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2007 MICHIGAN BLACK BEAR HUNTER SURVEY

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ABSTRACT

A random sample of bear hunters was contacted after the 2007 hunting season to determine hunter participation, hunting methods, bear harvest, and hunter satisfaction. In 2007, an estimated 8,900 hunters spent nearly 64,000 days afield and harvested about 2,181 bears; a decrease of nearly 17% from 2006. Statewide, 25% of hunters harvested a bear. Baiting was the most common hunting method used to harvest bears, although hunters using dogs had greater hunting success than hunters using bait only. Statewide, about 50% of hunters rated their hunting experience as very good or good. Most hunters (68%) approved of the preference-point system for the distribution of hunting licenses.

INTRODUCTION

Beginning in 1990, the Michigan Department of Natural Resources (DNR) created black bear (*Ursus americanus*) management units and limited the number of bear hunting licenses issued for each unit. Before 1990, an unlimited number of bear licenses were sold, and licenses were valid in all areas open to bear hunting. In 2000, the DNR modified the licensing system by implementing a zone and quota system based on preference points for issuing bear hunting licenses. Under this system, hunters received one preference point if they applied for a hunt but were not selected in the drawing. Hunters also could obtain a preference point by completing an application but forgoing the drawing. Applicants with the greatest number of preference points had the greatest chance of being selected for a hunt, except that no more than 2% of the licenses were issued to nonresidents.



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In 2007, ten bear management units in Michigan, totaling about 35,360 square miles, were open for bear hunting (Figure 1). Bear could be hunted September 10-October 26 in all of the Upper Peninsula (UP) units, except the Drummond Island Management Unit (September 10-16) and in the northern Lower Peninsula (LP) units (September 22-28). The Red Oak Management Unit in the LP also had an archery-only hunt during October 6-12. The DNR set license quotas for each management unit and allocated 11,905 licenses among 39,082 eligible applicants using the preference-point distribution system. Licenses were valid on all land ownership types and allowed a hunter to take one bear of either sex, excluding cubs and female bears with cubs. Bear could be harvested with either a firearm or archery equipment, except for the special archery-only hunt in the Red Oak Management Unit. Hunters could use bait or dogs to hunt bears (except dogs could not be used during September 10-14 in the UP, excluding Drummond Island, and during the archery-only season in the Red Oak Management Unit).

The DNR and Natural Resources Commission have the authority and responsibility to protect and manage the wildlife resources of the State of Michigan. Harvest surveys are one of the management tools used by the DNR to accomplish its statutory responsibility. Estimating harvest, hunting effort, and hunter satisfaction are among the primary objectives of these surveys. Estimates derived from harvest surveys, as well as harvest reported by hunters at mandatory registration stations, and other indices, are used to monitor bear populations and establish harvest regulations.

METHODS

The DNR provided all bear hunters the option to report information about their bear hunting activity voluntarily via the Internet. This option was advertised on the DNR website and an email message was sent to all license buyers that had provided an email address to the DNR (2,149 licensees). Hunters reported whether they hunted, number of days spent afield, whether they harvested a bear, date of harvest, and their hunting methods. Hunters also reported whether other hunters (including bear hunters) caused interference during their hunt. In addition, hunters rated the status of the bear population compared to last year (i.e., more, same, fewer bear, or unknown). Successful hunters were asked to report harvest date, sex of the bear taken, and harvest method. All hunters were asked to rate their overall hunting experience and indicate whether they approved of the preference-point system used to distribute hunting licenses. Finally, all hunters were asked what factors were important for selecting their hunting location. Following the 2007 bear hunting season, a questionnaire (Appendix A) was mailed to 3,603 randomly selected people (Table 1) that had purchased a bear hunting license (resident, senior, nonresident bear licenses, and comprehensive lifetime license) and had not already voluntarily reported harvest information via the Internet. Hunters receiving the questionnaire in the mail were asked the same questions as hunters responding on the internet.

Estimates were calculated using a stratified random sampling design that included eleven strata (Cochran 1977). Hunters were stratified based on the management unit where their license was valid (10 management units). Hunters that had voluntarily reported information about their hunting activity via the Internet were treated as a separate stratum

(eleventh stratum). The statewide estimate of the mean number of days required to harvest a bear was calculated using a different ratio for each stratum (i.e., separate ratio estimator). The number of bears registered in each stratum was used as an auxiliary variate to improve the precision of ratio estimates.

A 95% confidence limit (CL) was calculated for each estimate. In theory, the CL can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies that the true value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably more serious than theoretical calculations of sampling error. They include failure of participants to provide answers (nonresponse bias), question wording, and question order. It is very difficult to measure these biases; thus, estimates were not adjusted for these possible biases.

Statistical tests are used routinely to determine the likelihood that the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals was equivalent to stating that the difference between the means was larger than would be expected 995 out of 1,000 times, if the study had been repeated (Payton et al. 2003).

Questionnaires were mailed initially during late November 2007, and up to two follow-up questionnaires were mailed to nonrespondents. Although 3,603 people were sent the questionnaire, 53 surveys were undeliverable, resulting in an adjusted sample size of 3,550. Questionnaires were returned by 2,887 people, yielding an 81% adjusted response rate. In addition, 496 people voluntarily reported information about their hunting activity via the Internet before the random sample was selected.

RESULTS

In 2007, 9,514 bear hunting licenses were purchased (Table 1), slightly more than the 9,456 licenses sold in 2006. Most of the people buying a license were men (92%), and the average age of the license buyers was 46 years (Figure 2). About 3% of the license buyers (294) were younger than 17 years old.

Nearly $93 \pm 1\%$ of the license buyers hunted bear (Table 2). These hunters spent 63,862 days afield ($\bar{x} = 7.2$ days/hunter) and harvested 2,181 bears. Harvest decreased by nearly 17% from 2006 (Figure 3). Marquette County was the county with the highest number of bear hunters and bears harvested during 2007 (Table 3).

The average number of days required to harvest a bear statewide was 29 ± 2 days in 2007, which was significantly more than in 2006 (Figure 4). Mean effort per harvested bear increased in each ecological region between 2006 and 2007 (Figure 5). Long-term trends are difficult to interpret because hunting seasons have been lengthened and hunt periods and areas have been added since 1992; therefore, these annual estimates are not directly comparable. In 1994, most early hunt periods were increased from 37 to 42 days and a third hunt period was added in the Gwinn Unit. In 1995, a third hunt period was added in the Baraga Unit. In 1996, Baldwin and Gladwin units were created, and a third period was added

to Bergland, Amasa, Carney, and Newberry units. In 2002, the units in the LP were expanded slightly to coincide with county boundaries. In 2006, the area of the Bladwin Unit was increased slightly with the addition of Leelanau County. The units having the highest and lowest effort per harvested bear have generally been Gladwin and Drummond Island units, respectively (Figure 6).

About 35% of the bear hunters hunted on private lands only, 43% hunted on public lands only, and 20% hunted on both private and public lands (Table 4). Bear hunters spent 20,651 days afield on private land, 26,209 days hunting on public land only, and 16,135 days hunting on both private and public lands (Table 5). Of the estimated 2,181 bear harvested in 2007, $40 \pm 3\%$ of these bears (868 ± 79) were taken on private land. About $59 \pm 3\%$ of the bears ($1,294 \pm 97$) were taken on public land. A few bear (19 ± 13) were harvested from land of unreported ownership.

For bears that the harvest date was reported, about 30% of these bears were taken during the first five days and 52% during the first ten days of the hunting season (Figure 7). Of the bears harvested, $61 \pm 3\%$ were males ($1,336 \pm 98$) and $37 \pm 3\%$ were females (808 ± 76 ; Table 6). Statewide, 25% of hunters harvested a bear in 2007 (Table 2), significantly lower than last year (Frawley 2007). Hunter success ranged from 5-47% among the bear management units (Table 2).

Most hunters ($76 \pm 1\%$) used only firearms while hunting bear, although $24 \pm 1\%$ of the hunters used archery equipment only or a combination of firearm and archery equipment (Table 7). Most hunters ($89 \pm 2\%$) used a firearm to harvest their bear, while $10 \pm 2\%$ used a bow. A small proportion of successful hunter ($<1\%$) failed to report whether their bear was taken with a gun or bow. Most hunters ($85 \pm 1\%$) relied primarily on baiting as a means of locating and attracting bears (Table 8). About 12% ($\pm 1\%$) of hunters relied primarily on dogs alone or a combination of baiting and dogs to locate bears. About 3% of hunters relied on a hunting method not involving dogs or bait.

About $81 \pm 2\%$ of the harvested bears were taken with the aid of bait only (Table 9). Hunting success for hunters using bait only was $24 \pm 1\%$, while hunting success for hunters using dogs was $34 \pm 4\%$ in 2007. Success among hunters using dogs has usually been higher than among hunters using bait only (Figure 8).

Statewide, about $50 \pm 2\%$ of hunters rated their hunting experiences as very good or good and $27 \pm 1\%$ rated their hunting experiences as poor or very poor (Tables 3 and 10). Hunter satisfaction is affected by many factors such as hunting success and whether hunting activities were completed without interference (Figure 8 and 9). In 2007, $24\% \pm 1\%$ of the hunters ($2,162 \pm 117$) were interfered with by other hunters. Most of this interference was caused by another bear hunter; $20\% \pm 1\%$ of the hunters ($1,738 \pm 108$) reported that other bear hunters interfered with their hunt. Generally, hunters in the UP were less likely to be interfered with by other hunters than hunters in the LP (Tables 3 and 10, Figure 10).

In 2000, a preference-point system was implemented for distributing bear hunting licenses. Hunters were asked whether they approved of this distribution system. Most hunters ($68 \pm 1\%$) approved or strongly approved of the system. About $18 \pm 1\%$ of the hunters

indicated that they were not sure about the system, and $14 \pm 1\%$ disapproved or strongly disapproved of the system.

Bear hunters were asked which reasons were important for selecting their hunting location (Figure 11). Hunters most frequently cited high bear density as the most important factor used to select their hunting area ($63 \pm 1\%$). Hunting an area where they experienced low hunting pressure ($58 \pm 2\%$), hunting in a traditional hunting area ($55 \pm 2\%$), and hunting where there were large amounts of public lands ($54 \pm 2\%$) were the next most important reasons to select an area.

ACKNOWLEDGEMENTS

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- Frawley, B. J. 2007. 2006 Michigan black bear hunter survey. Wildlife Division Report 3468. Michigan Department of Natural Resources, Lansing. USA.
- Payton, M. E., M. H. Greenstone, and N. Schenker. 2003. Overlapping confidence intervals or standard error intervals: what do they mean in terms of statistical significance? Journal of Insect Science 3:34.



Figure 1. Bear management units open to hunting in Michigan, 2007.

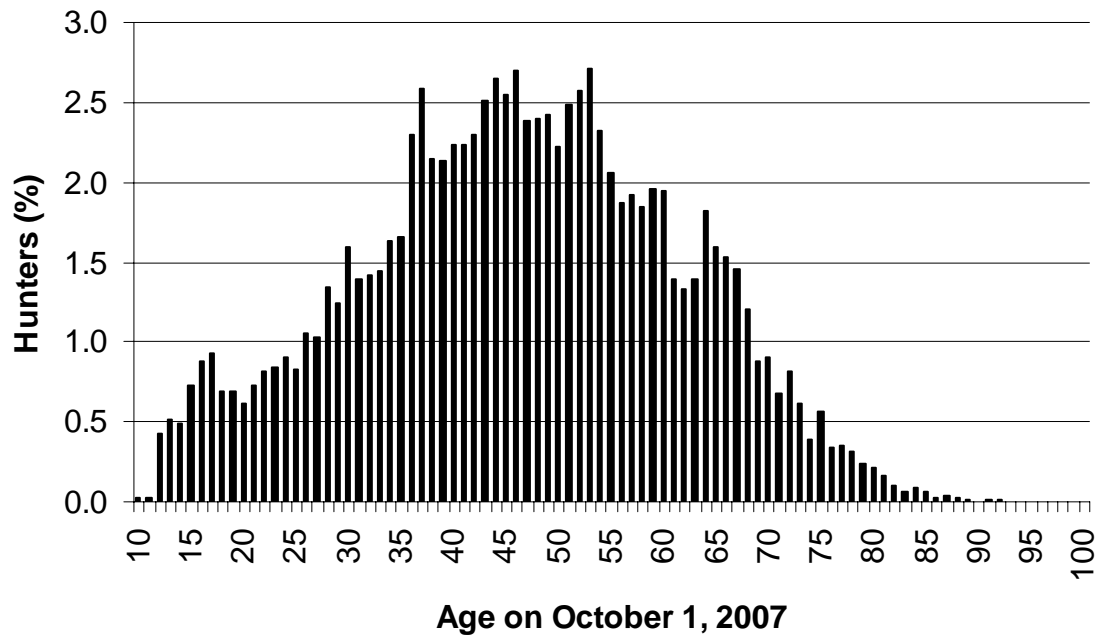


Figure 2. Age of people that purchased a bear hunting license in Michigan for the 2007 hunting season (\bar{x} = 46 years). Licenses were purchased by 9,514 people.

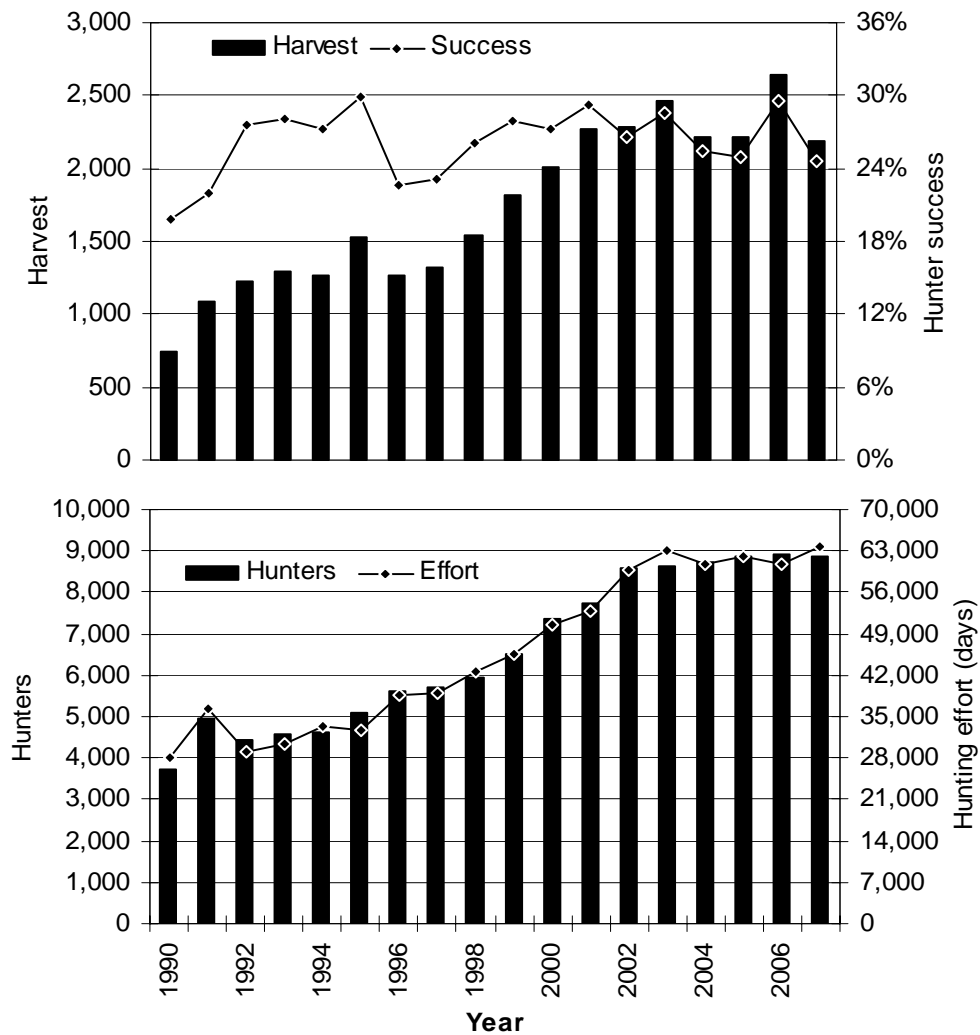


Figure 3. Estimated harvest, hunting success, number of hunters, and hunting effort during bear hunting seasons, 1990-2007.

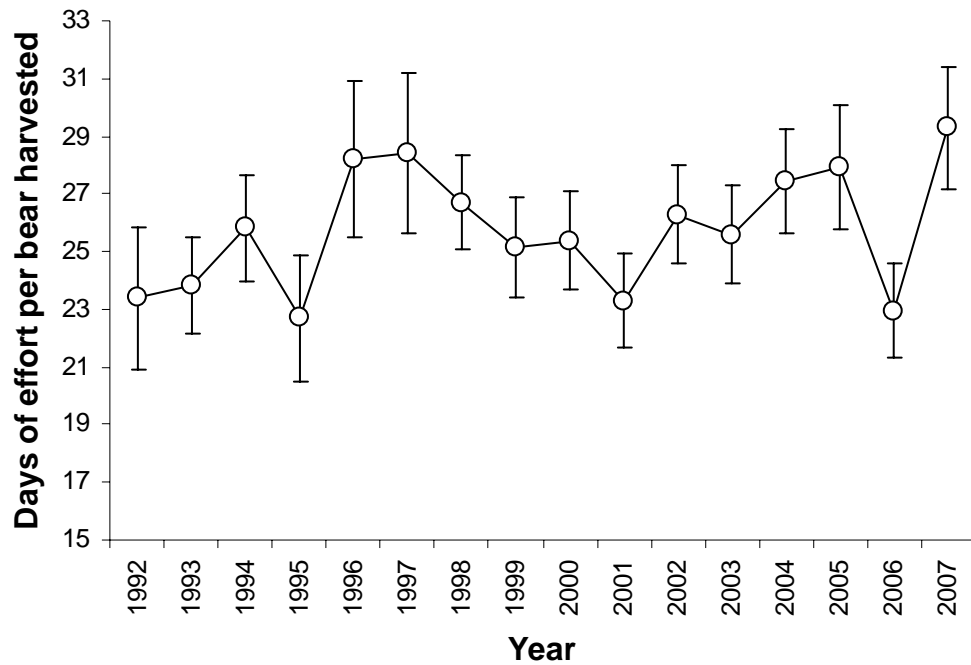


Figure 4. Estimated mean number of days required to harvest a bear statewide in Michigan during 1992-2007. Vertical bars represent the 95% confidence interval.

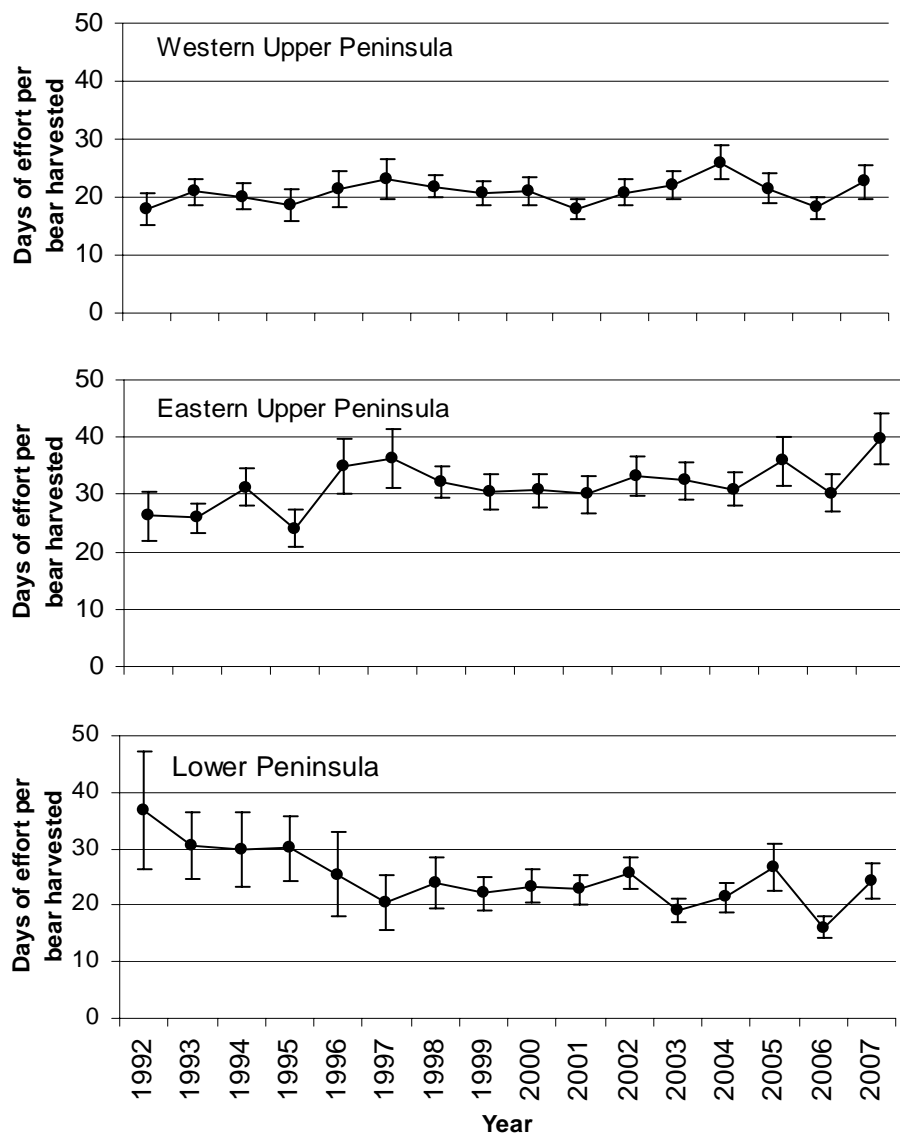


Figure 5. Estimated mean number of days required to harvest a bear in Michigan during 1992-2007, summarized by ecological region. Western UP consisted of Amasa, Baraga, and Bergland units, and eastern UP consisted of Carney, Gwinn, and Newberry units (Drummond Island Unit excluded). Lower Peninsula consisted of Baldwin, Gladwin, and Red Oak units. Vertical bars represent the 95% confidence interval.

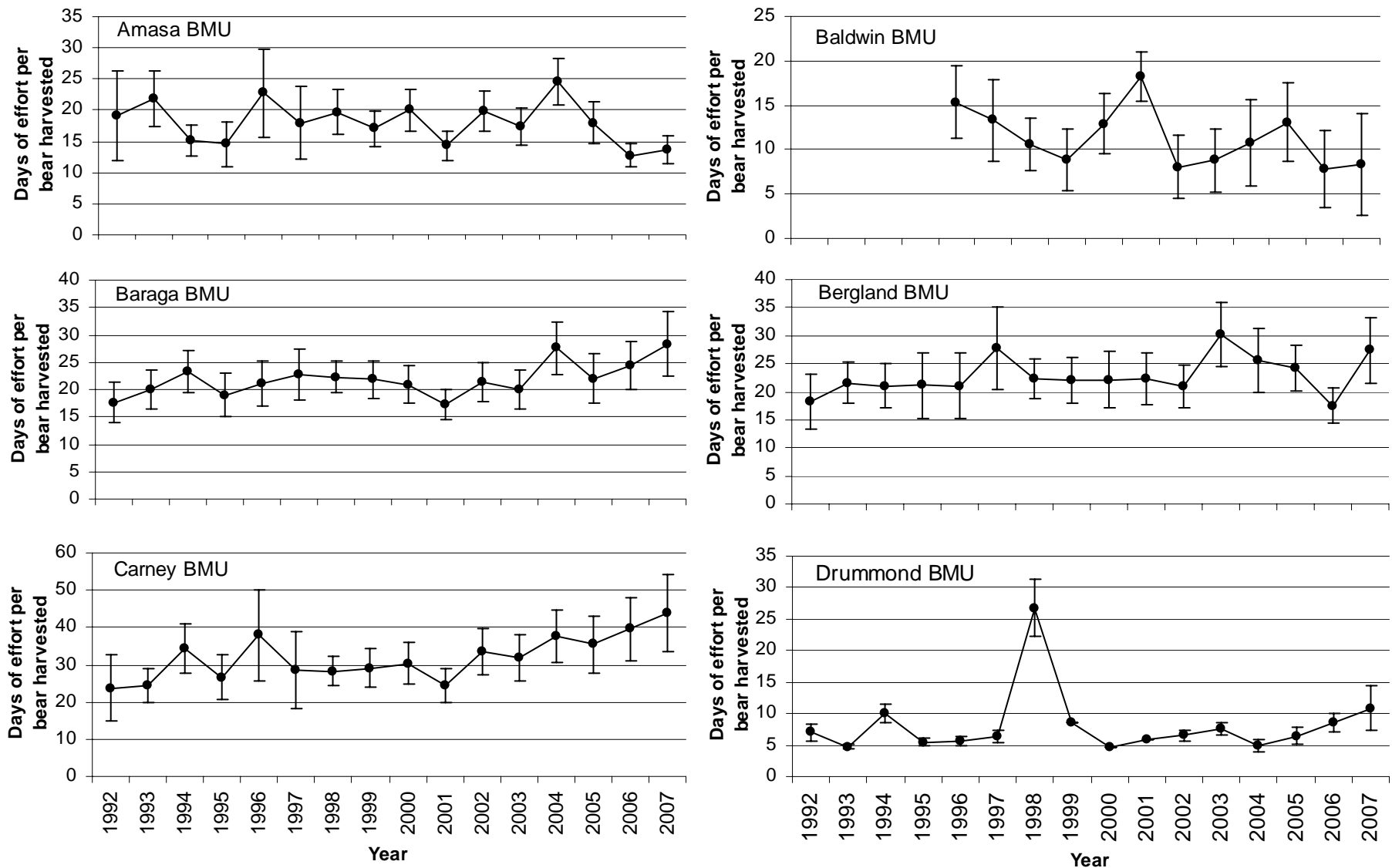


Figure 6. Estimated mean number of days required to harvest a bear in Michigan during 1992-2007, summarized by management unit. Baldwin and Gladwin management units were created in 1996. Vertical bars represent the 95% confidence interval.

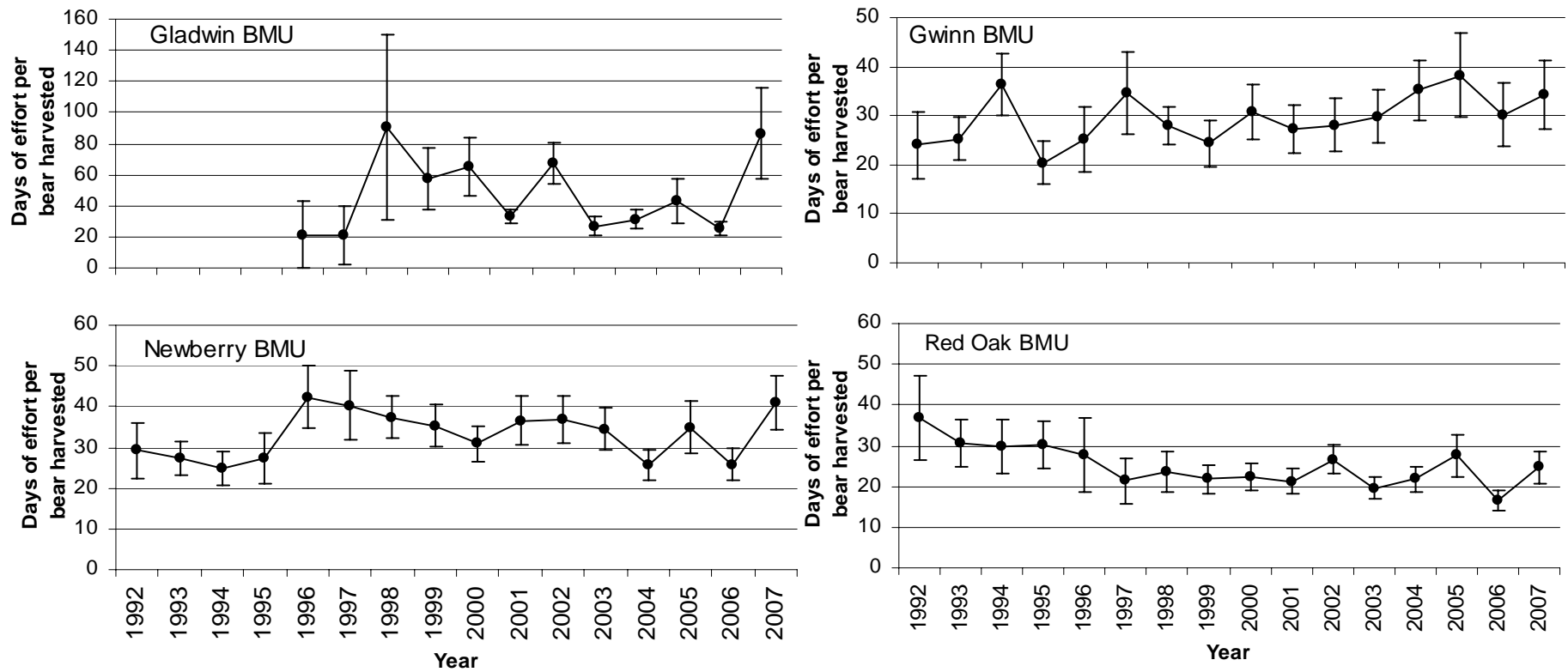


Figure 6 (continued). Estimated mean number of days required to harvest a bear in Michigan during 1992-2007, summarized by management unit. Baldwin and Gladwin management units were created in 1996. Vertical bars represent the 95% confidence interval.

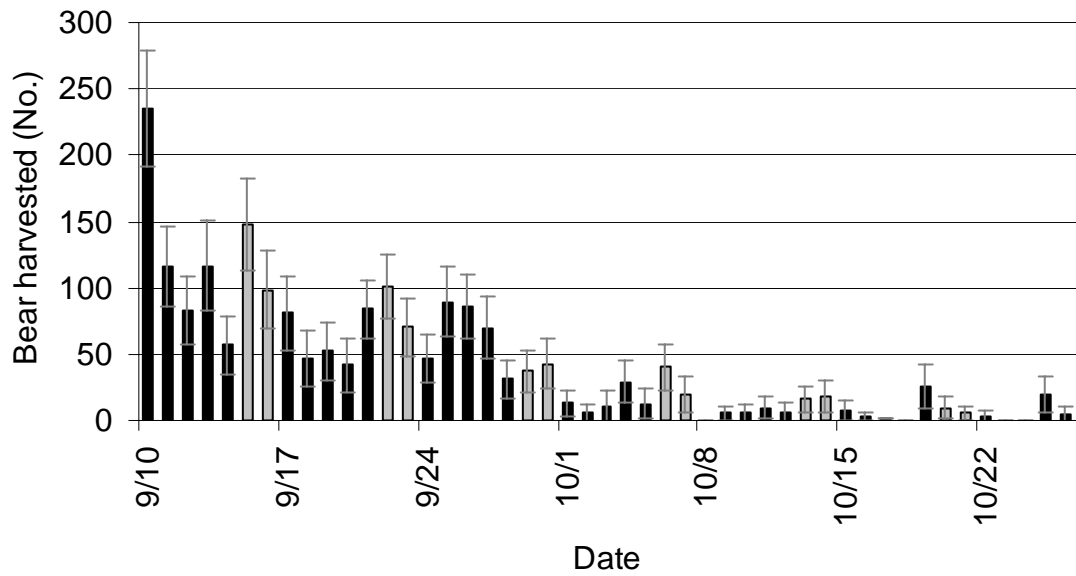


Figure 7. Estimated number of bear harvested by date during the 2007 bear hunting season (includes all hunt periods). An additional 173 ± 41 bear were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval. The opening of the bear hunting season was September 10 in the UP and September 22 in the LP. Hunting with dogs in the UP started on September 15.

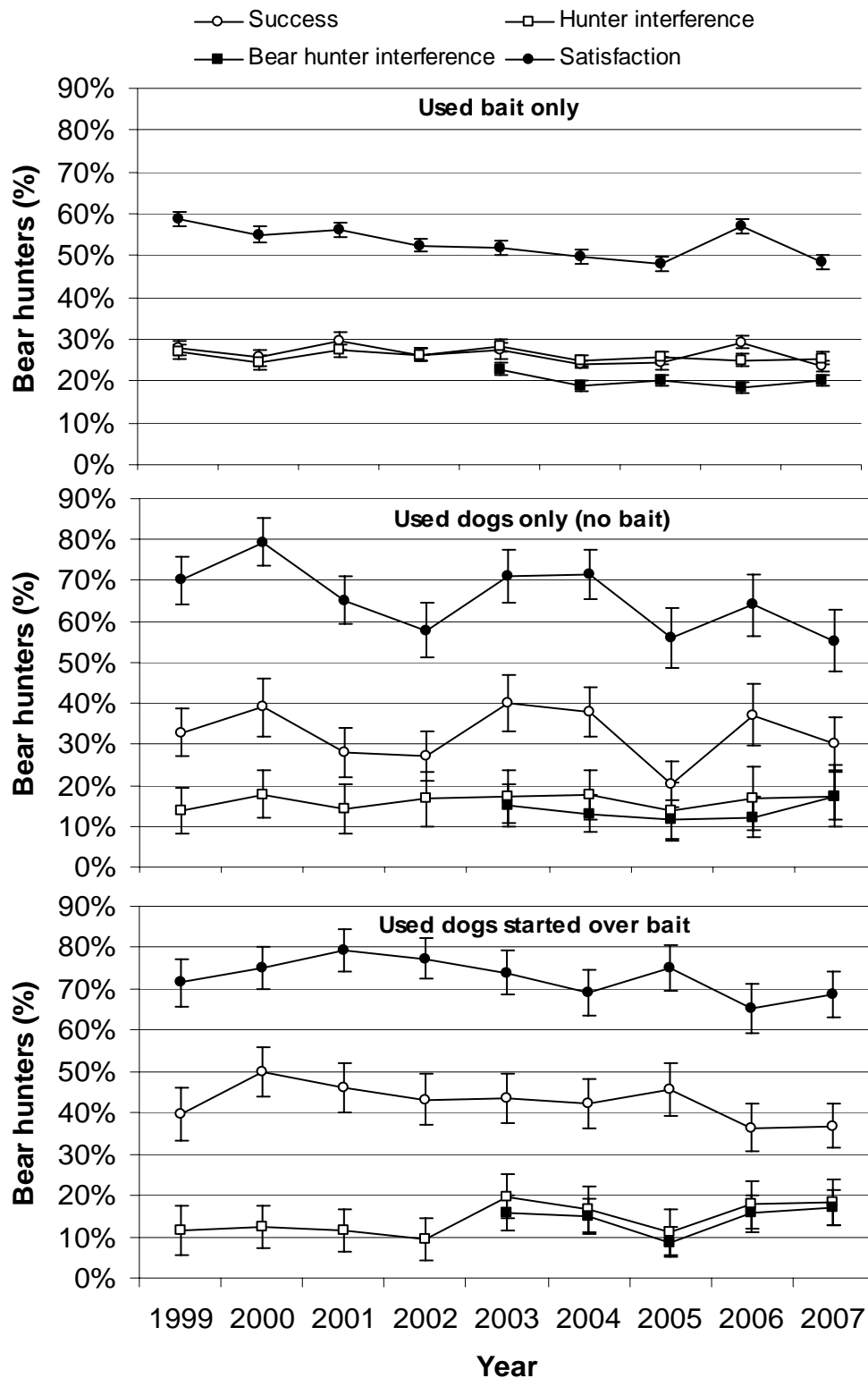


Figure 8. Estimated hunter success, interference, and satisfaction of bear hunters with their hunting experience in Michigan during 1999-2007, summarized by primary method of hunt. Vertical bars represent the 95% confidence interval. Interference was the proportion of hunters indicating they experienced interference from other hunters. Satisfaction was the proportion of hunters rating their hunting experience as very good or good.

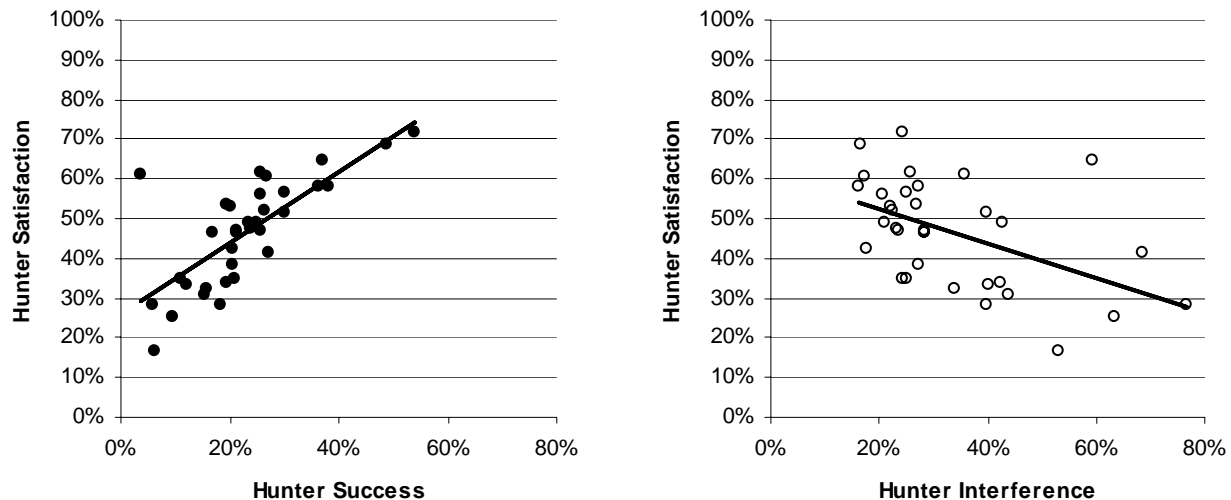


Figure 9. Hunter satisfaction (hunters rating their hunting experience as very good or good) relative to hunter success and hunter interference for 34 counties in Michigan during the 2007 bear hunting season (included only counties with at least 20 hunters). Interference was the proportion of hunters that reported interference from other hunters (all types of hunters).

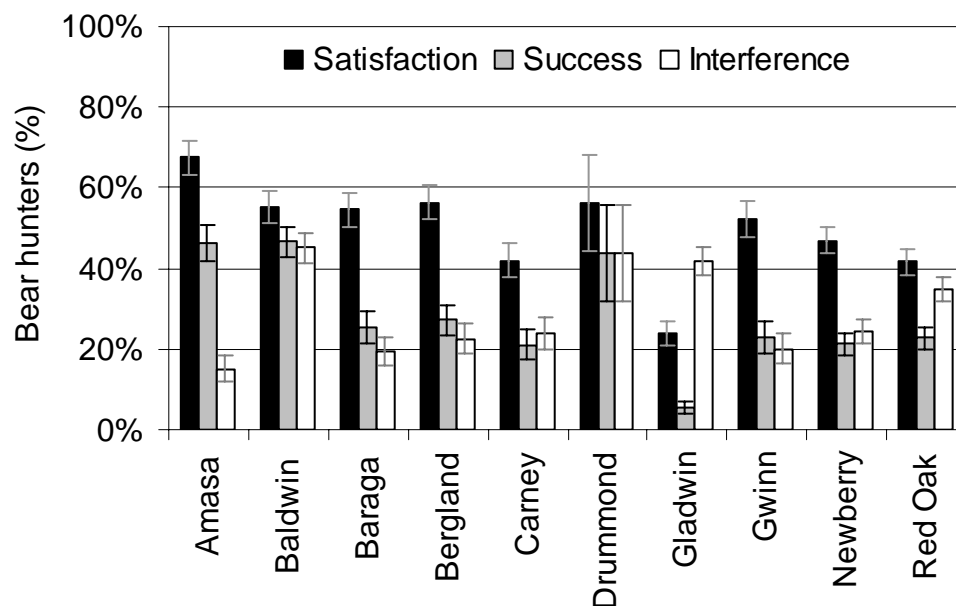
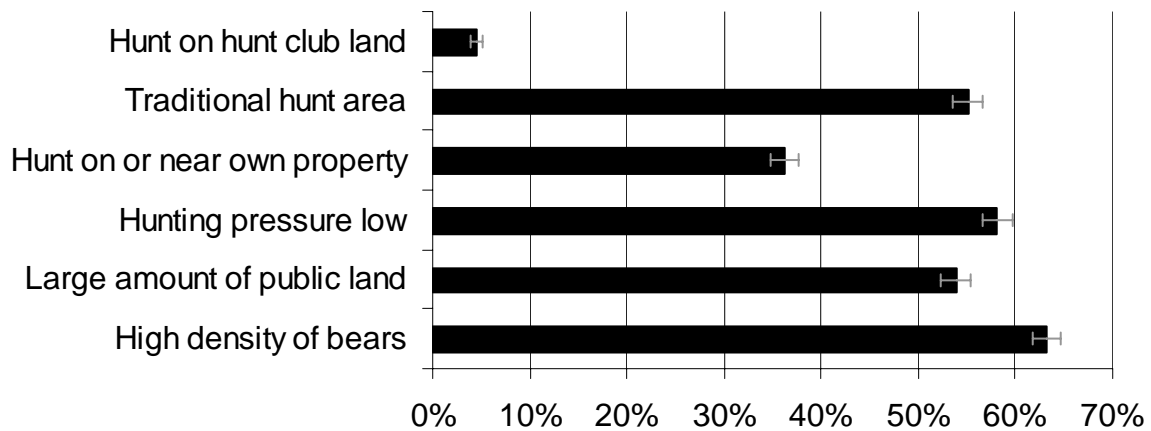


Figure 10. Estimated hunter satisfaction, hunting success, and level of hunter interference in Michigan's management units during the 2007 bear hunting season. Satisfaction measures the proportion of hunters rating their hunting experiences as very good or good. Error bars represent the 95% confidence limit. Interference was the proportion of hunters that reported interference from other hunters (all types of hunters).



Proportion of bear hunters reporting reason as very important or important

Figure 11. Reasons bear hunters cited as important factors in selecting their bear hunting location in Michigan during the 2007 bear hunting season. Error bars represent the 95% confidence limit.

Table 1. Number of people purchasing hunting licenses for the 2007 Michigan bear hunting seasons and number of people selected for survey sample.

Management unit	Licenses available (quota)	Number of eligible applicants ^a	Licenses sold ^b	Number of people included in survey sample
Amasa	590	2,486	524	289
Baldwin	70	2,202	68	62
Baraga	2,410	4,797	1,874	483
Bergland	1,620	2,830	1,208	425
Carney	1,380	2,481	1,030	401
Drummond Island	25	468	22	22
Gladwin	200	761	160	150
Gwinn	1,430	3,278	1,109	412
Newberry	2,480	8,372	2,007	719
Red Oak	1,700	11,407	1,512	640
Statewide	11,905	39,082	9,514	3,603
Applicants opting for Preference Point ^c		14,932		0

^aNumber of eligible applicants selecting the management unit as their first choice to hunt.

^bFewer licenses were sold than the number available because some successful applicants failed to purchase a license.

^cApplicants that chose to receive a preference point rather than enter into the drawing for a hunting license.

Table 2. Estimated number of hunters, harvest, hunter success, hunting effort, mean days hunted, and mean effort per harvested bear during the 2007 Michigan bear hunting season.

Management Unit	Hunters		Harvest		Hunter success		Hunting effort		Days hunted per hunter (\bar{x})		Days hunted per harvested bear (\bar{x})	
	No.	95% CL ^a	No.	95% CL ^a	%	95% CL ^a	Days	95% CL ^a	Days	95% CL ^a	Days	95% CL ^a
Amasa	489	12	227	23	46	4	2,975	273	6.1	0.5	13.1	2.2
Baldwin	66	1	31	3	47	4	261	12	4.0	0.2	8.5	1.0
Baraga	1,707	46	435	67	25	4	11,716	888	6.9	0.5	26.9	5.8
Bergland	1,135	25	308	44	27	4	8,193	649	7.2	0.5	26.6	5.8
Carney	953	24	201	35	21	4	8,520	722	8.9	0.7	42.3	10.4
Drummond Is.	21	1	9	3	44	12	98	10	4.8	0.4	10.9	3.6
Gladwin	153	2	8	2	5	2	662	24	4.3	0.1	80.7	29.0
Gwinn	1,041	23	238	40	23	4	8,106	685	7.8	0.6	34.1	7.0
Newberry	1,874	33	398	51	21	3	15,418	1063	8.2	0.5	38.7	6.6
Red Oak	1,435	21	326	39	23	3	7,914	353	5.5	0.2	24.3	3.8
Statewide ^b	8,874	75	2,181	118	25	1	63,862	1,879	7.2	0.2	29.3	2.1

^a 95% confidence limits.

^b Column totals may not equal statewide totals because of rounding.

Table 3. Estimated number of hunters, harvest, hunter success, hunting effort, hunter satisfaction, and hunt interference during the 2007 Michigan bear hunting season.

County	Hunters ^a		Harvest ^a		Hunter success		Hunting effort (days) ^a		Hunter satisfaction ^b		Interfered hunters ^c	
	Total	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	%	95% CL
Alcona	244	35	51	17	21	6	1,280	228	35	8	25	7
Alger	274	45	54	21	20	7	1,866	418	54	9	27	8
Alpena	130	26	33	14	26	9	628	141	56	11	21	9
Antrim	19	11	0	0	0	0	126	97	14	21	57	29
Arenac	2	1	0	0	0	0	16	9	50	28	50	28
Baraga	485	68	175	45	36	8	2,750	528	58	8	16	6
Benzie	3	1	1	1	33	17	18	7	67	17	100	0
Charlevoix	20	10	4	4	18	19	113	67	28	20	77	19
Cheboygan	94	24	23	12	25	11	435	129	49	13	43	13
Chippewa	437	53	74	23	17	5	3,543	624	46	7	28	6
Clare	56	5	3	1	6	2	240	26	17	4	53	6
Crawford	57	18	5	6	9	10	334	124	25	14	64	15
Delta	427	54	86	26	20	6	3,262	596	53	7	22	6
Dickinson	370	48	79	23	21	6	2,977	526	47	7	28	7
Emmet	49	17	18	10	37	17	258	123	65	17	59	17
Gladwin	42	5	2	1	6	3	190	25	28	6	40	7
Gogebic	484	50	145	32	30	6	3,507	531	56	6	25	6

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as very good or good.

^cProportion of hunters that indicated that they experienced interference from other hunters (all types of hunters).

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2007 Michigan bear hunting season.

County	Hunters ^a		Harvest ^a		Hunter success		Hunting effort (days) ^a		Hunter satisfaction ^b		Interfered hunters ^c	
	Total	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	%	95% CL
Gd. Traverse	3	4	0	0	0	0	19	29	100	0	100	0
Houghton	343	61	81	30	23	8	2,414	580	49	10	21	8
Iosco	11	8	3	4	25	34	51	40	50	39	50	39
Iron	314	22	154	21	49	6	2,005	274	69	5	17	4
Isabella	1	1	0	0	0	0	8	7	100	0	100	0
Kalkaska	89	23	11	8	12	9	472	142	33	12	40	13
Keweenaw	189	48	45	23	24	11	1,423	438	47	13	23	12
Lake	24	2	7	1	27	5	83	10	41	6	69	5
Leelanau	0	0	0	0	0	0	0	0	0	0	0	0
Luce	480	56	101	28	21	5	3,711	657	47	7	29	6
Mackinac	294	46	61	22	21	7	2,342	512	38	8	27	8
Manistee	7	2	4	1	67	12	9	3	83	9	33	12
Marquette	686	72	181	40	26	5	5,112	766	52	6	22	5
Mason	2	1	0	0	0	0	9	3	0	0	0	0
Mecosta	3	1	0	0	0	0	8	4	0	0	29	12
Menominee	541	45	111	27	21	5	5,057	676	42	6	18	5
Midland	0	0	0	0	0	0	0	0	0	0	0	0

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as very good or good.

^cProportion of hunters that indicated that they experienced interference from other hunters (all types of hunters).

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2007 Michigan bear hunting season.

County	Hunters ^a		Harvest ^a		Hunter success		Hunting effort (days) ^a		Hunter satisfaction ^b		Interfered hunters ^c	
	Total	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	%	95% CL
Missaukee	99	23	15	9	16	9	572	161	32	11	34	11
Montmorency	183	31	55	18	30	8	906	191	52	9	40	9
Muskegon	0	0	0	0	0	0	0	0	0	0	0	0
Newaygo	12	2	2	1	18	7	54	10	18	7	72	8
Oceana	1	0	1	0	100	0	3	0	100	0	0	0
Ogemaw	24	10	9	7	38	21	91	41	58	20	27	20
Ontonagon	617	65	159	36	26	5	4,225	623	61	6	26	5
Osceola	20	3	2	1	11	5	62	12	35	9	24	8
Oscoda	120	26	23	12	20	9	555	142	34	11	42	11
Otsego	70	20	3	4	4	6	395	144	61	14	36	14
Presque Isle	175	31	45	16	26	8	755	162	47	9	24	8
Roscommon	120	25	18	9	15	7	725	172	31	10	44	11
Schoolcraft	389	52	104	28	27	6	2,679	491	61	7	17	6
Wexford	25	5	13	2	54	11	90	31	72	13	24	14
Unreported	1,408	107	218	46	15	3	8,488	884	48	4	18	3

^aNumber of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

^bProportion of hunters that rated their hunting experience as very good or good.

^cProportion of hunters that indicated that they experienced interference from other hunters (all types of hunters).

Table 4. Estimated number and proportion of hunters hunting on private and public lands during the 2007 bear hunting season.

Management unit	Land type															
	Private land only				Public land only				Both private and public lands				Unknown land			
	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL	Total	95% CL	%	95% CL
Amasa	210	22	43	4	184	22	38	4	89	17	18	4	6	5	1	1
Baldwin	21	2	32	4	34	3	52	4	10	2	15	3	1	1	2	1
Baraga	395	64	23	4	816	79	48	4	459	69	27	4	38	23	2	1
Bergland	256	41	23	4	607	51	53	4	249	41	22	4	23	14	2	1
Carney	447	45	47	5	273	39	29	4	221	37	23	4	12	10	1	1
Drummond Is.	3	2	13	8	13	3	63	12	5	2	25	10	0	0	0	0
Gladwin	85	5	56	3	52	5	34	3	13	3	9	2	2	1	2	1
Gwinn	394	46	38	4	432	47	42	4	208	38	20	4	7	8	1	1
Newberry	544	58	29	3	945	65	50	3	364	50	19	3	20	13	1	1
Red Oak	730	48	51	3	489	45	34	3	200	33	14	2	16	10	1	1
Statewide	3,083	127	35	1	3,846	139	43	2	1,819	115	20	1	126	35	1	0

Table 5. Estimated number of days of hunting effort on private and public lands during the 2007 Michigan bear hunting season.

Management unit	Land type							
	Private lands		Public lands		Both private and public lands		Unknown	
	Total	95% CL	Total	95% CL	Total	95% CL	Total	95% CL
Amasa	1,287	212	888	169	778	212	21	30
Baldwin	90	11	128	13	36	9	7	4
Baraga	2,555	557	5,260	712	3,465	683	435	341
Bergland	1,793	405	4,113	517	2,191	521	96	86
Carney	3,828	570	2,210	481	2,403	548	78	104
Drummond Is.	12	8	53	12	34	14	0	0
Gladwin	380	28	228	26	47	14	7	4
Gwinn	2,847	508	2,924	482	2,313	560	23	38
Newberry	4,058	627	7,474	857	3,765	787	120	166
Red Oak	3,801	313	2,931	322	1,102	240	81	70
Statewide ^a	20,651	1,263	26,209	1,451	16,135	1,440	868	412

^aColumn totals may not equal statewide totals because of rounding errors.

Table 6. Number of applicants, licenses sold, estimated number of hunters, harvest, hunting effort (days), and hunting success during Michigan bear hunting seasons, 2001-2007.

Region	Year						
	2001	2002	2003	2004	2005	2006	2007
Upper Peninsula							
Applicants	31,666	29,112	27,344	28,295	28,600	26,554	24,712
Licenses sold	8,337	7,393	7,453	7,558	7,808	7,786	7,774
Hunters	6,492	6,949	6,939	7,062	7,305	7,310	7,221
Harvest	1,990	1,962	2,026	1,834	1,908	2,176	1,817
Males (%)	59	62	62	63	63	63	62
Females (%)	39	37	38	36	36	36	36
Unknown (%)	2	1	1	1	1	1	2
Hunter-days	46,719	51,452	54,333	52,158	53,729	53,113	55,025
Hunter success (%)	31	28	29	26	26	30	25
Lower Peninsula							
Applicants	14,674	14,370	14,297	15,616	15,625	14,634	14,370
Licenses sold	1,544	1,711	1,761	1,737	1,654	1,670	1,740
Hunters	1,247	1,626	1,695	1,653	1,567	1,608	1,653
Harvest	279	320	439	388	303	463	365
Males (%)	55	70	52	61	58	60	56
Females (%)	45	29	47	38	39	38	43
Unknown (%)	0	1	1	1	3	2	1
Hunter-days	6,204	8,465	8,592	8,451	8,250	7,589	8,838
Hunter success (%)	22	20	26	23	19	29	22
Statewide							
Applicants ^a	53,179	51,686	50,908	54,831	57,040	55,050	54,014
Licenses sold	9,881	9,104	9,214	9,295	9,462	9,456	9,514
Hunters	7,739	8,575	8,634	8,714	8,872	8,918	8,874
Harvest	2,268	2,282	2,465	2,221	2,210	2,639	2,181
Males (%)	58	63	60	62	63	63	61
Females (%)	40	36	39	36	36	36	37
Unknown (%)	2	1	1	1	1	1	2
Hunter-days	52,923	59,917	62,925	60,609	61,979	60,702	63,862
Hunter success (%)	29	27	29	25	25	30	25

^aBeginning in 2000, the number of applicants statewide also included people that applied for a preference point.

Table 7. Hunting equipment used to hunt bear in Michigan, 2007.

Equipment	Number of hunters	95% CL ^a	Equipment used (%)
Firearm	6,761	129	<p>A pie chart illustrating the distribution of hunting equipment used by hunters in Michigan in 2007. The chart is divided into four segments: a large black segment for 'Firearm' at 76.2%, a white segment for 'Both' at 12.5%, a gray segment for 'Archery' at 11.0%, and a very thin white segment for 'Unknown' at 0.3%.</p>
Archery	969	85	
Both firearm and archery	1,116	89	
Unknown	28	18	

^a95% confidence limits.

Table 9. Primary hunting methods used to hunt bear in Michigan, 2007.

Method	Number of hunters	95% CL ^a	Method used (%)
Bait only	7,508	118	<p>A pie chart illustrating the distribution of primary hunting methods used by hunters in Michigan in 2007. The chart is divided into five segments: a large black segment for 'Bait Only' at 84.5%, a gray segment for 'Dogs & Bait' at 7.5%, a white segment for 'Dogs Only' at 4.3%, a thin white segment for 'Other' at 2.6%, and a very thin white segment for 'Unknown' at 1.2%.</p>
Dogs only	379	55	
Dogs and bait	656	74	
Other	229	44	
Unknown	103	31	

^a95% confidence limits.

Table 10. Hunting methods used to harvest bear in Michigan, 2007.

Method	Number of hunters	95% CL ^a	Method used (%)
Bait only	1,769	109	<p>Bait Only 80.9%</p> <p>Dogs Only 6.9%</p> <p>Dogs & Bait 10.1%</p> <p>Other 1.2%</p> <p>Unknown 0.8%</p>
Dogs only	150	34	
Dogs and bait	219	42	
Other	26	16	
Unknown	18	12	

^a95% confidence limits.

Table 11. Level of hunter success, interference, and satisfaction of bear hunters with their hunting experience in Michigan during the 2007 season.

Management unit	Hunter success (%)	Hunters interfered by other hunters (%) ^a	Hunters interfered by other bear hunters (%)	Satisfaction level (%)					
				Very good	Good	Neutral	Poor	Very poor	No answer
Amasa	46	15	9	31	36	17	10	5	0
Baldwin	47	45	23	32	24	8	17	20	0
Baraga	25	20	15	21	34	19	15	9	2
Bergland	27	23	19	20	37	23	12	7	2
Carney	21	24	18	15	27	21	21	13	3
Drummond Is.	44	44	44	25	31	19	6	19	0
Gladwin	5	42	21	5	19	25	28	22	2
Gwinn	23	20	16	17	35	24	14	7	3
Newberry	21	24	22	15	32	23	16	11	3
Red Oak	23	35	29	14	28	19	22	15	2
Statewide	25	24	20	18	32	21	17	10	2

^aIncludes all types of hunters.

Appendix A

2007 Michigan Bear Harvest Questionnaire



2007 MICHIGAN BEAR HARVEST REPORT

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.



It is important that you complete and return this report even if you did not hunt or harvest a bear.

1. Did you hunt bear in Michigan during the 2007 season?

¹ ☐ Yes

² ☐ No; skip to question 11 on the reverse side

2. Please report the number of days for each county that you hunted bear in the following table.

COUNTY HUNTED (List each county that you hunted for bear)	NUMBER OF DAYS HUNTED	TYPE OF LAND
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both
		¹ <input type="checkbox"/> Private ² <input type="checkbox"/> Public ³ <input type="checkbox"/> Both

3. Did you hunt with a firearm, a bow, or with both during the 2007 bear season?

¹ ☐ Firearm

² ☐ Bow

³ ☐ Both

4. What hunting method did you most often use when hunting bear in Michigan during the 2007 bear season? (please select only one item)

¹ ☐ Hunted over bait only

² ☐ Used dogs only (bait not used)

³ ☐ Used dogs started over bait

⁴ ☐ Used other methods not involving dogs or bait

5. Was your harvest tag put on a bear? (If no, please skip to question 7)

¹ ☐ Yes

² ☐ No

Please continue on back

6. If your harvest tag was put on a bear, please fill in the information below

- a. What date was the bear harvested?
(please check [X] the box for the date of harvest)

September 2007						
S	M	T	W	T	F	S
	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

October 2007						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	

- b. What was the sex of the bear? ¹ ☐ Male ² ☐ Female ³ ☐ Not sure

- c. In what county was it harvested?
(please write in the county name)

- d. On what type of land was the bear harvested? ¹ ☐ Private ² ☐ Public

- e. What type of weapon was used to harvest bear? ¹ ☐ Firearm ² ☐ Bow

- f. What was the method of harvest? ¹ ☐ Taken over bait ² ☐ Used dogs (bait not used)
³ ☐ Used dogs started over bait ⁴ ☐ Used other methods not involving dogs or bait

7. Did other hunters interfere with your bear hunting? ¹ ☐ Yes ² ☐ No (skip to question 9)

8. If you answered "yes" to the previous question, was the interference caused by other bear hunters? ¹ ☐ Yes ² ☐ No

9. Overall, how would you rate your 2007 bear hunting experiences?

- ¹ ☐ Very Good ² ☐ Good ³ ☐ Neutral ⁴ ☐ Poor ⁵ ☐ Very Poor

10. How important were the following factors for selecting the location where you hunted bear in 2007?

	Very Important	Important	Slightly Important	Not Important	Not Sure
A. The area had a high density of bears.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
B. The area had a large amount of public land or commercial forest.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
C. Hunting pressure was low.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
D. I owned the property where I hunted or it was near my property.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
E. I have traditionally hunted this area.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>
F. I hunted property owned by a hunt club in this area.	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>	⁴ <input type="checkbox"/>	⁵ <input type="checkbox"/>

11. In 2000, a preference point system was implemented for distributing bear hunting licenses in Michigan. Which of the following best describes your opinion about the system? (select one)

- ¹ ☐ Strongly Approve ² ☐ Approve ³ ☐ Not Sure ⁴ ☐ Disapprove ⁵ ☐ Strongly Disapprove

Return the completed report in the enclosed postage-paid envelope. Thanks for your help.