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Completion Report

Mille Lacs Lake Creel Survey Report for

Open Water Season of 2010

and

Winter Season of 2009-2010

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Introduction

Mille Lacs Lake is a large, natural walleye *Sanders vitreum* lake in east-central Minnesota. At 132,516 acres, it is the second largest lake entirely within the state's borders. Major habitat features include sand and mud flats, rocky reefs, small exposed islands and points, and sudden sand breaks along the north shore (See Bruesewitz 1996 for a brief geological history).

European settlers began harvesting fish for market purposes in the late 1800's. Modern sport fishing is probably best defined as beginning in the late 1970's with the introduction of leeches as walleye bait (See Bruesewitz 1996 for a more complete history of fishing on Mille Lacs Lake).

Recent evolutions in sport fishing management included a number of special regulations. The first of these was the introduction of the early-season night ban in 1983. The present regulation prohibits possession of fishing gear on the lake between 10 P.M and 6 A.M. for about 4 weeks starting on the first Monday of the season. Also in 1983, winter spearing of northern pike *Esox lucius* was eliminated. In 1985, the first special walleye regulation was added that allowed only one of the bag limit of six walleye to be longer than 20 in. Since 1997, in response to 1837 Treaty litigation, walleye and northern pike regulations have been revised to keep harvests below allocations (Table 1). Regulations for other species have also been revised over the years to reduce angler harvest or to maintain fishing quality (Table 1).

Anglers target a number of species on Mille Lacs Lake. Year-round species include walleye, yellow perch *Perca flavescens*, and northern pike. Additional summer species include muskellunge *Esox masquinongy*, and smallmouth bass *Micropterus dolomieu*, while tullibee *Coregonus artedi* and burbot *Lota lota* can be important in the winter.

Methods

The opening weekend night survey, open-water day survey, regular winter survey, and winter late-ice survey were all access based non-uniform probability creels (Jones 2005). The open-water night survey from the end of the night closure through the end of October was modeled based on the relative number of boats returning during the last two hours of the open-water day survey (relative activity), modified from Jones and Bruesewitz (2004). The modifications included plotting the relative activity for a given season

against the ratio of night walleye kill versus walleye kill from years in which a night creel was conducted (1998-2003). A power function fit to the data was used to estimate the 2010 night walleye kill based on the 2009 relative activity. Tournament results were derived from tournament reports, with 25% mortality assigned to live-released fish, and on-the-water releases estimated from interviews of tournament anglers while they were pre-fishing (Jones 2003).

Hooking mortality estimates were calculated for released walleye and northern pike. Walleye release mortality was determined by using the methods of Reeves and Bruesewitz (2007), calibrated with water temperature data from hourly near-shore readings from the creel clerks. Northern pike hooking mortality is calculated as 5.5% of the released fish and is based on studies cited by Tomcko (1997).

Dates of the surveys were 17 December 2009 through 28 February 2010 for the winter creel survey, 1 March 2010 through 23 March 2010 for the late ice creel survey, and 15 May 2010 through 31 October 2010 for the open water season.

Age-length keys for the winter creel were developed from data derived from otoliths taken from the 2009 fall assessment gill nets. Minimal growth in total fish length occurs during the colder water temperatures of late fall through winter making direct comparisons of winter fish lengths to fall fish lengths reasonable. Harvested and released summer walleye age-at-length data were derived from scales taken from harvested fish observed in the creel. During each period we attempted to collect twelve scale samples for each one inch length interval where harvested fish were recorded. If minimal scale data was collected for a particular length, the age-length keys were augmented with data from the fall assessment gill nets.

Results and Discussion

Winter and Late Ice Creel Surveys

Fishing Pressure

Fishing pressure during the 2009-2010 winter creel survey was slightly above average at 1.82 million angler hours. The late ice angling survey measured an additional 85,000 angler hours of fishing pressure (Table 2 and Figure 1). 2009-2010 winter pressure was the first increase observed in the past five years, after a continuous decline from the relatively high pressure observed in 2006. Changes in annual winter pressure show little relation to walleye or yellow perch catch rates, with the exception of a very weak positive correlation between walleye harvest rate and pressure (Tables 3 and 4; Figure 2). Instead, winter ice fishing pressure is often influenced by the timing and quality of December ice conditions, severity of winter weather, and economic conditions.

Ice formation for the 2009-2010 winter period allowed mobile anglers to access much of the lake by mid-December. Permanent fish houses were being placed on the lake just prior to the normally pressure intensive Christmas and New Year's holidays. Winter anglers saw a moderate walleye harvest rate which when combined with an improving economy from the deep economic recession of the previous two years helped to raise 2009-2010 winter pressure to slightly above average (Figures 1 and 3; Federal Reserve, 2010).

Walleye

During the 2009-2010 regular winter season, anglers harvested 23,400 walleye weighing 22,100 lbs and released another 30,400 walleye that weighed 29,800 lbs (Tables 5, 6, and 7). Walleye harvest in both numbers and pounds more than doubled from the previous winter as anglers mainly kept walleye from the 2007 year class (Table 8; Jensen 2010). 2006 year class fish, which made up most of the harvest the previous winter, were also readily apparent in the 2009 – 2010 winter harvest, comprising approximately a third of the walleye harvest by number. Walleye from the 2007 year class were the modal age for released fish, followed closely by 2008 year class walleye (Table 9). The prominence of three year old walleyes observed as both harvested and released fish reflects the strength of the 2007 year class that was observed in the annual fall gill net sample (Jones 2011). Most of the three year old

fish ranged in size from ten to fifteen inches long, with anglers transitioning from release to harvest on walleye between 12 and 13 inches (Tables 8 and 9).

Walleye catch rate was moderate for the 2009-2010 winter season and stayed at a similar level to the 2008-2009 winter, however, harvest rate nearly doubled while release rate declined by 42 percent (Tables 3 and 4; Figure 3). The change in harvest rate appears to be the result of the afore-mentioned strong 2007 year class of walleyes growing into a size range acceptable for harvest (Tables 8 and 9; Figure 3; Jones 2011). Anglers tend to release most age 1 and age 2 walleye caught. Walleye release rates were lower in 2009-2010 primarily because fewer age 1 walleye were caught in 2010 (Tables 8 and 9; Jensen 2010).

Yellow Perch

The yellow perch harvest estimate for the 2009-20109 regular winter creel survey was approximately 49,000 fish weighing 22,500 lbs. Anglers released an additional 281,500 yellow perch that weighed 26,200 lbs (Tables 3, 4, and 7). Yellow perch anglers harvested 21,700 yellow perch weighing 12,150 lbs during the 36 days of late-ice fishing while releasing an additional 121,300 fish that weighed 9,700 lbs (Tables 10 and 11).

Total catch rate for yellow perch increased slightly in the 2009-2010 winter season due to the large number of fish caught that were smaller than 8.5 inches long (Figure 4 and Table 12). Harvest rates declined slightly from the previous year to the lowest level observed since the winter of 2004-2005 and reflect an overall trend of historically low harvest that began in 2002 (Table 3; Figure 4). The 2010 late ice harvest rate is the lowest observed since the inception of the late ice creel in 1990 (Table 10). Yellow perch release rates for late ice in 2010 were more moderate at 1.44 fish/hour due to large numbers of fish caught that were less than 7.5 inches total length (Tables 11, 12, 13, and 14). Anglers showed a preference for yellow perch greater than eight inches, however, two of the seven year classes containing perch of a larger size are missing, making overall numbers of “keeper” sized fish less available to the angler (Tables 12 and 14; Jones 2010).

Northern Pike

The 2009-2010 northern pike winter harvest was 100 fish at 300 lbs. Another 475 pike that weighed 2,550 lbs were released during the same time period. No northern pike were reported as released or harvested during the late ice period (Table 7). The number of northern pike harvested nearly doubled from the previous year while the number of pike released was nearly halved. Overall numbers of pike, harvested and released, remain low within the historical record (Tables 3 and 4). Total catch rate for the 2009-2010 winter season was at the lowest level observed since 1996 and the release rate was the second lowest observed (Figure 5). The low estimates for both harvest and release reflect an overall decreasing trend in targeted pressure for northern pike by winter anglers, which began in 1998 with the implementation of more restrictive regulations (Tables 1 and 3; Figure 6). The 2010 winter creel had the lowest number of angling parties targeting northern pike observed. Our creel data show that most of the winter northern pike catch is composed of fish caught incidentally by anglers targeting other species.

Tullibee and Burbot

Catches of tullibee and burbot began to decline around 1999, the initial decline being particularly sharp for tullibee (Tables 3, 4, 10 and 11). The 2009 winter catch of tullibee was the first major increase observed since 1999, with the 2010 catch increasing even further (Figure 7). The 2010 harvest of 11,600 tullibee at 8,000 lbs is the highest number and weight of tullibee harvested since the winter of 1998-1999, although it is still relatively low when compared to typical harvests throughout the 1990's (Tables 3 and 7). The release of 20,600 tullibee at 10,550 lbs was the second highest number ever observed (Tables 4 and 7). The size range of tullibee reported in the creel indicates that anglers were catching mostly two and three year old fish with smaller numbers of larger fish that would correspond to the 2003 and 2004 year classes (Tables 12 and 14; Jones 2010). The increase in tullibee catch rate coincides with the record numbers of tullibee caught in the fall assessment gill nets, which was prompted by increased survival due to cooler temperatures over recent summers (Figure 7; Jones 2010). Tullibee late-ice harvest also showed a sharp increase, when compared to recent years, with 9,000 tullibee kept that weighed 7,350 lbs (Tables 7 and 10). This increased harvest is still only around twenty-five percent of the peak years during the mid-1990s. The number of tullibee released during the late-ice period was the

highest ever observed and likely reflects the large number of age 2 fish that were able to survive the cooler summer temperatures (Table 11).

Winter angler catch rates for burbot show a similar overall decline, comparable to that observed for tullibee. Both declines begin in the late 1990s, although the downturn for burbot seemed less severe (Tables 3 and 4; Figures 7 and 8). Also similar to tullibee, burbot catch rates showed an upswing in 2009, however, in 2010 catch rates plummeted to their lowest observed levels (Figure 8). 2010 creel estimates indicate that only 130 burbot weighing 170 lbs were harvested during the regular ice season, while 680 fish weighing 925 lbs were released (Tables 3, 4, and 7). No burbot were reported as being caught during the late-ice season (Tables 7, 10, and 11). The increase in proportion of released fish to harvested fish is likely due in part to a successful promotion several years past, to have anglers release unwanted burbot back into the lake instead of discarding them on the ice. Anglers now release about six burbot for every one kept compared to releasing 0.75 burbot for each kept in the late 90's (Tables 3 and 4).

Black Crappie

Winter black crappie fishing on Mille Lacs generally centers around a population of fish located in Isle Bay. While several local anglers were familiar with a pattern of concentrated crappies feeding in the shallower drop-off region in the southwest corner of the bay during the late ice season, pressure was relatively light until successful promotion of the fishery by local businesses around 2004. When ice conditions permit, large numbers of anglers now target this specific concentration of fish. The 2010 late-ice conditions allowed anglers to target crappies; however, angler success was poor despite the previous year showing record numbers of black crappie caught (Table 10). Poor late-ice conditions shortened the season to 23 days, which tied 2007 for the shortest late-ice period ever observed (Table 10). Anecdotal reports from anglers indicated they were seeing some crappie on underwater cameras. Late-ice harvest of 325 black crappie at 382 lbs was the second lowest observed since 2004 with 2007, the lowest observed, being a poor ice year (Tables 7 and 10). Released fish numbers were also poor, showing 450 fish weighing 75 lbs (Tables 7 and 11).

Open-water Creel Survey

Fishing Pressure

Fishing pressure during the 2010 open-water fishing season was approximately 1.35 million angler-hours (a-hrs), or 10.23 a-hrs/acre (Table 5). This included 1,263,000 a-hrs from day anglers, 67,500 a-hrs of night effort, and 20,000 a-hrs of summer tournament fishing (Tables 5 and 15). Similar to most years, small boat anglers contributed 80% to 85% of the effort. Summer fishing pressure in 2010 was approximately 11% below the 1983 through 2010 historical average, but showed a strong improvement over fishing pressure levels the previous two years (Figure 9).

The vast majority of angler effort on Mille Lacs is directed toward walleye (Tables 16 and 17; Figure 10). As walleye catch rates fluctuate between years, angler pressure tends to respond in a similar fashion. 2010 walleye catch rates increased from the previous two years and angler effort increased toward more typical levels for the observed catch rate (Figures 11 and 12). While walleye catch rates appear to be a major factor in determining total summer effort, variables such as restrictive regulations, undesirable sized fish, economic conditions, a good walleye bite elsewhere, and the timing of inclement weather, have been suggested to have caused decreases in angler pressure for a particular year, that deviated from what would be expected from catch rate alone. Such was the case in 2008 and 2009 where severe economic recession was likely responsible for lower than expected pressure (Figure 12). A recovering economy in 2010, particularly in tourism, helped to better align angler pressure with walleye catch rates (Federal Reserve, 2010b).

Angler effort, over the course of the open water season, was near median levels for the month of May before dropping to a very low level in the second period (Figure 13). Low angler pressure in the second period was even more unusual when a very respectable walleye catch rate of 0.43 fish/hr is taken into account. Data recorded by all three creel clerks during the second period indicated a number of days with rain and poor lake traveling conditions, which likely adversely affected fishing effort. Pressure again picked up during the latter part of June to slightly above median levels before dropping again to near lows in Period 4. From late July through October angler effort was near or exceeded median angler pressure. October angler pressure was the second highest observed as anglers took advantage of good fall trolling for walleyes in shallower water.

Angler pressure from muskellunge anglers showed an increase from the previous year, but was still at historically low levels (Figure 14). Muskellunge anglers contributed significant pressure from July through October (Table 16). The contribution of directed angler effort from smallmouth bass anglers declined by approximately 10,000 hours (32%) from what had been observed the previous three years. Northern pike directed pressure remained relatively flat.

Walleye

The 2010 open-water-day walleye harvest was approximately 154,600 fish weighing 185,900 lbs (Table 18). Night angler harvest was estimated at 11,000 walleyes weighing 13,200 lbs and permitted tournaments reported a harvest of 3,600 walleyes weighing 5,200 lbs (Table 5). Recreational anglers released 534,400 lbs of walleyes during the day and 38,000 lbs at night, while tournament anglers released 21,400 lbs (Table 6). Hooking mortality of released fish from all anglers was 44,250 lbs, and the total kill for all open water categories was 248,500 lbs (Table 5). Walleye harvest, release, and yield increased from the previous year to moderate levels when compared to other post-treaty regulation years (Tables 19 and 20).

The walleye catch rate was 0.27 fish/hour (Table 21), which was an improvement over the previous two years, but moderate within the historical record (Figures 11 and 15). Annual catch and catch rates would have been higher if anglers had fished at typical levels of pressure associated with the relatively high catch rates observed during early June (Figures 11, 12, and 13). The walleye catch rate for targeting anglers was 0.33 fish/hour (Figure 16). One-third of the harvest was walleye from the 2006 year class; however, most of the harvest came from fish of the 2007 year class as they grew into lengths greater than twelve inches (Tables 22 and 23). The 2005 year class of walleye, which figured prominently in the 2009 harvest, was still apparent in the 2010 catch (Jensen 2010). Many of the 2005 year class fish were released in the early portion of the open water season, as they had grown into the 18-28 inch protected slot, but were then harvested when the protected slot was relaxed after 15 July (Tables 1, 22, 23, 24 and 25).

Walleye hooking mortality was approximately 7.5% of total kill by number and 16% of total kill by weight (Table 5). An estimated 6.6% of released walleyes died due to hooking mortality. Water

temperatures, which have a large influence on walleye hooking mortality, were higher than normal during the first two periods of the open water season, but never exceeded 70°F where hooking mortality becomes severe (Figure 17; Reeves and Breusewitz 2007). Lake temperatures exceeded 70°F from July through mid-September, but tended to remain near typical seasonal levels with the exception of a small spike in mid-August and a two week period of elevated temperatures in the first two weeks of September. Temperatures above 70°F were coincident with periods of reduced pressure and catch rates which helped to decrease total hooking mortality at times where hooking mortality rates were highest (Figures 13 and 17). Total pounds of hooking mortality was also reduced by releasing relatively low numbers of fish greater than 24 inches in length. Reeves and Bruesewitz (2007) showed that walleye less than 15 inches long and greater than 24 inches long experience higher hooking mortality than walleye between 15 and 24 inches (Table 24).

Yellow Perch

Yellow perch harvest during the open-water-day periods was 43,100 fish weighing 20,250 lbs (Table 18). An additional 150,000 fish weighting 23,000 lbs were released. Targeted effort for yellow perch increased to approximately 9,000 hours, but was still at relatively modest levels compared to previous years (Table 16 and Figure 18). Most of the directed effort occurred in late September and October, a time of year when anglers often target perch in shallower, rocky areas (Table 16). Yellow perch targeted catch rates doubled from the previous year, but was only at moderate historical levels (Figure 18).

Consistent harvest of yellow perch during all open water periods of the summer creel, even in periods with no measured directed effort, indicates substantial incidental harvest of yellow perch from walleye anglers throughout the summer (Table 5 and 16). Yellow perch catch rates for all anglers show a similar pattern to targeting anglers, although at a much reduced level (Figures 18 and 19). Harvest rate for all anglers doubled from 2009 levels, but most of the increase in total catch rate was from the release rate, which tripled from 2009 levels (Tables 19 and 20; Figure 19). Anglers began to keep a majority of yellow perch once they reached lengths greater than 8.5 inches (Tables 26 and 27). Fall sampling in 2009 and 2010 indicated good numbers of perch greater than 8.5 inches; however, the 2001 and 2004 year classes

were missing, which would have contributed more fish of an acceptable size to anglers. The bulk of released yellow perch were from 6 to 7.5 inches and corresponds to the very strong 2007 year class of fish (Jones 2010 and Jones 2011).

Northern Pike

The 2010 day-harvest of northern pike was approximately 575 fish weighing 2,800 lbs, with an average weight of 4.9 lbs. Day anglers also released 9,400 northern pike weighing approximately 46,700 lbs (Table 18). Hooking mortality accounted for an additional kill of 2,600 lb for the open water season.

Northern pike catch rose from the second lowest observed in 2009, to more moderate levels in 2010, despite 2010 having the lowest directed effort toward northern pike observed since treaty regulations were enacted (Tables 19 and 20; Figure 14). Targeted catch rates were the highest observed since 1998, while overall catch rates that include all anglers were more moderate, indicating lower levels of incidental northern pike catch by non-targeting anglers (Figures 16 and 20). Fall gill net sampling in the last several years suggests an increase in pike numbers, which may be responsible for the increase in catch rate (Jones 2010). Some of the increase in northern pike catch rate may be due to the increased directed effort of muskellunge anglers (Figure 14). Anglers actively seeking muskellunge tend to have high incidental catches of northern pike due to similarities between the two species in habitat selection. Northern pike catch generally tends to be higher than muskellunge catch by anglers targeting muskellunge, and even a moderate increase in pressure for muskellunge can have relatively large affects on catch for northern pike.

Compliance with the 24-36 inch protected slot was approximately 99% (Tables 26 and 27). The non-compliance consisted or two illegal fish caught by state-licensed recreational anglers. One illegal fish was from a group of anglers targeting northern pike who kept a fish exactly at 24 inches, the other non-compliance fish was 26.5 inches long from an angler targeting walleye, who was unfamiliar with the protected slot.

Muskellunge

The 2010 muskellunge catch of approximately 529 fish is the third lowest on record since we began recording release information of muskellunge in 1990 (Tables 18, 19, and 20). All three low catch years are continuous beginning in 2008. The same three years represent the lowest targeted catch rates observed for muskellunge (Figure 21). Targeted effort improved slightly over the previous year's historical low, but was still the third lowest ever observed (Figure 14). Muskie effort was fairly well distributed across the open water period, but the contribution of muskellunge anglers to total pressure was significant in August and October (Table 16). Low muskellunge catch rates over the last couple of years appear to be a function of the large numbers of tullibee available as forage and possibly lower muskellunge numbers (Jones 2010 and Jones 2011). Tullibee catches in the 2009 and 2010 fall assessment gill nets were at some of the highest levels observed during the past decade.

Approximately 17% of the muskellunge caught in the open-water creel were reported to have been larger than 50 inches (Table 27). No harvested fish were observed in the creel.

Smallmouth Bass

During the 2010 day creel survey, anglers harvested 560 smallmouth bass and released approximately 47,750 smallmouth bass (Table 18), which was the highest ever observed (Tables 19 and 20). Directed catch rates were the second highest observed, but directed effort was only moderate indicating that incidental catch of smallmouth by non-targeting anglers was likely higher than normal (Figures 14 and 16). Total angler catch rates for smallmouth bass were the highest ever observed, confirming that non-targeting angler by-catch was high (Figure 21). Approximately one-third of the released smallmouth were caught during May, which is prior to the bass opener when anglers can legally target smallmouth. Earlier than normal warm water temperatures and a reasonably strong shallow water walleye bite likely juxtaposed anglers and bass in similar areas to create higher than expected smallmouth bass catches in May (Figure 17).

In 2000, a minimum size limit of 21 inches was implemented for Mille Lacs smallmouth in order to maintain what was already regarded as a trophy fishery (Table 1). Seventy-five percent of the harvest observed in 2010, were fish of illegal size that were taken by state licensed anglers. In most instances,

illegal harvest occurred due to unfamiliarity with the Mille Lacs special regulation, by anglers targeting other species. In general, angler compliance was very good at 99% (Tables 26 and 27).

Trophy status for smallmouth bass is generally regarded as 20 inches (Anderson and Gutreuter 1983). In 2010, anglers indicated that 3.7% of fish caught would qualify as trophy fish (Tables 26 and 27). Furthermore, approximately 0.7% of released fish (328) were reported to be over 21 inches, a size legal for harvest.

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Table 1. Fishing regulation changes on Mille Lacs Lake, 1983-2010.

Year	Species	Limit	Regulation
1962	Northern Pike		No Harvest
1963	Northern Pike		Harvest allowed under normal state-wide regulations
1983	All		Early Season Night Ban
	Northern Pike		No Spearing
1985	Walleye	6	Only 1 over 20"
1997	Walleye	6	15" minimum, 1 over 20"
1998	Northern Pike	3	26"-36" protected slot, 1 over 36"
1999	Walleye	6	14"-20" harvest slot, 1 over 26"
2000	Walleye	6	14"-18" harvest slot, 1 over 28"
	Smallmouth Bass	1	21" minimum
2001	Walleye	6	16"-20" harvest slot, 1 over 28"
			June 5, 16" to 18" harvest slot
			June 30, 16"-18" harvest slot, 1 over 30"
			December 1, 14"-18" harvest slot, 1 over 28"
2002	Walleye	4	14"-16" harvest slot, 1 over 28
	Northern Pike	3	24"-36" protected slot, 1 over 36"
2003	Walleye	4	17"-28" protected slot, 1 over 28
	Tullibee	10	No Sport Netting
2004	Walleye	4	20"-28" protected slot, 1 over 28" except
			July 16 - Nov 30, 22"-28" protected slot, 1 over 28"
2005	Walleye		Same as 2004
2006	Walleye		Same as 2004
2007	Muskellunge	1	48" mimimum
	Walleye	4	Started same as 2004
			July 9, 14-16 HS, 1 over 28
			December 1, 20"-28" protected slot, 1 over 28"
2008	Walleye	4	18"-28" protected slot, only 1 over 28"
2009	Walleye	4	Same as 2008
2010	Walleye	4	Same as 2008
			July 15 - Nov 30, 20"-28" protected slot, 1 over 28"

Table 2. Angling effort by period, Mille Lacs Lake, winter creel season, 2009-2010.

Period	Angler Trips Estimate	Angler Trips SE	Angler Hours Estimate	Angler Hours SE
Regular Ice Season				
Dec 17 - Jan 24	55,529	5,611	1,085,951	140,770
Jan 25 - Feb 28	37,223	4,803	733,829	107,990
Late Ice Season				
Mar 1 - Mar 23	16,780	4,312	84,287	22,022
Regular Ice	92,752	7,386	1,819,780	177,420
Total Season	109,532	8,552	1,904,067	178,782

Table 3. History of winter creel harvest for selected species, Mille Lacs Lake

	2009-10	2008-09	2007-08	2006-07	2005-06	2004-05	2003-04	2002-03	2001-02	2000-01	1999-00	1998-99	1997-98	1996-97	1995-96	1994-95
Total angler hours	1,819,780	1,524,100	1,796,382	2,023,917	2,204,569	994,794	911,501	956,574	1,354,453	1,811,516	1,443,334	1,913,432	2,251,309	2,034,505	2,350,296	1,948,847
Total harvest (N)																
Tullibee	11,586	2,286	56	269	272	535	238	1,265	1,197	5,693	3,329	27,362	45,612	24,917	80,026	56,903
Northern pike	102	57	0	0	96	267	286	690	1,156	660	684	2,429	3,597	1,680	2,582	2,516
Burbot	130	953	673	2,349	7,750	2,863	1,684	910	6,951	9,774	7,091	14,536	47,820	19,813	38,651	62,398
Yellow perch	49,045	41,890	63,737	118,536	202,348	21,206	33,651	29,702	86,748	366,656	385,193	450,260	503,396	332,190	342,839	325,298
Walleye	23,379	9,538	5,590	36,549	55,165	9,735	1,738	1,877	33,918	8,681	13,714	27,199	21,670	21,903	43,550	36,330
Total harvest (lbs.)																
Tullibee	8,030	3,005	26	195	335	508	296	1,297	1,273	4,466	2,570	20,256	31,952	16,547	53,433	44,893
Northern pike	288	785	0	0	291	684	2,827	4,759	6,532	2,775	2,077	11,515	17,133	8,561	9,143	10,086
Burbot	170	1,235	1,033	3,562	9,505	3,192	1,684	1,315	11,785	17,370	12,164	25,366	67,724	27,639	47,273	72,819
Yellow perch	22,467	23,927	35,470	58,916	93,908	9,120	17,049	14,520	41,129	167,298	135,520	156,921	197,065	117,945	119,119	121,077
Walleye	22,099	10,760	7,005	58,446	66,079	9,272	3,192	2,604	45,639	16,879	27,355	63,553	48,077	37,635	60,081	42,753
Harvest/angler hour																
Tullibee	0.0064	0.0015	0.0000	0.0001	0.0001	0.0005	0.0003	0.0013	0.0009	0.0031	0.0023	0.0143	0.0203	0.0122	0.0340	0.0292
Northern pike	0.0001	0.0000	0.0000	0.0000	0.00004	0.0003	0.0003	0.0007	0.0009	0.0004	0.0005	0.0013	0.0016	0.0008	0.0011	0.0013
Burbot	0.0001	0.0006	0.0004	0.0012	0.0035	0.0029	0.0018	0.0010	0.0051	0.0054	0.0049	0.0076	0.0212	0.0097	0.0164	0.0320
Yellow perch	0.0270	0.0275	0.0355	0.0586	0.0918	0.0213	0.0369	0.0311	0.0640	0.2024	0.2669	0.2353	0.2236	0.1633	0.1459	0.1669
Walleye	0.0128	0.0063	0.0031	0.0181	0.0250	0.0098	0.0019	0.0020	0.0250	0.0048	0.0095	0.0142	0.0096	0.0108	0.0185	0.0186
Average weight (lbs.)																
Tullibee	0.69	1.31	0.46	0.72	1.23	0.95	1.24	1.03	1.06	0.78	0.77	0.74	0.70	0.66	0.67	0.79
Northern pike	2.82	13.77	--	--	3.03	2.56	9.88	6.90	5.65	4.20	3.04	4.74	4.76	5.10	3.54	4.01
Burbot	1.31	1.30	1.53	1.52	1.23	1.11	1.00	1.45	1.70	1.78	1.72	1.75	1.42	1.39	1.22	1.17
Yellow perch	0.46	0.57	0.56	0.50	0.46	0.43	0.51	0.49	0.47	0.46	0.35	0.35	0.39	0.36	0.35	0.37
Walleye	0.95	1.13	1.25	1.60	1.20	0.95	1.84	1.39	1.35	1.94	1.99	2.34	2.22	1.72	1.38	1.18

*Harvest and effort estimates for winters 1981-82 and 1982-83 are underestimates.

Table 3. Continued.

	1992-93	1991-92	1990-91	1989-90	1988-89	1987-88	1986-87	1985-86	1984-85	1983-84	1982-83*	1981-82*	1980-81	1976-77	1962-63	1961-62
Total angler hours	1,929,401	2,536,941	2,147,125	2,825,792	1,955,349	1,175,543	1,645,741	1,781,537	1,853,342	1,275,191	543,666	453,960	2,012,753	1,714,424	1,098,112	503,282
Total harvest (N)																
Tullibee	31,115	10,978	20,548	1,451	6,042	1,814	8,713	15,762	17,977	No Data	4,125	1,876	21,563			
Northern pike	282	2,305	879	3,158	3,794	713	1,613	1,043	2,276	1,725	655	1,708	2,714	5,871	closed	closed
Burbot	28,278	35,076	13,970	57,824	24,618	23,867	78,735	59,476	20,015	20,583	4,352	10,383	86,290			
Yellow perch	57,201	243,688	238,805	425,574	431,062	254,180	324,423	1,006,840	1,081,866	252,203	52,890	82,157	486,991	222,484	64,719	
Walleye	19,183	64,938	53,540	96,543	49,860	63,045	31,589	9,503	40,237	53,945	18,040	13,980	59,640	130,682	125,775	31,599
Total harvest (lbs.)																
Tullibee	21,968	8,581	16,027	1,097	5,439	1,472	7,842	14,186	16,179	No Data	4,125	1,238	10,768			
Northern pike	1,938	9,066	3,428	12,474	19,729	5,562	4,678	4,381	8,649	6,038	1,951	6,525	10,313	21,723		
Burbot	31,741	42,080	11,455	58,946	27,080	27,308	78,735	71,371	24,738	35,000	4,352	10,383	86,290			
Yellow perch	20,188	95,629	76,418	200,020	215,531	121,581	162,212	503,420	540,933	126,102	19,427	31,220	154,767	117,472	45,303	
Walleye	30,067	101,736	59,429	143,164	84,762	70,610	45,563	13,304	76,450	80,918	20,635	16,776	77,532	153,682	233,972	62,341
Harvest/angler hour																
Tullibee	0.0161	0.0043	0.0096	0.0005	0.0031	0.0015	0.0053	0.0088	0.0097	--	0.0076	0.0041	0.0107	--	--	--
Northern pike	0.0001	0.0009	0.0004	0.0011	0.0019	0.0006	0.0010	0.0006	0.0012	0.0014	0.0012	0.0038	0.0013	0.0034	--	--
Burbot	0.0147	0.0138	0.0065	0.0205	0.0126	0.0203	0.0478	0.0334	0.0108	0.0161	0.0080	0.0229	0.0429	--	--	--
Yellow perch	0.0296	0.0961	0.1112	0.1506	0.2205	0.2162	0.1971	0.5652	0.5837	0.1978	0.0973	0.1810	0.2420	0.1298	0.0589	--
Walleye	0.0099	0.0256	0.0249	0.0342	0.0255	0.0536	0.0192	0.0053	0.0217	0.0423	0.0332	0.0308	0.0296	0.0762	0.1145	0.0628
Average weight (lbs.)																
Tullibee	0.71	0.78	0.78	0.76	0.90	0.81	0.90	0.90	0.90	--	1.00	0.66	0.50	--	--	--
Northern pike	6.87	3.93	3.90	3.95	5.20	7.80	2.90	4.20	3.80	3.50	2.98	3.82	3.80	3.70	--	--
Burbot	1.12	1.20	0.82	1.02	1.10	1.14	1.00	1.20	1.24	1.70	1.00	1.00	1.00	--	--	--
Yellow perch	0.35	0.39	0.32	0.47	0.50	0.48	0.50	0.50	0.50	0.50	0.37	0.38	0.32	0.53	0.70	--
Walleye	1.57	1.57	1.11	1.48	1.70	1.12	1.44	1.40	1.90	1.50	1.14	1.20	1.30	1.18	1.86	1.97

*Harvest and effort estimates for winters 1981-82 and 1982-83 are underestimates.

Table 4. History of winter creel release statistics for selected species, Mille Lacs Lake.

	2009-10	2008-09	2007-08	2006-07	2005-06	2004-05	2003-04	2002-03	2001-02	2000-01	1999-00	1998-99
Total angler hours	1,819,780	1,524,100	1,796,382	2,023,917	2,204,569	994,794	911,501	956,574	1,354,453	1,811,516	1,443,334	1,813,432
Total release (N)												
Tullibee	20570	10234	785	436	474	629	564	194	145	1,749	1,835	16,312
Northern pike	478	884	571	883	838	753	1,031	1,127	1,818	1,715	1,913	2,549
Burbot	683	15,971	6,077	11,755	24,677	3,928	2,781	2,096	7,989	7,568	9,272	14,003
Yellow perch	281,431	191,572	144,741	227,529	332,965	52,213	181,853	57,703	57,274	270,311	583,604	1,048,689
Walleye	30,387	43,876	10,700	55,893	33,431	17,674	5,917	14,205	96,097	17,185	9,491	15,384
Total release (lbs.)												
Tullibee	10,553	6,769	331	491	483	741	547	230	235	1,527	1,303	12,759
Northern pike	2,530	5,966	3,572	6,465	7,444	4,860	5,536	6,851	11,398	7,901	9,392	16,305
Burbot	925	14,947	6,351	15,494	32,424	3,791	1,909	2,090	13,169	12,109	16,526	23,107
Yellow perch	26,230	12,072	10,917	23,095	38,888	8,313	11,678	4,459	7,332	37,051	65,012	103,264
Walleye	29,836	43,415	18,393	149,080	104,583	12,749	9,142	32,669	211,398	46,338	20,016	17,991
Release/angler hour												
Tullibee	0.0113	0.0067	0.0004	0.0002	0.0002	0.0006	0.0006	0.0002	0.0001	0.0010	0.0013	0.0090
Northern pike	0.0003	0.0006	0.0003	0.0004	0.0004	0.0008	0.0011	0.0012	0.0013	0.0009	0.0013	0.0014
Burbot	0.0004	0.0105	0.0034	0.0058	0.0112	0.0039	0.0031	0.0022	0.0059	0.0042	0.0064	0.0077
Yellow perch	0.1547	0.1257	0.0806	0.1124	0.1510	0.0525	0.1995	0.0603	0.0423	0.1492	0.4043	0.5783
Walleye	0.0167	0.0288	0.0060	0.0276	0.0152	0.0178	0.0065	0.0148	0.0709	0.0095	0.0066	0.0085
Average weight (lbs.)												
Tullibee	0.51	0.66	0.42	1.13	1.02	1.18	0.97	1.19	1.62	0.87	0.71	0.78
Northern pike	5.29	6.75	6.26	7.32	8.88	6.45	5.37	6.08	6.27	4.61	4.91	6.40
Burbot	1.35	0.94	1.05	1.32	1.31	0.97	0.69	1.00	1.65	1.60	1.78	1.65
Yellow perch	0.09	0.06	0.08	0.10	0.12	0.16	0.06	0.08	0.13	0.14	0.11	0.10
Walleye	0.98	0.99	1.72	2.67	3.13	0.72	1.55	2.30	2.20	2.70	2.11	1.17

Table 4. Continued.

	1997-98	1996-97	1995-96	1994-95	1993-94	1992-93	1991-92	1990-91	1989-90	1988-89	1987-88	1986-87
Total angler hours	2,251,309	1,654,066	2,350,296	1,948,867	1,439,660	1,929,400	2,536,941	2,146,821	2,825,792	1,955,348	1,175,542	1,645,742
Total release (N)												
Tullibee	10,751	7,357	33,792									
Northern pike	1,212	645	439									
Burbot	26,730	8,590	15,918									
Yellow perch	1,007,133	554,018	581,091	222,440	83,379	37,320	143,552	113,882				
Walleye	13,920	13,173	18,451	35,496	5,575	13,227	7,509	19,169	228,391	31,752	28,250	56,871
Total release (lbs.)												
Tullibee	8,601	4,591	26,732									
Northern pike	6,039	2,780	881									
Burbot	43,329	12,230	18,147									
Yellow perch	106,508	41,512	52,229	20,269	6,159	2,252	14,507	13,533				
Walleye	12,164	14,857	8,819	9,776	1,786	3,154	4,176	13,723	79,834	9,506	15,832	47,949
Release/angler hour												
Tullibee	0.0048	0.0044	0.0144	--	--	--	--	--	--	--	--	--
Northern pike	0.0005	0.0004	0.0002	--	--	--	--	--	--	--	--	--
Burbot	0.0119	0.0052	0.0068	--	--	--	--	--	--	--	--	--
Yellow perch	0.4474	0.3349	0.2472	0.1141	0.0579	0.0193	0.0566	0.0530	--	--	--	--
Walleye	0.0062	0.0080	0.0079	0.0182	0.0039	0.0069	0.0030	0.0089	0.0808	0.0162	0.0240	0.0346
Average weight (lbs.)												
Tullibee	0.80	0.62	0.79	--	--	--	--	--	--	--	--	--
Northern pike	4.98	4.31	2.01	--	--	--	--	--	--	--	--	--
Burbot	1.62	1.42	1.14	--	--	--	--	--	--	--	--	--
Yellow perch	0.11	0.07	0.09	0.09	0.07	0.06	0.10	0.12	--	--	--	--
Walleye	0.87	1.13	0.48	0.28	0.32	0.24	0.56	0.72	0.35	0.30	0.56	0.84

Table 5. Mille Lacs angler harvest summary for the 2009-2010 fishing year.

		Walleye						Yellow Perch		Northern Pike						Tullibee		Burbot	
	Pressure	Harvest		Hooking Mortality		Angler Kill				Harvest		Hooking Mortality		Angler Kill					
	Angler-hrs	no	lbs	no	lb	no	lbs	no	lbs	no	lbs	no	lb	no	lbs	no	lbs	no	lbs
Winter, Dec		Incl. in Jan		0	0	0	0							0	0				
Winter, Jan	1,085,951	21,622	20,522	8	8	21,630	20,530	26,139	10,722	102	288	0	0	102	288	1,976	1,392	0	0
Winter Feb	733,829	1,757	1,577	1	1	1,758	1,578	22,906	11,745	0	0	0	0	0	0	9,610	6,638	130	170
Spring ice	84,287	0	0	0	1	0	1	21,675	12,140	0	0	0	0	0	0	9,025	7,358	0	0
May Opener-31	346,935	61,190	68,940	960	3,420	62,150	72,360	4,729	2,829	109	344	51	218	160	562	0	0	0	0
June 1-15	148,088	29,012	34,287	1,024	3,202	30,036	37,489	4,698	2,632	174	517	143	575	317	1,092	0	0	0	0
June 16-30	195,842	23,461	26,169	2,779	9,521	26,240	35,690	6,490	3,383	118	342	76	372	194	714	0	0	0	0
July 1-15	106,785	9,239	10,845	2,917	10,825	12,156	21,670	2,753	1,160	0	0	28	173	28	173	0	0	0	0
July 16-31	139,429	9,666	14,060	2,100	7,417	11,766	21,477	5,020	2,157	24	73	45	310	69	383	0	0	0	0
August 1-15	71,098	3,285	5,141	1,148	3,197	4,433	8,338	1,025	369	68	929	96	503	164	1,432	0	0	0	0
August 16-31	72,745	4,509	6,745	826	1,827	5,335	8,572	6,951	3,317	35	450	45	245	80	695	0	0	0	0
September 1-15	57,868	4,700	6,555	162	230	4,862	6,785	2,805	1,116	0	0	17	73	17	73	0	0	0	0
September 16-30	44,997	3,491	4,882	22	49	3,513	4,931	4,459	1,707	46	140	8	31	54	171	0	0	0	0
October 1-31	79,248	6,056	8,244	22	47	6,078	8,291	4,203	1,568	0	0	7	69	7	69	0	0	0	0
Winter Tournaments	34,074	0	0	2	1	2	1	21	19	0	0	0	0	0	0	0	0	3	7
Summer Tournaments	20,200	3,600	5,200	900	1,700	4,500	6,900	5	2										
Unsurveyed Night	67,562	10,982	13,203	850	2,822	11,832	16,025												
All Ice Fishing	1,938,141	23,379	22,099	11	11	23,390	22,110	70,741	34,626	102	288	0	0	102	288	20,611	15,388	133	177
Open Water Day Creel	1,263,035	154,609	185,868	11,960	39,735	166,569	225,603	43,133	20,238	574	2,795	515	2,567	1,089	5,362	0	0	0	0
Other Open Water	87,762	14,582	18,403	1,750	4,522	16,332	22,925	5	2	0	0	0	0	0	0	0	0	0	0
Year Total	3,288,938	192,570	226,370	13,721	44,268	206,291	**270,638**	113,879	**54,866**	676	3,083	515	2,567	1,191	**5,650**	20,611	15,388	133	177
Allocation							**411,500**		**135,000**						**12,500**		**No SHL**		**No SHL**

Table 5. Continued.

	Muskellunge		Smallmouth Bass		Largemouth Bass		Rock Bass		Pumpkinseed		Bluegill		Black Crappie		Carp		Bullhead	
	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs
Winter Dec																		
Winter Jan																		
Winter Feb									109	33	980	374						
Spring ice											88	36	324	382				
May 15-31							182	202										
June 1-15			262	647														
June 16-30			39	33							434	108						
July 1-15																		
July 16-31			48	188			167	87										
August 1-15																		
August 16-31			51	323			139	129										
September 1-15			68	309														
September 16-30			92	147														
October 1-31											123	34						
Summer Tournaments					4	12												
Unsurveyed Night																		
All Ice Fishing	0	0	0	0	0	0	0	0	109	33	1,068	410	324	382	0	0	0	0
Open Water Day Creel	0	0	560	1,647	0	0	488	418	0	0	557	142	0	0	0	0	0	0
Other Open Water	0	0	0	0	4	12	0	0	0	0	0	0	0	0	0	0	0	0
Year Total	0	0	560	1,647	4	12	488	418	109	33	1,625	552	324	382	0	0	0	0

Table 6. Mille Lacs Lake angler release summary for the 2009-2010 fishing year.

	Pressure	Walleye		Yellow Perch		Northern Pike		Tullibee		Burbot	
	Angler-hrs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs
Winter Dec	0										
Winter Jan	1,085,951	26,871	25,447	146,155	13,330	239	1,166	4,939	3,278	401	572
Winter Feb	733,829	3,516	4,389	135,276	12,900	239	1,362	15,631	7,275	282	353
Spring ice	84,287	1,062	1,977	121,323	9,730	0	0	7,256	2,586	0	0
May Opener-31	346,935	60,593	185,495	4,909	1,257	923	3,959	0	0	42	9
June 1-15	148,088	34,471	94,571	6,119	1,521	2,595	10,448	0	0	0	0
June 16-30	195,842	34,918	104,937	16,652	3,793	1,389	6,763	0	0	0	0
July 1-15	106,785	19,498	63,114	12,485	1,639	509	3,144	0	0	0	0
July 16-31	139,429	10,602	34,679	25,929	3,987	817	5,632	0	0	0	0
August 1-15	71,098	4,698	12,333	11,534	1,785	1,738	9,146	0	0	0	0
August 16-31	72,745	6,228	13,379	27,343	4,676	817	4,447	0	0	0	0
September 1-15	57,868	6,056	8,429	9,725	1,244	312	1,321	0	0	0	0
September 16-30	44,997	2,372	6,621	13,375	964	146	563	0	0	0	0
October 1-31	79,248	5,346	10,837	21,399	2,046	123	1,252	0	0	0	0
Winter Tournaments	34,074	6	3	473	244	0	0	2	1	0	0
Summer Tournaments	20,200	10,400	21,400								
Unsurveyed Night	67,562	13,125	37,959								
All Ice Fishing	1,938,141	31,455	31,816	403,227	36,204	478	2,528	27,828	13,140	683	925
Open Water Day Creel	1,263,035	184,782	534,395	149,470	22,912	9,369	46,675	0	0	42	9
Other Open Water	87,762	23,525	59,359	0	0	0	0	0	0	0	0
Year Total	3,288,938	239,762	625,570	552,697	59,116	9,847	49,203	27,828	13,140	725	934

Table 6. Continued.

	Muskellunge		Smallmouth Bass		Largemouth Bass		Rock Bass		Pumpkinseed			Bluegill	Black Crappie			Bullhead
	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs	no	lbs
Winter Dec																
Winter Jan			60	522												
Winter Feb																
Spring ice					88	291							442	73		
May Opener-31			14,247	40,295			4,227	3,033			1,261	167	508	641		
June 1-15	40	81	7,278	15,133	40	81	5,954	3,898								
June 16-30			5,893	13,269	118	252	2,720	2,039			197	17				
July 1-15	81	1,735	3,160	6,559			1,250	768			76	26				
July 16-31	97	3,606	7,648	16,637	1,263	2,511	1,019	1,116			583	55				
August 1-15	63	2,256	3,239	7,101	1,879	3,851	440	275			44	18				
August 16-31	69	1,454	2,545	6,169	187	370	601	341	24	10	51	1				
September 1-15	41	269	440	1,087	27	53	95	28								
September 16-30	46	995	1,344	4,750			238	59								
October 1-31	92	1,907	1,937	6,194			154	101								
Winter Tournaments																
Summer Tournaments					53	184										
Unsurveyed Night																
All Ice Fishing	0	0	60	522	88	291	0	0	0	0	0	0	442	73	0	0
Open Water Day Creel	529	12,303	47,731	117,194	3,514	7,118	16,698	11,658	24	10	2,212	284	508	641	0	0
Other Open Water	0	0	0	0	53	184	0	0	0	0	0	0	0	0	0	0
Year Total	529	12,303	47,791	117,716	3,655	7,593	16,698	11,658	24	10	2,212	284	950	714	0	0

Table 7. Catch statistics for winter anglers, Mille Lacs Lake, 2009 - 2010

	Harvest (N)		Yield (lbs)		Mean	Released (N)		Weight Released (lbs)		Mean
	Estimate	SE	Estimate	SE	Weight (lbs)	Estimate	SE	Estimate	SE	Weight (lbs)
Regular Ice										
Bowfin	0	0	0	0		0	0	0	0	
Tullibee	11,586	3,899	8,030	2,747	0.7	20,570	6,330	10,553	3,077	0.5
Northern Pike	102	103	288	291	2.8	478	202	2,530	1,089	5.3
Muskellunge	0	0	0	0		0	0	0	0	
White Sucker	0	0	0	0		0	0	0	0	
Common Carp	0	0	0	0		0	0	0	0	
Bullhead spp.	0	0	0	0		0	0	0	0	
Burbot	130	77	170	154	1.3	683	268	925	385	1.4
Bluegill	980	1,006	374	387	0.4	0	0	0	0	
Pumpkinseed	109	112	33	34	0.3	0	0	0	0	
Hybrid Sunfish	0	0	0	0		0	0	0	0	
Black Crappie	0	0	0	0		0	0	0	0	
Rock Bass	0	0	0	0		0	0	0	0	
Largemouth Bass	0	0	0	0		0	0	0	0	
Smallmouth Bass	0	0	0	0		60	60	522	527	8.7
Walleye	23,379	3,357	22,099	3,256	0.9	30,387	5,156	29,836	5,536	1.0
Yellow Perch	49,045	6,823	22,467	3,258	0.5	281,431	32,407	26,230	3,066	0.1
Late Ice										
Bowfin	0	0	0	0		0	0	0	0	
Tullibee	9,025	3,677	7,358	3,038	0.8	7,256	4,052	2,586	1,395	0.4
Northern Pike	0	0	0	0		0	0	0	0	
Muskellunge	0	0	0	0		0	0	0	0	
White Sucker	88	92	153	159	1.7	0	0	0	0	
Common Carp	0	0	0	0		0	0	0	0	
Bullhead spp.	0	0	0	0		0	0	0	0	
Burbot	0	0	0	0		0	0	0	0	
Bluegill	88	92	36	38	0.4	0	0	0	0	
Pumpkinseed	0	0	0	0		0	0	0	0	
Hybrid Sunfish	0	0	0	0		0	0	0	0	
Black Crappie	324	218	382	261	1.2	442	461	73	76	0.2
Rock Bass	0	0	0	0		0	0	0	0	
Largemouth Bass	0	0	0	0		88	92	291	303	3.3
Smallmouth Bass	0	0	0	0		0	0	0	0	
Walleye	0	0	0	0		1,062	441	1,977	1,037	1.9
Yellow Perch	21,675	6,534	12,140	3,696	0.6	121,323	34,637	9,730	2,713	0.1
Combined										
Bowfin	0	0	0	0		0	0	0	0	
Tullibee	20,611	5,360	15,388	4,096	0.7	27,826	7,516	13,139	3,379	0.5
Northern Pike	102	103	288	291	2.8	478	202	2,530	1,089	5.3
Muskellunge	0	0	0	0		0	0	0	0	
White Sucker	88	92	153	159	1.7	0	0	0	0	
Common Carp	0	0	0	0		0	0	0	0	
Bullhead spp.	0	0	0	0		0	0	0	0	
Burbot	130	77	170	154	1.3	683	268	925	385	1.4
Bluegill	1,068	1,010	410	388	0.4	0	0	0	0	
Pumpkinseed	109	112	33	34	0.3	0	0	0	0	
Hybrid Sunfish	0	0	0	0		0	0	0	0	
Black Crappie	324	218	382	261	1.2	442	461	73	76	0.2
Rock Bass	0	0	0	0		0	0	0	0	
Largemouth Bass	0	0	0	0		88	92	291	303	3.3
Smallmouth Bass	0	0	0	0		60	60	522	527	8.7
Walleye	23,379	3,357	22,099	3,256	0.9	31,449	5,175	31,813	5,632	1.0
Yellow Perch	70,720	9,447	34,607	4,927	0.5	402,754	47,434	35,960	4,094	0.1

Table 8. Age length distribution of harvested walleye, winter creel survey, Mille Lacs Lake, 2009 - 2010.

	AGE										
Total Length	0	1	2	3	4	5	6	7	8	9	10+
8.0 -8.4											
8.5 -8.9											
9.0 -9.4											
9.5 -9.9			149								
10.0 -10.4			75	75							
10.5 -10.9			25	124							
11.0 -11.4				306							
11.5 -11.9				1,281							
12.0 -12.9				4,311							
13.0 -13.9				6,096	84						
14.0 -14.9				1,157	3,292	178					
15.0 -15.9				111	2,893	167	56				
16.0 -16.9					1,065	405	21				
17.0 -17.9					408	693	20	61	20		
18.0 -18.9					5	221	20	35	25		
19.0 -19.9											
20.0 -20.9											
21.0 -21.9											
22.0 -22.9											
23.0 -23.9											
24.0 -24.9											
25.0 -25.9											
26.0 -26.9											
27.0 -27.9											
28.0 -28.9											
29.0 -29.9											
30.0 -30.9											
TOTAL	0	0	248	13,460	7,747	1,664	117	96	45	0	0

Table 9. Age length distribution of released walleye, winter creel survey, Mille Lacs Lake, 2009-2010.

	AGE										
Total L	0	1	2	3	4	5	6	7	8	9	10+
3.0 -3.4											
3.5 -3.9											
4.0 -4.4		86									
4.5 -4.9											
5.0 -5.4		119									
5.5 -5.9											
6.0 -6.4		806									
6.5 -6.9											
7.0 -7.4			306								
7.5 -7.9											
8.0 -8.4			3,769								
8.5 -8.9											
9.0 -9.4			3,026	69							
9.5 -9.9											
10.0 -10.4			4,827	4,827							
10.5 -10.9											
11.0 -11.4				2,780							
11.5 -11.9											
12.0 -12.9				3,153							
13.0 -13.9				2,153	29						
14.0 -14.9				71	201	11					
15.0 -15.9				9	239	14	5				
16.0 -16.9					73	28	1				
17.0 -17.9					60	103	3	9	3		
18.0 -18.9					5	203	18	32	23		
19.0 -19.9						110	53	74	89	5	
20.0 -20.9						39	39	147	139	15	46
21.0 -21.9							38	38	295		219
22.0 -22.9								37	197	22	190
23.0 -23.9								24	24	24	217
24.0 -24.9									39		704
25.0 -25.9											695
26.0 -26.9											621
27.0 -27.9											86
28.0 -28.9											102
29.0 -29.9											60
30.0 -30.9											
31.0 -31.9											
TOTAL	0	1,011	11,928	13,061	608	507	157	361	810	67	2,940

Table 10. History of late-ice harvest, Mille Lacs Lake.

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1990
Number of Days	23	29	51	23	30	46	43	35	44	55	26	28	28	37	34	45	49
Total angler hours	84,287	68,472	51,591	27,029	70,130	60,365	80,493	43,461	45,849	122,411	13,657	62,635	21,293	81,516	91,932	58,197	110,650
Total harvest (N)																	
Tullibee	9,025	2,096	145	446	328	4,705	312	386	1,144	46,641	25	5,224	1,468	35,919	39,733	42,940	7,491
Burbot	0	150	0	0	0	226	32	59	208	960	193	3,344	1,191	1,258	2,041	2,228	2,445
Bl. Crappie	324	8,341	3,461	0	409	585	5,545	0	0	0	32	0	0	0	0	0	0
Yellow perch	21,675	18,767	15,728	15,005	48,026	30,232	37,951	20,860	17,464	76,663	25,257	77,135	31,392	76,114	108,233	64,850	115,994
Walleye	0	0	0	0	0	0	78	0	12	0	0	7	0	0	0	0	0
Total harvest (lbs.)																	
Tullibee	7,358	2,404	78	431	294	3,851	296	409	1,072	35,239	23	4,211	1,093	19,340	19,866	26,194	4,420
Burbot	0	107	0	0	0	376	30	73	440	1,831	417	6,094	2,138	2,206	3,633	3,008	3,545
Bl. Crappie	382	5,814	1,846	0	308	559	5,383	0	0	0	32	0	0	0	0	0	0
Yellow perch	12,140	9,551	7,590	7,473	22,416	13,797	23,897	9,537	7,713	33,548	9,983	27,331	13,127	23,832	34,634	21,400	46,398
Walleye	0	0	0	0	0	0	40	0	6	0	0	12	0	0	0	0	0
Harvest/angler hour																	
Tullibee	0.1071	0.0306	0.0028	0.0165	0.0047	0.0779	0.0039	0.0089	0.0250	0.3810	0.0018	0.0834	0.0689	0.4406	0.4322	0.7378	0.0677
Burbot	0	0.0022	0	0	0	0.0037	0.0004	0.0014	0.0045	0.0078	0.0141	0.0534	0.0559	0.0154	0.0222	0.0383	0.0221
Bl. Crappie	0.0038	0.1218	0.0671	0	0.0058	0.0097	0.0689	0	0	0	0.0023	0	0	0	0	0	0
Yellow perch	0.2572	0.2741	0.3049	0.5551	0.6848	0.5008	0.4715	0.4800	0.3809	0.6263	1.8494	1.2315	1.4743	0.9337	1.1773	1.1143	1.0483
Walleye	0	0	0	0	0	0	0.0010	0	0.0003	0	0	0.0001	0	0	0	0	0.0000
Average weight (lbs.)																	
Tullibee	0.82	1.15	0.54	0.97	0.90	0.82	0.95	1.06	0.94	0.76	0.92	0.81	0.74	0.54	0.50	0.61	0.59
Burbot	--	0.71	--	--	--	1.66	0.94	1.24	2.12	1.91	2.16	1.82	1.80	1.75	1.78	1.35	1.45
Bl. Crappie	1.18	0.70	0.53	--	0.75	0.96	0.97	--	--	--	1.00	---	---	---	---	---	---
Yellow perch	0.56	0.51	0.48	0.50	0.47	0.46	0.63	0.46	0.44	0.44	0.40	0.35	0.42	0.31	0.32	0.33	0.40
Walleye	--	--	--	--	--	--	0.51	--	0.50	--	--	1.71	--	--	--	--	--

Table 11. History of late-ice releases, Mille Lacs Lake

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total angler hours	84,287	68,472	51,591	27,029	70,130	60,365	80,493	43,461	45,849	122,411	13,657	62,635	21,293	81,516	91,932	58,179
Total release (N)																
Tullibee	7,256	3,323	39	142	421	2,425	19	212	124	2,960	68	1,255	672	1,845	4,495	5,149
Northern pike	0	75	118	29	25	18	144	10	646	0	40	284	50	0	57	0
Burbot	0	623	114	172	799	195	285	120	243	1,435	173	551	1,325	1,258	1,080	579
Black Crappie	442	4,936	4,752	0	0	702	0	0	0	0	0	0	0	0	0	0
Yellow perch	121,323	65,007	40,512	14,600	96,899	97,625	102,365	33,847	17,274	56,767	41,482	93,028	48,447	82,244	145,833	36,998
Walleye	1,062	780	180	1,987	1,753	3,475	824	668	2,087	837	160	726	181	212	650	1,762
Total release (lbs.)																
Tullibee	2,586	2,578	6	123	357	2,146	15	224	72	2,604	61	901	666	797	2,158	1,545
Northern pike	0	602	830	96	103	169	474	68	2,859	0	233	2,109	31	0	236	0
Burbot	0	1,338	124	218	1,447	300	447	207	465	2,170	393	1,090	2,206	657	2,030	626
Black Crappie	73	2,572	1,563	0	0	184	0	0	0	0	0	0	0	0	0	0
Yellow perch	9,730	3,039	2,614	2,129	8,940	10,907	7,350	2,781	1,918	6,546	4,926	8,088	5,055	5,653	13,125	2,960
Walleye	1,977	2,770	477	2,017	2,938	1,923	1,226	1,067	4,959	2,604	316	902	358	199	1,021	1,603
Release/angler hour																
Tullibee	0.0861	0.0485	0.0008	0.0053	0.0060	0.0402	0.0002	0.0049	0.0027	0.0242	0.0050	0.0200	0.0316	0.0226	0.0489	0.0885
Northern pike	0	0.0011	0.0023	0.0011	0.0004	0.0003	0.0018	0.0002	0.0141	0	0.0029	0.0045	0.0023	0	0.0006	0
Burbot	0	0.0091	0.0022	0.0064	0.0114	0.0032	0.0035	0.0028	0.0053	0.0117	0.0127	0.0088	0.0622	0.0154	0.0117	0.0100
Black Crappie	0.0052	0.0721	0.0921	0	0	0.0116	0	0	0	0	0	0	0	0	0	0
Yellow perch	1.4394	0.9494	0.7853	0.5402	1.3817	1.6172	1.2717	0.7788	0.3768	0.4637	3.0374	1.4852	2.2753	1.0089	1.5863	0.6359
Walleye	0.0126	0.0114	0.0035	0.0735	0.0250	0.0576	0.0102	0.0154	0.0455	0.0068	0.0117	0.0116	0.0085	0.0026	0.0071	0.0303
Average weight (lbs.)																
Tullibee	0.356	0.776	0.154	0.866	0.848	0.885	0.789	1.057	0.581	0.880	0.897	0.718	0.991	0.432	0.480	0.300
Northern pike	--	8.027	7.034	3.310	4.120	9.389	3.292	6.800	4.426	--	5.825	7.426	0.620	--	4.140	--
Burbot	--	2.148	1.088	1.267	1.811	1.538	1.568	1.725	1.914	1.512	2.272	1.978	1.665	0.522	1.880	1.081
Black Crappie	0.165	0.521	0.329	--	--	0.262	--	--	--	--	--	--	--	--	--	--
Yellow perch	0.080	0.047	0.065	0.146	0.092	0.112	0.072	0.082	0.111	0.115	0.119	0.087	0.104	0.069	0.090	0.080
Walleye	1.862	3.551	2.650	1.015	1.676	0.553	1.488	1.597	2.376	3.111	1.975	1.242	1.978	0.939	1.571	0.910

Table 12. Length distribution of harvested and released fish, winter creel survey, Mille Lacs Lake, 2009-2010.

Length class	Tullibee		Northern Pike		Burbot		Yellow Perch		Walleye	
(inches)	H	R	H	R	H	R	H	R	H	R
< 3.5										
3.5 -3.9										
4.0 -4.4							335	9,072		149
4.5 -4.9										
5.0 -5.4							670	57,213		74
5.5 -5.9							167			
6.0 -6.4							1,507	177,004		1,114
6.5 -6.9							1,004			
7.0 -7.4		77					1,841	31,255		297
7.5 -7.9							3,013			
8.0 -8.4		1,996					4,017	4,039		3,789
8.5 -8.9							4,185			
9.0 -9.4	138	154					8,035	1,192		2,526
9.5 -9.9	1,241						6,193		143	
10.0 -10.4	1,517	9,517					5,524	728	143	8,916
10.5 -10.9	1,931						4,687		143	
11.0 -11.4	276	537			65		4,185	596	287	2,600
11.5 -11.9	966						1,004	66	1,291	
12.0 -12.9	2,207	4,989				186	2,678	199	4,303	3,343
13.0 -13.9	966	1,535						66	6,311	2,229
14.0 -14.9	828	844							4,590	371
15.0 -15.9	1,103	461							3,299	149
16.0 -16.9	414	154				124			1,434	74
17.0 -17.9		154							1,147	74
18.0 -18.9		77							287	297
19.0 -19.9										297
20.0 -20.9				60		310				446
21.0 -21.9										669
22.0 -22.9		77		120	65					594
23.0 -23.9			102							297
24.0 -24.9										594
25.0 -25.9						62				594
26.0 -26.9										594
27.0 -27.9										149
28.0 -28.9										74
29.0 -29.9										74
30.0 -30.9				120						
31.0 -31.9										
32.0 -32.9				60						
33.0 -33.9										
34.0 -34.9				60						
35.0 -35.9				60						
36.0 -36.9										
37.0 -37.9										
38.0 -38.9										
39.0 -39.9										
40.0 -40.9										
TOTAL	11,586	20,570	102	478	130	683	49,045	281,431	23,379	30,387

Table 13. Angler catch rate (fish/hr) for winter anglers, Mille Lacs Lake, 2009-2010.

	Day		
	Harvest Rate	Release Rate	Total Catch Rate
Regular Ice			
Bowfin	0	0	0
Tullibee	0.00637	0.01130	0.01767
Northern Pike	0.00006	0.00026	0.00032
Muskellunge	0	0	0
White Sucker	0	0.00000	0.00000
Common Carp	0	0	0
Bullhead spp.	0	0	0
Burbot	0.00007	0.00038	0.00045
Bluegill	0	0	0
Pumpkinseed	0	0.00000	0.00006
Hybrid Sunfish	0	0	0
Black Crappie	0	0	0
Rock Bass	0	0	0
Largemouth Bass	0	0	0
Smallmouth Bass	0	0	0
Walleye	0.01285	0.01670	0.02955
Yellow Perch	0.02695	0.15465	0.18160
Late Ice			
Bowfin	0	0	0
Tullibee	0.10707	0.08609	0.19316
Northern Pike	0	0.00000	0.00000
Muskellunge	0	0	0
White Sucker	0	0	0
Common Carp	0	0	0
Bullhead spp.	0	0	0
Burbot	0.00000	0.00000	0.00000
Bluegill	0.00104	0.00000	0.00104
Pumpkinseed	0.00000	0.00000	0.00000
Hybrid Sunfish	0	0	0
Black Crappie	0.00384	0.00524	0.00909
Rock Bass	0	0.00000	0.00000
Largemouth Bass	0	0.00104	0.00104
Smallmouth Bass	0	0	0
Walleye	0	0.01260	0.01260
Yellow Perch	0.25716	1.43940	1.69655
Combined			
Bowfin	0	0	0
Tullibee	0.01082	0.01461	0.02544
Northern Pike	0.00005	0.00025	0.00030
Muskellunge	0	0	0
White Sucker	0	0.00000	0.00005
Common Carp	0	0	0
Bullhead spp.	0	0	0
Burbot	0.00007	0.00036	0.00043
Bluegill	0.00056	0.00000	0.00056
Pumpkinseed	0.00006	0.00000	0.00006
Hybrid Sunfish	0	0	0
Black Crappie	0.00017	0.00023	0.00040
Rock Bass	0	0.00000	0.00000
Largemouth Bass	0	0.00005	0.00005
Smallmouth Bass	0	0	0
Walleye	0.01228	0.01652	0.02880
Yellow Perch	0.03714	0.21152	0.24866

Table 14. Length-frequency distribution of harvested and released fish observed during the late-ice creel survey, Mille Lacs Lake, 2010.

Length class	Black Crappie		Bluegill	White Sucker		Tullibee	Largemouth Bass	Yellow Perch		Walleye
(inches)	H	R	H	H	H	R	R	H	R	R
< 3.5									64	
3.5 -3.9										
4.0 -4.4									4,674	
4.5 -4.9										
5.0 -5.4									34,572	62
5.5 -5.9										
6.0 -6.4		177				73			74,586	
6.5 -6.9										
7.0 -7.4		265						328	6,402	
7.5 -7.9			88					164		
8.0 -8.4						366		2,299	1,024	
8.5 -8.9					107			2,956		
9.0 -9.4					430			3,777		
9.5 -9.9					1,612			3,448		
10.0 -10.4					967	6,303		4,269		125
10.5 -10.9					107			2,463		
11.0 -11.4	108				430			1,478		62
11.5 -11.9	216				1,719			493		
12.0 -12.9					860	147				62
13.0 -13.9					1,074	220				187
14.0 -14.9				88	1,182	147				
15.0 -15.9					537					125
16.0 -16.9										62
17.0 -17.9										125
18.0 -18.9										
19.0 -19.9							88			62
20.0 -20.9										
21.0 -21.9										
22.0 -22.9										
23.0 -23.9										
24.0 -24.9										125
25.0 -25.9										
26.0 -26.9										62
27.0 -27.9										
28.0 -28.9										
29.0 -29.9										
30.0 -30.9										
31.0 -31.9										
32.0 -32.9										
TOTAL	324	442	88	88	9,025	7,256	88	21,675	121,323	1,062

Table 15. Angling effort by period, Mille Lacs Lake, open water day season, 2010.

Period	Angler Trips Estimate	Angler Trips SE	Angler Hours Estimate	Angler Hours SE
May 10 - May 31				
Boats	58,327	4,887	324,948	28,501
Launches	5,492	487	21,987	2,020
Combined	63,820	4,912	346,935	28,572
June 1 - Jun 15				
Boats	24,746	2,602	127,203	14,138
Launches	5,244	1,141	20,884	4,767
Combined	29,990	2,841	148,088	14,920
June 16 - June 30				
Boats	29,905	2,697	157,313	15,295
Launches	8,934	786	38,529	3,381
Combined	38,839	2,809	195,842	15,664
July 1 - July 15				
Boats	17,130	1,566	89,678	8,830
Launches	3,659	306	17,107	2,488
Combined	20,789	1,596	106,785	9,174
July 16 - July 31				
Boats	22,364	2,188	113,051	11,904
Launches	6,297	697	26,378	3,055
Combined	28,661	2,297	139,429	12,289
Aug 1 - Aug 15				
Boats	11,875	1,306	54,927	6,945
Launches	5,399	527	16,171	1,917
Combined	17,274	1,408	71,098	7,205
Aug 16 - Aug 31				
Boats	11,241	1,562	52,732	7,466
Launches	4,741	812	20,013	3,508
Combined	15,982	1,760	72,745	8,249
Sep 1 - Sep 15				
Boats	8,566	1,273	35,679	5,422
Launches	6,164	1,181	22,189	2,432
Combined	14,730	1,736	57,868	5,942
Sep 16 - Sep 31				
Boats	5,854	1,009	30,661	6,211
Launches	3,476	63	14,336	444
Combined	9,330	1,011	44,997	6,226
Oct 1 - Oct 31				
Boats	10,547	1,898	48,326	9,209
Launches	6,178	864	30,922	3,201
Combined	16,725	2,085	79,248	9,749
Total Season				
Boats	200,554	7,454	1,034,518	41,503
Launches	55,585	2,412	228,516	9,279
Combined	256,139	7,834	1,263,034	42,528

Table 16. Directed pressure by period, small boats, open-water-day, Mille Lacs Lake, 2010

Day Parties

Primary Species Sought	May 9-31		June 1-15		June 16-30		July 1-15		July 16-31		Aug 1-15		Aug 16-31		Sept 1-15		Sept 16-30		Oct 1-31	
Walleye	480	96.8%	259	93.5%	239	92.3%	177	90.3%	176	77.9%	80	68.4%	88	68.2%	87	75.0%	46	82.1%	51	70.8%
Yellow Perch	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.8%	2	1.7%	6	10.7%	10	13.9%
Northern Pike	2	0.4%	4	1.4%	2	0.8%	1	0.5%	0	0.0%	9	7.7%	5	3.9%	5	4.3%	0	0.0%	0	0.0%
Muskellunge	0	0.0%	4	1.4%	3	1.2%	12	6.1%	27	11.9%	17	14.5%	31	24.0%	14	12.1%	2	3.6%	9	12.5%
Smallmouth Bass	6	1.2%	7	2.5%	8	3.1%	3	1.5%	17	7.5%	6	5.1%	2	1.6%	7	6.0%	0	0.0%	1	1.4%
Miscellaneous	8	1.6%	3	1.1%	7	2.7%	3	1.5%	6	2.7%	5	4.3%	2	1.6%	1	0.9%	2	3.6%	1	1.4%
Total	496		277		259		196		226		117		129		116		56		72	

Day Pressure (angler-hours)

Primary Species Sought	May 9-31		June 1-15		June 16-30		July 1-15		July 16-31		Aug 1-15		Aug 16-31		Sept 1-15		Sept 16-30		Oct 1-31		Season Totals	
Walleye	315,500	97.1%	119,015	93.6%	147,374	93.7%	81,098	90.4%	92,472	81.8%	38,467	70.0%	36,035	68.3%	27,917	78.2%	25,966	84.7%	32,972	68.2%	916,815	88.6%
Yellow Perch	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	526	1.0%	315	0.9%	3,286	10.7%	4,834	10.0%	8,961	0.9%
Northern Pike	1,123	0.3%	2,584	2.0%	1,466	0.9%	221	0.2%	0	0.0%	2,165	3.9%	1,476	2.8%	1,384	3.9%	0	0.0%	0	0.0%	10,420	1.0%
Muskellunge	0	0.0%	1,504	1.2%	1,986	1.3%	6,300	7.0%	12,658	11.2%	9,937	18.1%	13,372	25.4%	4,243	11.9%	1,120	3.7%	9,800	20.3%	60,920	5.9%
Smallmouth Bass	4,840	1.5%	3,246	2.6%	3,427	2.2%	993	1.1%	5,729	5.1%	1,830	3.3%	498	0.9%	1,767	5.0%	0	0.0%	242	0.5%	22,571	2.2%
Miscellaneous	3,484	1.1%	855	0.7%	3,061	1.9%	1,065	1.2%	2,191	1.9%	2,528	4.6%	827	1.6%	54	0.2%	288	0.9%	478	1.0%	14,831	1.4%
Total	324,948		127,203		157,313		89,678		113,051		54,927		52,732		35,679		30,661		48,326		1,034,518	

Table 17. Number of parties targeting different combinations of species, open-water-day, Mille Lacs Lake, 2010.

Primary Targeted Species	Secondary Targeted Species: Walleye	Yellow Perch	Northern Pike	Muskellunge	Smallmouth Bass	Other
Walleye	1625	33	6	7	16	2
Yellow Perch	3	14		1	1	
Northern Pike	5		22	3		
Muskellunge	10		3	100	6	1
Smallmouth Bass	4			2	46	5
Other	2			1		33

Table 18. Catch statistics for boats and launches, open-water-day, Mille Lacs Lake, 2010.

	Harvest (N)		Yield (lbs)		Mean	Released (N)		Weight Released (lbs)		Mean
	Estimate	SE	Estimate	SE	Weight (lbs)	Estimate	SE	Estimate	SE	Weight (lbs)
Boats										
Bowfin	0	0	0	0		0	0	0	0	
Tullibee	0	0	0	0		0	0	0	0	
Northern Pike	482	234	1,793	833	3.7	8,750	1,538	42,819	7,194	4.9
Muskellunge	0	0	0	0		510	165	11,939	4,456	23.4
White Sucker	0	0	0	0		0	0	0	0	
Common Carp	0	0	0	0		0	0	0	0	
Bullhead spp.	0	0	0	0		0	0	0	0	
Burbot	0	0	0	0		42	43	9	9	0.2
Bluegill	557	454	142	115	0.3	2,181	1,271	265	153	0.1
Pumpkinseed	0	0	0	0		0	0	0	0	
Hybrid Sunfish	0	0	0	0		0	0	0	0	
Black Crappie	40	40	64	65	1.6	508	511	641	648	1.3
Rock Bass	488	259	418	227	0.9	13,328	2,001	9,230	1,420	0.7
Largemouth Bass	0	0	0	0		3,514	1,462	7,102	2,996	2.0
Smallmouth Bass	560	297	1,647	816	2.9	46,197	7,563	112,304	20,364	2.4
Walleye	134,358	7,579	161,091	9,069	1.2	166,183	9,342	490,838	28,209	3.0
Yellow Perch	38,822	5,187	17,828	2,193	0.5	134,898	20,091	20,822	2,683	0.2
Launches										
Bowfin	0	0	0	0		0	0	0	0	
Tullibee	0	0	0	0		0	0	0	0	
Northern Pike	92	60	1,002	780	10.9	618	423	3,855	2,692	6.2
Muskellunge	0	0	0	0		19	20	364	379	19.2
White Sucker	0	0	0	0		0	0	0	0	
Common Carp	0	0	0	0		0	0	0	0	
Bullhead spp.	0	0	0	0		0	0	0	0	
Burbot	0	0	0	0		0	0	0	0	
Bluegill	0	0	0	0		31	32	19	19	0.6
Pumpkinseed	0	0	0	0		24	25	10	10	0.4
Hybrid Sunfish	0	0	0	0		0	0	0	0	
Black Crappie	0	0	0	0		0	0	0	0	
Rock Bass	0	0	0	0		3,371	1,591	2,428	1,177	0.7
Largemouth Bass	0	0	0	0		0	0	0	0	
Smallmouth Bass	0	0	0	0		1,535	641	4,885	2,397	3.2
Walleye	20,251	2,332	24,778	2,953	1.2	18,599	2,415	43,555	5,080	2.3
Yellow Perch	4,309	882	2,412	543	0.6	14,573	2,670	2,089	463	0.1
Combined										
Bowfin	0	0	0	0		0	0	0	0	
Tullibee	0	0	0	0		0	0	0	0	
Northern Pike	574	242	2,795	1,141	4.9	9,368	1,595	46,674	7,681	5.0
Muskellunge	0	0	0	0		529	166	12,303	4,472	23.3
White Sucker	0	0	0	0		0	0	0	0	
Common Carp	0	0	0	0		0	0	0	0	
Bullhead spp.	0	0	0	0		0	0	0	0	
Burbot	0	0	0	0		42	43	9	9	0.2
Bluegill	557	454	142	115	0.3	2,212	1,271	284	154	0.1
Pumpkinseed	0	0	0	0		24	25	10	10	0.4
Hybrid Sunfish	0	0	0	0		0	0	0	0	
Black Crappie	40	40	64	65	1.6	508	511	641	648	1.3
Rock Bass	488	259	418	227	0.9	16,699	2,556	11,658	1,844	0.7
Largemouth Bass	0	0	0	0		3,514	1,462	7,102	2,996	2.0
Smallmouth Bass	560	297	1,647	816	2.9	47,732	7,590	117,189	20,504	2.5
Walleye	154,609	7,929	185,869	9,537	1.2	184,782	9,649	534,393	28,663	2.9
Yellow Perch	43,131	5,261	20,240	2,259	0.5	149,471	20,267	22,911	2,722	0.2

Table 19. History of open-water-day harvest, Mille Lacs Lake.

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Total angler-hrs	1,263,034	1,037,565	969,034	1,528,270	1,427,552	1,106,170	977,789	1,149,577	1,697,442	1,543,737	1,284,719	1,601,228	1,278,635	1,337,429	1,903,488	1,430,657	1,326,534
Total harvest (N)																	
Northern pike	574	268	649	1,262	412	503	1,116	1,451	1,654	3,945	3,012	1,417	2,008	2,736	5,013	2,937	1,847
Muskellunge	0	0	0	0	0	80	36	62	63	66	167	0	0	-	-	62	-
Carp	0	0	405	1,987	0	137	0	0	0	858	0	1,015	0	147	387	-	-
Bullhead	0	0	0	16	96	0	0	0	0	0	0	0	0	177	-	-	-
Burbot	0	0	0	0	0	0	0	0	0	0	0	0	0	-	83	74	-
Rock bass	488	0	628	268	449	123	604	0	880	181	1,959	895	1,216	4,589	1,429	2,244	4,543
Sunfish	557	401	821	1,042	3,880	0	381	316	2,131	1,860	2,017	347	420	415	54	-	97
Smallmouth bass	560	545	86	296	77	432	168	80	281	202	205	681	742	478	333	403	842
Largemouth bass	0	211	82	121	0	0	0	0	0	0	0	0	0	48	-	-	-
Black crappie	40	0	709	1,657	95	0	0	0	38	0	682	0	0	104	579	-	125
Yellow perch	43,131	16,620	12,394	39,368	64,805	48,067	30,417	14,199	10,705	51,251	138,178	123,807	123,261	90,579	70,955	58,672	62,760
Walleye	154,609	73,915	41,950	154,263	200,354	117,977	27,835	19,775	87,030	88,848	92,426	250,805	119,267	112,021	333,758	193,109	130,832
Total harvest-lbs																	
Northern pike	2,795	1,081	3,359	5,272	3,185	2,235	4,196	3,997	6,216	12,878	11,609	6,968	8,191	14,398	24,157	11,513	7,047
Muskellunge	0	0	0	0	0	2,882	626	3,216	1,659	2,757	4,770	0	0	-	-	1,237	-
Carp	0	0	7,460	26,050	0	1,248	0	0	0	18,824	0	14,644	0	1,467	3,870	-	-
Bullhead	0	0	0	56	121	0	0	0	0	0	0	0	0	177	-	-	-
Burbot	0	0	0	0	0	0	0	0	0	0	0	0	0	-	167	112	-
Rock bass	418	0	457	189	324	91	384	0	637	104	1,058	557	808	3,240	1,049	1,683	3,039
Sunfish	142	45	326	435	1,581	0	175	103	390	509	514	144	92	166	16	-	48
Smallmouth bass	1,647	1,172	342	799	120	963	437	173	459	267	419	1,859	1,538	583	349	403	902
Largemouth bass	0	288	54	193	0	0	0	0	0	0	0	0	0	53	-	-	-
Black crappie	64	0	533	1,188	50	0	0	0	37	0	363	0	0	73	347	-	86
Yellow perch	20,240	10,042	5,686	19,958	33,030	22,326	18,427	7,841	4,602	22,975	58,544	53,498	48,729	34,036	31,019	28,259	29,559
Walleye	185,869	92,846	49,740	247,688	288,315	146,566	59,676	28,601	102,410	172,855	141,020	454,921	244,970	236,050	557,910	302,088	175,862

Table 19. Continued

	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982*	1981*	1977	1976	1962	1961
Total angler-hrs	1,942,424	2,314,115	1,650,544	1,667,618	1,673,018	1,987,526	1,524,464	1,259,828	949,479	1,104,993	945,080	692,252	751,049	1,121,548	1,005,313	631,925	732,685
Total harvest (N)																	
Northern pike	2,124	4,387	3,989	8,782	4,858	4,506	7,690	4,368	3,741	8,394	3,363	2,546	5,490	6,853	3,355	closed	1,017
Muskellunge	21	-	-	159	135	-	-	-	-	-	-	-	-				
Carp	-	79	-	630	-	-	967	65	427	-	195	62	-				
Bullhead	-	126	144	146	426	-	-	111	143	543	201	378	468				
Burbot	-	-	-	-	-	-	-	-	-	-	27	100	-				
Rock bass	2,012	3,473	3,391	2,412	2,517	1,818	1,173	1,000	2,074	1,389	1,718	1,032	1,145				
Sunfish	-	81	96	88	-	387	-	111	4,562	234	341	277	-				
Smallmouth bass	1,073	2,577	1,337	1,050	1,593	850	650	283	514	62	132	33	52				
Largemouth bass	-	-	-	-	113	-	-	-	94	97	-	-	-				
Black crappie	466	2,737	1,102	1,255	-	338	752	111	-	87	223	49	2,861				
Yellow perch	32,431	34,792	115,341	44,971	116,787	57,962	30,214	51,365	50,705	31,950	93,188	51,072	61,280	75,321	52,704	25,319	15,749
Walleye	271,133	616,202	326,022	285,131	221,679	427,775	219,989	167,735	85,233	236,338	251,242	122,300	152,968	276,630	198,507	166,638	188,985
Total harvest-lbs																	
Northern pike	10,647	19,392	19,932	40,810	23,977	24,106	37,101	27,785	17,409	26,447	12,213	10,989	17,665	35,483	16,350	closed	4,605
Muskellunge	420	-	-	2,387	1,375	-	-	-	-	-	-	-					
Carp	-	785	-	6,296	-	-	15,402	931	4,958	-	1,742	648					
Bullhead	-	126	144	109	426	-	-	100	167	509	298	382	497				
Burbot	-	-	-	-	-	-	-	-	-	-	41	200					
Rock bass	1,461	2,601	2,543	1,809	1,426	1,110	793	730	1,375	1,006	1,286	1,351	961				
Sunfish	-	32	38	44	-	128	-	33	2,281	117	149	146					
Smallmouth bass	1,180	2,839	1,460	1,050	1,709	1,033	1,174	501	452	93	290	83	78				
Largemouth bass	-	-	-	-	113	-	-	-	113	122	-	-	-				
Black crappie	297	1,376	827	941	-	381	863	393	-	44	158	10	2,146				
Yellow perch	15,075	17,198	48,411	20,745	56,949	32,795	16,018	33,556	31,504	16,346	48,716	24,394	27,393	38,904	28,375	21,773	14,644
Walleye	471,365	977,228	400,336	368,498	345,331	572,889	340,997	296,479	99,435	366,452	285,466	148,372	193,890	397,412	342,285	289,950	339,386

* Effort and harvest statistics for 1981 and 1982 are underestimates.

Table 20. History of open-water-day releases, Mille Lacs Lake.

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
Total angler-hrs	1,263,034	1,037,565	969,034	1,528,270	1,427,552	1,106,170	977,789	1,149,577	1,697,442	1,543,737	1,284,719	1,601,228	1,278,635
Total Release (N)													
Bowfin	0	0	139	0	125	0	42	0	0	109	158	69	0
Tullibee	0	0	0	53	0	0	0	49	0	0	0	0	0
Northern pike	9,368	3,882	6,290	12,250	10,110	6,414	16,751	14,385	14,047	22,624	18,160	8,665	3,662
Muskellunge	529	454	364	1,662	1,559	1,415	1,784	1,441	1,504	2,176	2,133	1,412	685
White Sucker	0	0	0	0	0	0	53	140	71	0	0	37	
Carp	0	0	0	0	0	0	0	0	47	0	0	0	0
Bullhead	0	0	73	80	244	0	291	78	0	191	156	210	254
Burbot	42	504	91	65	199	137	96	153	342	419	41	773	895
Rock bass	16,699	9,612	10,811	9,427	7,682	15,812	18,413	6,999	6,532	9,799	21,517	8,962	20,494
Sunfish	2,212	2,002	3,155	1,245	8,854	252	2,503	353	396	6,595	13,948	333	5,863
Smallmouth bass	47,732	33,344	35,803	32,103	33,373	15,229	18,729	31,871	20,411	26,677	9,435	4,905	3,084
Largemouth bass	3,514	3,895	3,197	3,524	2,930	777	833	3,174	2,007	2,360	1,118	476	190
Black crappie	508	0	953	1,617	55	210	0	246	0	61	197	0	0
Yellow perch	149,471	43,563	52,870	120,639	108,799	114,438	89,412	48,800	16,644	90,769	318,487	442,204	549,105
Walleye	184,782	146,660	95,660	311,646	240,916	130,387	58,414	114,013	1,186,278	417,340	177,098	190,974	80,975
Total Release (lbs)													
Bowfin	0	0	929	0	599	0		0	0				
Tullibee	0	0	0	55	0	0	0	30	0	0	0	0	0
Northern pike	46,674	20,438	34,253	84,186	60,890	38,248	87,243	80,623	66,305	112,579	90,628	47,859	15,184
Muskellunge	12,303	10,640	5,542	37,945	32,280	37,904	45,127	33,641	28,472	42,021	10,175	23,812	8,702
White Sucker	0	0	0	0	0	0				0	0		
Carp	0	0	0	0	0	0	0	0	602	0	0	0	0
Bullhead	0	0	114	126	450	0	311	198	0	165	234	605	184
Burbot	9	462	31	75	215	70	49	124	377	805	34	1,689	727
Rock bass	11,658	6,247	7,747	7,041	5,127	10,285	11,388	4,429	4,196	5,667	11,669	5,142	10,804
Sunfish	284	187	551	102	2,131	93	317	70	40	459	1,379	159	246
Smallmouth bass	117,189	77,922	92,559	78,270	94,941	33,946	43,117	84,298	49,236	63,919	21,341	10,797	6,749
Largemouth bass	7,102	8,197	5,498	6,140	5,468	1,374	1,339	6,619	4,043	3,643	1,300	694	172
Black crappie	641	0	1,173	555	6	63	0	48	0	12	74		0
Yellow perch	22,911	7,822	5,972	18,874	18,237	18,692	13,665	7,297	3,500	20,055	47,011	61,382	77,096
Walleye	534,393	382,912	302,797	1,200,098	961,521	261,615	171,804	488,490	3,414,850	1,157,891	518,713	399,994	94,764

Table 20. Continued.

	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985
Total angler-hrs	1,337,429	1,903,488	1,430,657	1,326,534	1,942,424	2,314,115	1,650,544	1,667,618	1,673,018	1,987,526	1,524,464	1,259,828	949,479
Total Release (N)													
Bowfin	0	0	62	41									
Tullibee	81	431	122	200									
Northern pike	5,084	6,712	5,138	1,937	2,815	3,869	2,920	12,392					
Muskellunge	1,029	1,059	590	846	729	791	599	791					
White Sucker													
Carp	0	0	0	0									
Bullhead	252	664	74	97	228								
Burbot	170	1,515	2,777	681	798								
Rock bass	18,251	21,845	22,303	30,651	42,313	23,093	23,470	9,206					
Sunfish	659	237	0	0	287								
Smallmouth bass	2,921	4,520	2,408	896	2,076	4,181	2,005	2,925					
Largemouth bass	543	446	675	0	51								
Black crappie	0	497	109	311	113								
Yellow perch	212,269	279,213	224,195	124,482	54,803	72,661	208,827	90,407					
Walleye	107,096	137,617	118,630	79,030	158,715	126,332	106,406	674,131	185,764	311,235	471,659	178,568	42,293
Total Release (lbs)													
Bowfin													
Tullibee													
Northern pike													
Muskellunge													
White Sucker													
Carp													
Bullhead													
Burbot													
Rock bass													
Sunfish													
Smallmouth bass													
Largemouth bass													
Black crappie													
Yellow perch													
Walleye	133,592	171,829	84,087	32,595	87,722	166,267	101,587	343,838	151,613	269,709	242,305	61,259	18,661

Table 21. Angler catch rates (no/hr) from boats and launches, Mille Lacs Lake, 2010.

	Day		
	Harvest Rate	Release Rate	Total Catch Rate
Boats			
Bowfin	0	0	0
Tullibee	0	0	0
Northern Pike	0.00047	0.00846	0.00892
Muskellunge	0	0.00049	0.00049
White Sucker	0	0	0
Common Carp	0	0	0
Bullhead spp.	0	0	0
Burbot	0	0.00004	0.00004
Bluegill	0.00054	0.00211	0.00265
Pumpkinseed	0	0	0
Hybrid Sunfish	0	0	0
Black Crappie	0.00004	0.00049	0.00053
Rock Bass	0.00047	0.01288	0.01336
Largemouth Bass	0	0.00340	0.00340
Smallmouth Bass	0.00054	0.04466	0.04520
Walleye	0.12987	0.16064	0.29051
Yellow Perch	0.03753	0.13040	0.16792
Launches			
Bowfin	0	0	0
Tullibee	0	0	0
Northern Pike	0.00040	0.00270	0.00311
Muskellunge	0	0.00008	0.00008
White Sucker	0	0	0
Common Carp	0	0	0
Bullhead spp.	0	0	0
Burbot	0	0	0
Bluegill	0	0.00014	0.00014
Pumpkinseed	0	0.00011	0.00011
Hybrid Sunfish	0	0	0
Black Crappie	0	0	0
Rock Bass	0	0.01475	0.01475
Largemouth Bass	0	0	0
Smallmouth Bass	0	0.00672	0.00672
Walleye	0.08862	0.08139	0.17001
Yellow Perch	0.01886	0.06377	0.08263
Combined			
Bowfin	0	0	0
Tullibee	0	0	0
Northern Pike	0.00045	0.00742	0.00787
Muskellunge	0	0.00042	0.00042
White Sucker	0	0	0
Common Carp	0	0	0
Bullhead spp.	0	0	0
Burbot	0	0.00003	0.00003
Bluegill	0.00044	0.00175	0.00219
Pumpkinseed	0	0.00002	0.00002
Hybrid Sunfish	0	0	0
Black Crappie	0.00003	0.00040	0.00043
Rock Bass	0.00039	0.01322	0.01361
Largemouth Bass	0	0.00278	0.00278
Smallmouth Bass	0.00044	0.03779	0.03823
Walleye	0.12241	0.14630	0.26871
Yellow Perch	0.03415	0.11834	0.15249

Table 22. Length distribution of harvested walleye by sampling period, Mille Lacs Lake, 2010.

Total length (inches)	May 10- 31	June 1 -15	June 16 - 30	July 1 - 15	July 16 - 31	Aug 1 - 15	Aug 16 - 31	Sep 1 - 15	Sep 15 - 30	Oct 1 - 31	Season Total
8 -8.9	0	0	0	0	0	59	0	0	0	0	59
9 -9.9	59	0	0	0	45	0	0	0	46	0	150
10 -10.9	129	46	128	78	306	59	0	0	46	0	792
11 -11.9	1,087	364	642	117	252	206	73	0	0	446	3,187
12 -12.9	8,511	3,076	2,642	539	375	0	611	213	273	628	16,868
13 -13.9	13,131	6,558	5,032	2,313	1,404	138	614	789	683	447	31,108
14 -14.9	10,279	5,467	4,114	1,657	1,801	549	775	841	510	777	26,771
15 -15.9	9,448	4,389	4,051	1,554	1,210	536	458	1,062	480	1,099	24,287
16 -16.9	9,974	4,826	4,065	1,340	913	524	475	561	445	816	23,940
17 -17.9	7,526	3,831	2,632	1,487	722	313	391	468	199	699	18,268
18 -18.9	863	318	156	154	1,098	553	246	344	280	890	4,902
19 -19.9	128	45	0	0	1,439	287	831	361	528	161	3,781
20 -20.9	0	0	0	0	101	0	0	62	0	92	255
21 -21.9	0	0	0	0	0	0	0	0	0	0	0
22 -22.9	0	0	0	0	0	0	0	0	0	0	0
23 -23.9	0	0	0	0	0	0	0	0	0	0	0
24 -24.9	0	0	0	0	0	59	0	0	0	0	59
25 -25.9	0	0	0	0	0	0	0	0	0	0	0
26 -26.9	0	0	0	0	0	0	0	0	0	0	0
27 -27.9	57	0	0	0	0	0	36	0	0	0	94
28 -28.9	0	91	0	0	0	0	0	0	0	0	91
29 -29.9	0	0	0	0	0	0	0	0	0	0	0
30 -30.9	0	0	0	0	0	0	0	0	0	0	0
31 -31.9	0	0	0	0	0	0	0	0	0	0	0
	61,190	29,012	23,462	9,239	9,667	3,285	4,509	4,700	3,491	6,055	154,610

Table 23. Age-length distribution of harvested walleye, open-water-day, Mille Lacs Lake, 2010.

Total length (incl	1	2	3	4	5	6	7	8	9	10+	Total
6 -6.9											0
7 -7.9											0
8 -8.9	59										59
9 -9.9	46	103	1								150
10 -10.9	76	588	129								793
11 -11.9		1,046	2,142								3,188
12 -12.9		1,941	14,927								16,868
13 -13.9		2,104	27,659	1,346							31,109
14 -14.9		613	19,832	5,298	1,026						26,770
15 -15.9			6,837	15,874	1,575						24,286
16 -16.9			2,230	14,197	7,289	223					23,939
17 -17.9			506	8,700	7,400	1,436	226				18,268
18 -18.9			61	1,889	2,006	348	201	397			4,902
19 -19.9				903	2,104	233	269	214	13	45	3,780
20 -20.9				8	86	9	51	57	9	35	255
21 -21.9											0
22 -22.9											0
23 -23.9											0
24 -24.9							2	4	2	51	59
25 -25.9											0
26 -26.9											0
27 -27.9										93	93
28 -28.9										91	91
29 -29.9											0
30 -30.9											0
31 -31.9											0
Total	181	6,395	74,324	48,215	21,486	2,249	750	672	24	314	154,610

Table 24. Length distribution of released walleye by sampling period, Mille Lacs Lake, 2010.

Total length (inches)	May 10 - 31	June 1 -15	June 16 - 30	July 1 - 15	July 16 - 31	Aug 1 - 15	Aug 16 - 31	Sep 1 - 15	Sep 15 - 30	Oct 1 - 31	Season Total
<5.0	97	0	0	0	0	0	0	0	0	0	97
5 -5.9	0	0	0	0	0	147	0	0	0	0	147
6 -6.9	182	202	304	36	145	44	98	107	276	206	1,599
7 -7.9	164	40	275	0	48	51	0	0	0	0	578
8 -8.9	678	443	440	190	324	95	250	89	138	0	2,647
9 -9.9	164	79	375	0	66	0	304	0	0	0	987
10 -10.9	3,335	2,801	1,724	1,044	613	135	1,028	2,347	276	436	13,740
11 -11.9	624	395	586	230	300	301	28	590	138	436	3,629
12 -12.9	4,217	3,458	1,945	1,048	829	726	755	900	46	1,582	15,504
13 -13.9	3,058	1,389	2,369	389	180	597	322	383	0	0	8,688
14 -14.9	1,168	1,588	857	653	191	0	509	101	54	0	5,121
15 -15.9	430	289	177	544	97	88	0	41	0	62	1,727
16 -16.9	865	578	531	145	222	44	253	54	0	185	2,876
17 -17.9	1,077	293	423	145	97	0	253	0	0	215	2,503
18 -18.9	4,389	3,217	2,992	1,252	208	44	0	0	0	154	12,255
19 -19.9	5,835	3,012	3,566	2,381	485	0	0	81	0	154	15,513
20 -20.9	5,532	3,238	2,645	1,688	600	385	413	99	200	584	15,384
21 -21.9	5,964	2,967	3,014	1,528	1,027	453	118	272	292	92	15,727
22 -22.9	7,376	3,317	3,262	2,450	1,874	404	647	332	238	414	20,314
23 -23.9	4,219	2,076	2,277	1,954	989	280	278	262	238	291	12,866
24 -24.9	4,557	2,227	2,825	1,671	894	373	576	173	260	222	13,779
25 -25.9	2,702	921	2,007	1,009	764	309	104	68	127	185	8,194
26 -26.9	2,778	1,409	1,615	781	402	126	290	68	46	69	7,585
27 -27.9	668	412	630	322	200	44	0	41	46	0	2,362
28 -28.9	515	83	79	0	48	51	0	47	0	62	885
29 -29.9	0	0	0	36	0	0	0	0	0	0	36
30 -30.9	0	40	0	0	0	0	0	0	0	0	40
31 -31.9	0	0	0	0	0	0	0	0	0	0	0
32 -32.9	0	0	0	0	0	0	0	0	0	0	0
	60,594	34,472	34,918	19,498	10,602	4,698	6,227	6,056	2,373	5,346	184,784

Table 25. Age-length distribution of released walleye, open-water-day, Mille Lacs Lake, 2010.

Total length (incl	0	1	2	3	4	5	6	7	8	9	10+	Total
4 -4.9		97										97
5 -5.9	147											147
6 -6.9	687	913										1,600
7 -7.9		394	183									577
8 -8.9	69	1,237	1,341									2,647
9 -9.9		336	647	4								987
10 -10.9		4,154	7,879	1,708								13,741
11 -11.9		309	1,702	1,617								3,628
12 -12.9			4,427	11,077								15,504
13 -13.9			789	7,520	379							8,688
14 -14.9			195	3,562	1,093	270						5,121
15 -15.9				534	1,043	150						1,727
16 -16.9				375	1,756	721	24					2,876
17 -17.9				76	1,240	1,012	150	25				2,503
18 -18.9				6	385	8,684	822	1,363	995			12,255
19 -19.9					147	5,399	2,418	3,295	4,019	235		15,513
20 -20.9					46	1,884	1,246	4,967	4,808	529	1,905	15,384
21 -21.9						187	944	1,127	7,693	8	5,769	15,727
22 -22.9						43	44	1,717	9,040	958	8,512	20,314
23 -23.9							23	1,041	1,445	1,033	9,324	12,866
24 -24.9								48	878	80	12,773	13,779
25 -25.9								13	26	13	8,142	8,194
26 -26.9											7,585	7,585
27 -27.9											2,362	2,362
28 -28.9											885	885
29 -29.9											36	36
30 -30.9											40	40
31 -31.9												
32 -32.9												
Total	903	7,440	17,163	26,480	6,090	18,348	5,670	13,596	28,904	2,856	57,334	184,784

Table 26. Length distribution of harvested fishes other than walleye, open-water-day, Mille Lacs Lake, 2010.

Total length (inches)		Rock Bass	Bluegill	Northern Pike	Black Crappie	Smallmouth Bass	Yellow Perch
3.0	-3.4						
3.5	-3.9						
4.0	-4.4						119
4.5	-4.9						119
5.0	-5.4						59
5.5	-5.9						178
6.0	-6.4		86				119
6.5	-6.9		171				357
7.0	-7.4		257				1,249
7.5	-7.9		43				2,142
8.0	-8.4	81					3,510
8.5	-8.9	41					4,581
9.0	-9.4	41					7,079
9.5	-9.9	41					6,485
10.0	-10.4	81					5,771
10.5	-10.9	81					4,997
11.0	-11.4	41				70	2,737
11.5	-11.9						1,725
12.0	-12.9	81				70	1,666
13.0	-13.9				40		178
14.0	-14.9						59
15.0	-15.9					70	
16.0	-16.9					140	
17.0	-17.9						
18.0	-18.9					70	
19.0	-19.9						
20.0	-20.9						
21.0	-21.9			41		140	
22.0	-22.9			41			
23.0	-23.9			287			
24.0	-24.9			41			
25.0	-25.9						
26.0	-26.9			41			
27.0	-27.9						
28.0	-28.9						
29.0	-29.9						
30.0	-30.9						
31.0	-31.9						
32.0	-32.9						
33.0	-33.9						
34.0	-34.9						
35.0	-35.9						
36.0	-36.9			41			
37.0	-37.9			41			
38.0	-38.9			41			
39.0	-39.9						
40.0	-40.9						
41.0	-41.9						
42.0	-42.9						
Total		488	557	574	40	560	43,131

Table 27. Length frequency distribution of released fishes other than walleye, open-water-day, Mille Lacs Lake, 2010.

Total length (inches)	Black Crappie	Northern Pike	Muskellunge	Burbot	Bluegill	Pumpkin-seed	Rock Bass	Largemouth Bass	Smallmouth Bass	Yellow Perch
<3.4										134
3.5 -3.9										
4.0 -4.4					565		38			14,204
4.5 -4.9										
5.0 -5.4					753		75		47	10,909
5.5 -5.9										
6.0 -6.4					565		563		187	58,595
6.5 -6.9										
7.0 -7.4					94		450			24,444
7.5 -7.9										
8.0 -8.4					141	24	3,190		468	25,246
8.5 -8.9										
9.0 -9.4				42	47		3,040		281	4,631
9.5 -9.9										45
10.0 -10.4		80					7,768	46	1,309	6,456
10.5 -10.9										
11.0 -11.4	212						338		94	935
11.5 -11.9										
12.0 -12.9							1,126	46	5,750	1,158
13.0 -13.9	254						75	46	1,917	45
14.0 -14.9	42	40					38	324	4,535	45
15.0 -15.9		80						832	7,901	
16.0 -16.9		161						1,063	8,415	
17.0 -17.9		121						647	5,937	
18.0 -18.9		121						277	6,405	
19.0 -19.9								231	2,852	
20.0 -20.9		1,005							1,309	
21.0 -21.9		563							281	
22.0 -22.9		724	44						47	
23.0 -23.9		121								
24.0 -24.9		1,608								
25.0 -25.9		482								
26.0 -26.9		362								
27.0 -27.9		643								
28.0 -28.9		402								
29.0 -29.9		322								
30.0 -30.9		885	44							
31.0 -31.9		161								
32.0 -32.9		281								
33.0 -33.9		281								
34.0 -34.9		40								
35.0 -35.9		161								
36.0 -36.9		241	44							
37.0 -37.9										
38.0 -38.9		121								
39.0 -39.9		161								
40.0 -40.9		80	88							
41.0 -41.9		40	88							
42.0 -42.9		80	44							
43.0 -43.9			44							
44.0 -44.9										
45.0 -45.9			44							
46.0 -46.9										
47.0 -47.9										
48.0 -48.9										
49.0 -49.9										
> 50			88							
Total	508	9,368	529	42	2,165	24	16,699	3,514	47,732	146,844

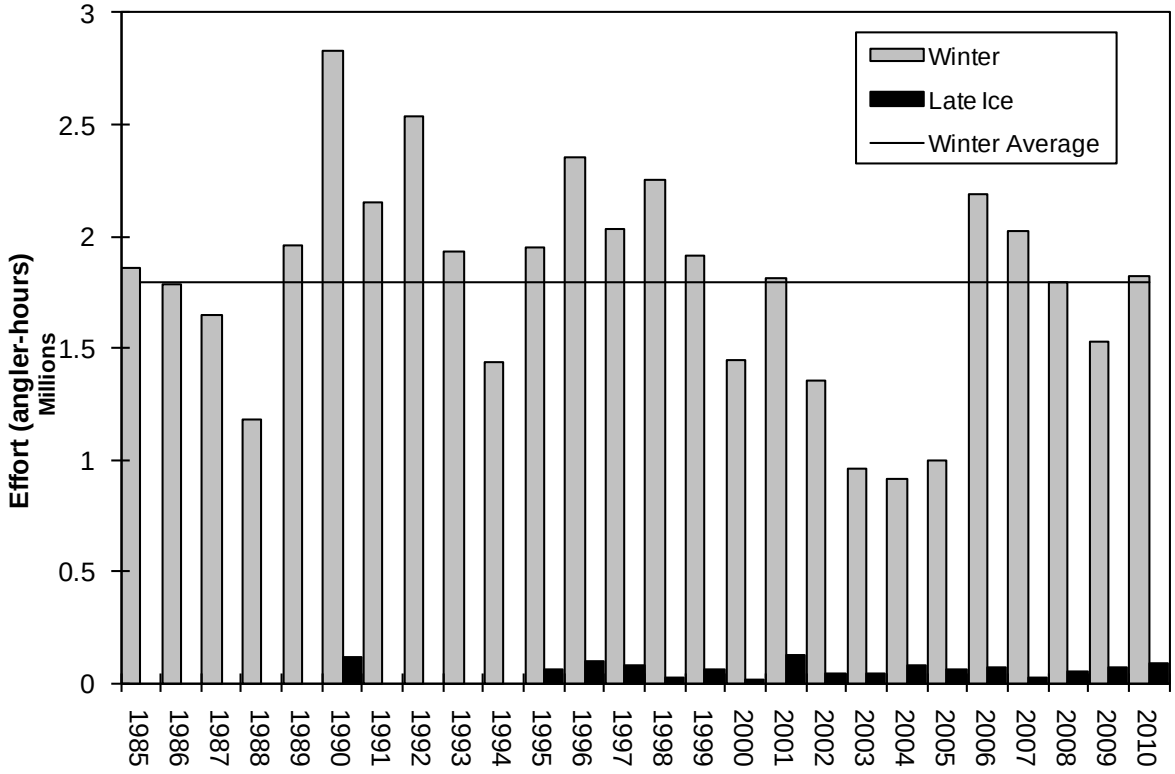

Figure 1. Winter fishing effort, Mille Lacs Lake, 1985-2010

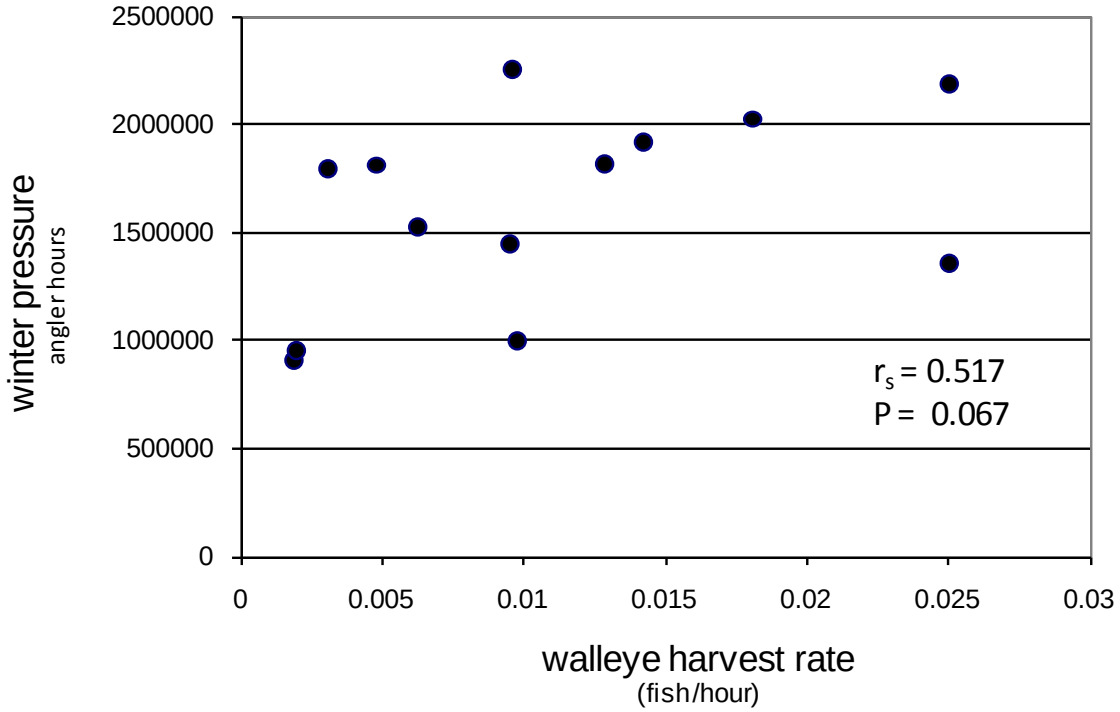

Figure 2. Spearman Rank correlation between winter walleye harvest rate and angler hours during treaty era regulations, Mille Lacs Lake, 1998 - 2010.

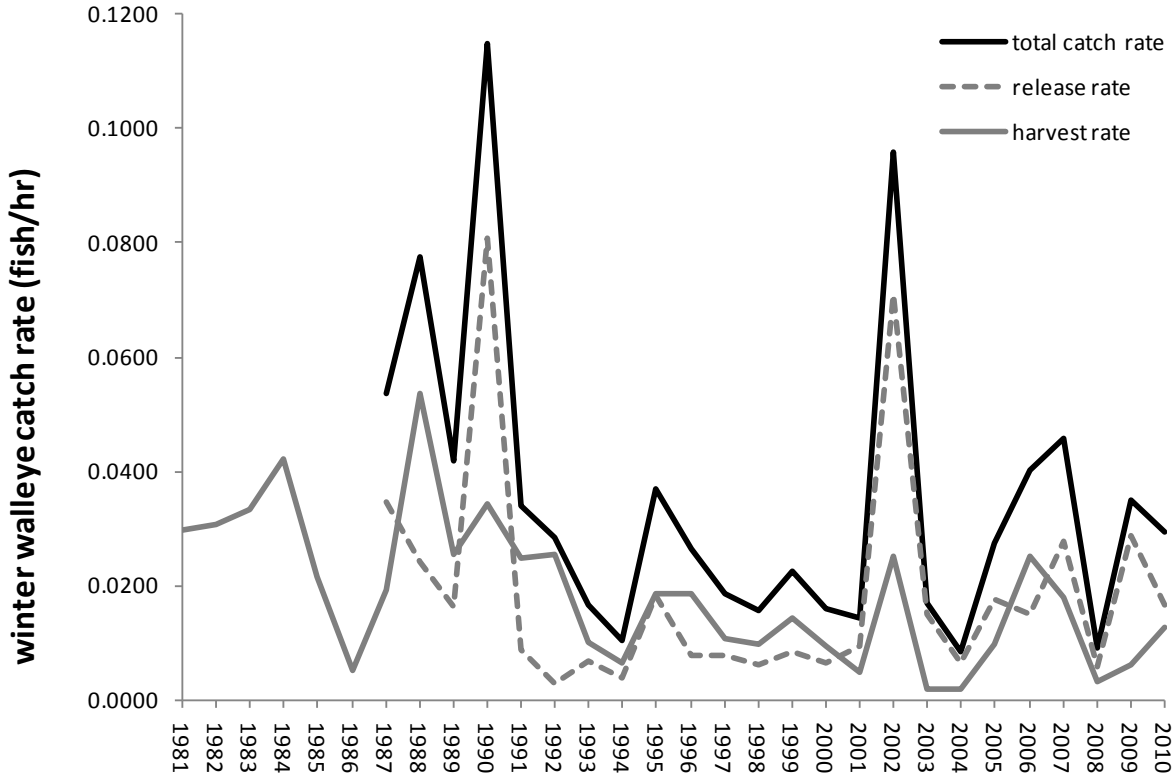

Figure 3. Historical winter walleye catch rates, Mille Lacs Lake, 1981-2010.

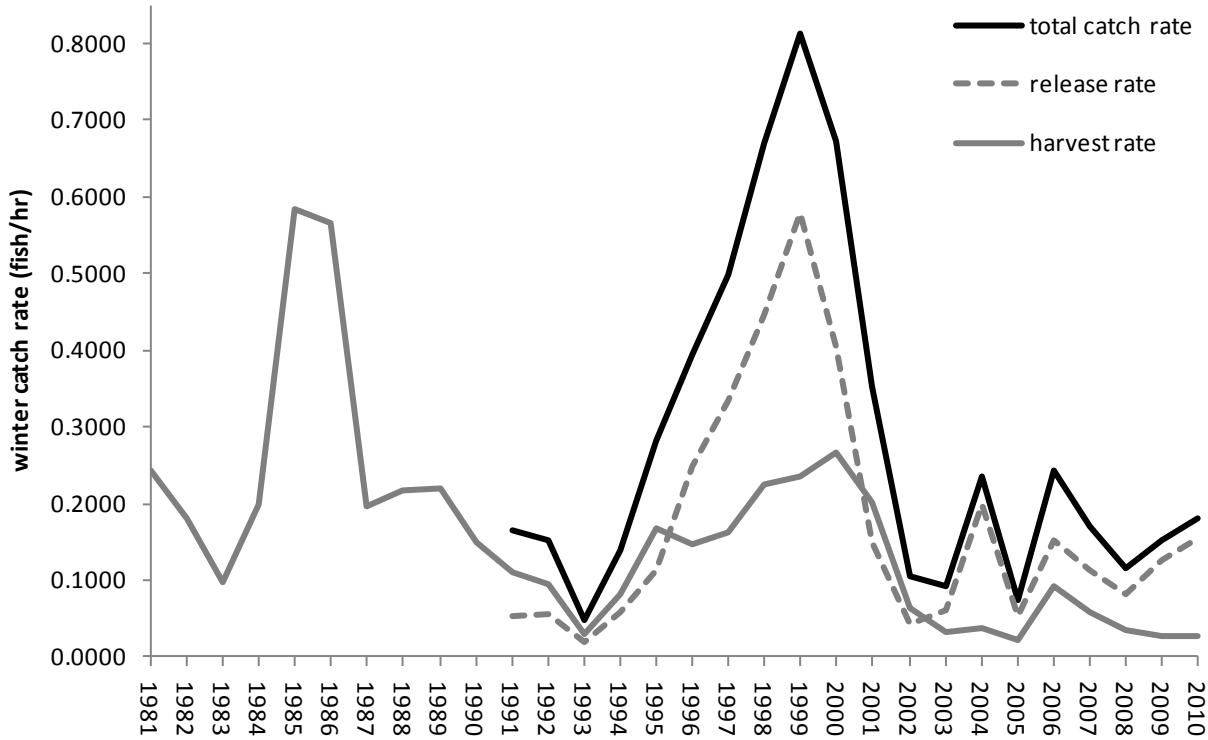

Figure 4. Historical winter yellow perch catch rates, Mille Lacs Lake, 1981-2010.

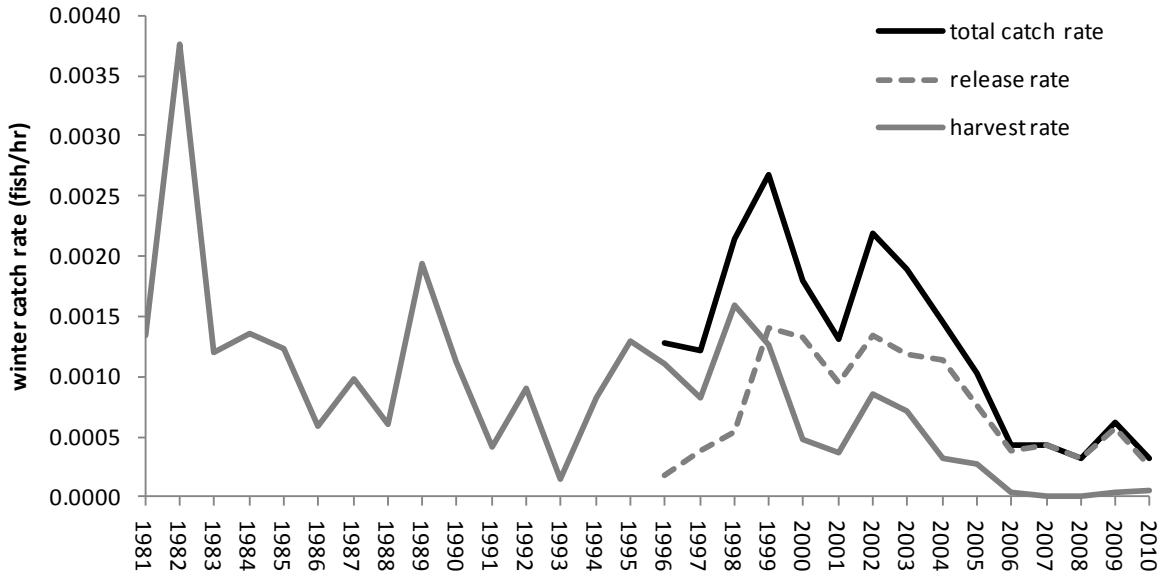

Figure 5. Historical regular winter season northern pike catch rates, Mille Lacs Lake, 1981-2010.

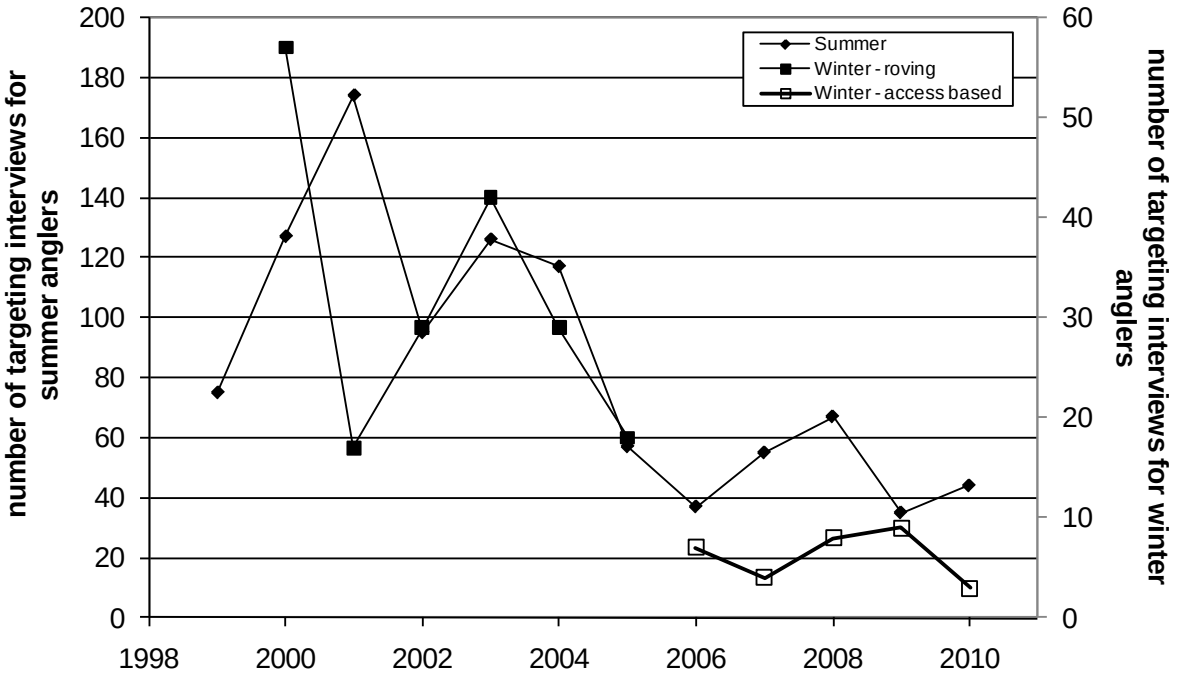

Figure 6. Number of interviews of anglers targeting northern pike in summer and winter creel surveys, Mille Lacs Lake, 1999-2010. Open squares indicate non-uniform probability, access based winter creels. Closed squares show roving winter creels.

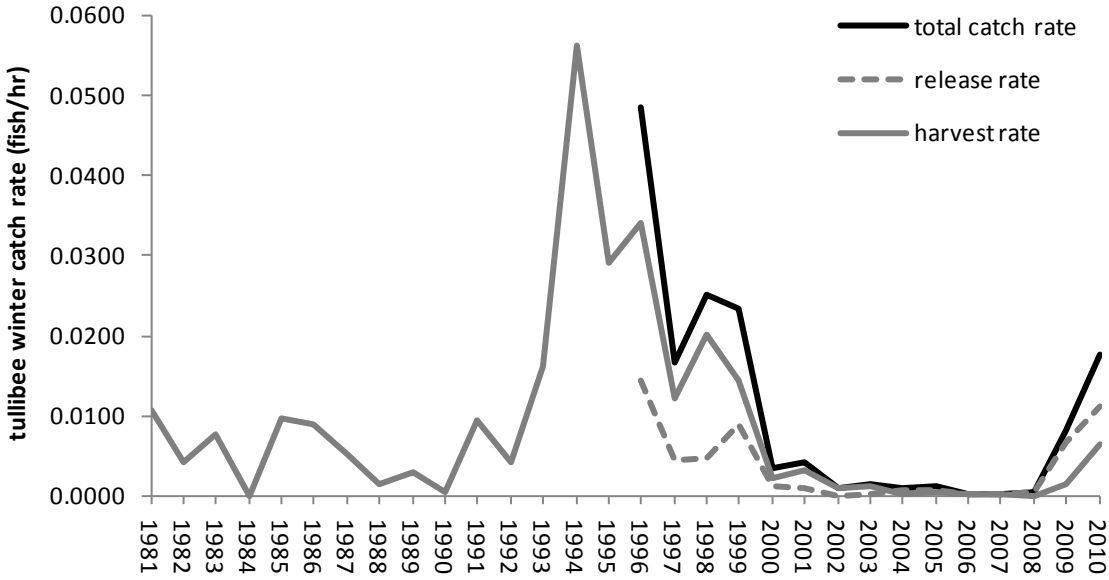

Figure 7. Historical regular winter season tullibee catch rates, Mille Lacs Lake, 1981-2010.

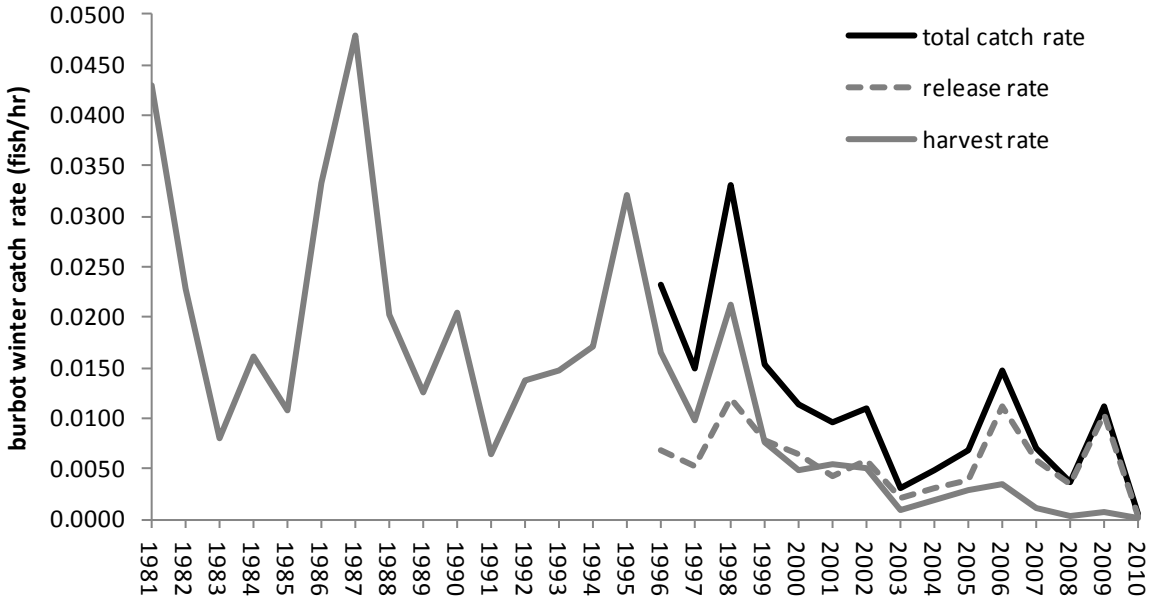

Figure 8. Historical regular winter season burbot catch rates, Mille Lacs Lake, 1981-2010.

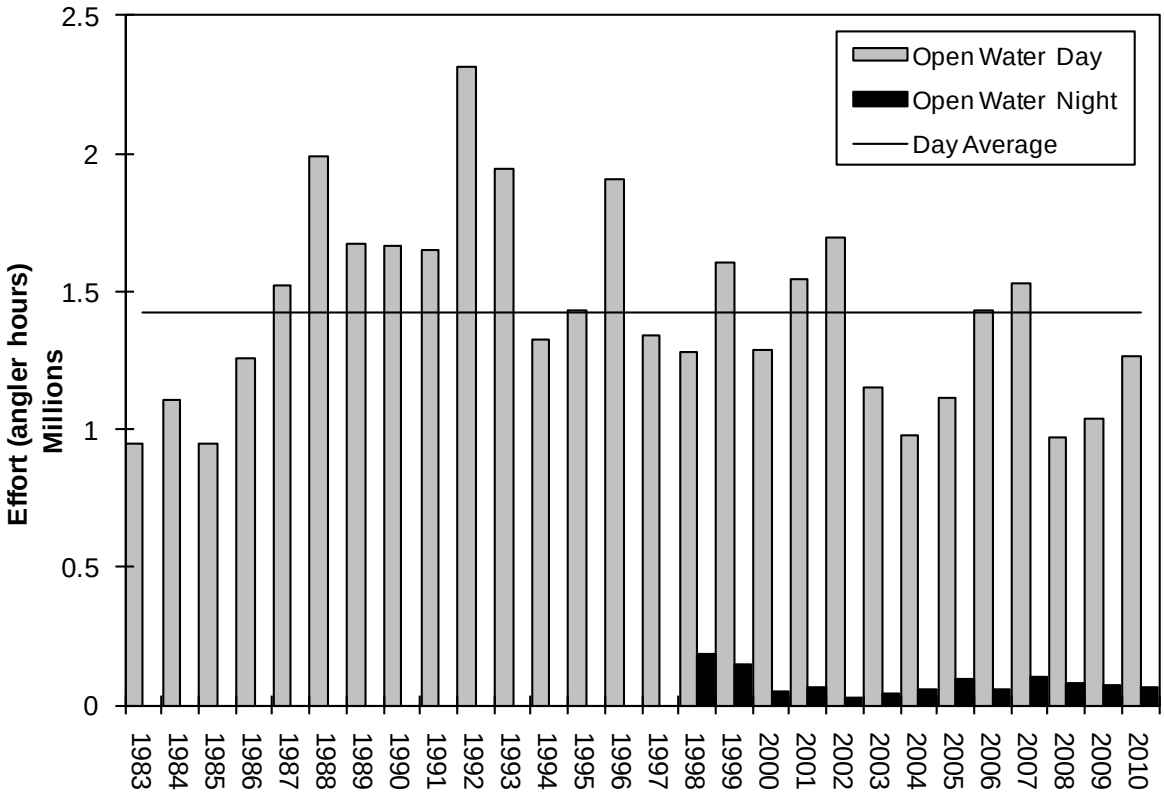

Figure 9. Open water fishing effort, Mille Lacs Lake, 1983-2010.

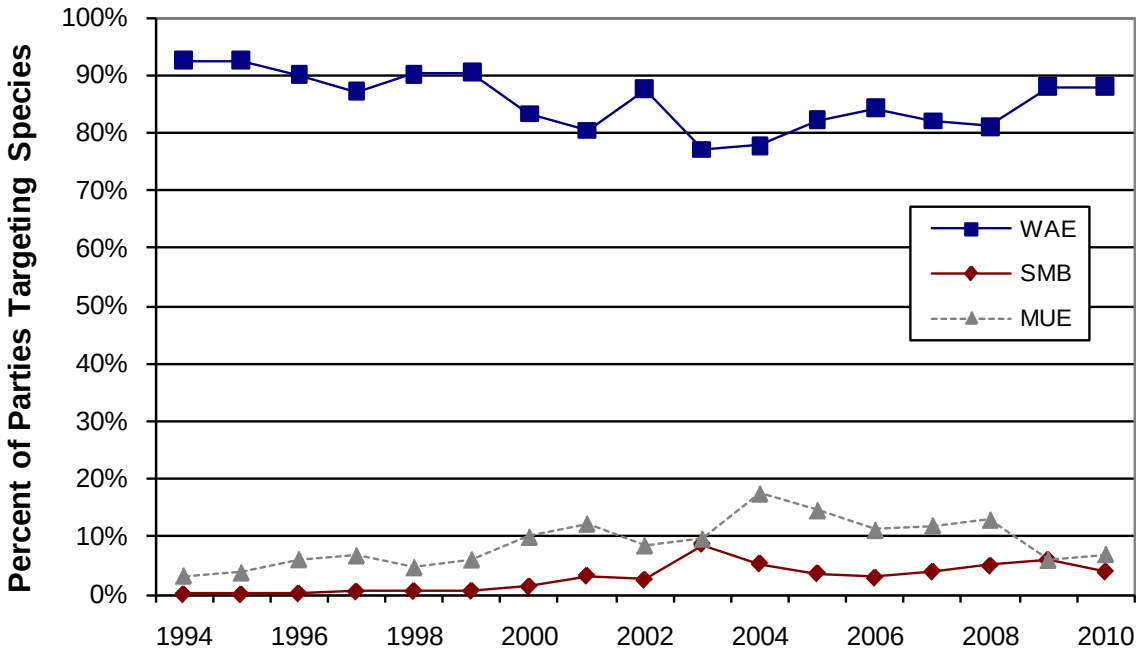

Figure 10. Percent of parties targeting selected species, Mille Lacs Lake, 1994-2010.

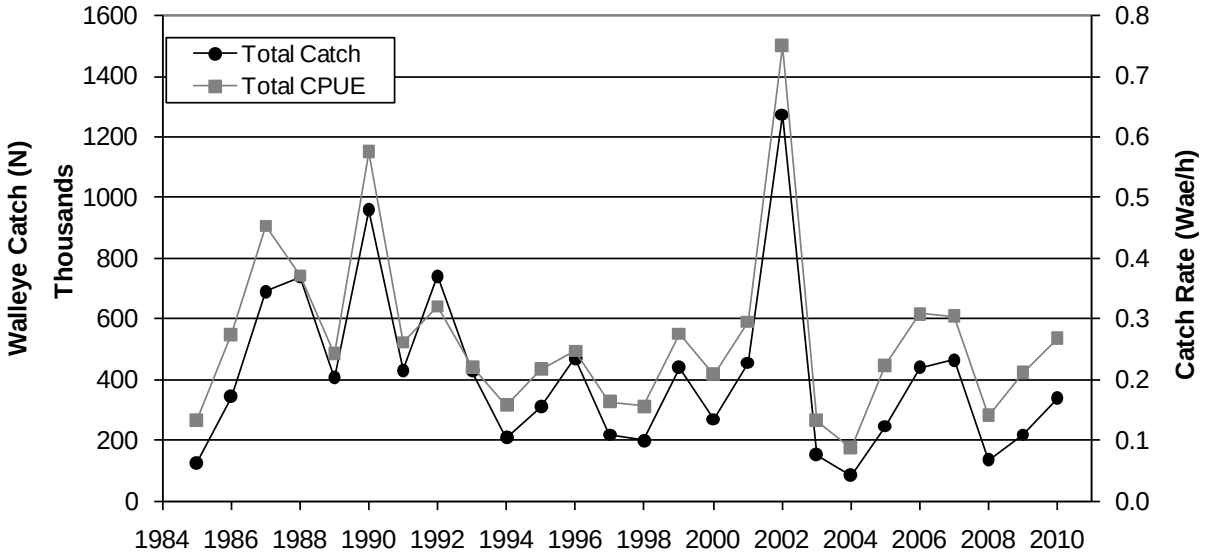

Figure 11. Walleye catch and catch rate for all open-water day anglers, Mille Lacs Lake, 1985-2010.

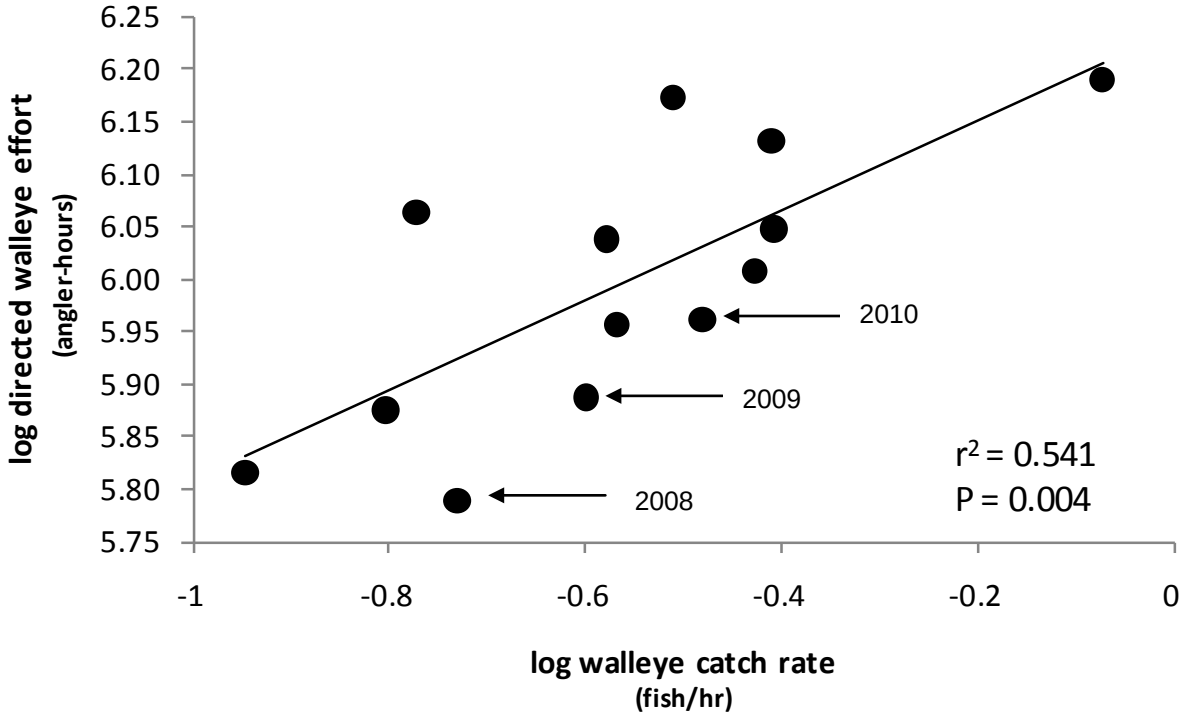

Figure 12. Walleye directed effort at various summer walleye catch rates, from Mille Lacs Lake from 1998 through 2010. The equation for the trend line is log Y = 6.24 + 0.428 · logX and transforms to Y = 1,737,801 ($X^{0.428}$)

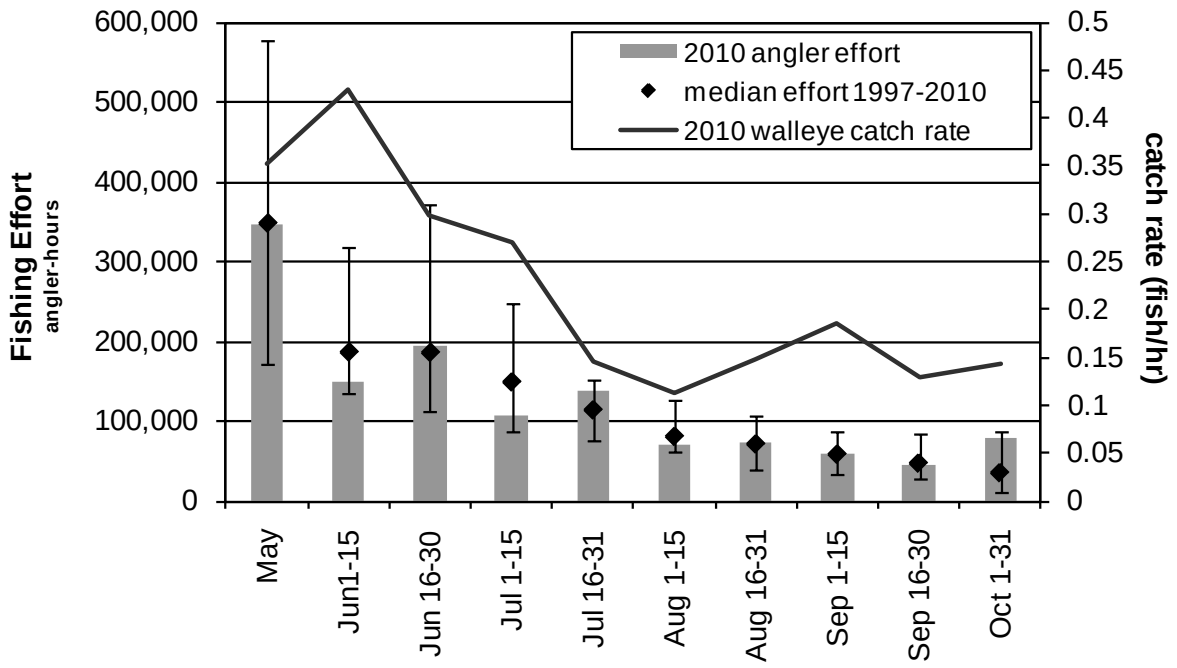

Figure 13. Fishing effort in 2010, by period (grey bars), with median (diamonds) and minimum and maximum (error bars) effort observed from 1997 - 2010.

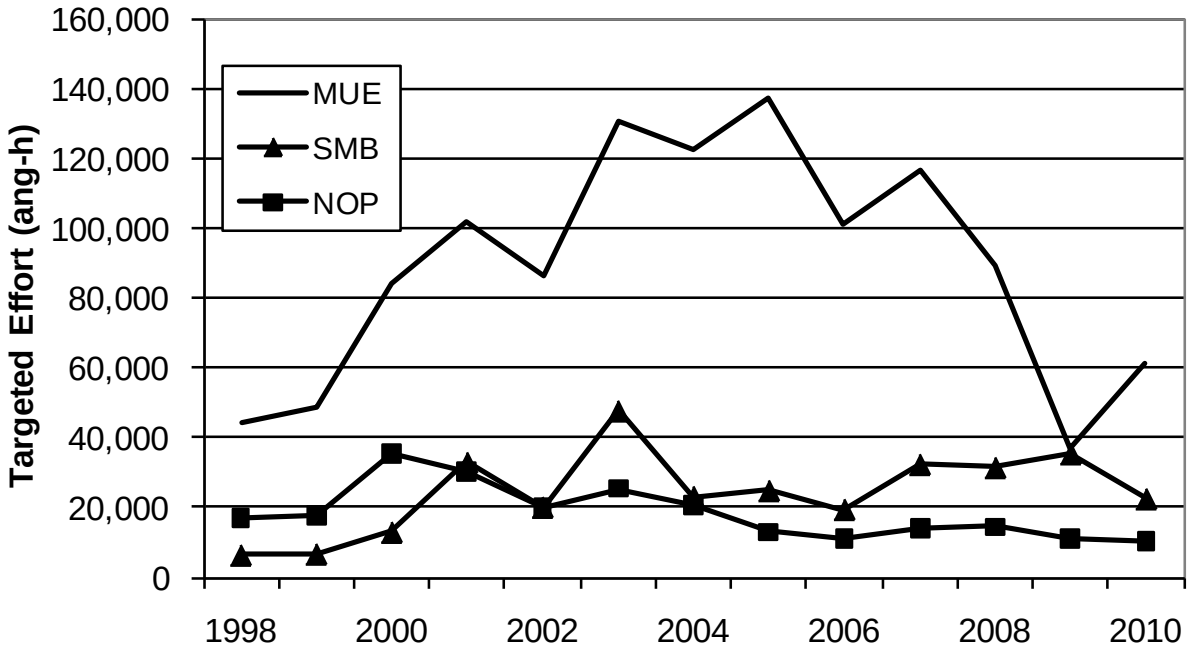

Figure 14. Targeted effort for muskellunge (MUE), smallmouth bass (SMB), and northern pike (NOP), open water day, Mille Lacs Lake, 1998 - 2010.

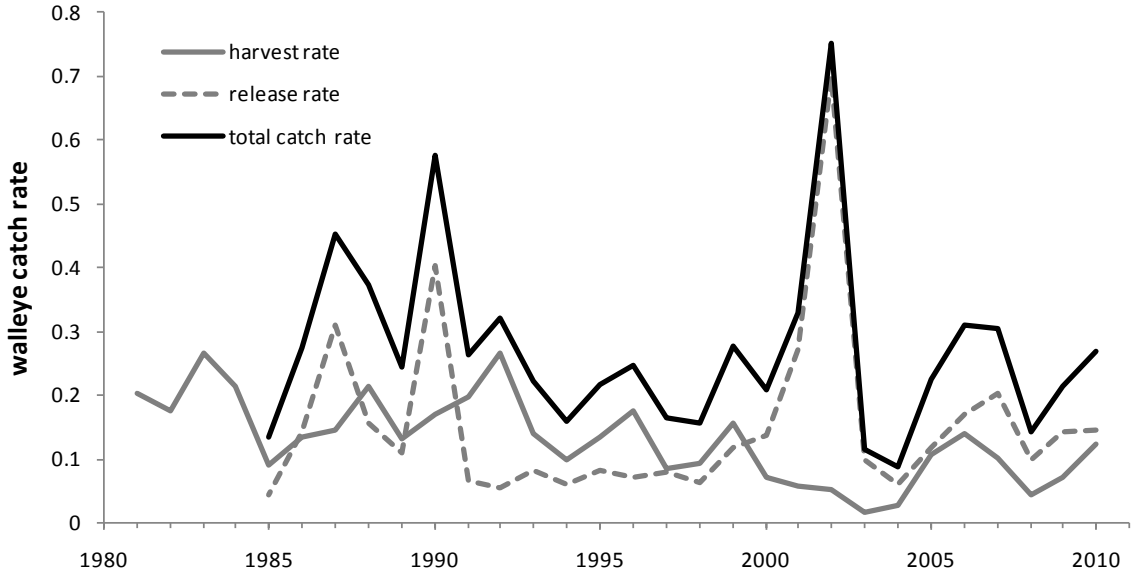

Figure 15. Historical open-water walleye catch rates, Mille Lacs Lake, 1981-2010.

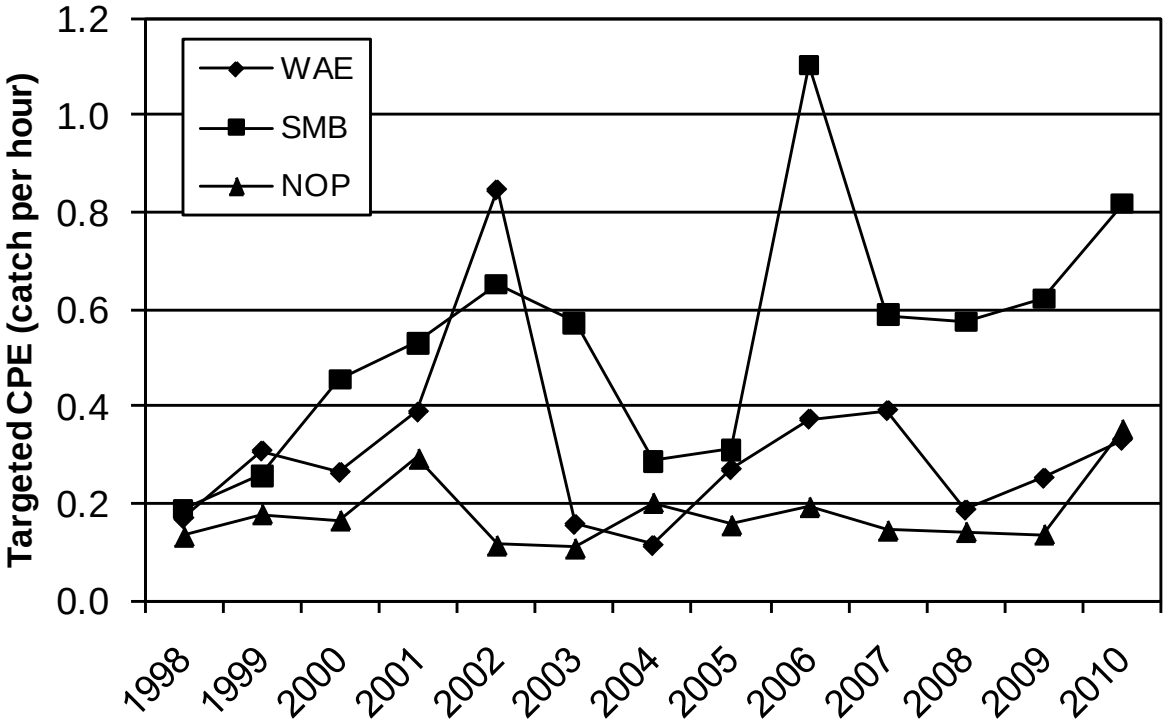

Figure 16. Catch rates for anglers targeting walleye (WAE), smallmouth bass (SMB), and northern pike (NOP), open water day, Mille Lacs Lake, 1998-2010.

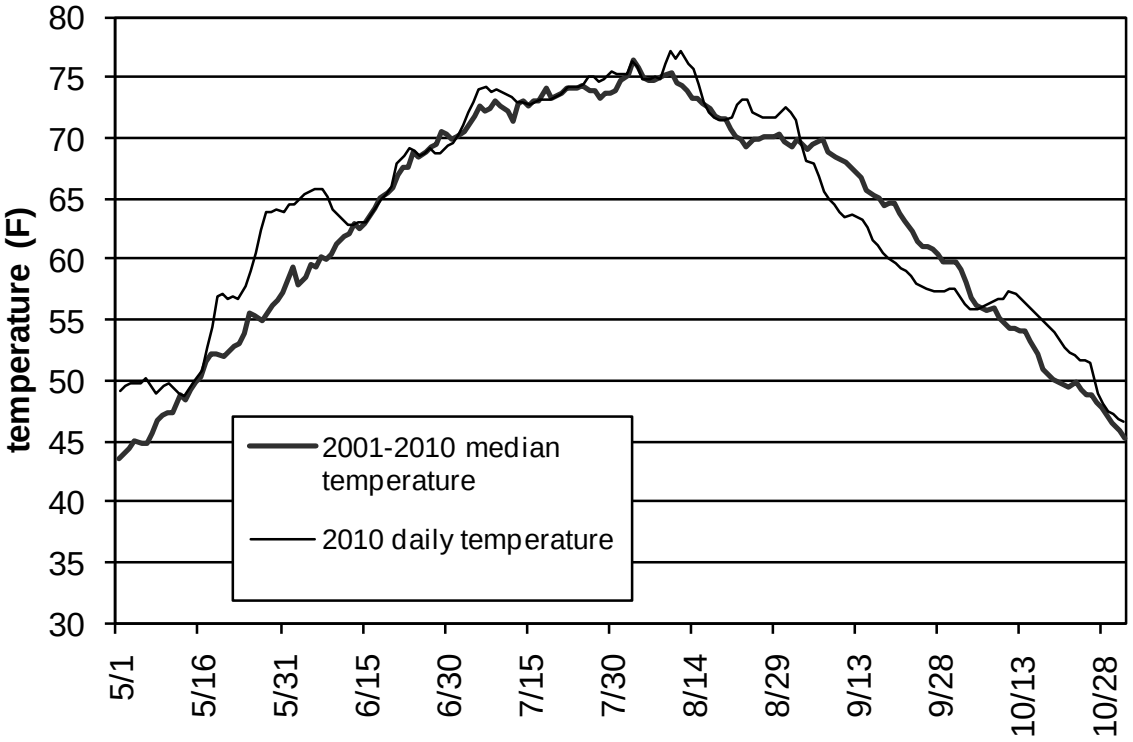

Figure 17. 2001-2010 water temperatures from a mid-lake location in Mille Lacs Lake.

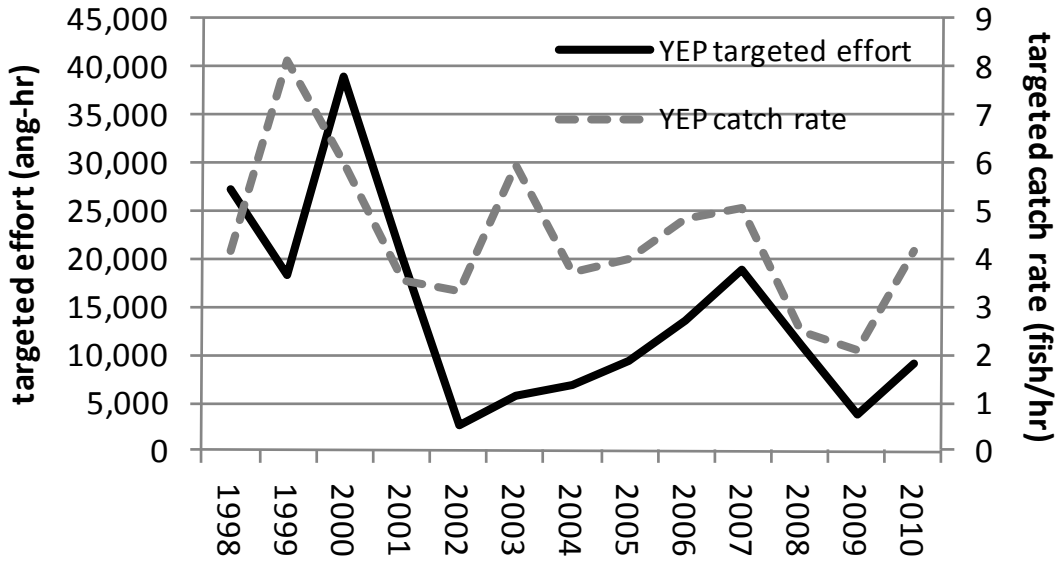

Figure 18. Targeted effort for yellow perch, open-water-day, Mille Lacs Lake, 1998-2010.

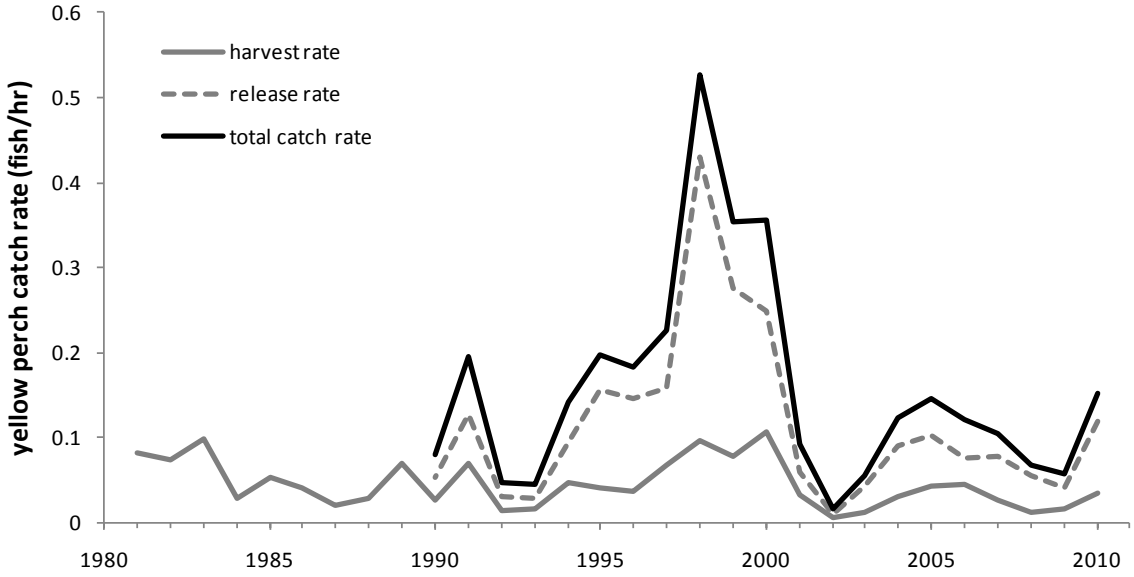

Figure 19. Historical open-water yellow perch catch rates, Mille Lacs Lake, 1981-2010.

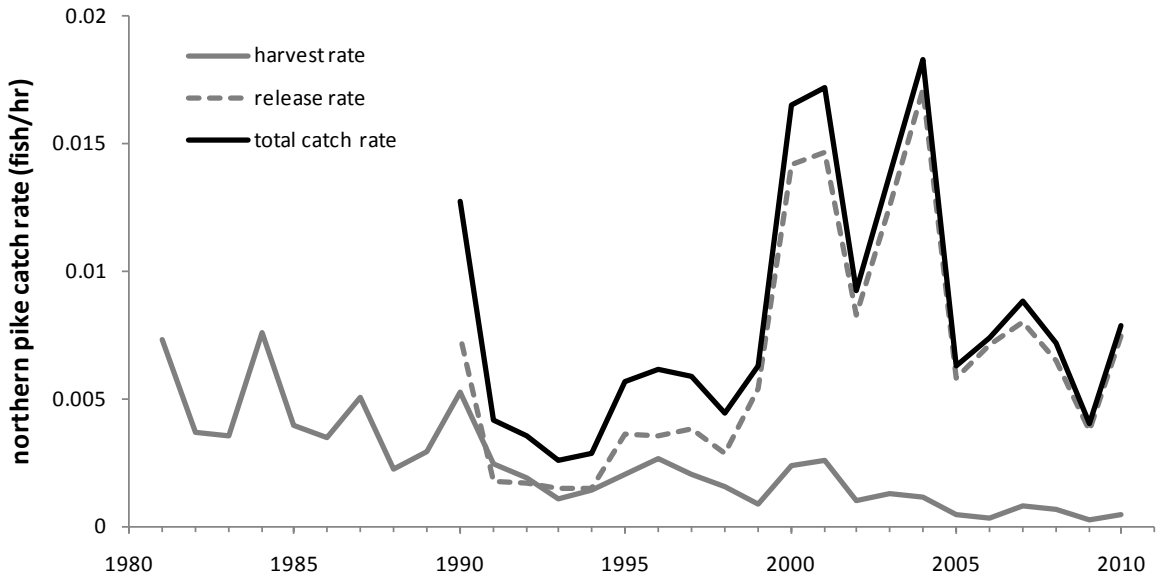

Figure 20. Historical open water season northern pike catch rates, Mille Lacs Lake, 1981-2010.

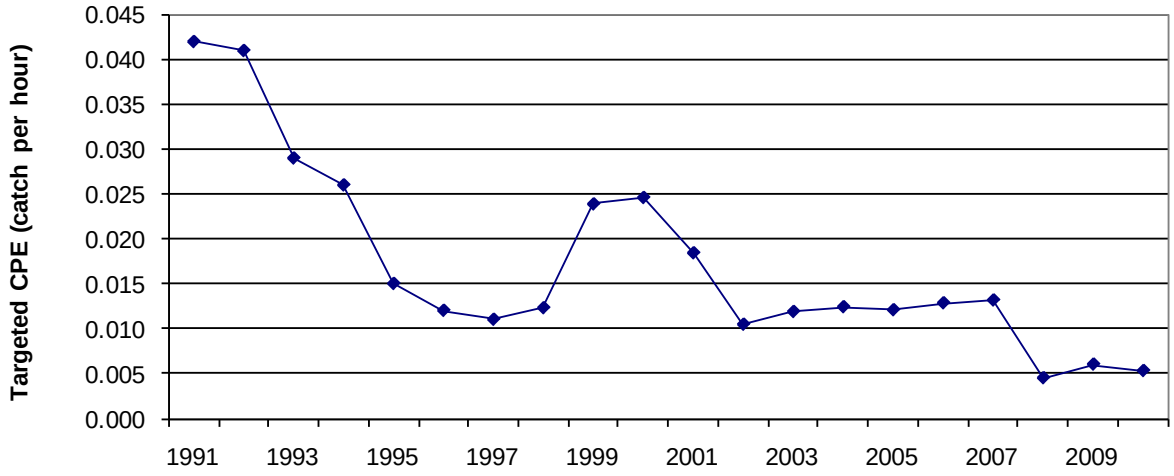

Figure 21. Muskellunge catch rate for targeting anglers, open-water-day, Mille Lacs Lake, 1991-2010.

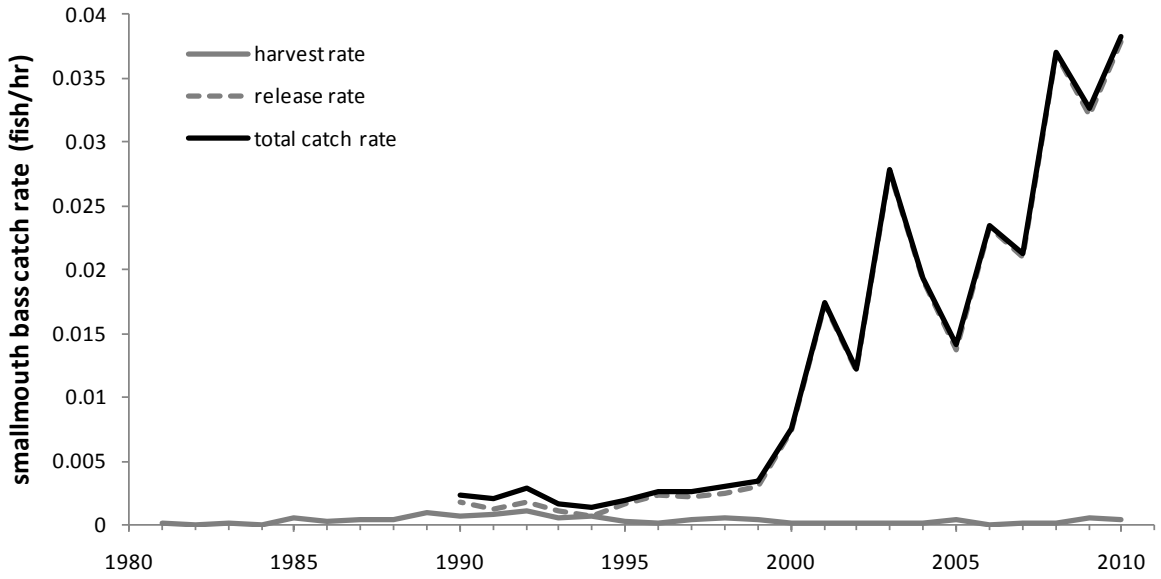

Figure 22. Historical open water season smallmouth bass catch rates, Mille Lacs Lake, 1981-2010.

Completion Report:

Mille Lacs Lake Creel Survey Report for Open Water Seasons of 2010
And Winter Seasons of 2009-2010

Prepared by: Eric Jensen, Fisheries Specialist

Approved by: _____ 3/28/11
Rick Bruesewitz, Area Fisheries Supervisor — Date

Approved by: _____ 5-26-11
Joe Mix, Regional Fisheries Approval — Date

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