

**HumanDimensions**  
Research Program

# Internet Use Among Illinois Hunters: A Ten Year Comparison

Illinois Natural History Survey  
Prairie Research Institute  
University of Illinois at  
Urbana-Champaign



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Marc Miller, Director  
Illinois Department of Natural  
Resources

Paul Vehlow  
Federal Aid Coordinator

John E. Buhnerkempe  
Chief, Division of Wildlife  
Resources



Craig A. Miller, Ph.D.  
Program Leader and Principal Investigator  
Human Dimensions Research Program  
Illinois Natural History Survey

Prepared by  
Mark G. Alessi and  
Craig A. Miller, Ph.D.



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# INTERNET USE AMONG ILLINOIS HUNTERS: A TEN- YEAR COMPARISON

JOB COMPLETION REPORT

WILDLIFE HARVEST AND  
HUMAN DIMENSIONS RESEARCH PROGRAM

STATE OF ILLINOIS

PROJECT NUMBER: W-112-R-20  
STUDY 101  
JOB NO. 101.1

Prepared by  
Mark G. Alessi and Craig A. Miller, Ph.D.  
Illinois Natural History Survey  
Champaign, IL  
August 29, 2011

Federal Aid in Wildlife Restoration  
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Illinois Department of Natural Resources

Marc Miller, Director  
Illinois Department of Natural Resources

John E. Buhnerkempe, Chief  
Division of Wildlife

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## **Abstract**

Technological advances have permitted outdoor enthusiasts the ability to use the internet to access information provided by state wildlife agencies. Using the 2010-2011 Illinois Hunter Harvest Survey, we investigated age distribution and incomes of hunters purchasing licenses on the Illinois Department of Natural Resources (IDNR) website, differences in mean age and age distribution compared to a 2001 dataset, and hunters' attitudes toward various methods of receiving hunting information. Mean hunter age in 2010-2011 was 49 years old, significantly higher than the mean age of hunters (46 years old) reported in the 2000-2001 Illinois Hunter Harvest Survey. A minority (18%) of 2010 hunters purchased their license through the IDNR website, and the majority (72%) of those hunters were 32-66 years of age. Younger ( $\leq 31$  years of age) hunters were more likely to support receiving information from IDNR via technological means (e.g., text or email messages) than older hunters. A significant, positive relationship did exist between household incomes and purchasing licenses through the Internet. Comparative data suggest the mean age and age distribution of hunters is becoming skewed towards older hunters at a faster rate than young hunters are entering the population in Illinois, and the proportion of the hunting population that utilizes the internet to purchase their license remains small. Thus, it is important to continue to allow hunters the option of purchasing their licenses through traditional methods.

## **Methods**

See Miller et al. (2001) for methods on 2000-2001 survey design, and see Alessi et al. (2011) for methods on 2010-2011 survey design. We conducted Chi-square tests and determined

statistical significance given  $p \leq .05$ . We included effect sizes to measure the strength of association between the independent and dependent variables.

## Results

### *Relationship between Age and Use of Internet*

Previous research on Illinois hunters' use of the Internet showed that hunters visiting the IDNR website were younger than those who did not visit the website (Miller 2003). The relationship between use of the website and age was similar during 2010-11, but the actual distribution of hunters has changed over the intervening ten years (Figure 1, Table 1); the proportion of hunters in the 32-49 years of age category had decreased 10% as the 50-66 years of age category increased 10%, and the differences were significant ( $\chi^2 = 58.176$ ,  $df = 3$ ,  $p < .001$ ). Moreover, mean age for hunters ( $n = 2,132$ ) from the 2000-2001 study was 46 years of age; ten years later (2010-2011 season,  $n = 1,587$ ) hunters were significantly older (mean = 49 years of age,  $t = -4.967$ ,  $df = 3,717$ ,  $p < .001$ ).

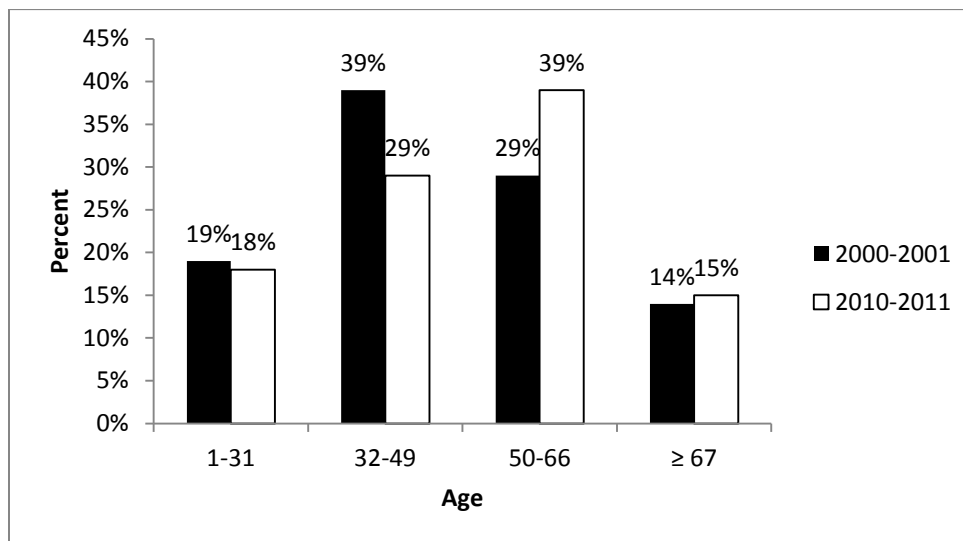


Figure 1. Age distribution of respondents to the 2000-2001 ( $n=2,132$ ) and 2010-2011 ( $n=1,587$ ) Illinois Hunter Harvest Survey.

An analysis of the 2010-2011 Illinois Hunter Harvest dataset showed 18% of hunting licenses and/or habitat stamps were purchased online during the 2010-2011 season through the IDNR website, compared to 7% who used the IDNR website to purchase a hunting license in 2000-2001 (Miller 2003). A significantly higher proportion of hunters in the 1-31 (22%) and 32-49 (34%) age category purchased their license online than those who did not purchase online (1-31: 17%, 32-49: 28%), and a higher proportion (17%) of hunters older than 66 years of age did not purchase their license online when compared to the same cohort of hunters (6%) who did purchase online ( $\chi^2 = 24.441$ ,  $df = 3$ ,  $p < .001$ ). Of those who purchased their licenses on the Internet, 72% were between the ages of 32 and 66 years of age (Figure 2, Table 2), and 50-66 year old hunters purchased more licenses online than any other age group. When mean age of internet purchasers was compared to that of other methods, Internet purchasers were significantly younger (mean=45 years of age) than non-Internet purchasers (mean=50 years of age,  $t = 4.25$ ,  $df = 1,585$ ,  $p < .001$ ). Hunters in the 2010-2011 Survey were also queried as to whether they have a computer in their residence (77% said Yes). Older hunters ( $\geq 67$  years of age) were less likely to have a computer in their residence than younger hunters (Table 3), and of the hunters that did have a computer, 71% of these hunters were between the ages of 32 and 66 years of age. Seventy-five percent of all hunters surveyed had internet access at home, and 98% of hunters with a computer at home also had access to the Internet. In comparison to the general Illinois population, 74% of households had Internet access at home during 2009 (U.S. Census Bureau 2009).

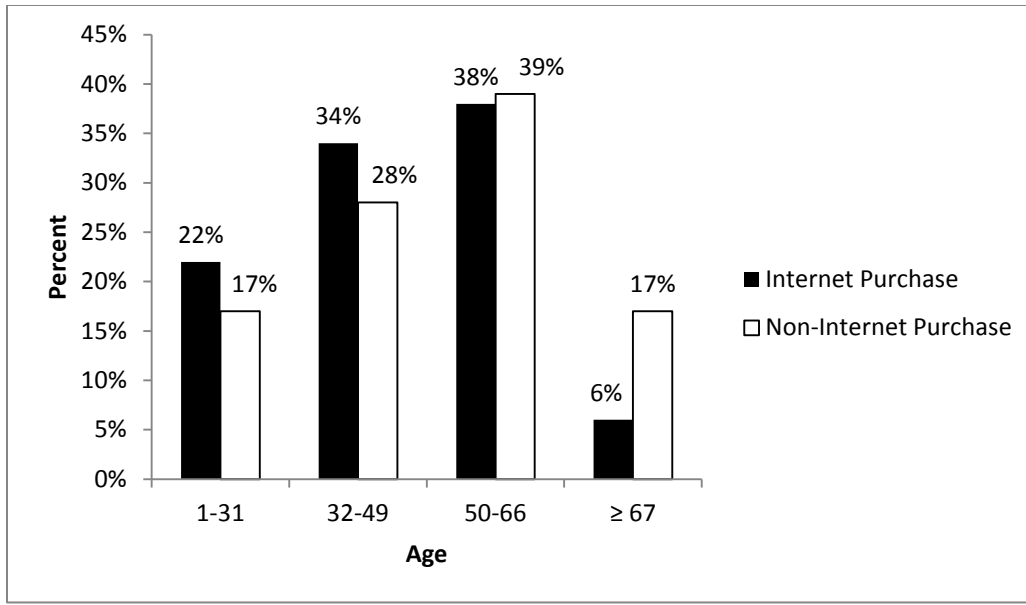


Figure 2. Age distribution of hunters who did ( $n=265$ ) and did not ( $n=1,332$ ) purchase their license online during the 2010-2011 season.

Hunters from the 2010-2011 Hunter Harvest Survey were asked to indicate how they would like to receive certain information from IDNR. Overall, the majority of hunters (regardless of age) preferred to receive season date information via paper copy of the hunting digest (73%) and on the IDNR website (68%). Most hunters also preferred to receive hunting application reminders on a postcard in the mail (73%), and receive hunter harvest information on the IDNR website (68%). Although other possibilities were preferred less, age distribution of potential participants varied greatly and differences were significant for 11 of the 14 different possibilities (Table 4). Younger hunters were more likely to agree to receiving information through computers or text messages than older hunters. The older generation ( $\geq 67$  years of age) indicated a preference for the more traditional methods (mail and digest).



### *Influence of Income on Online Purchasing of Hunting Licenses*

Past research suggested a positive relationship between annual income levels and use of the Internet (Miller 2003). A similar relationship exists in this current study; hunters with higher household incomes were more likely to purchase their license online (Table 5,  $\chi^2 = 77.375$ ,  $df = 6$ ,  $p < .001$ ). For example, 13% of hunters who responded to the 2010-2011 Illinois Hunter Harvest Survey had annual household incomes of less than \$20,000, and only 4% of hunters in this category purchased their license online this past year; thus a 9% departure from their expected representation. Thirty-one percent of hunters who earned between \$100,000-150,000 purchased their licenses online during the 2010-2011 seasons.

### **Conclusions**

State wildlife agencies have perceived an increased need to offer stakeholders the ability to view information and purchase licenses through the Internet. Despite a 157% (7% in 2000 to 18% in 2010) increase in the proportion of hunters who purchase their licenses online in the past 10 years in Illinois, the overall proportion of hunters who purchase their licenses online remains small. Thus, the majority of hunters in Illinois are not utilizing the Internet to purchase their license, and it is important that managers continue to offer these stakeholders the ability to purchase their licenses at retail stores in Illinois. Additionally, it is important that the persons selling the licenses are knowledgeable on what hunters need in order to hunt in Illinois. Although this is not an exhaustive list, we propose various hypotheses as to why the majority of hunters are not buying their licenses online.

First, the relative lack of recruitment of young, technologically-savvy hunters is apparent, and the majority (68%) of the hunter population is comprised of men between the ages of 32-66

years of age. Therefore, hunters who were hunting before licenses were made available online may have continued to purchase their licenses through the traditional methods. Next, some hunters may have continued to purchase their licenses and permits at dealers because those licenses and permits are more durable than those printed online. Additionally, the convenience fee associated with purchasing a license online could be significant enough to deter hunters from purchasing their license online, although the advantage of purchasing online allows you to print more than one license in the event of a lost or misplaced license. Lastly, some hunters may have attempted to print their licenses online previously, but they may have been deterred due to the perceived difficulty. These possibilities, among others, need to be investigated in order to determine why hunters are not purchasing their licenses online.

It is important to recognize that even though the majority of each cohort of hunters may have preferred different methods to receive hunting information, the proportion of each cohort of hunters is represented differently in the age distribution. Therefore, continuing and even expanding a multifaceted, but simple, approach to license purchasing and customer service in Illinois is vital to hunter retention and recruitment.

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Table 1. Age distribution of hunters in Illinois, by year.

<b>Age</b>	<b>Year</b>		$\chi^2$	<i>p</i>	<i>V</i>
	2000-2001	2010-2011			
1-31	18.8%	17.6%	58.176	< .001	.125
32-49	39.1	28.8			
50-66	28.7	38.9			
> 66	13.5	14.7			

Table 2. Relationship between age and online license purchases during the 2010-2011 hunting seasons in Illinois.

<b>Purchase license online?</b>	<b>Age of Hunters</b>				$\chi^2$	<i>p</i>	<i>V</i>
	$\leq 31$	32-49	50-66	$\geq 67$			
Yes	20.8%	19.9%	16.3%	6.4%	24.441	< .001	.124
No	79.2	80.1	83.7	93.6			

Table 3. Home computer ownership by age among Illinois hunters during the 2010-2011 hunting seasons.

<b>Home computer?</b>	<b>Age of Hunters</b>				$\chi^2$	<i>p</i>	<i>V</i>
	$\leq 31$	32-49	50-66	$\geq 67$			
Yes	89.1%	87.8%	75.7%	48.2%	160.566	< .001	.321
No	10.9	12.2	24.3	51.8			

Table 4. Proportion of hunters by age who selected to receive information from the Illinois Department of Natural Resources.

	<b>Age of Hunter</b>				$\chi^2$	<i>p</i>	<i>V</i>
	<b>≤ 31</b>	<b>32-49</b>	<b>50-66</b>	<b>≥ 67</b>			
<b><u>Season Date Information</u></b>							
On IDNR website	76% <sup>1</sup>	80%	65%	36%	108.658	< .001	.287
E-mail	47	49	40	26	27.030	< .001	.146
Text messages	24	14	7	4	48.460	< .001	.203
Facebook, My Space, or Twitter	25	14	5	2	74.287	< .001	.252
Paper copy of Digest	77	73	71	74	3.869	.276	.054
Postcard in mail	57	57	56	67	6.704	.082	.072
<b><u>Hunting Application Reminders</u></b>							
On IDNR website	66	69	52	26	87.121	< .001	.263
E-mail	62	59	43	29	61.063	< .001	.219
Text messages	28	18	10	5	51.427	< .001	.210
Facebook, My Space, or Twitter	25	14	5	5	68.624	< .001	.243
Postcard in mail	74	73	72	79	3.457	.326	.050
<b><u>Hunter Harvest Info.</u></b>							
On IDNR website	72	80	65	38	95.095	< .001	.269
Facebook, My Space, or Twitter	18	11	4	3	47.943	< .001	.205
E-mail	46	44	33	29	22.010	< .001	.133

<sup>1</sup> Percentages are of respondents who selected "Yes."

Table 5. Annual household income and online purchase of licenses during the 2010-2011 hunting seasons in Illinois.

		<b>Annual Household Income (in thousands)</b>								
<b>Internet Purchase?</b>	< \$20	\$20- \$40	\$40- \$60	\$60- \$80	\$80- \$100	\$100- \$150	> \$150	$\chi^2$	<i>p</i>	<i>V</i>
Yes	3.5%	7.3%	21.3%	23.7%	18.9%	31.4%	26.0%	77.375	<.001	.24
No	96.5	92.7	78.7	76.3	81.1	68.6	74.0			