

Observations on Minnesota's changing resident angler population using Electronic Licensing System information from 2000 to 2005

07 - 0030

CONTENTS

<u>Topic</u>	<u>Page</u>
Summary	2
Introduction	4
Results	
Age class	5
Region	8
Gender	9
Year last fished	9
References	11
Appendix A: Data tables on Minnesota-licensed resident anglers, 2000 to 2005	12

Prepared by:

Tim Kelly
Minnesota Department of Natural Resources
Office of Management and Budget Services

October 2006

SUMMARY

Introduction

The Electronic Licensing System (ELS) offers an opportunity to track the changing characteristics of Minnesota's hunters and anglers at a detailed level from 2000 to 2005. ELS went into operation in 2000, and information is archived annually. ELS stores information on every hunter/angler (age, gender, location of residence) and activity for which the hunter/angler is licensed (e.g., hunting small game, hunting deer).

In this study, resident angler population trends are examined by age class, region in the state, gender, and last year fished. Comparisons are made with resident hunter population trends, and the trends for hunters and anglers are similar.

Age class

The changes by age class are marked. Younger adults (age 16 to 44) have large decreases in participation rates over the five year period (2000 to 2005), while older adults (age 45+) show relatively stable rates. The angling population is growing older faster than the Minnesota population.

The younger age classes—which have the largest decreasing participation rates—are growing slowly relative to the older age classes that have more stable participation rates. This covariance of population change and participation-rate change has kept license numbers up.

The Minnesota age-class pattern of change is broadly similar to that found for the U.S. angling population as a whole, as well as for the U.S. hunting and wildlife-watching populations. It is also similar to the change pattern for Minnesota hunters and national park visitors. Evidently, younger adults are not participating in these wildlife-associated/nature-based activities like their elders. A generational shift in these activities appears to be taking place.

Region

The Northwest and South Region generally have the least participation decrease between 2000 and 2005. The Central Region has the greatest decrease. The Central Region is the most rapidly growing in the state, and it is becoming more and

more an extension of the Twin Cities Metro Region. The Metro Region (and an urban population in general) has a lower fishing participation rate.

Gender

Females—who comprise just over one-third of resident anglers—have a larger participation rate decrease than males between 2000 and 2005.

Year Last Fished

The large majority of 2004 resident anglers had fished in 2003, with far fewer having fished in 2002 and not fished in 2003. Very few 2004 anglers took two to three years off from fishing (last fished in 2001 or 2000). Some 16 percent of 2004 anglers were “new to ELS”. The age distribution of the “new to ELS” anglers is younger than the general angling population, but not all are youngsters.

(Note: The above is based on 2004 licensed anglers, although the original intent was to base it on 2005 anglers. Some 2005 anglers were assigned temporary customer identification numbers in ELS, and the temporary numbers have not been replaced by the permanent number a pre-2005 ELS customer would have been assigned. Thus, it is not possible to track some anglers from 2004 to 2005.)

INTRODUCTION

The Electronic Licensing System (ELS) offers an opportunity to track the changing characteristics of Minnesota's hunters and anglers at a detailed level. ELS went into operation in 2000, and information is archived annually. ELS stores information on every hunter/angler (age, gender, location of residence) and activity for which the hunter/angler is licensed (e.g., hunting small game, hunting deer).

This effort was a pilot project that had two goals:

1. Examine if a five year time span (2000 to 2005) is sufficient to detect changes in Minnesota's resident angling population. The results indicate that five years was a long enough period. Some changes over this short period are marked.
2. Develop a format for routine annual reporting of ELS information. The tables herein are a start at such a format. The tables contain breakdowns of resident licensed anglers by age class, gender, region, and last year fished.

All fishing-license information was extracted from ELS in the September of 2006 (Reference 4). Raw data on resident license holders used to form the tables in the "Results" section are in Appendix A. A Minnesota "resident" was determined by the purchase of a "resident" fishing license (as opposed to a "nonresident" license) in all cases except one. The one exception is the 24-hour license (license code = 110), in which case the state of residence was used to identify resident anglers. If the state is "MN", the angler is a Minnesota resident; all other state codes are nonresident anglers. When a characteristic about license holders is unknown (e.g., unknown region in the state of license holder), the unknown values are allocated according to the relative proportions of known values.

A large number of fishing licenses are combination licenses, which license both the purchaser of the license and the spouse. The spouse records for 2000 to 2005 were received from the ELS vendor in September 2006, and will be obtained in subsequent years to facilitate the type of reporting in this study.

In the combination licenses, the spouse is not assigned a unique customer identification number, so the spouse cannot be tracked from year to year. The spouse records were largely complete, with on average 98.7 percent of resident combination licenses containing two ELS records. The number without two records averages about 3500, and fell from 4800 to 3400 between 2000 and 2005.

It should be noted that the “certified” number of Minnesota anglers—filed with the U.S. FWS for federal aid apportionment—was done using ELS from 2001 to 2005, so the total numbers in this report are very close to the “certified” numbers for those years (within 0.2% on average, after removal of “free” licenses which are not counted in the certification). In 2000, however, the “certified” number was done using the pre-ELS estimation methods, so the total number used in this report is smaller by some 3.5 percent. This smaller number of 2000 license holders reduces the size of the license decreases between 2000 and 2005.

Minnesota population data come from the U.S. Census for 2000 decennial population counts and for 2005 county population estimates (Reference 5). The portion of the population in a 2005 age subclass was taken from the 2005 population projections from the Minnesota State Demographer (Reference 3). These portions were applied to the 2005 estimates to derive number of people by age class.

RESULTS

Age class

The changes by age class are marked. Younger adults (age 16 to 44) have large decreases in participation rates over the five year period, while older adults (age 45+) show relatively stable rates (Table 1). The fishing population is growing older faster than the overall Minnesota population.

In comparison with hunting, the general patterns are similar, especially the age groupings of 16 to 44 and 45 and older (Reference 2). The notable differences between fishing and hunting are at the age class extremes. For fishing, the 65+ age class does not show an increase in rates, and the youngest age class (16 to 24) has a smaller rate of decrease than the next oldest class. Whether the smaller rate of decrease for the youngest age class is a break in the pattern, and the beginning of a new pattern that will work its way up the age classes, is a topic that will have to be monitored over time.

The younger age classes—which have the largest decreasing participation rates—are growing slowly relative to the older age classes that have more stable participation rates (Table 2). This covariance of population change and participation-rate change has kept license numbers up.

Table 1

Participation rates by age class for Minnesotans licensed to fish in Minnesota

(participation rate = licensed anglers / population)

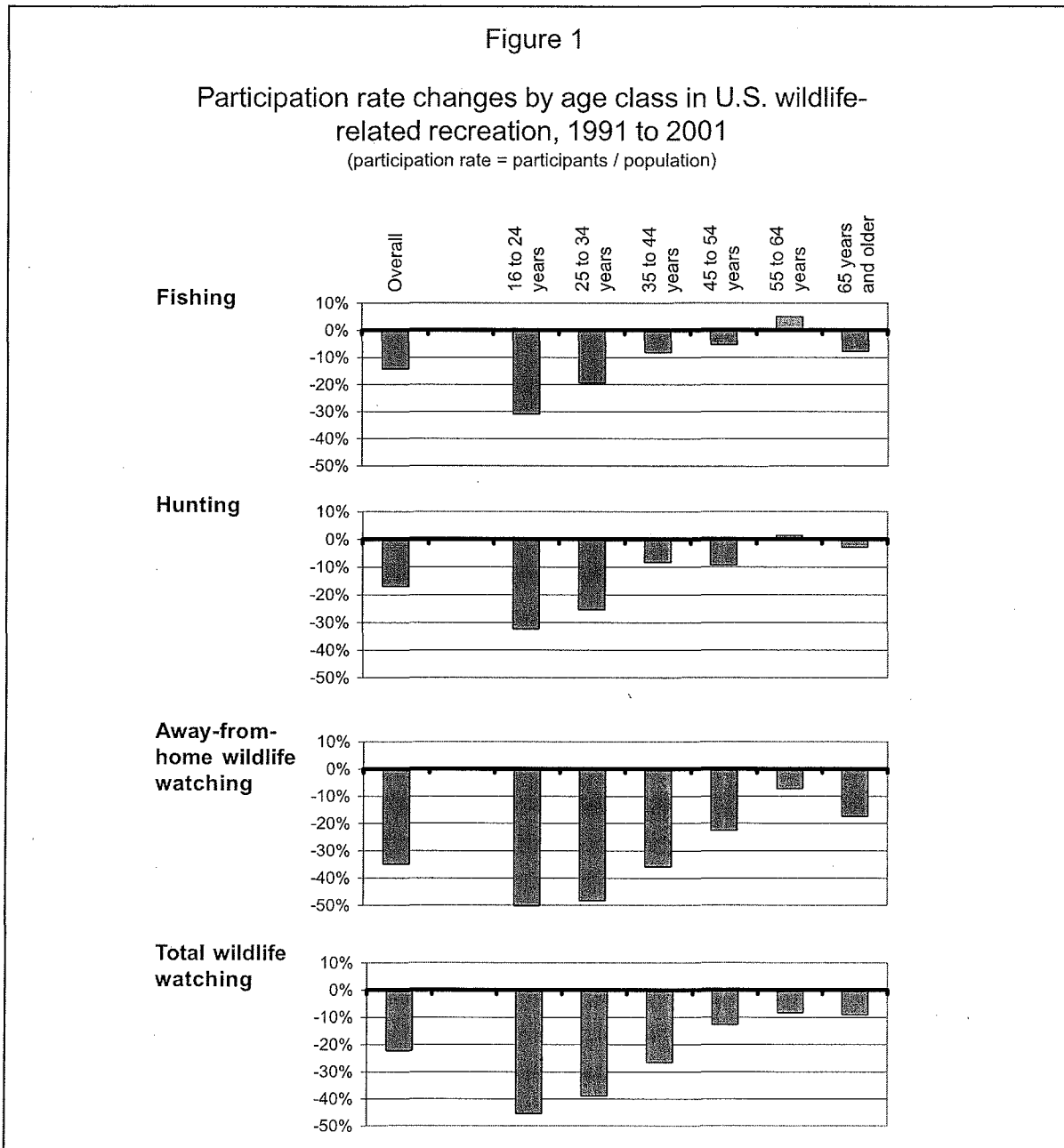
All licensed anglers (age 16+)	-- Percent of population licensed in year --		Percent change 2000 to 2005	All licensed hunters (age 16+) Percent change 2000 to 2005
	2000	2005		
Age grouping				
Overall (ages 16+)	31.2%	29.1%	-6.9%	-9.5%
Ages 16 to 44	33.3%	29.8%	-10.7%	-14.0%
Ages 45 +	28.6%	28.3%	-1.1%	-0.3%
Age 16 to 24	25.7%	24.2%	-5.6%	-14.7%
Age 25 to 34	34.2%	30.0%	-12.1%	-14.8%
Age 35 to 44	38.4%	34.4%	-10.5%	-12.3%
Age 45 to 54	34.6%	33.5%	-3.0%	-3.1%
Age 55 to 64	32.5%	31.4%	-3.4%	-5.8%
Age 65+	19.2%	19.2%	-0.2%	6.3%

Table 2

Population breakdowns and change for 2000 to 2005

Age class	----- Year -----		-- Change 2000 to 2005 --	
	2000	2005	Number	Percent
0 to 11	835,643	832,796	-2,847	0%
12 to 15	301,019	296,562	-4,457	-1%
16 to 24	620,666	673,940	53,274	9%
25 to 34	673,138	683,222	10,084	1%
35 to 44	824,182	771,113	-53,069	-6%
45 to 54	665,696	759,683	93,987	14%
55 to 64	404,869	504,288	99,419	25%
65+	594,266	611,195	16,929	3%
Total	4,919,479	5,132,799	213,320	4%
Subtotal, age 12+	4,083,836	4,300,003	216,167	5%
Subtotal, age 16+	3,782,817	4,003,441	220,624	6%
Region (age 16+)				
Northwest	341,360	356,404	15,044	4%
Northeast	321,761	332,148	10,388	3%
South	752,442	777,799	25,357	3%
Central	347,130	407,998	60,868	18%
Metro (7 county)	2,020,124	2,129,091	108,968	5%
Total, age 16+	3,782,817	4,003,441	220,624	6%
Gender (age 16+)				
Male	1,852,825	1,973,130	120,305	6%
Female	1,929,992	2,030,311	100,320	5%
Total, age 16+	3,782,817	4,003,441	220,624	6%

The Minnesota age-class pattern of change is broadly similar to that found for the U.S. angling population as a whole, as well as for the U.S. hunting and wildlife-watching populations (Figure 1—Reference 6). And this same pattern of declining participation rates by younger adults—compared with older adults—is evident in national park visitation since the late 1980s (Reference 1). Evidently, younger adults are not participating in these wildlife-associated/nature-based activities like their elders. A generational shift in these activities appears to be taking place.



Region

The Northwest and South Region generally have the least participation decrease between 2000 and 2005 (Table 3). The Central Region has the greatest decrease. The Central Region is the most rapidly growing in the state, and it is becoming more and more an extension of the Twin Cities Metro Region (Table 2). The Metro Region (and an urban population in general) has a lower fishing participation rate (Table 3).

In comparison with hunting, the patterns are similar, with the same regions showing the least participation decrease, and the same regions showing the greatest decrease (Reference 2).

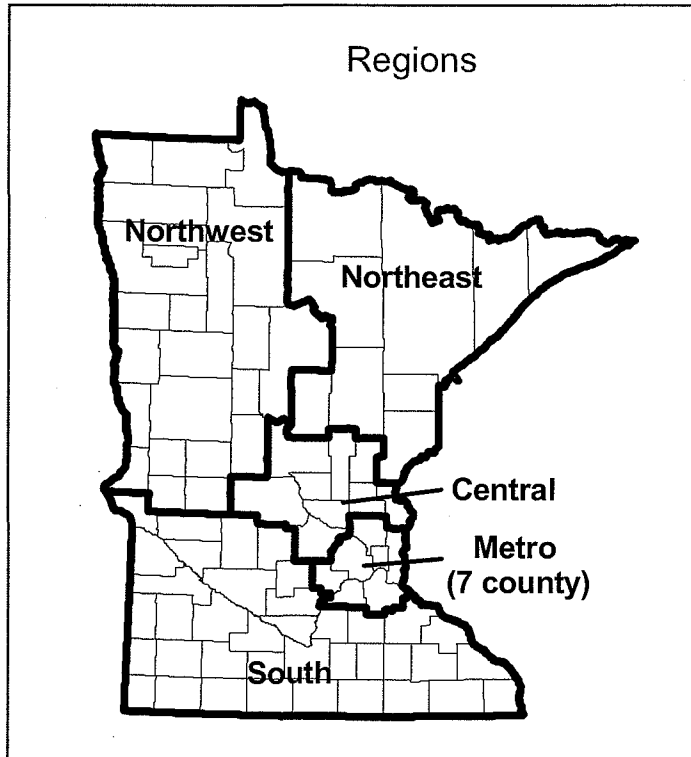


Table 3

Participation rates by region for Minnesotans licensed to fish in Minnesota

(participation rate = licensed anglers / population)

Region	-- Percent of population licensed in year --		Percent change 2000 to 2005	All licensed hunters (age 16+) Percent change 2000 to 2005
	2000	2005		
Northwest	45.1%	42.5%	-5.9%	-6.7%
Northeast	43.8%	41.0%	-6.3%	-11.0%
South	30.1%	28.7%	-4.6%	-6.4%
Central	50.1%	44.1%	-12.1%	-15.9%
Metro (7 county)	24.1%	22.2%	-7.7%	-10.6%
Statewide	31.2%	29.1%	-6.9%	-9.5%

Gender

Females—who comprise just over one-third of resident anglers—have a larger participation rate decrease than males between 2000 and 2005 (Table 4). For hunting, the female participation rate decrease is much larger than the male decrease (Reference 2).

Table 4
Participation rates by gender for Minnesotans licensed to fish in Minnesota
(participation rate = licensed anglers / population)

Gender	<i>-- Percent of population licensed in year --</i>		Percent change 2000 to 2005	<i>All licensed hunters (age 16+) Percent change 2000 to 2005</i>
	2000	2005		
All licensed anglers (age 16+)				
Male	40.6%	38.0%	-6.4%	-9.1%
Female	22.2%	20.4%	-8.3%	-18.9%
Both genders	31.2%	29.1%	-6.9%	-9.5%

Year Last Fished

This section is based on “primary” license holders, who are those who have an individual license or who are the purchasers of a combination license. A primary license holder is assigned a unique customer identification number in ELS that permits tracking the individual from year to year. In combination fishing licenses, the spouse is not assigned a unique customer identification number, so the spouse cannot be tracked from year to year. Some 75 percent of all resident licensed anglers are primary license holders.

In addition, this section is based on 2004 licensed anglers, although the original intent was to base it on 2005 anglers. Some 2005 anglers were assigned temporary customer identification numbers in ELS, and the temporary numbers have not been replaced by the permanent number a pre-2005 ELS customer would have been assigned. Thus, it is not possible to track some anglers from 2004 to 2005.

The large majority of 2004 resident anglers had fished in 2003, with far fewer having fished in 2002 and not fished in 2003 (Table 5). Very few 2004 anglers took two to three years off from fishing (last fished in 2001 or 2000). Some 16 percent of 2004 anglers were “new to ELS”. The age distribution of the “new to ELS”

anglers is younger than the general angling population, but not all are youngsters (Table 6).

For hunters, the general patterns are the same, although a larger portion of 2005 hunters (near 85%) had hunted in 2004 (Reference 2).

Table 5

Year last fished for Minnesotans (who are primary license holders)
licensed in 2004 to fish in Minnesota

(Note: This table only tracks primary license holders from year to year; spouses in combination licenses cannot be tracked over time, since they are not assigned a unique customer identification number)

2004 All licensed anglers (age 16+)	
<u>Year last fished</u>	<u>Percent of 2004 anglers</u>
2003	72%
2002	8%
2001	3%
2000	2%
New to ELS	16%
Total	100%

Table 6

Ages of 2004 resident anglers new to Electronic Licensing System (not in system
from 2000 to 2003)

(Note: The "New to ELS" column only includes primary license holders, and it excludes spouses in combination licenses; the "All anglers" column includes both primary and spouse license holders)

2004 All licensed anglers (age 16+)		
<u>Age class</u>	<u>New to ELS (percent)</u>	<u>All anglers (percent)</u>
Age 16 to 24	39%	14%
Age 25 to 34	20%	18%
Age 35 to 44	17%	24%
Age 45 to 54	13%	21%
Age 55 to 64	7%	13%
Age 65+	4%	10%
Total	100%	100%

REFERENCES

1. Gramann, Jim H., Steve Hollenhorst, Margaret Littlejohn, and Lena Le. 2006. Last child in the parks? Age trends in U.S. National Park visitation. Abstract of paper presented at 12th International Symposium on Society and Natural Resource Management.
2. Kelly, Tim. 2006. Observations on Minnesota's changing resident hunter population using Electronic Licensing System information from 2000 to 2005. Minnesota Department of Natural Resources, Office of Management and Budget Services.
3. Minnesota Department of Administration, Minnesota Planning, State Demographic Center. 2002. Minnesota Population Projections 2000 - 2030.
4. Minnesota Department of Natural Resource. Electronic Licensing System information on Minnesota anglers for 2000 to 2005. Information extracted in September 2006.
5. U. S. Department of Commerce, U. S. Census Bureau. Minnesota decennial census population counts 2000, Minnesota population estimates for 2001 to 2005, and 2005 Minnesota county population estimates.
6. U. S. Department of the Interior, Fish and Wildlife Service and U. S. Department of Commerce, U. S. Census Bureau. National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Survey years 1991 to 2001.

Appendix A: Data tables on Minnesota-licensed
resident anglers, 2000 to 2005

Number of Minnesotans licensed to fish in Minnesota

AGE CLASS	License year					
	2000	2001	2002	2003	2004	2005
Age class						
15 and under	211	305	220	213	257	190
16 to 24	159,418	160,524	161,152	162,074	165,284	163,392
25 to 34	229,880	223,278	214,596	210,235	207,264	205,000
35 to 44	316,653	308,529	295,016	284,603	275,631	265,285
45 to 54	230,173	236,314	239,176	244,478	249,603	254,828
55 to 64	131,497	134,929	140,288	146,689	152,854	158,268
65+	<u>114,327</u>	<u>112,898</u>	<u>111,892</u>	<u>111,833</u>	<u>114,090</u>	<u>117,386</u>
Total	1,182,159	1,176,777	1,162,340	1,160,125	1,164,983	1,164,349
Subtotal, age 16+	1,181,948	1,176,472	1,162,120	1,159,912	1,164,726	1,164,159

REGION	License year					
	2000	2001	2002	2003	2004	2005
Region						
Northwest	153,074	154,803	153,314	153,738	152,370	146,222
Northeast	139,942	138,938	138,076	136,382	136,154	131,601
South	225,147	220,676	219,410	221,571	223,391	215,808
Central	172,826	173,973	173,073	174,918	177,701	173,574
Metro (7 county)	483,276	481,292	473,022	468,923	471,002	456,898
Unknown	<u>7,683</u>	<u>6,790</u>	<u>5,225</u>	<u>4,380</u>	<u>4,108</u>	<u>40,056</u>
Total (age 16+)	1,181,948	1,176,472	1,162,120	1,159,912	1,164,726	1,164,159

GENDER	License year					
	2000	2001	2002	2003	2004	2005
Gender						
Male	752,106	754,950	753,009	751,272	755,272	731,379
Female	428,825	420,348	408,275	407,653	408,422	403,577
Unknown	<u>1,017</u>	<u>1,174</u>	<u>836</u>	<u>987</u>	<u>1,032</u>	<u>29,203</u>
Total (age 16+)	1,181,948	1,176,472	1,162,120	1,159,912	1,164,726	1,164,159

LAST FISHED FOR 2004 PRIMARY LICENSE HOLDERS	
(Note: Can only track primary license holders from year to year; spouses in combination licenses cannot be tracked over time, since they are not assigned a unique customer identification number)	
Year last fished	Number
2003	629,406
2002	67,234
2001	27,094
2000	15,603
New to ELS	<u>136,523</u>
Total (age 16+)	875,860