685	3,263	0.17	6.03	2,423	0.12	8.12
1975	19	3,305	21,765	4,873	0.22	4.47	3,836	0.18	5.67
1976	21	2,566	16,408	2,730	0.17	6.01	2,218	0.14	7.40
1977	19	2,611	16,233	2,977	0.18	5.45	2,442	0.15	6.65
1978	15	2,988	19,691	4,317	0.22	4.56	3,046	0.15	6.46
1979	13	2,711	16,232	4,085	0.25	3.97	3,537	0.22	4.59
1980	14	3,529	22,247	5,836	0.26	3.81	4,798	0.22	4.64
1981	15	2,781	18,019	3,927	0.22	4.59	3,246	0.18	5.55
1982*	18	3,151	20,641	5,860	0.28	3.52	5,302	0.26	3.89
1983*	20	3,377	21,876	6,674	0.31	3.28	5,531	0.25	3.96
1984	29	3,140	20,458	6,084	0.30	3.36	5,355	0.26	3.82
1985	31	3,546	22,817	7,969	0.35	2.86	6,723	0.29	3.39
1986	32	3,173	19,238	5,114	0.27	3.76	3,952	0.21	4.87
1987	42	4,100	25,782	6,603	0.26	3.90	5,423	0.21	4.75
1988	45	4,541	28,190	6,744	0.24	4.18	5,149	0.18	5.47
1989	49	5,174	33,447	7,623	0.23	4.39	4,867	0.15	6.87
1990	50	4,917	30,313	5,270	0.17	5.75	4,098	0.14	7.40
1991	46	4,223	24,937	6,244	0.25	3.99	4,268	0.17	5.84
1992	40	3,337	20,662	4,687	0.23	4.41	3,723	0.18	5.55
1993	38	3,366	19,882	4,550	0.23	4.37	3,635	0.18	5.47
1994	39	3,489	20,800	4,368	0.21	4.76	3,751	0.18	5.55
1995	38	3,120	18,524	4,139	0.22	4.48	3,423	0.18	5.41
1996	35	2,489	14,807	3,466	0.23	4.27	2,780	0.19	5.33
1997	30	2,344	14,350	3,713	0.26	3.86	3,028	0.21	4.74
1998	23	2,289	13,195	3,883	0.29	3.40	3,360	0.25	3.93
1999	26	2,213	13,197	3,860	0.29	3.42	2,931	0.22	4.50
2000	28	2,117	11,928	3,848	0.32	3.10	3,353	0.28	3.56
2001	23	1,794	10,231.5	3,408	0.33	3.00	3,008	0.29	3.40
2002	23	2,374	14,089	4,535	0.32	3.11	3,625	0.26	3.89
2003	26	2,537	14,936	4,170	0.28	3.58	3,425	0.23	4.36
2004	27	2,510	14,614	4,573	0.31	3.20	3,967	0.27	3.68
2005	27	2,435	14,124.5	4,446	0.31	3.18	3,925	0.28	3.60
2006	24	1,774	10,342	2,753	0.27	3.76	2,496	0.24	4.14
2007	25	1,422	8,571.5	2,368	0.28	3.62	1,972	0.23	4.35
<b>TOTAL</b>		<b>106,336</b>	<b>658,928</b>	<b>163,640</b>			<b>132,724</b>		
<b>AVE.</b>	<b>29</b>	<b>3,038</b>	<b>18,827</b>	<b>4,675</b>	<b>0.25</b>	<b>4.03</b>	<b>3,792</b>	<b>0.20</b>	<b>4.96</b>

\* 1982 AND 1983 FIGURES INCLUDE SOME MINNESOTA AND MICHIGAN TRIPS LANDING IN WISCONSIN PORTS.

**TABLE 29**  
**WISCONSIN'S LAKE SUPERIOR CHARTER EFFORT, HARVEST AND HARVEST RATES.**  
**1988-2007. SUPERIOR.**

YEAR	# OF ACTIVE GUIDES	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1988	26	1,406	8,145	2,720	0.33	2.99	2,133	0.26	3.82
1989	28	1,694	10,305	3,010	0.29	3.42	1,742	0.17	5.92
1990	26	1,505	9,138	2,061	0.23	4.43	1,467	0.16	6.23
1991	24	1,159	6,905	2,224	0.32	3.10	1,263	0.18	5.47
1992	18	853	5,305	1,296	0.24	4.09	927	0.17	5.72
1993	15	1,045	5,843	1,517	0.26	3.85	974	0.17	6.00
1994	19	956	5,868	1,236	0.21	4.75	986	0.17	5.95
1995	15	714	4,188	847	0.20	4.94	518	0.12	8.08
1996	11	566	3,590	799	0.22	4.49	505	0.14	7.11
1997	9	683	4,613	937	0.20	4.92	518	0.11	8.91
1998	6	513	3,415	775	0.23	4.41	525	0.15	6.50
1999	7	595	3,830	831	0.22	4.61	521	0.14	7.35
2000	7	289	1,884	464	0.25	4.06	307	0.16	6.14
2001	5	36	181	72	0.40	2.51	43	0.24	4.21
2002	4	652	4,521	1,401	0.31	3.23	986	0.22	4.59
2003	6	874	5,367.5	1,599	0.30	3.36	1,029	0.19	5.22
2004	6	854	5,279	1,585	0.30	3.33	1,352	0.26	3.90
2005	5	753	4359	1,351	0.31	3.23	1,119	0.26	3.90
2006	5	541	3,116	655	0.21	4.76	596	0.19	5.23
2007	6	241	1,607	462	0.29	3.48	367	0.23	4.38
<b>TOTAL</b>		<b>15,929</b>	<b>97,460</b>	<b>25,842</b>			<b>17,878</b>		
<b>AVE.</b>		<b>796</b>	<b>4,873</b>	<b>1,292</b>	<b>0.27</b>	<b>3.77</b>	<b>894</b>	<b>0.18</b>	<b>5.45</b>

**TABLE 30**  
**WISCONSIN'S LAKE SUPERIOR CHARTER EFFORT, HARVEST AND HARVEST RATES.**  
**1988-2007. CORNUCOPIA / PORT WING.**

YEAR	# OF ACTIVE GUIDES	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1988	7	709	3,995	1,119	0.28	3.57	769	0.19	5.20
1989	5	838	4,785	1,070	0.22	4.47	562	0.12	8.51
1990	7	867	4,823	983	0.20	4.91	718	0.15	6.72
1991	5	673	3,261	826	0.25	3.95	539	0.17	6.05
1992	7	581	2,960	793	0.27	3.73	585	0.20	5.06
1993	5	382	1,923	463	0.24	4.15	342	0.18	5.62
1994	5	474	2,588	552	0.21	4.69	460	0.18	5.63
1995	4	418	2,016	648	0.32	3.11	452	0.22	4.46
1996	4	345	1,747	799	0.46	2.19	383	0.22	4.56
1997	5	287	1,463	491	0.34	2.98	380	0.26	3.85
1998	4	417	2,095	965	0.46	2.17	767	0.37	2.73
1999	4	341	2,033	755	0.37	2.69	511	0.25	3.98
2000	4	280	1,592	735	0.46	2.17	604	0.38	2.64
2001	4	420	2,397	838	0.35	2.86	669	0.28	3.58
2002	4	465	2,698	1,079	0.40	2.50	856	0.32	3.15
2003	4	381	2,198	704	0.32	3.12	635	0.29	3.46
2004	5	354	1,963	615	0.31	3.19	451	0.23	4.35
2005	5	294	1,709	590	0.35	2.90	470	0.28	3.64
2006	4	231	1,222	331	0.27	3.69	258	0.21	4.74
2007	4	116	725	222	0.31	3.27	180	0.25	4.03
<b>TOTAL</b>		<b>8,873</b>	<b>48,193</b>	<b>14,578</b>			<b>10,591</b>		
<b>AVE.</b>		<b>444</b>	<b>2,410</b>	<b>729</b>	<b>0.30</b>	<b>3.31</b>	<b>530</b>	<b>0.22</b>	<b>4.55</b>

**TABLE 31**  
**WISCONSIN'S LAKE SUPERIOR CHARTER EFFORT, HARVEST AND HARVEST RATES.**  
**1988-2007. ASHLAND, BAYFIELD, WASHBURN.**

YEAR	# OF ACTIVE GUIDES	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1988	10	2,194	14,449	2,476	0.17	5.84	1,868	0.13	7.74
1989	14	2,372	16,581	3,050	0.18	5.44	2,127	0.13	7.80
1990	15	2,233	14,647	1,895	0.13	7.73	1,590	0.11	9.21
1991	15	2,208	13,448	2,864	0.21	4.70	2,158	0.16	6.23
1992	13	1,758	11,455	2,312	0.20	4.95	1,938	0.17	5.91
1993	16	1,755	10,800	2,243	0.21	4.81	2,012	0.19	5.37
1994	13	1,761	10,404	2,068	0.20	5.03	1,818	0.17	5.72
1995	17	1,708	10,434	2,225	0.21	4.69	1,891	0.18	5.52
1996	18	1,418	8,470	1,865	0.22	4.54	1,655	0.20	5.12
1997	14	1,250	7,502	2,059	0.27	3.64	1,908	0.25	3.93
1998	10	1,126	6,322	1,751	0.28	3.61	1,683	0.27	3.76
1999	13	1,121	6,234	2,003	0.32	3.11	1,650	0.26	3.78
2000	15	1,365	7,360	2,342	0.32	3.14	2,146	0.29	3.43
2001	13	1,248	7,089.5	2,341	0.33	3.03	2,146	0.30	3.30
2002	14	1,196	6,529	1,975	0.30	3.31	1,711	0.26	3.82
2003	14	1,151	6,498.5	1,649	0.25	3.94	1,550	0.24	4.19
2004	14	1,133	6,224	2,002	0.32	3.11	1,823	0.29	3.41
2005	14	1,162	6,620	2,153	0.33	3.07	1,989	0.30	3.33
2006	12	855	5,043	1,566	0.31	3.22	1,444	0.29	3.49
2007	11	871	5,004.5	1,453	0.29	3.44	1,206	0.24	4.15
<b>TOTAL</b>		<b>29,885</b>	<b>181,114</b>	<b>42,292</b>			<b>36,313</b>		
<b>AVE.</b>		<b>1,494</b>	<b>9,056</b>	<b>2,115</b>	<b>0.23</b>	<b>4.28</b>	<b>1,816</b>	<b>0.20</b>	<b>4.99</b>

**TABLE 32**  
**WISCONSIN'S LAKE SUPERIOR CHARTER EFFORT, HARVEST AND HARVEST RATES.**  
**1988-2007. SAXON HARBOR.**

YEAR	# OF ACTIVE GUIDES	ANGLER TRIPS	ANGLER HOURS	TOTAL FISH HARVEST	FISH / HOUR	ANGLR. HRS / FISH	# OF LAKE TROUT	LAKE TROUT / HOUR	ANGLR. HRS / LKT
1988	2	232	1,601	429	0.27	3.73	379	0.24	4.22
1989	2	270	1,840	523	0.28	3.52	436	0.24	4.22
1990	2	312	1,705	331	0.19	5.15	314	0.18	5.43
1991	2	183	1,323	333	0.25	3.97	308	0.23	4.30
1992	2	145	943	286	0.30	3.30	273	0.29	3.45
1993	2	184	1,316	323	0.25	4.07	307	0.23	4.29
1994	2	298	1,940	512	0.26	3.79	487	0.25	3.98
1995	2	280	1,886	419	0.22	4.50	382	0.20	4.94
1996	2	160	1,000	262	0.26	3.82	237	0.24	4.22
1997	2	124	772	226	0.29	3.42	222	0.29	3.48
1998	2	233	1,363	389	0.29	3.50	385	0.28	3.54
1999	2	156	1,100	271	0.25	4.06	249	0.23	4.42
2000	2	183	1,093	307	0.28	3.56	296	0.27	3.69
2001	1	90	564	157	0.28	3.59	150	0.27	3.76
2002	1	61	341	80	0.23	4.26	72	0.21	4.74
2003	2	131	872	218	0.25	4.00	211	0.24	4.13
2004	2	169	1,148	371	0.32	3.09	341	0.30	3.37
2005	3	226	1,437	352	0.24	4.08	347	0.24	4.14
2006	3	147	961	201	0.21	4.78	198	0.21	4.85
2007	4	194	1,235	231	0.19	5.35	219	0.18	5.64
<b>TOTAL</b>		<b>3,778</b>	<b>24,440</b>	<b>6,221</b>			<b>5,813</b>		
<b>AVE.</b>		<b>189</b>	<b>1,222</b>	<b>311</b>	<b>0.25</b>	<b>3.93</b>	<b>291</b>	<b>0.24</b>	<b>4.20</b>

TABLE 33

## WISCONSIN'S LAKE SUPERIOR CHARTER FISHERY HARVEST 1987 - 2007.

(PERCENT OF TOTAL HARVEST PER YEAR IN PARENTHESES)

YEAR	LAKE TROUT	COHO SALMON	CHINOOK SALMON	BROWN TROUT	RAINBOW TROUT	SPLAKE	ATL. SALMON	PINK SALMON	FATS	WALLEYE	NORTH. PIKE	BROOK TROUT	YEP	OTHER	TOTAL HARVEST
<b>1987</b>	5,432	520	458	72	69	38				9				5	<b>6,603</b>
<b>1988</b>	5,149	850	576	81	48	23				7				10	<b>6,744</b>
<b>1989</b>	4,867	1,761	684	145	92	31	12			15				5	<b>7,612</b>
<b>1990</b>	4,098	459	452	125	25	10	5			69				27	<b>5,270</b>
<b>1991</b>	4,268	848	333	131	20	6	9		4	616				9	<b>6,244</b>
<b>1992</b>	3,723	312	305	135	13	10	8		3	170				8	<b>4,687</b>
<b>1993</b>	3,635	269	400	73	7	4	4		1	145				12	<b>4,550</b>
<b>1994</b>	3,751	331	111	45	10	22	1			88				9	<b>4,368</b>
<b>1995</b>	3,243	536	213	72	7	10	2			45				11	<b>4,139</b>
<b>1996</b>	2,780	368	196	33	3	19				63				4	<b>3,466</b>
<b>1997</b>	3,028	280	266	41	9	11	2		13	60				1	<b>3,711</b>
<b>1998</b>	3,360 (86.5%)	228 (5.9%)	194 (5.0%)	32 (0.8%)	6 (0.2%)	5 (0.1%)	1 (0.0%)			47 (1.2%)				10 (0.3%)	<b>3,883</b>
<b>1999</b>	2,931 (75.9%)	542 (14.0%)	219 (5.7%)	61 (1.6%)	23 (0.6%)	30 (0.8%)	7 (0.2%)			35 (0.9%)				12 (0.3%)	<b>3,860</b>
<b>2000</b>	3,353 (87.1%)	174 (4.5%)	178 (4.6%)	75 (1.9%)	8 (0.2%)	4 (0.1%)	2 (0.1%)	2 (0.1%)		47 (1.2%)	5 (0.1%)				<b>3,848</b>
<b>2001</b>	3,008 (88.3%)	229 (6.7%)	65 (1.9%)	51 (1.5%)	14 (0.4%)	7 (0.2%)				31 (0.9%)	3 (0.1%)				<b>3,408</b>
<b>2002</b>	3,625 (79.9%)	425 (9.4%)	249 (5.5%)	69 (1.5%)	31 (0.7%)	9 (0.2%)	3 (0.1%)			123 (2.7%)		1 (0.0%)			<b>4,535</b>
<b>2003</b>	3,425 (82.1%)	86 (2.1%)	164 (3.9%)	41 (1.0%)	8 (0.2%)	6 (0.1%)	1 (0.0%)		4 (0.1%)	429 (10.3%)	3 (0.1%)	2 (0.0%)		1 (0.0%)	<b>4,170</b>
<b>2004</b>	3,967 (86.7%)	208 (4.5%)	242 (5.3%)	48 (1.0%)	16 (0.3%)	4 (0.1%)	3 (0.1%)		1 (0.0%)	81 (1.8%)	2 (0.0%)		1 (0.0%)		<b>4,573</b>
<b>2005</b>	3,925 (88.3%)	197 (4.4%)	175 (3.9%)	67 (1.5%)	18 (0.4%)	4 (0.1%)				54 (1.2%)	4 (0.1%)			2 (0.0%)	<b>4,446</b>
<b>2006</b>	2,496 (90.7%)	99 (3.6%)	67 (2.4%)	42 (1.5%)	8 (0.3%)	8 (0.3%)	2 (0.1%)		4 (0.1%)	26 (0.9%)	1 (0.0%)				<b>2,753</b>
<b>2007</b>	1,972 (83.3%)	252 (10.6%)	54 (2.3%)	60 (2.5%)	9 (0.4%)	6 (0.3%)				13 (0.5%)	2 (0.1%)				<b>2,368</b>

**TABLE 34  
REGISTERED STURGEON HARVEST IN CHEQUAMEGON BAY, 1983-2007.**

YEAR	ANGLER TAGS ISSUED*	TOTAL	# HARVESTED ≥ 50"	AVERAGE SIZE(in)	AVERAGE WEIGHT(lb)
		REPORTED HARVEST			
1983	unknown	2	2	55.0	unknown
1984	unknown	3	1	47.3	unknown
1985	unknown	5	3	51.8	unknown
1986	unknown	4	1	48.4	28.0
1987	unknown	0	0	--	--
1988	unknown	14	8	49.6	30.6
1989	unknown	11	2	46.6	28.0
1990	unknown	7	2	49.9	33.5
Sturgeon minimum size limit increased from 40" to 50" in 1991.					
1991	unknown	2	2	55.8	44.5
1992	unknown	0	0	--	--
1993	unknown	1	1	64.0	55.0
1994	140	0	0	--	--
1995	unknown	2	2	63.0	59.0
1996	unknown	0	0	--	--
1997	97	1	1	57.8	46.0
1998	92	1	1	54.0	32.0
1999	124	6	6	55.3	40.2
2000	111	0	0	--	--
2001	74	2	2	51.75	--
2002	102	3	3	51.5	--
2003**	93	1**	1	52.0	--
2004	104	4	4	58.6	--
2005 #	unknown	1	1	55.25	34.0
2006	unknown	0	0	--	--
2007	unknown	1	1	51.0	38.0

Sturgeon minimum size limit increased from 40" to 50" in 1991.

\*Angler tags issued (Ashland, Bayfield, Washburn area only).

\*\* The Sturgeon Harvested in 2003 was reported during Dec. 2004.

# = Starting 1/1/05 hook and line Sturgeon angler tags issued through the ALIS license system replacing the metal tags.

**APPENDIX 1.**

LAKE SUPERIOR CREEL SURVEY TIME INTERVAL COUNT RANDOMIZATION  
 ROUTE = "PORT WING" MONTH = 'JULY' DAYTIME = 'WEEKEND' SHIFT = 'AM'

DATE (MM/DD/YY): \_\_\_\_ / \_\_\_\_ / \_\_\_\_

N=5

WEEKDAY (1) WEEKEND/HOLIDAY (2)

---

TIME	LOCATION	CODE	TIME ARRIVED	TIME DEPARTED	WEIGHTED COI
7:00	TRAVEL				
7:07	CORNUCOPIA	520	_____ : _____	_____ : _____	_____ : _____
8:56	TRAVEL				
9:11	BARK POINT	540	_____ : _____	_____ : _____	_____ : _____
9:46	TRAVEL				
9:54	HERBSTER	545	_____ : _____	_____ : _____	_____ : _____
10:05	TRAVEL				
10:17	PORT WING	555	_____ : _____	_____ : _____	_____ : _____
13:32	TRAVEL				
14:00	END OF SHIFT		_____ : _____	_____ : _____	_____ : _____



**APPENDIX III. 2007 OPEN WATER CREEL ROUTES AND SHIFT TIMES.**

ROUTE / PORT	START DATES	SHIFT TIMES	NUMBER OF NON-OVERLAPPING SHIFTS	TYPE OF CREEL	COMMENTS
<b>ONE ROUTE: 1/2 TIME ASHLAND</b> (SECOND LANDING, KREHER PARK, ASHLAND MARINA) <b>I/2 TIME WASHBURN</b> (AND MARINA)	ASHLAND: 04/20/2007 WASHBURN 04/21/2007	APRIL, SEPT: AM SHIFT 7am-2pm, PM SHIFT 2pm-8pm. MAY-AUG: AM SHIFT 7am-2pm PM SHIFT 2pm-9pm.	2 WEEKEND 2 WEEKDAY	SINGLE LOOP TIME INTERVAL	BOTH WEEKEND DAYS THREE RANDOM WEEKDAYS
<b>ONE ROUTE: 1/2 TIME LITTLE SAND BAY</b> , 1/4 TIME BAYFIELD, 1/4 TIME RED CLIFF	LSB + BAYF 04/13/2007 RC 6/21/7				
<b>ONE ROUTE: SAXON</b> (1/2 TIME)	04/14/2007	WEEKEND: 7am-9pm(8pm April) WEEKDAY: 7am-10:30am 10:30am-2pm; 2pm-5:30pm 5:30pm-9pm(8pm April)	2 WEEKEND 4 WEEKDAY	TIME INTERVAL ONE SITE	ONE WEEKEND DAY, 2 or 3 WEEKDAYS.
<b>ONE ROUTE: SUPERIOR (BARKER'S ISLAND)</b> (FULL TIME)	05/01/2007	5:30am-1:30pm 1:30am-9:30pm	2 WEEKEND 2 WEEKDAY	SINGLE LOOP TIME INTERVAL	BOTH WEEKENDS DAYS TWO RANDOM WEEKDAYS

OPEN WATER CREEL ENDED 9/30/07

**APPENDIX IV. INTERVIEW FORM.**

CHECK POINT \_\_\_\_\_ DATE \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ WEEKDAY - 1 WEEKEND - 2  
MONTH DAY YEAR

1 - OPEN COLD WTR	4 - ICE COOL WTR	7 - PLEASURE	FISHED IN:		TRIP:				
2 - OPEN COOL WTR	5 - ICE BOBBING	8 - SHORE ANGLER	1 - WI	4 - WI / MN	1 - COMPLETE	2 - INCOMPLETE			
3 - ICE SHALLOW WTR	6 - STREAM	9 - TRIBAL	2 - MN	5 - WI / MI	AREA FISHED:				
ANGLERS IN PARTY _____			1 - RESIDENT		TIME START _____				
SUCCESSFUL ANGLERS _____			2 - NONRESIDENT		TIME END _____				
FISH SPECIES _____			# LEGAL _____		# SUBLEGAL _____				
RELEASED SPECIES _____			# LEGAL _____		# SUBLEGAL _____				
SPECIES	CODE	LENGTH	FINCLIP	TAG/COLOR	SPECIES	CODE	LENGTH	FINCLIP	TAG/COLOR

TOTAL # FISH KEPT \_\_\_\_\_ COMMENTS \_\_\_\_\_

**FIN CLIP CODES:** NO CLIP - 00, ADIPOSE - 01, ADLR - 02, ADRR - 03, ADLF - 04, ADRF - 05, LR - 06, RR - 07, LF - 08, RF - 09, BR - 10, RFLR - 11, BRAD - 12, D - 13, LFRR, 15, RFD - 17, LFLR - 20, DAD - 21, LFD - 23, LRD - 24, HATCHERY - 25, NO CHECK - 40, BF - 96.  
**SPECIES CODE:** BLKCRP-005, BROOK-006, BURBOT-011, HERRING-033, FAT-34, LT-35, SPLAKE-36, NOP-43, BROWN-45, RBT-46, ROCK BASS-047, CHINOOK-48, COHO-49, PINK-51, ATL. SAL.-52, SMELT-60, STURGEON-62, LMB-66, SMB-67, WF-70, MENWF-71, YEP-76, WAL-78

**APPENDIX V. 2007 ICE CREEL ROUTES ANS SHIFT TIMES.**

ROUTE / PORT	START DATES	SHIFT TIMES	NUMBER OF NON-OVERLAPPING SHIFTS	TYPE OF CREEL	COMMENTS
<b>ASHLAND</b> (SECOND LANDING - PIG IRON)	12/28/06 - 03/25/2007	9:00am - 5:00pm	1 weekend 1 weekday	stratified 2 counts	2 weekend shifts 3 weekday shifts
<b>WASHBURN - BAYFIELD - MADELINE ISLAND - CORNUCOPIA</b>	01/12/07 - 03/25/2007	9:00am - 5:00pm	1 weekend 1 weekday	stratified 2 counts	2 weekend shifts 3 weekday shifts

# APPENDIX VI. VEHICLE PRESSURE

DATE \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 MONTH DAY YEAR

WEATHER: \_\_\_\_\_  
 TIME \_\_\_\_\_

DAY TYPE: (1) WEEK DAY  
 (2) WEEKEND/HOLIDAY

AIR TEMP \_\_\_\_\_

PRECIP. \_\_\_\_\_

SITE #	LOCATION	TIME	VEHICLES				COMMENTS
			RESIDENT		NON-RESIDENT		
305	"S" CURVE						
307	THOMPSON PARK						
311	WEST END						
315	WASHB. MARINA						
319	WASHB. COAL DK						
321	MEMORIAL PARK						
331	BODIN RESORT						
341	SIOUX RIVER						
343	ONION R. BEACH						
345	ONION R. MOUTH						
351	PIKES BAY						
355	PORT SUPERIOR						
363	BAYFIELD						
366	ROY'S POINT						
370	RED CLIFF						
380	PAG. GROUNDS						
390	RASPBERRY BAY						
204	2nd LANDING						
234	ASH. BOAT CLUB						
246	TREBAS						
256	REIS COAL DOCK						
258	KREHER PARK						
270	HOT POND						
282	BELL SLIP						
289	SAND BAR						
401	K'PUNKY BAY						
410	JACK STEWART						
420	KRON BEACH						
440	NE TIP MAD. ISL.						
450	RUSSEL BAY						
470	ICE ROAD						
471	O'BREINS						
480	LaPOINTE PARK						
515	MARTENSON RD.						
520	CORNUCOPIA						
530	ROMAN POINT						
540	BARK POINT						



## APPENDIX VIII. LENGTH WEIGHT EQUATIONS

DATA OBTAINED FROM VARIOUS WI DNR ASSESSMENTS INCLUDING:

SPRING INDEX 2002-2007

1 HOUR GILL NET 2004-2005

SUMMER INDEX 2001-2007

DIET WORK 1998-2000

### BROWN TROUT (NATIVE + HATCHERY)

$$\text{LN(WT g)} = -13.22602 + 3.285043 (\text{LN LENGTH mm})$$

R Square 0.925378

Observations 33

### BURBOT

$$\text{LN(WT g)} = -12.88511 + 3.182398 (\text{LN LENGTH mm})$$

R Square 0.909619

Observations 128

### SISCOWET LAKE TROUT (FATS)

$$\text{LN(WT g)} = -12.919 + 3.193 (\text{LN LENGTH mm})$$

R Square 0.97

Observations 552

### LAKE HERRING

#### SUMMER INDEX 2006

$$\text{LN(WT g)} = -11.231 + 2.898 (\text{LN LENGTH mm})$$

Observation = 97

#### MENOMINEE WF REGRESSION

$$\text{LN(WT g)} = -14.92026 + 3.5439873 (\text{LN LENGTH mm})$$

R Square 0.974467

Observations 19

### NORTHERN PIKE

$$\text{LN(WT g)} = -16.09087 + 3.6193782 (\text{LN LENGTH mm})$$

R Square 0.774415

Observations 48

### SPLAKE

$$\text{LN(WT g)} = -12.39372 + 3.1396534 (\text{LN LENGTH mm})$$

R square 0.946627

Observations 63

### WALLEYE

$$\text{LN(WT g)} = -12.78895 + 3.1948672 (\text{LN LENGTH mm})$$

R Square 0.968676

Observations 203

### YELLOW PERCH

$$\text{LN(WT g)} = -11.24584 + 2.9836053 (\text{LN LENGTH mm})$$

R Square 0.85566

Observations 37

### LAKE WHITEFISH

#### SPRING INDEX 2006 + 2007

$$\text{LN(WT g)} = -12.431 + 3.126 (\text{LN LGTH mm})$$

Observations = 274

### RAINBOW TROUT

Fish Mgmt. Report No. 123. Migratory Brown Trout and Rainbow

Trout Populations of the Brule River, Wisconsin (1984).

$$\text{males } W = 0.00074 L^{2.79248}$$

R Square 0.84

Observations 100

$$\text{females } W = 0.00075 L^{2.78982}$$

R Square 0.92

Observations 100

### CHINOOK SALMON

Minnesota DNR Investigational Report # 382, Growth and

Fecundity of Chinook Salmon in Western Lake Superior (July 1985)

$$\text{LN(WTg)} = -12.67 + 3.18 (\text{LN length mm})$$

### COHO SALMON

$$\text{LN(WT g)} = -8.0592 + 2.4238 (\text{LN length mm})$$

### RAINBOW SMELT

$$\text{LN( WT g)} = -5.545 + \text{LN (LENGTH mm)} 3.119$$

### LAKE TROUT (NATIVE)

#### SPRING INDEX 2007

$$\text{LN(WT g)} = -13.099 + 3.222 (\text{LN LENGTH mm})$$

Observations = 226

### LAKE TROUT (HATCHERY)

#### SPRING INDEX 2004, 2005, 2006, 2007

$$\text{LN(WT g)} = -13.155 + 3.237 (\text{LN LENGTH mm})$$

Observations = 88

### LAKE TROUT (NATIVE AND HATCHERY)

#### SPRING INDEX 2004, 2005, 2006, 2007

$$\text{LN(WT g)} = -13.011 + 3.210 (\text{LN LENGTH mm})$$

Observations = 314

FIGURE 1. MAJOR PORTS CREELED AND WISCONSIN MANAGEMENT ZONES.

