

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

## CONTENTS

<u>Topic</u>	<u>Page</u>
Summary	2
Introduction	3
Results	
Age class	3
Region	8
Gender	10
Year last hunted	11
References	13
Appendix A: Data tables on Minnesota-licensed resident hunters, 2000 to 2005	14

Prepared by:

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

June 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 hunter population trends are examined by age class, region in the state, gender, and last year hunted.

### 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 stable rates. The hunting population is growing older faster than the Minnesota population.

The younger age classes—which have decreasing hunting participation rates—are growing slowly relative to the older age classes that have 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 the same as that found for the U.S. hunting population as a whole, as well as for the U.S. fishing and wildlife-watching populations. Evidently, younger adults are not participating in these wildlife-associated activities like their elders. A generation 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 consistently has the greatest decrease across the types of hunting. 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 low hunting participation rate, half the rate of the next lowest region.

### Gender

Females—who comprise only a small portion of hunters—have the largest participation rate decreases between 2000 and 2005 across the types of hunting.

### Year Last Hunted

The large majority of 2005 hunters had hunted in 2004, with far fewer having hunted in 2003 and not hunted in 2004. Very few 2005 hunters took two to four years off from hunting (last hunted in 2002, 2001, and 2000). Some 6 to 12 percent of 2005 hunters (depending on type of hunting) were “new to ELS”. The age distribution of the “new to ELS” hunters is younger than the general hunting population, but not all are youngsters.

## 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 hunting 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 hunting by type (small game, deer with firearm, and all types combined), by age class, gender, region, and last year hunted.

All information was extracted from ELS in the Spring of 2006 (Reference 2). 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" hunting license (as opposed to a "nonresident" license). 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.

Minnesota population data come from the U.S. Census for 2000 decennial population counts and for 2005 county population estimates (Reference 3). The portion of the population in a 2005 age subclass was taken from the 2005 population projections from the Minnesota State Demographer (Reference 1). 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 stable rates (Table 1). The hunting population is growing older faster than the overall Minnesota population. It is interesting to note that the youngest licensed age class (12 to 15) has a stable participation rate for the period, and the oldest age class consistently shows an increasing participation rate across the types of hunting examined.

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

The Minnesota age-class pattern of change is the same as that found for the U.S. hunting population as a whole, as well as for the U.S. fishing and wildlife-watching populations (Figure 1—Reference 4). Evidently, younger adults are not participating in these wildlife-associated activities like their elders. A generation shift in these activities appears to be taking place. It will be interesting to see—when this type of ELS application is extended to anglers—how Minnesota anglers compare with anglers nationwide.

[As an aside, ELS will permit us to accurately determine the percent of the population in an age group that is licensed to hunt. In the past, we knew that some licensed hunters were under 16, but we did not know how many. The existing long-term participation trend series (which normalizes all hunters, including those under 16, by the age 16+ population) should be continued for continuity, and an additional series or two from ELS should be added starting in 2000 (say, percent of population 12+ and 16+ that are licensed to hunt in Minnesota). The number of hunters under 16 is relatively small (some 7% of the total), so the various trend series will not be very different.]

It should be noted that the “certified” number of Minnesota hunters—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 0.3% on average). In 2000, however, the “certified” number was done using the pre-ELS estimation methods, so the total number in this report is different by some 2 percent.

Table 1

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

(participation rate = licensed hunters / population)

<b>All licensed hunters</b>			
<u>Age grouping</u>	<i>-- Percent of population licensed in year --</i>		<u>Percent change 2000 to 2005</u>
	<u>2000</u>	<u>2005</u>	
Overall (ages 12+)	14.0%	12.8%	-8.9%
Overall (ages 16+)	14.2%	12.8%	-9.5%
Ages 16 to 44	16.2%	13.9%	-14.0%
Ages 45 +	11.7%	11.6%	-0.3%
Age 12 to 15	12.4%	12.3%	-0.4%
Age 16 to 24	15.5%	13.2%	-14.7%
Age 25 to 34	15.7%	13.4%	-14.8%
Age 35 to 44	17.0%	14.9%	-12.3%
Age 45 to 54	15.5%	15.0%	-3.1%
Age 55 to 64	13.6%	12.8%	-5.8%
Age 65+	6.1%	6.4%	6.3%

<b>Small game licensed hunters</b>			
<u>Age grouping</u>	<i>-- Percent of population licensed in year --</i>		<u>Percent change 2000 to 2005</u>
	<u>2000</u>	<u>2005</u>	
Overall (ages 16+)	8.1%	6.7%	-18.2%
Ages 16 to 44	9.7%	7.4%	-24.2%
Ages 45 +	6.2%	5.9%	-4.5%
Age 16 to 24	8.9%	6.4%	-27.8%
Age 25 to 34	9.8%	7.3%	-25.5%
Age 35 to 44	10.2%	8.2%	-19.6%
Age 45 to 54	8.9%	8.0%	-10.2%
Age 55 to 64	7.1%	6.5%	-7.9%
Age 65+	2.5%	2.7%	10.8%

<b>Deer firearm licensed hunters</b>			
<u>Age grouping</u>	<i>-- Percent of population licensed in year --</i>		<u>Percent change 2000 to 2005</u>
	<u>2000</u>	<u>2005</u>	
Overall (ages 12+)	11.0%	10.2%	-6.9%
Overall (ages 16+)	10.9%	10.1%	-7.3%
Ages 16 to 44	12.1%	10.9%	-10.6%
Ages 45 +	9.3%	9.2%	-0.7%
Age 12 to 15	11.9%	11.9%	-0.8%
Age 16 to 24	11.9%	10.7%	-10.0%
Age 25 to 34	11.5%	10.3%	-9.9%
Age 35 to 44	12.9%	11.5%	-11.1%
Age 45 to 54	12.1%	11.8%	-2.0%
Age 55 to 64	10.9%	10.1%	-7.1%
Age 65+	5.1%	5.2%	3.1%

Table 2

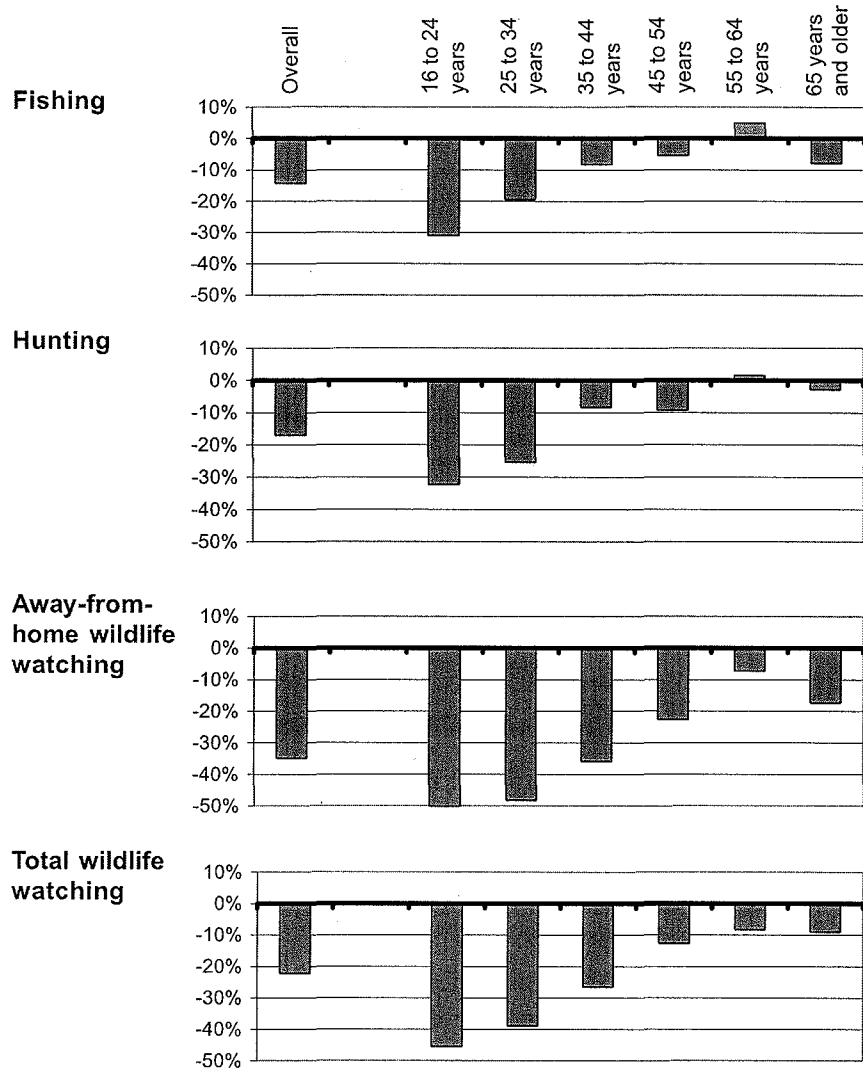
Population breakdowns and change for 2000 to 2005

	----- Year -----		-- Change 2000 to 2005 --	
	2000	2005	Number	Percent
<b>Age class</b>				
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%
<b>Total</b>	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%
<b>Region (age 16+)</b>				
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%
<b>Total, age 16+</b>	3,782,817	4,003,441	220,624	6%
<b>Gender (age 16+)</b>				
Male	1,852,825	1,973,130	120,305	6%
Female	1,929,992	2,030,311	100,320	5%
<b>Total, age 16+</b>	3,782,817	4,003,441	220,624	6%

Figure 1

Participation rate changes by age class in U.S. wildlife-related recreation, 1991 to 2001

(participation rate = participants / population)



## Region

The Northwest and South Region generally have the least participation decrease between 2000 and 2005 (Table 3). The Central Region consistently has the greatest decrease across the types of hunting. 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 low hunting participation rate, half the rate of the next lowest region (Table 3).

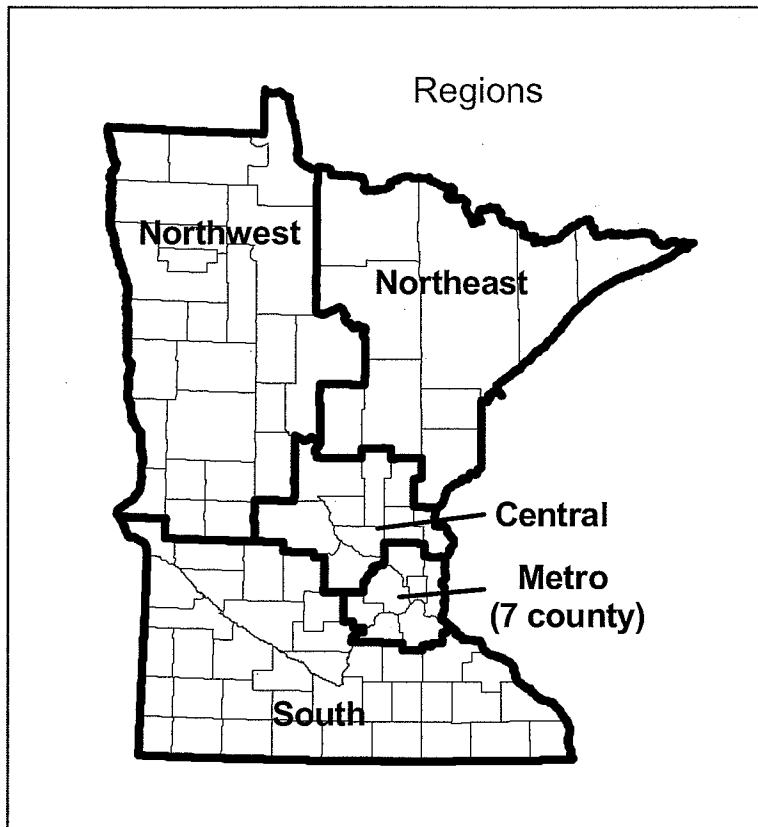




Table 3

Participation rates by region for Minnesotans licensed to hunt in Minnesota

(participation rate = licensed hunters / population)

<b>All licensed hunters (age 16+)</b>			
<b>Region</b>	<i>-- Percent of population licensed in year --</i>		<b>Percent change 2000 to 2005</b>
	<b>2000</b>	<b>2005</b>	
Northwest	27.8%	25.9%	-6.7%
Northeast	25.8%	23.0%	-11.0%
South	15.6%	14.6%	-6.4%
Central	25.0%	21.0%	-15.9%
Metro (7 county)	7.7%	6.8%	-10.6%
<i>Statewide</i>	<i>14.2%</i>	<i>12.8%</i>	<i>-9.5%</i>

<b>Small game licensed hunters (age 16+)</b>			
<b>Region</b>	<i>-- Percent of population licensed in year --</i>		<b>Percent change 2000 to 2005</b>
	<b>2000</b>	<b>2005</b>	
Northwest	13.7%	11.5%	-15.7%
Northeast	15.5%	11.1%	-28.6%
South	9.2%	8.3%	-9.7%
Central	12.8%	9.8%	-23.4%
Metro (7 county)	4.8%	4.0%	-18.2%
<i>Statewide</i>	<i>8.1%</i>	<i>6.7%</i>	<i>-18.2%</i>

<b>Deer firearm licensed hunters (age 16+)</b>			
<b>Region</b>	<i>-- Percent of population licensed in year --</i>		<b>Percent change 2000 to 2005</b>
	<b>2000</b>	<b>2005</b>	
Northwest	24.1%	22.8%	-5.3%
Northeast	20.6%	19.5%	-5.6%
South	11.8%	11.0%	-6.3%
Central	20.5%	17.6%	-14.4%
Metro (7 county)	5.1%	4.7%	-7.8%
<i>Statewide</i>	<i>10.9%</i>	<i>10.1%</i>	<i>-7.3%</i>

Gender

Females—who comprise only a small portion of hunters—have the largest participation rate decreases between 2000 and 2005 across the types of hunting (Table 4).

**Table 4**

Participation rates by gender for Minnesotans licensed to hunt in Minnesota

(participation rate = licensed hunters / population)

<b>All licensed hunters (age 16+)</b>			
<b>Gender</b>	<i>-- Percent of population licensed in year --</i>		<b>Percent change 2000 to 2005</b>
	<b>2000</b>	<b>2005</b>	
Male	26.2%	23.8%	-9.1%
Female	2.6%	2.1%	-18.9%
<i>Both genders</i>	<i>14.2%</i>	<i>12.8%</i>	<i>-9.5%</i>

<b>Small game licensed hunters (age 16+)</b>			
<b>Gender</b>	<i>-- Percent of population licensed in year --</i>		<b>Percent change 2000 to 2005</b>
	<b>2000</b>	<b>2005</b>	
Male	16.0%	13.1%	-18.3%
Female	0.6%	0.5%	-27.9%
<i>Both genders</i>	<i>8.1%</i>	<i>6.7%</i>	<i>-18.2%</i>

<b>Deer firearm licensed hunters (age 16+)</b>			
<b>Gender</b>	<i>-- Percent of population licensed in year --</i>		<b>Percent change 2000 to 2005</b>
	<b>2000</b>	<b>2005</b>	
Male	20.0%	18.7%	-6.8%
Female	2.1%	1.7%	-16.8%
<i>Both genders</i>	<i>10.9%</i>	<i>10.1%</i>	<i>-7.3%</i>

## Year Last Hunted

The large majority of 2005 hunters had hunted in 2004, with far fewer having hunted in 2003 and not hunted in 2004 (Table 5). Very few 2005 hunters took two to four years off from hunting (last hunted in 2002, 2001, and 2000). Some 6 to 12 percent of 2005 hunters (depending on type of hunting) were “new to ELS”. The age distribution of the “new to ELS” hunters is younger than the general hunting population, but not all are youngsters (Table 6).

**Table 5**

Year last hunted for Minnesotans licensed in 2005 to hunt in Minnesota

<b>2005 All licensed hunters (age 16+)</b>	
<u>Year last hunted</u>	<u>Percent of 2005 hunters</u>
2004	86%
2003	4%
2002	1%
2001	1%
2000	1%
New to ELS	7%
Total	100%

<b>2005 Small game licensed hunters (age 16+)</b>	
<u>Year last hunted for small game</u>	<u>Percent of 2005 hunters</u>
2004	78%
2003	6%
2002	2%
2001	1%
2000	1%
New to ELS	12%
Total	100%

<b>2005 Deer firearm licensed hunters (age 16+)</b>	
<u>Year last hunted for deer with firearms</u>	<u>Percent of 2005 hunters</u>
2004	86%
2003	5%
2002	1%
2001	1%
2000	1%
New to ELS	6%
Total	100%

**Table 6**

Ages of 2005 resident hunters new to Electronic Licensing System (not in system from 2000 to 2004)

<b>2005 All licensed hunters (age 16+)</b>		
<u>Age class</u>	<u>New to ELS (percent)</u>	<u>All hunters (percent)</u>
Age 16 to 24	27%	17%
Age 25 to 34	23%	18%
Age 35 to 44	21%	22%
Age 45 to 54	16%	22%
Age 55 to 64	8%	13%
Age 65+	4%	8%
Total	100%	100%

<b>2005 Small game licensed hunters (age 16+)</b>		
<u>Age class</u>	<u>New to ELS (percent)</u>	<u>All small game hunters (percent)</u>
Age 16 to 24	37%	16%
Age 25 to 34	19%	19%
Age 35 to 44	18%	24%
Age 45 to 54	15%	23%
Age 55 to 64	8%	12%
Age 65+	4%	6%
Total	100%	100%

<b>2005 Deer firearm licensed hunters (age 16+)</b>		
<u>Age class</u>	<u>New to ELS (percent)</u>	<u>All deer firearm hunters (percent)</u>
Age 16 to 24	26%	18%
Age 25 to 34	25%	17%
Age 35 to 44	21%	22%
Age 45 to 54	16%	22%
Age 55 to 64	8%	13%
Age 65+	4%	8%
Total	100%	100%

## REFERENCES

1. Minnesota Department of Administration, Minnesota Planning, State Demographic Center. 2002. Minnesota Population Projections 2000 - 2030.
2. Minnesota Department of Natural Resource. Electronic Licensing System information on Minnesota hunters for 2000 to 2005. Information extracted in Spring 2006.
3. U. S. Department of Commerce, U. S. Census Bureau. Minnesota decennial census population counts 2000, and Minnesota population estimates for 2001 to 2005.
4. 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 hunters, 2000 to 2005

<u>Table</u>	<u>Page</u>
Number of resident license holders by age class	15
Number of resident license holders (age 16+) by region	16
Number of resident license holders (age 16+) by gender	17
Number of resident license holders (age 16+) by year last hunted	18

Number of resident hunting license holders by age class

	<i>License year</i>					
	2000	2001	2002	2003	2004	2005
<b>All hunters</b>						
<i>Age class</i>						
11 and under	45	44	35	30	5	36
12 to 15	37,279	37,070	35,849	36,381	36,719	36,576
16 to 24	95,917	94,502	91,468	92,141	90,825	88,843
25 to 34	106,002	101,737	95,741	95,592	93,999	91,673
35 to 44	140,375	135,902	127,081	125,129	119,820	115,118
45 to 54	103,230	105,831	104,327	109,159	111,205	114,140
55 to 64	54,952	56,361	56,070	59,742	61,789	64,468
65+	35,994	36,222	34,378	36,693	37,874	39,369
Total	573,794	567,669	544,949	554,867	552,236	550,223
Subtotal, age 16+	536,470	530,555	509,065	518,456	515,512	513,611
<b>Small game hunters</b>						
<i>Age class</i>						
11 and under	32	28	23	23	2	3
12 to 15	347	347	366	412	102	85
16 to 24	55,458	52,175	49,938	50,337	47,405	43,448
25 to 34	65,782	60,965	57,355	56,881	54,202	49,733
35 to 44	84,291	78,521	74,437	73,544	69,393	63,378
45 to 54	59,035	58,288	58,288	61,724	61,561	60,482
55 to 64	28,769	28,578	29,365	31,612	32,571	33,018
65+	14,697	13,620	13,496	15,668	16,176	16,751
Total	308,411	292,522	283,268	290,201	281,412	266,898
Subtotal, age 16+	308,032	292,147	282,879	289,766	281,308	266,810
<b>Deer firearm hunters</b>						
<i>Age class</i>						
11 and under	23	21	14	9	4	12
12 to 15	35,963	35,534	34,411	34,817	35,336	35,145
16 to 24	73,854	74,559	72,457	73,832	73,501	72,145
25 to 34	77,112	75,595	71,429	72,357	71,836	70,490
35 to 44	106,345	104,285	96,532	95,845	92,488	88,491
45 to 54	80,308	83,204	81,135	85,139	87,670	89,802
55 to 64	43,995	45,317	44,228	47,230	49,012	50,930
65+	30,042	30,415	28,259	29,791	30,878	31,863
Total	447,642	448,930	428,465	439,020	440,725	438,878
Subtotal, age 16+	411,656	413,375	394,040	404,194	405,385	403,721

Number of resident hunting license holders (age 16+) by region

	<i>License year</i>					
	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<b>All hunters</b>						
<u>Region</u>						
Northwest	94,126	93,916	90,679	91,110	91,289	91,108
Northeast	82,486	81,607	76,658	77,404	76,676	75,272
South	116,415	114,126	109,455	113,646	113,304	111,865
Central	86,243	86,400	83,687	84,846	85,041	84,730
Metro (7 county)	153,658	151,311	146,153	149,366	147,580	143,875
Unknown	<u>3,542</u>	<u>3,195</u>	<u>2,433</u>	<u>2,084</u>	<u>1,622</u>	<u>6,761</u>
Total (age 16+)	536,470	530,555	509,065	518,456	515,512	513,611
<b>Small game hunters</b>						
<u>Region</u>						
Northwest	46,291	44,711	43,501	44,798	43,381	40,150
Northeast	49,460	45,730	41,694	41,396	39,522	35,912
South	68,702	64,692	64,330	67,932	66,661	63,171
Central	44,163	42,669	41,763	42,460	41,758	39,161
Metro (7 county)	97,186	92,552	90,174	91,982	89,102	82,504
Unknown	<u>2,230</u>	<u>1,793</u>	<u>1,417</u>	<u>1,198</u>	<u>884</u>	<u>5,912</u>
Total (age 16+)	308,032	292,147	282,879	289,766	281,308	266,810
<b>Deer firearm hunters</b>						
<u>Region</u>						
Northwest	81,726	82,478	79,656	80,203	80,607	81,048
Northeast	65,967	67,020	63,191	64,703	64,880	64,436
South	87,922	86,877	81,527	85,357	85,627	85,368
Central	70,784	71,681	69,526	70,955	71,471	71,451
Metro (7 county)	102,938	103,077	98,452	101,599	101,681	100,293
Unknown	<u>2,319</u>	<u>2,242</u>	<u>1,688</u>	<u>1,377</u>	<u>1,119</u>	<u>1,125</u>
Total (age 16+)	411,656	413,375	394,040	404,194	405,385	403,721



Number of resident hunting license holders (age 16+) by gender

	<i>License year</i>					
	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<b>All hunters</b>						
Gender						
Male	485,164	478,907	463,528	474,324	471,736	464,631
Female	50,934	51,144	45,174	43,674	43,294	42,960
Unknown	<u>372</u>	<u>504</u>	<u>363</u>	<u>458</u>	<u>482</u>	<u>6,020</u>
Total (age 16+)	536,470	530,555	509,065	518,456	515,512	513,611
<b>Small game hunters</b>						
Gender						
Male	295,765	281,205	272,991	279,244	271,458	252,235
Female	12,085	10,755	9,746	10,272	9,593	8,979
Unknown	<u>182</u>	<u>187</u>	<u>142</u>	<u>250</u>	<u>257</u>	<u>5,596</u>
Total (age 16+)	308,032	292,147	282,879	289,766	281,308	266,810
<b>Deer firearm hunters</b>						
Gender						
Male	371,184	371,687	357,106	369,014	369,981	367,965
Female	40,269	41,341	36,682	34,881	35,066	35,226
Unknown	<u>203</u>	<u>347</u>	<u>252</u>	<u>299</u>	<u>338</u>	<u>530</u>
Total (age 16+)	411,656	413,375	394,040	404,194	405,385	403,721

Number of 2005 resident hunting license holders  
(age 16+) by year last hunted

	<u>Number</u>
<b>All hunters</b>	
<u>Year last hunted</u>	
2004	441,923
2003	21,579
2002	7,218
2001	4,741
2000	3,000
New to ELS	<u>35,150</u>
Total (age 16+)	513,611
<b>Small game hunters</b>	
<u>Year last hunted for small game</u>	
2004	207,965
2003	16,306
2002	5,555
2001	3,290
2000	2,561
New to ELS	<u>31,133</u>
Total (age 16+)	266,810
<b>Deer firearm hunters</b>	
<u>Year last hunted for deer with firearms</u>	
2004	349,171
2003	18,804
2002	5,914
2001	4,042
2000	2,351
New to ELS	<u>23,439</u>
Total (age 16+)	403,721