



2000 MICHIGAN SPRING TURKEY HUNTER SURVEY

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ABSTRACT

A survey of turkey hunters was conducted following the 2000 spring hunting season to determine turkey harvest and hunter participation. In 2000, an estimated 78,376 hunters harvested 30,353 turkeys. Statewide, 39% of hunters harvested a turkey. The 2000 turkey harvest was the largest harvest in Michigan's history. It was 22% higher than the 1999 harvest of 24,973, the previous record harvest. Factors contributing to the excellent harvest included greater hunter numbers, a larger turkey population, extended shooting hours, and more area open for hunting. The number of people hunting turkeys increased by 17%, and hunting effort increased by 21% between 1999 and 2000. Nearly 68% of the hunters rated their hunting experience as excellent, very good, or good.

INTRODUCTION

In 2000, 76% of the state (42,537 square miles) was open for wild turkey (*Meleagris gallopavo*) hunting from April 17 through May 31 (Fig. 1). The area open for turkey hunting was about 72 square miles more than in 1999 and was the most ever open to spring turkey hunting.

The area open for turkey hunting was divided into 31 management units. Within each management unit, the hunting season was divided into 2 to 4 separate hunt periods, each period lasting 7-29 days.

A licensed hunter was allowed to take one bearded turkey. The Wildlife Division limited the number of licenses available for all hunt periods that began before May 16 and for hunts on public lands in southern Michigan that began after May 16 (79,990 licenses available for these quota hunts). These licenses were valid only in a single management unit and hunt period. Hunters entered into a random drawing for these limited licenses. Applicants unsuccessful in the drawing could purchase any unclaimed licenses on a first-come, first-served basis.



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In addition to the quota hunt licenses, an unlimited number of hunting licenses was available to unsuccessful applicants for use during May 16-31. Unsuccessful applicants could purchase only one of these unlimited quota licenses. These unlimited quota licenses could be used statewide except on public lands in southern Michigan.

The Wildlife Division has the authority and responsibility to protect and manage the wildlife resources of the State of Michigan. Harvest surveys are one of the primary management tools used by the Wildlife Division to accomplish its statutory responsibility. Estimating harvest, hunting effort, and hunter satisfaction are among the primary objectives of these surveys.

METHODS

Following the 2000 spring turkey hunting season, a questionnaire was sent to 12,700 randomly selected people that had purchased a turkey hunting license (resident turkey, senior resident turkey, and nonresident turkey licenses). Hunters receiving the questionnaire were asked to report whether they hunted, number of days spent afield, and whether they harvested a turkey. Successful hunters also were asked to report where their turkeys were taken (public or private land), date and time of harvest, and beard length of the harvested bird. Birds with a beard <6 inches were classified as juveniles (1 year old), while birds with longer beards were adults (≥ 2 years old). Finally, all license buyers were asked to rate their overall hunting experience (excellent, very good, good, fair, or poor).

Estimates were calculated using a stratified random sampling design that included 32 stratum (Cochran 1977). Hunters were stratified based on the management unit where their license was valid (31 management units). Hunters that purchased a license that could be used in any management unit were treated as a separate strata. A 95% confidence limit (CL) was also calculated for each estimate. This confidence limit could be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval was 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. Estimates were not adjusted for possible nonresponse bias.

Questionnaires were mailed initially during late June 2000, and a reminder note and two follow-up questionnaires were mailed to nonrespondents. Although 12,700 people were sent the questionnaire, 100 surveys were undeliverable resulting in an adjusted sample size of 12,600. Questionnaires were returned by 11,197 people, yielding an 89% adjusted response rate.

RESULTS AND DISCUSSION

In 2000, 84,475 licenses were purchased for the spring turkey hunting season, an increase of 19% from 1999. Nearly $93 \pm 1\%$ of these license buyers hunted turkeys (78,376 hunters). Hunter numbers increased 17% from 1999 (Table 1 and 2). Most of these hunters were men ($73,684 \pm 621$), although nearly 6% of the hunters were women ($4,692 \pm 462$).

Hunters spent 315,546 days afield pursuing turkeys (4.0 ± 0.7 days/hunter), an increase of 21% from 1999, and harvested 30,353 birds (Fig. 2). Between 1999 and 2000, hunter success increased from 37% to 39%. The 2000 turkey harvest was the largest harvest in Michigan's history. It was 22% higher than the 1999 harvest of 24,973, the previous record harvest. Factors contributing to the record harvest included a larger turkey population, greater hunter numbers, extended shooting hours, and more areas available for hunting.

About $39 \pm 2\%$ of the harvested birds were juvenile males ($11,833 \pm 686$); $60 \pm 2\%$ were adult males ($18,171 \pm 805$), and $<1\%$ were bearded females (197 ± 73). Additionally, the age of a small number of harvested birds ($<1\%$) was unknown (152 ± 99).

In 2000, hunting hours were one-half hour before sunrise to one-half hour before sunset. In previous years, legal hunting hours ended at 4 p.m. The extended hunting hours represented about 29% of the time available for hunting in 2000. About $19 \pm 1\%$ of the harvested birds were taken during the extended shooting hours (4:00 p.m. to one-half hour before sunset).

Hunters harvested the greatest number of turkeys during the earliest hunting periods (Fig. 3). For turkeys that the harvest date was known, 29% of these birds were taken during April 17-23. Harvest also generally was greater on the weekends than weekdays, especially on Saturdays.

Of the 30,353 turkeys harvested in 2000, $82 \pm 2\%$ of these birds were taken on private land ($24,760 \pm 862$ birds). About $18 \pm 2\%$ of the harvest ($5,519 \pm 562$ birds) were taken on public land. A few turkeys (74 birds) were harvested from land of unknown ownership.

Of the 78,376 people hunting turkeys in 2000, $68 \pm 1\%$ of the hunters rated their hunting experience as either excellent ($16,153 \pm 774$ hunters), very good ($16,262 \pm 776$), or good ($20,862 \pm 846$) (Table 3). Nearly $17 \pm 1\%$ of the hunters rated their experience as fair ($13,445 \pm 693$ hunters). Only $12 \pm 1\%$ of the hunters rated their experience as poor ($9,698 \pm 574$ hunters). About 2% of the hunters ($1,956 \pm 265$ hunters) failed to rate their hunting experience.

Changes in hunter satisfaction generally track changes in hunter success. Although hunter success increased from 37 to 39% between 1999 and 2000, hunter satisfaction remained at 68%. Hunter success was high in all hunt periods, although hunters pursuing turkeys during the earlier hunt periods were generally more satisfied and more successful than people hunting during the later periods (Table 4).

LITERATURE CITED

Cochran, W. G. 1977. Sampling techniques. John Wiley & Sons, New York. 428pp.

Table 1. Number of hunters, harvest, and hunting efforts during the spring 2000 Michigan turkey hunting season (includes all management units and hunt periods).

Management unit	Licenses available	Number of applicants ^a	Number of applicants in drawing ^b	Licenses sold	Hunters		Hunting efforts (days)		Harvest		Hunting success	
					Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
Hunt periods with quotas												
A	3,200	3,289	3,201	2,502	2,398	57	9,496	836	815	134	34	6
AA	1,800	2,416	1,801	1,368	1,256	43	4,808	417	262	61	21	5
B	5,500	4,246	4,246	3,250	3,011	97	13,060	1,375	896	166	30	5
E	3,400	6,817	3,401	2,620	2,466	69	8,313	771	963	142	39	6
F	2,950	3,526	2,725	2,118	2,021	50	6,604	464	652	111	32	5
H	1,900	3,392	1,903	1,509	1,390	46	4,967	394	410	75	29	5
J	6,500	8,574	6,507	5,193	4,788	158	19,041	2,057	2,136	291	45	6
K	14,000	31,246	14,027	11,596	11,118	262	38,454	3,175	4,742	648	43	6
L	2,300	4,830	2,304	1,971	1,882	46	7,743	766	948	110	50	6
M	950	1,262	950	747	703	20	2,587	202	278	40	40	6
MA	300	316	300	241	227	7	819	66	85	13	37	6
N	1,900	2,068	1,906	1,492	1,445	29	4,960	378	682	83	47	6
O	1,500	1,823	1,327	1,165	1,121	25	3,905	299	454	65	40	6
P	1,250	1,579	1,250	1,030	987	23	4,405	397	315	52	32	5
PB	1,375	1,766	1,376	1,118	1,043	33	5,297	505	437	64	42	6
Q	550	1,397	550	458	430	12	2,011	237	219	26	51	6
QA	500	1,004	500	406	388	9	1,720	171	117	20	30	5
QB	305	489	305	235	223	6	1,107	143	78	13	35	6
R	1,640	2,768	1,640	1,398	1,352	28	5,638	579	696	80	51	6
RA	490	1,144	490	405	391	8	1,579	150	206	22	53	6
S	2,480	4,526	2,481	2,074	2,011	40	8,335	770	884	116	44	6

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

Table 1. (continued) Number of hunters, harvest, and hunting efforts during the spring 2000 Michigan turkey hunting season (includes all management units and hunt periods).

Management unit	Licenses available	Number of applicants	Licenses sold	Number of successful applicants	Hunters		Hunting efforts (days)		Harvest		Hunting success (%)	
					Total	95% CL	Total	95% CL	Total	95% CL	%	CL
Hunt periods with quotas												
T	4,000	5,837	3,226	3,953	3,064	79	13,922	1,499	1,098	172	36	6
U	3,000	4,905	2,553	2,959	2,478	49	12,906	1,266	1,267	144	51	6
UA	1,825	2,773	1,545	1,719	1,490	32	6,162	598	721	87	48	6
UB	425	674	346	414	318	10	1,467	174	144	18	45	6
V	3,900	6,161	2,995	3,911	2,812	80	10,569	827	603	135	21	5
W	2,600	4,312	2,172	2,599	2,067	52	8,012	765	1,006	121	49	6
X	2,700	3,193	2,162	2,507	2,020	62	8,514	878	679	115	34	6
Y	3,150	3,628	2,591	3,133	2,521	48	10,474	977	1,206	149	48	6
Z	2,200	3,250	1,844	2,206	1,794	34	10,135	1,044	850	105	47	6
ZA	1,400	2,601	1,207	1,400	1,142	31	4,693	460	506	67	44	6
Unlimited quota hunt period ^c												
All units	NA	NA	NA	NA	18,018	210	73,846	1,974	5,995	274	33	1
Statewide ^d	79,990	125,812	84,475	77,991	78,376	444	315,546	5,727	30,353	928	39	1

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

^bNumber of successful applicants was sometimes larger than quota because of system processing errors.

^cSee Table 2 for a breakdown of hunters, harvest, and hunting effort by management units during the unlimited quota hunt period.

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

Table 2. Number of hunters, harvest, and hunting efforts during the unlimited quota hunt period (May 16–31, 2000) of the spring turkey hunting season in Michigan.

Management unit	Hunters		Hunting efforts (days)		Harvest		Hunting Success (%)	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
A	72	36	306	182	22	20	31	24
AA	262	67	930	259	45	28	17	9
B	56	31	145	86	6	10	11	18
E	1,332	148	4,613	627	384	81	29	5
F	362	79	1,348	357	78	37	22	9
H	607	102	2,429	488	150	51	25	7
J	747	112	2,936	516	195	58	26	7
K	4,697	253	19,456	1,352	1,510	157	32	3
L	1,070	134	4,129	630	0	0	0	0
M	195	58	791	259	56	31	29	14
MA	45	28	145	105	0	0	0	0
N	106	43	340	161	50	30	47	21
O	167	54	691	255	45	28	27	15
P	206	60	852	336	72	36	35	14
PB	234	64	1,114	343	45	28	19	11
Q	373	80	1,827	522	106	43	28	10
QA	167	54	568	214	22	20	13	11
QB	67	34	234	162	6	10	9	15
R	596	101	2,513	573	212	61	36	8
RA	357	78	1,605	428	134	48	38	11
S	997	129	4,585	759	306	73	31	6
T	669	107	2,591	502	201	59	30	7
U	752	113	3,293	622	312	73	41	8
UA	323	75	1,666	472	100	42	31	11
UB	134	48	396	179	95	41	71	18
V	696	109	2,524	451	145	50	21	6
W	825	118	3,081	565	401	83	49	7
X	195	58	657	231	17	17	9	9
Y	290	71	1,086	314	123	46	42	12
Z	552	97	2,307	510	256	67	46	9
ZA	657	106	3,131	619	256	67	39	8
Unknown	357	78	1,554	408	646	105	NA	NA
Statewide ^a	18,018	210	73,846	1,974	5,995	274	33	1

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

Table 3. How hunters rated their hunting experience during the spring 2000 Michigan turkey hunting season (includes all management units and hunt periods).

Management unit	Satisfaction level (% of hunters)					
	Excellent	Very good	Good	Fair	Poor	No answer
Hunt periods with quotas						
A	13	19	32	19	14	2
AA	11	20	20	24	22	3
B	19	17	26	19	16	2
E	20	22	25	14	14	4
F	21	20	21	22	13	2
H	19	20	27	20	12	2
J	25	18	30	15	10	2
K	23	24	29	15	9	1
L	28	22	27	13	8	3
M	21	21	25	20	11	1
MA	15	19	30	20	12	3
N	17	28	29	15	8	3
O	17	24	30	17	11	1
P	23	19	29	16	11	2
PB	23	22	26	14	11	4
Q	34	23	25	11	5	2
QA	22	15	39	15	9	0
QB	34	17	24	14	8	2
R	26	24	25	16	8	1
RA	30	22	25	15	5	4
S	26	25	20	17	9	3
T	19	22	26	20	9	3
U	28	25	29	12	4	3
UA	27	26	25	13	7	2
UB	24	25	31	14	6	1
V	11	15	31	21	18	3
W	22	26	24	15	10	3
X	26	17	27	15	11	3
Y	29	23	23	15	7	3
Z	31	26	23	14	5	2
ZA	26	20	30	14	7	2
Unlimited quota hunt period						
All units	15	18	25	20	19	3
Statewide	21	21	27	17	12	2

Table 4. Number of hunters, hunting success, and hunter rating of the 2000 spring turkey hunting season.

Variable	Hunt periods beginning							
	April 17		April 24		May 4		May 16	
	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL
Number of hunters	25,634	802	23,300	818	10,449	723	18,993	263
Success hunters (n)	10,834	625	9,670	662	3,480	498	6,363	291
Success hunters (%)	42	2	42	2	33	4	34	1
Favorable rating (n) ^b	18,562	769	16,760	778	6,896	640	11,060	331
Favorable rating (%) ^b	72	2	72	2	66	4	58	2
							68	1

^aRow totals may not equal totals for all periods because of rounding errors.

^bHunters rating their hunting experience as excellent, very good, or good.

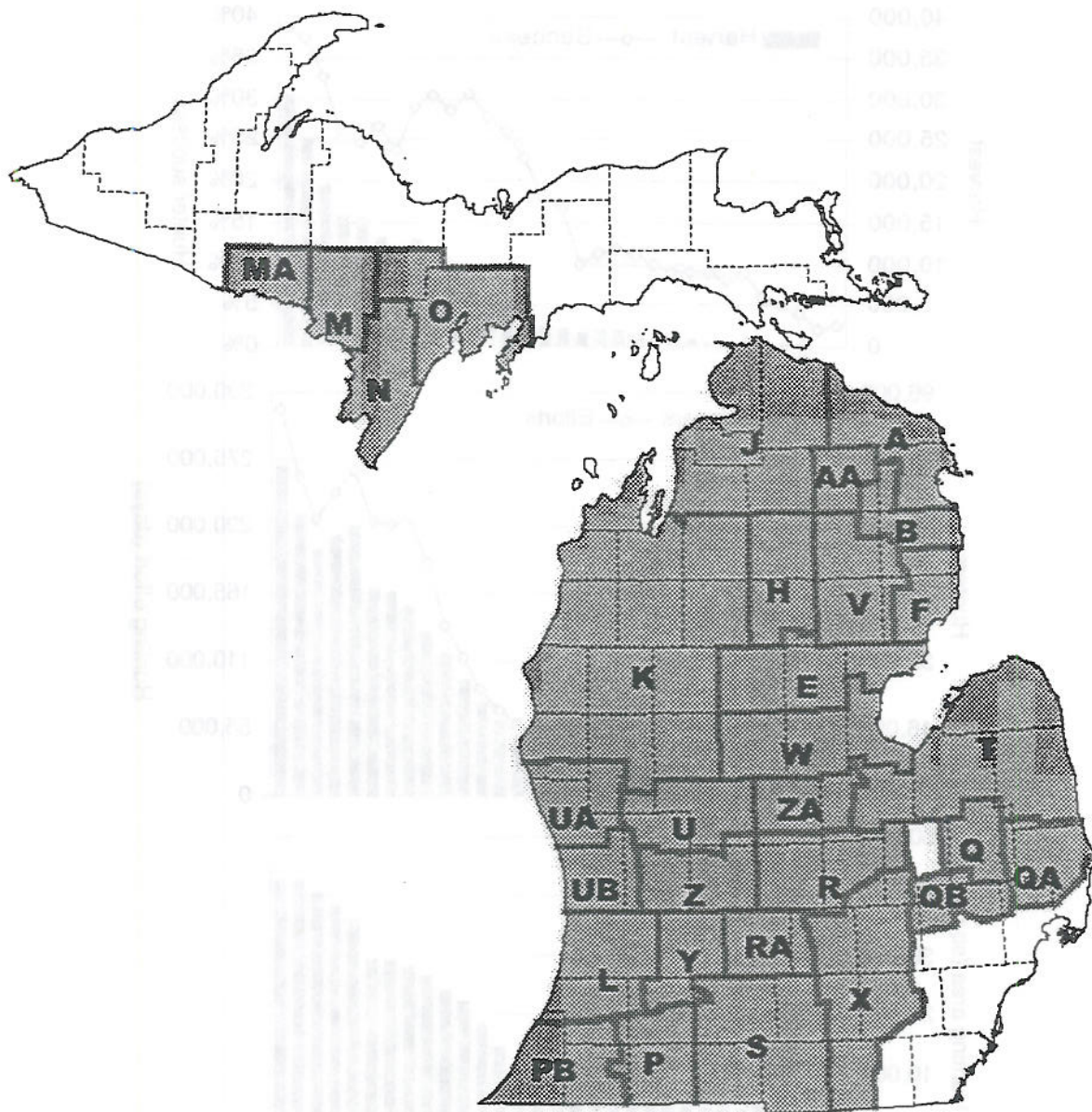


Figure 1. Management units in Michigan open to spring turkey hunting in 2000.

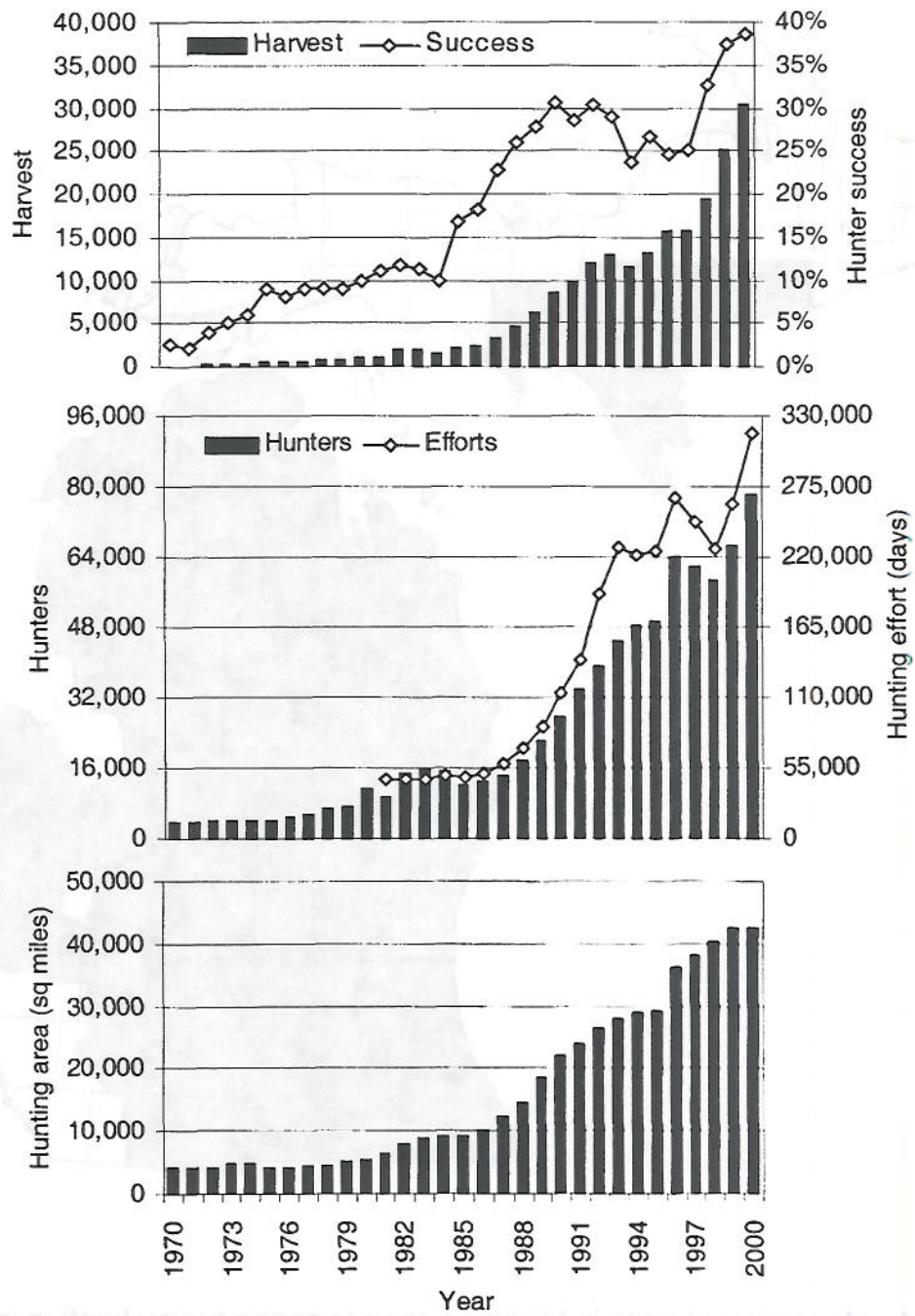


Figure 2. Number of hunters, harvest, hunting efforts, and hunting success during the spring turkey hunting season, 1970-2000. Estimates of hunting effort generally were not available before 1981.

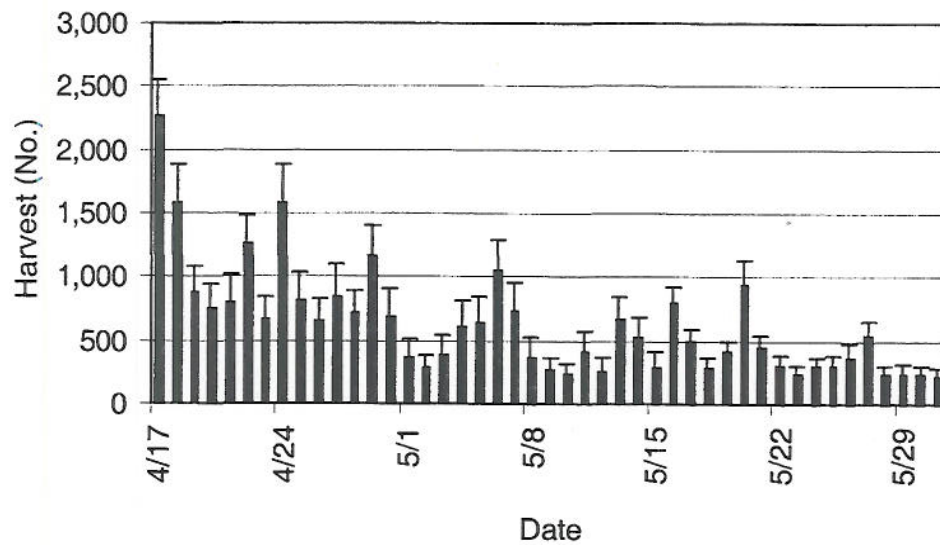


Figure 3. Harvest of turkeys by date during the 2000 spring turkey hunting season. An additional $2,161 \pm 315$ birds were taken on unknown dates. Vertical error bars represent the upper 95% confidence interval.

