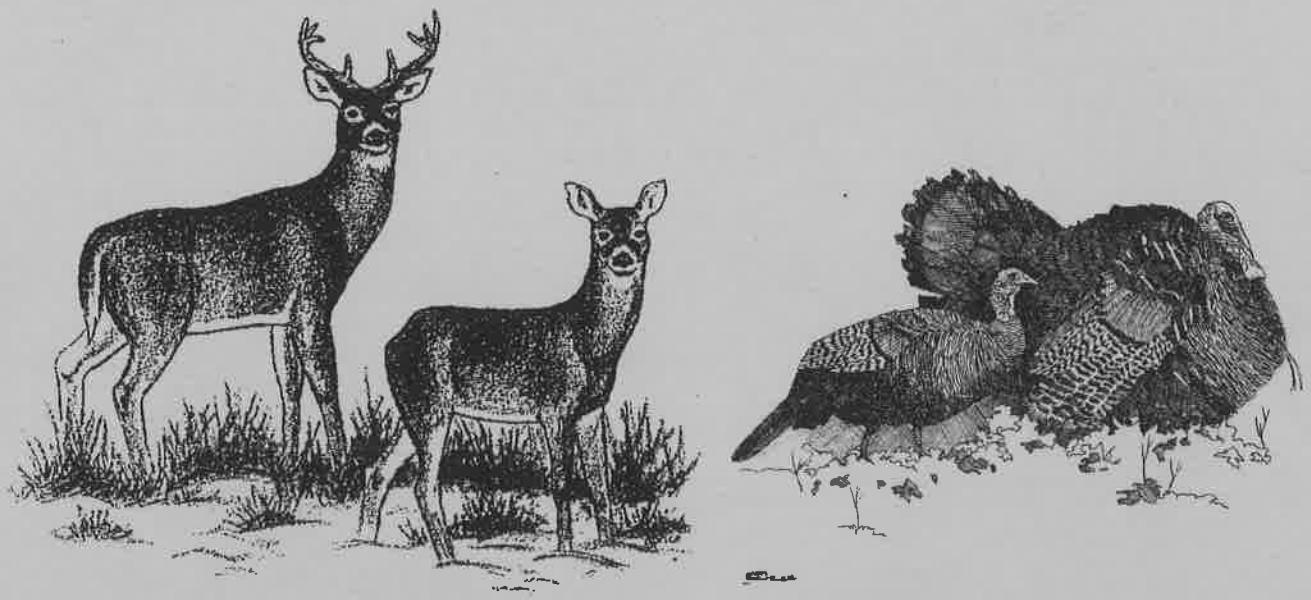
2003

Midwest Deer and Turkey Study Group Proceedings



August 24-27, 2003

Bethel Horizons Prairie Center
Dodgeville, Wisconsin

Midwest Deer and Turkey Study Group Proceedings

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Past Meeting Locations
Midwest Deer and Turkey Study Group

Year	State	Location	Date
1977	Missouri	Fountain Grove Wildlife Area	Jan. 17-19
1978	Wisconsin	Wyalusing State Park	Jan. 16-17
1979	Iowa	Rathburn Fish Hatchery	Jan. 15-18
1980	Minnesota	Whitewater State Park	Jan. 21-24
1981	Indiana	Harrison - Crawford State Park	Jan. 19-22
1982	Ohio	Lake Hope State Park	Jan. 18-21
1983	Nebraska	Louisville 4-H Camp	Jan. 17-21
1984	Kansas	Camp Aldrich	Jan. 17-21
1985	South Dakota	Black Hills	May 7-10
1986	North Dakota	Camp-of-the-Cross	Jan. 20-23
1987	Michigan	Kellog Biological Station	Jan. 27-29
1988	Illinois	Touch of Nature	Feb. 1-4
1989	Missouri	YMCA Camp of the Ozarks	Jan. 23-26
1990	Wisconsin	Bethel Horizons Prairie Center	Jan. 15-18
1991	Iowa	Conservation Education Center	Jan. 14-17
1992	Minnesota	Whitewater State Park	Jan. 13-16
1993	Indiana	Harrison - Crawford State Park	Jan. 11-14
1994	Ohio	Canter's Cave 4-H Camp	Jan. 30-Feb. 2
1995	Nebraska	Mahoney State Park	Jan. 15-18
1996	Kansas	Camp Pecusa	Jan. 14-16
1997	South Dakota	Camp NeSoDak	Aug. 24-27
1998	North Dakota	Camp Grafton	Aug. 9-12
1999	Ontario	Blue Springs Scout Reserve	Aug. 15-18
2000	Michigan	Thunder Bay Resort	Aug. 20-23
2001	Illinois	Dixon Springs Ag. Station	Aug. 19-22
2002	Missouri	Conception Abbey	Aug. 18-21
2003	Wisconsin	Bethel Horizons Prairie Center	Aug. 24-27

MEETING SUMMARY

Midwest Deer and Turkey Study Group
August 24-27, 2003

The 27th annual meeting of the Midwest Deer and Turkey Study Group was held at the Bethel Horizons Prairie Center near Dodgeville, Wisconsin. The major theme of the meeting was chronic wasting disease in the Wisconsin and Illinois deer populations. Presentations included an overview of the Wisconsin CWD management program, a description of the 2002 surveillance efforts and results, the initial epidemiological analysis of the Wisconsin outbreak, an assessment of the 2002 control disease efforts, an overview of the Illinois situation, a genetic analysis of the prion protein in Wisconsin deer, hunter's response to CWD in Illinois and Wisconsin, and the operational challenges of CWD management. Additional presentations in the deer concurrent session addressed the use of sterilization for urban deer control and the influence of landscape characteristics on deer abundance in Missouri state parks. Presentations in the turkey concurrent session included reports on population dynamics research in Wisconsin, all day turkey hunting, human dimensions of turkey hunting, crop depredation, harvest registration and data collection, and youth turkey hunts. A field trip was conducted through the Wisconsin CWD disease eradication zone with presentations about ongoing field research, landowner outreach programs, and CWD sample collection and processing. Additionally, a stop was made to inspect turkey-stamp funded habitat management activities on a state fish management area.

Common themes among the state deer status reports included: large or overabundant populations, efforts to expand antlerless harvests, concerns that populations have exceeded hunter demand, increased demand for older bucks, concerns about increased commercialization of deer (high fences, leases, resale of landowner permits), and efforts to automate the collection of field survey and harvest registration data. Results of 2002 CWD surveillance testing were reviewed and plans for 2003 testing were discussed.

In general turkey hunting opportunity, hunter numbers, and harvest continue to grow in most midwest states. Much of the discussion centered around state's abilities to increase opportunity and continue to properly manage for sustainable or even expanding hunting opportunity. Population monitoring and modeling were discussed as areas where more information is needed as the turkey hunting opportunity grows and turkey hunters become increasingly selective for adult gobblers.

A brief business meeting was held on August 26th. Iowa is the next state in the normal rotation but was not represented at the business meeting. In subsequent discussions Iowa has tentatively offered to host next year's meeting.

"Letter to Midwest Wildlife Agencies"

MIDWEST DEER AND TURKEY STUDY GROUP
Bethel Horizons Nature Center, Dodgeville, Wisconsin
August 24-27, 2003

This was the 27th annual meeting of the Midwest Deer and Turkey Group. The first meeting was held in 1977 at Missouri. The group is composed of deer and turkey biologists from 12 states (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) and Ontario Canada. These jurisdictions share the common bond of similar Midwest farmland habitats. The purpose of the group is based on 5 objectives outlined in the organizational guidelines (see attached):

1. Provide a forum for discussion of common management problems concerning white-tailed deer and turkey in farmland habitat typical of the Midwest region.
2. Provide an opportunity to define common problems and goals and formulate priorities for investigation into these problems, to minimize duplication of efforts among the member States.
3. Stimulate an exchange of information on survey techniques and results, harvest regulations and results, research projects, and habitat management.
4. Act as a source of detailed information on deer and turkeys in the Midwest for the public and other resource agencies.
5. Formulate long-range guidelines for species management in the Midwest region.

The organizational guidelines were developed and implemented to assure productive meetings with frank and open discussions. Management of deer and turkey populations can call for some difficult and sometimes unpopular decisions to be made. This group serves as a support group of peers for biologists having to make these decisions, through the realization that others are faced with similar problems. The group is not political and has never created or endorsed any position statements. Information presented at the meetings has helped states and provinces avoid costly duplication of research and management efforts.

At a glance it is obvious that member jurisdictions all approach deer and turkey management with different techniques. However, this group has produced, stimulated, or been responsible for shaping some very common themes throughout the Midwest. For example, youth hunts, muzzleloading hunts, antlerless quotas, computer modeling, animal handling techniques, tagging procedures, landowner surveys, telemetry studies, fall turkey seasons, defining suitable turkey habitat, trapping techniques, and solving depredation problems. This meeting alone brought to attention automation of field data collection and harvest registration, wildlife disease monitoring and control, all day turkey hunting, and human dimensions research.

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2003 MIDWEST DEER AND TURKEY STUDY GROUP MEETING AGENDA

Sunday August 24, 2003

3:00 - 9:00 Registration

Monday August 25, 2003

7:00 – 8:00 Breakfast

Plenary Session

8:00 - 8:15 Welcome – Tom Hauge

8:15 - 9:00 History of Wild Turkey Management in Wisconsin – John Kubisiak

9:00 - 9:45 History of White-tailed Deer Management in Wisconsin – Robert Rolley

9:45 - 10:00 Break

10:00 - 10:30 Overview of Wisconsin CWD Management – Tim Van Deelen

10:30 - 11:00 Wisconsin's CWD Surveillance Program and Results – Julie Langenberg

11:00 - 11:30 Initial epidemiological analysis of Wisconsin's CWD outbreak – Mike Samuel

11:30 - 12:00 CWD update and actions in Illinois – Paul Shelton

12:00 - 1:00 Lunch

	Deer Group	Turkey Group
1:00 - 1:30	Prion protein genetics in Wisconsin - Judd Aiken	Wisconsin Wild Turkey Population Dynamics Research - George Klemolin
1:30 - 2:00	Results of the WDNR audit of captive white-tailed deer farms – Karl Brooks	All Day Turkey Hunting: Open Forum - Jeff Beringer, Facilitator
2:00 - 2:30	Wisconsin's Hunter's response to CWD - Jordan Petchenik	Human Dimensions of Turkey Hunting in Wisconsin - Stacy Lischka
2:30 - 3:00	Perceived risk of CWD among hunters in Illinois - Craig Miller	Wild Turkey Crop Depredation -Todd Gosselink
3:00 - 3:30	Break	
3:30 - 4:00	Operational challenges of CWD management - Carl Batha	Turkey Registration and Data Collection - Steve Backs
4:00 – 4:30	Use of sterilization for urban deer population control in Highland Park, Illinois - Nancy Mathews	Youth Turkey Hunts - James Robaidek and Kay Brockman-Mederas
4:30 – 5:00	The influence of landscape characteristics on white-tailed deer abundance in Missouri State Parks - Craig Pullins	NWTF Research - Tom Hughes

5:30 - 6:30 Dinner

7:00 Whitetails Unlimited Educational Programs

Tuesday August 26, 2003

7:00 - 8:00 Breakfast

	Deer Group	Turkey Group
8:00 - 12:00	State status reports	State status reports

12:00 - 1:00 Lunch

1:00 - 5:30 Field trip of southwestern Wisconsin turkey management and CWD eradication zone, sampling station and processing center.

6:00 - 7:00 Dinner

7:00 - 10:00 Business meeting and informal discussions

Wednesday August 27, 2003

7:00 - 8:00 Breakfast

8:00 Departure

Organizational Guidelines of the Midwest Deer and Turkey Study Group

Objectives: The Midwest Deer and Turkey Study Group was formed to:

1. Provide a forum for discussion of common management problems concerning the white-tailed deer and the wild turkey in Farmland habitat typical of the midwest region.
2. Provide an opportunity to define common problems and goals and formulate priorities for investigations into these problems, to minimize duplication of efforts among the member states.
3. Stimulate an exchange of information between states on survey techniques and results, harvest regulations and results, research projects, and habitat management.
4. Act as a source of detailed information on deer and turkeys in the Midwest for the public and other resource agencies.
5. Formulate long-range guidelines for species management in the Midwest region.

Organization: The Midwest Deer and Turkey Study Group shall consist of representatives from member states who, as wildlife biologists, are directly responsible for the management of deer and wild turkeys in farmland habitat. States invited for the group are Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

Officers: The offices of chairman and secretary shall be filled by biologists from the state selected to host the next meeting. Their term of office shall be from their selections until completion of all responsibilities for their group meeting. Officers will be selected by the host state with recommendations made by the group. Their responsibilities will include organizing the meeting to be held in their state, selecting a meeting site and dates, arranging for lodging and meeting rooms, formulating an informal program, publicity and meeting announcement to member states, and publication of a post-meeting Newsletter.

Committee: Committees may be selected to investigate specific problem areas and make recommendations to the entire membership. The important work of the group will be performed by assigned committees. Committees will be selected by the chairman after reviewing requests for committee action submitted by the membership. Possible committees include: research review, information and education, future programs, and position statements.

Meetings: At each group meeting the time and host state for the next meeting will be decided. Group meetings will be held on an irregular basis as determined by the needs of the membership. Meeting sites will be rotated among member states on a volunteer basis. If no volunteer comes forward, the first member state (proceeding alphabetically) that has not yet hosted a meeting, or the member state with the longest elapsed time period since it last hosted a meeting will be chosen (if agreeable to that state). Meetings will generally be of 2-3 days in duration. A general theme shall be selected for each meeting, if possible, with a meeting site chosen to enhance the discussion of the selected topic.

Notice of arrangements for the meeting shall be distributed to member states at least 4 months in advance to allow time for securing out-of-state travel authority and preparation of presentations.

Meeting Agenda: The program shall be as informal as possible with plenty of time allotted for discussion. One aspect of the program should be a report from each state on hunting regulations and harvest; population surveys, new research and management projects, University research, and any other topics the state may feel is important to the group. Also the chairman may invite guest speakers to present reports on the selected theme of the meeting or other topics which may be of interest to the group. Short field trips may be utilized to point out areas of special interest to the group. Better efficiency and exchange of ideas will be realized by breaking down the group into separate deer and turkey workshops to discuss pertinent research and management programs. The business meeting and certain topics of interest to the entire group will require a combined meeting of the membership.

Attendance: To enhance an atmosphere of total participation and exchange of ideas, the attendance shall be held to 35 persons. The chairman will be responsible for limiting the size of the meeting to this number. He shall allocate the 35 seats in a manner that allow the 10 non-host member states to send a maximum of 3 individuals apiece, while the host state is allowed 5 seats. If pre-meeting registration indicates that some states will not send their full allotment, the chairman can delegate unfilled seats to the host state too or to states requesting extra attendance. Persons invited by the host state to participate in the program would not be counted towards the allotment.

Business Meeting: A short business meeting will be scheduled on the meeting agenda. Topics for discussion will include selection of the next host state, year of the next group meeting, future topic(s) of interest, selection of officers, committee reports, and any other information pertinent to the operation of the group.

Newsletter: The secretary for the group shall be responsible for sending out a Newsletter immediately following each meeting to the Chairman of the Midwest Fish & Game Commissioners, the Director of all member states, persons attending the meeting, and any other organization or agency making a request. This Newsletter shall contain a summary of information presented in the program, discussion, and items covered at the business meeting including committee reports. Any written reports submitted at the meeting shall be included as well as a list of persons attending the meeting and their addresses. Funds for distribution of the Newsletter and other materials will be furnished by the host state or obtained through the charge of a small registration fee.

STATE

DEER

REPORTS

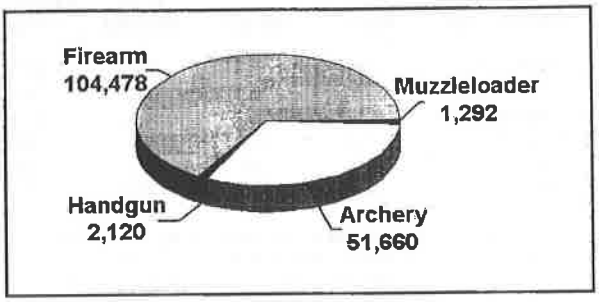
SUMMARY OF 2002-2003 ILLINOIS DEER SEASONS

Forest Wildlife Information Series #01-03 September 2003

Introduction

Illinois deer hunters set a new harvest record during 2002 with 159,550 whitetails, compared to the previous record of 152,756, set in 2001. The firearm and handgun seasons showed a 3% and 1% increase in harvests, respectively, and there was a significant 8% increase in the archery season harvest. However, the muzzleloader season saw a 14% decrease in the whitetail deer harvest. A breakdown of harvest by season is provided in Figure 1.

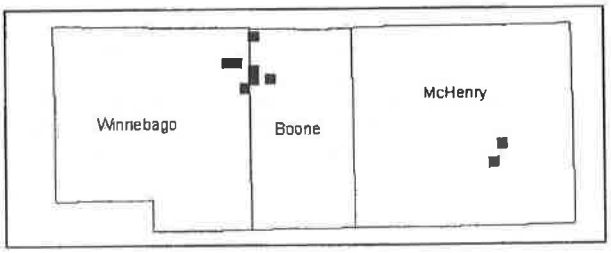
Figure 1. 2002 Illinois deer harvest by season



Chronic Wasting Disease in Illinois

On November 1, 2002, DNR officials received confirmation that a wild Illinois deer had tested positive for chronic wasting disease (CWD). During the ensuing firearm deer season, over 4,000 samples were taken from hunter harvested deer in 36 counties. Six additional CWD-positive deer were identified from these samples. In conjunction with additional surveillance efforts, two clusters of infection were identified - one located along the Boone-Winnebago county line northeast of Rockford, and the other southeast of Woodstock in McHenry County (Map 1).

Map 1. CWD-infected Sections



Season Results

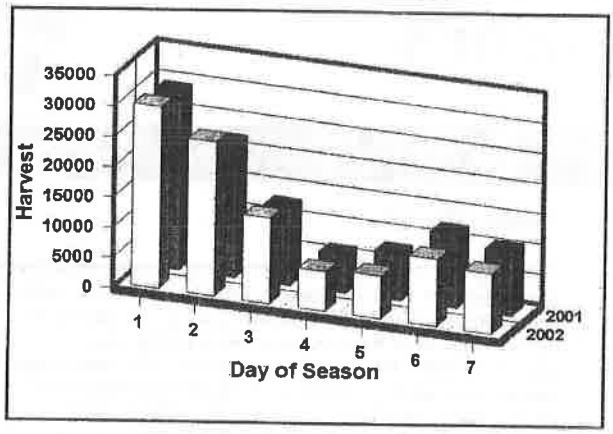
Firearm: The 7-day 2002 firearm deer season consisted of one 3-day segment (Friday - Sunday, Nov. 22 - 24) and a second 4-day segment (Thursday - Sunday, Dec. 5 - 8). Statewide corn harvest was more than 95% complete by the onset of firearm season. IDNR's Permit Office issued 277,701 county-specific firearm deer permits, resulting in 102,823 deer harvested in the 98 counties open to firearm hunting. An additional 4,037 permits (excluding standby permits issued at the sites) were issued for special hunt areas (public lands), with a harvest of 1,655 deer. In comparison, 99,906 deer were harvested using 282,066 county permits in 2001, and special hunt areas accounted for 1,398 deer with 3,995 permits. Hunters with muzzleloading-only permits took 624 deer during the second weekend of the 2002 regular firearm deer season. Table 1 presents the number of permits issued and resulting harvest on a statewide basis. Average permit success rates during 2002 increased by 1 percentage point (from 36% to 37%) compared to 2001, with the success rate for a full-season either-sex permit remaining at 40%. Daily harvest rates during the 2002 season were higher than during 2001 on the first four days of the hunting season, with decreases on the last three days (Figure 2). Individual county results are included in Table 7 at the end of this report.

Table 1. Firearm deer harvest by permit type during 2002

Permit Type[1]	Permits Issued	Deer Harvested	Permit Success	% of Harvest
E-S/ Full	140,323	56,452	40%	54%
E-S/1st	327	73	22%	<1%
E-S/2nd	14,284	3,562	25%	3%
A-O/Full	42,270	20,480	48%	20%
A-O/1st	656	207	32%	<1%
A-O/2nd	3,020	902	30%	<1%
E-S/Free L-T	39,029	9,950	25%	9%
A-O/Free L-T	39,020	10,692	27%	10%
E-S/Paid L-T	18	6	33%	<1%
NRL/E-S	771	301	39%	<1%
NRL/A-O	508	203	40%	<1%
A-O/Youth	1,512	308	20%	<1%
E-S/Muzzle[2]	6,239	542	N/A	<1%
A-O/Muzzle[2]	593	82	N/A	<1%
Other [3]	N/A	718	N/A	<1%
Total	**288,570**	**104,478**	**37%[4]**	**100%**

(1) E-S represents either-sex permits and A-O represents antlerless-only permits. L-T represents landowner-tenant permits.
(2) Represents permits issued for the muzzleloading-only season that could be used during the second regular firearm season.
(3) Represents deer tagged with site-specific standby permits or unidentified/incorrectly used permit types.
(4) Total does not include muzzleloading or "Other" data.

Figure 2. Daily harvest during the firearm deer seasons - 2002 and 2001



Weather conditions were generally favorable during the firearm season, with temperatures remaining cool, particularly during the fourth and fifth days, when temperatures dropped into the teens and single digits. During the first season, mean temperatures were in the mid to upper 30s, and a trace of snowfall was observed at several locations throughout the state on the first day. During the second season, mean temperatures were generally in the 20s. However, high temperatures reached the upper 40s on the sixth day.

The statewide 2002 firearm harvest is summarized by age and sex in Table 2. *Note:* age or sex data were lacking for 7,455 deer. Concern for traffic safety was the primary reason information was not collected for these deer (i.e., when hunter traffic backed up on major roadways at check stations, checkers only tagged deer and collected hunter permits but did not age deer). The sex composition of the 2002 firearm harvest was 42% females and 58% males.

Table 2. Sex and age composition of the 2002 firearm deer harvest *

Age	Males	% of Males	Females	% of Females	% of Total
Fawn	14,308	25%	10,054	25%	25%
1 ½	18,476	33%	12,668	31%	32%
2 ½	15,026	27%	12,000	30%	28%
3 ½	7,208	13%	4,293	11%	12%
4 ½+	1,523	3%	1,467	4%	3%
Total	**56,541**	**100%**	**40,482**	**100%**	**100%**

* There were an additional 7,455 deer checked through the check stations with no age or sex recorded.

IDNR biologists annually monitor the age structure of the antlered buck harvest. This serves as an index of the mortality rate, most of which is accounted for by hunter harvest. Limiting buck mortality at acceptable levels, while controlling population levels through adequate doe harvest, ensures that mature bucks are plentiful in the population, and doe:buck ratios are low. The proportion of yearling bucks (42%) in the antlered harvest during the 2002 firearm season was the lowest in recent years. Age composition of the antlered buck harvest is reported in Table 3.

Table3. Age structure of antlered bucks taken during the 2002 firearm season for which age data are available

Age	Total	Percent of Total*
1 ½	16,871	42% (45%)
2 ½	14,851	37% (36%)
3 ½	7,149	18% (15%)
4 ½+	1,494	4% (3%)
	40,365	**100%**

* Figures in parentheses represent 2001 percentages.

Muzzleloading: The 2002 muzzleloader season was held December 13-15. Muzzleloader permit allocation decreased slightly overall, with 6,239 either-sex and 593 antlerless-only permits issued. In addition, the muzzleloader harvest of 1,292 deer represents a 14% decrease over the previous year (Table 4). Hunters with muzzleloading-only permits accounted for 56% of the harvest, with the remaining 44% taken primarily by landowners with unfilled property-only permits ("free" landowner permits).

Table 4. Harvest by permit type during the 2002 muzzleloading deer season

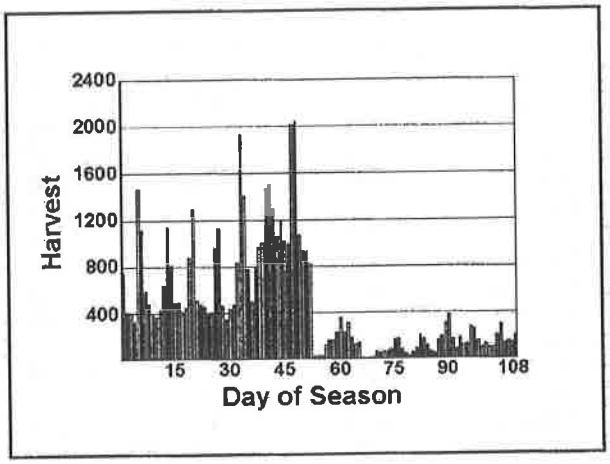
Permit Type[1]	Male[2]	Female	Total Harvest	Percent of Harvest
E-S/Muzzle	325	322	649	50%
A-O/Muzzle	15	57	72	6%
E-S/Free L-T	169	102	272	21%
A-O/Free L-T	54	202	257	20%
Other[3]	12	30	42	3%
Totals	**575**	**713**	**1292**	**100%**

(1) E-S represents either-sex permits and A-O represents antlerless-only permits, L-T represents landowner-tenant permits.
(2) Totals for male and female do not include 4 deer for which sex was not identified.
(3) Includes site-specific standby permits and improperly-used permit types.

Archery: In counties closed to firearm deer hunting, the 2002 - 2003 archery season consisted of 108 days from October 1, 2002 through January 16, 2003, while in counties open to firearm deer hunting the season consisted of 101 days. Resident hunters could purchase unlimited numbers of over-the-counter combination permits (each consisting of one either-sex and one antlerless-only tag), but harvest was limited to a maximum of two antlered deer during all seasons (including archery, firearm, and muzzleloader). Archery harvest increased significantly, from 47,858 in 2001 to 51,660 in 2002 (+8%). The ratio of bucks to does in the harvest was 55:45%. Archery harvest results by county are included in Table 7.

The rate of harvest during the statewide archery season peaked in early to mid-November during the rut, with the weekend of November 16-17 having the highest harvests. The harvest on the first complete weekend of the season was almost as high as during mid November. Daily archery harvest for the 2002-2003 season is shown in Figure 3.

Figure 3. Daily archery harvest during 2002-2003



Restricted Archery Zone Results: Special regulations remained in place for the five central Illinois counties in the Restricted Archery Zone (Champaign, DeWitt, Macon, Moultrie and Piatt). In this zone, only antlered deer were legal during October 1-31, with a maximum harvest of 2 deer (either-sex) per hunter during the archery season. Either-sex hunting resumed November 1 until the close of the season.

Biologists' goal for the Restricted Zone was to reduce archery harvest by more than 20% from 1998 levels, with a heavy emphasis on reduction of the doe kill. A comparison of archery harvest in the Restricted Zone counties during the past 5 years is presented in Table 5.

Table 5. Results of regulations (enacted in 1999) in the 5-County Restricted Archery Zone, 2002

County	1998	1999	2000	2001	2002	Average % Reduction
Champaign	274	161	188	229	211	-28%
DeWitt	215	163	172	201	254	-8.1%
Macon	290	223	200	255	261	-19%
Moultrie	159	104	120	130	155	-20%
Piatt	177	122	104	97	123	-37%
Total	**1,115**	**773**	**784**	**912**	**1004**	**-22.1%**
Rest of State	**35,213**	**40,573**	**42,116**	**46,947**	**50,656**	**+28%**

Handgun: A special handgun hunting season (January 17-19, 2003) was held in 26 counties as authorized by 520 ILCS 5/2.25. A total of 11,713 antlerless-only permits was issued through a randomized lottery drawing. Hunter success averaged 18%, with a harvest of 2,120 deer (Table 6). Although interest in this season continues to grow, and support for expansion into new counties is strong, it is unlikely that IDNR will be able to increase the number of open counties in the absence of legislation to liberalize handgun deer hunting.

Table 6. Handgun harvest results by county - January 2003[1]

County	Permits Issued	Total Harvest	Hunter Success	Antlerless Males[2]	Female
Adams	514	81	16%	22	59
Brown	406	93	23%	28	65
Calhoun	327	86	26%	16	69
Clark	276	51	18%	7	44
Crawford	235	55	23%	9	41
Fayette	660	92	14%	28	64
Fulton	597	86	14%	26	60
Greene	317	68	21%	18	50
Jasper	410	85	21%	23	62
Jefferson	682	145	21%	33	111
JoDaviess	782	128	16%	33	95
Lawrence	133	31	23%	9	21
Macoupin	532	59	11%	3	53
McLean	290	44	15%	15	29
Morgan	243	47	19%	18	29
Ogle	416	44	11%	7	36
Perry	487	89	18%	21	68
Pike	954	273	29%	61	211
Randolph	540	91	17%	25	66
Richland	197	49	25%	13	36
Schuyler	416	70	17%	19	51
St. Clair	343	43	12%	11	31
Wayne	603	150	25%	42	108
White	221	63	28%	6	56
Whiteside	195	16	8%	4	12
Williamson	650	67	10%	18	49
Total	**11,613**	**2,106**	**18%**	**515**	**1576**

(1) Number of permits issued and deer harvested do not include special hunt areas. Grand totals including these areas are 11,713 permits and 2,120 deer harvested.
(2) Totals for male and female do not include 14 for which sex was not identified.

Recent Harvest Trends

Following the then-record harvest in 1995, deer harvests were relatively stable through 1999, with a significant increase during the last three years. While there was a significant drop in the muzzleloader harvest, increases in the other seasons created yet another record harvest for Illinois hunters in 2003.

Figure 4. Recent trends in Illinois deer harvest

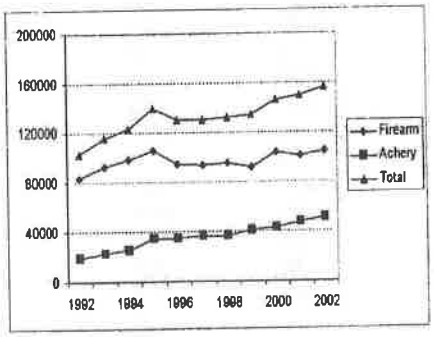


Table 7. Firearm and archery harvest by county, 2002-2003 season

County	Firearm Permits	Firearm Harvest	Archery Harvest
Adams	7734	2737	839
Alexander	1223	366	191
Bond	2870	1013	364
Boone	1115	259	196
Brown	4291	1623	694
Bureau	3389	1287	584
Calhoun	3978	1524	911
Carroll	3063	977	380
Cass	2242	786	480
Champaign	638	227	211
Christian	1844	568	362
Clark	3014	1190	489
Clay	3341	1424	560
Clinton	2407	917	481
Coles	1733	639	466
Cook	0	0	128
Crawford	2896	1236	564
Cumberland	2066	741	252
DeKalb	1200	306	242
DeWitt	875	314	254
Douglas	600	214	137
DuPage	0	0	106
Edgar	1699	679	302
Edwards	1480	596	168
Effingham	2778	982	375
Fayette	5723	2134	653
Ford	397	116	61
Franklin	3054	1171	840
Fulton	7063	2298	1193
Gallatin	1795	678	254
Greene	3925	1789	608
Grundy	1196	378	346
Hamilton	3094	1402	468
Hancock	4704	1910	546
Hardin	2673	1025	356
Henderson	1884	713	227
Henry	2224	789	388
Iroquois	1740	606	339
Jackson	7353	2608	737
Jasper	3016	1209	552
Jefferson	5268	2333	1389
Jersey	2852	1006	536
JoDaviess	6822	2148	520
Johnson	5248	1760	537
Kane	0	0	412
Kankakee	998	218	233
Kendall	500	130	166
Knox	3769	1277	592
Lake	0	0	535
LaSalle	3409	1149	1068
Lawrence	1805	812	492
Lee	2148	725	535
Livingston	1432	460	259
Logan	995	367	226
Macon	647	259	261
Macoupin	6374	2105	755
Madison	3477	1115	915
Marion	4579	1970	1067
Marshall	1634	586	266
Mason	1495	567	485
Massac	1825	594	378
McDonough	2409	929	390
McHenry	3020	570	603
McLean	2287	716	462
Menard	1529	539	332
Mercer	2552	873	289
Monroe	2880	1195	280
Montgomery	3821	1337	513
Morgan	3190	1221	495
Moultrie	470	172	155
Ogle	3888	1186	600
Peoria	3982	1292	889
Perry	4464	1819	709
Piatt	433	180	123
Pike	9264	3691	2874
Pope	6645	2130	713
Pulaski	1851	738	325
Putnam	1145	440	175
Randolph	6206	2534	843
Richland	2328	932	441
Rock Island	2423	726	418
Saline	2436	889	426
Sangamon	2556	790	624
Schuyler	4785	1710	558
Scott	1512	682	229
Shelby	3583	1129	631
St.Clair	3509	1270	683
Stark	651	232	162
Stephenson	2971	1024	396
Tazewell	2390	758	654
Union	5348	1880	570
Vermilion	2333	772	915
Wabash	868	397	251
Warren	1551	612	225
Washington	3793	1504	524
Wayne	3918	1689	722
White	2472	1117	552
Whiteside	2370	767	368
Will	1081	260	805
Williamson	5315	1696	797
Winnebago	2373	575	469
Woodford	2334	838	539
Totals[1]	**284,533**	**102,823**	**51,660**

[1] Firearm totals do not include permits issued for, or deer harvested on, special hunt areas. Grand totals including these areas are 288,570 permits and 104,478 deer harvested.

Status Report

INDIANA DEPARTMENT OF NATURAL RESOURCES

To Midwest Deer Study Group
August 2003

For 2002 Season

Bloomington Field Office
Prepared by:
Zack Walker and Jim Mitchell

553 E. Miller Dr.
Bloomington, IN 47401

Season Framework and Regulations

General

The 2002 Indiana deer hunting season was comprised of 4 segments: early archery (October 1 - December 1), firearms (November 16 - December 1), muzzleloader (December 7 - 22), and late archery (December 7 - January 5). This was the ninth year that the early archery season extended into and throughout the firearm season. This was the seventh year that the late archery season extended through the first Sunday in January rather than ending on the last day in December.

This was the sixth year that the crossbow was legal for hunting under an archery license by non-handicapped hunters. The crossbow was eligible for use only in the late archery season and only for antlerless deer. Special public hunts were held at Muscatatuck and Big Oaks National Wildlife Refuges.

In designated urban zones hunters could harvest deer 2 weeks prior to the opening of the early archer season. In the urban zones hunters were allowed to harvest up to 4 deer (4 antlerless or 3 antlerless and 1 antlered). These deer did not count towards any other statewide bag limit. The statewide archery bag limit was 2 deer. Hunters could take 1 deer on a regular archery license and an additional deer on an extra archery license. Either archery license could be used to take an either-sex deer, but a total of one (1) antlered deer could be taken by archers on the two licenses. The gun bag limit was 1 antlered deer during the firearms season and 1 either-sex deer during the muzzleloader season. However, hunters could only take a total of one (1) antlered deer during the combination of the firearm, muzzleloader, and archery seasons. A single firearms license was required to hunt with any or all shotgun, muzzleloader, or handgun during the firearms season, and a muzzleloader license (separate from the firearms license) was required to hunt during the muzzleloader season. The resident deer license fee was $24.00 and the nonresident fee was $120.75. Resident landowners and lessees who hunted on land they own or lease and gained agricultural benefit from this land were exempt from purchasing deer licenses.

Antlerless Permits

For the last 19 years, antlerless deer could be taken during the firearms season by use of bonus county antlerless permits in addition to the above bag limits. Initially, the bonus county antlerless permits were limited to a specific quota for each county and were only valid for the specified county. One permit per hunter was available via a drawing. During the first years of the program, the left-over permits were destroyed. The program was liberalized in subsequent years. During the last year of the quota system (1995), individual hunters could pick up multiple left-over permits. Left-over permits were available on a first come basis at one site in each specific county where the permits were valid.

The bonus antlerless program was revised in 1996 so that hunters did not have to apply through a drawing. 2002 was the seventh year of this modified antlerless bag limit and permit disbursement system. An unlimited number of permits were available at every deer license vendor statewide, and each permit could be used in any county in the state. Permits were available to both resident and non-resident hunters. Each permit was valid for 1 antlerless deer, and hunters were allowed to take up to 4 antlerless deer statewide. Hunters could not exceed individual county bag limits which ranged from 0 to 4. County bag limits were published in the Hunting and Trapping Guide. Since 1993, the bonus county permits could be used during the

muzzleloader and late archery seasons if they were not filled during the firearms season. In 2002, 4 counties had a bag limit of 1 and regulations which restricted the season of use for Bonus Antlerless permits to the last 4 days of the firearms season plus the muzzleloader and late archery seasons. Two counties had a Bonus Antlerless bag limit of zero (0).

The additional archery permit regulation which allowed hunters to take additional deer with archery equipment in defined urban deer zones remained in place for a seventh year. However, in 2002, this was liberalized to allow more deer to be taken and to allow hunting prior to the start of the statewide archery season. Each deer required a separate additional archery license. The hunting season for urban deer began 2 weeks prior to the regular archery season, and continued throughout the statewide archery season. The total archery bag limit within an urban deer zone, excluding bonus county antlerless permits, was 6 deer.

Number of Deer Harvested

A total of 104,428 deer was legally harvested in Indiana during 2002. This harvest was a 1% increase from the 103,163 deer harvested during 2001. Compared to 2001, the antlered buck harvest of 47,177 represented a 2% decrease from last year, and the antlerless harvest of 57,251 was up 4%.

2002 INDIANA DEER HARVEST

(Percent change compared to 2001 is shown in parentheses)

Season	Number of deer harvested		
	Antlered	Antlerless	Total
Early Archery (Oct. 1 - Dec. 1)	7,397 (-38)	10,749 (-3)	18,146 (-22)
Firearms (Nov. 16 - Dec. 1)	37,119 (+10)	36,682 (+7)	73,801 (+9)
Muzzleloader (Dec. 7 - 22)	2,441 (+1)	8,914 (+3)	11,355 (+2)
Late Archery (Dec. 7 - Jan. 5)	220 (-15)	906 (+25)	1,126 (+15)
Totals	47,177 (-2)	57,251 (+4)	104,428 (+1)

Starting in 2002, 9 urban deer zones could be hunted with archery equipment two weeks prior to the opening day of early archery season (Sept. 15 - Sept. 30). In September, 199 deer (75 antlered and 124 antlerless) were reported as being harvested within these zones. Tippecanoe (59) and Vanderburgh (28) counties harvested the most deer in the additional 2 week season framework. The complete harvest taken as a result of the urban deer zone regulations is impossible to report. Even for those counties that lay completely within an urban deer zone (Marion and Vanderburgh), we can not determine the number of deer that were taken on regular licenses versus the urban deer zone extra archery permits.

The early archery season harvest of 18,146 deer comprised 17.4% of the total harvest and was 22% lower than during 2001. The late archery season harvest of 1,126 deer comprised 1% of

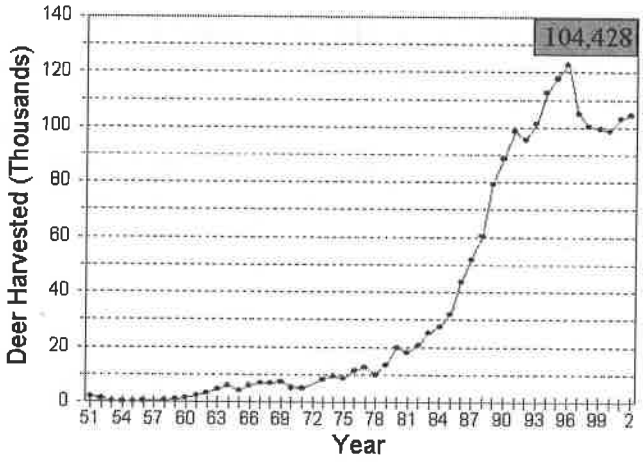
the total harvest and was 14.5% higher than during 2001. The combined early and late archery season harvest of 19,272 was 20.1% lower than the 24,116 deer harvested during 2001. Antlerless deer comprised 60% of the total archery harvest which was 11 percentage points higher than last year.

The total crossbow harvest for the year, including deer taken on handicapped hunter crossbow permits, was 387 animals compared with 410 for 2001. During the late archery season, the crossbow harvest was 59 deer compared with 20 for 2001.

The firearms season harvest of 73,801 deer was 9% higher than during 2001 and comprised 70.7% of the total harvest. Antlerless harvest (36,682) increased 7.0% for this season, and the antlered buck harvest (37,119) increased 10.3%. Antlerless deer comprised 50% of the firearm season harvest which is the same as in 2001.

The muzzleloader season harvest of 11,355 deer comprised 10.8% of the total harvest equaling that of 2001. As in past years, a very large percentage (78.5%) of the muzzleloader season harvest was composed of antlerless deer.

INDIANA DEER HARVEST, 1951-2002



The 2002 harvest represented the second increase in total harvest over the previous year since the peak harvest in 1996. Approximately 1.86 million deer have been legally harvested during the past 51 deer hunting seasons.

DAILY HARVEST DURING THE FIREARMS SEASON AND THE LAST 16 DAYS OF THE CONCURRENT EARLY ARCHERY SEASON FOR 2002

Date	Month	Day	Antlered		Antlerless		Total	
			N	%	N	%	N	%
16	November	Sat	14,099	62	8,730	38	22,829	31
17	November	Sun	6,641	57	5,076	43	11,717	16
18	November	Mon	2,137	52	1,971	48	4,108	6
19	November	Tue	1,308	53	1,148	47	2,456	3
20	November	Wed	1,328	52	1,207	48	2,535	3
21	November	Thu	710	48	766	52	1,476	2
22	November	Fri	992	49	1,036	51	2,028	3
23	November	Sat	2,838	42	3,844	58	6,682	9
24	November	Sun	1,793	41	2,601	59	4,394	6
25	November	Mon	500	41	712	59	1,212	2
26	November	Tue	478	38	766	62	1,244	2
27	November	Wed	509	41	746	59	1,255	2
28	November	Thu	1,087	37	1,872	63	2,959	4
29	November	Fri	941	30	2,150	70	3,091	4
30	November	Sat	904	31	2,039	69	2,943	4
1	December	Sun.	930	30	2,221	70	3,151	4
Totals*			37,195		36,885		74,080	

* Totals differ from those in previous table because date of harvest is not known for some registered deer and this table includes deer from both the firearms season and the last 16 days of the early archery season.

Age and Sex of the Harvest

The age and sex structure of the 2002 deer harvest was 45.2% adult males (antlered bucks), 33.9% adult females, 10.8% male fawns (button bucks) and 10.2% female fawns. About 53% of the antlered bucks and 40% of the adult does harvested during 2002 were yearlings (1.5 years old).

AGE AND SEX STRUCTURE OF THE HARVEST, 1987-2002

Year	Adults		Fawns		Total (%)
	Males (%)	Females (%)	Males (%)	Females (%)	
1987	29,530 (57)	11,139 (21)	6,164 (12)	4,945 (10)	51,778 (100)
1988	34,358 (57)	13,170 (22)	7,050 (12)	5,656 (9)	60,234 (100)
1989	40,503 (51)	19,464 (24)	10,737 (14)	8,614 (11)	79,318 (100)
1990	43,080 (48)	23,680 (27)	12,373 (14)	9,630 (11)	88,763 (100)
1991	41,593 (42)	31,211 (32)	14,626 (15)	11,253 (11)	98,683 (100)
1992	43,508 (46)	25,387 (27)	14,262 (15)	12,157 (13)*	95,314 (100)
1993	44,424 (44)	27,704 (27)	14,751 (15)	14,335 (14)*	101,214 (100)
1994	50,812 (45)	32,466 (29)	15,487 (14)	13,651 (12)*	112,416 (100)
1995	47,098 (40)	40,946 (35)	16,398 (14)	13,287 (11)*	117,729 (100)
1996	47,315 (38)	39,913 (32)	17,307 (14)	18,551 (15)*	123,086 (100)
1997	42,537 (41)	35,163 (34)	14,039 (13)	13,198 (12)*	104,937 (100)
1998	44,955 (45)	30,711 (31)	12,257 (12)	12,538 (12)*	100,461 (100)
1999	46,371 (46)	30,474 (31)	11,645 (12)	11,129 (11)*	99,618 (100)
2000	44,621 (45)	31,986 (32)	11,072 (11)	11,046 (11)*	98,725 (100)
2001	48,357 (47)	31,806 (31)	11,230 (11)	11,770 (11)*	103,163 (100)
2002	47,177 (45)	35,357 (34)	11,291 (11)	10,603 (10)*	104,428 (100)

* Number of adult and fawn females is projected from the % fawns in the females aged at the biological check stations (not from the ratio of fawn does to fawn bucks).

Distribution of the Harvest

The number of deer harvested in individual counties ranged from 64 to 2,584. Harvest exceeded 1,000 deer in 54 counties and 2,000 deer in 10 of those 54 counties. For the sixth consecutive year, no counties harvested more than 3,000 deer. The five counties with the highest total harvest were Steuben, Franklin, Switzerland, Dearborn, and Washington. The five counties with the lowest total harvest were Tipton, Benton, Marion, Rush, and Hancock. The antlered buck harvest exceeded 1,000 deer in 4 counties equaling 2001, while the antlerless harvest exceeded 1,000 deer in 14 counties vs. 13 counties in 2001. Antlerless deer comprised at least 50% of the total harvest in 71 of the state's 92 counties.

Harvest by Type of Hunting Equipment

Five types of equipment were legal for hunting deer during 2002: bow, shotgun, muzzleloader, handgun, and crossbow. The above equipment types accounted for 18.1, 61.1, 18.9, 1.6, and 0.4 percent of the total deer harvest respectively. Harvest by shotgun, muzzleloader, and handgun increased 7%, 11%, and 4% from 2001, while harvest by bow and by crossbow decreased 20% and 6% respectively from 2001 levels.

HARVEST BY TYPE OF HUNTING EQUIPMENT, 1998-2002*
(Percent of total is shown in parentheses)

Number of deer harvested/Year

Equipment type	1998	1999	2000	2001	2002
Bow	18,360 (18)	20,010 (20)	22,131 (22)	23,765 (23)	18,911 (18)
Shotgun	65,847 (66)	62,849 (63)	59,994 (61)	59,688 (58)	63,794 (61)
Muzzleloader	14,149 (14)	14,739 (15)	14,704 (15)	17,738 (17)	19,711 (19)
Handgun	1,886 (2)	1,796 (2)	1,615 (2)	1,562 (2)	1,625 (2)
Crossbow					
Handicap	180 (0)	174 (0)	227 (0)	390 (0)	328 (0)
Late archery	39 (0)	50 (0)	54 (0)	20 (0)	59 (0)
Totals	100,461	99,618	98,725	103,163	104,428

*Values within this table do not exactly equal those tallied by season (page 2) due to the fact that multiple equipment types (shotgun, handgun, and muzzleloader) can be used during the firearm season. Muzzleloaders may also be used during both the firearm and muzzleloader season. Additionally, differences arise due to the different methods required to partition data where either the equipment and or the season is unknown.

Harvest by License Status

Licensed hunters accounted for 86% of the total deer harvest. Landowners and lessees who hunted on their own land without a license and military personnel on official leave status accounted for 14% of the total deer harvest. Of the deer harvested by license-exempt hunters, 98% were taken by landowners/tenants and 2% by military personnel on leave.

Number of deer harvested in each Indiana county during 2002.

	No. Harvested				No. Harvested		
County	Antlered	Antler-less	Total*	County	Antlered	Antler-less	Total*
Adams	208	272	480	Lawrence	623	678	1,302
Allen	521	636	1,157	Madison	201	309	510
Bartholomew	336	296	632	Marion	118	89	207
Benton	61	55	116	Marshall	818	882	1,700
Blackford	149	224	373	Martin	742	803	1,545
Boone	151	149	299	Miami	504	594	1,098
Brown	746	271	1,017	Monroe	686	828	1,514
Carroll	310	390	700	Montgomery	414	520	934
Cass	501	570	1,071	Morgan	511	573	1,085
Clark	682	863	1,545	Newton	422	402	825
Clay	410	620	1,031	Noble	970	1,237	2,207
Clinton	146	158	304	Ohio	351	698	1,049
Crawford	735	690	1,425	Orange	848	1,213	2,061
Daviess	569	864	1,433	Owen	737	615	1,352
Dearborn	943	1,461	2,404	Parke	1,005	1,371	2,377
Decatur	174	195	369	Perry	989	961	1,950
Dekalb	694	835	1,529	Pike	753	963	1,716
Delaware	225	314	539	Porter	466	667	1,133
Dubois	670	987	1,656	Posey	649	547	1,195
Elkhart	504	540	1,045	Pulaski	522	550	1,072
Fayette	259	322	581	Putnam	808	891	1,699
Floyd	191	261	452	Randolph	226	320	546
Fountain	573	659	1,232	Ripley	706	1,029	1,735
Franklin	918	1,504	2,423	Rush	135	110	245
Fulton	567	700	1,267	SaintJoseph	419	404	823
Gibson	557	720	1,278	Scott	408	512	920
Grant	243	252	495	Shelby	124	162	286
Greene	874	839	1,713	Spencer	645	648	1,293
Hamilton	169	121	290	Starke	478	525	1,002
Hancock	112	135	247	Steuben	1,125	1,458	2,584
Harrison	849	1,104	1,953	Sullivan	753	734	1,487
Hendricks	208	205	413	Switzerland	1,034	1,373	2,408
Henry	203	303	506	Tippecanoe	455	611	1,066
Howard	136	166	302	Tipton	46	19	64
Huntington	454	558	1,011	Union	203	261	464
Jackson	919	1,443	2,362	Vanderburg	325	504	829
Jasper	530	608	1,138	Vermillion	475	417	892
Jay	288	518	807	Vigo	519	677	1,196
Jefferson	893	1,297	2,190	Wabash	563	425	988
Jennings	641	828	1,469	Warren	472	543	1,015
Johnson	211	260	471	Warrick	643	701	1,344
Knox	460	501	961	Washington	1,071	1,330	2,401
Kosciusko	979	897	1,876	Wayne	375	364	739
Lagrange	665	1,288	1,954	Wells	241	284	525
Lake	435	504	939	White	334	399	733
Laporte	764	1,073	1,837	Whitley	431	591	1,023

* Totals may be off +/- 1 due to rounding during partitioning of harvested deer of unknown sex or county.

Testing for CWD During 2002

During 2002, random samples of hunter killed deer (Active surveillance) were tested by the Indiana Department of Natural Resources (DNR) and the Indiana Board of Animal Health (BOAH) as were free ranging and captive animals that appeared sick or that were found dead (Targeted surveillance). The samples from hunter killed deer were by far the bulk of the samples tested. While the bulk of the samples of hunter killed deer were collected at deer check stations during the opening weekend of the firearm season, additional samples were collected at deer processing facilities throughout the hunting seasons. A stratified random sampling scheme was used to collect samples from every county in the state with the number of samples per county proportional to the total deer harvest in that county during the previous hunting season. Fawns were not included in the sampling scheme. The total number of samples collected statewide that were sent to the laboratory for analysis was approximately 1,313. Of these, 137 were found to not be usable and 1,176 were all found to have no detectable evidence of CWD. This sample size provides sufficient statistical power to be 95% confident of detecting CWD if it had been present in the state at a prevalence of at least 0.3% of the state's deer population (this would have required that several thousand deer had been infected). An additional 2,172 samples were similarly collected and processed to the point where they could be stored without degradation. The stored samples will only be used to evaluate prevalence of the disease if additional samples taken at a future date find a deer positive for CWD. While the state is thankful that CWD was not detected in 2002, there are three reservations that must be kept in mind: 1) This sampling effort does not rule out the possibility of a low level of infection in the state that would not be likely to be detected unless much more money was spent to collect and analyze more samples, 2) Approximately $300,000 was spent on this sampling effort that would have been spent on other aspects of wildlife management if this disease was not a threat to the deer resource, and 3) Not finding the disease in 2002 does not mean that the disease will not be present in 2003 - additional money will have to be diverted from other uses during each of the next few years in order to continue to monitor the health of the state's deer herd.

In addition to the random samples of hunter killed deer, 11 samples were collected from free ranging deer that appeared to be sick or that had died of unexplained causes and approximately 300 samples were collected from confined deer and elk that died on the premise or at slaughter plants. BOAH regulations stipulate that every captive cervid that dies must be tested for CWD regardless of the cause of death. All of these samples were analyzed and none were found to show any indication of exposure to CWD.

Projected CWD Testing and Management for 2003

The DNR and BOAH will cooperate to continue both Active and Targeted Surveillance for CWD detection. The surveillance efforts will be similar to those of 2002 but will be slightly modified so that this year's effort builds upon the foundation of last year and upon the results of the 2002 surveillance in the adjoining states. The projected cost for the basic surveillance effort is similar to that of last year at $300,000. If a CWD infection is confirmed in Indiana or within 40 miles of Indiana, in either a free-ranging or captive cervid population, such a finding will involve BOAH and DNR in a series of actions and communications. The funding needed for this effort would be in addition to the above funds and the dollar amount would be a function of the specific management actions that are developed in response to the specific nature of the disease detection. Agency officials from DNR and BOAH would outline a coordinated effort to address the situation, and maintain continual public communications to explain and update actions and goals. The specific actions that would be appropriate to implement will depend to a large extent

upon how many loci of infection are discovered. The response will be different if an isolated cases is found vs if multiple foci of infection are found. Initially the BOAH will activate a joint BOAH/DNR CWD Management Team. This team will meet on a regular basis to coordinate the decision making process of the DNR and the BOAH. The team will develop a plan for disease response by reviewing the current science of the disease as it relates to the specific distribution of the disease. The team will work with their respective executive offices, with the Governor's representatives and with the legislature to ensure that all affected individual's concerns are addressed and to attempt to secure financial resources for an adequate response.

Midwest Deer and Turkey Group Report: Iowa

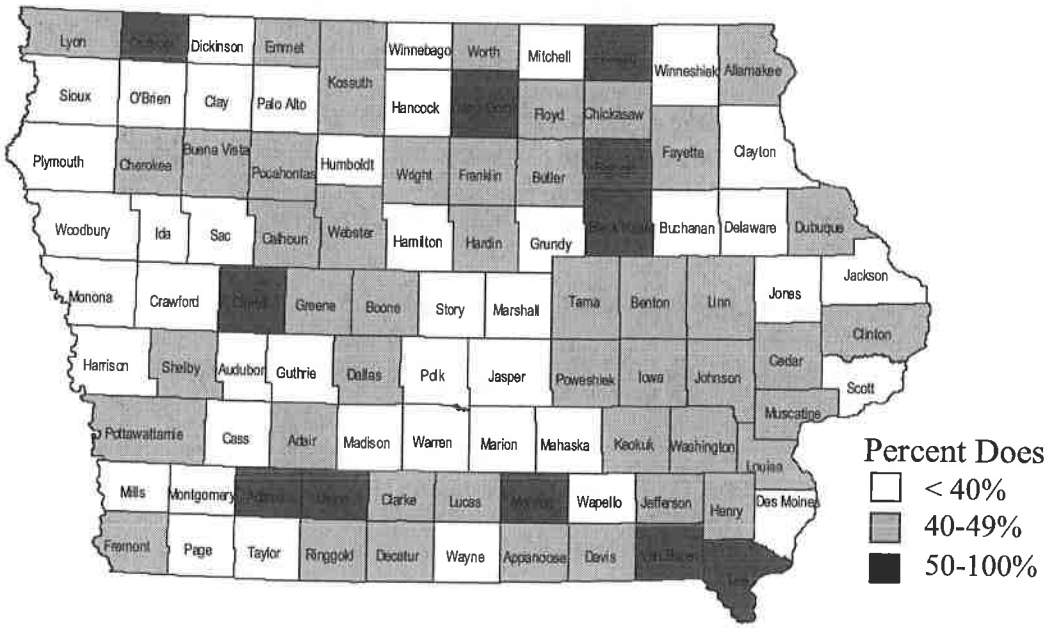
The estimated deer harvest in 2002 set a new record with more than 140,000 deer being taken. This is about 3% higher than in 2001 (Table 1). For the second year in a row all of the increase was due to an increased kill of antlerless deer. The number of does killed increased by about 4,250 deer or 7% over 2001. Most of the increased kill was due to the extra antlerless licenses issued to hunters and the fact that the number of counties open for the January season increased from 11 to 22.

Table 1. *Harvest estimates for the 2001-2002 deer season.*

Season	Hunters	Does	Buck Fawns	Antlered Bucks	Total	Change	*Percent Change*
Youth	3,326	706	196	571	1,473	- 142	*-8.8%*
Early Muzz	7,128	1,402	307	2,310	4,019	246	*6.5%*
Landowner	41,932	11,631	2,589	8,388	22,608	5,229	*30.1%*
Late Muzz	14,955	3,996	905	1,845	6,746	140	*2.1%*
Shotgun 1	67,955	17,128	5,085	25,131	47,344	- 2,323	*-4.7%*
Shotgun 2	48,939	15,809	4,448	10,339	30,596	- 2,458	*-7.4%*
Bow	42,845	6,126	1,327	10,489	17,942	1,282	*7.7%*
Nonresident	6,685	900	174	2,673	3,747	205	*5.8%*
Bonus Late	4,741	2,386	419	121	2,926	1,387	*90.1%*
Special Hunts	3,193	1,550	387	-	1,939	366	*23.3%*
Depredation	1,857	975	175	-	1,150	- 97	*-7.8%*
Total	**243,556**	**62,609**	**16,012**	**61,867**	**140,490**	**3,835**	***2.8%***
Change		*4,250*	*-523*	*106*	*3,835*		
Percent Change		*7.3%*	*-3.2%*	*0.2%*	*2.8%*		

Does made up less than 50% of the kill in most counties (See Fig 1). The percent of the harvest which consists of does is probably a good "indicator" of deer numbers in a county. Hunters will select for antlered deer as long as they are available and then take does to fill their licenses. The pattern observed in the doe kill suggests that deer are fairly abundant in most areas of the state.

Figure 1. *The percent of the total harvest that was does in 2002.*



When these harvest estimates are placed into the simulation model (2001 population of about 295,000 deer (Table 2) the simulated numbers increased by about 4% this past year. The simulation correlates well with the observed changes in the survey indices (Fig 2).

Table 2. *Results from statewide population simulations.*

Year	Harvest		Simulation			Percent Change		
	Does	Bucks	Does	Bucks	Total	Does	Bucks	Total
1985	13,703	29,014	82,606	47,107	129,713			
1986	21,921	39,009	97,599	60,124	157,723	18%	28%	22%
1987	30,873	43,983	110,499	67,186	177,685	13%	12%	13%
1988	40,820	52,375	118,556	74,974	193,530	7%	12%	9%
1989	46,600	51,325	119,108	77,289	196,397	0%	3%	1%
1990	42,881	54,147	113,469	80,118	193,587	-5%	4%	-1%
1991	36,113	46,836	109,166	76,184	185,350	-4%	-5%	-4%
1992	34,291	43,338	110,350	78,095	188,445	1%	3%	2%
1993	30,174	46,272	114,221	84,368	198,589	4%	8%	5%
1994	32,629	54,594	123,668	89,010	212,678	8%	6%	7%
1995	35,961	61,295	134,406	90,208	224,614	9%	1%	6%
1996	41,695	65,093	145,537	90,366	235,903	8%	0%	5%
1997	51,353	66,913	154,818	92,864	247,682	6%	3%	5%
1998	47,083	64,964	157,479	98,152	255,631	2%	6%	3%
1999	49,585	70,099	164,708	105,624	270,332	5%	8%	6%
2000	50,786	76,341	172,468	111,369	283,837	5%	5%	5%
2001	58,340	78,205	181,598	114,157	295,755	5%	3%	4%
2002	62,609	77,879	186,501	119,865	306,366	3%	5%	4%
2003	*78,000*	*78,000*	*188,401*	*127,408*	*315,809*	*1%*	*6%*	*3%*
2004	*78,000*	*78,000*	*175,481*	*134,659*	*310,140*	*-7%*	*6%*	*-2%*
2005	*78,000*	*78,000*	*156,791*	*132,463*	*289,254*	*-11%*	*-2%*	*-7%*

- numbers in italics are projected for the future

The updated simulation now has the highest correlation with the spotlight survey (See Fig 2). The simulated numbers are also highly correlated with the reported roadkill and the aerial surveys. However when the reported roadkill is adjusted for traffic volume (kill per billion miles (Kpbm) it has the lowest correlation of any index. Neither the reported roadkill or the adjusted roadkill match the simulated numbers very closely over the last 3 to 4 years. The spotlight and aerial surveys both match the simulation from 1997-2002 and are both equally well correlated with the simulation.

Figure 2. *Simulation results compared to the population indices. All of the indices have been scaled to the same magnitude as the simulation numbers. The scaling maintains the inherent variability of the survey indices so that they can be directly compared with the simulation.*

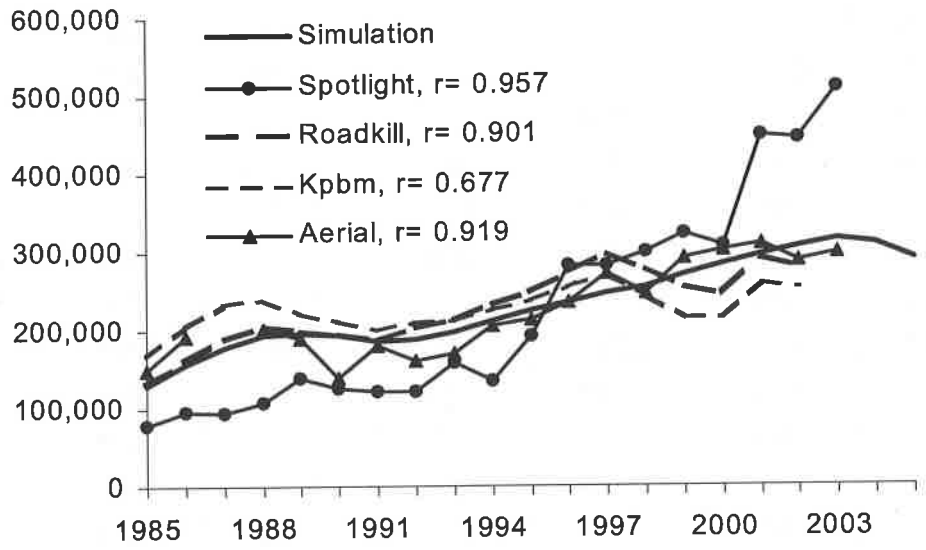


Table 3. *The results of the deer population surveys (1976 - present).*

Year	Spotlight Survey		Aerial Survey		Traffic Kill Per Billion Mile Vehicle		
	Mean Count	Percent Change	Weighted Count[a]	Percent Change	Traffic Kill	Number	Percent Change
1976	-	-	-	-	2,537	225	-1%
1977	-	-	-	-	2,929	252	12%
1978	6.9	-	-	-	2,872	241	-4%
1979	6.8	-1%	-	-	3,005	259	7%
1980	7.1	4%	-	-	3,743	335	29%
1981	5.9	-17%	-	-	4,164	365	9%
1982	12.0	103%	-	-	4,805	412	13%
1983	13.3	11%	5,903	-	5,335	448	9%
1984	16.4	23%	6,387	8%	6,177	500	12%
1985	15.4	-6%	7,607	19%	5,925	495	-1%
1986	18.5	20%	9,790	29%	7,225	593	20%
1987	18.2	-2%	-	-	8,440	678	14%
1988	20.8	14%	10,289	5%[b]	9,248	707	4%
1989	26.8	29%	9,672	-6%	8,914	655	-7%
1990	24.0	-10%	7,070	-27%	8,799	607	-7%
1991	23.0	-4%	9,191	30%	8,428	590	-3%
1992	23.0	0%	8,235	-10%	9,135	616	4%
1993	30.0	30%	8,680	5%	9,576	624	1%
1994	25.8	-14%	10,483	21%	10,438	663	6%
1995	35.3	37%	10,877	4%	11,167	699	5%
1996	51.1	45%	12,051	11%	12,276	748	7%
1997	51.1	0%	13,902	15%	13,148	778	4%
1998	55.9	9%	12,651	-9%	12,427	714	-8%
1999	59.9	7%	14,928	18%	11,366	637	-11%
2000	57.2	-5%	15,375	3%	10,970	634	0%
2001	81.4	42%	15,793	3%	13,404	757	19%
2002	80.0	-2%	13,107	-17%	11,975	651	-14%
2003	92.5	16%	15,676	20%	-	-	

[a] - adjusted for missing counts
[b] - change form 1986 to 1988

Table 4. *A summary of the number of licenses issued, the number of hunters, the number of deer harvested and success rates for the 2002-2003 season.*

Season	License Type	Licenses Issued	Number of Hunters	Harvest	Success Rate
REGULAR GUN					
Paid	Season 1	68,926	67,955	47,344	70%
	Season 2	44,731	43,736	27,498	63%
	Antlerless	5,316	3,870	3,098	
	Nonresident	3,851	3,712	2,564	69%
	Total	122,824 (-7%)[a]	119,273 (-7%)	80,504 (-5%)	
Landowner	Any sex	38,843	31,990	17,345	54%
	Antlerless	4,146	2,407	1,587	
	Total	42,989 (+8%)	34,397 (+13%)	18,932 (+28%)	
GUN SEASON TOTAL		**165,813 (-4%)**	**153,670 (-4%)**	**99,436 (-1%)**	**65%**
MUZZLELOADER					
Early	Paid	7,501	7,128	4,019	56%
	Landowner	2,306	1,949	1,072	55%
	Total	9,807 (-2%)	9,077 (+1%)	5,091 (+11%)	56%
Late	Paid	10,459	9,223	4,098	44%
	Antlerless	5,524	4,225	2,648	
	Landowner	2,782	1,783	728	41%
	Nonresident	714	661	298	45%
	Total	19,479 (+4%)	15,892 (-4%)	7,772 (+6%)	49%
MUZZLELOADER TOTAL		**29,286 (+2%)**	**24,969 (+3%)**	**12,863 (+8%)**	**52%**
JANUARY SEASON					
	Paid	4,078	2,962	2,240	76%
	Landowner	4,267	1,779	686	39%
	Total	**8,345 (+72%)**	**4,741 (+69%)**	**2,926 (+90%)**	**62%**
YOUTH	Paid	3,233	3,113	1,411	45%
	Landowner	214	180	50	28%
	Disabled	43	33	12	
	Total	**3,490 (-6%)**	**3,326 (-7%)**	**1,473 (-8%)**	**44%**
ARCHERY	Paid	36,324	31,405	12,382	39%
	Antlerless	7,752	5,720	5,560	
	Landowner	5,004	3,804	1,876	49%
	Nonresident	2,454	2,312	885	38%
ARCHERY TOTAL		**51,534 (-1%)**	**43,241 (-11%)**	**20,703 (+10%)**	**48%**
TOTAL[b]		**265,185 (NC)**	**234,997 (-4%)**	**140,490 (+3%)**	

[a] - the numbers in parentheses are the percent change from 2001-2002, NC = < 0.5%

[b] - total include licensed hunters and kill from hunts in special deer management zones and depredation licenses

Urban Deer Management

Since the early 1980's deer population in refuges have become large enough to cause problems for people living near them. In rural areas controlled hunts have been used to manage deer populations in many of these areas. Beginning in 1991 deer management issues in urban areas were formally addressed. Because these situations are often controversial a facilitated management approach (McAninch 1991) was used. Task forces or management committees were formed and management recommendations were made. Table 5 summarizes the accomplishments of these efforts to date.

Table 5. *Deer management activities in urban and other refuge areas.*

Area	Task Force	Initial Year	Aerial Survey	Active Control	Activity
Springbrook State Park Guthrie County	No	1994	Fixed	No	None
Elk Rock State Park Marion county	No	1999	Fixed	Yes	Firearm hunt
Waterloo/Cedar Falls Black Hawk County	Yes	1994	Helicopter	Yes	Archery hunt
Lake Darling State Park Washington County	No	1989	Fixed	Yes	Firearm hunt
Viking Lake State Park Montgomery County	No	1996	Fixed	No	Firearm hunt
Scott County Park Scott County	Yes	1995	Fixed	Yes	Firearm hunt
Linn County Zone	Yes	1996	Helicopter	Yes	Gun/Bow hunt
Squaw Creek Park	Yes	1996	Helicopter	Yes	Archery hunt
Cedar Rapids/Marion	Yes	1996	Helicopter	Yes[a]	Archery hunt
Linn County	Yes	1998	Helicopter	Yes	Archery hunt
Backbone State Park Delaware County	Yes	1997	Fixed	Yes	Firearm hunt
Polk County Zone	Yes	1997	Helicopter	Yes	Firearm hunt
Dubuque County Zone	Yes	1997	Helicopter	Yes	Gun/Bow hunt
Dubuque, City zone	Yes	1997	Helicopter	Yes	Archery hunt
Mt. St Francis Dubuque County	No	1997	Helicopter	Yes	Archery hunt
Iowa Army Ammunition Plant, Des Moines county	No	1985	Fixed	Yes	Gun/Bow hunt
Polk county metro	Yes	1998	Helicopter	Yes	Archery hunt
Polk County Zone	Yes	1997	Helicopter	Yes	Gun/Bow hunt
Kent Park	Yes	1995	Helicopter	Yes	Firearm hunt
Coralville	Yes	1998	Helicopter	Yes	Archery hunt
Iowa City	Yes	1998	Helicopter	Yes	Sharpshooters
Johnson County Zone	No	2000	Helicopter	Yes	Gun/Bow hunt
Lake of Three Fires Taylor County	No	2001	Fixed	Yes	Firearm hunt
Lake Panorama Guthrie County	No	2000	Fixed	Yes	Archery hunt
Lake Manama State Park Pottawttamie County	No	1998	Fixed	Yes	Archery hunt

[a] - hunt was held in city of Marion only

MIDWEST DEER STUDY GROUP
KANSAS - 2002-2003 STATUS REPORT

Prepared by Lloyd Fox

Deer Population Trends

We organize deer management in Kansas around Deer Management Units (DMU). Harvest and human dimensions aspects to deer management are also summarized by these units. Historically there have been 18 units. An additional unit has been developed for the 2003-2004 season.

Population trend information is collected on a county-by-county basis, which is then converted to an approximate DMU based on the mean of all counties within a DMU. Population trends of deer in Kansas are currently monitored using deer related vehicle accidents adjusted for annual changes in vehicle mileage. County sheriff or state highway patrol officers collect vehicle accident data at the site of each accident. State laws require that an accident report be prepared for each accident that results in an injury or causes more than $500 in property damage. Vehicle mileage estimates for each county are obtained from standard surveys conducted at continuous traffic count stations. These data are compiled by the Kansas Department of Transportation (KDOT).

An additional technique was initiated during the fall of 2002. We conducted distance sampling surveys using spot lights from pick-up trucks. The results of those surveys are still being evaluated.

Deer populations in Kansas had steadily increased since the 1950s until 1998. Each of the18 DMUs in Kansas showed a positive population index trend between 1991 and 1996. The index has declined in value during three of the last four year. There were 9,287 accidents reported during 2002, a decrease of 8.8% over the number of accidents that occurred in 2001. A summary of the statewide deer population trend using annual adjusted values based on traffic volume and compared with deer permits is shown in figure 1.

Hunting Permits and Seasons

Increased hunting pressure has been used in an effort to reduce the deer herd in Kansas. The emphasis since 1997 has been on permits and tags that restricted the holder to antlerless deer (see fig. 1). A distinction has been made in the Kansas system between deer permits and game tags. Both have a carcass tag that the hunter must fill out and attach to the deer. Both permits and game tags allow one deer per item. Permits and game tags have different advantages and disadvantages. Game tags have traditionally been restricted to antlerless white-tailed deer and non-department lands. The game tag system is also a reduced fee method for hunters to take antlerless white-tailed deer.

Three classes of permits are available for residents. A general resident class costs $30.50 while the landowner/tenant permit costs $15.50. Both of these classes allow the hunter to hunt anywhere they have permission within a DMU. Some permits allow the hunter to hunt statewide, or multiple units. Landowners with 80 acres of land or tenants actively engaged in the agricultural operation may apply for a hunt-on-your-own-land (HOL) permit. The HOL permit costs $10.50, and it may be purchased by mail or over-the-counter at selected KDWP offices. However, HOL class permits restrict the holder to their property. HOL permits are unlimited in quantity and allow the holder to take one deer of either species and either sex. Each member

of the landowner's or tenant's family may obtain one of these permits provided the total property size is 80 acres or more for each permit issued.

Deer permits come in a variety of hunt types. The hunt type may restrict the hunter to a particular species or it may restrict the hunter to specific equipment. The "Any-Deer" and "Antlerless Only" permits are the permits that allow the hunters to take a mule deer. White-tailed either-sex permits and white-tailed antlerless only permits have been created to increase hunting pressure on white-tailed deer without increasing the legal harvest of mule deer. Most firearm permits are restricted to a single DMU.

Game tag availability is unlimited; however, each hunter may purchase no more than four of these $10.50 tags. Game tags are sold over-the-counter. Formerly these tags were limited to people with a deer permit, however, that restriction ended in 2001. Game tags allow the hunter to hunt during any season with the equipment that is legal for that season. A game tag is also valid throughout the state, however, during the 2002-03 seasons only two of the potential four tags were valid in all unit and two were restricted to a few of the units.

HOL, leftover firearm permits, and game tags are valid during any season, i.e., regular firearm, muzzleloader, archery, or January extended season, with the appropriate equipment for that season.

Two types of archery permits were available until 2001. Resident statewide archery permits allowed the holder to hunt anywhere within the state and to take one deer of either species and either sex. Nonresident archery permits were valid statewide but they restrict the hunter to white-tailed deer. Unit archery permits allowed the archer to take one antlerless white-tailed deer anywhere within the state. That permit was changed in 2001-02 to a white-tailed antlerless permit. It became valid during any season and any unit. It is useful for firearms and muzzleloader hunters as well as archers. That permit has unlimited availability to residents and nonresidents and can be purchased over-the-counter. That permit also allows the hunter to use it on department managed lands, whereas game tags are not valid there.

Major changes occurred during the 2001-02 season in the way most firearms deer permits were issued. Deer permits have been the traditional means of authoring hunters to take a deer. Deer permits were allocated through a drawing system, with the exception of HOL permits, and archery permits. During the 2001-02 season a general residents of Kansas was able to purchase an antlered deer permit over-the-counter. This was accomplished after the availability of white-tailed deer permits had exceeded resident hunter demand in most units for a couple of years. The new system allowed hunters to purchase their permit either by mail or over-the-counter at selected department offices. The hunter had to designate which one of the 18 DMUs they would hunt. A change also converted all permits in the eastern 9 DMUs to white-tailed deer only as opposed to "Any-Deer" permits.

An allocation and drawing system was continued for residents desiring a firearm permits that would allowed them to take a mule deer. Those permits were classified as "Any-Deer," "Muzzleloader Any-Deer," and "Antlerless Only." Each of those three hunt types allowed the holder to take either a mule deer or a white-tailed deer. A preference point system for resident hunters unsuccessful in obtaining a permit in the draw was initiated in 2001. That system has been expanded to nonresidents and landowners applying for the transferable / resalable permits.

The white-tailed either sex permit was further changed from a firearm permit to a firearm and muzzleloader permit. Thus a hunter could use one permit during either the early muzzleloader season (hunter restricted to muzzleloader equipment) and/or the regular 12-day firearm season.

During the regular firearm season a hunter was allowed to choose any legal firearm, which included muzzleloaders.

Every permit and game tag issued since 1998 has allowed the person to take an antlerless white-tailed deer. Since 2000 each Kansas deer hunter has been limited to one permit that allows them to take an antlered deer (i.e., no leftover permits that allowed the bearer to take a second or third antlered deer). White-tailed either sex permits are now authorized in an unlimited number for resident hunters. Any resident or nonresident could purchase one white-tailed antlerless only permit. Residents could also purchase a leftover antlerless permit after the initial drawing. In total a resident had the opportunity to obtain 8 permits and tags and a nonresident could obtain 6 permits and tags.

Table 1 shows the number of deer permits and tags that were sold in Kansas for the 2001-02 season. A total of 173,699 permits and tags were sold for 2002-03 compared to 193,527 for 2001-02, a 10.2% decrease. For many years we used permit availability as opposed to permit sales as a measure of the hunting pressure placed on the deer herd. That system was relatively accurate as long as demand for deer hunting exceeded permit availability. Few permit remained unsold at the end of the season. It was used because those values were available during the regulation development stages each year and frequently the final permit sales figures were not available at that time. In recent years the system broke down because we were authorizing more permits than residents desired. Permits were also changing from either sex permits in the first draw to antlerless type permits if they became leftover permits.

State law limits nonresident firearm permit availability to no more that 10% of the number authorized for residents or 10% of the number issued to residents the year before if the availability for residents was unlimited. Nonresident archery permits are limited to no more than 15% of the number sold to residents the year before. State law does not limit the number of antlerless type permits the department may authorize.

The history of season dates is presented in Table 2. Shooting hours have traditionally been from ½ hour before sunrise to ½ hour after sunset.

The trend in hunting pressure and estimated harvest since 1994 is shown in Table 3. That table shows the changes in number of limited quota permits issued through drawings and the number of unlimited availability permits.

Deer Harvest

The estimate of the deer harvest in Kansas during the 2002-03 season was approximately 82,900. That was 18% lower than the corresponding estimate made of the harvest last year. Estimates of the 2002-03 harvest have been made by expanding the values obtained from returned report cards. A sample of 19,391 people (16,242 firearm and nonresident permit holders, and 3,149 resident statewide archers) were mailed survey forms. There were 142 undeliverable addresses in the firearms and nonresident file and 158 in the resident bowhunter file of address. Usable returns were obtained from 14,819 people for a 77.6% response rate from a mail survey with a preseason mailing and one postseason follow-up mailing to non-respondents. The returns included 13,113 firearm and nonresident hunters, 1,706 resident statewide archers and 332 people from the resident bowhunter survey that indicated that they no longer hunted deer (see archery section below). The estimated harvest has not been adjusted for non-response bias. This is the second year for a new system where a sample of hunters with permits in each DMU were required to complete a harvest survey on their entire permit and game tag purchases and their entire harvest during all seasons with all permits and tags they purchased.

Liberalization and decentralization of the permitting system has made it more complicated to estimate hunting pressure within each DMU. Permits and tags may be issued in a combination with sixteen hunt types, nine classes (cost) and assigned to one or more of 18 deer management units. Some of the permit hunt types, such as archery, HOL, whitetail antlerless and the game tags are issued without a designation to a DMU. All HOL permit holders are entered into a data base. A program has been prepared that estimates the most likely unit used by each permit holder based on their zip code. That distribution is then expanded to the total number of HOL permits issues, to account for the distribution of nonresident HOL permits and when resident addresses can not be read. Hunters with an archery, or white-tailed deer antlerless only permit, and hunters with a game tag are not individually entered in our data base of hunters and addresses. We estimate the distribution of resident archers based on a sample of approximately 1,000 that completed a hunter diary and report card. All nonresident archers are surveyed so the unit they hunted most, a survey question, determines their distribution among the units. Game tag use among the DMUs is determined by the distribution from the report card returns.

Archery

A sample of names and addresses of resident bowhunters were obtained from the 1997 license sales. That file has been used each year since then to collect bowhunter observations of wildlife (a diary system) and to evaluate hunter activity, success and satisfaction. Periodically new names are added to the file and undeliverable addresses have been deleted. However, this file needs to be updated. Diaries and hunter report cards were mailed to 3,149 people with 158 being undeliverable. A second mailing with a report card and wildlife observation summary card was mailed to 1,958 people that had not returned their report card at the end of the season. Duplicate returns were eliminated from people that returned both the first and second report card after receiving their second notice. A total of 2,255 unique usable returns were obtained for a response rate of 75.4%. However, only 75.7% (n=1,706) of the returns indicated that they had purchased an archery permit for the 2002-03 season. The remainder of the returns were from people that switched to firearms permits (n=217, 9.6% of returns) while 14.7% of the returns (n=332) indicated that they did not purchase a deer permit for the current season.

Estimating the distribution of game tag use and harvest is the most difficult aspect in our harvest survey. The survey forms are analyzed by the DMU designated when the hunter selected their permit, or the DMU of the permit they drew if they did not get an either sex type of permit. The percent of the hunters in that unit that bought game tags and the mean number of game tags they bought is used to estimate how many game tags permit buyers occurred in that unit and how many game tags they purchased. Values are obtained from the survey returns for percent tag success and sex age composition of their harvest. For the sake of this report I presumed that hunters without a deer permit that purchased a game tag had the same success rate as deer hunters in our sample.

Table 4 shows the success rates of the 16 hunt types and the breakdown of the harvest by species and age sex category. The overall permit success rate was approximately 50%, which is the lowest value obtained in many years. Table 5 shows the number of deer taken statewide by permit hunt type. That table also shows the percent of the harvest that is taken by nonresidents. Approximately 68% of the white tailed deer that were taken in 2002-03 were antlerless and 56.7% of the harvest was classified by hunters as female deer.

Legislative and Social Issues

The Kansas Legislature was active during 2002 on deer related issues. Numerous bills were proposed and amended that were not passed. Some of those bills influenced the department to

change management programs. For example, a bill was proposed that would have created fund to pay landowners for damages that deer caused. That bill was amended into one that would have raised the permit price and then used those funds to lease land for deer hunting opportunities with emphasis on leasing land from landowners that were suffering crop damage. The department enacted a regulation to create an additional season and issue additional game tags in a portion of the state where complaints about deer damage had been problematic.

New legislative items initiated during the 2002 session in Kansas included a modification of the nonresident cap on big game permits and a request to have the department investigate the potential to develop a DMAP system. The emphasis in Kansas has been on transferable deer permits that allow the holder to take an antlered deer, not the traditional DMAP system that focuses on permits for antlerless deer.

The department sponsored a working group to review deer management issues during 2002. The working group consisted of stakeholders representing a variety of hunting interests and community / agricultural producer advocates. Spencer Amend, Dynamic Solutions Group, facilitated their meetings and the public scoping meetings held before the group met. The issues they were charged to review included:

1. Transferable landowner/nonresident permits
2. Deer management goals and objectives
3. Leasing hunting rights on private land
4. Resident deer hunting opportunities
5. Nonresident deer permits
6. Economic factors
7. Pricing structure
8. Damage control permits
9. Minimum acreage requirements
10. Guides/Outfitters

The working group made 42 recommendations. As a result the department proposed recommendations. Some of those included:

1) Propose legislation that would restrict use of the transferable permit to lands owned, operated and controlled by the applicant; including lands controlled for big game hunting through written agreement.
2) Continue the percentage allocation restriction method for determining nonresident deer permits, but prepare legislation that would allow for a conservative increase as recommended by the workgroup; increasing the percentage limitation to 12% for firearms and 17% for archery.
3) The KDWP should implement a preference point draw system for transferable landowner/nonresident permits.
4) Continue efforts to culture partnerships with those urban areas requesting assistance. The department will continue to encourage the use of hunter harvest when practical and where ordinances can be adjusted to allow for such management efforts. The department will enhance it's involvement with urban deer management issues, including feasibility of expanding to other urban areas where assistance is needed.
5) An evaluation of a program to separate management of mule deer from management of white-tailed deer.

Chronic Wasting Disease Management

In November 2001 a captive elk in Kansas that came from a private elk farm in Colorado was determined to be positive for CWD. That is the only positive CWD animal to date that has been identified in Kansas. KDWP has collected samples for CWD testing since 1996. Prior to this year we had submitted 1,176 samples.

Personnel from KDWP, USDA APHIS Veterinary Services, Kansas Animal Health Department, and Kansas Department of Agriculture, Meat and Poultry Inspection collected 1,154 samples from deer killed by hunters during the 2002-03 season. In addition we submitted samples on 16 elk and we submitted 42 samples from animals collected by KDWP personnel. Test results are complete on all of the samples and none were positive.

Plans are in progress to increase our sample intensity to 2,325 during the 2003-04 seasons

A contingency plan to address CWD was prepared and presented to the Kansas Dept. Wildlife and Parks Commission. The plan includes actions that will be taken during the first 28 days after a positive case is identified in wild deer or elk in Kansas.

Figure 1. Statewide deer population trend in Kansas versus permits authorized .

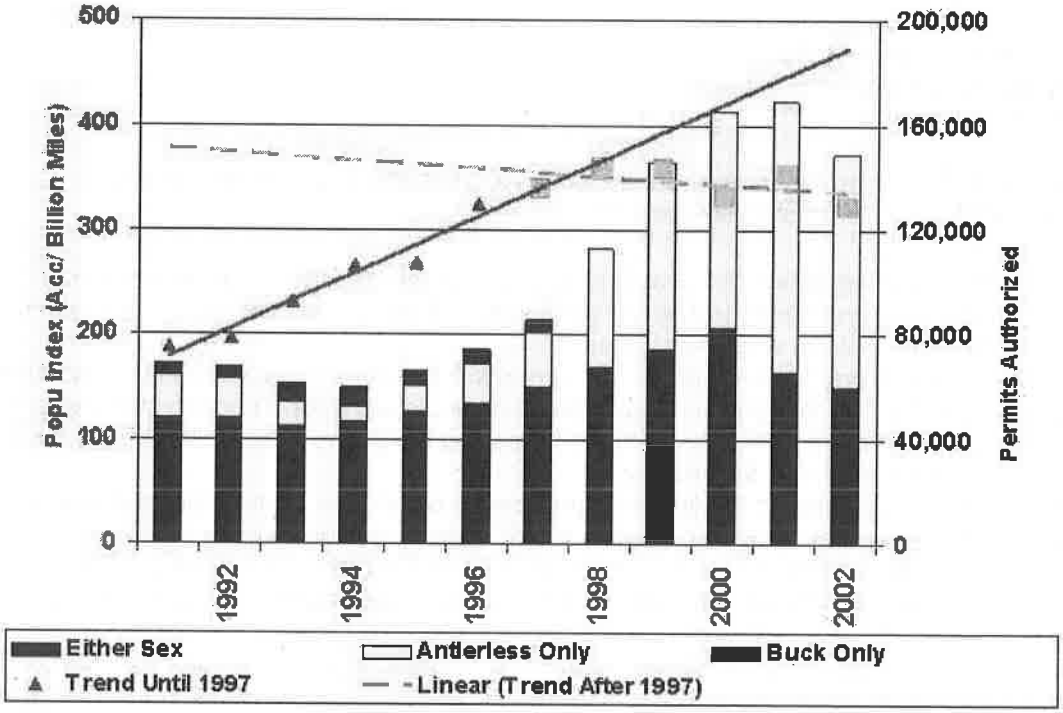


Table 1. *Summary of deer hunting permits issued in Kansas, 2002.*

FIREARM

Permit Type	General Resident	Landowner / Tenant	Landowner / Resalable	Hunt-Own-Land	Non-Res Landowner	General Non-Res	Total
Reg Firearm AD	2,547	723		12,654	701		16,625
Reg Firearm AO	949	274					1,223
Reg Firearm WTES	31,579	10,083					41,662
Muzzleloader	940	232					1,172
Game Tags *	85,799						85,799
WTAO Permit **	1,599	360					1,959
Special Transferrable HOL				671			
Non-Resident							
Firearm - Any/Buck Only			1,687			2,660	4,347
Firearm - Antlerless			20			182	202
Muzzleloader - Any Deer			103			141	244
Firearm - White-tailed Antlerless			3			523	526
Total - Firearm	123,413	11,672	1,813	13,325	701	3,506	153,759
Total 2001	**141,717**	**12,589**	**1,322**	**13,858**	**566**	**3,783**	**173,235**
% Change	**-12.9**	**-7.3**	**37.1**	**-3.8**	**23.9**	**-7.3**	**-11.2**

ARCHERY

Permit Type	General Resident	Landowner / Tenant	Landowner/ Resalable	Hunt-Own-Land	Non-Res Landowner	General Non-Res	Total
Statewide Archery**	14,467	2,873					17,340
Non-Resident Archery - Any / Buck Only			1,302			1,298	2,600
Total - Archery	14,467	2,873	1,302			1,298	19,940
Total 2001	**14,504**	**2,811**	**379**			**2,598**	**20,292**
% Change	**-0.3**	**2.2**	**243.5**			**-50.0**	**-1.7**

Table 2. *The history of Kansas deer hunting season dates.*

YEAR	FIREARMS OPEN DATES	NO. DAYS	ARCHERY OPEN DATES	NO. DAYS	MUZZLELOADER OPEN DATES	NO. DAYS	YOUTH AND DISABLILITY OPEN DATES	NO. DAYS	EXTENDED OPEN DATES	NO. DAYS	YEAR
1965	DEC. 11 - 15	5	OCT. 1 - NOV. 15	46	0	0	0	0	0	0	1965
1966	DEC. 10 - 14	5	OCT. 1 - DEC. 9	70	0	0	0	0	0	0	1966
1967	DEC. 8 - 12	5	OCT. 1 - NOV. 26	57	0	0	0	0	0	0	1967
1968	DEC. 13 - 17	5	OCT. 1 - DEC. 1	62	0	0	0	0	0	0	1968
1969	DEC. 6 - 10	5	OCT. 1 - NOV. 30	61	0	0	0	0	0	0	1969
1970	DEC. 5 - 9 DEC. 5 - 13	5 - WEST 9 - EAST	OCT. 1 - NOV. 30 0	61 0	0 0	0 0	0 0	0 0	0 0	0 0	1970
1971	DEC. 4 - 8 NOV. 27 - DEC- 5	5 - WEST 9 - EAST	OCT. 16 - NOV.25, DEC.11 - DEC. 31 0	62 0	0 0	0 0	0 0	0 0	0 0	0 0	1971
1972	DEC. 2 - 6 DEC. 2 - 10	5 - WEST 9 - EAST	OCT. 1 - NOV. 30 0	61 0	0 0	0 0	0 0	0 0	0 0	0 0	1972
1973	DEC. 1 - 9	9	OCT. 1 - NOV. 25, DEC. 15 - DEC. 31	73	0	0	0	0	0	0	1973
1974	DEC. 7 - 15	9	OCT. 1 - NOV. 30, DEC. 21 - DEC. 31	72	0	0	0	0	0	0	1974
1975	DEC. 6 - 14	9	OCT. 1 - NOV. 30, DEC. 20 - DEC. 31	73	0	0	0	0	0	0	1975
1976	DEC. 4 - 12	9	OCT. 1 - NOV. 30, DEC. 18 - DEC. 31	75	0	0	0	0	0	0	1976
1977	DEC. 3 - 11	9	OCT. 1 - NOV. 30, DEC. 17 - DEC. 31	76	0	0	0	0	0	0	1977
1978	DEC. 2 - 10	9	OCT. 1 - NOV. 30, DEC. 16 - DEC. 31	77	0	0	0	0	0	0	1978
1979	DEC. 1 - 9	9	OCT. 1 - NOV. 28, DEC. 12 - DEC. 31	79	0	0	0	0	0	0	1979
1980	DEC. 6 - 14	9	OCT. 1 - DEC.3, DEC. 17 - DEC. 31	79	0	0	0	0	0	0	1980
1981	DEC. 5 - 13	9	OCT. 1 - DEC. 2, DEC. 16 - DEC. 31	79	0	0	0	0	0	0	1981
1982	DEC. 4 - 12	9	OCT. 1 - DEC. 1, DEC. 15 - DEC. 31	79	0	0	0	0	0	0	1982
1983	DEC. 3 - 11	9	OCT. 1 - NOV. 30, DEC. 12 - DEC. 31	79	0	0	0	0	0	0	1983
1984	DEC. 1 - 9	9	OCT. 1 - NOV. 30, DEC. 10 - DEC. 31	79	0	0	0	0	0	0	1984
1985	DEC. 7 - 15	9	OCT. 1 - DEC. 6, DEC. 16 - DEC. 31	79	0	0	0	0	0	0	1985

Table 2. *Continued.*

YEAR	FIREARMS OPEN DATES	NO. DAYS	ARCHERY OPEN DATES	NO. DAYS	MUZZLELOADER OPEN DATES	NO. DAYS	YOUTH AND DISABLILITY OPEN DATES	NO. DAYS	EXTENDED OPEN DATES	NO. DAYS	YEAR
1986	DEC. 6 - 14	9	OCT. 1 - DEC. 5, DEC. 15 - DEC. 31	79	DEC. 6 - 14	9	0	0	0	0	1986
1987	DEC. 5 - 13	9	OCT. 1 - DEC. 4, DEC. 14 - DEC. 31	79	DEC. 5 - 13	9	0	0	JAN. 2 - 10, 1988	9	1987
1988	NOV. 30 - DEC. 11	12	OCT. 1 - NOV. 29, DEC. 12 - DEC- 31	79	OCT. 21 - 24	4	0	0	JAN. 2 - 10, 1989	9	1988
1989	NOV. 29 - DEC. 10	12	OCT. 1 - NOV. 28, DEC. 11 - DEC. 31	79	SEPT. 22 - 30	9	0	0	0	0	1989
1990	NOV. 28 - DEC. 9	12	OCT. 1 - NOV. 27, DEC. 10 - DEC. 31	79	SEPT. 22 - 30	9	0	0	1st seg Jan. 1 - 14, 2nd seg Jan 22 - Feb 4	28	1990
1991	DEC. 4 - 15	12	OCT. 1 - DEC. 3, DEC. 16 - DEC. 31	79	SEPT. 21 - 29	9	0	0	1st seg Jan. 1 - 13, 2nd seg Jan 21 - Feb 3	28	1991
1992	DEC. 2 - 13	12	OCT. 1 - DEC. 1, DEC. 14 - DEC. 31	79	SEPT. 19 - 27	9	0	0	Jan. 13 - 26	14	1992
1993	DEC. 1 - 12	12	OCT. 1 - NOV. 30, DEC. 13 - DEC. 31	79	SEPT. 18 - 26	9	0	0	Jan 11 - 24	14	1993
1994	NOV. 30 -DEC. 11	12	OCT. 1 - NOV. 29, DEC. 12 - DEC- 31	79	SEPT. 17 - 25	9	0	0	0	0	1994
1995	DEC. 1 - 10	12	OCT. 1 - NOV. 28, DEC. 11 - DEC. 31	79	SEPT. 16 - 24	9	0	0	0	0	1995
1996	DEC. 4 - 15	12	OCT. 1 - DEC. 3, DEC. 16 - DEC. 31	79	SEPT. 21 - 29	9	0	0	0	0	1996
1997	DEC. 3 - 14	12	OCT. 1 - DEC. 2, DEC. 15 - DEC. 31	79	SEPT. 20 - 28	9	0	0	0	0	1997
1998	DEC. 2 - 13	12	OCT. 1 - DEC. 1, DEC. 14 - DEC. 31	79	SEPT. 19 - 27	9	0	0	JAN. 9 - 10, 1999	2	1998
1999	DEC. 1 - 12	12	OCT. 1 - NOV. 30, DEC. 13 - DEC. 30	78	SEPT. 18 - 30	13	0	0	DEC. 31 - JAN. 9, 2000	10	1999
2000	NOV. 29 - DEC. 10	12	OCT. 1 - NOV. 28, DEC. 11 - 31	79	SEPT. 16 - 29	14	SEPT. 30 - OCT. 1	2	JAN. 1 - 14, 2001	14	2000
2001	NOV. 28 - DEC. 9	12	OCT. 1 - NOV. 27, DEC. 10 - 31	79	SEPT. 15 - 28	14	SEPT. 29 - 30	2	JAN. 1 - 13, 2002	13	2001
2002	DEC. 4 - 15	12	OCT. 1 - DEC. 3, DEC. 16 - 31	79	SEPT. 14 - 27	14	SEPT. 28 - 29	2	JAN. 1 - 12, 2003	12	2002
2003	DEC. 3 - 14	12	OCT. 1 - DEC. 2, DEC. 15 -31	79	SEPT. 13 - 26	14	SEPT. 27 -28	2	JAN 1 - 4, 2004	4	2003

Table 3. *History of deer permit availability and harvest in Kansas, 1994 to 2002.*

Availability of Limited Quota Permit Types											
Permit Type	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Difference 2001 vs 2002**	**Percent Change**
Resident											
Any Deer	25,380	26,995	27,850	31,150	37,200	40,000	45,175	4,373	3,270	-1,103	-25.2
Buck Only	5,850	5,000	5,250	4,675	0	0	0	0	0	0	
W-T Either Sex	3,900	5,480	6,180	7,800	8,605	11,030	14,420	Unl Sales	Unl Sales		
W-T Buck Only	1,220	670	320	0	0	0	0	0	0	0	
Muzzleloader	3,000	3,350	3,645	3,945	4,755	5,140	5,985	1,186	1,172	-14	-1.2
Antlerless Only	2,950	4,785	8,835	13,835	9,660	8,760	12,405	1,385	1,223	-162	-11.7
W-T Antlerless Only	300	600	1,750	2,920	5,055	4,330	6,611	Unl Sales	Unl Sales		
Sub-total	**42,600**	**46,880**	**53,830**	**64,325**	**65,275**	**69,260**	**84,596**	**6,944**	**5,665**	**-1,279**	**-18.4**
Nonresident							Sales	Sales			
Antlered (Firearms)	415	385	451	645	986	1587	3678	3965	4347	382	9.6
Antlered (Muzzleloader)	18	0	43	141	154	237	461	240	244	4	1.7
Antlerless (Firearms)	115	45	241	775	646	632	906	900	728	-172	-19.1
Antlered (Archery)	415	385	451	645	814	866	2877	2977	2600	-377	-12.7
Antlerless (Archery)	115	45	241	775	271	154	207	0	0	0	
Sub-total	**1,078**	**860**	**1,427**	**2,981**	**2,871**	**3,476**	**8,129**	**8,082**	**7,919**	**-163**	**-2.0**

Unlimited Permit Types Based on History of Permit Sales											
Permit Type	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Difference 2001 vs 2002**	**Percent Change**
Hunt-Your-Own-Land	14,284	15,144	15,775	16,927	17,221	17,625	18,002	13,824	13,654	-170	-1.2
W-T Either Sex								45,395	41,662	-3,733	-8.2
Game Tags (Residents)	3,119	4,734	4,872	4,634	29,707	49,200	58,764	94,116	79,870	-14,246	-15.1
Game Tags (Nonresidents)						938	4,743	5,977	5,929	-48	-0.8
WT Antlerless Only								1,874	1,959	85	4.5
STWD Archery	16,156	16,106	16,429	16,299	17,330	19,180	19,831	17,315	17,340	25	0.1
Unit Archery	4,656	4,742	5,106	5,434	3,093	1,756	1,837	0	0	0	
Sub-total	**38,215**	**40,726**	**42,182**	**43,294**	**67,351**	**88,699**	**103,177**	**178,501**	**160,414**	**-18,087**	**-10.1**
GRAND TOTAL	**81,893**	**88,466**	**97,439**	**110,600**	**135,497**	**161,435**	**195,902**	**193,527**	**173,998**	**-19,529**	**-10.1**

Table 3. *Continued.*

History of deer harvest in Kansas, 1994 to 2002.											
Permit Type	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Difference 2001 vs 2002**	**Percent Change**
Regular Firearms (Res)	25,500	27,700	31,200	39,600	40,700	44,700	38,548	27,493	22,561	-4,932	-17.9
Hunt-Own-Land (Res + NR)	8,400	8,900	8,800	10,400	10,900	12,000	11,732	7,114	5,370	-1,744	-24.5
Game Tags (Res + NR)	1,800	2,500	3,100	2,800	20,300	31,000	44,216	56,164	43,002	-13,162	-23.4
Regular Firearms (NR)	340	290	450	640	1,200	1,600	4,776	2,768	2,832	64	2.3
Archery (Res + NR)	7,800	7,200	8,500	9,700	8,000	12,000	11,887	8,045	9,147	1,102	13.7
Grand Total	**43,840**	**46,590**	**52,050**	**63,140**	**81,100**	**101,300**	**111,159**	**101,584**	**82,912**	**-18,672**	**-18.4**

Table 4. *Success rates, species and sex composition of deer hunters using various permit hunt types in Kansas, 2002-2003.*

RES	STWD Permit Type	Permit Success Rate	Percent of the Harvest in Species and Sex Category									
			White-tailed Deer					Mule Deer				
			Antlered Buck	Male Fawn	Adult doe	Female Fawn	Buck With Sheds	Antlered Buck	Male Fawn	Adult doe	Female Fawn	Buck With Sheds
KS	Any Deer	59.9%	39.82%	0.83%	7.54%	0.68%	0.75%	39.74%	0.68%	8.90%	0.15%	0.90%
KS	W-T Either Sex	46.1%	70.63%	3.40%	22.09%	1.61%	1.89%	0.31%	0.00%	0.03%	0.00%	0.03%
KS	Muzzleloader	47.9%	31.77%	1.44%	9.03%	0.36%	0.36%	45.49%	0.36%	9.75%	0.72%	0.72%
KS	Antlerless Only	57.1%	0.00%	4.83%	26.09%	3.38%	3.86%	0.00%	3.38%	56.04%	1.93%	0.48%
KS	Leftover Antlerless Only	63.6%	0.00%	0.76%	28.24%	5.34%	0.00%	0.00%	6.11%	55.73%	3.05%	0.76%
KS	W-T Antlerless Only	41.4%	0.00%	12.67%	75.57%	6.79%	4.98%	0.00%	0.00%	0.00%	0.00%	0.00%
KS	Est. Game Tags	51.4%	0.00%	11.67%	77.21%	9.96%	1.16%	0.00%	0.00%	0.00%	0.00%	0.00%
KS	HOL	43.3%	57.54%	1.40%	17.19%	1.05%	2.11%	17.54%	0.35%	2.81%	0.00%	0.00%
KS	STWD Archery	47.1%	78.64%	2.31%	11.69%	2.02%	1.15%	3.32%	0.00%	0.72%	0.00%	0.14%
NR	W-T Either Sex	58.5%	95.28%	0.34%	3.37%	0.00%	1.01%	0.00%	0.00%	0.00%	0.00%	0.00%
NR	Muzzleloader	55.2%	50.59%	0.00%	3.53%	0.00%	1.18%	42.35%	0.00%	2.35%	0.00%	0.00%
NR	Antlerless Only	63.4%	0.00%	4.04%	32.32%	1.01%	0.00%	0.00%	2.02%	57.58%	1.01%	2.02%
NR	W-T Antlerless Only	43.3%	0.00%	7.69%	87.18%	5.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NR	Est. Game Tags	46.9%	0.00%	8.15%	83.26%	8.37%	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%
NR	HOL	46.7%	71.43%	0.00%	14.29%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%
NR	STWD Archery	39.3%	96.44%	0.40%	2.37%	0.40%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%
STWD	KS Sub-Total	49.9%	34.32%	6.26%	41.53%	4.89%	1.45%	7.45%	0.26%	3.53%	0.12%	0.18%
STWD	NR Sub-Total	49.5%	55.41%	3.00%	31.47%	2.65%	0.53%	3.18%	0.12%	3.47%	0.06%	0.12%

Note: Percent composition by species, age and sex class is based on sample survey values, not expansion estimates (FLOOR function) of the harvest.

Table 5. *Number of deer harvested by permit hunt type in Kansas, 2002 - 2003.*

RES	STWD Permit Type	White-tailed Deer					Mule Deer					Total WT Deer Harvested	Total Mule Deer Harvested	Percent Of WT Harvest That Was Antlerless	Percent Of MD Harvest That Was Antlerless	Grand Total For Permit Type
		Antlered Buck	Male Fawn	Adult Doe	Female Fawn	Buck With Sheds	Antlered Buck	Male Fawn	Adult Doe	Female Fawn	Buck With Sheds					
KS	Any Deer	744	12	127	10	12	824	14	187	2	16	905	1,043	17.79%	21.00%	1,948
KS	W-T Either Sex	12,914	620	4,385	285	299	29	0	4	0	15	18,503	48	30.21%	39.58%	18,551
KS	Muzzleloader	153	4	37	1	1	286	1	65	3	3	196	358	21.94%	20.11%	554
KS	Antlerless Only	0	14	87	14	4	0	20	292	10	1	119	323	100.00%	100.00%	442
KS	Leftover Antlerless Only	0	1	63	11	0	0	17	172	7	2	75	198	100.00%	100.00%	273
KS	W-T Antlerless Only	0	97	612	49	35	0	0	0	0	0	793	0	100.00%		793
KS	Est. Game Tags	0	4,717	31,139	4,037	415	0	0	0	0	0	40,308	0	100.00%		40,308
KS	HOL	2,951	88	1,167	70	79	599	5	107	0	0	4,355	711	32.24%	15.75%	5,066
KS	STWD Archery	6,423	185	949	168	90	252	0	57	0	12	7,815	321	17.81%	21.50%	8,136
NR	W-T Either Sex	2,288	5	65	0	19	0	0	0	0	0	2,377	0	3.74%		2,377
NR	Muzzleloader	67	0	3	0	1	54	0	3	0	0	71	57	5.63%	5.26%	128
NR	Antlerless Only	0	3	37	0	0	0	2	75	1	2	40	80	100.00%	100.00%	120
NR	W-T Antlerless Only	0	19	178	10	0	0	0	0	0	0	207	0	100.00%		207
NR	Est. Game Tags	0	206	2,252	232	4	0	0	0	0	0	2,694	0	100.00%		2,694
NR	HOL	226	0	39	0	0	39	0	0	0	0	265	39	14.72%	0.00%	304
NR	STWD Archery	977	4	23	4	3	0	0	0	0	0	1,011	0	3.36%	#DIV/0!	1,011
STWD	KS Sub-Total	23,185	5,738	38,566	4,645	935	1,990	57	884	22	49	73,069	3,002	68.27%	33.71%	76,071
STWD	NR Sub-Total	3,558	237	2,597	246	27	93	2	78	1	2	6,665	176	46.62%	47.16%	6,841
STWD	Grand Total	26,743	5,975	41,163	4,891	962	2,083	59	962	23	51	79,734	3,178			82,912
STWD	Percent of harvest by NR	13.30%	3.97%	6.31%	5.03%	2.81%	4.46%	3.39%	8.11%	4.35%	3.92%	8.36%	5.54%			8.25%

2002 – 2003 Michigan Deer Status Report
27TH Midwest Deer and Turkey Study Group Meeting
24 – 27 August, 2003 · Dodgeville, WI

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The Michigan Department of Natural Resources (MDNR) is committed to the conservation, protection, management, use, and enjoyment of the State's natural resources for current and future generations. MDNR deer management is guided by Natural Resource Commission (NRC) Policy 2007 (issued April 14, 1994), which states:

The Department's goal is to manage the deer herd using management practices based on scientific research to:
1. Maintain healthy animals and keep the deer population within limits dictated by the carrying capacity of the range and by its effect on native plant communities, agricultural, horticultural, and silvicultural crops and public safety.
2. Maintain an active public information program designed to acquaint the public with the methods of deer management and the conditions needed to maintain a healthy, vigorous herd.
The Department shall develop procedures to implement this policy.

2002 Michigan Deer Season Synopsis

Summarized with modifications from:

Frawley, B. J. 2003. Michigan deer harvest survey report, 2002 seasons. Wildlife Division Report 3399. Michigan Department of Natural Resources, Lansing, USA.

For a complete review of methods and results, use the contact information above or see the Michigan Department of Natural Resources website (www.michigan.gov/dnr) to acquire a full copy of the report.

Michigan uses an annual mail survey of hunters following completion of the deer hunting season to estimate hunter participation, harvest, and hunting effort. Following the 2002 deer hunting seasons, a questionnaire was sent to 52,589 randomly selected individuals that had purchased a deer hunting license (Table 1). Hunters receiving the questionnaire were asked to report which seasons they pursued deer, number of days spent afield, and number of deer harvested. Estimates were calculated using a stratified random sampling design and were presented along with their 95% confidence limit.

In 2002, 788,271 people purchased a license to hunt deer in Michigan. The number of people buying a license in 2002 declined about 2% from 2001. The number of 2002 deer harvest tags sold for all license types combined increased 1% since 2001 (Table 2). Hunters most frequently

purchased antlerless and combination harvest tags (Figure 2). About 52% of the license buyers purchased at least one antlerless license (409,181 people), and 97% of antlerless license buyers purchased three or fewer antlerless licenses. Although the number of harvest tags available increased by 1%, the sales of deer hunting licenses declined slightly (about 1%) in 2002 (Table 2). The increase in harvest tags occurred because two harvest tags were provided for antlerless licenses sold for the special-regulations DMUs in NE Lower Peninsula (7 counties).

About 94.0 ± 0.2% (740,529 ± 1,968 hunters) of the people buying a license in 2002 actually spent time hunting deer, a decline of nearly 2% from 2001. Most hunters (684,036 ± 2,811) pursued deer during the regular firearm season (Figure 3). About 45% of the days that hunters spent pursuing deer throughout the state occurred in the regular firearm season (Figure 4). About 44% of the hunting effort occurred during the archery season. Statewide, hunters devoted an average of 14.3 days afield hunting deer during all seasons combined. Archers had the greatest number of days available to hunt deer (77 days) and devoted the greatest number of days afield ($\bar{x}$ = 14.7 days/hunter) (Figure 5). For all seasons and areas combined, hunting effort was virtually unchanged between 2001 and 2002.

An estimated 476,215 deer were harvested in 2002, an increase of nearly 3% from the number taken in 2001 (Figure 6, Table 3). Statewide, the harvest of both antlerless deer and antlered bucks increased 3% from 2001(Table 3). About 64% of the animals harvested (sexes combined) in 2002 were taken during the regular firearm season (Figure 7). Most of the antlerless deer (58%) and antlered bucks (69%) were harvested in the regular firearm season. Hunters took 25% of the harvested deer (sexes combined), including 23% of the antlerless deer and 27% of the antlered bucks harvested, during archery season. The 2002 Michigan deer hunting season marked the first time that harvest estimates indicate a greater number of antlerless deer and antlered bucks were harvested in the Southern Lower Peninsula (Figure 1) than in the rest of the state combined (Table 4).

Disease Surveillance in Michigan Deer

Chronic Wasting Disease Surveillance

The 2002 MDNR Chronic Wasting Disease (CWD) Surveillance Plan established a goal of actively collecting samples from 60 deer harvested in 40 counties, for a total of 2,400 deer to be tested, and 50 elk. Counties selected for active surveillance included those bordering other states, containing 10 or more captive cervid herds, and those that currently or historically contained deer research facilities. In addition, samples from any deer or elk showing general symptoms of CWD were to be accepted from anywhere in the state under targeted surveillance. A total of 4,349 deer and 117 elk harvested in 2002 were tested for CWD, with all samples testing negative.

The 2003 MDNR CWD Surveillance Plan calls for the collection of samples from 60 deer harvested in 62 counties, or a total of 3,720 deer to be tested, and 125 elk, plus continued targeted surveillance. Counties selected for active surveillance in 2003 include those bordering other states, containing 15 or more captive cervid herds, and any county not selected for active surveillance in 2002.

Bovine Tuberculosis Surveillance

The 2002 MDNR Bovine Tuberculosis (TB) Surveillance Plan established a goal of actively collecting samples from 12,500 deer harvested in a region encompassing 33 counties within the

northern half of Michigan's Lower Peninsula, and required mandatory submission of samples from all hunter-harvested elk. A total of 18,069 deer harvested in 2002 were tested for TB, with 51 samples testing positive. No elk tested positive for TB. All samples testing positive for TB during 2002 surveillance were collected from counties that had documented positive test results in previous years. The TB prevalence rate within deer management unit (DMU) 452 (2.8%), the core area of TB infection, was higher than in recent years, although the difference was not statistically significant. To date, samples have been collected from greater than 100,000 free-ranging deer and 1,000 free-ranging elk for TB surveillance in Michigan. Cumulative analysis suggests that reductions in deer densities (brought about through increased harvests of antlerless deer) and artificial food supplementation (brought about through bans on all feeding and baiting in those counties of greatest concern) has prevented further spread and increases in prevalence that model predictions indicated would occur in the absence of intervention. Current models suggest that maintaining these conditions will prevent expansion of infection and increasing prevalence, but additional time or increased intervention may be required to reduce prevalence in the core area of infection.

Regulation Issues

Regulation of Baiting and Feeding

In the event CWD is documented within Michigan or within 50 miles of Michigan's border with another state (Ohio, Indiana, Illinois, Wisconsin, or Minnesota) or Canadian province (Ontario), the NRC has ordered that the MDNR Director shall ban the use of bait and ban all feeding of deer and elk within the peninsula adjacent to the adjoining state or province with CWD or containing CWD, as per Wildlife Conservation Order, Section 3.100a.

In Michigan, **"Baiting"** is defined as putting out food materials to attract, lure, or entice deer or elk as an aid in hunting. All baiting is prohibited in Alcona, Alpena, Crawford, Montmorency, Oscoda, Otsego, and Presque Isle counties, which encompasses seven contiguous counties in the northeastern Lower Peninsula (NELP). Baiting is allowed from October 1 to January 1 in the remainder of the state, at a volume of up to two gallons at any one hunting site at any time, scattered on the ground over a minimum of a ten-foot by ten-foot area.

In Michigan, **"Feeding"** is defined as placing food materials out that attract deer or elk for any reason other than baiting. **"Recreational Feeding"** is feeding for the intent of bringing deer into closer proximity within viewing areas. Recreational feeding is prohibited in the seven NELP counties listed above. Recreational feeding is allowed elsewhere in the state, but it is restricted by volume (not to exceed two gallons per residence at any time) and location (feed must be placed within one hundred yards of a residence, on land owned or possessed by that person, and at least 100 yards from any area accessible to cattle, goats, sheep, new world camelids, bison, swine, horses, or captive cervidae). **"Supplemental Feeding"** is feeding for the purpose of helping deer survive harsh winter conditions. **All supplemental feeding was prohibited statewide in Michigan after May 15, 2003.** Prior to that date, supplemental feeding was prohibited in the Lower Peninsula and in the Upper Peninsula counties of Menominee, Dickinson, Iron, and Gogebic, which are those counties bordering Wisconsin. Within other areas of the Upper Peninsula, supplemental feeding was restricted by location (placed one-quarter mile or more from the nearest paved public highway, and at least one mile from cattle, goats, sheep, new world camelids, bison, swine, horses, captive cervidae, wheat fields, potato fields, commercial fruit orchards, and commercial plantings of nursery stock or Christmas trees), unless otherwise approved by the Upper Peninsula Field Deputy. Individuals conducting supplemental feeding on public land were required to obtain a permit, and all individuals were

required to submit a reporting form of their activities. Several stakeholder groups, including the Michigan United Conservation Clubs, have requested that the NRC consider returning to previous supplemental feeding regulations with an additional restriction to only allow such activities when winter conditions are severe enough to threaten the welfare of deer populations. The NRC has indicated that they will not entertain any changes to the current regulations at this time.

Michigan Natural Resources Commission Procedure for Initiation, Evaluation, and Review of Mandatory Quality Deer Management Proposals

With increased hunter interest in Quality Deer Management (QDM), the Wildlife Division, at the request of the NRC, formed a QDM working group in July 1998 to recommend a process by which stakeholder groups could propose mandatory QDM guidelines for harvest regulations at the level of an individual DMU. The process recommended by the working group and adopted by the NRC requires a 2-year time period in which (1) a sponsoring group drafts a proposal that must include a mandatory antler point restriction to protects at least 50% of yearling bucks in the area, (2) critique is performed by Wildlife and Law Division staff, (3) the final proposal details and public meeting dates to discuss the proposal are publicized, and (4) a good-faith payment of $2,000 is provided by the sponsoring group to defray the expenses of a random mail survey conducted by Wildlife Division staff. The procedure states that 66% approval (calculated by dividing the number of respondents that support the proposal by the number that do not support the proposal or are unsure of their support) of both landowners and hunters in the affected area is required. Initial restrictions will stay in place for 5 years, with a second survey to measure hunter and landowner support for continuing the regulations conducted in the fourth year. Michigan currently has antler restrictions in place for 9 DMUs, requiring 2 or more points on one side in 3 DMUs and 3 or more points on one side in 6 DMUs.

Five proposals (2 to initiate new restrictions, 1 to retain initial restrictions beyond the 2003 season, 1 to adopt more restrictive antler criteria, and 1 to expand an existing area) submitted during 2002 failed to meet the 66% measure of support. One proposal submitted in 2002 to maintain an antler restriction did meet the margin of support. No new proposals were received in 2003 (although a proposal was received after the submission deadline). A focus group process was conducted by Michigan State University researchers at the request of the Wildlife Division to summarize impressions of stakeholders and Division employees regarding their experiences with the development and evaluation of these proposals. Findings were shared at the August meeting of the NRC Committee on Wildlife Issues and will be revisited in October.

Technology Update

Deer Harvest Data Collection and Reporting System

Wildlife Division completed a second season utilizing a Personal Digital Assistant (PDA) system for collection and submission of data at Michigan deer check stations. Data are initially collected and stored on a handheld, commercially-available PDA, later transferred to a computer workstation, and electronically submitted to a centralized database. The system was primarily initiated to improve the timeliness of data submission and enhance quality control at the time of data collection. Individuals with access to the State of Michigan computer network are able to conduct real-time queries of the check station database and view summaries of the sex, age, location, and season of checked deer as well as check station location. For the 2002 season, bar code scanning devices were integrated with each PDA to automate recording of an identification number for disease surveillance samples as well as a customer identification

number for individuals submitting samples. This information was captured from barcodes printed on disease surveillance tags and Michigan deer hunting licenses (alternatively available on some Michigan driver's licenses). This system effectively integrated 3 separate data sets – check station data (including biological data plus time and location of kill), disease surveillance data (including testing results for Chronic Wasting Disease and/or bovine tuberculosis), and retail sales system data (primarily for the purpose of capturing a mailing address to which testing results could be sent).

During the 2002 hunting season, a total of 183 PDAs and 77 workstations were used for collection and transfer of data. Records on greater than 45,000 deer (nearly 10% of all deer harvested) were collected at check stations. Five (2.7%) PDAs were damaged beyond use, and data lost due to unit failures or operations error amounted to approximately 0.5% of all records collected. Seventy-eight percent of all disease surveillance sample records also included scanned customer identification numbers. Seventy-five percent of all addresses required for the mailing of disease testing results were retrieved from the retail sales system database. Overall, the PDA system has provided an efficient and reliable means of data collection and management. Software changes to enhance user interface will be completed prior to the 2003 hunting season. An evaluation of the effects of new license stock material on the barcode scanning capabilities will be necessary.

Deer Management Information System

The Deer Management Information System (DMIS) is a desktop software application accessible to all MDNR Wildlife staff for recording, maintaining and viewing information pertaining to deer management. DMIS seeks to provide real-time data access and standardized automated processes to MDNR Wildlife staff involved with deer management planning, implementation, and evaluation. Benefits include enhancements to accessibility of preliminary and final data, timeliness in review and approval of recommendations, and standardization of commonly-used analytical methods and summaries.

DMIS provides several benefits when developing recommendations for hunting regulations. Field staff benefit from immediate access to electronic data to track hunting trends, generate indices and estimates of deer populations, and conduct coarse habitat assessments. Data include (1) historical antlerless license quotas, application rates, and sales figures, (2) deer harvest mail survey results, (3) estimated deer densities, and (4) general land ownership and habitat composition for each deer management unit (DMU). Species management and research staffs are provided immediate review of regulation recommendations and summaries of factors used in making the recommendations. The system allows more time for staff discussion, as well as online documentation of comments and modification or approval of recommendations. Prior to and during hunting seasons, DMIS tracks license sales through the retail sales database.

Future revisions to DMIS are planned to incorporate other electronic information, including check station data and disease testing results. At least one tool for generating deer population estimates (a formulation of the sex-age-kill reconstruction method as commonly applied in Michigan) will be available. Processes will also be developed for conversion of information maintained by this application into a standard desktop GIS software database format usable by MDNR Wildlife staff.

Research Update

Assessing Purchase Histories and Attitudes of Antlerless Deer License Buyers

History has failed to indicate a direct relationship between antlerless deer license sales and antlerless deer harvests in Michigan. The effects of antlerless license sales on the harvest of antlerless deer are likely influenced by indirect impacts that result from modifying supply-demand relationships, and multiple dynamics likely exist between these indirect impacts, hunter attitudes and experiences, and deer population trends. This study represents a pilot effort to assess these dynamics.

Hunters from two different regions in Michigan will be sampled to account for potential differences resulting from contrasting antlerless deer regulations, deer population trends, and hunting traditions. Resident hunters in each region have been categorized based on antlerless license purchase histories from 1998-2002 as infrequent buyers, including individuals that purchased one or more antlerless licenses in two or fewer years, or frequent buyers, including individuals that purchased one or more antlerless licenses in three or more years. A sample of individuals in each category in each region will be selected to receive a mail survey intended to (1) determine if individuals in these categories possess contrasting attitudes towards purchasing and using antlerless licenses, (2) determine whether individuals in either or both categories rely on any source of information to support their decisions to purchase and/or use antlerless licenses, and (3) evaluate differential hunting effort and success between individuals in these categories. In addition to evaluating hunter attitudes, this project will assess whether hunters can be categorized into distinct groups using license purchase histories. This concept would allow managers to forecast hunting participation and success by annually classifying individuals into such groups, and may also allow more focused efforts for education or collection of additional information.

Southern Michigan Deer Research

Previous research on free-ranging white-tailed deer in Michigan has focused on populations in the Upper Peninsula and Northern Lower Peninsula. A project initiated in cooperation with Michigan State University in the fall of 2000 has begun to assess movement patterns and population dynamics of deer in the Southern Lower Peninsula. The study area is characterized as an agro-forest ecosystem, with dominant cover types including rowcrops (47%) and upland deciduous forests (25%). The graduate research project associated with this study has been completed and a final report is being developed.

Clover traps were used to capture deer during the winter of 2001 (29 animals were radiocollared) and 2002 (30 animals were radiocollared). Annual survival probabilities for deer radiocollared in 2001 were relatively high and similar between years of tracking (0.76 for 2001, 0.75 for 2002). These rates were similar to survival of deer living on refuges in other studies. Deer collared in 2002 had an annual survival probability of 0.40, significantly different than the annual survival probability of deer collared in 2001. The primary cause of mortality was legal harvest (17 of 26 mortalities; 65%). Home ranges of winter-captured deer averaged 390 acres, more similar to other observations of deer in agriculturally dominated landscapes of the Midwest than to home ranges from studies of deer in northern portions of Michigan.

Break-away fawn radiocollars were placed on neonates from mid May through June, including 35 animals in 2001 and 40 animals in 2002. Survival probabilities were higher than most published studies. Survival rates to approximately 180 days were 0.82 for 2001 and 0.85 for

2002. Survival for 2001 and 2002 fawns at the conclusion of deer hunting seasons (approximately 230 days) were 0.76 and 0.85, while annual probabilities were 0.76 and 0.75. Mortality causes directly or indirectly related to human activities (e.g. hunter harvest, vehicle accidents, and fence entanglement) accounted for 65% (11 of 17) of all fawn mortality events. Predation, a significant mortality factor reported in many studies, accounted for only 1 of 17 (6%) of mortalities in this study. Home ranges to approximately 29 weeks post capture averaged 155 acres. Mean annual home range was 186 acres.

Fall of 2003 will mark the start of a second phase of southern Michigan deer research. The new study site will be located approximately 70 miles east of the original area. Landscape-level cover types and composition will be similar to the original study area, but local capture sites are intended to include (1) a large complex (> 30,000 acres) of state land, encompassing the greatest amount of contiguous forest cover in the southern Lower Peninsula, (2) actively farmed private land, with scattered woodlots, and (3) county metropolitan parks and neighboring private lands with low-level residential development. The more diverse land ownership pattern of the new study site will allow, in addition to the points addressed under the first phase of southern Michigan deer research, the assessment of (1) wildlife stakeholder acceptance capacity, defined as the aggregated stakeholder acceptance of deer population levels and their associated impacts, and (2) the influence of varying levels of hunting access and intensity on deer survivorship and movement patterns. Field techniques and methodologies will be similar to the initial research project.

Potential of Deer Management Using an Ecosystem Paradigm

This study, conducted in cooperation with Michigan State University, is intended to support a holistic approach to deer management through the development and integration of population-based models, habitat-based models, and cultural carrying capacity models that evaluate deer management actions on a landscape level.

The population-based component of this project seeks to determine whether readily-available data may be used to develop landscape-level indices of herd condition, adjusted for regional variation and other mechanisms likely to influence condition. Check station data were used to summarize antler development and lactation status as indices of herd condition. Winter severity, population density, and habitat quality were selected as the three major underlying mechanisms with the greatest potential to influence herd quality. These indices, and an understanding of the relationship between underlying mechanisms that influence herd condition, are intended to help managers define an appropriate scale at which to measure the quality of a deer population and, consequently, incorporate herd health into deer management planning and evaluation.

The habitat-based component of this project seeks to contribute to the understanding of relationships between white-tailed deer populations and their habitat based on the potential of Michigan landscapes to provide deer habitat requirements. Habitat suitability in regionally distinct study areas was quantified according to three deer habitat requirements (fall and winter food, thermal cover, and spring and summer habitat), which were characterized based on a literature review. Distinct habitat parcels were defined using digital vegetation and soil databases, empirical vegetation attribute data, and ecological classification systems. Landscape-scale models were constructed that quantify habitat suitability for each seral stage. The highest suitability that a habitat parcel could attain at any seral stage is indicative of habitat potential (i.e. the capability of an area being or becoming high-quality habitat based on biological and geological characteristics).

The cultural carrying capacity (CCC) model developed for this project seeks to establish a process for identifying CCC for deer in Michigan based on attributes of the deer population. Attributes are identified as the direct or indirect outcomes of different deer management actions. The model must determine the relative importance of attributes to different stakeholders, and assess the likelihood of issue activity with respect to combinations of attributes. Issue activity is the stimulation of letter writing, phone calls, attendance at public meetings, etc. undertaken by stakeholders to express their concerns about wildlife management. Preference for attributes selected to contribute to CCC estimation was based on whether identified relationships existed between outcomes of deer management and the attribute considered, the population-based and habitat-based components of the overall project could assist in quantifying the attribute, and individuals could understand and make meaningful trade-offs among the attributes. The willingness or preferences of stakeholders for selecting trade-offs was quantified using focus groups and mail surveys guided by choice experiment methodology.

The three components of this study were completed as collaborative but independently-operating models, and the initial stages of integration have begun. The functional components of this study are scheduled to be completed by December, 2004.

Figure 1. *Areas used to summarize deer harvest in Michigan for the 2002 hunting seasons.*

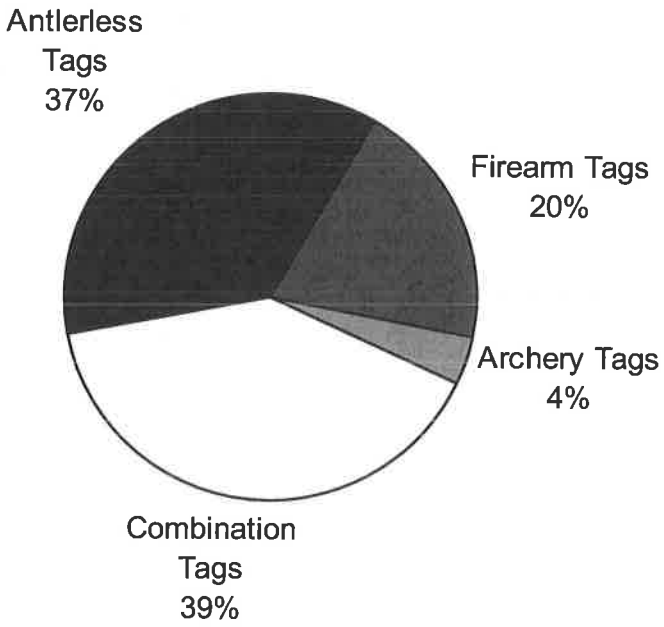

Figure 2. *Types of harvest tags purchased for deer hunting in Michigan during the 2002 hunting seasons.*

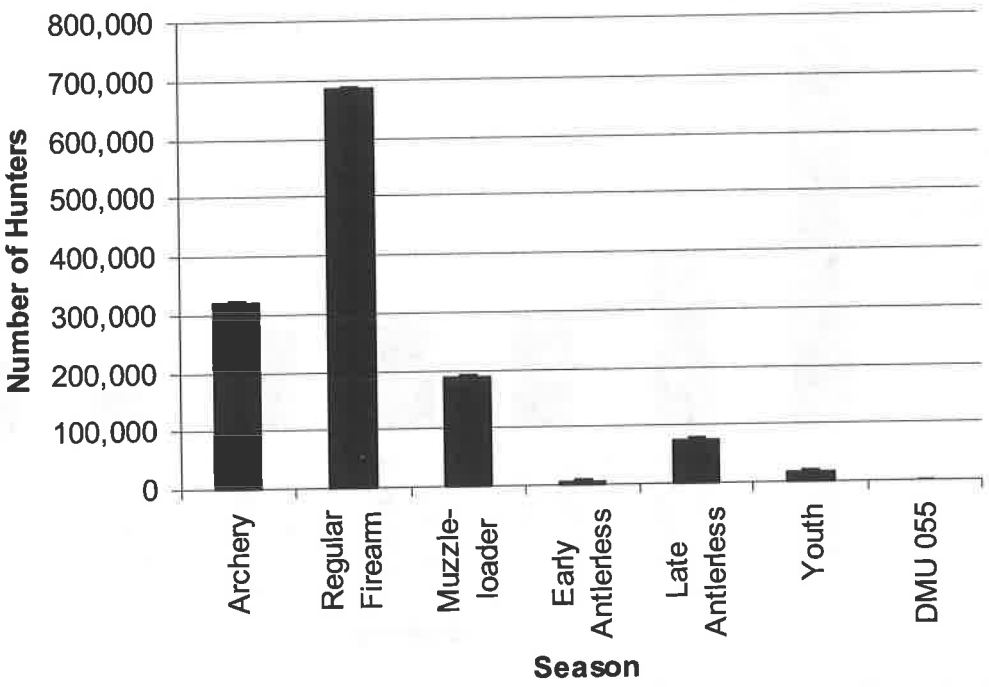

Figure 3. *Number of people hunting deer in Michigan during the 2002 hunting seasons. Error bars represent the 95% confidence limits.*

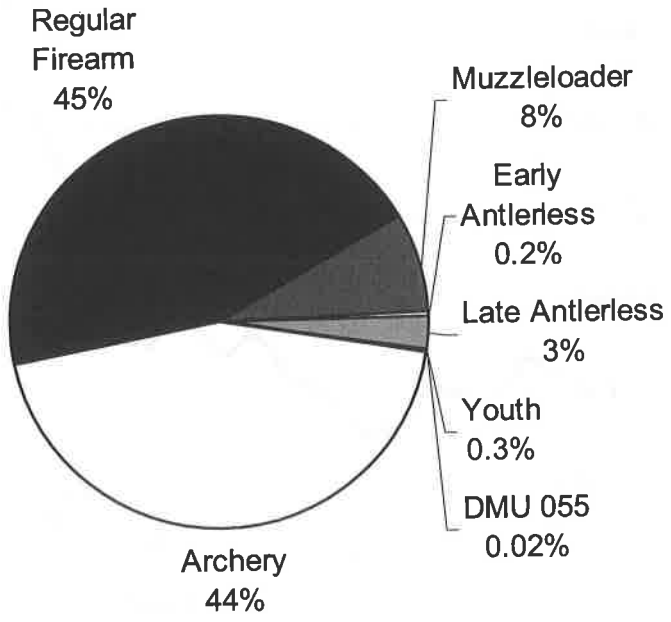

Figure 4. *Distribution of hunting effort among deer hunting seasons in Michigan, 2002.*

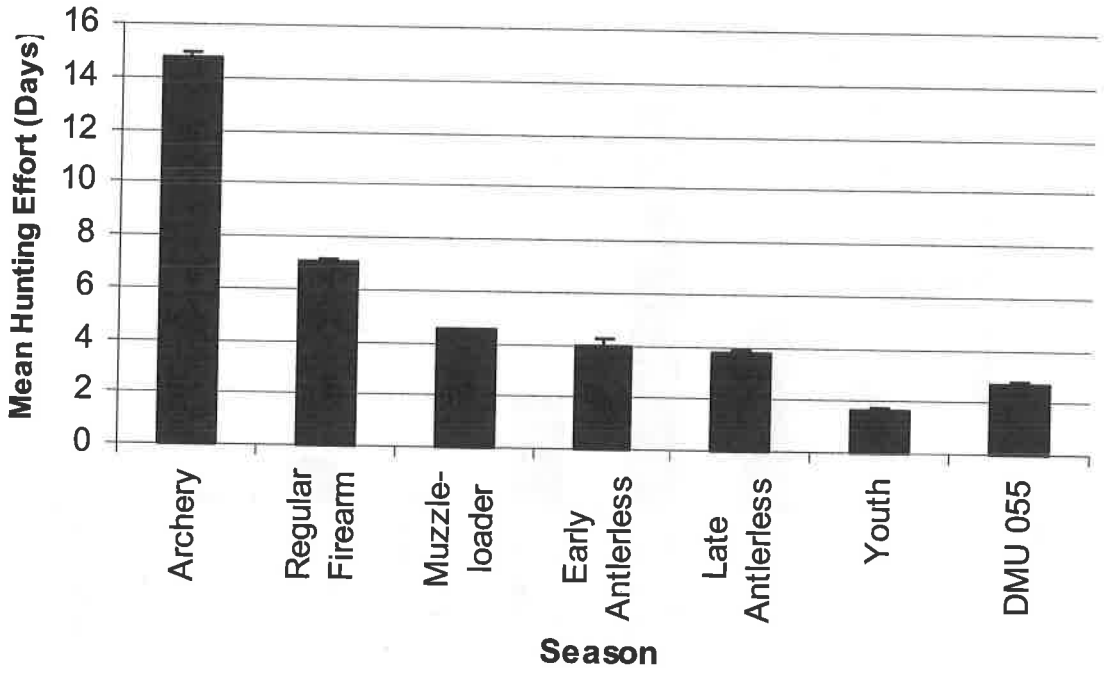

Figure 5. *Mean number of days spent hunting deer in Michigan during the 2002 hunting seasons. Error bars represent the 95% confidence limits.*

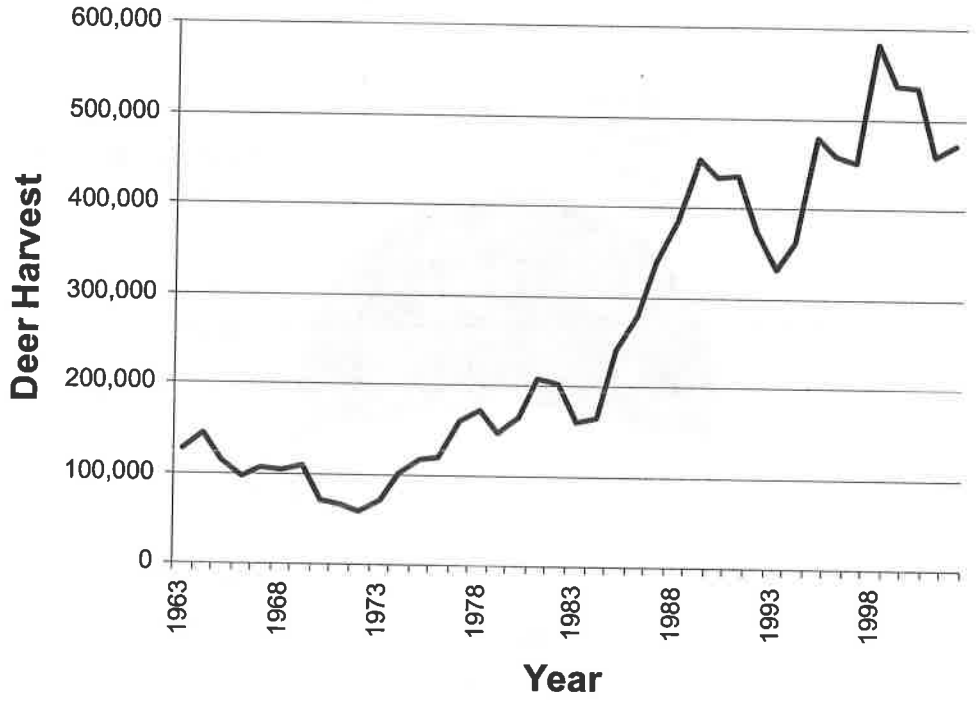

Figure 6. *Number of deer harvested in Michigan's hunting seasons, 1963-2002. Harvest from all seasons and for all deer sexes was combined.*

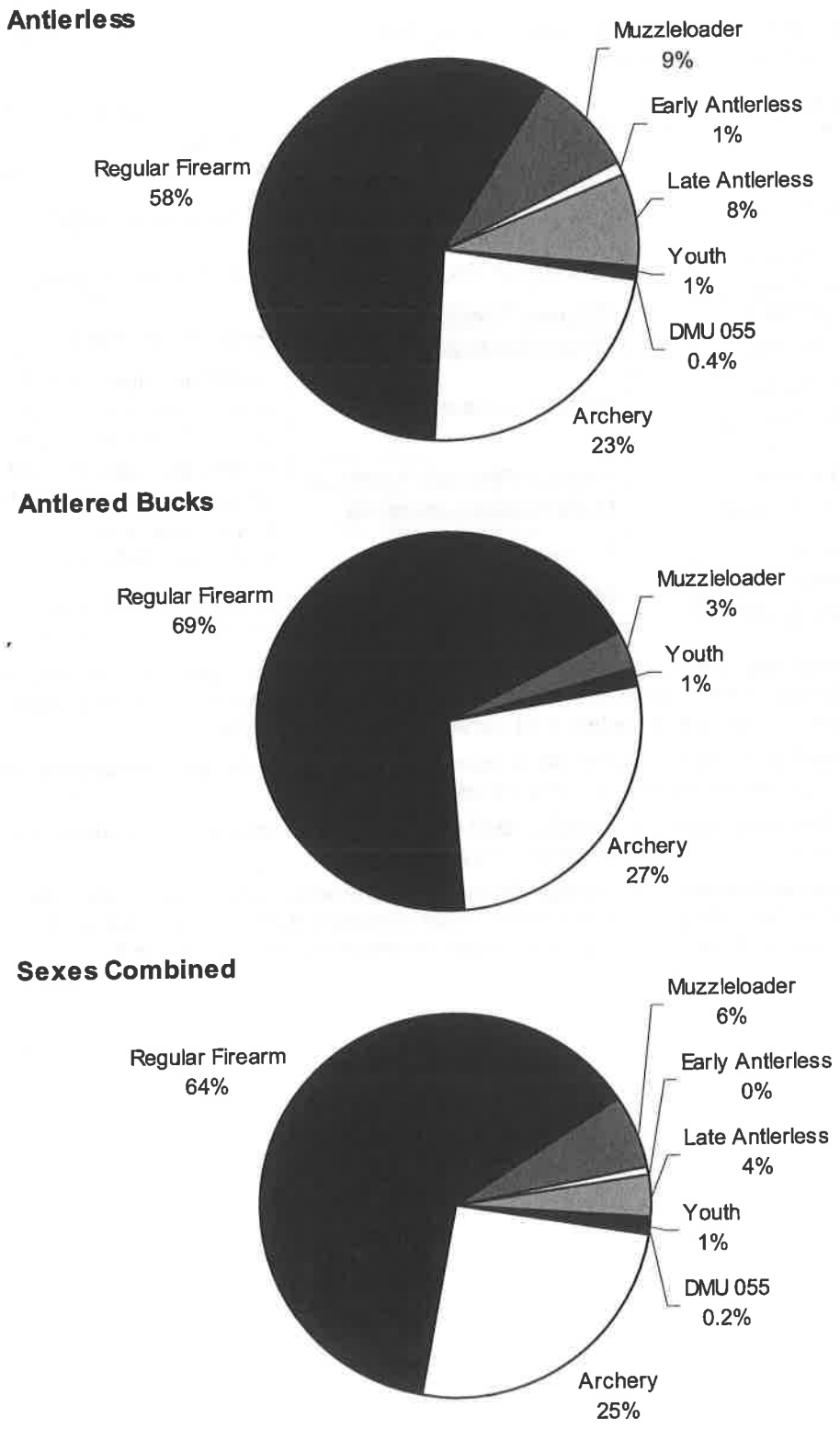

Figure 7. *Distribution of harvest among deer hunting seasons in Michigan, 2002.*

Table 1. *Kind of deer that could be taken during the hunting seasons for each combination of season and deer hunting license.*

Type of license (harvest tag) or permit	Season	Kind of deer that could be harvested[a]
Archery License	Archery seasons	Antlerless or antlered deer[b]
Firearm License	Regular Firearm, Youth, or Muzzleloading seasons	Antlered deer only[b]
Combination License (Regular harvest tag)	Archery or Youth[c] seasons	Antlerless or antlered deer
Combination License (Regular harvest tag)	Regular Firearm, Youth, or Muzzleloading seasons	Antlered deer only
Combination License (Restricted harvest tag)	Archery seasons	Antlerless deer or a deer that has at least 1 antler with 4 or more antler points, 1 or more inches in length
Combination License (Restricted harvest tag)	Regular Firearm, Youth, or Muzzleloading seasons	A deer that has at least 1 antler with 4 or more antler points, 1 or more inches in length
Antlerless License	All seasons	Antlerless deer only
Deer Management Assistance (DMA) permit[d]	All seasons	Antlerless deer only

[a]Antlered deer had antlers at least 3 inches in length; antlerless deer included deer without antlers and deer with antlers less than 3 inches in length. Hunters could harvest a maximum of 2 antlered deer per year (all seasons combined); maximum antlerless limit varied by region of the state.

[b]If a person takes 2 antlered deer during all seasons combined, one of the antlered deer must have at least 1 antler with 4 or more antler points, 1 or more inches in length.

[c]Youth hunters that used archery equipment could harvest either an antlered or antlerless deer; all youths 12 and 13 years of age were restricted to archery-only hunting.

[d]Permits issued to landowners in areas experiencing severe crop damage or areas where management objectives included controlling diseases or severe deer overpopulation. To use these permits, the hunter must also have purchased a firearm, archery, combination, or antlerless deer license for the season in which they were hunting.

Table 2. *Number of Michigan deer licenses and harvest tags purchased, 2000-2002.*

Licenses or Harvest Tags	Number purchased			Change (%) Between 2001 and 2002
	2000	2001[a]	2002	
Firearm Licenses				
Resident	303,489	306,935	304,294	-0.9%
Non-resident	14,075	13,760	14,772	7.4%
Senior	32,170	32,816	32,461	-1.1%
Military	31	28	24	-14.3%
Subtotal	349,765	353,539	351,551	-0.6%
Archery Licenses				
Resident	67,372	62,028	54,136	-12.7%
Non-resident	3,695	3,569	3,228	-9.6%
Junior	10,173	9,789	9,254	-5.5%
Senior	3,209	3,238	2,962	-8.5%
Military	18	26	29	11.5%
Subtotal	84,467	78,650	69,609	-11.5%
Combination Licenses[b]				
Resident	313,878	304,799	299,140	-1.9%
Non-resident	1,516	1,497	1,603	7.1%
Junior	29,187	31,146	30,852	-0.9%
Senior	25,707	25,734	25,813	0.3%
Military	147	131	137	4.6%
Subtotal	370,435	363,307	357,545	-1.6%
Antlerless Licenses[c]				
Resident	573,616	582,775	597,721	2.6%
Non-resident	6,695	5,986	5,312	-11.3%
Junior	10,509	11,475	4,890	-57.4%
Deer Management Assistance[d]	12,130	9,814	6,312	-35.7%
Subtotal	602,950	610,050	614,235	0.7%
Total Licenses	1,407,617	1,405,546	1,392,940	-0.9%
Harvest Tags				
Firearm	349,765	353,539	351,551	-0.6%
Archery	84,467	78,650	69,609	-11.5%
Combination	740,869	726,614	715,090	-1.6%
Antlerless	602,950	610,050	653,446	7.1%
Total Harvest Tags	1,778,051	1,768,853	1,789,696	1.2%

[a]The number of antlerless licenses reported sold in 2001 was incorrectly reported in Frawley (2002).

[b]Combination licenses included two harvest tags. Most other license types had one harvest tag.

[c]In 2002, two harvest tags were issued with 39,211 antlerless licenses sold for eight management units in NE Lower Peninsula.

[d]Prior to 2001, Block Permits were included with DMA permits.

Table 3. *Estimated number of deer harvested in Michigan, 2000-2002.*

Season or permit	Type of deer	2000	2001	2002	Change from 2001 to 2002
Season					
Archery	Antlerless	52,760	52,942	53,258	0.6%
	Antlered bucks	76,166	66,975	64,517	-3.7%
	Sexes combined	128,926	119,918	117,775	-1.8%
Regular firearm	Antlerless	146,734	123,440	133,524	8.2%
	Antlered bucks	197,290	157,388	165,412	5.1%
	Sexes combined	344,024	280,828	298,936	6.4%
Muzzleloader	Antlerless	20,187	18,230	20,792	14.1%
	Antlered bucks	8,830	7,929	8,233	3.8%
	Sexes combined	29,017	26,159	29,026	11.0%
Early antlerless	Antlerless	2,287	5,232	2,307	-55.9%
Late antlerless	Antlerless	25,129	20,421	17,876	-12.5%
Youth	Antlerless	1,366	1,754	2,004	14.2%
	Antlered bucks	3,626	2,978	3,142	5.5%
	Sexes combined	4,992	4,733	5,146	8.7%
DMU 055[a]	Antlerless	0	698	811	16.2%
Special permits[b]	Antlerless	7,327	5,717	4,338	-24.1%
Grand Total	Antlerless	255,790	228,435	234,911	2.8%
	Antlered bucks	285,911	235,271	241,304	2.6%
	Sexes combined	541,701	463,706	476,215	2.7%

[a]Special early antlerless season in DMU 055 did not occur prior to 2001.
[c]Includes deer harvested with DMA permits. These permits could be used during any deer hunting season.

Table 4. *Estimated number of deer harvested in Michigan by hunting season and region, 2002.* [a]

Season or permit	Type of deer	UP	NLP	SLP	Statewide
Archery	Antlerless	6,718	18,471	28,069	53,258
	Antlered bucks	4,700	17,702	42,116	64,517
	Sexes combined	11,413	36,166	70,196	117,775
Regular firearm	Antlerless	14,665	49,140	69,720	133,524
	Antlered bucks	28,933	57,838	78,641	165,412
	Sexes combined	43,608	106,975	148,353	298,936
Muzzleloader	Antlerless	2,850	5,659	12,284	20,792
	Antlered bucks	1,716	2,026	4,491	8,233
	Sexes combined	4,560	7,687	16,779	29,026
Early antlerless	Antlerless	0	2,307	0	2,307
Late antlerless	Antlerless	0	5,629	12,247	17,876
Youth	Antlerless	165	812	1,027	2,004
	Antlered bucks	173	1,256	1,714	3,142
	Sexes combined	337	2,068	2,741	5,146
DMU 055	Antlerless	811	0	0	811
All Seasons	Antlerless	25,205	81,941	123,427	230,573
	Antlered bucks	35,489	78,819	127,012	241,320
	Sexes combined	60,702	160,749	250,426	471,877

[a]Harvest estimates do not include deer taken with DMA permits. An additional 4,338 deer were taken with these permits.

Minnesota Deer Status Report
2003 Midwest Deer & Turkey Study Group

Brian Haroldson & Lou Cornicelli

Season Framework

Archery

The statewide archery season runs from the 2nd Saturday in September to 31 December. Archers ($27 resident license, $136 non-resident license) may take 1 deer of either sex, but are restricted to legal bucks (>3" antler) in areas where firearms hunters are restricted to bucks-only hunting. Archers may continue to hunt and take deer of either sex during the firearms season. Crossbows are not allowed, except for disabled hunters.

Firearms

In general, hunters select 1 of 6 zone/time options. The firearms license ($27 resident, $136 non-resident) is a bucks-only license, however, hunters may apply for an either-sex permit in 1 of 128 deer management units (DMU) or a special area permit in 1 of 16 special hunt areas (e.g., state parks or other refuge areas where hunting is normally prohibited and where hunter numbers must be limited to control harvest or for public safety). Either-sex permits are issued via lottery. Hunters under age 16 may take a deer of either-sex without a permit. In addition, Multi-Zone Buck licenses ($53 resident, $271 non-resident) allow firearm hunters to hunt and tag a legal buck during multiple zone/time options. An All-Season license ($79 resident only) allows hunters to hunt during any open archery, muzzleloader, or firearms season, and tag 1 buck and 1 antlerless deer. The firearms season begins on the Saturday nearest 6 November. Seasons are generally short (2-4 days) in agricultural zones dominated by private land, and longer (9-16 days) in forested zones with abundant public land. Agricultural zones are restricted to shotguns with a single slug, whereas rifles and shotguns are authorized in forested areas. Also, muzzleloaders and handguns are allowed statewide during any of the firearms season options.

Muzzleloader

The 16-day statewide muzzleloader season begins the Saturday after Thanksgiving. Hunters may not hunt during both the firearms season and the muzzleloader season unless they purchase an All-Season license. As with archery, this is an either-sex season, except in areas where firearms hunters are restricted to bucks-only hunting. Smooth-bore and rifled muzzleloaders must be at least .45 caliber and .40 caliber, respectively. Scopes and breech-loading weapons are not legal during this season. There are no restrictions on ignition systems, bullet types, etc.

Shooting hours for all deer seasons are 2 hour before sunrise to 2 hour after sunset. Generally, hunters may purchase both a firearms (or muzzleloader) and archery license, but may tag only one deer. In areas where the deer population exceeds goal, Management permits ($14 resident, $68.50 non-resident) and Intensive Harvest permits ($14 resident, $68.50 non-resident) are available which allow 1-4 additional (antlerless-only) deer to be taken. Management and Intensive Harvest permits are issued over-the-counter. Hunters are required to tag deer at the kill location and registration is mandatory. Most registration stations are

private businesses that provide the service for free or a small fee. Party hunting is allowed (except for All-Season license holders) whereby members of the same hunting party may tag deer taken by other party members who are in the field and hunting together at the same time. Use of bait is prohibited.

Population Trends

Mild winters during 5 of the last 6 years have allowed deer numbers in Zone 1 (which comprises the northeastern forested part of the state) and Zone 2 (east-central and north-central Minnesota) to reach record levels (Figure 1, 2). Deer numbers in Zone 3 (southeastern Minnesota) also continue a slow, steady rise. In the intensively cultivated area of western and southwestern Minnesota (Zone 4), however, deer populations are generally decreasing. Statewide, deer numbers generally meet or exceed population goals in all DMUs. The 2003 pre-fawn population estimate is 757,000 deer, up 4% from last year (Figure 1).

2002 Season Summary

Registered deer kill increased 2% during 2002 and was the second highest level on record (Table 1). Overall, 222,050 deer were registered by firearm, muzzleloader, and archery hunters. Although regular firearm license sales were down 8% in 2002, total firearm license sales increased 5%, primarily due to a 79% increase in Management and Intensive Harvest permit (antlerless-only) sales. Intensive Harvest permits, which combined with a regular license allow hunters to tag up to 5 deer, were available in 42 of 128 DMUs, a 50% increase from 2001. In addition, sales of the new All Season license (2 deer) surpassed 22,000, greatly exceeding expectations. Firearm harvest increased 7% in Zone 1 and 6% in Zone 2 (Table 2, Figure 2). In Zones 3 and 4, however, firearm harvest decreased 9% and 5%, respectively. Either-sex permit availability to firearm hunters was also at a record level (Table 1). Permits increased 55%, 38%, and 9% in Zones 1, 2, and 4, respectively, but decreased 3% in Zone 3 (Table 3, Figure 2).

An estimated 443,115 firearm hunters registered 200,121 deer; 58,807 archers registered 16,192 deer; and 11,764 muzzleloader hunters registered 5,737 deer. Statewide, firearm harvest increased 2%, muzzleloader harvest increased 20%, and archery harvest decreased 1% (Table 1).

2003 Season Outlook

The winter of 2002-03 was relatively mild. Final Winter Severity Index (WSI) values (measured by the number of days with ambient temps #0E F and days with ≥15 inches of snow) ranged from 33-80. Although colder than normal temperatures occurred last winter, snow depths never exceeded 15 inches. Based on WSI values, Minnesota winters have been mild during 5 of the last 6 years. Deer numbers in Minnesota continue to increase, particularly in the northern forested areas following the back-to-back severe winters of 1995-96 and 1996-97 (Figure 1). The prehunt deer population is estimated at 1.14 million, an increase of over 40,000 animals from last year. A new system for managing antlerless harvest (described below) eliminates the need for firearm hunters, in many areas of the state, to apply for a permit to take deer of either sex. Under the new system, more than three quarters of the firearm deer hunters will be allowed to tag deer of either sex on their regular license, bypassing the lottery drawing. In addition, either-sex permits are now available to firearm hunters during the 3A (formerly bucks-only) season. Youth hunting opportunities have also been expanded to include 2 additional 2-day archery hunts and a 4-day firearm hunt.

2003 Regulation Changes

Antlerless Deer Management System

Since 1972, firearm deer hunters interested in hunting antlerless deer with their regular license were required to apply for either-sex permits through a lottery drawing. Unsuccessful applicants in the drawing were restricted to hunting for legal bucks only. Even in undersubscribed DMUs, where the number of available permits exceeded the number of applicants, hunters were required to apply for permits through the system. Beginning in 2003, the procedure for allocating either-sex permits has been modified. Under the new system, the state's 128 DMUs have been divided into 3 categories: lottery; managed; and intensive. The annual lottery system for either-sex permits will remain in place only in lottery DMUs. Firearm hunters who hunt in managed or intensive DMUs may now tag a deer of either sex using their regular license and no longer need to apply for either-sex permits. In addition, hunters in managed DMUs may purchase 1 Management permit to take a second, antlerless-only deer. Hunters in intensive DMUs may purchase up to 4 Intensive Harvest permits to tag up to 4 additional antlerless deer. In general, bag limits are 1, 2, and ≤5 deer in lottery, managed, and intensive DMUs, respectively. Muzzleloader and archery hunters may still tag a deer of either sex statewide and may purchase Intensive Harvest permits for use in managed or intensive DMUs.

Zone 3A/3B Season Structure

Zone 3 (southeastern Minnesota; Figure 2) has traditionally had a split season structure consisting of 9 days of bucks-only hunting (3A) and 3-7 days of either-sex (with permit) hunting (3B). Annually, the number of either-sex permits offered during 3B exceeds the number of permit applicants. Allocation of Management and Intensive Harvest permits, which allow the taking of 1-4 additional antlerless deer, has reached a point of saturation. Despite past efforts, the deer population in Zone 3 continues to climb at a slow, steady rate. To increase antlerless deer harvest in Zone 3, the 3A season has been shortened by 2 days, the 3B season has been lengthened by 2 days, and either-sex permits will be available during both seasons. Youth hunters and hunters with disabilities will also be allowed to kill deer of either sex, without a permit, during 3A.

Carcass Import Restrictions

To help prevent the spread of chronic wasting disease (CWD), hunters cannot bring whole cervid carcasses into Minnesota from other states or provinces. However, hunters may bring the following carcass parts into the state: cut and wrapped meat; quarters or other portions of meat with no part of the spinal column or head attached; antlers, hides, or teeth; antlers attached to skull caps that are cleaned of all brain tissue; and finished taxidermy mounts.

Captive Cervid Industry

Regulatory authority of all captive cervid farms is now under control of a single agency, the Minnesota Board of Animal Health (BAH). All captive cervid owners are required to register their animals with BAH and participate in a CWD surveillance program. This program includes the following: 1) An annual inventory of each cervid herd must be verified by an accredited veterinarian and filed with BAH; 2) Movement of cervids from any premises to another location must be reported to BAH within 14 days of such movement; 3) All animals from cervid herds

>16 months of age that die or are slaughtered must be tested for CWD. BAH requires all captive cervids to be identified. The identification must be visible to the naked eye during the daylight at a distance of 50 yards. Newborn animals must be identified before December 31 of the birth year or before movement from the premises, whichever occurs first. Perimeter fences for farmed cervids must be at lease 96 inches in height. If animals escape their enclosure and are not captured or returned within 24 hours of their escape, the owner must notify Minnesota DNR. Wild cervids that get into enclosures must be destroyed by the farm owner and reported to Minnesota DNR within 24 hours. A permit from BAH is required before captive cervids can be brought into the state.

Youth-Only Hunts

Hunting opportunities for youth hunters have been increased for the 2003 deer season. Youth (ages 12-17) archery hunts will be held at Camp Ripley Military Reservation during 11-12 October and at Arden Hills Army Training Site during 16-17 October and 18-19 October. Rydell National Wildlife Refuge will hold an archery hunt during 8-9 November for hunters between the ages of 12 and 15. Up to 150 permits will be issued by random drawing for the Ripley hunt and 20 permits will be available during each of the Arden Hills and Rydell hunts. Minnesota's first youth firearms hunt will be held during 16-19 October at Whitewater State Game Refuge. Fifty permits will be issued to hunters 12-17 years of age. For all youth hunts, hunters must be accompanied by an adult mentor, who is ineligible to hunt. One deer of either sex may be taken and no party hunting is allowed.

Electronic Registration

Pilot testing of electronic registration of deer will continue in several areas of Minnesota during the 2003 deer season. Registration agents will keypunch harvest data (age, sex, kill date, etc.) using the point-of-sale license terminals rather than hand write information onto paper forms. We expect electronic registration to become operational statewide during 2004.

Research Activities

Farmland Deer Mortality

The goal of this study is to determine seasonal survival rates, causes of mortality, and seasonal movements of adult female and fawn white-tailed deer in select areas throughout the agricultural region of Minnesota. Specific objectives are to evaluate the impacts of hunting, poaching, predation, and vehicle collisions on deer populations. Evaluation of disease prevalence and the impacts of weather also are being examined. Results will be used to improve population modeling efforts and to assist wildlife managers with decision-making processes concerning white-tailed deer.

Current Deer Management Issues

Population Goals

To reach consensus on appropriate deer population goals, Minnesota is using a stakeholder "roundtable" process similar to processes used in New York and Wisconsin. DMU boundaries are currently being evaluated and revised to conform more closely to landscapes that have been delineated and classified for land management planning purposes. Public roundtable meetings will occur during upcoming years.

Chronic Wasting Disease

During August 2002, the first confirmed case of CWD in Minnesota was found in a captive, 5-year-old male elk that died on an Aitkin County cervid farm. This animal had previously resided at captive facilities in Stearns and Benton counties. All 3 herds were subsequently quarantined, depopulated, and submitted for testing, resulting in Minnesota's second CWD-positive captive elk, a 3-year-old female from the Stearns County herd, in January 2003. No positive results were detected in wild white-tailed deer sampled by Minnesota DNR staff in the immediate area around the Aitkin farm during August 2002 or in hunter-killed deer collected during the 2002 deer hunting season in the DMU surrounding the farm. In addition, no positives were detected from hunter-killed deer in 3 DMUs surrounding or adjacent to the Stearns and Benton County captive facilities.

To date, CWD has not been detected in Minnesota's wild deer herd. During 2002, 4,462 hunter-killed deer were tested for CWD in 17 of 128 DMUs across the state, supplementing ongoing testing of "suspect" cervids that are found sick or displaying symptoms consistent with the disease. No CWD-positive samples were found in any brain stem samples collected from hunter-killed or "suspect" deer.

During the 2003 deer season, Minnesota plans to test 13,000 hunter-killed deer (>1-year-old) for CWD. Medial retropharyngeal lymph nodes will be collected in 63 of 128 DMUs across the state (Figure 2). Similar to 2002, the testing system is designed to detect CWD with 95% confidence at a 1% infection rate. If CWD is detected, Minnesota will aggressively attempt to control and manage the disease, likely implementing intensive culling and special hunting seasons as Wisconsin and Nebraska have used after they found the disease.

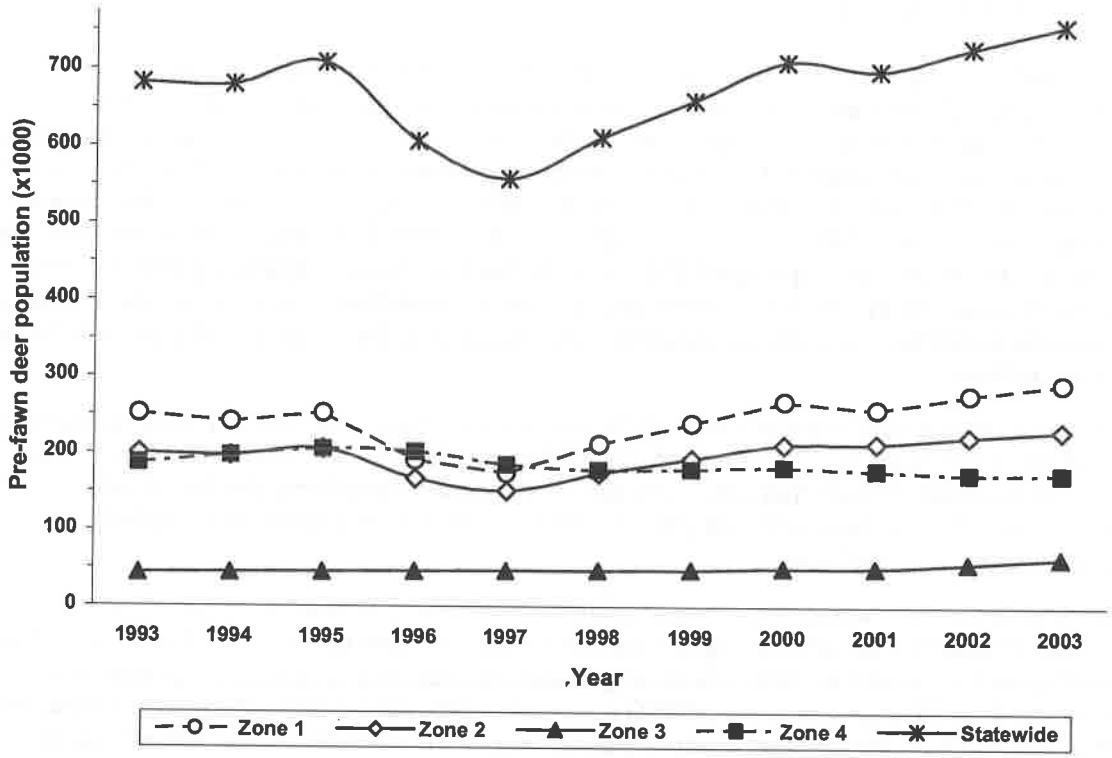

Figure 1. *Pre-fawn deer population estimates in Minnesota, 1993-2003.*

Table 1. *Statewide deer license sales, harvest, and success rates in Minnesota, 1990-2002.*

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	% Change (2001-2002)
FIREARM														
Resident Licenses	412,306	425,975	443,005	426,215	427,343	419,965	389,745	369,190	378,320	395,745	400,814	401,005	367,964	-8.2
Non-Resident Licenses	6,441	6,863	8,033	8,498	9,190	9,339	8,535	7,830	8,852	9,970	10,595	10,972	10,835	-1.2
Mgmt/Intensive Harvest Permits	4,165	7,173	40,471	18,140	19,308	22,603	27,148	32,229	20,884	23,785	34,802	59,013	105,699	79.1
Multi-Zone Buck Licenses	--	--	5,711	16,881	24,590	29,902	38,806	42,803	44,739	43,903	42,669	41,921	35,658	-14.9
Resident Youth Licenses	--	--	--	--	--	1,835	2,964	3,844	3,445	2,038	3,215	4,011	2,884	-28.1
All Season Buck Licenses	--	--	--	--	--	--	--	--	--	--	2,384	3,986	--	
All Season Deer Licenses	--	--	--	--	--	--	--	--	--	--	--	--	22,125	
Free Landowner Licenses	--	--	--	--	--	--	--	--	--	--	1,671	2,604	3,649	40.1
Total License Sales	422,912	440,011	497,220	469,734	480,431	483,644	467,198	455,896	456,240	475,441	496,150	523,512	548,814	4.8
Either-sex Permits Offered	138,650	193,980	322,030	236,055	199,950	201,525	154,195	150,195	140,280	177,380	232,595	284,210	363,765	28.0
Either-sex Permits Issued	133,854	183,729	277,776	194,888	164,418	162,761	116,650	105,481	108,016	135,852	180,490	196,603	192,907	-1.9
Either-sex Permit Applications	277,135	291,836	317,947	262,402	260,086	257,653	174,329	142,260	151,148	214,597	237,571	225,341	202,086	-10.3
Adult Male Harvest	90,426	97,484	95,531	79,498	85,661	89,001	71,316	65,156	82,928	92,584	102,861	98,645	100,083	1.5
Antlerless Harvest	76,163	108,791	133,752	108,747	92,752	109,192	68,233	62,407	60,492	71,681	88,492	98,095	100,038	2.0
Total Harvest	166,589	206,275	229,283	188,245	178,413	198,193	139,549	127,563	143,420	164,265	191,353	196,740	200,121	1.7
Success Rate (%)	39.4	46.9	46.1	40.1	37.1	41.0	29.9	28.0	31.4	34.6	38.6	37.6	36.5	-3.0
ARCHERY														
Resident Licenses	67,031	69,791	71,946	69,434	71,409	70,056	67,058	63,499	63,826	66,226	68,947	69,608	57,532	-17.3
Non-Resident Licenses	747	787	914	1,128	1,156	1,171	1,098	980	1,029	1,073	1,271	1,288	1,275	-1.0
Mgmt/Intensive Harvest Permits	1,416	3,400	14,349	14,907	13,121	15,387	15,632	17,478	15,846	16,945	20,393	22,141	18,126	-18.1
Total License Sales	69,194	73,978	87,209	85,469	85,686	86,614	83,788	81,957	80,701	84,244	90,611	93,037	76,933	-17.3
Total Harvest	11,106	13,183	13,410	13,695	13,723	14,342	14,348	13,247	12,450	13,579	16,251	16,300	16,192	-0.7
Success Rate (%)	16.1	17.8	15.4	16.0	16.0	16.6	17.1	16.2	15.4	16.1	17.9	17.5	21.0	20.1
MUZZLELOADER														
Total License Sales				2,608	5,200	7,329	8,291	9,503	9,765	11,411	11,972	13,043	11,764	-9.8
Total Harvest	730	977	829	1,118	1,799	2,471	3,375	3,183	3,183	2,972	4,548	4,780	5,737	20.0
Success Rate (%)				42.9	34.6	33.7	40.7	33.5	32.6	26.0	38.0	36.6	48.8	33.1
TOTAL HARVEST	178,425	220,435	243,522	203,058	193,935	215,006	157,272	143,993	159,053	180,816	212,152	217,820	222,050	1.9

Table 2. *Deer harvest during Minnesota's firearm, muzzleloader, and archery seasons, 1993-2002.*

Season	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	% Change (2001-02)
Firearm											
Zone 1	47,990	45,302	51,322	19,301	19,145	29,990	44,256	59,396	60,050	64,220	6.9
Zone 2	52,562	50,387	56,505	35,543	28,939	36,458	44,794	53,700	59,478	62,881	5.7
Zone 3A	5,523	5,906	6,484	6,375	6,171	6,578	6,770	6,642	5,866	5,721	-2.5
Zone 3B	13,067	11,416	11,680	12,638	12,651	11,931	11,530	13,718	10,316	9,054	-12.2
Zone 4A	40,122	39,006	43,323	40,734	35,648	34,154	37,260	36,920	37,706	36,085	-4.3
Zone 4B	28,981	26,396	28,879	24,958	25,009	24,309	19,655	20,977	23,324	22,160	-5.0
Total	188,245	178,413	198,193	139,549	127,563	143,420	164,265	191,353	196,740	200,121	1.7
Muzzleloader	1,118	1,799	2,471	3,375	3,183	3,183	2,972	4,548	4,780	5,737	20.0
Archery	13,695	13,723	14,342	14,348	13,247	12,450	13,579	16,251	16,300	16,192	-0.7
Total	203,058	193,935	215,006	157,272	143,993	159,053	180,816	212,152	217,820	222,050	1.9

Table 3. *Either-sex permit quotas during Minnesota's firearm deer season, 1993-2002.*

	# of either-sex permits offered										
Zone	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	% Change (2001-02)
1	54,150	35,900	35,100	2,300	2,640	6,280	23,415	50,170	71,850	111,250	54.8
2	70,180	58,325	57,600	41,650	32,575	34,925	46,325	69,100	87,975	121,710	38.3
3A[1]	0	0	0	0	0	0	0	0	0	0	0
3B	23,600	19,600	20,800	22,800	25,900	26,200	28,975	33,500	37,500	36,525	-2.6
4A	48,100	47,075	48,525	49,910	51,840	43,350	46,695	48,175	52,030	57,115	9.8
4B	40,025	39,050	39,500	37,535	37,240	29,525	31,570	31,550	34,855	37,165	6.6
Total	236,055	199,950	201,525	154,195	150,195	140,280	177,380	232,595	284,210	363,765	28.0

[1] Bucks-only season; no either-sex permits available.

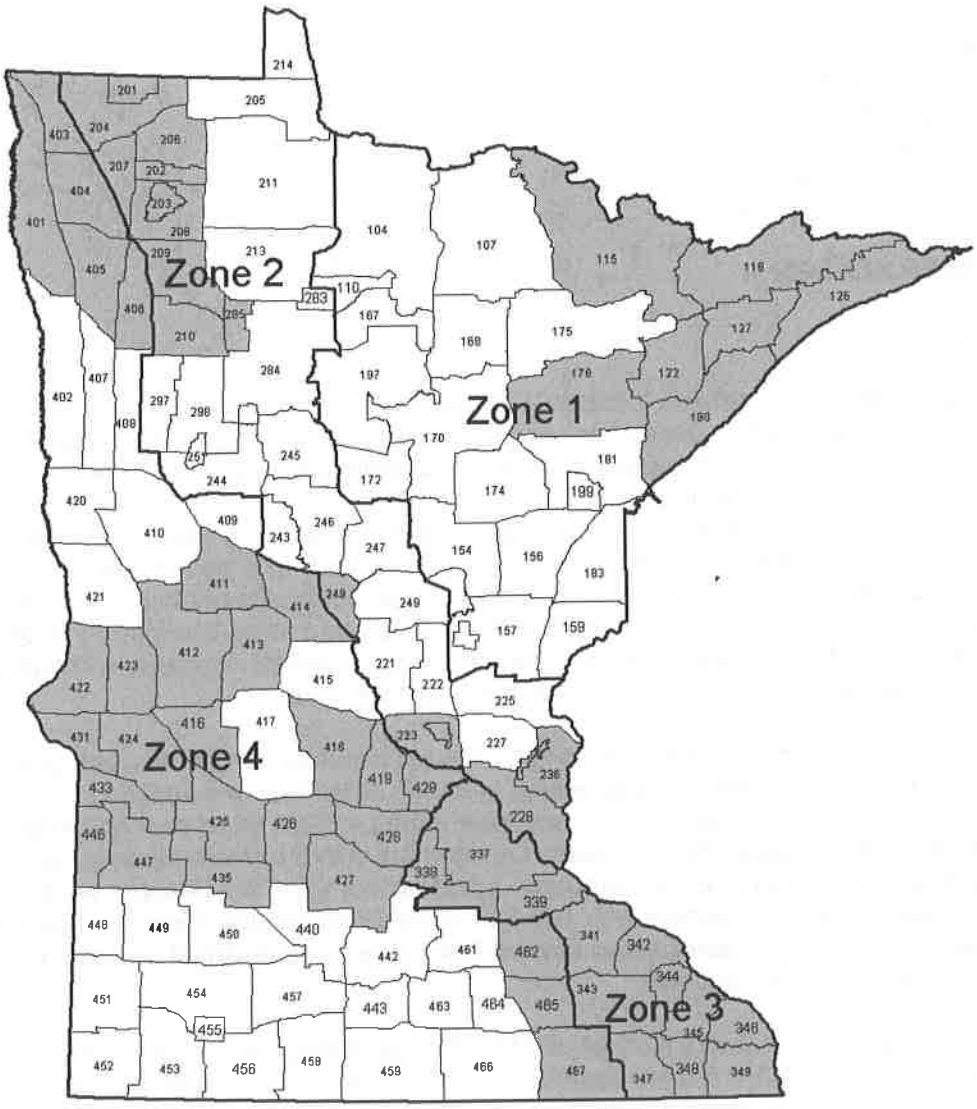

Figure 2. Deer management units selected to test for chronic wasting disease from hunter-killed deer, 2003.

Midwest Deer and Turkey Study Group Meeting
Missouri 2002-2003 Report

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2002 DEER SEASON

Firearms

The 2002 firearms deer season included a 2-day youth-only portion November 2-3, an 11 day portion November 16-26, a December muzzleloading firearms portion December 7-15 and for units 1-27, 33-37, 58, and 59 a December 19-22 antlerless-only portion. Shooting hours were ½ hour before sunrise to ½ hour after sunset (CST). Regulations were based on 59 management units (Figure 1). Permits that allowed any sex or age of deer to be taken (any-deer permits) were valid for use anywhere in Missouri. First and second bonus permits were unit specific. With the exception of 3 units where a drawing was held for bonus permits, all permits were available over-the-counter. Permits went on sale 1 July and sales continued throughout the firearms season. In units where permits were available in limited numbers, a drawing was held in which applications were submitted from 1 July to 15 August.

Landowner any-deer and bonus permits were issued separately from the quota permits. If bonus permits were issued to any permittee in a unit, all landowners applying would receive them. Landowners who applied for an any-deer permit in 2001 were sent abbreviated forms for 2002 to facilitate the application process. Landowners with 5 or more acres could hunt antlered deer without a permit on their own property. Landowners with 75-149 acres were eligible for 1 free any-deer permit; landowners with 150-299 acres could receive 2 any-deer permits, landowners with 300-599 acres could receive 3 any-deer permits and those with 600+ acres could receive 4 any-deer permits.

Preliminary figures indicated a harvest of 247,826 deer during the firearms and muzzleloading firearms season in 2002, a 5% increase from 2001 (Table 1). The most significant factors affecting statewide deer harvest were excellent weather, increased harvest opportunity, and abundant deer.

The new and improved POS system with thermal printers that produce adhesive-backed permits that look like a deer permit, including a tear-off transportation tag worked well. We received some complaints about permit size but overall hunters liked it. The permit will be downsized for 2003 a bit to reduce bulk.

Archery

Archers in 2002 were allowed to take 2 deer with the exception that only 1 buck could be taken prior to the firearms season (October 1 - November 15). Archers hunting in special antlerless only management units (1-17, 20, 22, 23, 24, 30, 58 and 59) could take an additional 5

antlerless deer on antlerless-only archery tags which cost $5.00 each. Archers took 29,587 deer in 2002 compared to 26,273 in 2001. Archery permit sales increased slightly in 2002 (Table 1).

Managed Deer Hunts

In 2002 there were 71 managed hunts on 36 areas (MDC land, DNR State Parks and federal refuges). Participants were determined by random drawing. The purpose of the managed hunts is to provide a unique hunting experience while, at the same time, controlling local deer population problems. Most of the managed hunts occur on areas where control of hunter numbers and method of take is desired. Twenty one of the 2002 hunts were archery only, 28 were muzzleloading firearms only, 18 were modern weapons only, and 1 was an historic weapons hunt (muzzleloading firearms, archery, or crossbow).

POPULATION TRENDS

Trend and harvest information and population modeling (Table 2) indicate a stabilization of deer numbers. Deer populations seem to be lower in our agricultural zone in northern Missouri, although in many units we are still above population goals. In southern Missouri we tend to be at or below goals. Deer populations in each management unit were simulated prior to setting deer regulations for the 2002 season (Table 3). The simulations indicated stabilized or reduced populations in some units and increasing populations in others. Overall our population goals call for higher deer populations in the Ozarks, southeastern and east-central Missouri and lower populations throughout most of northern Missouri.

Field Staff Questionnaire

Wildlife management, private lands and protection staff in each county annually respond to a deer status questionnaire in which they report trends in deer populations and the number of crop damage complaints. They also are given the opportunity to make quota recommendations. The results of the survey indicated in general a stable deer herd.

Archery Hunter Index

A survey, initiated by our furbearer biologist to determine trends in furbearers, enlists the aid of several thousand cooperating archery hunters. Each cooperator maintains a diary in which he/she records the number of deer and furbearers seen during each hunting trip. The archer notes the location (county and deer management unit) and number of hours hunted for each trip. Sightings per hunting effort are tallied and broken down by unit and geographic region. Overall this year's archery index indicates stable to increasing deer populations in most parts of the state (Table 4).

RESEARCH PROJECTS

Deer Management Project

We conduct periodic attitude surveys of Missouri firearms deer hunters (1978, 1991, 2001) and landowners (1980, 1998, 2000) that provide useful information on hunter and landowner demographics and attitudes toward deer issues. The hunter attitude surveys indicate that firearms hunters are aging in Missouri with the average age increasing from 36 in 1978 to 42 in 2001. The surveys also indicate older hunters take fewer deer. The prognosis is that future deer hunters will individually and collectively take fewer deer than today's hunters. At the same time, hunter interests are changing, especially in northern Missouri. Surveys suggest that an

increasing proportion of hunters want more than just to take a deer. They want the opportunity to take an adult buck and ask that we balance the sex and age structure of Missouri's deer herd.

Citizen concerns about deer numbers, changing hunter interests, and decreasing effectiveness of our current system are being considered as we develop future deer management programs. The current system has worked well and the tradition of unrestricted buck harvests and limited doe harvests is deeply engrained in our deer hunting heritage. However, we feel we are at a crossroads of deer management in Missouri; we must adapt to changing landscapes, public attitudes, and hunter demographics. We feel that to continue with the current system will jeopardize our ability to manage deer in the future. To address this, we will implement changes over the next couple of years in an attempt to shift more harvest emphasis from bucks to does. We want to produce more even age/sex distributions and, in places further reduce deer populations.

For 2003, harvest opportunities for antlerless deer will be increased. In 50 of the 59 units archers will be able to purchase unlimited antlerless-only archery permits. In 39 units firearms hunters will be able to purchase unlimited bonus antlerless-only permits. The antlerless-only portion of the firearms season has been expanded to 9 days and a 2-day urban deer management portion of the firearms season has been added for the St. Louis and Kansas City areas.

For 2004, pilot deer hunting regulations will be implemented in selected deer management units. What these regulations will be has not yet been decided but could include minimum antler size, earn-a-buck etc. Pilot regulations will be developed and presented to the public for comment over the next 8 months. Public response will be considered, regulations revised, and then presented to our Conservation Commission in April 2004 for implementation in the fall, 2004. We will collect data on extended age distribution in the harvest and landowner and hunter attitudes in prior to implementation of the pilot regulations and then track effects of the regulations on public attitudes and herd composition in subsequent years.

CWD Testing

We collected tissue samples for CWD testing from 30 counties (Figure 2). A total of 5,972 deer killed by hunters during the November portion of the 2002 firearms deer season were tested along with approximately 400 deer taken by hunters in managed deer hunts and a smaller number of apparently sick deer that were reported to the Conservation Department as part of its pre-existing, targeted surveillance program. None of the deer tested positive for CWD.

The testing was the first round of the Conservation Department's four-year CWD monitoring program. It included approximately 200 deer from each of the 30 counties. In the next three years, we plan to test another 12,000 deer from Missouri's remaining 84 counties. A Wildlife Society Bulletin article outlining procedures and costs has been written and should be published within the next few months.

Hunter Attitude Surveys

We recently completed a final report on a hunter attitude survey conducted in 2001. The survey consisted of 3 parts: (1) 2001 firearms deer hunting activities; (2) perceptions and attitudes about deer hunting in general; (3) biographical sketch of the respondent. We mailed the survey to 10,000 2001 firearms deer hunting permittees with 2 follow-up mailings. We received 4,998 usable responses out of 9,006 successfully-mailed surveys. Copies of the final report are available upon request.

Table 1. *2002 Deer Season Summary.*

Season	Antlered Deer			Button Bucks			Does			Total[1]		
	2001	2002	% Diff.	2001	2002	% Diff	2001	2002	% Diff	2001	2002	% Diff
Archery	11,128	12,278	10	3,651	3,758	3	11,394	12,962	14	26,273	29,587	13
Youth-Only	2,944	3,886	32	949	1,054	11	2,437	2,755	13	6,350	7,727	22
November	99,384	93,619	-6	25,477	29,027	14	79,594	93,992	18	205,232	217,248	6
Muzzleloading[2]	2,312	2,110	-9	1,361	1,487	9	4,921	5,781	17	8,622	9,405	9
Antlerless-Only	0	0	-	2,636	2,511	-5	12,045	10,848	-10	14,796	13,446	-9
Managed Hunts	384	424	10	473	372	-21	1,554	1,213	-22	2,411	2,009	-17
TOTAL[1]	**116,293**	**112,324**	**-3**	**34,588**	**38,214**	**10**	**112,052**	**127,562**	**14**	**263,974**	**279,445**	**6**

HUNTER SUCCESS RATES

Permit Type	Number of Permits[4]		Permit Success Rates		Number of Deer Harvested	
	2001	2002	2001	2002	2001	2002
Archery	97,883	99,630	27	30	26,273	29,587
Any-Deer	398,565	412,346	35	35	138,590	143,740
1st Bonus Antlerless-only	194,633	191,843	33	36	65,250	70,019
2nd Bonus Antlerless-only	65,936	82,787	30	33	19,491	27,313

DEER LICENSE SALES

	Number of Permits Sold		License Revenue	
	2001	2002	2001	2002
Resident Firearms[5]	552,348	567,877	$7,326,695	$7,469,675
Non-Resident Firearms[5]	15,991	15,549	$1,893,350	$2,161,400
Resident Archery	95,124	96,649	$1,617,567	$1,643,033
Non-Resident Archer	2,759	2,981	$275,900	$352,320
Antlerless-Only Archery	9,107	18,661	$45,535	$93,305
Resident Managed Hunt	6,136	5,679	$92,055	$85,185
Non-Resident Managed Hunt	61	34	$7,625	$5,555
Youth Deer and Turkey Hunting	10,474	13,005	$157,110	$195,075
TOTAL	**692,000**	**720,435**	**$11,415,837**	**$12,005,548**

ANY-DEER AND BONUS PERMIT DISTRIBUTION

Any-Deer Permits				Bonus Antlerless-Only Permits							
Landowner		Permittee		Landowner				Permittee			
				2001		2002		2001		2002	
2001	2002	2001	2002	1st	2nd	1st	1st	1st	2nd	1st	2nd
41,402	40,051	357,163	372,295	35,982	21,447	35,654	28,768	158,651	44,539	154,800	53,660

[1] Includes deer of unknown sex, age, or season type.
[2] Includes deer taken during the December portion of the firearms season.
[3] Does not include landowner antlered-only hunters.
[4] For the archery season the number of permits does not include urban archery permits
[5] Includes bonuses.

Table 2. *Deer Population Trend Indicators.*

Mgmt Unit	% Hunter Success with Bonus Permits		Field Staff Observations[1]		Doe Harvest [2]		Antlered Deer Harvest [2]	
	2001	2002	Trends	Public Perceptions	2001	2002	2001	2002
1	35	36	S-D	AR-TF	963	933	1,023	956
2	33	37	S	AR	2,625	2,785	2,494	2,692
3	29	35	S	AR	4,425	4,786	4,117	4,181
4	36	38	S	AR	3,699	3,514	3,157	3,205
5	32	36	S-I	TM	2,956	2,944	2,491	2,416
6	38	39	S	AR-TM	3,138	2,883	2,289	2,217
7	35	36	S-I	TM	4,752	4,301	4,065	3,602
8	21	30	I	TM	255	326	293	320
9	28	37	S	AR-TM	403	495	396	478
10	31	34	S-I	TM	3,309	3,386	3,342	3,160
11	25	26	S	AR	610	544	597	567
12	33	37	S	AR	2,128	2,121	1,988	1,854
13	37	38	S	AR-TM	3,870	3,747	3,161	3,120
14	36	38	S-I	AR-TM	2,327	2,251	1,891	1,767
15	34	33	S-I	TM	2,439	2,297	1,970	1,819
16	31	34	S-I	AR-TM	2,892	2,901	2,307	2,242
17	37	36	S-I	AR-TM	3,658	3,324	2,773	2,544
18	24	28	S	AR	1,217	1,412	1,404	1,308
19	29	36	S	AR	2,522	3,230	2,698	2,678
20	34	36	S-I	AR-TM	1,694	1,767	1,513	1,486
21	37	38	I	AR-TM	1,152	1,827	1,335	1,368
22	32	34	S-I	AR-TM	1,336	1,247	1,145	1,033
23	33	33	I	TM	1,976	1,889	1,634	1,447
24	29	28	S-I	AR-TM	1,448	1,296	1,221	1,026
25	34	38	S	AR-TM	1,038	1,746	1,319	1,379
26	35	39	S-I	AR-TM	2,009	3,477	2,342	2,339
27	36	39	S-I	AR-TM	2,460	4,059	3,152	2,889
28	33	33	S-I	AR-TM	2,961	3,382	3,108	2,776
29	32	35	S-I	AR-TM	3,470	3,642	3,148	2,788
30	30	38	S-I	AR-TM	1,677	1,862	1,674	1,545
31	—	20	S-I	AR	691	867	1,169	1,274

Table 2. *Continued.*

Mgmt Unit	% Hunter Success with Bonus Permits		Field Staff Observations[1]		Doe Harvest [2]		Antlered Deer Harvest [2]	
	2001	2002	Trends	Public Perceptions	2001	2002	2001	2002
32	-	29	S-I	AR	772	1,105	1,235	1,368
33	32	38	I	TM	1,556	2,375	1,916	2,056
34	30	37	S-I	AR-TM	1,749	2,928	2,105	2,186
35	32	31	I	AR-TM	994	1,485	1,356	1,300
36	32	36	I	TM	1,502	2,224	1,995	1,899
37	28	35	I	TM	599	1,054	801	948
38	32	34	S-I	AR-TM	2,130	2,381	2,071	2,107
39	32	33	S	AR-TM	1,200	2,352	1,729	1,939
40	33	39	S-I	AR-TM	1,527	1,490	1,889	1,564
41	-	-	S-I	AR-TF	1,344	1,372	1,977	1,738
42	-	-	S	AR-TF	360	776	1,261	1,169
43	24	25	S-I	AR-TF	2,841	2,570	3,317	2,755
44	-	-	S	AR-TF	681	925	1,116	1,197
45	30	33	I	AR-TM	400	482	554	566
46	25	30	I	TM	900	952	1,152	986
47	35	30	S-I	AR-TM	286	280	476	538
48	25	26	S-I	AR-TM	1,053	1,104	1,190	1,057
49	—	—	S-I	AR-TM	681	668	1,408	1,195
50	34	29	S-I	AR-TF	736	992	809	780
51	32	35	S-I	AR-TF	986	921	1,409	1,178
52	37	34	S-I	AR-TM	3,085	3,916	2,950	2,310
53	-	-	S-I	AR	441	881	1,142	798
54	-	-	I	AR-TF	106	328	429	439
55	-	-	S	AR	682	1,454	1,560	1,392
56	-	-	I	AR	354	486	609	621
57	-	-	I	TM	25	281	455	514
58	26	29	S-I	TM	1,364	1,458	1,680	1,571
59	32	31	S-I	TM	385	385	370	396
North[3]	33	35	-	—	52,551	51,580	45,915	44,099
South[3]	32	34	-	-	46,187	61,293	58,258	54,944
Unknown	-	-	-	-	206	316	564	470
Statewide	33	35	—	-	99,059	113,189	104,741	99,513

[1] I=Increasing deer population; S=Stable; D=Decreasing; TF=Too few deer; AR=About right; TM=Too many

[2] Includes November, muzzleloader, antlerless-only and, after 2000, youth-only portions of the firearms season[3]

North = Units 1-17, 20, 22-24, 58, 59; South = Units 18, 19, 21, 25-57

Table 3. *Simulated Growth of the Deer Herd.*

Management Unit	Simulated Preseason Population Size[1]		
	2001	2002	2003
1	11,240	11,285	11,288
2	26,235	26,886	26,782
3	40,871	40,590	38,477
4	33,196	33,220	32,802
5	26,924	26,497	25,981
6	25,906	25,040	24,360
7	39,888	38,725	38,333
8	3,974	4,256	4,305
9	4,557	4,609	4,342
10	31,334	31,026	30,392
11	6,459	6,521	6,647
12	22,366	22,518	22,606
13	35,731	35,198	34,409
14	20,649	19,979	19,248
15	20,949	20,346	19,613
16	26,310	25,948	25,031
17	33,361	32,637	32,033
18	15,869	16,298	16,499
19	29,888	30,975	30,730
20	16,354	16,641	16,633
21	13,458	14,429	13,889
22	13,212	12,493	11,750
23	17,734	17,128	16,289
24	12,817	11,808	11,109
25	12,236	12,811	11,845
26	22,864	23,567	20,914
27	27,517	27,928	25,036
28	29,382	28,168	25,987
29	31,858	30,313	28,171
30	17,281	17,388	16,558
31	12,946	13,696	14,324

Table 3. *Continued.*

Management Unit	Simulated Preseason Population Size[1]		
	2001	2002	2003
32	11,791	12,307	11,961
33	18,948	19,963	19,220
34	21,841	23,077	21,695
35	14,792	15,288	15,015
36	17,992	18,606	17,968
37	8,399	8,983	8,601
38	22,021	22,323	21,980
39	18,382	19,827	18,768
40	16,729	16,990	17,726
41	19,125	19,129	19,511
42	9,911	10,402	10,159
43	26,081	25,776	26,583
44	9,419	10,004	10,216
45	5,272	5,424	5,521
46	10,663	10,433	10,383
47	5,632	5,982	6,462
48	11,446	11,349	11,546
49	11,878	11,937	12,024
50	7,766	7,780	7,239
51	13,735	13,640	13,911
52	29,999	28,898	26,681
53	10,896	11,223	11,109
54	3,847	4,106	3,980
55	16,499	16,970	16,223
56	7,407	7,856	8,069
58	25,265	25,008	24,687
59	9,918	9,930	9,760
North[2]	435,214	430,290	421,334
South[3]	633,805	641,846	622,045
Total	**1,069,019**	**1,072,136**	**1,043,379**

[1] The simulated population size is the number of deer needed to sustain estimated mortality and harvest rates given estimated natality rates.
[2] North includes units 1 – 17, 58.
[3] South includes units 18 – 57, 59.

Table 4. *Archery hunter index of white-tailed deer populations.*

Year	Glaciated Plains	Ozarks	Osage Plains	Ozark Border	Miss. Lowlands	Statewide
1983 Hours	18,332	17,015	4,086	14,540	857	55,374
Index	514	612	572	501	268	543
1984 Hours	10,684	9,116	2,990	9,168	743	32,746
Index	611	473	724	551	260	598
1985 Hours	10,867	8,670	2,380	8,509	565	30,990
Index	653	480	589	386	223	519
1986 Hours	14,835	16,445	4,503	14,443	815	51,727
Index	647	522	782	487	291	566
1987 Hours	12,381	10,912	3,288	11,333	731	38,645
Index	687	543	752	526	364	617
1988 Hours	26,101	25,462	7,102	24,094	1,316	84,526
Index	728	472	678	479	353	569
1989 Hours	21,756	22,050	6,143	21,663	1,256	72,992
Index	664	482	637	451	493	539
1990 Hours	24,075	20,174	6,796	18,751	1,413	72,227
Index	644	504	692	470	484	559
1991 Hours	20,667	19,216	5,664	17,349	1,140	64,006
Index	803	552	973	539	1,001	675
1992 Hours	21,902	17,888	5,394	17,816	1,232	64,230
Index	676	490	670	557	567	589
1993 Hours	19,087	15,830	4,578	13,278	604	53,376
Index	714	456	696	571	1,195	606
1994 Hours	17,526	13,525	4,160	12,808	590	48,609
Index	702	523	877	619	612	644
1995 Hours	21,445	19,943	5,550	17,605	955	65,498
Index	761	530	876	583	620	651
1996 Hours	20,325	18,211	5,090	15,271	695	59,593
Index	796	570	768	710	570	700
1997 Hours	16,699	13,765	3,451	12,512	688	47,115
Index	864	508	889	632	737	698
1998 Hours	14,455	12,825	3,744	11,017	515	42,555
Index	861	547	1,005	658	723	725
1999 Hours	14,556	12,908	3,940	11,712	567	43,681
Index	789	572	848	599	713	678
2000 Hours	17,880	14,135	4,330	13,376	653	50,353
Index	803	565	954	602	608	693
2001 Hours	16,701	13,109	3,410	12,653	484	46,357
Index	807	581	975	698	1,063	728
2002 Hours	14,451	11,233	3,989	11,743	537	41,952
Index	938	577	1141	743	701	803

Figure 1. *Missouri Deer Management Units.*

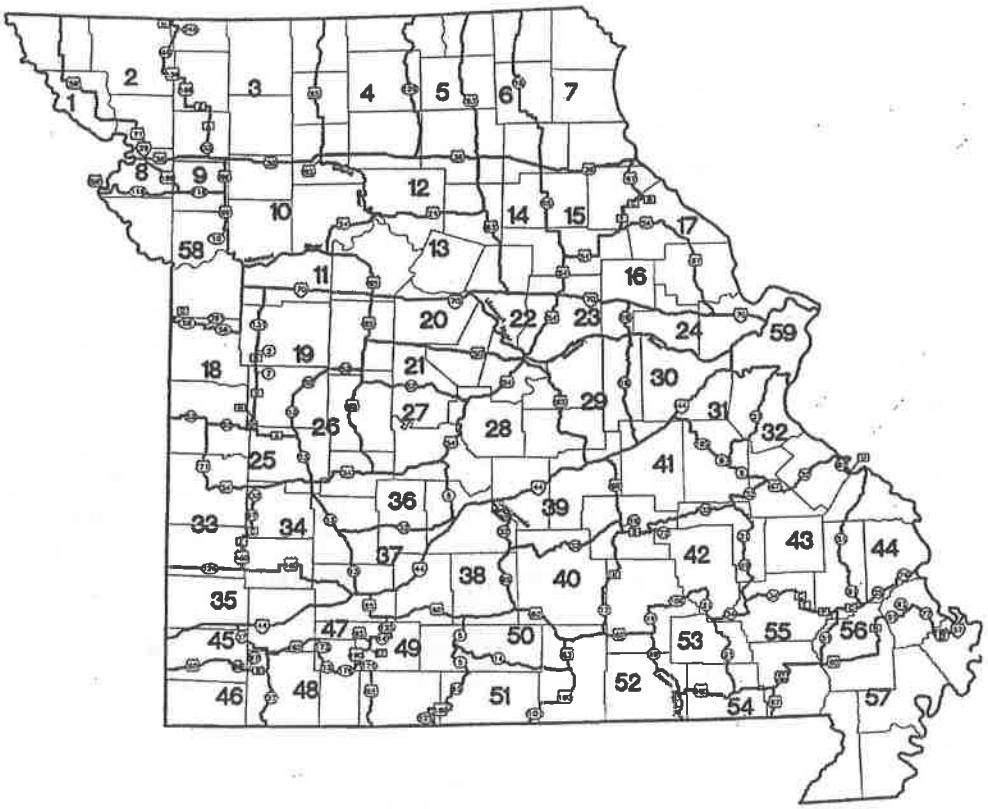
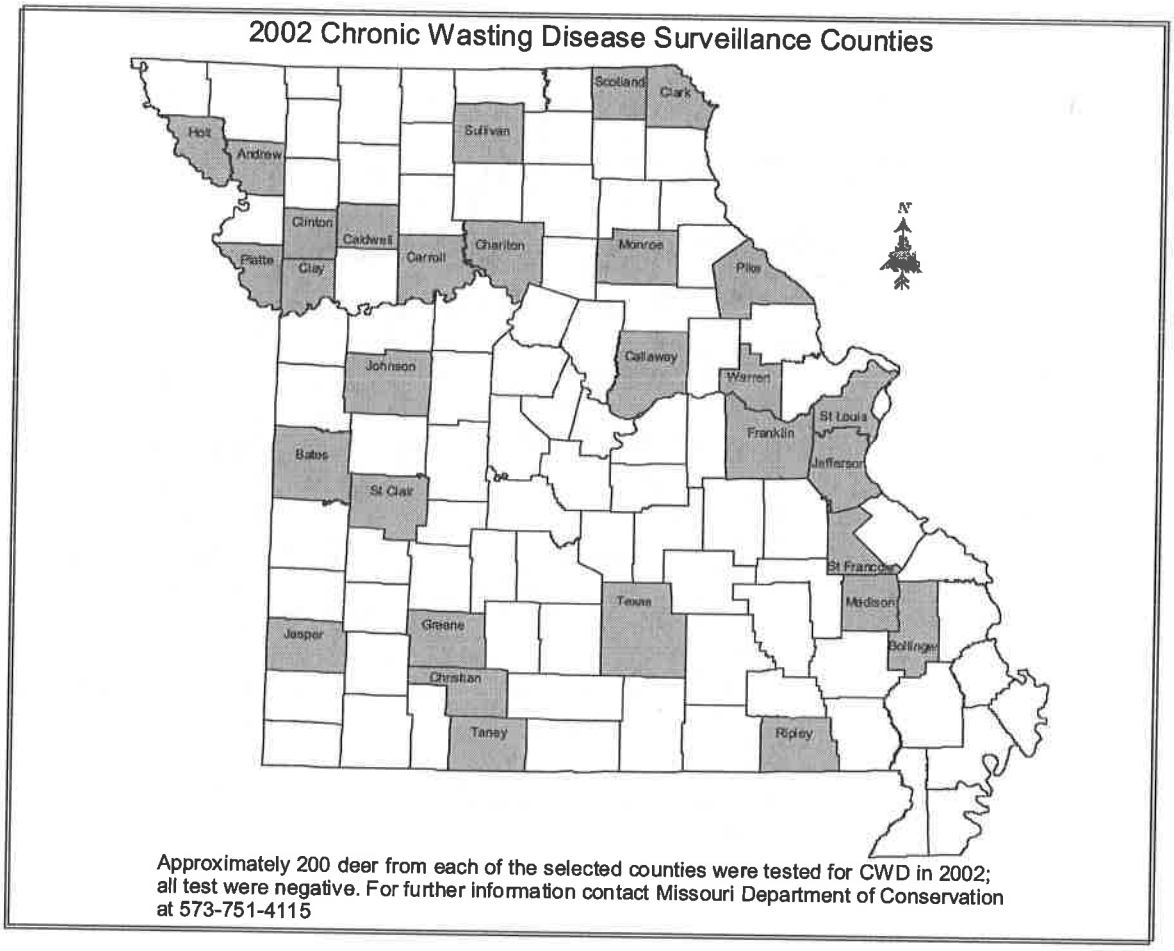


Figure 2. *Counties sampled for chronic wasting disease in 2002.*



2002 Nebraska Deer Report

By Kit Hams and Bruce Trindle

Hunters purchased 112,894 permits and harvested 53,624 deer in 2002. This is the fourth highest kill on record. Total kill was down 10% from last year's harvest of 59,455 deer. Archers took 3,811 deer, muzzleloader took 3,875 deer, SCA hunters harvested 10,115 deer and November firearm hunters killed 35,566. Years with higher deer kill were 1997, 2000 and 2001.

Success for archers, November firearm and Season Choice hunters remained at levels comparable to last year, while muzzleloader success declined significantly from 31% in 2001 to 25% in 2002. Archery success increased to 28% (27% in 2001) and success for SCA hunters (58%) and November firearm hunters (54%) was equal to success in 2001.

Permit sales were down 10% from the previous year, but were still the third highest on record. Permits sales were higher in 2000 and 2001. Archery sales were down 10%, muzzleloaders down 15%, November firearm permit sales down 10%. SCA permit sales were the same as in 2001.

Season Choice Areas - The 2002 deer season gave hunters more opportunities to harvest antlerless deer with the addition of six new Season Choice Areas (SCA). A total of 23,450 SCA permits were available, giving a hunter as much as 117 days to harvest antlerless deer. 10,115 deer were harvested by SCA 17,572 permitees. SCA seasons in Blue Southeast and on the Lower Platte accounted for most of the permits sales and harvest. 6,085 SCA permits were unsold by the close of the season. Nearly 4,000 of the unsold permits were in SCA5 and SCA6 (Blue Southeast and the Lower Platte areas) where 12,000 permits had been offered.

CWD - Concerns resulted in the creation of two units in the CWD endemic area of the Panhandle which allowed permit holders to harvest an unlimited number of antlerless deer in the Pine Ridge Control Area and in Season Choice Area 15 in the southern portion of the Upper Platte deer unit.

Demand was low for these permits. Fewer than 100 Pine Ridge Control Area permits were sold by the close of the January season.

A total of 4,174 deer was tested for CWD in units across the state during our deer hunting seasons and additional 317 outside of the seasons in 2002. Most of the tested deer came from Pine Ridge, Plains and Upper Platte units and approximately 100 deer came from each of the other deer management units. A total of 24 deer tested positive in 3 areas of the Panhandle. This testing brings Nebraska to a total of 27 positives statewide since testing began in 1997. Some of the decline in permit sales was probably due to concerns about CWD.

Bonus antlerless tags – 15,500 bonus tags were authorized for Blue Southeast, SCA 5 and SCA6 permits. 13,184 bonus tags were issued and 21% were used to harvest 2,706 additional antlerless deer. 20% of Blue Southeast hunter took a bonus deer, 24% of SCA5 hunters took bonus deer and 19% of SCA6 hunters took bonus deer.

Nebraska Deer Seasons – 2002			
	Permits	**Harvest**	**Success**
Archery	13,951	3,875	28%
Muzzleloader	15,408	3,811	25%
November	65,579	35,566	54%
Season Choice Areas	17,572	10,115	58%
Special Areas	308	172	56%
Pine Ridge Control Area	76*	39*	
Total	112,894	53,624 (+46 unk. seas.)	

*incomplete

Archery Season – Archery success was 28%. For the past nine years archery success has ranged from 27-29%. Archery permit sales declined 6% in 2002. 13,951 permits were issued. This is the 4th year of declining archery permit sales. Record archery permits sales of 16,137 occurred in 1999. Archery deer harvest for 2002 was 3,875 deer.

Archery Deer Season (1999-2002)			
Year	**Permits**	**Harvest**	**Success**
2002	13,951	3,875	28%
2001	15,182	4,141	27%
2000	15,729	4,550	29%
1999	16,137	4,504	28%

Muzzleloader Deer Season – 15,408 permits were sold, a 15% decline from last year when a record 18,083 permits were issued. Muzzleloaders harvested 3,811 deer for a record low success rate of 25%.

Muzzleloader Deer Season (1999-2002)			
Year	**Permits**	**Harvest**	**Success**
2002	15,408	3,811	25%
2001	18,083	5,516	31%
2000	17,798	5,758	32%
1999	15,047	4,797	32%

November Firearm Deer Season

65,579 permits were sold for the November firearm season. 509 permits (1%) remained unsold at the close of the season. The majority of unsold permits were in Upper Platte (195) and Pine Ridge (174), the two units with CWD. 140 permits remained unsold in Plains, Buffalo WT and Platte WT. While not all Pine Ridge and Upper Platte permits were sold, the sale 73 Pine Ridge Control Area permits, 31 SCA 15 permits and bonus tags on all PR and UP permits should increase antlerless kills in CWD areas as planned.

10,088 landowner permits were sold in 2002, a 12% decline from 2001.

39,711 deer were harvested during the November firearm season. 35,566 were harvested on regular firearm permits and bonus tags. 4,145 were harvested on Season Choice permits during November.

Statewide success was 54%, no change from 2001.

Approximately 6,000 fewer November firearm permits were offered in 2002. Nearly all of these 6,000 permits were antlerless only permits which were shifted over to Season Choice Areas.

November Firearm Deer History (1999-2002)			
Year	**Permits**	**Harvest**	**Success**
2002*	65,579	35,566	54%
2001*	73,299	39,579	54%
2000*	68,747	43,308	63%
1999	69,771	39,399	56%

* 3,500 bonus tags increased harvest and success

Season Choice Deer Season

23,450 permits were available in sixteen Season Choice Areas in 2002, an increase of six units and 6,050 permits from 2001. Bonus antlerless tags were offered on 12,000 SCA tags. The increase in SCA permits resulted from moving all November antlerless permits to the Season Choice format.

17,572 SCA permits were sold in 2002 compared to 16,967 sold in 2001. 6,087 permits did not sell in 2002. Most of the unsold permits (3,993) were in SCA 5 (Lower Platte) and SCA 6 (Blue SE). The supply of SCA permits in 2002 greatly exceeded the demand.

10,115 deer were killed on SCA permits. 8% of the harvest was by archers, 11% by muzzleloaders, 40% by November firearm hunters and 41% by January hunters.

Season Choice Areas (1999-2002)				
Year	**Permits Authorized**	**Permits Issued**	**Harvest**	**Success**
2002	23,450	17,572	10,115	58%
2001	17,200	16,967	9,915	58%
2000	11,000	10,818	6,231	58%
1999*	6,700	6,927	3,216	46%

* No Season Choice in 1999. Data from five January late seasons.

Special Season / Areas - 2002			
Unit	**Permits**	**Harvest**	**Success**
DeSoto Early	100	64	64%
DeSoto Late	100	40	40%
Lincoln Water Early	18*	15	83%
Lincoln Water Middle	18*	8	44%
Lincoln Water Late	18*	21	117%
Nat. Guard Early	27	21	78%
Nat. Guard Late	27	3	11%
Pine Ridge Control Area	73-partial	39-partial	na

*bag limit was two antlerless deer

Summary of Total Deer Permit Sales and Harvest		
Year	**Permits Issued**	**Total Harvest**
2002	112,894	53,624
2001	123,956	59,455
2000	112,933	60,148
1999	108,146	52,225
1998	99,882	53,339

Mule Deer Harvest /Whitetail Harvest

9,225 mule deer were harvested in 2002, a 12.5% decline from the 10,544 MD harvested in 2001. MD harvest during the past twenty years has ranged from 9,229 in 1983 to 11,602 in 1997.

44,390 whitetail deer were harvested in 2002. WT harvest during the past five years has ranged from 41,490 in 1999 to 49,714 in 2000.

Year	**Mule Deer Harvest**	**Whitetail Harvest**
2002	9,225	44,390
2001	10,544	48,815
2000	10,095	49,714
1995	10,960	34,160
1990	9,920	25,512
1985	10,174	25,250
1980	6,584	11,578

1,319 fewer mule deer were harvested in 2002. 80% of this decline was a result of lower participation and success by muzzleloaders, a reduction in the number of Frenchman permits that allowed hunters to harvest mule deer and declines in permit sales in Pine Ridge. Generally the mule deer population is stable in most units.

In 2002, four units had antlerless mule deer restrictions and four additional units were using whitetail only permits to decrease pressure on MD and increase harvest pressure on WT.

DEER IN NORTH DAKOTA- 2003

By Roger Johnson

Firearms Season Structure

Regulations for the 2002 firearms deer season were established for all 38 hunting units (Figure 1.). Deer licenses are normally issued through a lottery except for landowner permits. In 1993, a weighted priority lottery system was initiated. The priority system is similar to South Dakota's in which unsuccessful applicants have their name entered more times in the drawing the longer they have been unsuccessful. The weighted priority system was continued in 2002. The utilized permits are issued for specific deer types (antlered or antlerless white-tailed deer, antlered or antlerless mule deer and antlered or antlerless any deer). The gratis landowner permits allow any deer to be taken, but are restrictive in that the holders may only hunt on their own land. A total of 115,476 permits were issued for the 2002 deer gun season. This was an increase of 10,083 permits from the 105,393 permits issued in 2001. In 2002, second and third deer licenses were again issued through a lottery rather than a first come basis as in the past. The second and third deer licenses were all antlerless licenses not sold during the lottery drawing. The white-tailed deer antlerless licenses were mainly left over in the central and eastern portion of the state. The distribution of the deer permits was 11,569 gratis landowner, 83,143 resident, and 20,764 second and third deer licenses. The season length options were not changed in 2002. The season across the state was 16½ days in length except for the split season areas. The split season (early and late) was again offered in 2002 near the population centers along the extreme eastern edge of the state and the Missouri River unit south of Bismarck (hunting units 2B and 3C) (Figure 1).

The deer gun season started at noon CST November 8, 2002 for all season lengths including the early season in split season areas. In split season areas, the early season lasted 6½ days. The late season started November 16 and ran for 10 days. This type of split allowed for both the early and late seasons to be held within the 16½ day season framework. The daily hunting hours are from one-half hour before sunrise to one-half hour after sunset.

2002 Deer Gun Season Harvest

The results of the 2002 deer gun season are finalized. After the season, 25,022 questionnaires were mailed to 114 non-gratis, 38 gratis license groups and 21 second license groups. The combined response was 58.8%. Expanding the data revealed that 93% of the licensees actively attempted to harvest a deer. This resulted in 81,523 ± 815 deer harvested for an overall success of 76.2% (Table 1).

Muzzleloading Long Gun Season Structure

For the sixteenth time in the recent history of North Dakota, a muzzleloading long gun season was proclaimed. The season was mandated by the 1986-87 legislature. This season was modified in the 1996-97 legislature. The change allows for 2% of the white-tailed deer gun permits to be allocated for muzzleloader season of which up to one-half can be antlered licenses. In 2002, there were 930 antlered, 926 antlerless and 373 any white-tailed deer licenses (gratis) issued. The season was from noon CST November 29, 2002 and from one-half hour before sunrise to one-half hour after sunset each day thereafter through December 15, 2002. The season was proclaimed for all of North Dakota. The licenses were issued by lottery. A priority system is in place for the drawing of these permits. Legal weapons were

muzzleloading long guns of .45 caliber or larger fired by black powder or pyrodex with flint or percussion ignition. Telescopic sights are illegal but in-line type percussion locks were legal for the eighth year in 2002.

2002 Muzzleloading Long Gun Harvest

All 2,229 muzzleloading hunters were sent a questionnaire. The response rate to the questionnaire was 66.8%. The respondents indicated that 91% of the licensees actually went hunting and 41.5% of the hunters harvested a deer. This projected a harvest of 841 white-tailed deer (405 antlered and 436 antlerless). The hunters hunted an average of 4.1 days.

Archery Season Structure

Archery deer licenses are issued over the counter through license vendors and county auditors with no restrictions on species or sex. The 2002 archery deer season started at noon, August 30, 2002 and continued from one-half hour before sunrise to one-half hour after sunset each day until January 5, 2003. The deer bow season is left open during the whole deer gun season with the only restriction being that the bow hunters have to wear blaze orange during the deer gun season. Any deer was legal, with no unit restrictions.

2002 Archery Harvest

The 2002 archery season began on August 30, 2002 and continued until January 5, 2003. The season resulted in the sale of 14,023 licenses. After the season, 3,010 questionnaires were sent to resident license holders from the 2001 season. One thousand seven hundred sixty-four resident and nonresident questionnaires were returned. Expanding the sample results projected that 13,201 of the hunters who bought a license actually went hunting. These deer bow hunters experienced 35.4% success for a total deer harvest of 4,677 deer, with 4,124 white-tailed deer and 553 mule deer.

Youth Deer Gun Season

An experimental youth deer gun season was initiated in 1994. The season is a one time opportunity for youths 14 and 15 years of age at the time of the application deadline. All regular deer gun season regulations and weapon restrictions applied. This includes a half price ($10.00) license for all youths under sixteen. In addition, each youth licensee must be accompanied by at least one unarmed parent, guardian, or adult authorized by their parent or guardian. In 2002, an unlimited number of any white-tailed deer and antlerless mule deer permits were available and a limited number of antlered mule deer permits. The season is mid-September for nine and a half days with the option that they can also hunt during the regular deer gun season if they are unsuccessful in the youth season. This youth deer season was again available in 2002.

2002 Youth Deer Gun Season Harvest

The 2002 statewide youth deer gun season began on September 20, 2002 (12 noon) and continued through September 29, 2002. The season resulted in the sale of 2,075 licenses. After the youth season, questionnaires were sent to all 2,075 licensees. One thousand one hundred twenty-two(1122) questionnaires were returned for a response rate of 54.2%. One thousand seven hundred twenty-six (1,726) teenagers participated in the youth season. They experienced a 49.0% success rate, harvesting 845 ± 42 deer. The composition of the harvest

was 640 white-tailed deer (457 antlered and 183 antlerless) and 205 mule deer (172 antlered and 33 antlerless).

2002 Special Herd Reduction Deer Bow Season

There are two areas in North Dakota open for special herd reduction seasons. The areas are the city limits of Bismarck and Grahams Island State Park. Both areas have special regulations to fit their individual needs.

In the city of Bismarck, the chief of police issued antlerless white-tailed deer permits for portions of the city as the need arises. The season ran from August 30, 2002 through January 31, 2003. The special hunt permits are above the allotted number of permits allowed by the state during normal seasons. All the information and paperwork for these hunts are handled by the entity in charge, so it requires a minimum effort by the Game & Fish Department. The harvest from these special hunts has been minimal, 50-70 animals, but it does help to disperse the deer.

Population Trend

White-tailed deer are distributed throughout North Dakota. Population densities vary by region and are influenced by land use, human population densities, habitat types and climatological regions. In 1958, the state was divided into 41 subunits with permanent boundaries that most nearly coincide with environmental influences, thus permitting deer management on a utilized basis. Permanent deer population study areas have been established within each of the 41 subunits to provide comparative annual population trend information. The main range of mule deer in North Dakota is the region of the state southwest of the Missouri River. The utilized system of management for white-tailed deer is also used as a basis for mule deer management. The Badlands region is considered the primary mule deer range and permanent deer population study areas have been established.

Population trend data in North Dakota for both white-tailed deer and mule deer is obtained by aerial survey of permanent study areas. In 2002-2003, the snow levels were only adequate to fly one of the permanent aerial survey blocks in North Dakota. The mild weather and general observations indicate that the white-tailed deer population is stable at record levels. The spring mule deer survey was flown during April, 2003. The area involves 291 square miles of Badlands habitat. The counts indicated a mule deer population index of 7.3 deer per square mile. This is above the 2002 population index of 6.8 and above the long term averaged data of 4.5 mule deer per square mile.

Research

No research projects on white-tailed deer are currently being undertaken.

FIG. 1

2002 DEER GUN HUNTING UNITS

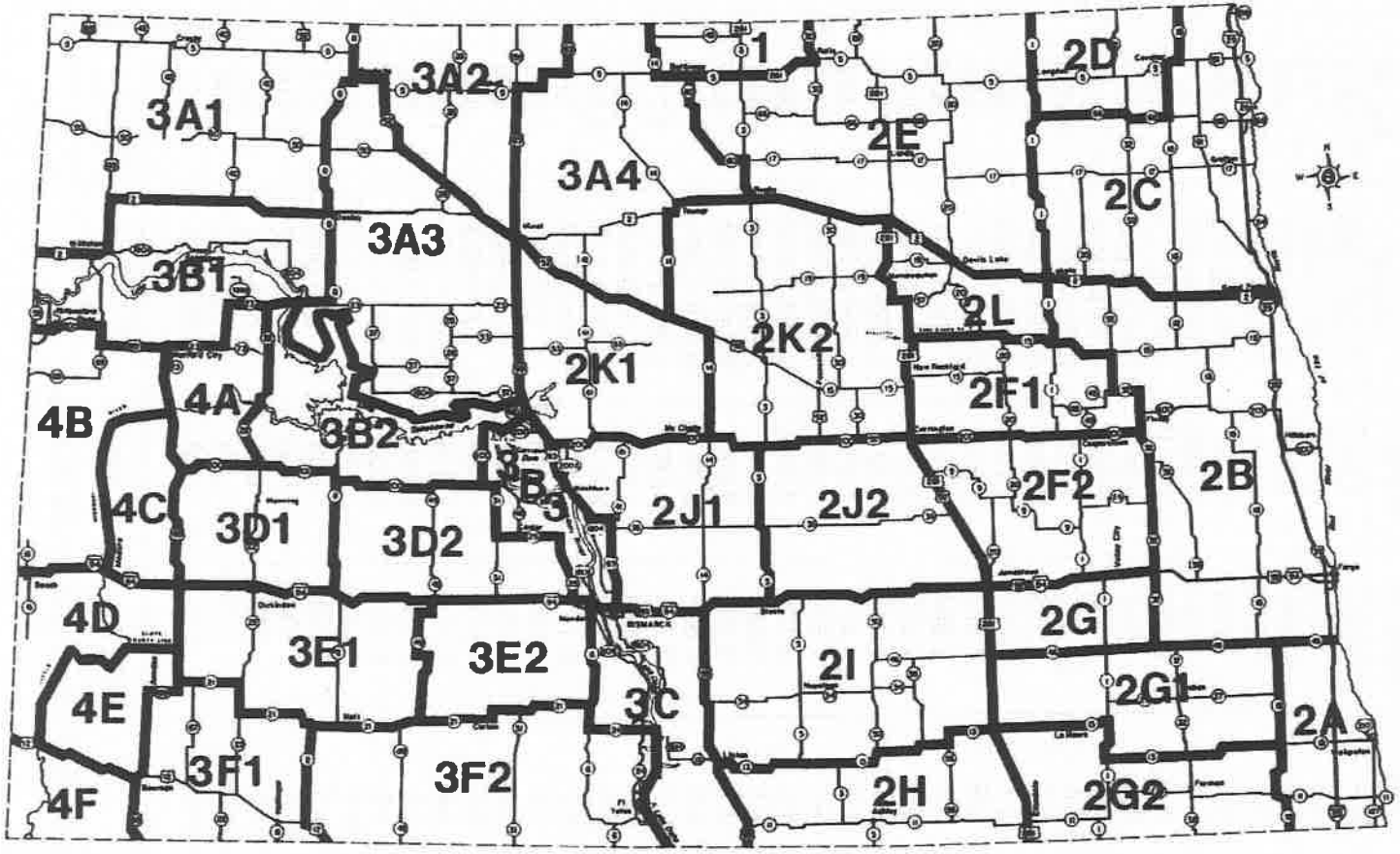


Table 1. *2002 Deer gun hunter success by hunting unit for all licenses (all seasons).*

Hunting Unit	Management Unit	Number of Hunters	Total Deer Killed	Confidence Limits (Low-High)*	Deer Kill /1000 Sq. Mi.	Percent Hunter Success
1	5-1	1,999	1,147	1,025-1,269	1,944	57.4
2A	9-3	1,576	1,174	1,091-1,257	987	74.5
2B	9-2	10,048	7,173	6,785-7,561	1,556	71.4
2C	9-1	6,000	4,503	4,209-4,797	1,430	75.1
2D	8-1	3,013	1,961	1,789-2,133	2,335	65.1
2E	3-4	5,463	4,189	3,891-4,487	959	76.7
2F1	7-1	5,221	4,131	3,875-4,387	3,060	79.1
2F2	7-2	4,559	3,669	3,474-3,864	1,911	80.5
2G	7-3	1,983	1,601	1,510-1,692	1,819	80.7
2G1	7-4	4,873	3,773	3,538-4,008	2,096	77.4
2G2	7-5	4,148	3,356	3,164-3,548	2,034	80.9
2H	3-7	2,254	1,797	1,698-1,896	982	79.7
2I	3-6	3,506	2,913	2,756-3,070	931	83.1
2J1	3-5	1,264	1,031	958-1,104	536	81.6
2J2	3-5	4,622	3,676	3,463-3,889	1,871	79.5
2K1	3-3	2,249	1,851	1,753-1,949	926	82.3
2K2	3-3	5,373	4,487	4,249-4,725	1,462	83.5
2L	6-1	1,675	1,269	1,179-1,359	1,379	75.8
3A1	3-1	4,785	3,253	2,988-3,518	861	68.0
3A2	4-1	3,627	2,871	2,699-3,043	1,679	79.2
3A3	?-?	3,358	2,632	2,469-2,795	828	78.4
3A4	4-?	4,691	3,741	3,514-3,968	1,396	79.7
3B1	2-?	2,718	2,062	1,951-2,173	1,031	75.9
3B2	2-3	618	473	450-496	404	76.5
3B3	2-?	2,530	2,018	1,921-2,115	2,491	79.8
3C	2-?	2,179	1,470	1,398-1,542	766	67.5
3D1	1-1	508	348	327-369	260	68.5
3D2	1-2	1,134	854	815-893	515	75.3
3E1	1-3	978	785	747-823	383	80.3
3E2	1-4	1,724	1,315	1,254-1,376	1,027	76.3
3F1	1-5	1,498	1,216	1,163-1,269	746	81.2
3F2	1-6	1,364	1,100	1,054-1,146	451	80.6
4A	0-4	1,012	715	678-752	883	70.7
4B	0-3	1,204	855	805-905	464	71.0
4C	0-3	837	636	600-672	1,016	76.0
4D	0-2	792	617	586-648	593	77.9
4E	0-2	872	639	607-671	799	73.3
4F	0-1	916	639	605-673	913	69.8
State		107,171	81,940	81,149-82,731	1,160	76.5

* 95% Confidence limits (Cochran 1963) on total deer killed.

MIDWEST DEER AND TURKEY STUDY GROUP MEETING
WHITE-TAILED DEER MANAGEMENT and RESEARCH IN OHIO
2002-03

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2003 Population Status and Hunting Season Forecast

The 2003 statewide pre-hunt deer population is slightly lower than the 2002 pre-hunt deer population estimate. Deer populations were reduced 5-10% in many counties in east-central and southeastern Ohio due to ideal hunting conditions, record deer permit sales, expanded antlerless opportunities, and unrestricted Sunday hunting. However, these reductions were mostly offset by deer population growth in western and northeast Ohio. The major regulation changes for the 2003-04 season were the addition of a 2-day statewide youth shotgun season on Nov. 22-23, 2003, an increase in the season bag limit from 1 to 2 deer (only 1 of which may be antlered) in 11 counties in northern Ohio, and a reduction in the season bag limit from 3 to 2 deer (only 1 of which may be antlered) in 24 southeastern Ohio counties. We expect a harvest of 185,000 - 190,000 deer in the 2003-04 hunting season, depending on weather conditions.

Summary of 2002-03 Ohio Deer Seasons

Seasons, Permits, and Bag Limits

A valid hunting license (resident = $15, nonresident = $91) and Special Deer Permit ($20) were required (landowners were exempt) to hunt deer in Ohio during the 2002-03 season. Hunter's could harvest up to 3 deer using Special Deer Permits provided that the bag limit was not exceeded in any Deer Zone (Fig. 1). Hunters could harvest only one antlered deer per year. The Urban Deer Permit ($10), valid for an antlerless deer only, could be used in urban deer zones and during most DOW special and controlled hunts. A maximum of 4 deer could be harvested using Urban Deer Permits, but a hunter was required to first purchase at least one Special Deer Permit before purchasing Urban Deer Permits.

Hunters had the opportunity to harvest deer during any of Ohio's 4 deer seasons including the 108-day, statewide either-sex archery season, Oct. 5, 2002-Jan. 31, 2003, the 4-day statewide either-sex primitive hunt, Dec. 27-30, and the buck-only 6-day early primitive hunt, Oct 21-26 at Shawnee State Forest, Wolf Creek Wildlife Area/Wildcat Hollow, and Salt Fork Wildlife Area.

The 7-day, either-sex gun season ran from Dec. 2 to Dec. 8, statewide. Hunters in Zone A were restricted to bucks only after the first 2 days of the gun season.

Harvest Summary

A total of 204,652 deer was harvested this year, nearly 24% more than last season, and breaking the record harvest of 179,543 set in 1995 (Table 1). Record deer permit sales, expanded antlerless opportunities, unrestricted Sunday hunting, and ideal hunting conditions contributed to the record harvest. Hunters harvested 133,391 deer during this year's week-long gun season, exceeding last year's harvest by nearly 33%. Muskingum, Coshocton, Guernsey, Jefferson, and Tuscarawas counties led the state in total gun harvest (Table 2). Archers reported harvesting 48,904 deer during this year's 4-month long archery season. Both the crossbow (28,352) and vertical bow (20,552) harvests broke records set last season. Crossbow and vertical bow hunters harvested nearly 18% more deer than last year. Licking County led the state in both crossbow and vertical bow harvests. Coshocton, Tuscarawas, Holmes, and Guernsey counties rounded out the top 5 in total crossbow harvest while Knox, Muskingum, Holmes, and Coshocton completed the list of top 5 counties in vertical bow harvest. A total of 21,599 deer was harvested during the 4-day statewide primitive season, December 27-30. This year's harvest was 5.5% lower than last year's record total. Jefferson County had the highest primitive harvest followed by Monroe, Coshocton, Belmont, and Harrison counties. Hunters purchased 507,723 permits and permit success rate was 40%, equaling the success rate recorded in 1994.

Age, Sex, and Condition Data

Each year during the gun season, DOW personnel will age approximately 5-7% of the harvest. A total of 8,228 deer was examined at 23 check stations this year. A total of 37% of deer aged this year were antlered bucks; yearlings (1.5-year-olds) accounted for 60% of the bucks. Antler measurements from yearling bucks provide an annual assessment of the relative condition of the deer herd. Yearling buck antler beam data for 1973, 2002, and the average for the past 5 years is presented in Figure 2. The age data collected each year are used to estimate adult buck harvest mortality, the adult sex ratio, and fawns per adult doe in the harvest (Table 3).

Deer-vehicle Accidents

Because they represent a significant cost to the public, the DOW has monitored deer-vehicle accident trends since the 1940s. Moreover, deer-vehicle accident trends should reflect fluctuations in deer populations if changes in traffic volume are considered and accident reporting rates do not vary over time. Statewide, there was a total of 30,306 reported deer-vehicle accidents in 2002, down 4.1% from the previous year.

Deer Crop Damage Complaints

Severe drought conditions and deer populations above target in many counties resulted in a record 1,389 crop damage complaints. This represents an increase of 44% over last year. A total of 5,335 deer were killed on damage permits this year, an increase of 37% over last year.

Beginning in 1997, the DOW began issuing damage permits that were valid only during deer season. The goal was to reduce abuse and hunter dissatisfaction, while still effectively addressing bona fide damage problems. Where hunting was ineffective (damage occurring outside the hunting season or deer simply were not available for harvest during legal shooting hours), the traditional out-of-season permit would be issued. A total of 2,047 deer was

harvested on in-season damage permits this year, accounting for 38% of all deer taken on damage permits and nearly 32% more than last year. A total of 3,288 deer was killed on out-of-season permits, an increase of 40% over last year.

White-tailed Deer Research Projects

Aerial Surveys

Persistent snow cover in winter 2003 allowed the DOW to complete aerial surveys of deer populations in portions of 9 Ohio counties. Surveys were completed in select areas of Hancock, Harrison, Jefferson, Sandusky, Tuscarawas, Meigs, Portage, Trumbull, and Washington counties. Post-hunt deer densities ranged from 3 deer per square mile to >100 deer per square mile on a NASA research station in Sandusky County closed to hunting since September 11, 2001. The DOW plans to evaluate the use of Forward-Looking Infrared (FLIR) thermal imagery to expand the number of aerial surveys conducted each year.

Chronic Wasting Disease Surveillance

In 2002, 650 deer were tested for CWD and Bovine Tuberculosis including deer collected through targeted surveillance of suspect animals and random testing of hunter-harvested deer at check stations. Testing was conducted by the Ohio Department of Agriculture's Animal Disease Diagnostic Laboratory in Reynoldsburg, Ohio. Neither CWD or TB was detected in Ohio. Plans for testing in 2003 have yet to be finalized, but the objective is to test a minimum of 450 deer in primarily eastern Ohio where deer densities and the number of captive Cervid herds are greatest.

Deer Immunocontraception Study

The Cleveland Metroparks received a permit from the DOW to conduct an immunocontraception study in an urban reservation in Cuyahoga County (Cleveland) in 2001. The research in being conducted by Dr. Anthony DeNicola of White Buffalo, Inc. and was designed to test the effectiveness of a new PZP formulation that can be administered in winter and does not require a booster in the first year. However, the vaccine was not effective without a booster injection, as at least 55% of treated does were pregnant in winter 2001-02. In winter 2002-03, new captures were treated with a different PZP vaccine, Spayvac, which research trials have indicated may provide multiple years of contraception with a single dose of the vaccine. The Metroparks is committed to a comprehensive approach to deer management incorporating both lethal and non-lethal techniques. In addition to these ongoing research projects, >1,500 deer have been culled in the past 5 years at Metroparks reservations.

Deer Hunter Survey

We surveyed a 3% random sample of deer hunters after the 2001 hunting season to determine participation rates and hunting success and assess their opinions and attitudes regarding deer populations, hunting season structure, and quality deer management. We received a 45% survey return rate, but non-response bias was not evaluated. Final reports are available from the Waterloo Wildlife Research Station (740-664-2745 / mike.reynolds@dnr.state.oh.us).

Deer Population Model Development

The DOW has used a modified version of the Sex-Age-Kill model developed in Wisconsin for estimating pre-hunt deer populations for several decades. However, model assumptions may not be valid in all counties. As an alternative, accounting-style population models have been developed for most counties. Model validation is ongoing and based on independent datasets when available. Models were used to estimate deer populations in 2003 and formulate hunting regulations.

Fawn Mortality Study

I initiated a research project in 2001 to determine the survival and specific causes of mortality of newborn fawns in southeastern Ohio. From 2001 to 2003, I captured 81 fawns during hayfield searches and monitoring radio-collared does. Annual survival of fawns varied among years from 0.32 to 0.67. Coyote predation, natural causes (i.e., abandonment, starvation, and disease), vehicle collisions, legal harvest, and unretrieved kill were the leading causes of mortality during the 3-year study. Survival rates will be used as inputs for deer population models.

Table 1. *Ohio's 2002-03 white-tailed deer harvest by season and percent change from the previous year.*

Season/Hunt	Antlered	Antlerless	Total[1]	% Change
Gun	**49,819**	**82,637**	**133,391**	**32.8**
Crossbow	15,422	12,632	28,352	17.7
Vertical Bow	10,592	9,728	20,552	17.9
Archery	**26,014**	**22,360**	**48,904**	**17.8**
Salt Fork[2]	91	0	91	-22.2
Wildcat Hollow[2]	79	0	79	-24.8
Shawnee[2]	50	0	50	8.7
Statewide Primitive[3]	5,592	15,861	21,599	-5.5
Primitive	**5,812**	**15,861**	**21,819**	**-5.6**
Ravenna Hunt[4]	**87**	**448**	**538**	**827.6**
Season Total	**81,732**	**121,306**	**204,652**	**23.9**

[1]Row totals include 1,614 deer with incomplete harvest data.
[2]Special primitive season for antlered deer only Oct 21-26, 2002.
[3]Statewide either-sex primitive season Dec 27-30, 2002.
[4]Public controlled hunts were conducted at Ravenna Arsenal in 2002. Only military personnel participated in the 2001 controlled hunt.

Table 2. *Comparison of the 2001 and 2002 antlered and antlerless deer harvest by season for the top 5 total harvest counties, Ohio.*

Season	County	Antlered		Antlerless	
		2001	2002	2001	2002
Gun	Muskingum	1,613	1,850	2,257	3,250
	Coshocton	1,403	1,732	2,121	3,354
	Guernsey	1,258	1,656	1,902	2,983
	Jefferson	1,424	1,805	1,575	2,752
	Tuscarawas	1,217	1,547	1,736	2,898
Crossbow	Licking	563	575	360	495
	Coshocton	445	490	337	470
	Tuscarawas	356	445	255	418
	Holmes	369	422	278	411
	Guernsey	306	418	222	370
Vertical Bow	Licking	337	356	262	387
	Knox	355	310	315	399
	Muskingum	286	289	185	259
	Holmes	226	288	254	350
	Coshocton	252	270	237	357
Primitive	Jefferson	226	215	654	674
	Monroe	226	194	589	611
	Coshocton	201	187	533	579
	Belmont	239	181	569	574
	Harrison	192	176	650	575
All	Coshocton	2,301	2,679	3,228	4,760
	Muskingum	2,496	2,669	3,359	4,248
	Tuscarawas	1,959	2,461	2,652	4,159
	Guernsey	2,059	2,552	2,815	4,059
	Jefferson	2,159	2,612	2,513	3,891

Table 3. *Estimated harvest rate of antlered deer, preseason adult (1.5 years old and older) sex ratio, and fawns per adult doe in the gun season harvest sample. Estimates are based on 8,228 deer sampled during the 2002 shotgun season.*

Variable	Region		
	EC-Southeast	Northeast	Western
Buck harvest rate[1]			
5-year average[2]	0.56	0.58	0.58
2002	0.55	0.57	0.56
Adult sex ratio			
5-year average	1.48	1.47	1.51
2002	1.60	1.58	1.49
Fawn/adult doe			
5-year average	0.98	1.03	1.06
2002	0.95	0.95	0.98

[1]The proportion of antlered deer alive at the start of the gun season that will be harvested.
[2]Average based on data from 1998-2002 seasons.
[3]For example, for every 100 adult bucks alive at the start of the gun season, there will be approximately 150 adult does.

2002-03 Deer Zones

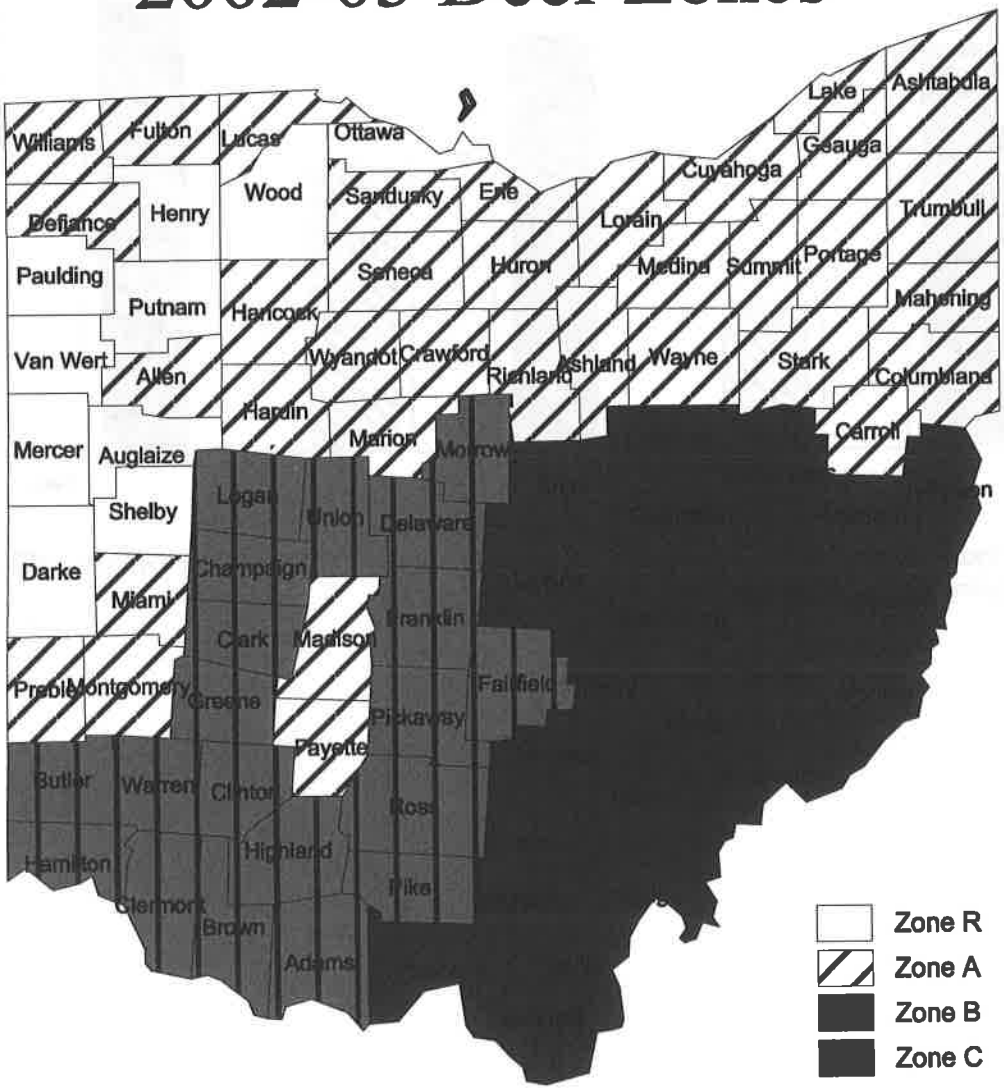

Figure 1. Map of 2002-03 deer hunting zones, Ohio.

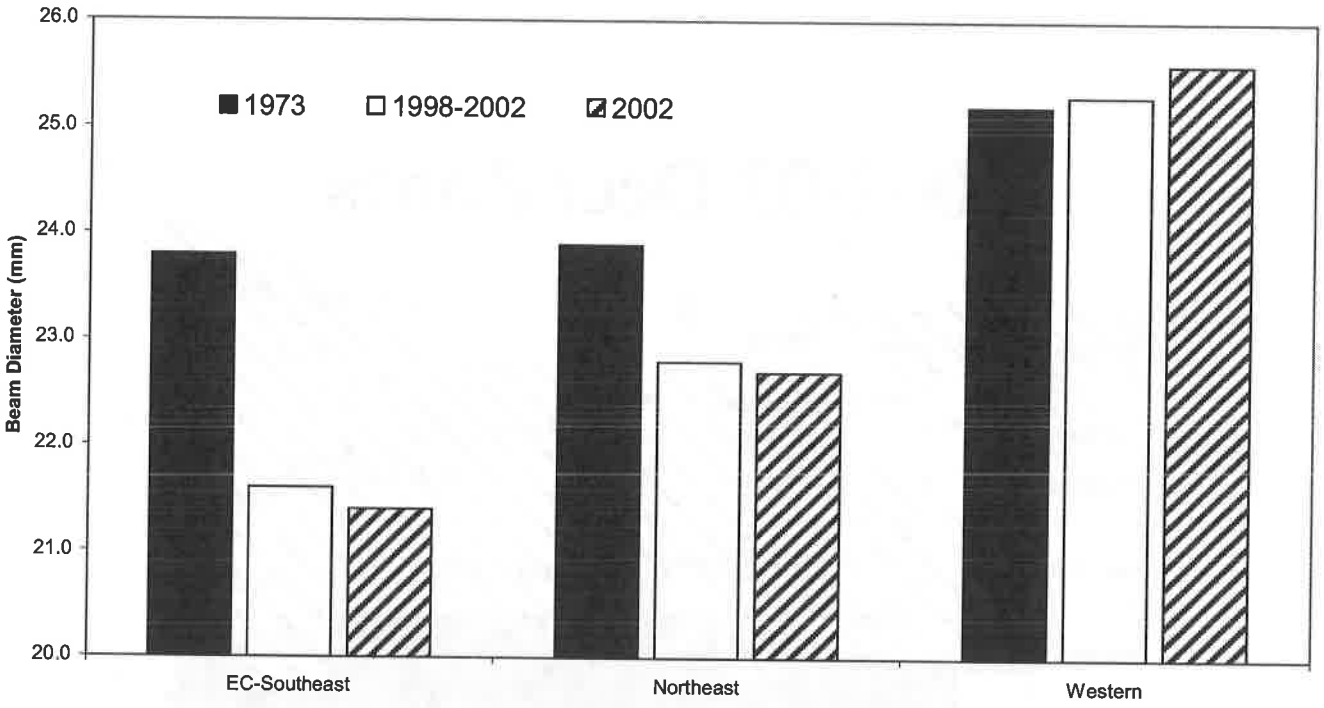

Figure 2. Mean antler beam diameters of yearling bucks by region, Ohio, in 1973, during the past 5 years, and 2002.

Ontario Deer Status Report 2003

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Peterborough, Ontario
2003

Ontario Deer Status Report, 2003

DEER MANAGEMENT IN ONTARIO

BACKGROUND

Deer populations have changed substantially in Ontario within the last 150 years. Before European settlement, deer range was restricted largely to areas south of the Canadian Shield. In the late 1800's a climatic warming trend, combined with clearing of land for agriculture, allowed deer to move northward and populations to expand. By the 1950's, there were likely more deer in Ontario than at any time before, however populations declined through the 1960's and 1970's, most likely due to a combination of severe winters, reduced habitat suitability and inappropriate harvest control.

Deer in Ontario are now managed within the context of a broader ecosystem approach to resource management (see figure1). Since deer are capable of very rapid population growth, the goal of deer population management in Ontario is to maintain populations at levels that will not cause habitat damage for themselves or for other species, nor cause crop damage while still providing for recreational opportunities for both hunting and viewing.

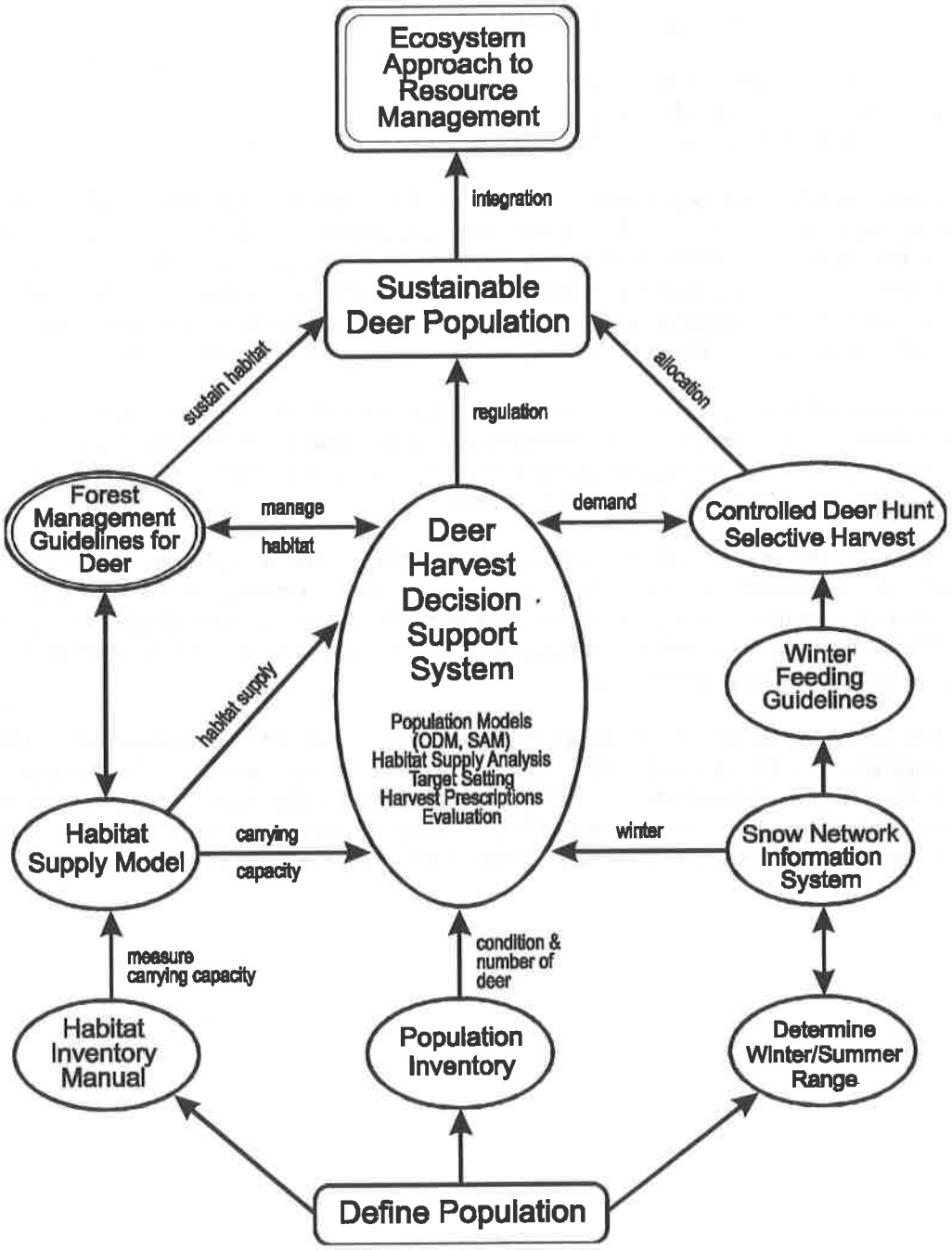
Prior to the 1980's a number of different deer management techniques were used in Ontario, season manipulation being the foundation of deer management applied up until the late 1970's. A controlled deer hunt program was introduced to the southern agricultural areas of Ontario in 1980. This controlled hunt system was a means of providing hunting opportunities in southern Ontario, all the while helping resolve complaints of deer crop damage and deer vehicle collisions due to the high deer numbers.

Controlled hunts have continued to expand since the 1980's, and now 44 controlled deer hunt wildlife management units (WMU) provide over 400 days of shotgun/muzzle-loading hunts to over 25,000 participants. This system controls hunter numbers, restricts the types of firearms that may be used, and provides preference for tag allocation to local farmers/landowners. The controlled hunt system is mostly applied as a management tool in developed or urban areas where human population density is high, and there is little or no public land.

In 1980, a selective harvest system was introduced province wide. This program was created to address significant declines in certain deer populations as well as related economic and recreational benefits. The selective harvest system operates under the name of: "Antlerless Deer Validation Draw". The goal of the antlerless deer validation tag draw is to prevent the over-harvest of breeding does. Antlerless tags, which include both adults and fawns, are strictly controlled through a computerized random draw that is conducted for the majority of Ontario's deer WMU's.

In 2001, the province of Ontario implemented additional game seals to better manage the deer population in specific areas where deer density is high. This was the first time that hunters were able to kill and seal more than one deer in Ontario per season (with the exception of a few special hunts). These additional game seals, offered in limited numbers, are available in certain WMU's on a first come first serve basis. The additional game seals should assist in decreasing deer crop damage and deer/vehicle collisions in the affected WMU's.

Figure 1. *Deer Management Framework in Ontario.*



ONTARIO'S DEER HUNT

There are three types of deer hunting opportunities in Ontario:

- The Antlerless Deer Validation (tag draw)
- The Controlled Deer Hunt Validation (tag draw)
- Additional Game Seals (1st come, 1st serve)

The **antlerless deer validation tag program** was instituted in portions of Ontario in 1980, when deer populations were at a relatively low level. The program's purpose is to ensure the sustainability of the herd. It is used to limit the number of antlerless tags allocated, which controls the number of antlerless deer harvested. If deer populations are low, then the number of antlerless tags offered will decrease, allowing the herd to rebuild. As deer numbers increase, the number of antlerless tags offered will increase, controlling the growth of the herd.

The antlerless deer validation tag program allows any legally licensed hunter to harvest a buck, but an antlerless deer (doe or fawn) can be harvested only if the hunter or hunting party holds an antlerless deer validation tag. An antlerless deer is defined as a deer that has no antlers, or has antlers that are less than 7.5 cm (3 inches) in length.

The term **"controlled hunt"** means that the total number of deer hunters implicated is controlled or limited in that unit. Controlled hunts may be used to meet one or more objectives. Limiting the number of hunters in a wildlife management unit is desirable in built-up rural areas to ensure public safety. Controlling hunter numbers in popular units can also prevent overcrowding; this results in a higher-quality hunting experience.

Additional game seals only apply to certain WMU's in Ontario, and may be purchased by any hunter who possesses a valid resident, non-resident or farmer's deer license. The additional game seal is limited by the harvest method (archery, gun) and to the type of deer specified, specific to the WMU in which it was issued. This hunting opportunity was created to help manage high-density deer populations in certain areas of the province (see figure 2.).

Figure 2. *Wildlife Management Units Offering Additional Seals for Deer in 2002. Units offering additional seals are shaded.*

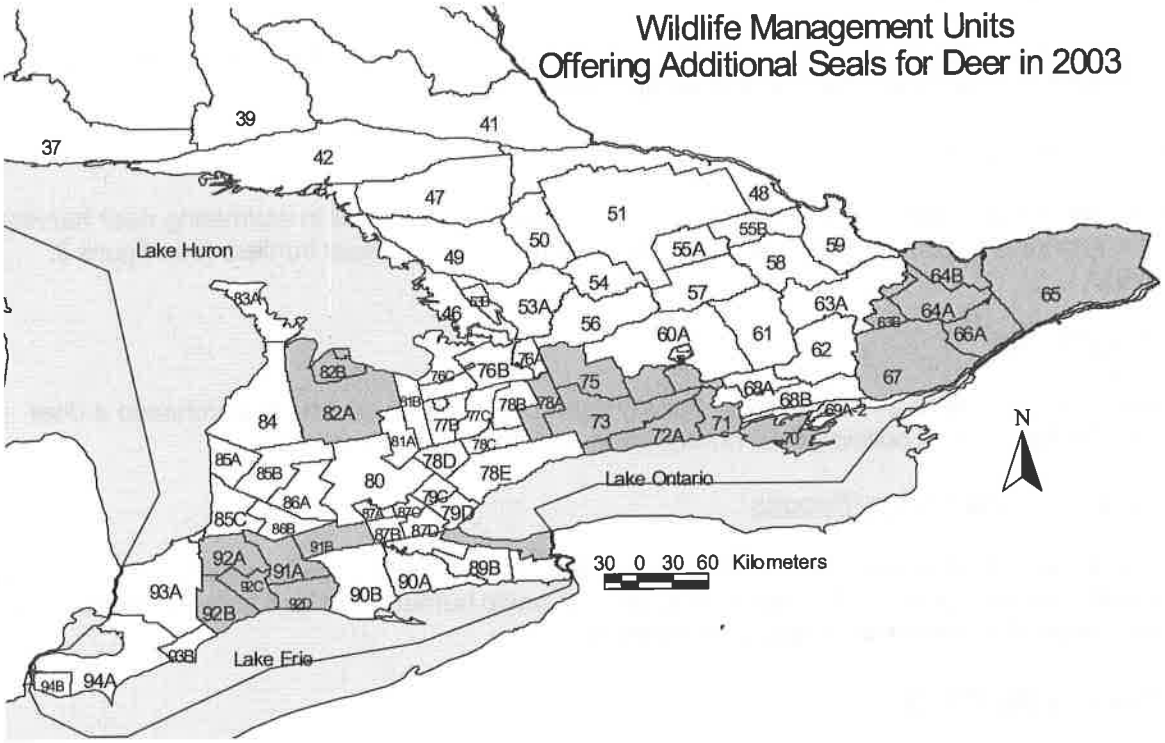
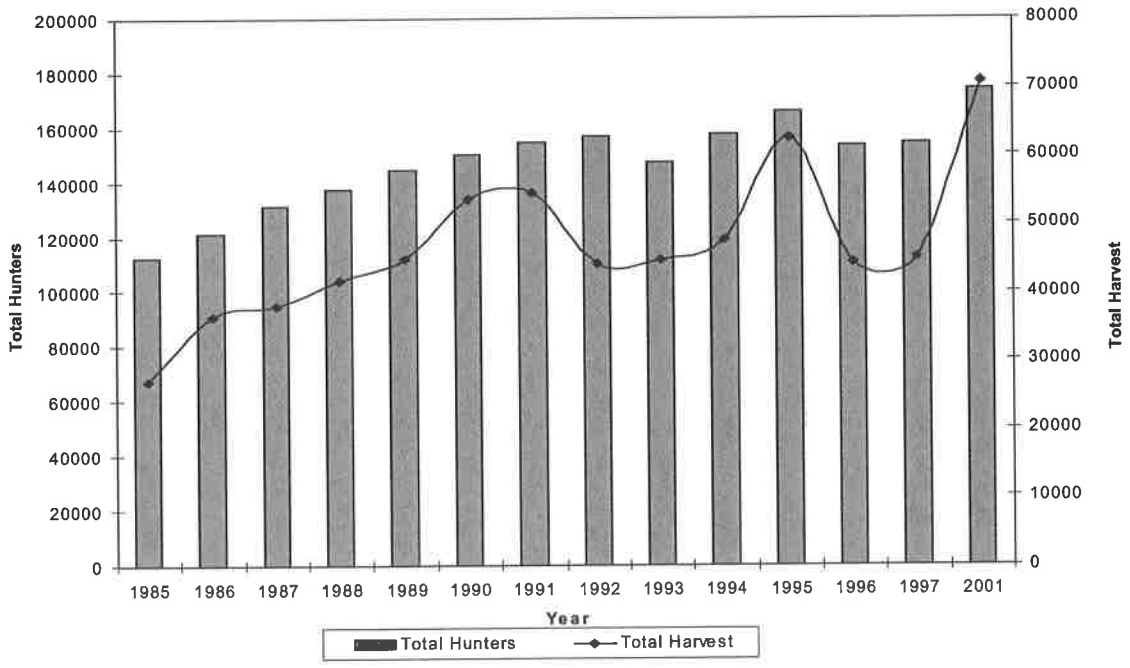


Figure 3. *Comparison of hunters and harvest 1985-2001 as reported in the Provincial Mail Survey. 2001 preliminary results.*



HARVEST TRENDS

Deer Harvest Reports

Deer harvest estimates are derived from four sources: provincial mail survey, postcard survey, controlled hunt mandatory reports, and additional seal reports.

Provincial Mail Survey

The provincial mail survey is conducted every four years, and assists in estimating deer harvest for the province, it also collects socio-economic information from deer hunters (see figure 3, above).

Postcard Survey

The postcard survey is a random basic survey sent to all hunters who have purchased a deer license for that year. It collects deer hunter effort and harvest information.

Controlled Hunt Mandatory Reports

All hunters who hold a controlled hunt validation tag are required by law to submit the report that is issued with the deer tag. This report also collects basic hunter effort and harvest information for the areas of the province offering controlled hunts.

Additional Seal Reports

Similar to the controlled hunt report, this collects hunter effort and harvest data related to the activities of deer hunters purchasing a second game seal. This report is voluntary.

Table 1. *Additional game seal results.*

Year	No. Hunters Hunting With Additional Seal	Sex And Age Class Of Deer Sealed				# Extra Days Hunted Due To Additional Seal
		Adult Female	Fawn Female	Fawn Male	Adult Male	
2001	3183	544	111	221	646	22,461
2002	5420	1176	238	412	924	40,258

Table 2. *Deer harvest estimates based on the provincial mail survey.*

Year	Total Harvest	Fawn		Adult		Total Harvest		Ratio Antlered:Antlerless
		Female	Male	Female	Male	Antlered	Antler-less	
1996	43,815	2,528	5,888	13,581	21,818	21,818	21,997	0.99
1997	44,315	3,429	6,378	12,825	21,683	21,683	22,632	0.96
1998	*							
1999	*							
2000	*							
2001+	64,482	3,136	7,065	20,086	34,194	34,194	30,288	0.89

*The provincial mail survey was not conducted 1998-2000. + Preliminary results.

Table 3. *Deer harvest estimates based on the provincial mail survey and the postcard survey.*

Year	Postcard Survey Total Antlerless Harvest	Postcard Survey Total Antlered Harvest	Total Harvest
1996	16,776	16,639*	33,415
1997	19,346	18,535*	37,881
1998	18,898	18,524*	37,422
1999	21,039	25,836	46,875
2000	22,532	35,104	57,636
2001	23,242	20,459	43,701
2002	25,663	37,273	62,936

*Antlered harvest estimate obtained by using the ratio antlered: antlerless from the provincial mail survey (Table 2) and applying it to the antlerless harvest estimated in the postcard survey. Note: for 2001, the non-applicant data was not analyzed.

Table 4. *Effort estimates based on postcard survey of Selective Harvest Deer Hunters.*

Year	Total Harvest	# Hunters	# Hunter Days	# Deer Seen
1999	46,875	153,216	992,446	813,832
2000	57,636	159,129	1,033,051	952,444
2001	43,701	118,571	815, 945	754,195
2002	62,936	179,604	1,185,950	1,195,261

Note: for 2001, the non-applicant data was not analyzed.

Table 5. *The number of deer permits allocated and issued in Ontario (1996-2002) through the Antlerless Deer Validation Tag Draw.*

Year	# Permits Allocated	# Permits Issued
1996	70,190	65,812
1997	69,333	64,195
1998	74,270	69,338
1999	77,586	71,305
2000	82,357	78,718
2001	83,335	77,512
2002	91,405	84,492

Table 6. *The number of deer tags allocated and issued in Ontario (1996 - 2001) through the Deer Controlled Hunt Tag Draw.*

Year	Quota	Applicants*	Projected Harvest
1996	23,990	29,504	
1997	23,812	29,806	
1998	27,720	30,505	
1999	27,595	30,462	
2000	28,160	32,527	10,845
2001	28,970	32,209	11,252
2002	31,650	30,325	12,916

*Applicants = Choice 1 and Choice 2 applicants

Table 7. *Fall 2000 Controlled Deer Hunt: WMU Statistical Summary.*

Year	WMU	Draw Quotas	First Choice Applicants	Successful Applicants	Total Tags (includes farmer/landowner tags)	# Hunters Hunting	Projected Harvest
2000	69A	600	601	601	899	800	344
	70	800	801	801	1287	1094	446
	73	400	306	316	345	228	21
	76A	525	526	526	661	529	108
	76B	500	448	466	564	477	90
	76C	700	703	703	791	642	113
	76D	500	468	487	527	432	98
	76E	80	21	22	22	17	0
	77A	0	0	0	0	0	0
	77B	650	651	651	754	604	96
	77C	250	253	253	327	288	85
	78A	900	853	871	971	819	231
	78B	850	851	851	908	777	241
	79C	400	349	355	375	330	70
	79D	175	124	125	139	120	32
	80	1850	1851	1851	2371	2110	905
	81A	700	665	677	800	672	204
	81B	1300	1058	1113	1197	991	281
	85A	950	852	859	1091	968	552
	85B	1400	1339	1351	1639	1461	819
	85C	775	760	764	938	827	381
	86A	400	386	401	692	623	268
	86B	350	350	350	462	420	234
	87B	360	362	362	410	377	160
	87C	250	251	251	281	250	96
	87D	500	508	508	572	503	143
	87E	250	250	250	270	235	66
	89A	800	805	805	888	746	168
	89B	900	903	903	1153	1026	411
	90A	850	850	850	1091	961	348
	90B	2200	1968	1030	2635	2291	801
	91A	1150	805	812	977	877	352
	91B	1250	989	1012	1174	1073	475
	92A	875	438	444	553	489	249
	92B	1175	1040	1059	1266	1138	558
	92C	900	432	434	514	450	263
	92D	1150	785	789	983	902	457
	93A	225	227	227	1105	983	553
	93B	75	78	78	172	163	74
	93C	0	0	0	0	0	0
	94B	75	77	77	235	204	52
Total 2000		**28,040**	**24,984**	**24,285**	**32,039**	**27,897**	**10,845**

Table 8. *Fall 2001 Controlled Deer Hunt: WMU Statistical Summary.*

Year	WMU	Draw Quotas	First Choice Applicants	Successful Applicants (choice 1)	Total Tags (includes farmer/landowner tags)	# Hunters Hunting	Projected Harvest
2001	53B	90	249	91	125	106	44
	69A	600	992	601	937	833	382
	70	800	1566	800	1354	1196	455
	73	400	347	347	515	371	0
	76A	525	638	525	674	560	94
	76B	500	510	487	598	480	81
	76C	700	777	701	797	294	134
	76D	500	554	502	544	472	140
	76E	80	35	35	39	33	1
	77B	650	874	651	770	630	147
	77C	250	413	252	320	287	108
	78A	900	986	902	1013	837	203
	78B	900	1040	902	972	803	248
	79C	400	306	306	341	294	80
	79D	175	129	129	149	115	39
	80	1850	2234	1850	2369	2101	890
	81A	700	640	640	766	668	224
	81B	1300	1020	1020	1164	949	266
	85A	950	850	850	1104	967	501
	85B	1450	1456	1398	1767	1555	826
	85C	850	766	766	966	853	381
	86A	400	375	375	683	610	249
	86B	350	351	351	450	413	226
	87B	400	390	390	438	412	214
	87C	300	307	300	332	269	85
	87D	650	688	652	712	624	190
	87E	300	260	260	302	265	130
	89A	800	1079	800	868	730	246
	89B	1100	1592	1100	1365	1200	531
	90A	850	1115	850	1095	970	355
	90B	2400	2152	2152	2820	2425	826
	91A	1150	829	829	982	853	345
	91B	1275	1055	1029	1196	1059	433
	92A	875	419	419	551	504	240
	92B	1200	1122	1105	1368	1206	558
	92C	900	471	471	564	497	305
	92D	1150	803	803	1042	955	483
	93A	225	668	225	1113	1007	522
	93B	75	152	75	170	147	70
Total 2001		**28,970**	**30,210**	**25,941**	**33,335**	**28,550**	**11,252**

Table 9. *Fall 2002 Controlled Deer Hunt: WMU Statistical Summary.*

Year	WMU	Draw Quotas	First Choice Applicants	Successful Applicants	Total Tags (Includes farmer/landowner tags)	# Hunters Hunting	Projected Harvest
2002	53B	120	250	121	156	131	61
	69A	600	884	600	950	836	430
	70	800	1385	803	1377	1198	545
	72A	120	140	120	130	130	22
	73	400	342	342	349	349	31
	74A	70	42	42	47	47	8
	75	210	47	47	56	56	9
	76A	525	573	490	637	544	133
	76B	500	439	439	573	474	118
	76C	700	782	700	815	698	189
	76D	500	506	479	538	461	151
	76E	80	20	20	22	15	1
	77B	675	787	677	794	676	168
	77C	250	399	251	338	315	126
	78A	950	909	909	1036	869	303
	78B	950	954	885	992	835	265
	79C	400	326	326	351	305	95
	79D	175	116	116	129	104	38
	80	2200	2130	1936	2478	2134	936
	81A	700	684	648	784	650	266
	81B	1300	1029	1029	1099	891	329
	85A	975	855	855	1079	964	614
	85B	1550	1460	1460	1787	1590	947
	85C	875	764	764	953	864	397
	86A	375	355	375	644	567	263
	86B	350	339	339	446	410	202
	87B	400	381	381	432	406	201
	87C	300	271	271	313	275	94
	87D	700	653	653	730	657	215
	87E	300	277	277	330	290	132
	89A	900	947	900	979	832	277
	89B	1100	1525	1102	1371	1193	501
	90A	850	951	852	1133	1002	408
	90B	2400	2107	2107	2750	2373	916
	91A	1025	798	798	963	867	434
	91B	1200	1040	1040	1209	1067	529
	92A	875	443	443	561	505	300
	92B	1300	1139	1139	1372	1228	700
	92C	900	503	503	588	528	340
	92D	1150	818	818	1029	943	534
	93A	225	571	227	1100	990	539
	93B	75	130	75	183	161	95
	94B	163	12	0	239	215	54
Total 2002		29,155	1,170	335	33,842	29,645	12,916

NUISANCE DEER MANAGEMENT TOOLS

Deer Removal Permit

To address ongoing concerns by the agricultural community regarding crop damage by deer, the Game and Fish Act was amended in January 1997 to allow for the killing of deer in defense of property. The intent of this program is to provide some relief to farmers experiencing significant crop damage from deer. This permit system is a means of last resort when other farm and wildlife management techniques have not reduced crop losses to acceptable levels. Farmers must demonstrate that losses are significant and have tried other means of reducing deer damage. Other management techniques such as more hunting seasons and multiple bag limits may be utilized.

Certain conditions apply to the deer removal permit:

- Firearm type
- Time of year
- Time of day
- Type of deer that can be killed
- Permit location
- Hunter orange
- Reporting
- Carcass disposal

Removal permits will be limited and not issued to farmers where there is not a reasonable chance of success in controlling the problem.

Deer Removal Permits Issued

Between 1999 and 2001, 9 removal permits were issued across Ontario to farmers who experienced serious agricultural damage. Also, 5 deer removal permits were issued to airports in the central and southern part of Ontario. In 2002 7 removal permits were issued for agriculture and airport protection.

REFERENCE

Bisset, A. R., L. Dix-Gibson, M. A. McLaren. 2001. 1998 deer and moose harvest in Ontario. Ont. Min. Nat. Resour., Northwest Science and Technol., NWST Tech Rep. TR-128. 26 pp.

ACKNOWLEDGEMENTS

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South Dakota Department of Game, Fish, and Parks
2002-2003 Deer Status Report

Steven L. Griffin and Corey Huxoll

2002 SEASONS

Statewide Combined Deer Harvest

Season Summary

There were 87,086 resident deer licenses (plus unlimited licenses) available in 2002, and 89,608 sold. For nonresidents, there were 2,782 licenses (plus unlimited licenses), and 4,693 sold. Statewide, there were a total of 94,301 licenses sold which represented 115,775 resident and 6,293 nonresident tags for a statewide total of 122,068 tags.

Random samplings were taken for each season. The minimum season response rate (90%) was met for all seasons except for General Archery Deer (87.8%), Antlerless Archery Deer (86.3%), Youth (86.9%), Muzzleloader (87.9%), Black Hills (89.8%), West River (89.0%), West River Landowner (81.3%), East River (88.0%), and East River Landowner Deer (84.2%). In all cases, the vast majority of units within seasons met the 85% unit response rate goals.

The projected statewide deer harvest was 62,599. This projection included 27,446 whitetail bucks, 25,095 whitetail does, 6,565 mule bucks and 3,493 mule does. Nearly 8,000 more tags were available and over 7,000 more were sold in 2002 compared with 2001. A combination of this increase and an estimated harvest success similar to 2001 appears to account for the increase in overall harvest of approximately 4,000 deer. All seasons except Black Hills and East River Special Buck showed harvest increases compared to 2001. Whitetail doe harvest increased by over 3,000 and was primarily attributed to an increase of 2,603 for the East River season. A decrease in harvest of 293 deer for the Black Hills season appears to be attributed to a reduction in the number of tags available (-250) and a 3% decline in harvest success.

Harvest success varied by less than 4% throughout all seasons except West River Landowner and East River Landowner, which increased by 9% and 10%, respectively. Overall statewide harvest success increased from 52% in 2001 to 53% in 2002.

Respondents reported hunting an average of 5.22 days per hunter, which projects to a statewide total of 492,552 recreation days in 2002. The average number of days hunted increased by 0.2 per hunter, resulting in an increase of approximately 35,000 total days of recreation.

Hunters indicated similar satisfaction values (1=best to 7=worst) in 2002 compared to 2001 and ranged from 1.35 for East River Special Buck to 3.42 for Sand Lake National Wildlife Refuge.

East River Firearm Deer

There were 40,977 licenses issued for the 2002 East River Firearm Deer season (40,474 residents and 503 nonresidents). These licenses represented 55,235 total tags issued for the season (54,346 residents and 889 nonresidents). In addition, there were 400 East River Special Buck licenses issued to residents and 1,840 Landowner Own Land Only licenses (2,080 tags).

A random sampling of 17,642 hunters was taken for the regular season (43.1% of all hunters), all 400 Special Buck hunters, and 1,837 Landowner Own Land Only (99.8% of the hunters – 3 surveys were undeliverable). The response rate was 88.0% for the regular season, 95.0% for Special Buck, and 84.2% for Landowner Own Land Only.

The East River season ran November 16 to December 1 (16 days) in the north and west units. In the southeastern units the season ran November 23 to December 1 (9 days) for type 01, 02, 04, 07, 10, 12, 16, and 41 licenses, and from November 23 to December 8 (16 days) for type 03, 06, 13, and 17 antlerless-only licenses. Respondents reported hunting 3.93 days per hunter for the regular season, 5.09 days for Special Buck, and 4.09 days for Landowner Own Land Only, giving a projected total of 170,601 recreation days for the entire East River season (161,040 regular season, 2,035 Special Buck, 7,526 Landowner Own Land Only). Of those responding, 2.5% of the regular season, 1.8% Special Buck, and 2.1% Landowner Own Land Only hunters reported that they did not hunt at all.

The projected harvest for the regular East River Deer season was 32,445 (14,300 whitetail bucks, 17,252 whitetail does, 454 mule deer bucks, and 439 mule deer does), 210 for the Special Buck season (197 whitetail bucks and 13 mule deer bucks), and 1,259 from the Landowner Own Land Only hunters (868 whitetail bucks, 237 whitetail does, 76 mule deer bucks, and 2 mule deer does). Success rates were 59% for the regular season, 52.5% for Special Buck, and 60.5% for Landowner Own Land Only hunters. Success for the regular East River season single tags and 1st tags was 64% (26,374 deer harvested), 2nd tags of 2-tag licenses was 43% (6,071 deer harvested).

The mean satisfaction score for those responding to the regular East River survey was 2.99 (1 = "very satisfied" and 7 = "very dissatisfied"). Mean satisfaction for Landowner Own Land Only hunters was 2.99.

Regular season hunters were asked if they harvested their deer on public land, private land or on public walk-in areas. Of those responding, 84.7% reported hunting on private land, 10.0% on public land and 5.3% on walk-in areas.

Summary comparison of the 1997-2002 regular East River Deer seasons

Year	Licenses Sold				Harvest				Total Harvest	Success	Avg Days	Avg Satis
	Resident		Nonres		Bucks		Does					
	Lics	Tags	Lics	Tags	WT	Mule	WT	Mule				
1997	34,411	39,569	183	240	11,958	579	12,595	567	25,699	65%	3.49	3.3
1998	31,950	36,383	66	66	11,535	451	11,202	373	23,561	65%	3.47	3.15
1999	33,353	38,155	213	326	12,356	479	11,017	265	24,117	63%	3.54	3.14
2000	35,902	41,078	238	383	13,548	467	11,964	226	26,205	63%	3.05	3.01
2001	39,260	52,166	452	819	13,827	439	15,122	426	29,814	56%	3.79	3.17
2002	40,474	54,346	503	889	14,300	454	17,252	439	32,445	59%	3.93	2.99

West River Firearm Deer

There were 21,939 licenses issued for the 2002 West River Firearm Deer season (19,878 residents, 2,061 nonresidents). A total of 34,384 tags were issued (31,128 residents, 3,256 nonresidents). In addition, there were 804 West River Special Buck single-tag licenses issued (402 residents, 402 nonresidents), 564 Landowner Own Land Only licenses (748 tags), and 48 special October antlerless season licenses (82 tags). The special October licenses were available in Jones, Lyman, and Mellette counties and were valid during Firearm Antelope season (October 5-13).

A random sample of 13,335 hunters was taken from the Regular West River season (12,094 residents, 1,241 nonresidents), 798 from the Special Buck season (all were sampled, 6 were undeliverable), and 563 hunters from the Landowner Own Land Only licensees (1 was undeliverable). Overall 63.1% of the West River Firearm hunters were surveyed (60.8% Regular West River season, 99.3% of the Special Buck, and 99.8% of the Landowner Own Land Only licensees). The overall response rates for the seasons were 89.0% for the Regular West River Deer, 90.4% for Special Buck, 81.3% for Landowner Own Land Only, and 93.8% for early October Antlerless. Of all responding hunters, 21.7% of regular West River, 10.0% of landowner only, 20.3% of Special Buck, and 17.8% of early October season hunters responded over the internet.

The West River season was open 16 days from November 9-24 in most units, and from November 2-24 in Dewey and Ziebach counties. Respondents reported hunting an average of 3.42 days in the Regular West River season, 3.67 days in the Special Buck, and 3.96 by the Landowner Own Land Only licensees. These averages projected to a total of 80,336 recreation days for all West River deer seasons (75,031 Regular West River, 2,929 Special Buck, 2,233 Landowner Own Land Only, 143 Early October Antlerless). Of those reporting, 4.4% of the Regular West River season, 3.6% of the Special Buck season, 4.4% of the Landowner Own Land Only, and 11.1% of early October Antlerless licensees said they did not hunt.

The West River projected deer harvest included 17,203 for the regular deer season, 552 for the Special Buck season, 396 for the Landowner Own Land Only licenses, and 39 for the early October Antlerless season. Success rates were 50% for the regular season, 69% for the Special Buck, 44% for the Landowner Own Land Only, and 48% for the early October Antlerless season. Success for the Regular West River season single tags and 1st tags was 60% (13,189 deer harvested), 2nd tags of 2-tag licenses was 32% (4,014 deer harvested).

The mean satisfaction score for those responding to the regular West River season was 2.97 (1 being very satisfied and 7 very dissatisfied).

Regular West River season hunters were asked if they harvested a deer on public land, private land, or walk-in areas. Of those responding, 80.1% harvested deer on private land, 14.1% on public land, and 5.8% on walk-in area land.

Summary comparison of the 1997-2002 regular West River Deer seasons

Year	Licenses Sold				Harvest				Total Harvest	Success	Avg Days	Avg Satis
	Resident		Nonres		Bucks		Does					
	Lics	Tags	Lics	Tags	WT	Mule	WT	Mule				
1997	18,171	26,848	1,737	2,509	5,104	3,593	3,960	2,512	15,169	51%	3.33	3.80
1998	14,773	20,173	1,250	1,758	5,364	3,131	2,827	1,238	12,560	57%	3.23	3.16
1999	15,061	20,084	1,201	2,182	4,964	3,120	2,662	891	11,637	52%	3.23	3.22
2000	16,977	22,592	1,496	2,056	6,200	3,782	3,423	1,068	14,473	59%	2.91	2.84
2001	19,107	28,406	1,864	2,848	6,228	4,479	3,578	2,133	16,418	53%	3.29	3.01
2002	19,878	31,128	2,061	3,256	6,318	4,618	3,837	2,430	17,203	50%	3.42	2.97

Black Hills Deer

There were 6,454 single tag licenses issued for the 2002 Black Hills Deer season (5,980 resident, 474 nonresident).

A random sampling of 2,588 hunters was taken (40.1% of license holders) and there were 2,324 responses for a 89.8% return rate. Approximately 17.7% of responding hunters used the internet to submit their response.

The traditional Black Hills Buck season ran the usual month of November, a total of 30 days. The special any-deer, any-whitetail, and antlerless-whitetail seasons ran from November 10-19, a total of 10 days. Those responding reported hunting an average of 4.59 days (4.96 days each for those participating in the buck only portion of the season). That projected to 29,624 recreation days for this season. Of those responding, 5.9% stated they did not hunt at all during the season.

The mean satisfaction score for all combined units was 2.75. The satisfaction scale ranged from 1 = "most satisfied" to 7 = "least satisfied".

The harvest projection for the Black Hills Deer season was 3,369 deer (2,365 whitetail bucks, 346 whitetail does, 618 mule deer bucks, 40 mule deer does). The overall season projected harvest success rate was 52%.
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Harvest summaries for 1997-2002 Black Hills Deer

Year	Licenses Sold		Harvest				Success	Avg Days Hunted	Average Satisfaction
			Bucks		Does				
	Resident	Nonresident	WT	Mule	WT	Mule			
1997	10,780	1,044	2,376	699	1,339	197	39%	4.76	3.26
1998	7,673	612	2,169	564	1,043	132	47%	4.24	3.28
1999	7,271	578	2,032	620	744	140	45%	4.54	3.21
2000	7,350	571	2,603	500	782	84	50%	3.89	2.77
2001	6,211	496	2,419	859	313	71	55%	4.14	2.80
2002	5,980	474	2,365	618	346	40	52%	4.59	2.75

National Wildlife Refuge Deer

The number of licenses issued for the 2002 Sand Lake Refuge Deer season was 594 (540 residents and 54 nonresidents); LaCreek Refuge was 44 (40 residents and 4 nonresidents); and Waubay Refuge was 71 (67 residents and 4 nonresidents). All were single-tag licenses.

All license-holders for each season were surveyed and response rates for Sand Lake, LaCreek, and Waubay refuges were 92.9%, 100.0%, and 94.4%, respectively. Approximately 16.5% of responding hunters used the internet response system.

The seasons had different opening dates in the each refuge. All ran between 5 and 7 days except Unit 603C that was open 14 days. The average days hunted for Sand Lake was 2.61, LaCreek reported 2.30, and 2.04 for Waubay. Of the refuge license holders who responded to the survey, 6.2%, 11.4%, and 10.4% did not hunt at Sand Lake, LaCreek, and Waubay refuges, respectively. There were a projected 1,550 recreation days at Sand Lake, 101 at LaCreek, 144 at Waubay, for a total of 1,795 days at the three refuges combined.

The reported harvest at the refuges consisted only of white-tailed deer. The projected harvest for Sand Lake was 174 bucks and 67 does, LaCreek 9 bucks and 4 does, and Waubay 14 bucks and 9 does. The projected success rate for Sand Lake was 41%, for LaCreek 30%, and for Waubay 32%.

Harvest summaries for 1997-2002 National Wildlife Refuge Deer Seasons

SAND LAKE NATIONAL WILDLIFE REFUGE						
YEAR	LICENSES	BUCKS	DOES	% SUCCESS	AVG DAYS HUNTED	AVERAGE SATISFCTN
1997	524	97	78	33	NA	3.50
1998	595	125	90	36	2.50	3.70
1999	569	120	55	31	2.61	3.92
2000	594	130	86	36	2.04	3.04
2001	593	136	68	34	2.50	3.42
2002	594	174	67	41	2.61	3.17

LACREEK NATIONAL WILDLIFE REFUGE						
YEAR	LICENSES	BUCKS	DOES	% SUCCESS	AVG DAYS HUNTED	AVERAGE SATISFCTN
1997	84	11	10	25	NA	3.60
1998	44	12	4	36	3.02	3.48
1999	43	3	6	21	2.78	2.83
2000	44	7	4	25	2.79	2.91
2001	44	11	1	27	1.86	2.30
2002	44	9	4	30	2.30	2.25

WAUBAY NATIONAL WILDLIFE REFUGE						
YEAR	LICENSES	BUCKS	DOES	% SUCCESS	AVG DAYS HUNTED	AVERAGE SATISFCTN
1997	54	19	16	65	NA	2.20
1998	96	13	14	28	1.45	3.26
1999	69	17	5	32	1.79	3.74
2000	71	15	12	38	2.29	3.32
2001	71	14	12	37	2.30	2.95
2002	71	14	9	32	2.04	3.46

Youth Deer

There were 2,767 single tag antlerless licenses issued for the 2002 Youth Deer hunting season (2,708 resident, 59 nonresident). Licenses remaining after the second resident drawing became available to nonresidents. All license holders were sampled, of which 2,400 responses (86.9%) were received (6 were undeliverable). Approximately 20.2% of responding hunters used the internet to do so.

The Youth season ran from September 14-22 and reopened from December 7-31, a total of 34 days. Respondents reported hunting an average of 3.96 days each, which projected to 10,957 recreation days for the season. Of those responding to the survey, 6.5% said they did not hunt. License holders were asked if they hunted in September, December or both. Of those responding, 36.7% said they hunted in September only, 37.5% in December only, and 25.3% hunted during both.

Harvest projections for the season estimated 198 whitetail bucks, 1,031 whitetail does (1,229 total whitetails), 16 mule deer bucks and 245 mule deer does harvested (261 total mule deer). The total deer harvest for the Youth Deer season was 1,490, and the overall success rate was 54%.

The overall satisfaction rating for those responding (1 being very satisfied and 7 very dissatisfied) was 2.52.

Comparison of the 1997 - 2002 Youth Deer hunting seasons.

Year	Licenses Sold	Harvest				Total Harvest	Success	Avg Days Hunted	Average Satisfaction
		Bucks		Does					
		WT	Mule	WT	Mule				
1997	2,210	167	37	811	237	1,252	57%	NA	2.6
1998	2,321	217	20	860	185	1,371	56%	4.13	2.84
1999	2,490	224	26	862	227	1,339	54%	4.04	2.8
2000	2,609	288	11	1,026	180	1,505	58%	3.42	2.64
2001	2,662	251	25	974	211	1,461	55%	3.76	2.61
2002	2,767	198	16	1,031	245	1,490	54%	3.96	2.52

Muzzleloader Deer

There were 3,149 antlerless deer licenses (3,118 resident, 31 nonresident) issued for the 2002 Muzzleloader Deer Season. These licenses represented a total of 3,572 tags (3,527 resident, 45 nonresident). A survey sample of 3,067 licensees (97%) was taken and the overall response rate was 87.9%. Approximately 22.6% of responding hunters used the internet response system.

The Muzzleloader season was open from December 14, 2001 through January 31, 2002, a total of 50 days. Hunters for this season averaged hunting 5.29 days, for a projected total of 16,658 recreation days for the entire season. Of those reporting, 11.4% said they did not hunt at all.

The harvest projection for the Muzzleloader season was 1,244 deer (194 whitetail bucks, 828 whitetail does, 13 mule deer bucks, and 209 mule deer does). The overall success rate for the season was 35%.

Average satisfaction for the season was 2.67 (1 = very satisfied, 7 = very dissatisfied).

Summary comparison of the 1997-2002 Muzzleloader Deer seasons.

Year	Licenses Sold		Harvest				Total	Success	Avg Days Hunted	Average Satisfaction
			Bucks		Does					
	Res	Nonres	WT	Mule	WT	Mule				
1997	1,405	NA	98	31	207	114	450	32%	3.87	3.19
1998	1,485	NA	66	11	329	95	501	34%	4.19	3.19
1999	1,652	NA	99	19	275	97	490	30%	4.04	3.37
2000	1,824	NA	150	13	467	99	729	40%	2.83	2.96
2001	2,644	24	168	32	686	177	1,063	37%	4.98	2.71
2002	3,118	31	194	13	828	209	1,244	35%	5.29	2.67

General Archery Deer

There were 12,256 general archery deer licenses issued in 2002 (11,119 resident, 1,137 nonresident). All were single any-deer tags for the statewide, East River and West River units.

A random sampling of 25% of licensees was taken (2,749 residents, 307 nonresidents) and the overall return rate for the survey was 87.6%. Approximately 21.4% of responding hunters used the internet response system.

The archery season ran from September 21 through December 31, a total of 102 days. Respondents reported hunting 12.38 days per hunter, which projected to a total of 151,729 recreation days for the season. Of those who responded, 4.9% reported they did not hunt at all.

The projected deer harvest for the general archery season was 3,300 deer (2,238 adult whitetail bucks, 563 adult whitetail does, 105 juvenile whitetail bucks, 69 juvenile whitetail does, 261 adult mule bucks, 64 adult mule does, and zero juvenile mule bucks or does). The projected success rate for the season was 27%.

Satisfaction was also measured (1=very satisfied to 7=very dissatisfied); the average response rate for this season was 2.70.

Hunters were also asked to identify if they harvested a deer in the Black Hills, Sand Lake National Wildlife Refuge, or Farm or LaFramboise Islands. Estimates indicated 268 deer were harvested in the Black Hills (197 in 401A, 42 in 402A, 19 in 403A, 10 in 404A), 28 at Sand Lake National Wildlife Refuge, and 28 on Farm or LaFramboise Islands.

Summary comparison of the 1997-2002 General Archery Deer seasons

Year	Licenses Sold		Harvest				Total	Success	Avg Days Hunted	Average Satisfaction
			Bucks		Does					
	Res	Nonres	WT	Mule	WT	Mule				
1997	9,575	605	1,385	136	464	109	2,094	21%	10.39	NA
1998	9,507	634	1,604	163	514	79	2,360	23%	11.52	3.00
1999	9,233	748	1,606	221	353	68	2,248	22%	12.56	2.97
2000	9,254	754	1,820	199	544	74	2,637	25%	11.23	2.67
2001	10,550	1,049	2,193	309	507	62	3,071	26%	12.42	2.83
2002	11,119	1,137	2,343	261	632	64	3,300	27%	12.38	2.70

Antlerless Archery Deer

There were 2,436 licenses sold (2,413 resident, 23 nonresident) that represented a total of 2,653 tags of the 3,785 that were available for the season in 2002. Random sub-samples totaling 2,369 licensees were taken (97% sampled overall) and 2,045 responses were received (86.3% response rate).

The season ran from September 21, 2002 through January 31, 2003, a total of 133 days. Those responding reported hunting an average of 12.7 days per hunter, which projected to 30,937 recreation days for the season. There were 4.6% who reported they did not hunt at all.

The projected harvest for the Antlerless Archery season was 924 deer (88 whitetail bucks, 796 whitetail does, 1 mule deer buck, 39 mule deer does) for a success rate of 35%.

The overall satisfaction for the Antlerless Archery season was estimated to be 2.51, on a scale with 1 being "very satisfied" and 7 being "very dissatisfied".

Hunters reported harvesting 5 deer at Sand Lake, 1 at Pocasse National Wildlife Refuge, 0 at Little Bend, 0 at LaCreek National Wildlife Refuge, and 5 at Waubay National Wildlife/State Game Refuge.

Summary comparison of the 1997-2002 Antlerless Archery Deer seasons

Year	Licenses Sold		Harvest				Total	Success	Avg Days Hunted	Average Satisfaction
			Bucks		Does					
	Res	Nonres	WT	Mule	WT	Mule				
1997	1,174	NA	39	2	276	29	346	29%	12.13	NA
1998	1,080	NA	60	0	320	24	404	37%	12.73	2.75
1999	1,302	NA	69	1	382	15	467	36%	13.01	2.91
2000	1,534	NA	74	5	524	38	641	42%	11.74	2.61
2001	2,116	25	104	5	614	36	759	35%	12.87	2.61
2002	2,413	23	88	1	796	39	924	35%	12.70	2.51

South Dakota Game, Fish, and Parks-Chronic Wasting Disease Update August 2003

Steven L. Griffin

CWD was first diagnosed in a South Dakota captive elk herd in the winter of 1997-1998. Since then, a total of seven captive elk herds in the state were found to have CWD. All seven herds were quarantined and have now been depopulated. With over 4.5 years of mandatory surveillance for all deaths and movement restrictions, the disease had not been detected in captive wildlife herds in South Dakota since six herds were depopulated in 1998. In August of 2002, another CWD positive captive elk herd was discovered in the Black Hills Area. This herd was depopulated and a total of 2 animals were found to be infected with CWD.

South Dakota Department of Game, Fish, and Parks, in cooperation with South Dakota State University have been looking for CWD in free ranging wildlife since 1997. The major areas of concern are still in areas surrounding captive herds that had exhibited positive animals for CWD. Primary areas of emphasis in South Dakota were the southeastern part of the Black Hills, Fall River County in the extreme southwest and McPherson County in the north-central part of the state.

South Dakota has utilized hunter-harvested animals for testing of CWD. Since 1997, South Dakota Game Fish and Parks and South Dakota State University have collected heads at locker plants in different areas of the state. We are also looking for CWD in road killed deer and sick/surveillance deer. Submission of heads from hunter harvested deer and elk is a voluntary program in South Dakota.

Results of CWD testing from the 2001-hunting season produced a positive test for CWD in a wild, white-tailed female. The deer was harvested in Fall River Co. near Hot Springs, SD.

Results of CWD testing from the 2002-hunting season produced 9 more positive deer in South Dakota. These deer came from 3 different counties in southwestern South Dakota (Pennington County, Custer County, and Fall River County). Not all of these deer were hunter harvested. We collected 2 road kill positives, 2 sick/surveillance positives, and 5 hunter harvested positives.

Wind Cave National Park has found an additional 4 positive mule deer and 1 positive elk since November of 2002. Wind Cave National Park is conducting research in cooperation with South Dakota State University on CWD within the Park.

Since 1997, South Dakota has sampled a total of 3,859 wild deer and elk in the state. Species breakdown is 1,148 Elk, 1,738 White-tailed Deer, and 973 Mule Deer. We have found a total of 14 deer and 1 elk that tested positive for CWD. Four of these deer and the one elk came out of Wind Cave National Park.

South Dakota Department of Game, Fish and Parks will actively monitor for CWD in areas of concern during the fall of 2003. We will sample heads from voluntary hunter submissions at collection areas and processing plants. South Dakota will also conduct surveillance on all wild cervids that are considered sick or suspect animals for CWD. This surveillance will be conducted on a statewide basis.

WISCONSIN DEER STATUS REPORT, 2003
Midwest Deer & Turkey Group – Dodgeville, Wisconsin

Robert E. Rolley and Tim Van Deelen

Hunting Seasons

The gun deer season in Wisconsin has traditionally been 9 days, beginning the Saturday before Thanksgiving, with most of the state open to bucks-only (>3" antler) plus prescribed quotas of antlerless deer. A limited any-deer hunt has been conducted in some management units adjacent to the Mississippi River. Approximately 3.5 million hunter days of recreation are provided by the 9-day hunt (5+ days/hunter).

A 10-day muzzleloader season immediately follows the 9-day gun season. Hunters with unused gun season or bonus antlerless licenses are able to participate.

The archery deer season opens September 13th and continues through January 3 with a break beginning 1 day before the gun deer season until the close of the gun season. Hunters can harvest 1 deer of either sex anywhere in the state on their archery license. In addition, hunters with unit-specific either-sex gun season permits or bonus antlerless permits are able to use them during the archery season to harvest antlerless deer. Archers exercise about 3.5 million hunts (15 hunts/ archer). Firearm and archery deer licenses cost $20 for residents and $135 for non-residents and generate about $20 million in revenue.

Population Goals

In the Northern and Central Forest regions (Fig. 1) population goals are set relative to carrying capacity. In the three farmland regions, goals have primarily been set relative to human tolerance for deer. Overwinter goals range by unit from 10 to 30 deer/mi^2 of deer habitat. Normal recruitment should produce fall populations of over 1,000,000 when the population is at goal and an annual gun and bow harvest of about 300,000.

Following the discovery of chronic wasting disease in southwestern Wisconsin in 2002, population goals were reduced to 10 deer/mi^2 for all or parts of 15 management units. The reduction of density goals in these units resulted in a 21% reduction of the Southern Farmland overwinter population goal to 126,210 and a 5% reduction in the statewide overwinter population goal to 709,000.

Population Trends

Deer populations in the Northern Forest, Eastern Farmland, and Western Farmland regions increased substantially during the 1980's (Figure 1). Aggressive harvests during the late 1980's and early 1990's, combined with very poor recruitment in the Northern and Central Forest regions in 1992, reduced populations to near goal in the Northern Forest and below goal in the Central Forest. Deer populations in all regions grew rapidly following the conservative harvests in 1993, reaching a record posthunt population in excess of 1,100,000 in 1995. Liberal harvests in the farmland regions together with over-winter losses in the north associated with the severe winters of 1995-96 and 1996-97 reduced populations from the 1995 peak in all regions. The mild winter of 1997-98, together with lower antlerless harvests in the farmland regions in 1998, allowed deer populations to grow in all regions. Strong antlerless harvests in 1999 and 2000, together with the moderately severe winter of 2000-01 in the Northern Forest, reduced

populations in all regions. Moderate population declines continued in the Northern Forest and Western Farmland regions in 2002 but reduced harvests in 2002 lessened population declines in the Eastern and Southern farmland regions.

The statewide posthunt white-tailed deer population estimate for 2002 was 913,000. This was 29% above the statewide goal of 709,000. The posthunt 2002 population was 7% lower than a year ago.

The posthunt population in the Northern Forest region decreased 16% from 2001 to 2002, but was still 18% above goal in 2002. The Central Forest population increased 16% between 2001 and 2002 and was 19% above goal in 2002. The Eastern Farmland population declined 3%, but was still 46% above goal. Populations in the Western Farmland decreased 6% while populations in the Southern Farmland only decreased 3%. The Western and Southern Farmland populations were 18% and 53% over goal, respectively.

Harvest Trends

During the 1960s and early 1970s, the combined gun and archery harvest fluctuated from a low of about 40,000 to a high of about 136,000 and averaged about 90,000 (Figure 2). Total harvest increased steadily during the late 1970s and 1980s, peaking at over 400,000 in 1991. Harvest declined sharply to about 270,000 in 1993. Harvest rebounded to another record of over 470,000 in 1995, and then declined to approximately 360,000 in 1997. Total harvest increased each year during 1998-2000, setting an all-time record of 618,374 in 2000. Total harvest decreased 28% in 2001 and 16% in 2002.

Hunting Season Summary – 2002

The 2001 posthunt population was estimated to be about 984,500, about 11% lower than in 2000. The winter of 2001-2002 was rated as mild. Observations of fawns and does in summer 2002 indicated that recruitment was above the long-term average in the Northern Forest and below average in the Central Forest. Observed fawn:doe ratios were well below average in the farmland regions. The estimated statewide fall 2003 population was approximately 1.34 million.

A 4-day antlerless-only gun hunt was held in October for the seventh year in a row. It was held in 41 deer management units (Zone T) across the state, including many in the Northern Forest. Deer populations in these units had been chronically over goal and there was little chance that populations would be reduced to within 20% of goal with a conventional season. Over 18,000 antlerless deer were killed during this early season.

The November 2002 firearm season opened on the latest possible date. Hunter access was good because back roads and wetlands were frozen. Temperatures during the season were colder than normal and high winds occurred during the opening weekend and later in the week. Snow cover was lacking throughout the season in most of the state. Parts of the north received snow early in the week and again at the end of the season.

Hunting pressure appeared to be affected by the discovery of chronic wasting disease earlier in the year. Sales of gun deer licenses were 10% lower than in 2001 and sales of archery licenses were reduced by 13%. Estimates of hunter pressure during the opening weekend of the November gun season were 13% lower then in 2001.

In addition to the October and November gun seasons, a 4-day antlerless gun season was held in early December in 21 of the 41 units where the October gun season was conducted. Similar to the November gun season, there was no snow cover throughout this season. Despite these conditions, 2,615 antlerless deer were harvested.

Harvest registrations showed that archers took 54,133 deer during the bow season, the 11th highest archery harvest. Gun hunters registered 317,888 deer. This was 12% below the gun harvest in 2001 and was the 9th highest on record. The gun season antlered harvest of 126,470 was the 10th highest and the gun season antlerless harvest of 191,377 was the 8th highest. The combined bow and gun season harvest of 155,792 bucks was the 11th highest on record. During the muzzleloader season, 3,905 deer (2,867 antlerless and 1,038 antlered bucks) were harvested. The Chippewa tribes harvested 861 antlered bucks and 1,044 antlerless deer in the ceded territories outside of reservations.

A statewide harvest quota of 400,830 antlerless deer was established for the 2002 season. Each hunter received 1 free Zone T Bonus Antlerless Permit with the purchase of his or her regular gun and bow license. The Zone T permits were valid during any season in the 41 units where the special October and December gun hunts were held. In addition, hunters could purchase additional bonus antlerless-only licenses in these 41 units. More than 563,000 antlerless permits were available in the management units that were not included in Zone T. In all, more than 1.1 million antlerless permits were issued. Antlerless permit holders harvested 165,572 antlerless deer for an overall success rate of 15%.

Nearly 20,000 deer were examined from 104 deer management units during the 2002 gun deer season. In the Northern Forest, the percentages of harvested bucks that were yearlings were 7-9% lower than the 10-year average and the percentages of yearlings among does were also (3-10%) below average. In the eastern and western farmland regions, the percentages of yearlings among does were 2-15% below average in 2002 and the percentages of yearlings among bucks were 10-13% below average.

Antler development of yearling bucks was near normal in the Northern Forest (57% of yearlings had forked antlers compared to a 28-year average of 57%, Figure 3). In the Central Forest, 65% of yearlings had forked antlers, which was 9% higher than the long-term average. Antler development in the farmland regions was similar to the long-term average, 88% of yearlings had forked antlers.

Winter 2003-2003

The winter of 2002-2003 was rated as mild with an average winter severity index (WSI) of 47 for northern Wisconsin. This follows the mild winter of 2001-02 (WSI=29) and the severe winter of 2000-01 (WSI=83). On average, snow depths greater than or equal to 18 inches were recorded on 1 day in 2002-03 and minimum temperatures less than or equal to 0°F occurred on 46 days. Good recruitment in the Northern Forest is anticipated for 2003 and the statewide fall 2003 population is predicted to be about 1.4 million.

2003 Deer Season

Forty-seven management units have been designated as "Zone-T" for the 2003 deer season. This designation signifies that the deer populations in these units are well above the established population goals and a traditional deer season would be unlikely to reduce the populations to within 20% of goal. Special antlerless-only firearm hunts will be held during October 30-

November 2 in all Zone-T units and December 11-14 in 33 southern Zone-T units. One free "Zone-T" antlerless permit will be issued to all hunters with the purchase of their archery and/or gun deer license. These permits will be valid for all deer seasons in any Zone-T unit. During the regular 9-day November firearm season and the late muzzleloader season the regular license will be valid for a deer of either sex in Zone T units.

A 1-day youth antlerless deer firearm hunt will be held on November 1 in all non-Zone T management units. The youth hunt is open to persons 12-15 years of age who have completed hunter education. An adult must accompany hunters.

Chronic Wasting Disease

In response to the discovery of CWD near Mt. Horeb in southwestern Wisconsin in 2002, the state initiated an aggressive disease management program in an attempt to eradicate the disease. A 411-mi^2 disease eradication zone was declared with the goal of removing as many deer as possible from this area. In addition, deer population goals were reduced to 10 deer/mi^2 in an area out to 40 miles from the eradication zone (herd reduction zone). In addition, the DNR enacted an emergency rule in 2002 to ban the use of bait for deer hunting and the artificial feeding of deer to reduce the probability of CWD transmission.

Deer population reduction strategies for 2002 included a combination of 1) out-of-season shooting permits issued to landowners in the eradication zone, 2) extended hunting seasons with liberal bag limits for both the eradication zone and the surrounding management area, and 3) government agency sharpshooters. Shooting by agency sharpshooters began in May. Landowners within the eradication zone were issued permits for shooting during 4 1-week periods in June-September, the fall hunting season, and in February and March. Deer hunting seasons within the eradication zone included an archery season during September 14-January 31 and a gun season during October 24-January 31. An unlimited number of earn-a-buck permits were offered to hunters, hunters were required to take an antlerless deer before they were allowed to harvest a buck. Over 9,200 deer were removed from the eradication zone in 2002-03, about 400 (5%) during the spring 2002 surveillance sampling, nearly 1,500 (16%) during the summer landowner-permit period, nearly 6,700 (72%) during the fall hunting seasons, and about 670 following the close of the hunting season. Agency sharpshooters shot about half of the deer taken during the "winter campaign" and the remainder were shot by landowners. More than 70% of the deer shot in the fall hunting season were antlerless.

An aerial survey was conducted in February-March 2003 to estimate the winter deer population in the disease eradication zone. The survey used a stratified random block design with optimum allocation based on deer habitat suitability. A total of 1,662 deer were counted in the 100 sampled quadrats. The estimated number of "observable" deer ($\pm$ 95% CI) in the eradication zone was 6,116 $\pm$ 932. Assuming observability was between 60 and 70%, best estimates of deer abundance range from 8,700 to 10,200, or 31-37 deer/mi^2 of deer range (21-25 deer/mi^2 of land area). We estimate that the fall and winter kills removed approximately 40% of the fall 2002 population in the disease eradication zone and project a fall 2003 population about 25% lower than in 2002.

The deer season in the management units surrounding the eradication zone included an archery season during September 14-January 31 and a gun season divided into 3 segments, October 24-27, November 23-December 15, and December 21-January 3. Similar to the eradication zone permits were unlimited earn-a-buck. More than 41,500 deer were taken, 75%

were antlerless. Harvest density was nearly 20 deer/mi^2 of deer range. Estimates of the posthunt 2002-03 population were 12% lower than in 2001-02.

An extensive disease surveillance program was conducted in 2002. More than 40,000 deer were tested from across the state. Sample intensity was sufficient to have a high degree of confidence that we would have detected another "Mt. Horeb situation" if it existed. A total of 207 CWD positive deer have been detected to date, 201 within the previously identified disease eradication/intensive harvest zone and 6 in close proximity to this zone. The total affected area is about 800 mi^2. Prevalence was highest (~7%) in a 120-mi^2 area approximately centered on the 3 original cases.

Four captive cervid farms were quarantined in 2002-03 (3 white-tailed deer farms and 1 elk farm). Two of these farms (1 deer and 1 elk) were depopulated. Depopulation of the remaining deer farms is awaiting legal proceedings. Escapes were documented from 2 of these farms including 1 CWD positive white-tailed deer. Conservation wardens conducted an extensive audit of captive white-tailed deer farms prior to the transfer of authority over these farms to the Department of Agriculture, Trade, and Consumer Protection. The audit found the majority of farms were in compliance with existing state laws but a number were in violation of fence standards. White-tailed deer farms contained more than 16,000 deer. More than 400 unrecovered escaped deer were reported from 182 farms during the lifetime of their operation.

An environmental impact statement was completed on the CWD control program. In April 2003 the DNR invited 6 nationally known experts on CWD, wildlife disease control, deer ecology, and human dimensions to review the state's CWD management program. The reviewers were asked to critique the state's initial responses to the discovery of CWD. The review examined the program goals and strategies, surveillance activities, deer population control mechanisms, research plans, and public communication strategies.

Following the program review, the Natural Resources Board approved a package of rules designed to facilitate: 1) the eradication of CWD via depopulation of deer in the CWD affected area, 2) limiting the spread of CWD by deer population reduction in management units surrounding the affected area, and 3) reduce the rate of transmission of CWD by banning baiting and feeding of deer. Legislative committees allowed the emergency rule banning baiting and feeding to expire and have objected to the provision in the Board approved permanent rule related to banning baiting and feeding. Legislation to regulate baiting and feeding is pending.

A comprehensive research plan was developed and cooperative studies with the University of Wisconsin and the USGS National Wildlife Health Laboratory were initiated to investigate: 1) deer dispersal, social behavior, and mortality; 2) disease ecology, transmission, and impacts of control measures; 3) the role of genetics in deer susceptibility; and 4) the human dimensions of CWD management. In addition, we are collaborating with numerous researchers around the nation to address questions of susceptibility of cattle to CWD, risk to human health, the development of additional diagnostic tests, and a variety of other issues.

Providing the public with timely, complete, and accurate information about CWD is a key goal of our disease control plan. During the past year public outreach was accomplished through statewide public meetings, personal communications, local government meetings, web pages, special publications, and news releases. One-on-one communications between department staff and landowners in the affected area is a primary focus of communication efforts this summer and fall.

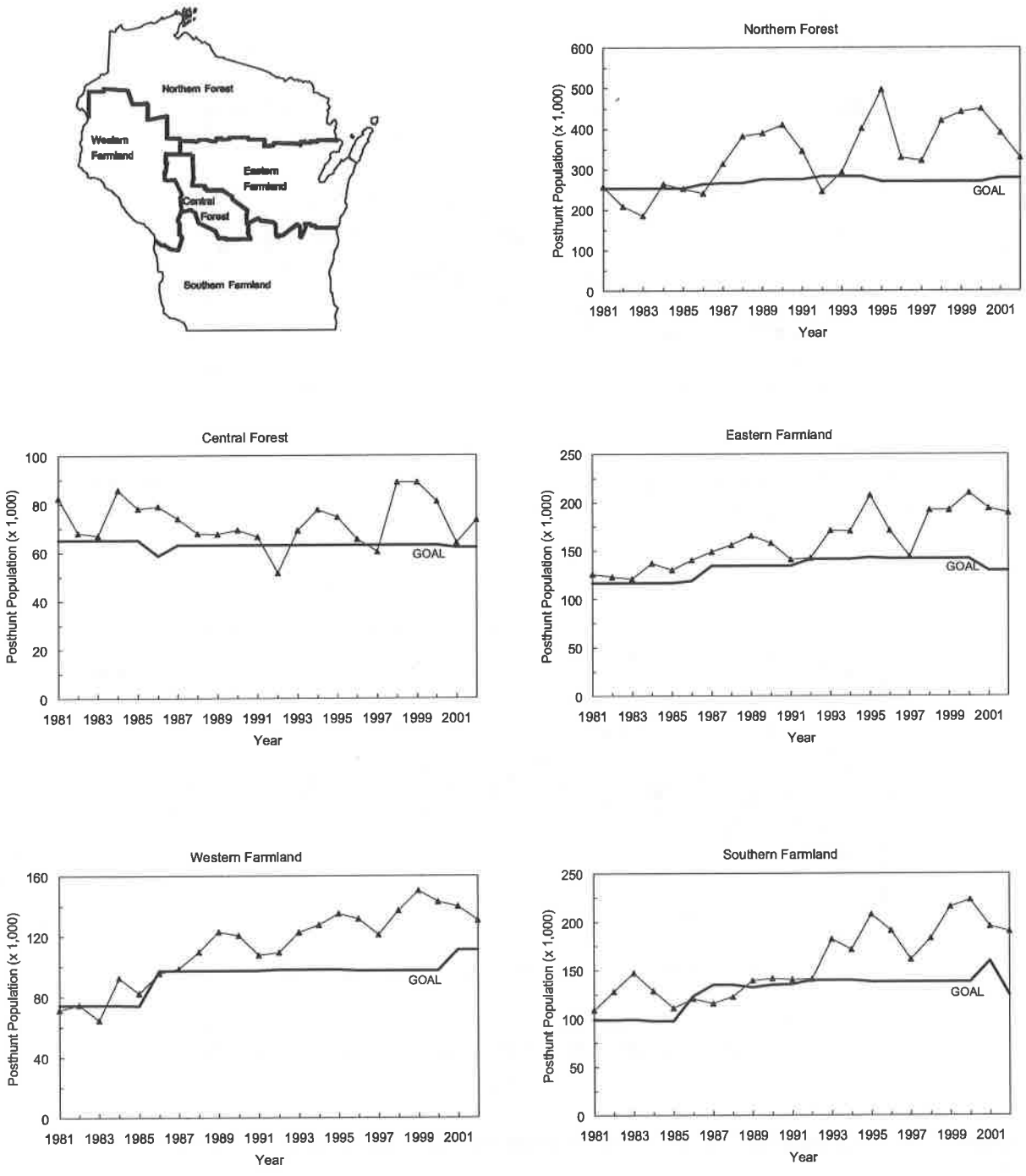


Figure 1. *Regional white-tailed deer population trends in Wisconsin, 1981-2002.*

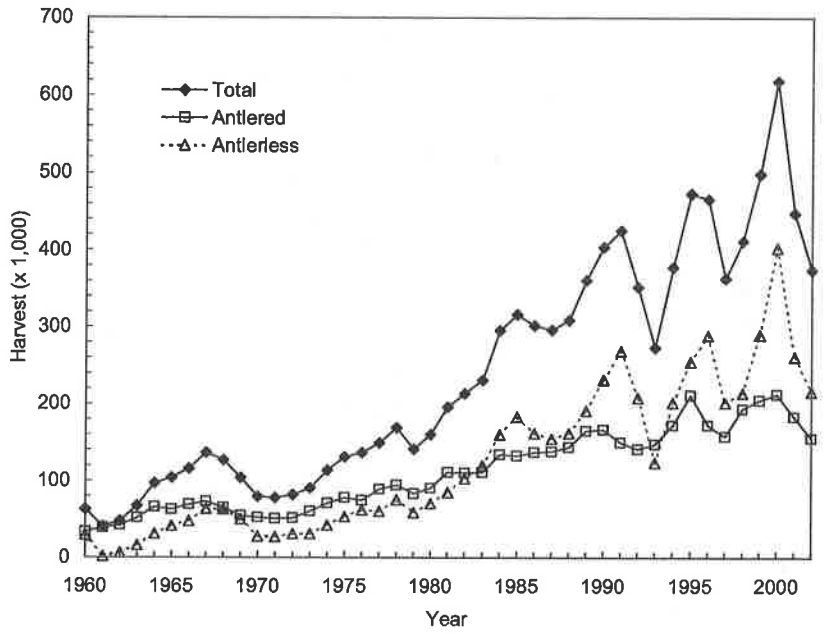


Figure 2. *Number of antlered, antlerless, and total deer harvested during gun and archery seasons in Wisconsin, 1960-2002.*

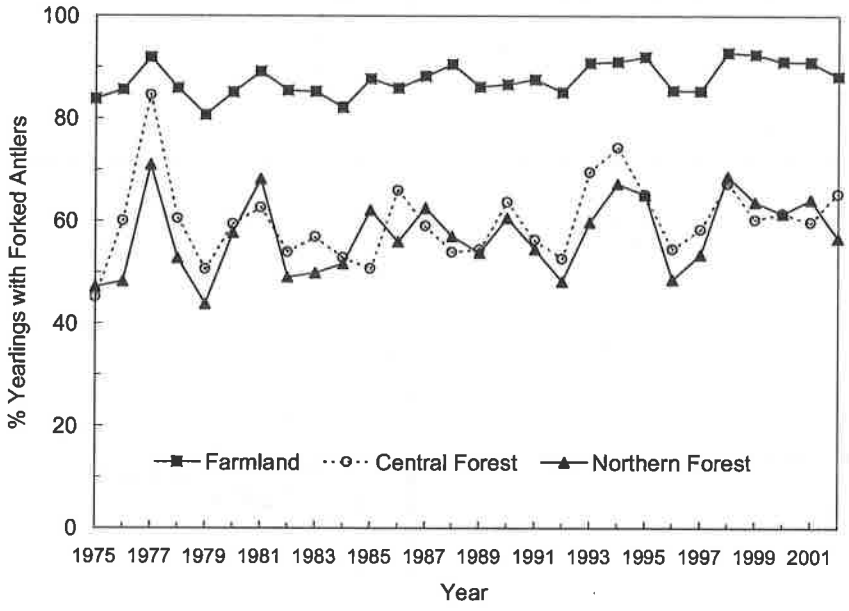


Figure 3. *Yearling antler development in the principle deer habitat regions, 1976-2002.*

STATE

TURKEY

REPORTS

INDIANA STATUS REPORT TO MIDWEST TURKEY GROUP: Bethel Horizons, Dodgeville, WI, August, 2003.

Steven E. Backs, Wildlife Research Biologist
Forest Wildlife Hdqts., 562 DNR Rd., Mitchell, IN 47446
TX: 812-849-4586 (Fax 849-6013) Email: sbacks@dnr.state.in.us

Production

Wild turkey brood production in 2002 was 3.2 poults:hen which was a slight decrease from 3.3 poults/hen recorded in 2001 and only slightly below the average 3.3 poult:hen index of the previous 5 years. The proportion of hens observed with poults remained at 79%. The total number of brood observations increased over the previous year probably reflecting general population growth and range expansion. The 2002 early brood period (June) was abnormally wet/cold weather. However, extensive flooding in drainage habitats may have increased the amount of renesting, possibly delaying the normal peak of hatch in some areas. The early brood period was followed by extended heat and drought conditions that persisted from July through most of October.

Spring Harvest - 2003 Check Station Results

The 34th wild turkey hunt was held 23 April to 11 May 2003, with special hunt days at Camp Atterbury held earlier. Harvest data was collected at 312 check stations throughout the turkey range. Hunters harvested 10,366 wild turkeys in 82 of the 90 counties open to hunting during the 19-day season. This was the first decrease (-2%) in the harvest in since 1982 compared to 10,575 birds harvested in 2002. Counties with high kills (>300 birds harvested) were Switzerland (462), Warrick (396), Harrison (387), Jefferson (383), Perry (373), Orange (322), Crawford (320), Washington (319), Greene (316), Franklin (308), Dearborn (304), and Parke (301) (Table 1). Approximately 55% of the kill occurred during the first 5 days of the season with 38% occurring on weekends (Figure 1). Approximately 72% of the kill occurred by 1000 hrs and 80% by noon with 12% occurring after 1600 hrs (4pm) to sunset (Figure 2). Unlicensed landowners/active military personnel and nonresident hunters respectively accounted for 8% and <2% of the harvest.

Based on spur measurements taken at check stations, juvenile gobblers (1 yr-old birds commonly referred to as "jakes") made up 24% of the 2003 harvest; 2 yr-olds (49%); 3+ yr-olds (28%) (Table 2; Figure 3). Jakes averaged 15.3 pounds while the average 2 yr-old weighed 21.3 lbs and ≥ 3 yr-olds weighed 22.4 lbs. The slight drop in the proportion of jakes was more evident in the older established populations of south central and southeast Indiana. These same regions experienced abnormally high rainfall during the 2002 early brood period (June) that probably reduced summer recruitment.

Reasons for the 2% decrease in harvest are speculative at best. The counties with older, more established turkey populations that traditionally have the higher harvests were generally the counties that had decreases in their harvests. Whether this was the result of lower production due to a cool/wet June 2002 or lower population growth ("leveling off") with over time, accumulative hunter pressure, inclement weather, combinations thereof remains unclear. The number of hunters and their success rate currently cannot be estimated for 2003 until license sales are reconciled but it is suspected that hunter success dropped below 25%, possibly 20 to

22%. Presuming a 21% success rate, the estimated number of hunters afield this spring was around 49,000 hunters (Table 3).

The statewide mean turkey kill/mi^2 of hunting range was 0.32 birds with 1.56 birds/mi^2 of forest cover (21% forest cover in hunt range). The mean harvest and harvest/mi2 of hunting range for counties open to turkey hunting shows regional variation in harvest with the SE and SC portions each accounting for 30% of the total harvest Figure 4.

Proposed Regulation Changes

Spring Turkey Season: Expand hunting range to include Rush and Shelby counties by Spring 2005 (92 of 92 counties open).

Fall Season Proposed: A conservative fall season proposed that includes about a 3 week archery season (1Oct) and 5-day gun season (3rd wk Oct) with fewer counties open to gun hunting. One bird/hunter/season bag.

Table 1. Indiana wild turkey harvest by county, spring 2002 and 2003.

County	2002 Reported* Harvest	Percent of Harvest	2003 Reported* Harvest	Percent of Harvest	Difference from prior year	Percent Change
Adams	0	0.0%	0	0.0%	0	0%
Allen	9	0.1%	7	0.1%	-2	-22%
Bartholomew	85	0.8%	91	0.9%	6	7%
Benton	1	0.0%	7	0.1%	6	600%
Blackford	1	0.0%	1	0.0%	0	0%
Boone	1	0.0%	4	0.0%	3	300%
Brown	218	2.1%	194	1.9%	-24	-11%
Carroll	1	0.0%	4	0.0%	3	300%
Cass	31	0.3%	31	0.3%	0	0%
Clark	296	2.8%	292	2.8%	-4	-1%
Clay	98	0.9%	104	1.0%	6	6%
Clinton	1	0.0%	1	0.0%	0	0%
Crawford	325	3.1%	320	3.1%	-5	-2%
Daviess	79	0.7%	91	0.9%	12	15%
Dearborn	422	4.0%	304	2.9%	-118	-28%
Decatur	31	0.3%	36	0.3%	5	16%
DeKalb	17	0.2%	28	0.3%	11	65%
Delaware	0	0.0%	0	0.0%	0	0%
Dubois	191	1.8%	191	1.8%	0	0%
Elkhart	16	0.2%	17	0.2%	1	6%
Fayette	39	0.4%	46	0.4%	7	18%
Floyd	64	0.6%	63	0.6%	-1	-2%
Fountain	117	1.1%	146	1.4%	29	25%
Franklin	316	3.0%	308	3.0%	-8	-3%
Fulton	26	0.2%	40	0.4%	14	54%
Gibson	76	0.7%	105	1.0%	29	38%
Grant	10	0.1%	1	0.0%	-9	-90%
Greene	346	3.3%	316	3.0%	-30	-9%
Hamilton	0	0.0%	1	0.0%	1	0%
Hancock	1	0.0%	1	0.0%	0	0%
Harrison	387	3.7%	387	3.7%	0	0%
Hendricks	0	0.0%	3	0.0%	3	0%
Henry	0	0.0%	0	0.0%	0	0%
Howard	4	0.0%	3	0.0%	-1	-25%
Huntington	12	0.1%	35	0.3%	23	192%
Jackson	203	1.9%	209	2.0%	6	3%
Jasper	25	0.2%	28	0.3%	3	12%
Jay	0	0.0%	0	0.0%	0	0%
Jefferson	467	4.4%	383	3.7%	-84	-18%
Jennings	317	3.0%	267	2.6%	-50	-16%
Johnson	39	0.4%	19	0.2%	-20	-51%
Knox	38	0.4%	61	0.6%	23	61%
Kosciusko	18	0.2%	22	0.2%	4	22%
Lagrange	45	0.4%	54	0.5%	9	20%
Lake	4	0.0%	2	0.0%	-2	-50%
LaPorte	97	0.9%	122	1.2%	25	26%
Lawrence	315	3.0%	284	2.7%	-31	-10%

** Harvest totals from check station reports.*

Table 1 continued on next page.

Table 1. Indiana wild turkey harvest by county, spring 2002 and 2003.

County	2002 Reported* Harvest	Percent of Harvest	2003 Reported* Harvest	Percent of Harvest	Difference from prior year	Percent Change
Madison	4	0.0%	0	0.0%	-4	-100%
Marion	0	0.0%	0	0.0%	0	0%
Marshall	103	1.0%	125	1.2%	22	21%
Martin	220	2.1%	250	2.4%	30	14%
Miami	19	0.2%	19	0.2%	0	0%
Monroe	204	1.9%	187	1.8%	-17	-8%
Montgomery	41	0.4%	39	0.4%	-2	-5%
Morgan	39	0.4%	52	0.5%	13	33%
Newton	37	0.3%	61	0.6%	24	65%
Noble	11	0.1%	11	0.1%	0	0%
Ohio	198	1.9%	172	1.7%	-26	-13%
Orange	366	3.5%	322	3.1%	-44	-12%
Owen	198	1.9%	221	2.1%	23	12%
Parke	359	3.4%	301	2.9%	-58	-16%
Perry	409	3.9%	373	3.6%	-36	-9%
Pike	238	2.3%	250	2.4%	12	5%
Porter	12	0.1%	11	0.1%	-1	-8%
Posey	56	0.5%	79	0.8%	23	41%
Pulaski	42	0.4%	39	0.4%	-3	-7%
Putnam	127	1.2%	135	1.3%	8	6%
Randolph	0	0.0%	0	0.0%	0	0%
Ripley	326	3.1%	287	2.8%	-39	-12%
Rush	Not Open	NA	Not Open	NA	NA	NA
St. Joseph	48	0.5%	54	0.5%	6	13%
Scott	197	1.9%	182	1.8%	-15	-8%
Shelby	Not Open	NA	Not Open	NA	NA	NA
Spencer	280	2.6%	292	2.8%	12	4%
Starke	121	1.1%	135	1.3%	14	12%
Steuben	107	1.0%	146	1.4%	39	36%
Sullivan	231	2.2%	239	2.3%	8	3%
Switzerland	571	5.4%	462	4.5%	-109	-19%
Tippecanoe	42	0.4%	50	0.5%	8	19%
Tipton	0	0.0%	0	0.0%	0	0%
Union	54	0.5%	49	0.5%	-5	-9%
Vanderburg	6	0.1%	5	0.0%	-1	-17%
Vermillion	96	0.9%	125	1.2%	29	30%
Vigo	95	0.9%	106	1.0%	11	12%
Wabash	51	0.5%	52	0.5%	1	2%
Warren	123	1.2%	134	1.3%	11	9%
Warrick	313	3.0%	396	3.8%	83	27%
Washington	354	3.3%	319	3.1%	-35	-10%
Wayne	37	0.3%	37	0.4%	0	0%
Wells	0	0.0%	3	0.0%	3	0%
White	3	0.0%	15	0.1%	12	400%
Whitley	2	0.0%	2	0.0%	0	0%
Unknown	46	0.4%				
Totals	**10,575**	**100.0%**	**10,366**	**100.0%**	-209	-2%

** Harvest totals from check station reports.*

Figure 1 Harvest by Day of 2003 Season

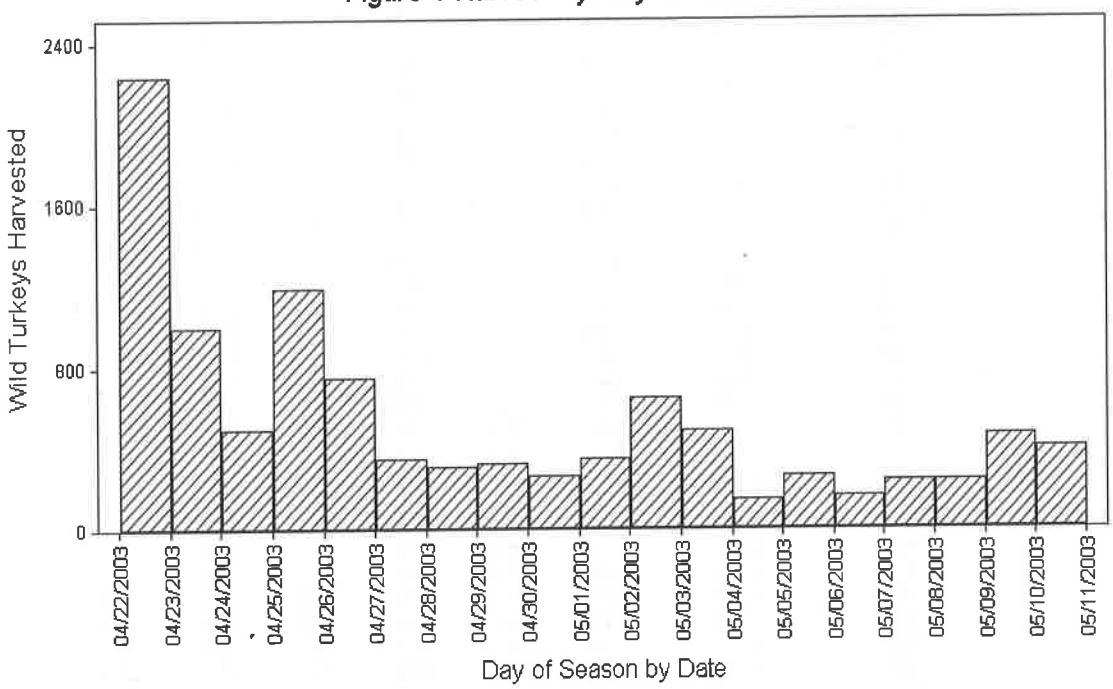


Figure 2 Time of Kill 2003 Turkey Season

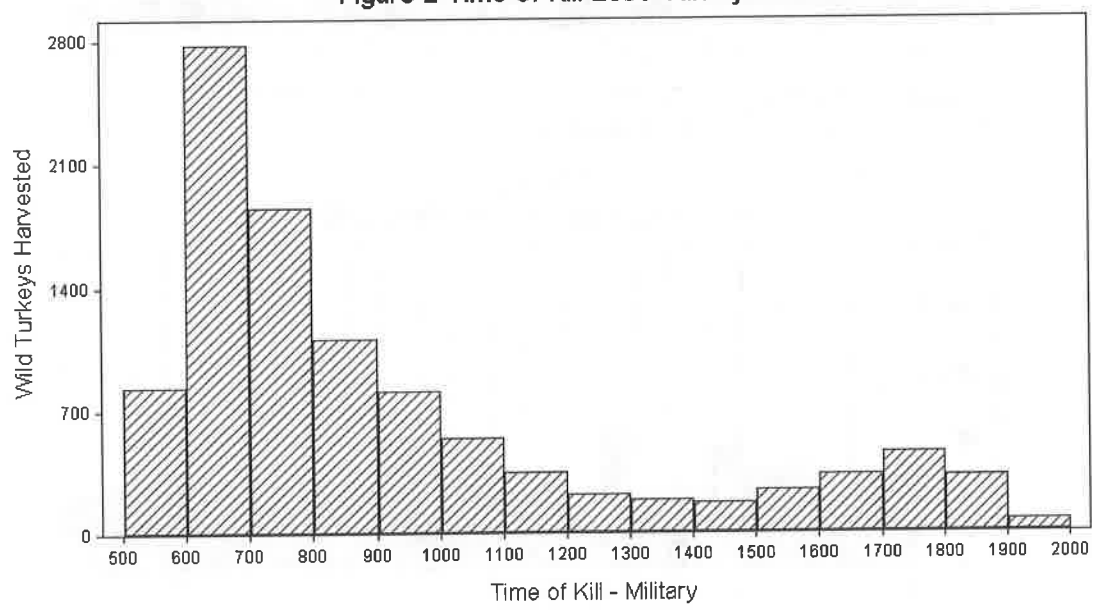


Table 2. Composition of Indiana's spring gobbler harvests, 1970-2003.

Year	Reported Harvest	Age Class Percentages* and Mean Weights (lbs) 1Yr	Wt.	2Yr	Wt	3+Yr	Wt
1970	6	0%		33%		67%	
1971	11	9%		9%		82%	
1972	12	0%		17%		83%	
1973	27	4%		37%		59%	
1974	26	15%		27%		58%	
1975	15	7%		20%		73%	
1976	32	22%		19%		59%	
1977	46	17%		26%		57%	
1978	33	33%		18%		48%	
1979	48	47%		29%		25%	
1980	54	33%		38%		29%	
1981	90	29%		20%		51%	
1982	73	21%		19%		60%	
1983	93	34%		38%		28%	
1984	104	32%		39%		29%	
1985	255	40%		39%		21%	
1986	293	29%		41%		30%	
1987	741	24%		44%		32%	
1988	905	45%	15.4	39%	20.7	16%	21.8
1989	1,359	20%	15.5	63%	20.7	17%	22.2
1990	1,505	31%	15.2	41%	21.0	28%	21.9
1991	2,318	25%	15.5	53%	21.1	22%	22.2
1992	2,531	38%	15.1	43%	20.8	19%	22.2
1993	3,500	18%	15.9	60%	20.9	22%	22.4
1994	3,741	41%	15.2	37%	21.2	22%	22.4
1995	4,706	28%	15.6	55%	20.6	18%	22.1
1996	4,859	24%	15.6	53%	21.6	23%	22.7
1997	5,790	21%	15.7	56%	21.5	24%	22.7
1998	6,384	22%	15.5	51%	21.1	28%	22.5
1999	6,548	25%	15.5	49%	21.1	26%	22.6
2000	7,822	27%	15.2	44%	20.7	28%	21.9
2001	9,975	26%	15.7	50%	20.1	24%	22.1
2002	10,575	27%	15.7	47%	21.3	27%	22.5
Previous Years' Means **		27%	15.5	50%	21.0	23%	22.3
2003	10,366	24%	15.3	49%	21.3	28%	22.4

* Based on longest spur measurement

** Mean percents and weights based on previous 10 years.

Figure 3

Harvest Age Structure 1980-2002

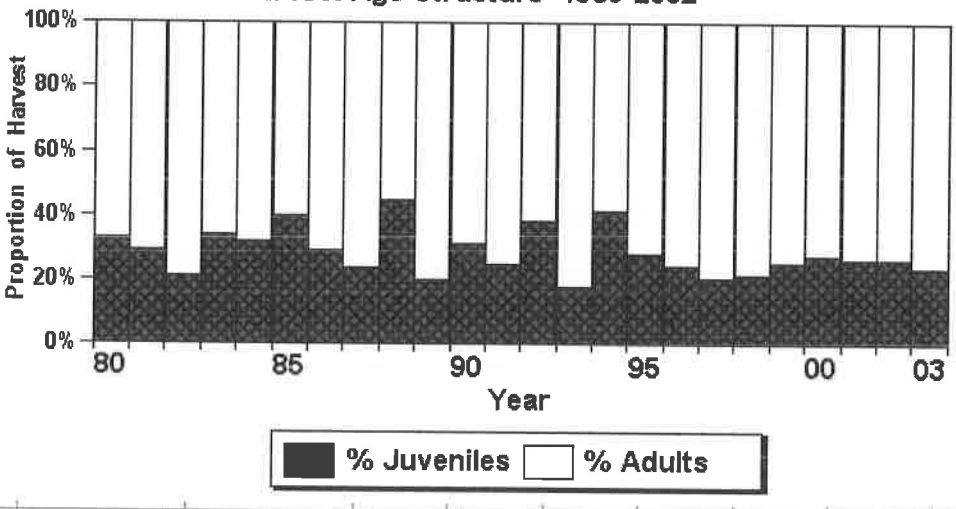


Table 3. Summary of Indiana's wild turkey hunting seasons, 1970 to 2003.

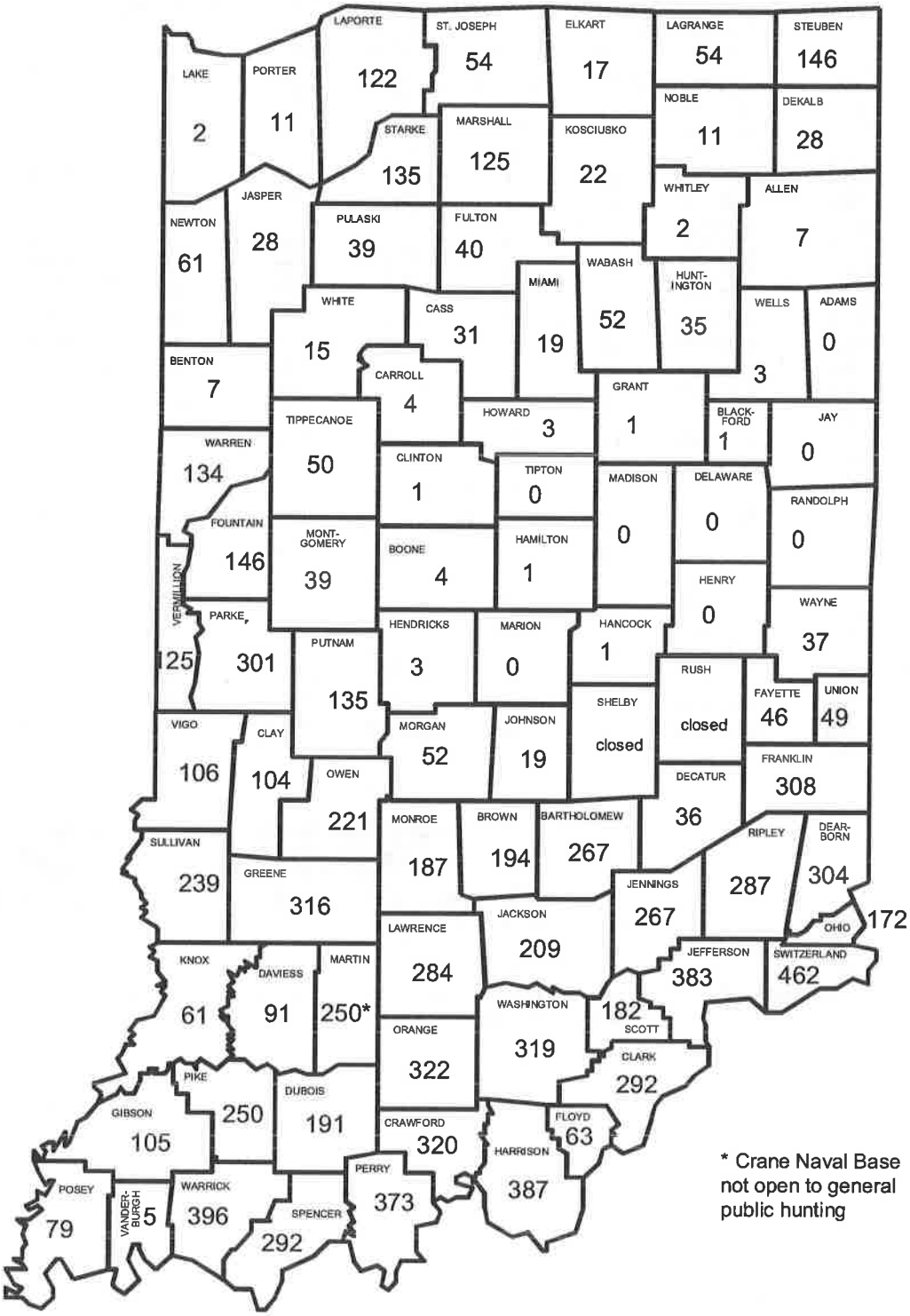
Year	Regular Season Dates	Season Length (Days)	No. of Counties	No. of Permits Sold*	Est. No. of Hunters**	Reported Harvest	Hunter Success
1970	5/2-5/5	4	3	75	62	6	9.7%
1971	5/1-5/5	5	9	298	224	11	4.9%
1972	4/26-4/30	5	9	585	422	12	2.8%
1973	4/25-4/29	5	11	625	503	27	5.4%
1974	4/24-4/28	5	11	665	496	26	5.2%
1975	4/29-5/5	7	11	722	501	15	3.0%
1976	4/29-5/5	7	13	666	500	32	6.4%
1977	4/28-5/5	8	16	668	520	46	8.8%
1978	4/26-5/7	12	18	852	619	33	5.3%
1979	4/25-5/6	12	19	932	860	48	5.6%
1980	4/23-5/4	12	17	706	670	54	8.1%
1981	4/22-5/3	12	18	922	814	90	11.1%
1982	4/21-5/2	12	18	1,125	696	73	10.5%
1983	4/20-5/1	12	18	1,218	984	93	9.5%
1984	4/25-5/6	12	18	1,320	1,205	104	8.6%
1985	4/24-5/5	12	25	1,882	1,302	255	19.6%
1986	4/23-5/4	12	25	2,523	1,648	293	17.8%
1987	4/22-5/6	15	33	3,348	2,619	741	28.3%
1988	4/27-5/11	15	33	10,894	4,677	905	19.4%
1989	4/26-5/10	15	39	11,442	6,068	1,359	22.4%
1990	4/25-5/9	15	39	14,379	7,860	1,505	19.1%
1991	4/24-5/8	15	43	16,387	9,643	2,318	24.0%
1992	4/22-5/6	15	43	18,735	13,110	2,531	19.3%
1993	4/28-5/16	19	48	21,078	15,673	3,500	22.3%
1994	4/27-5/15	19	48	23,357	18,622	3,741	20.1%
1995	4/26-5/14	19	52	28,858	20,861	4,706	22.6%
1996	4/24-5/12	19	52	28,733	21,442	4,859	22.6%
1997	4/23-5/11	19	74	32,703	23,085	5,790	25.1%
1998	4/22-5/10	19	74	32,889	22,876	6,384	27.9%
1999	4/21-5/9	19	74	38,730	27,285	6,548	24.0%
2000	4/26-5/14	19	74	***40,900***	***30,000***	7,822	***26%***
2001	4/25-5/13	19	74	***45,000***	***33,000***	9,975	***30%***
2002	4/24-5/12	19	90	***59,000***	***42,300***	10,575	***25%***
2003	4/23-5/11	19	90		***49,362***	10,366	***21%***

* Since 1987 totals include lifetime licenses and since 1988 youth licenses sold from Jan-May.

** No. of hunters includes those permit holders who hunted >= 1 day and since 1986 has been adjusted for non-licensed landowners or military hunters.

Bold italics = *preliminary estimates based on projecting previous years' trends or means while also accounting for potential effects of regulation changes.*

Figure 4. Indiana 2003 Spring Turkey Harvest by County.



IOWA WILD TURKEY STATUS REPORT 2003

Todd E. Gosselink, Ph.D.
Forest Wildlife Research Biologist
Iowa Department of Natural Resources

Fall 2002 Harvest Survey

In 2002, zones and quotas remained the same as 2001. Shotgun license issue (paid and free combined) increased 2,526 from the 2001 level to 13,751 (Fig. 1) for the 47-day season that ran from 14 October through 30 November, 2002. Over 52% of the shotgun licenses were issued free to landowners. An additional 1,698 archery-only licenses were issued for a season that ran from 1 October through 6 December, 2002 and 23 December, 2002 through 10 January, 2003. Only 7,682 shotgun hunters actually hunted for turkeys during fall 2002 (Fig. 1). Hunter success rates (Fig. 2) in 2002 (49.4 $\pm$ 3.5%) increased from fall of 2001 (44.8 $\pm$ 3.5%). Nonresidents were not permitted to hunt fall turkeys in Iowa this year.

Spring 20003 Harvest Survey

Turkey hunter numbers and turkey harvest have remained similar during the last 3 years, with a slight increase in the number of licenses issued in 2003 from 2002 (Fig. 3). This was the fifteenth year the entire state was open to spring turkey hunting. The 35-day season (14 April through 18 May, 2003) was partitioned into 4 separate seasons: 4, 5, 7, and 19-days in length, respectively. The 4-season format, with an unlimited license quota for all the periods, resulted in 53,662 resident shotgun licenses issued, an increase of 1,236 from 2002. An additional 2,694 archery-only licenses were issued. Success rates reached an all time high of 45.4% since the first regulated hunting season in 1974 (Fig. 2).

This was the fourteenth spring that non-residents were allowed to hunt turkeys in Iowa. Non-residents purchased 2,079 of the 2,148 licenses available. Ninety-three percent of the non-resident hunters that were issued a license actually hunted and they harvested an estimated 1,172 wild turkeys. Non-residents success rates remained higher than residents in harvesting a spring gobbler (60.4% versus 45.4%, respectively). Non-resident turkey hunting license was $100.50, with the second gun season closed to non-residents.

Production Survey

Wild turkey poult production per hen during 2002 (5.4 poults) was the highest since 1997, based on 2,742 observations statewide (Fig. 4). The 10-year average is 5.0 poults/hen. The percent of hens with broods (54%) was the highest since 1999 estimates (Fig. 4) and the 10-year average (50.7%). The number of birds/flock also increased to 11.3, the highest since 1997 (Fig. 4), with a 10-year average of 11.0 birds/flock.

Hunting Accidents

Fall 2002

One turkey hunting accident was reported for the 2002 fall season. A non-licensed hunter shot his father-in-law in the midsection with a shotgun on October 16, 2002. The victim fully recovered.

Spring 2003

No spring turkey hunting accidents were reported in 2003. In 2002, one incident was reported, with one turkey hunter mistaking another hunter's head for game. The victim received pellets to the head, but recovered fully.

Restoration

Restoration efforts within Iowa ended in 2001, with a total of 3,583 Eastern wild turkeys that have been trapped and released at 265 sites at a stocking rate of approximately 5 adult gobblers and 9 hens per site. Nearly all sites are considered successful, however the most recent stockings are still being evaluated. No sites are currently considered to be unsuccessful. Most sites were opened to hunting after populations were established, usually about 5 years post-stocking. Restorations by the IDNR during the last 2 decades have returned wild turkeys to about 95% of the remnant timber stands in the state.

Eastern turkeys adapted so well to habitat conditions in Iowa that by 1980 the IDNR decided to start trading turkeys for other extirpated wildlife. Since 1980, 7,501 Iowa turkeys have been traded for prairie chickens, ruffed grouse, river otters, habitat moneys, and sharp-tailed grouse with 11 states and 1 Canadian province.

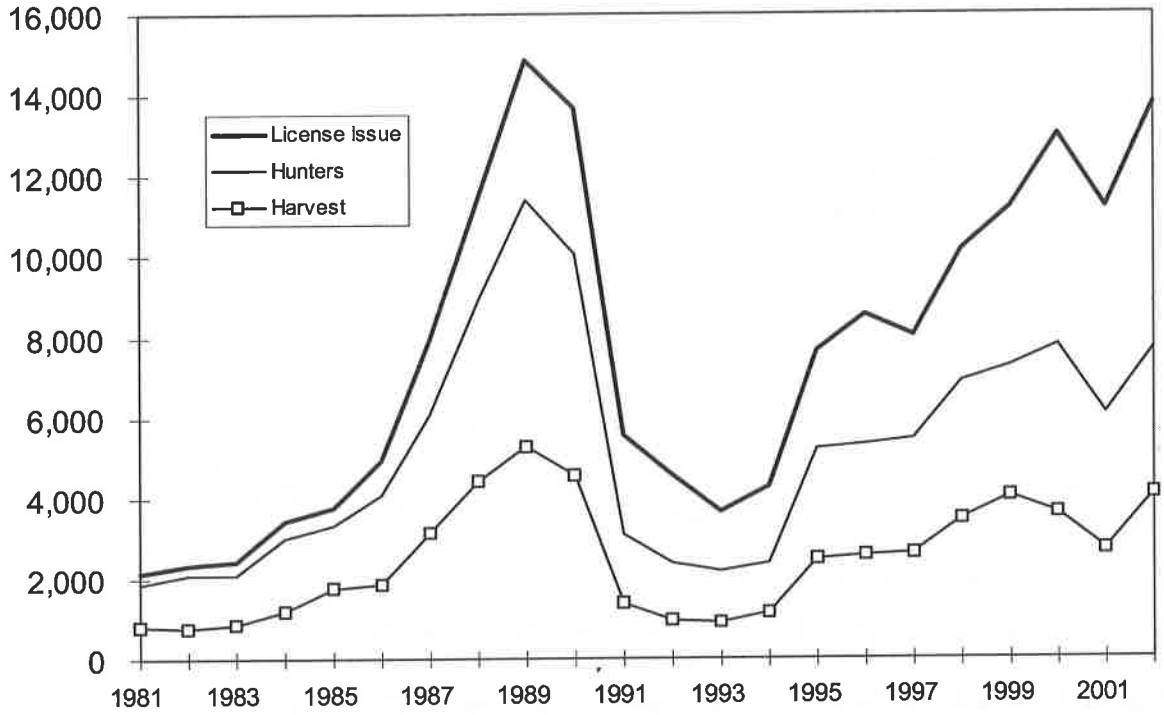


Figure 1. Iowa fall turkey hunting statewide estimates, 1981-2002.

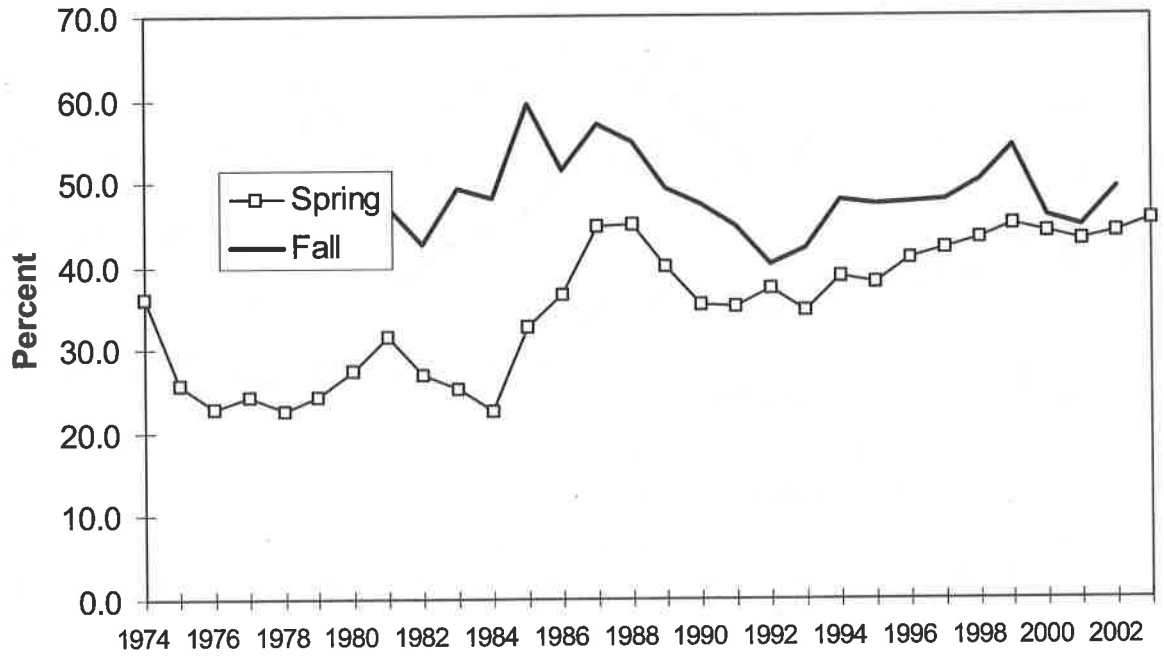


Figure 2. *Iowa turkey harvest statewide success rates, 1974-2003.*

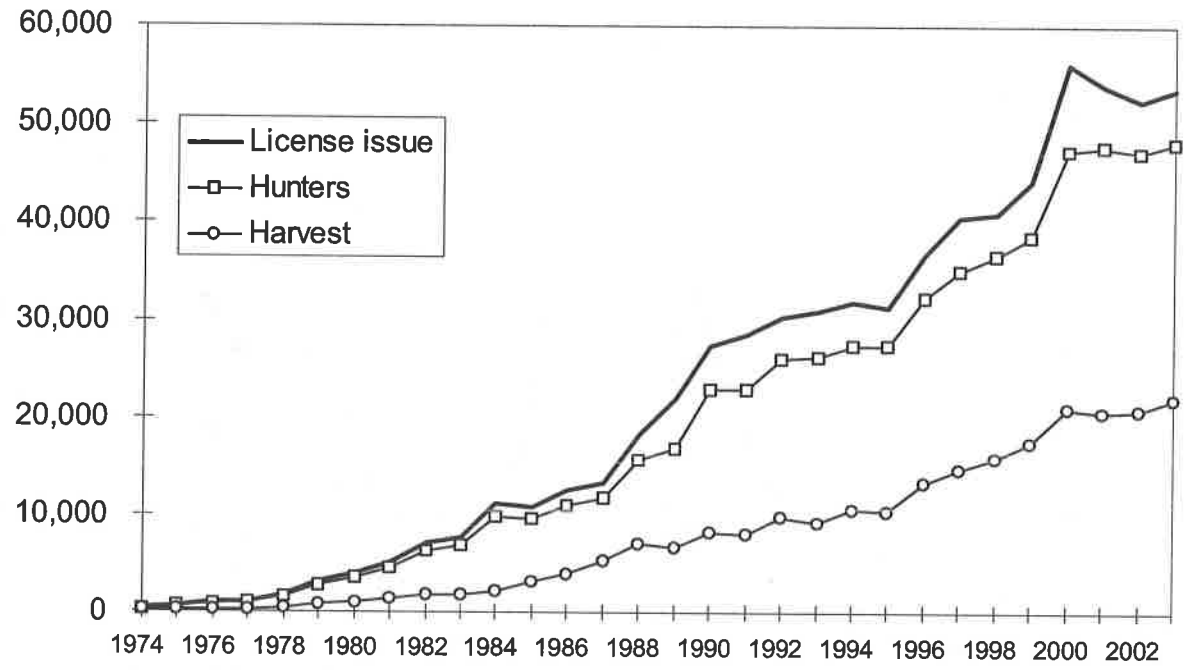


Figure 3. *Iowa spring turkey hunting statewide estimates, 1974-2003.*

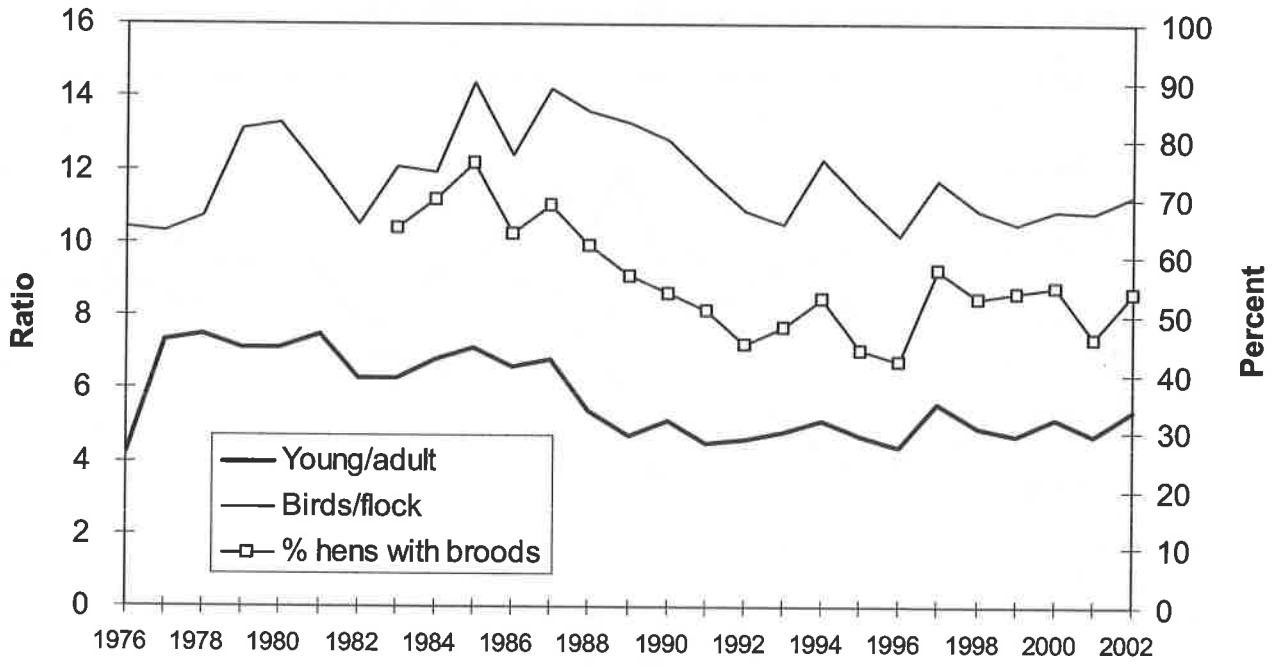


Figure 4. *Iowa turkey brood survey statewide results, 1976-2002.*

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2002 MICHIGAN SPRING TURKEY HUNTER SURVEY

Brian J. Frawley

ABSTRACT

A survey of turkey hunters was conducted following the 2002 spring hunting season to determine turkey harvest and hunter participation. In 2002, an estimated 87,538 hunters harvested 30,867 turkeys. Statewide, 35% of hunters harvested a turkey. Although the 2002 turkey harvest was nearly 4% lower than the 2001 harvest, the number of turkeys harvested was the second largest harvest in Michigan's history. The number of people hunting turkeys decreased by 2%, but hunting effort increased by 11% between 2001 and 2002. Nearly 60% of the hunters rated their hunting experience as excellent, very good, or good. About 86% of the hunters reported that they experienced no or only minor interference from other hunters.

INTRODUCTION

Michigan's spring turkey (*Meleagris gallopavo*) hunting season was based on an area and quota system. This system was set up primarily to distribute hunters across geographic areas (management units) and time (hunt periods). The goal of this system has been to provide hunting opportunities while maintaining acceptable levels of hunter satisfaction (Luukkonen 1998).

In 2002, 78% of the state (44,403 square miles) was open for wild turkey hunting from April 22 through May 31 (Figure 1). The area open for turkey hunting was about 534 square miles more than in 2001 and was the most ever open to spring turkey hunting. The hunting area was divided into 33 management units (Figure 1). Hunting licenses were available for three types of hunts on these management units: (1) licenses for quota hunts on a specific management unit, (2) licenses for a quota hunt on private lands in southern Michigan (Hunt 301), and (3) licenses for an unlimited quota hunt that included all units (Hunt 234).

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A limited number of licenses were available for quota hunts, and they were valid only in a certain management unit and only during a limited time period (7-18 days). Most quota hunts began before May 6 and lasted for 7 days. A private land management unit (Unit ZZ) was created in 2002 that included all private lands in southern Michigan (Figure 1). Hunters who selected Hunt 301 could hunt the first two weeks of the season (April 22-May 5) anywhere on private lands in the Unit ZZ. This new unit and hunt period were created to provide additional hunting opportunity and increased flexibility for hunters who had difficulty finding time to hunt during shorter quota hunts during previous years.

Licenses for Hunt 234 could be used in any management unit except on public lands in the southern Michigan Unit ZZ (Figure 1). Hunt 234 started later than most quota hunts but lasted for 26 days (i.e., May 6-31). An unlimited number of licenses were available for Hunt 234.

A licensed hunter was allowed to take one bearded turkey. The Wildlife Division used a lottery system (random selection process) to distribute hunting licenses among applicants. Each applicant in the lottery could select up to two hunt choices (any combination of quota and unlimited quota hunts). The lottery consisted of two drawings. The first drawing was used to select applicants based on their preferred hunt choice. The second drawing was among applicants that were not successful in the first drawing, and was based on the hunter's second choice for a hunt. Applicants unsuccessful in the two drawings could purchase any unclaimed licenses on a first-come, first-served basis, or choose to purchase a license for the unlimited quota hunt period (Hunt 234).

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. A secondary objective of these surveys was to evaluate whether establishing Hunt 301 in Management Unit ZZ affected hunter effort, hunter success, and license fulfillment rates.

METHODS

Following the 2002 spring turkey hunting season, a questionnaire was sent to 23,935 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, the days spent afield, whether they harvested a turkey, and whether other hunters caused interference during their hunt (none, minor, some irritation, or major problem). Successful hunters were asked to report where their turkeys were taken (public or private land), date 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 ($\geq$2 years old). Finally, hunters 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 33 strata (Cochran 1977). Hunters were stratified based on the management unit where their license was valid (31 management units). Hunters who purchased a license that could be used in multiple management units (hunts 234 and 301) were each treated as a separate stratum. 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 response or nonresponse biases.

Questionnaires were mailed initially during mid-June 2002, and a reminder note and two follow-up questionnaires were mailed to nonrespondents. Although 23,935 people were sent the questionnaire, 216 surveys were undeliverable resulting in an adjusted sample size of 23,719. Questionnaires were returned by 19,635 people, yielding an 83% adjusted response rate.

Results and Discussion

In 2002, 98,306 licenses were purchased for the spring turkey hunting season, an increase of 3% from 2001. Most of the people buying a license were men (94%), and the average age of the license buyers was 43 years (Figure 2). Nearly 7% of the license buyers were younger than 17 years old (N = 7,082).

About 89 ± 1% of these license buyers hunted turkeys (87,538 hunters). Most of these hunters were men (81,867 ± 530), although nearly 6 ± 1% of the hunters were women (5,671 ± 345). Hunter numbers decreased 2% from 2001 (Tables 1 and 2). Counties having more than 2,000 hunters afield included Montcalm, Allegan, Newaygo, Alcona, Barry, Kent, Lake, Tuscola, Jackson, and Ionia (Table 2).

Hunters spent 388,299 days afield pursuing turkeys (4.4 ± 0.1 days/hunter), an increase of 11% from 2001, and harvested 30,867 birds (Figure 3). Counties with hunters taking more than 1,000 turkeys included Montcalm, Kent, and Allegan (Table 2). Hunter success was 35% in 2002, compared to 36% hunter success in 2001. Although the 2002 turkey harvest was about 4% lower than the 2001 harvest, the number of turkeys harvested was the second largest harvest in Michigan's history.

About 37 ± 1% of the harvested birds were juvenile males (11,522 ± 497); 61 ± 1% were adult males (18,897 ± 567), and about 1% were bearded females (355 ± 75). Additionally, the age of a small number of harvested birds (<1%) was unknown (93 ± 41).

Hunting effort and the number of turkeys harvested was generally highest during the earliest hunting periods (Figures 4-7). For turkeys that the harvest date was known, 45% of these birds were taken during April 22-28. Daily hunter success generally was $\geq$6% during April. Daily hunter success remained above >6% until about May 10, but then declined slightly to 5% for the remainder of May. Hunting effort and harvest also generally was greater on the weekends than weekdays, especially on Saturdays.

About 74% of turkey hunters hunted solely on private land, 17% hunted on public land only, and 8% hunted on both private and public lands (Table 3). Of the 30,867 turkeys harvested in 2002, 87 ± 1% of these birds were taken on private land (26,837 ± 638 birds). About 13 ± 1% of the harvest (4,030 ± 340 birds) was taken on public land.

Hunter satisfaction is one measure used to assess the turkey management program in Michigan. Of the 87,538 people hunting turkeys in 2002, 60 ± 1% of the hunters rated their hunting experience as either excellent (13,929 ± 514 hunters), very good (15,053 ± 526), or good (23,423 ± 631) (Table 4). Nearly 21 ± 1% of the hunters rated their experience as fair (18,171 ± 570 hunters). Only 17 ± 1% of the hunters rated their experience as poor (15,036 ± 513 hunters). About 2% of the hunters (1,925 ± 209 hunters) failed to rate their hunting experience.

Hunter satisfaction is affected by many factors such as hunting success and whether hunting activities were completed without interference. In 2002, 62 ± 1% of the hunters reported no hunter interference; 24 ± 1% reported minor interference; 10 ± 1% reported some irritation caused by hunter interference; and 3 ± 1% reported that hunter interference was a major problem (Table 5).

Although interference can affect hunter satisfaction, hunter satisfaction was more closely associated with hunter success (Figure 8). Hunter success declined from 36 to 35% between 2001 and 2002, and hunter satisfaction also declined slightly from 64 to 62%. 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 6).

Compared to 2001, only southern Michigan experienced an increase in the number of people hunting turkey, increased hunting effort, and increased harvest in 2002 (Table 7). This shift in hunting effort was accomplished while maintaining hunter success comparable to 2001. Hunter satisfaction decreased slightly and hunter interference increased slightly between 2001 and 2002 in southern Michigan (Table 8), although these changes were comparable to those observed for the remainder of the state. Hunter satisfaction was similar to previous years, suggesting that regulation changes associated with the creation of Management Unit ZZ were acceptable to most hunters.

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Table 1. Number of hunters, harvest, and hunting efforts during the spring 2002 Michigan turkey hunting season.

Management unit	Licenses available (quota)	Number of applicants[a]	Number of applicants successful in drawing[b]	Licenses sold	Hunters		Hunting efforts (days)		Harvest		Hunter success	
					Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
Hunt periods with quotas												
A	2,200	3,058	2,200	1,663	1,506	60	5,798	578	629	99	42%	6%
AA	1,200	1,795	1,200	896	801	33	2,909	242	216	46	27%	6%
B	4,000	3,402	3,700	2,998	2,644	118	10,436	940	696	155	26%	6%
E	1,700	5,843	1,700	1,304	1,244	33	4,120	288	423	74	34%	6%
F	1,600	2,930	1,600	1,266	1,154	42	4,060	326	368	68	32%	6%
H	1,500	3,420	1,500	1,190	1,099	38	3,784	291	263	59	24%	5%
J	4,000	6,056	4,000	2,944	2,707	96	9,639	787	938	164	35%	6%
K	8,500	26,496	8,500	6,883	6,386	212	22,115	1,759	2,512	394	39%	6%
L	925	1,793	925	729	686	20	2,902	220	190	38	28%	5%
M	1,800	1,210	1,176	930	855	31	3,066	224	262	52	31%	6%
MA	700	422	430	337	310	11	1,159	97	109	19	35%	6%
N	2,000	1,847	1,750	1,393	1,314	38	4,336	324	624	82	47%	6%
O	2,500	1,861	1,661	1,306	1,150	51	4,050	338	365	71	32%	6%
P	320	518	306	260	214	12	910	105	74	14	35%	6%
PB	160	413	160	103	92	4	394	45	22	6	23%	6%
Q	800	1,639	769	588	541	20	2,292	209	131	30	24%	6%
QB	200	430	200	163	143	7	491	51	41	10	29%	7%
QD	40	66	39	28	25	1	85	11	5	2	19%	7%
R	400	977	400	287	265	10	1,115	121	85	17	32%	6%
RA	40	257	40	24	20	2	61	15	9	3	47%	13%

[a]Number of eligible applicants selecting the management unit as their first choice to hunt.
[b]Number of successful applicants was sometimes larger than quota because of system processing errors.
[c]Column totals may not equal statewide totals because of rounding errors. Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 1 (continued). Number of hunters, harvest, and hunting efforts during the spring 2002 Michigan turkey hunting season.

Management unit	Licenses available (quota)	Number of applicants[a]	Number of applicants successful in drawing[b]	Licenses sold	Hunters		Hunting efforts (days)		Harvest		Hunter success	
					Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
Hunt periods with quotas												
S	160	973	160	115	99	6	414	58	24	7	24%	7%
T	1,700	3,002	1,494	1,319	1,180	49	4,629	440	290	66	25%	6%
U	1,200	1,958	1,041	929	832	35	3,369	328	250	51	30%	6%
UA	925	2,051	812	739	671	26	2,318	205	266	43	40%	6%
UB	175	257	129	102	88	4	298	27	24	5	28%	6%
V	2,200	5,349	2,200	1,707	1,558	58	5,292	410	350	83	22%	5%
W	800	1,692	800	587	529	21	1,884	166	188	33	36%	6%
X	1,600	2,379	1,354	1,217	1,128	38	4,779	449	307	64	27%	6%
Y	1,000	1,297	870	754	703	23	2,705	242	190	40	27%	6%
Z	500	888	441	354	316	14	1,240	139	100	21	32%	6%
ZA	600	1,065	576	499	459	16	1,947	199	163	28	36%	6%
Subtotal	45,445	85,344	42,133	33,614	30,719	306	112,597	2,555	10,117	522	33%	2%
Hunt period 301 with quota (Management Unit ZZ; April 22-May 5, 2002)												
L	NA	NA	NA	NA	2,628	186	12,187	1,056	953	115	36%	4%
P	NA	NA	NA	NA	1,043	120	4,633	643	330	68	32%	5%
PB	NA	NA	NA	NA	1,326	135	6,412	788	481	82	36%	5%
Q	NA	NA	NA	NA	2,062	166	8,299	827	788	105	38%	4%
QB	NA	NA	NA	NA	278	63	939	252	132	43	47%	11%
QD	NA	NA	NA	NA	52	27	278	179	19	16	36%	26%
R	NA	NA	NA	NA	1,967	163	8,620	880	755	103	38%	4%

[a]Number of eligible applicants selecting the management unit as their first choice to hunt.
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Table 1 (continued). Number of hunters, harvest, and hunting efforts during the spring 2002 Michigan turkey hunting season.

Management unit	Licenses available (quota)	Number of applicants[a]	Number of applicants successful in drawing[b]	Licenses sold	Hunters		Hunting efforts (days)		Harvest		Hunter success	
					Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
Hunt period 301 with quota (Management Unit ZZ; April 22-May 5, 2002)												
RA	NA	NA	NA	NA	1,269	132	5,487	694	472	82	37%	5%
S	NA	NA	NA	NA	3,760	219	16,429	1,171	1,345	136	36%	3%
T	NA	NA	NA	NA	3,256	205	13,659	1,066	1,297	134	40%	3%
U	NA	NA	NA	NA	2,194	171	9,153	884	1,024	119	47%	4%
UA	NA	NA	NA	NA	915	113	3,836	568	382	73	42%	6%
UB	NA	NA	NA	NA	788	105	3,062	491	311	66	40%	7%
W	NA	NA	NA	NA	2,161	170	8,521	827	873	110	40%	4%
X	NA	NA	NA	NA	1,864	159	7,209	766	722	100	39%	4%
Y	NA	NA	NA	NA	1,873	159	7,733	801	651	96	35%	4%
Z	NA	NA	NA	NA	2,821	192	11,635	987	1,142	126	40%	3%
ZA	NA	NA	NA	NA	1,482	142	6,242	750	585	91	39%	5%
Unknown	NA	NA	NA	NA	991	117	4,345	652	217	56	21%	5%
Subtotal	55,000	37,694	40,168	34,150	30,984	203	138,681	2,225	12,480	336	40%	1%
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)												
A	NA	NA	NA	NA	422	73	2,162	474	126	40	30%	8%
AA	NA	NA	NA	NA	292	61	1,210	319	35	21	12%	7%
B	NA	NA	NA	NA	261	58	1,083	293	48	25	18%	9%
E	NA	NA	NA	NA	2,215	163	10,041	980	587	86	27%	3%
F	NA	NA	NA	NA	753	97	3,498	598	174	47	23%	6%
H	NA	NA	NA	NA	1,062	115	4,607	656	204	51	19%	4%

[a]Number of eligible applicants selecting the management unit as their first choice to hunt.
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					Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)												
J	NA	NA	NA	NA	1,597	140	7,440	920	466	77	29%	4%
K	NA	NA	NA	NA	8,540	281	41,858	1,989	2,593	175	30%	2%
L	NA	NA	NA	NA	753	97	3,811	627	287	61	38%	6%
M	NA	NA	NA	NA	178	48	766	237	65	29	37%	13%
MA	NA	NA	NA	NA	39	22	200	159	13	13	33%	29%
N	NA	NA	NA	NA	231	54	1,049	325	91	34	40%	12%
O	NA	NA	NA	NA	300	62	1,440	394	96	35	32%	10%
P	NA	NA	NA	NA	335	65	1,649	431	131	41	39%	10%
PB	NA	NA	NA	NA	287	61	1,792	511	100	36	35%	10%
Q	NA	NA	NA	NA	700	94	3,137	573	178	48	25%	6%
QB	NA	NA	NA	NA	183	48	909	360	61	28	33%	13%
QD	NA	NA	NA	NA	57	27	231	133	22	17	38%	24%
R	NA	NA	NA	NA	666	92	3,559	634	235	55	35%	7%
RA	NA	NA	NA	NA	422	73	2,097	508	122	40	29%	8%
S	NA	NA	NA	NA	966	110	5,038	734	313	63	32%	5%
T	NA	NA	NA	NA	1,105	117	5,386	744	313	63	28%	5%
U	NA	NA	NA	NA	770	98	4,177	705	287	61	37%	6%
UA	NA	NA	NA	NA	853	103	4,107	667	292	61	34%	6%
UB	NA	NA	NA	NA	248	56	1,170	367	74	31	30%	11%
V	NA	NA	NA	NA	1,192	121	5,060	638	209	52	18%	4%

[a]Number of eligible applicants selecting the management unit as their first choice to hunt.
[b]Number of successful applicants was sometimes larger than quota because of system processing errors.
[c]Column totals may not equal statewide totals because of rounding errors. Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

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Management unit	Licenses available (quota)	Number of applicants[a]	Number of applicants successful in drawing[b]	Licenses sold	Hunters		Hunting efforts (days)		Harvest		Hunter success	
					Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)												
W	NA	NA	NA	NA	770	98	3,572	643	248	56	32%	6%
X	NA	NA	NA	NA	648	90	3,019	539	157	45	24%	6%
Y	NA	NA	NA	NA	635	89	3,546	689	226	54	36%	7%
Z	NA	NA	NA	NA	827	102	3,820	597	231	54	28%	6%
ZA	NA	NA	NA	NA	518	81	2,732	555	222	53	43%	8%
Unknown	NA	NA	NA	NA	531	82	2,854	596	65	29	11%	5%
Subtotal	NA	17,874	23,687	30,542	25,835	226	137,021	2,870	8,271	279	32%	1%
Statewide[c]	100,445	140,912	105,988	98,306	87,538	431	388,299	4,440	30,867	681	35%	1%

[a]Number of eligible applicants selecting the management unit as their first choice to hunt.
[b]Number of successful applicants was sometimes larger than quota because of system processing errors.
[c]Column totals may not equal statewide totals because of rounding errors. Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 2. Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]		Noninterfered hunters[c]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Alcona	2,733	216	10,808	1,136	685	144	25%	5%	47%	6%	84%	4%
Alger	41	26	146	105	10	13	25%	27%	38%	28%	74%	28%
Allegan	2,988	183	13,026	1,008	1,034	115	35%	3%	62%	3%	81%	3%
Alpena	1,275	169	4,424	716	589	122	46%	8%	60%	8%	90%	5%
Antrim	1,127	167	3,877	682	402	111	36%	8%	63%	8%	88%	5%
Arenac	632	94	2,562	494	173	51	27%	7%	57%	8%	87%	5%
Baraga[d]	0	0	0	0	0	0						
Barry	2,714	171	11,981	1,032	848	104	31%	3%	62%	3%	85%	3%
Bay	292	61	1,194	299	56	26	19%	8%	51%	11%	88%	7%
Benzie	580	169	2,379	828	200	95	35%	14%	54%	15%	91%	9%
Berrien	518	82	2,620	512	149	45	29%	7%	69%	7%	82%	6%
Branch	675	95	3,181	550	236	57	35%	7%	65%	7%	82%	5%
Calhoun	1,941	161	8,235	852	616	92	32%	4%	68%	4%	87%	3%
Cass	1,125	120	5,528	750	367	69	33%	5%	69%	5%	84%	4%
Charlevoix	776	143	2,719	575	311	96	40%	10%	55%	10%	90%	6%
Cheboygan	874	150	3,227	623	209	79	24%	8%	52%	9%	90%	5%
Chippewa[d]	0	0	0	0	0	0						
Clare	1,526	137	5,979	664	446	80	29%	5%	51%	5%	88%	3%
Clinton	1,735	147	7,848	838	642	91	37%	4%	69%	4%	81%	3%
Crawford	1,163	107	4,462	574	207	54	18%	4%	48%	6%	89%	4%
Delta	1,178	92	4,260	506	396	75	34%	6%	61%	6%	89%	4%

[a]Number 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.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.
[c]Proportion of hunters that indicated that they experienced no or only minor interference from other hunters.
[d]Not open for turkey hunting.

Table 2 (continued). Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]		Noninterfered hunters[c]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Dickinson	998	68	3,664	345	322	59	32%	6%	49%	6%	86%	4%
Eaton	1,372	136	5,914	735	477	81	35%	5%	67%	5%	86%	4%
Emmet	612	129	2,378	612	203	74	33%	10%	64%	10%	87%	8%
Genesee	549	85	2,313	441	149	45	27%	7%	66%	7%	86%	5%
Gladwin	1,289	126	5,192	683	363	73	28%	5%	56%	5%	85%	4%
Gogebic[d]	0	0	0	0	0	0						
Gd. Traverse	1,024	227	3,989	940	327	138	32%	11%	50%	11%	92%	5%
Gratiot	1,186	116	4,642	585	470	75	40%	5%	63%	5%	85%	4%
Hillsdale	1,152	124	4,880	649	385	73	33%	5%	63%	5%	77%	5%
Houghton[d]	0	0	0	0	0	0						
Huron	1,201	131	5,189	697	320	68	27%	5%	57%	6%	84%	4%
Ingham	1,219	130	5,367	725	491	84	40%	5%	67%	5%	88%	4%
Ionia	2,021	159	8,715	875	710	97	35%	4%	62%	4%	84%	3%
Iosco	1,590	129	6,182	668	416	78	26%	4%	53%	5%	92%	3%
Iron	356	35	1,351	196	122	23	34%	6%	52%	7%	81%	5%
Isabella	1,718	148	6,509	728	668	94	39%	4%	66%	4%	89%	3%
Jackson	2,086	167	8,753	864	703	99	34%	4%	66%	4%	80%	3%
Kalamazoo	1,299	130	5,272	618	525	84	40%	5%	73%	5%	90%	3%
Kalkaska	1,047	197	4,659	1,098	287	120	27%	9%	53%	9%	86%	6%
Kent	2,705	186	10,512	900	1,047	118	39%	3%	69%	3%	85%	3%
Keweenaw[d]	0	0	0	0	0	0						

[a]Number 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.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.
[c]Proportion of hunters that indicated that they experienced no or only minor interference from other hunters.
[d]Not open for turkey hunting.

Table 2 (continued). Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]		Noninterfered hunters[c]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Lake	2,451	328	9,265	1,322	619	202	25%	7%	52%	7%	87%	4%
Lapeer	1,932	154	8,039	838	739	99	38%	4%	70%	4%	84%	3%
Leelanau	361	106	1,467	448	189	63	39%	14%	64%	12%	90%	6%
Lenawee	545	88	2,256	442	137	44	25%	7%	56%	8%	82%	6%
Livingston	963	115	3,664	552	289	65	30%	6%	66%	6%	83%	5%
Luce[d]	0	0	0	0	0	0						
Mackinac[d]	0	0	0	0	0	0						
Macomb	130	41	426	150	24	18	19%	12%	76%	13%	91%	9%
Manistee	940	187	3,670	739	322	138	34%	11%	56%	10%	90%	6%
Marquette	282	81	1,038	298	55	31	19%	10%	60%	14%	94%	6%
Mason	1,098	225	4,538	951	331	131	30%	10%	55%	10%	85%	8%
Mecosta	1,730	266	6,655	1,099	727	185	42%	8%	62%	7%	88%	5%
Menominee	1,512	76	5,361	476	715	89	47%	6%	65%	5%	88%	4%
Midland	1,439	131	6,130	738	585	86	41%	5%	59%	5%	87%	3%
Missaukee	997	218	3,532	859	362	147	36%	11%	60%	11%	86%	7%
Monroe	97	33	400	180	36	20	37%	17%	67%	16%	83%	13%
Montcalm	3,060	192	13,407	1,079	1,247	130	41%	3%	69%	3%	87%	2%
Montmorency	1,327	123	4,878	554	292	64	22%	5%	42%	6%	91%	3%
Muskegon	1,677	150	6,880	775	602	89	36%	4%	64%	5%	81%	4%
Newaygo	2,745	295	11,425	1,329	767	149	28%	5%	56%	6%	85%	4%
Oakland	471	70	1,793	386	178	45	38%	7%	69%	7%	85%	6%

[a]Number 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.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.
[c]Proportion of hunters that indicated that they experienced no or only minor interference from other hunters.
[d]Not open for turkey hunting.

Table 2 (continued). Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]		Noninterfered hunters[c]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL	%	95% CL
Oceana	1,365	222	5,507	955	479	129	35%	8%	61%	8%	75%	8%
Ogemaw	1,165	139	4,208	680	301	75	26%	6%	52%	7%	91%	3%
Ontonagon[d]	0	0	0	0	0	0						
Osceola	1,435	256	4,990	903	588	181	41%	9%	62%	9%	89%	5%
Oscoda	1,411	159	5,300	746	249	80	18%	5%	42%	6%	88%	4%
Otsego	1,047	164	4,408	881	267	93	26%	8%	39%	9%	87%	6%
Ottawa	1,124	120	4,456	606	396	72	35%	5%	70%	5%	82%	4%
Presque Isle	1,001	117	4,468	706	297	76	30%	7%	41%	7%	85%	5%
Roscommon	1,115	115	4,113	527	288	64	26%	5%	50%	6%	83%	4%
Saginaw	1,928	155	8,552	876	743	98	39%	4%	62%	4%	88%	3%
St. Clair	1,039	113	4,344	578	293	62	28%	5%	60%	5%	81%	4%
St. Joseph	852	102	4,049	630	267	57	31%	6%	68%	6%	85%	4%
Sanilac	1,989	165	7,977	832	670	98	34%	4%	62%	4%	84%	3%
Schoolcraft[d]	0	0	0	0	0	0						
Shiawassee	1,135	124	4,869	671	391	73	34%	5%	69%	5%	82%	4%
Tuscola	2,148	166	8,768	860	768	106	36%	4%	65%	4%	84%	3%
Van Buren	1,328	133	6,365	797	455	79	34%	5%	67%	5%	79%	4%
Washtenaw	649	93	2,268	407	138	46	21%	6%	64%	7%	80%	6%
Wayne	29	20	161	129	9	12	33%	33%	85%	24%	100%	0%
Wexford	1,651	291	6,189	1,143	366	147	22%	8%	49%	9%	89%	5%
Unknown	2,121	219	8,555	1,000	174	54	8%	2%	42%	5%	78%	5%

[a]Number 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.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.
[c]Proportion of hunters that indicated that they experienced no or only minor interference from other hunters.
[d]Not open for turkey hunting.

Table 3. Number and proportion of hunters hunting on private and public lands during the spring 2002 Michigan turkey hunting season.

Management unit	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
Hunt periods with quotas																
A	1,139	95	76%	6%	165	61	11%	4%	202	67	13%	4%	0	0	0%	0%
AA	281	50	35%	6%	372	53	46%	6%	134	38	17%	5%	13	13	2%	2%
B	1,935	176	73%	6%	557	143	21%	5%	139	77	5%	3%	13	24	0%	1%
E	685	79	55%	6%	381	72	31%	6%	173	54	14%	4%	6	11	0%	1%
F	541	74	47%	6%	441	71	38%	6%	162	50	14%	4%	11	14	1%	1%
H	209	54	19%	5%	734	69	67%	6%	145	46	13%	4%	11	13	1%	1%
J	1,294	174	48%	6%	914	163	34%	6%	475	129	18%	5%	24	31	1%	1%
K	3,402	409	53%	6%	1,963	369	31%	6%	995	287	16%	4%	26	50	0%	1%
L	233	40	34%	6%	294	42	43%	6%	158	35	23%	5%	0	0	0%	0%
M	430	57	50%	6%	294	53	34%	6%	131	40	15%	5%	0	0	0%	0%
MA	166	20	54%	6%	87	18	28%	6%	57	15	18%	5%	0	0	0%	0%
N	939	77	71%	6%	218	60	17%	5%	151	51	12%	4%	6	11	0%	1%
O	827	76	72%	6%	210	58	18%	5%	102	43	9%	4%	12	15	1%	1%
P	92	15	43%	7%	96	15	45%	7%	24	9	11%	4%	2	3	1%	1%
PB	71	7	77%	6%	12	5	13%	5%	9	4	10%	5%	0	0	0%	0%
Q	269	36	50%	6%	212	35	39%	6%	57	22	11%	4%	3	6	1%	1%
QB	41	10	29%	7%	88	11	61%	7%	14	6	10%	4%	0	0	0%	0%
QD	15	2	62%	8%	5	2	19%	7%	5	2	19%	7%	0	0	0%	0%
R	171	18	65%	6%	60	15	23%	6%	31	11	12%	4%	2	3	1%	1%
RA	20	2	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%

[a]Licenses for the unlimited quota hunt were valid only on private lands in the southern Michigan zone (Figure 1).
[b]Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 3 (continued). Number and proportion of hunters hunting on private and public lands during the spring 2002 Michigan turkey hunting season.

Management unit	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
Hunt periods with quotas																
S	88	7	89%	5%	6	4	6%	4%	5	3	5%	3%	0	0	0%	0%
T	514	78	44%	6%	508	78	43%	6%	157	52	13%	4%	0	0	0%	0%
U	411	57	49%	6%	300	53	36%	6%	111	37	13%	4%	9	11	1%	1%
UA	330	44	49%	6%	255	42	38%	6%	83	28	12%	4%	4	6	1%	1%
UB	68	6	77%	5%	15	4	17%	5%	5	3	6%	3%	0	0	0%	0%
V	589	98	38%	6%	827	103	53%	6%	142	57	9%	4%	0	0	0%	0%
W	379	34	72%	6%	104	27	20%	5%	42	18	8%	3%	3	5	1%	1%
X	413	69	37%	6%	642	73	57%	6%	61	32	5%	3%	11	14	1%	1%
Y	249	43	35%	6%	389	46	55%	6%	62	25	9%	4%	4	7	1%	1%
Z	178	23	56%	7%	115	21	37%	7%	23	11	7%	4%	0	0	0%	0%
ZA	172	29	38%	6%	235	30	51%	6%	49	18	11%	4%	3	5	1%	1%
Subtotal	16,153	551	53%	2%	10,500	499	34%	2%	3,903	371	13%	1%	163	75	1%	0%
Hunt period 301 with quota (Management Unit ZZ; April 22-May 5, 2002)																
L	2,628	186	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
P	1,043	120	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
PB	1,326	135	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Q	2,062	166	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
QB	278	63	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
QD	52	27	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
R	1,967	163	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%

[a]Licenses for the unlimited quota hunt were valid only on private lands in the southern Michigan zone (Figure 1).
[b]Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 3 (continued). Number and proportion of hunters hunting on private and public lands during the spring 2002 Michigan turkey hunting season.

Management unit	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
Hunt period 301 with quota (Management Unit ZZ; April 22-May 5, 2002)																
RA	1,269	132	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
S	3,760	219	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
T	3,256	205	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
U	2,194	171	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
UA	915	113	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
UB	788	105	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
W	2,161	170	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
X	1,864	159	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Y	1,873	159	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Z	2,821	192	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
ZA	1,482	142	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Unknown	991	117	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Subtotal	30,984	203	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)																
A	244	56	58%	9%	122	40	29%	8%	57	27	13%	6%	0	0	0%	0%
AA	104	37	36%	10%	157	45	54%	11%	22	17	7%	6%	9	11	3%	4%
B	170	47	65%	11%	61	28	23%	9%	30	20	12%	7%	0	0	0%	0%
E	1,353	129	61%	4%	587	86	27%	3%	261	58	12%	2%	9	11	0%	0%
F	309	63	41%	6%	335	65	45%	7%	100	36	13%	4%	9	11	1%	1%
H	235	55	22%	5%	709	94	67%	5%	117	39	11%	3%	0	0	0%	0%

[a]Licenses for the unlimited quota hunt were valid only on private lands in the southern Michigan zone (Figure 1).
[b]Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 3 (continued). Number and proportion of hunters hunting on private and public lands during the spring 2002 Michigan turkey hunting season.

Management unit	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
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)																
J	888	105	56%	4%	439	75	28%	4%	261	58	16%	3%	9	11	1%	1%
K	4,642	225	54%	2%	2,432	170	28%	2%	1,440	133	17%	1%	26	18	0%	0%
L[a]	753	97	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
M	96	35	54%	14%	52	26	29%	12%	26	18	15%	10%	4	7	2%	4%
MA	26	18	67%	29%	9	11	22%	25%	4	7	11%	19%	0	0	0%	0%
N	174	47	75%	10%	35	21	15%	9%	22	17	9%	7%	0	0	0%	0%
O	144	43	48%	10%	113	38	38%	10%	39	22	13%	7%	4	7	1%	2%
P[a]	335	65	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
PB[a]	287	61	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Q[a]	700	94	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
QB[a]	183	48	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
QD[a]	57	27	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
R[a]	666	92	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
RA[a]	422	73	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
S[a]	966	110	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
T[a]	1,105	117	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
U	744	97	97%	2%	9	11	1%	1%	4	7	1%	1%	13	13	2%	2%
UA	653	91	77%	5%	144	43	17%	5%	48	25	6%	3%	9	11	1%	1%
UB[a]	248	56	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
V	479	78	40%	5%	548	83	46%	5%	161	45	14%	4%	4	7	0%	1%

[a]Licenses for the unlimited quota hunt were valid only on private lands in the southern Michigan zone (Figure 1).
[b]Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 3 (continued). Number and proportion of hunters hunting on private and public lands during the spring 2002 Michigan turkey hunting season.

Management unit	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
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)																
W[a]	770	98	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
X[a]	648	90	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Y[a]	635	89	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Z[a]	827	102	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
ZA[a]	518	81	100%	0%	0	0	0%	0%	0	0	0%	0%	0	0	0%	0%
Unknown	370	69	70%	7%	74	31	14%	5%	35	21	7%	4%	48	25	9%	4%
Subtotal	17,655	310	68%	1%	4,764	228	18%	1%	3,272	194	13%	1%	144	43	1%	0%
Statewide[b]	64,792	664	74%	1%	15,264	549	17%	1%	7,175	418	8%	0%	307	86	0%	0%

[a]Licenses for the unlimited quota hunt were valid only on private lands in the southern Michigan zone (Figure 1).
[b]Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 4. How hunters rated their hunting experience during the spring 2002 Michigan turkey hunting season.

Management unit	Satisfaction level (% of hunters)[a]					
	Excellent	Very good	Good	Fair	Poor	No answer
Hunt periods with quotas						
A	12%	18%	23%	23%	22%	2%
AA	10%	12%	24%	24%	28%	2%
B	7%	12%	25%	26%	28%	2%
E	16%	15%	28%	17%	22%	2%
F	14%	14%	26%	25%	20%	2%
H	13%	15%	23%	23%	22%	2%
J	11%	18%	27%	21%	22%	1%
K	19%	17%	30%	20%	11%	3%
L	14%	12%	27%	29%	17%	2%
M	12%	11%	25%	23%	26%	3%
MA	11%	19%	19%	26%	23%	2%
N	17%	17%	28%	19%	18%	2%
O	16%	12%	29%	20%	18%	4%
P	17%	19%	32%	20%	12%	1%
PB	20%	3%	20%	38%	17%	2%
Q	20%	15%	30%	19%	12%	4%
QB	23%	19%	29%	18%	9%	4%
QD	19%	24%	10%	24%	14%	10%
R	19%	13%	31%	18%	18%	2%
RA	20%	40%	13%	13%	13%	0%
S	16%	11%	42%	10%	18%	3%
T	11%	17%	28%	25%	17%	2%
U	19%	14%	23%	26%	16%	2%
UA	19%	17%	24%	18%	17%	4%
UB	14%	17%	29%	25%	15%	0%
V	13%	11%	24%	19%	33%	0%
W	13%	18%	26%	20%	21%	1%
X	14%	16%	28%	22%	16%	4%
Y	19%	17%	26%	22%	15%	2%
Z	14%	12%	33%	21%	17%	2%
ZA	13%	21%	28%	20%	16%	3%
Subtotal	15%	15%	27%	22%	19%	2%

[a]Row totals may not equal 100% because of rounding errors.

Table 4 (continued). How hunters rated their hunting experience during the spring 2002 Michigan turkey hunting season.

Management unit	Satisfaction level (% of hunters)[a]					
	Excellent	Very good	Good	Fair	Poor	No answer
Hunt period 301 with quota (Management Unit ZZ; April 22-May 5, 2002)						
L	17%	18%	31%	20%	12%	1%
P	19%	20%	34%	14%	11%	1%
PB	16%	26%	30%	19%	8%	1%
Q	23%	20%	26%	18%	11%	2%
QB	36%	24%	19%	15%	7%	0%
QD	27%	27%	36%	0%	0%	9%
R	18%	23%	29%	19%	9%	2%
RA	20%	20%	29%	19%	11%	1%
S	20%	19%	27%	17%	16%	1%
T	20%	17%	28%	21%	13%	1%
U	23%	23%	27%	16%	10%	2%
UA	22%	25%	25%	18%	8%	3%
UB	19%	25%	29%	14%	13%	0%
W	20%	17%	28%	20%	14%	2%
X	23%	20%	29%	15%	11%	3%
Y	19%	21%	25%	21%	11%	3%
Z	23%	21%	25%	19%	11%	2%
ZA	19%	19%	24%	24%	13%	1%
Unknown	14%	14%	25%	21%	20%	5%
Subtotal	20%	20%	27%	19%	12%	2%

[a]Row totals may not equal 100% because of rounding errors.

Table 4 (continued). How hunters rated their hunting experience during the spring 2002 Michigan turkey hunting season.

Management unit	Satisfaction level (% of hunters)[a]					
	Excellent	Very good	Good	Fair	Poor	No answer
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)						
A	5%	13%	21%	28%	29%	4%
AA	7%	10%	21%	15%	45%	1%
B	8%	18%	25%	22%	23%	3%
E	8%	14%	28%	24%	24%	2%
F	14%	17%	23%	21%	24%	1%
H	8%	10%	25%	27%	27%	2%
J	12%	14%	24%	25%	23%	1%
K	10%	15%	25%	24%	24%	2%
L	17%	20%	29%	16%	14%	3%
M	12%	20%	22%	37%	7%	2%
MA	0%	22%	33%	33%	11%	0%
N	21%	15%	43%	13%	8%	0%
O	16%	13%	36%	22%	13%	0%
P	14%	22%	27%	19%	17%	0%
PB	23%	24%	23%	15%	15%	0%
Q	14%	15%	25%	18%	23%	5%
QB	21%	17%	26%	17%	17%	2%
QD	31%	15%	8%	38%	0%	8%
R	18%	22%	30%	14%	10%	5%
RA	16%	19%	30%	23%	7%	5%
S	18%	15%	28%	22%	14%	2%
T	11%	19%	27%	22%	18%	3%
U	18%	22%	29%	19%	11%	1%
UA	11%	19%	31%	18%	20%	1%
UB	11%	25%	25%	18%	19%	4%
V	8%	13%	24%	22%	30%	3%
W	14%	16%	24%	23%	20%	3%
X	15%	17%	26%	23%	15%	3%
Y	21%	21%	21%	19%	14%	4%
Z	16%	22%	25%	18%	11%	7%
ZA	20%	18%	33%	18%	10%	1%
Unknown	7%	15%	21%	23%	28%	6%
Subtotal	13%	16%	26%	22%	21%	3%
Statewide	16%	17%	27%	21%	17%	2%

[a]Row totals may not equal 100% because of rounding errors.

Table 5. Amount of hunter interference experienced by turkey hunters during the spring 2002 Michigan turkey hunting season.

Management unit	Interference level (% of hunters)[a]				
	None	Minor	Some irritation	Major problem	No answer
Hunt periods with quotas					
A	68%	17%	10%	2%	2%
AA	61%	26%	10%	2%	1%
B	63%	21%	11%	3%	3%
E	66%	23%	8%	2%	1%
F	63%	26%	7%	1%	2%
H	60%	27%	8%	3%	2%
J	64%	25%	8%	1%	2%
K	65%	23%	8%	2%	2%
L	52%	28%	14%	4%	3%
M	60%	24%	11%	2%	2%
MA	59%	21%	16%	4%	0%
N	66%	21%	10%	1%	2%
O	63%	25%	7%	3%	3%
P	55%	27%	14%	2%	2%
PB	73%	17%	5%	5%	0%
Q	55%	30%	11%	3%	2%
QB	66%	21%	9%	3%	1%
QD	67%	19%	10%	0%	5%
R	65%	21%	8%	3%	3%
RA	67%	20%	7%	7%	0%
S	56%	19%	18%	2%	5%
T	56%	30%	8%	4%	2%
U	58%	26%	12%	3%	2%
UA	63%	23%	9%	3%	2%
UB	65%	18%	11%	5%	2%
V	76%	15%	8%	0%	0%
W	65%	25%	7%	2%	1%
X	50%	27%	13%	6%	3%
Y	58%	27%	10%	4%	2%
Z	65%	18%	9%	5%	3%
ZA	56%	30%	9%	3%	2%
Subtotal	63%	24%	9%	2%	2%

[a]Row totals may not equal 100% because of rounding errors.

Table 5 (continued). Amount of hunter interference experienced by turkey hunters during the spring 2002 Michigan turkey hunting season.

Management unit	Interference level (% of hunters)[a] None	Minor	Some irritation	Major problem	No answer
Hunt period 301 with quota (Management Unit ZZ; April 22-May 5, 2002)					
L	53%	28%	14%	4%	1%
P	62%	28%	9%	1%	1%
PB	57%	27%	12%	3%	1%
Q	59%	24%	12%	3%	2%
QB	51%	27%	20%	2%	0%
QD	73%	18%	0%	0%	9%
R	53%	24%	15%	4%	3%
RA	59%	26%	11%	3%	0%
S	56%	26%	13%	4%	1%
T	55%	28%	13%	3%	1%
U	61%	25%	10%	3%	1%
UA	46%	30%	16%	5%	3%
UB	46%	34%	15%	5%	0%
W	65%	22%	9%	3%	1%
X	59%	26%	10%	2%	2%
Y	61%	22%	11%	3%	2%
Z	59%	27%	10%	3%	1%
ZA	57%	29%	10%	4%	0%
Unknown	64%	17%	13%	1%	5%
Subtotal	58%	26%	12%	3%	1%

[a]Row totals may not equal 100% because of rounding errors.

Table 5 (continued). Amount of hunter interference experienced by turkey hunters during the spring 2002 Michigan turkey hunting season.

Management unit	Interference level (% of hunters)[a] None	Minor	Some irritation	Major problem	No answer
Unlimited quota hunt period (Hunt 234; May 6-31, 2002)					
A	65%	25%	5%	1%	4%
AA	72%	18%	7%	3%	0%
B	70%	22%	3%	2%	3%
E	63%	24%	9%	2%	2%
F	72%	20%	9%	0%	0%
H	62%	23%	10%	3%	1%
J	66%	23%	8%	2%	1%
K	60%	26%	9%	3%	2%
L	59%	25%	8%	5%	3%
M	63%	29%	5%	0%	2%
MA	78%	22%	0%	0%	0%
N	87%	8%	4%	2%	0%
O	77%	17%	3%	3%	0%
P	65%	23%	8%	4%	0%
PB	70%	15%	11%	3%	2%
Q	69%	12%	11%	4%	4%
QB	74%	14%	5%	5%	2%
QD	62%	23%	0%	0%	15%
R	62%	27%	6%	2%	3%
RA	70%	16%	9%	0%	4%
S	64%	20%	9%	5%	2%
T	67%	20%	9%	2%	2%
U	67%	21%	7%	2%	2%
UA	52%	29%	12%	7%	1%
UB	67%	23%	5%	2%	4%
V	70%	18%	7%	2%	2%
W	72%	17%	7%	1%	3%
X	66%	21%	9%	1%	3%
Y	73%	17%	5%	1%	3%
Z	63%	19%	9%	4%	5%
ZA	73%	18%	6%	2%	1%
Unknown	59%	25%	7%	2%	7%
Subtotal	65%	22%	8%	3%	2%
Statewide	62%	24%	10%	3%	2%

[a]Row totals may not equal 100% because of rounding errors.

Table 6. Number of hunters, hunting efforts, hunting success, hunters that experienced interference, and hunter rating of the 2002 spring turkey hunting season, by hunt periods.

	Hunt periods beginning									
	April 22		April 29		May 6		May 13		All periods[b]	
Variable	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL	Estimate	95% CL
Hunting efforts (days)	197,118	3,349	38,902	2,286	143,540	2,926	8,738	869	388,299	4,440
Number of hunters	47,589	567	10,675	510	27,637	262	1,636	125	87,538	431
Successful hunters (n)	18,508	557	3,229	359	8,703	288	427	68	30,867	681
Successful hunters (%)	39%	1%	30%	3%	31%	1%	26%	4%	35%	1%
Noninterfered hunters (n)[c]	40,328	615	9,248	499	24,000	302	1,402	118	74,978	603
Noninterfered hunters (%)[c]	85%	1%	87%	2%	87%	1%	86%	3%	86%	1%
Favorable rating (n)[d]	30,346	616	6,145	452	15,021	329	893	96	52,405	719
Favorable rating (%)[d]	64%	1%	58%	3%	54%	1%	55%	4%	60%	1%

[b]Row totals may not equal totals for all periods because of rounding errors.
[c]Proportion of hunters that indicated that they experienced no or only minor interference from other hunters.
[d]Hunters rating their hunting experience as excellent, very good, or good.

Table 7. Comparison of the number of hunters, hunting effort, and harvest between 2001 and 2002 in Michigan spring turkey hunting season, summarized by regions.

	Hunters (No.)[b]					Hunting efforts (days)					Harvest (No.)				
	2001		2002			2001		2002			2001		2002		
Region[a]	Total	95% CL	Total	95% CL	Change (%)	Total	95% CL	Total	95% CL	Change (%)	Total	95% CL	Total	95% CL	Change (%)
UP	4,835	158	4,283	137	-11%	16,824	913	15,821	804	-6%	2,051	157	1,621	135	-21%
NLP	40,707	503	35,029	456	-14%	160,396	3,707	147,449	3,463	-8%	13,286	574	11,213	539	-16%
SLP	42,748	491	47,474	390	11%	165,397	3,722	216,474	3,283	31%	16,549	562	17,859	412	8%
Unknown	2,506	293	2,121	219		8,181	1,269	8,555	1,000		107	69	174	54	
Total	88,894	378	87,538	431	-2%	350,798	4816	388,299	4,440	11%	31,993	796	30,867	681	-4%

[a]Regions included the Upper Peninsula (UP), the northern Lower Peninsula north of Management Unit ZZ (NLP), and Management Unit ZZ in the southern Lower Peninsula (SLP).
[b] Number of hunters did not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 8. Comparison of the hunter success, hunter satisfaction, and hunt interference between 2001 and 2002 in Michigan spring turkey hunting season, summarized by regions.

	Hunter success					Hunter satisfaction[b]					Noninterferred hunters[c]				
	2001		2002		Differ-	2001		2002		Differ-	2001		2002		Differ-
Region[a]	%	95% CL	%	95% CL	ence (%)	%	95% CL	%	95% CL	ence (%)	%	95% CL	%	95% CL	ence (%)
UP	42%	3%	38%	3%	-5%	66%	3%	59%	3%	-7%	90%	2%	88%	2%	-2%
NLP	33%	1%	32%	1%	-1%	59%	1%	54%	2%	-5%	87%	1%	88%	1%	0%
SLP	39%	1%	38%	1%	-1%	70%	1%	65%	1%	-4%	87%	1%	84%	1%	-3%
Total	36%	1%	35%	1%	-1%	64%	1%	60%	1%	-4%	87%	1%	86%	1%	-1%

[a]Regions included the Upper Peninsula (UP), the northern Lower Peninsula north of Management Unit ZZ (NLP), and Management Unit ZZ in the southern Lower Peninsula (SLP).
[b]Hunters rating their hunting experience as excellent, very good, or good.
[c]Proportion of hunters that indicated that they experienced no or only minor interference from other hunters.

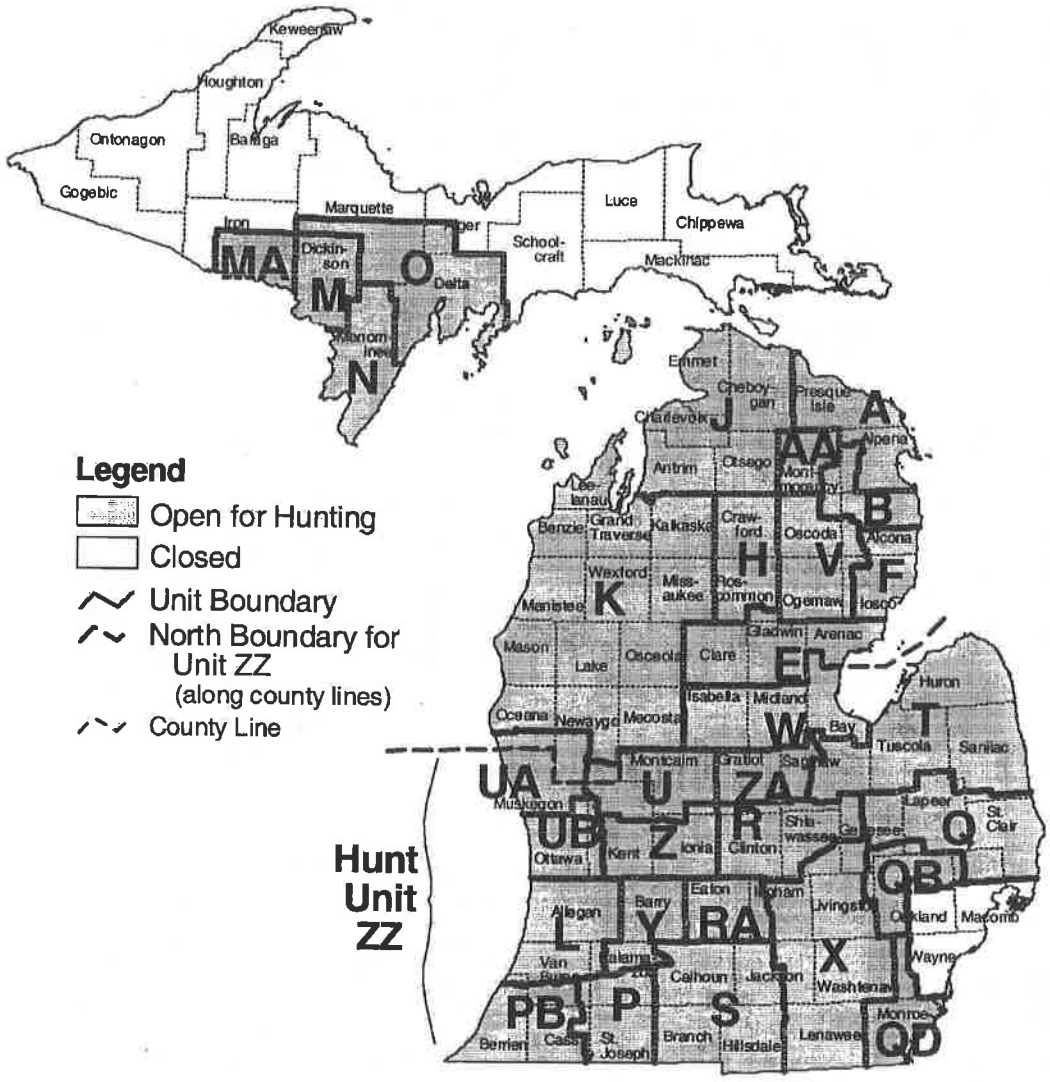

Figure 1. Management units in Michigan open to spring turkey hunting in 2002.

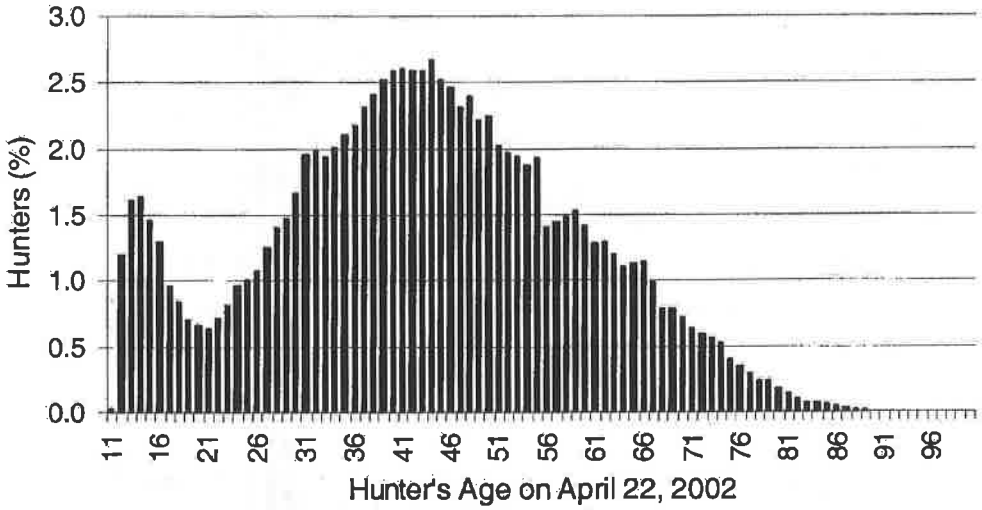

Figure 2. Age of people that purchased a turkey hunting license in Michigan for the 2002 spring hunting season ($\bar{x}$ = 43 years). Licenses were purchased by 98,306 people.

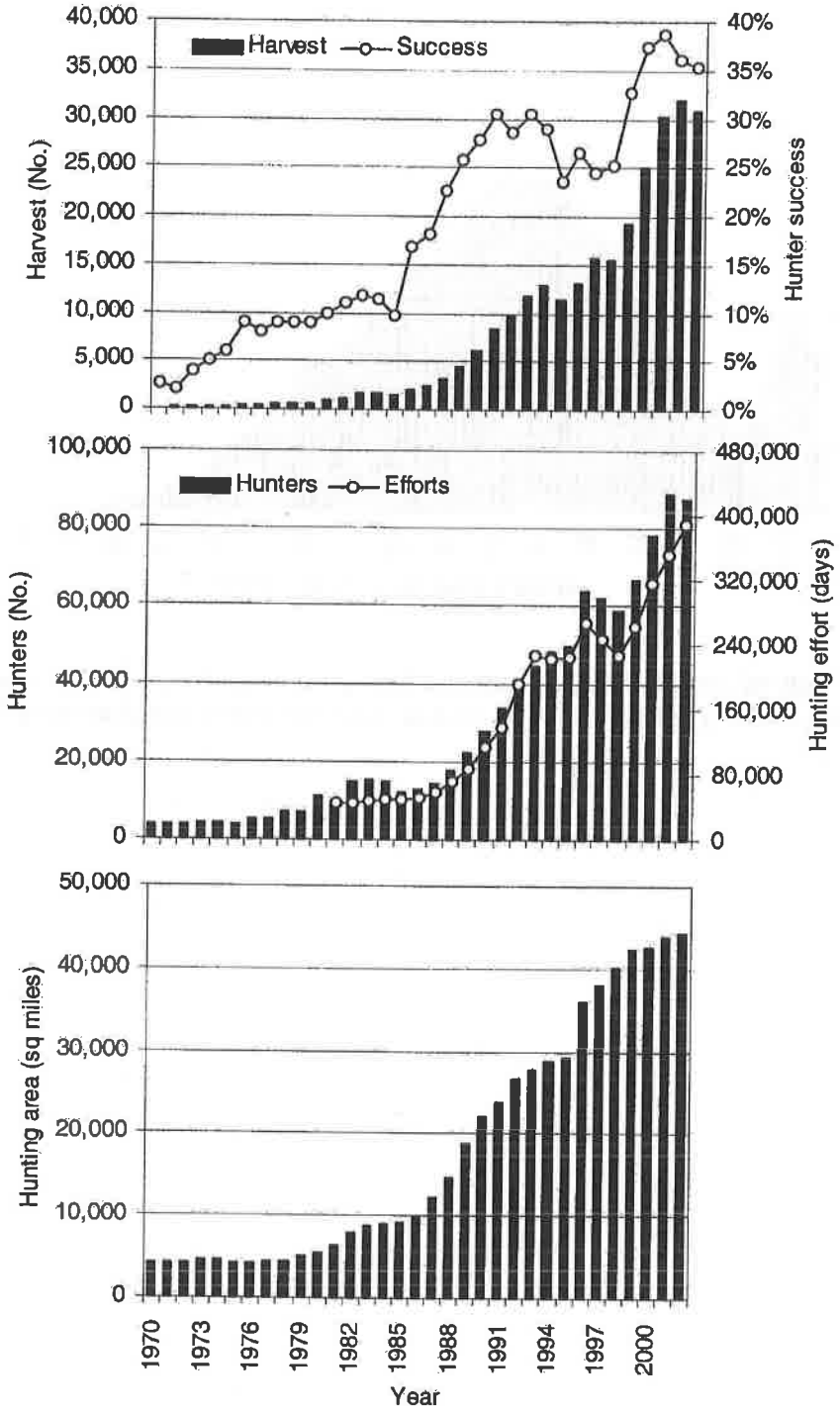

Figure 3. Number of hunters, harvest, hunting efforts, and hunting success during the spring turkey hunting season, 1970-2002. Estimates of hunting effort generally were not available before 1981.

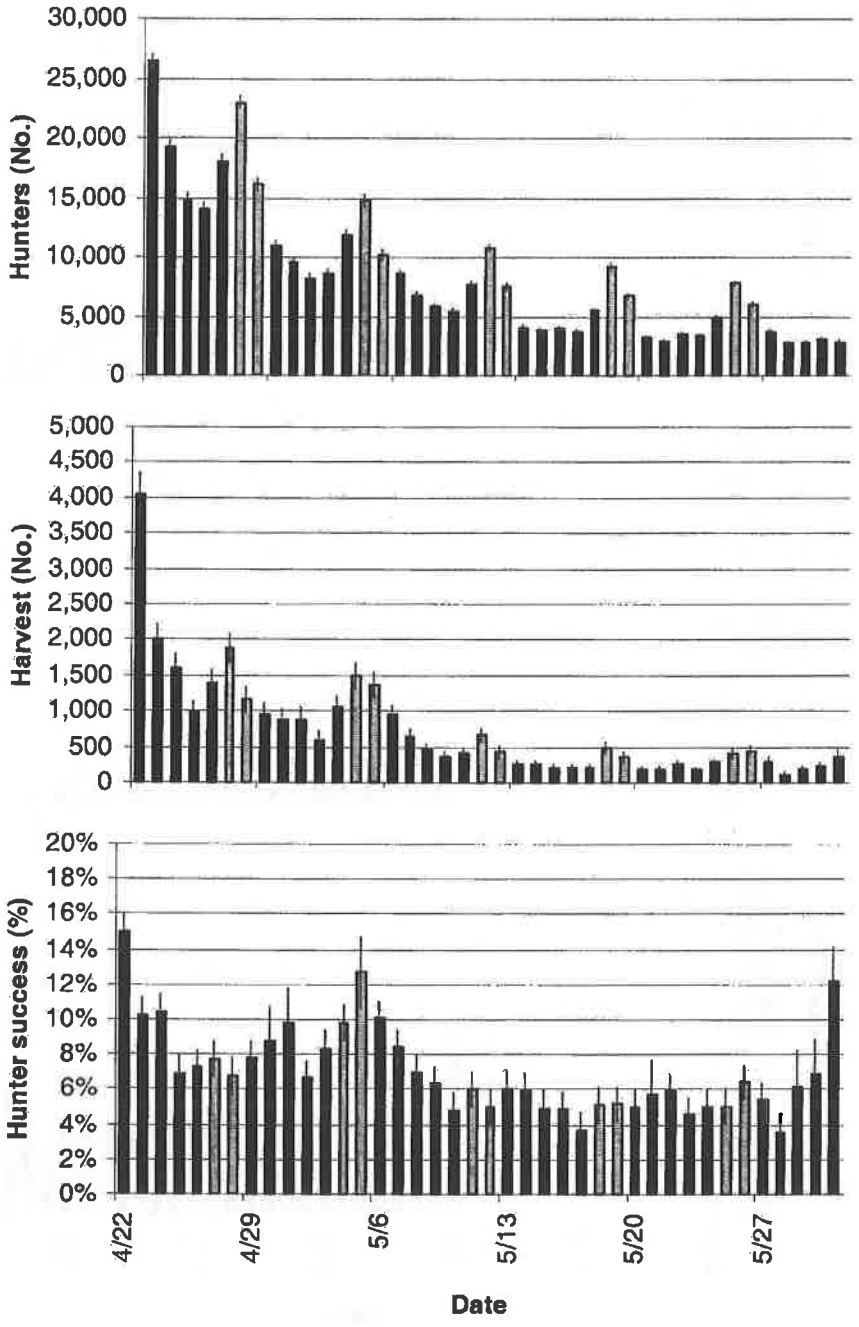

Figure 4. Number of hunters, harvest of turkeys, and hunter success by date during the 2002 spring turkey hunting season (includes all hunts). An additional 1,633 ± 160 birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

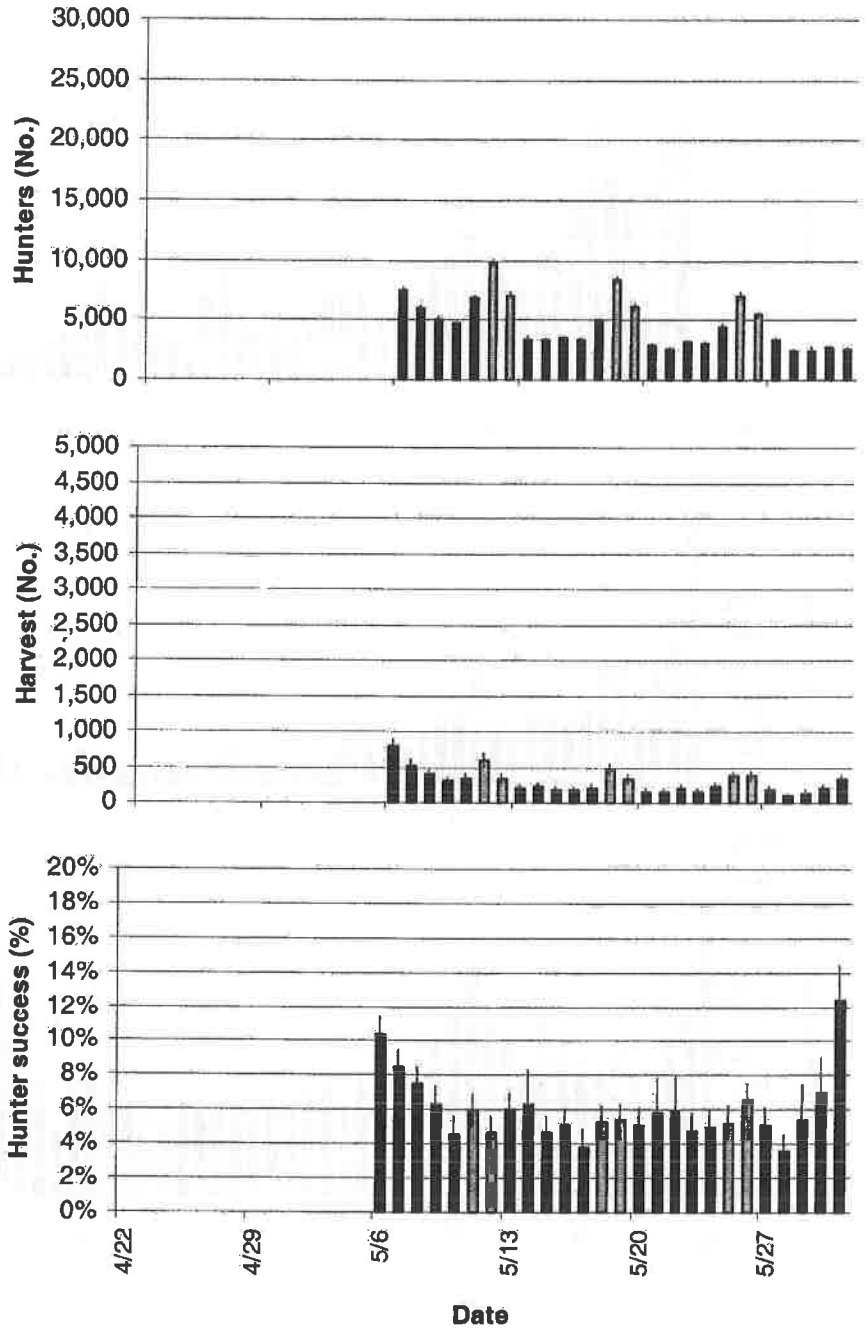

Figure 5. Number of hunters, harvest of turkeys, and hunter success by date during Hunt 234 of the 2002 spring turkey hunting season (May 6-31). An additional 574 ± 85 birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

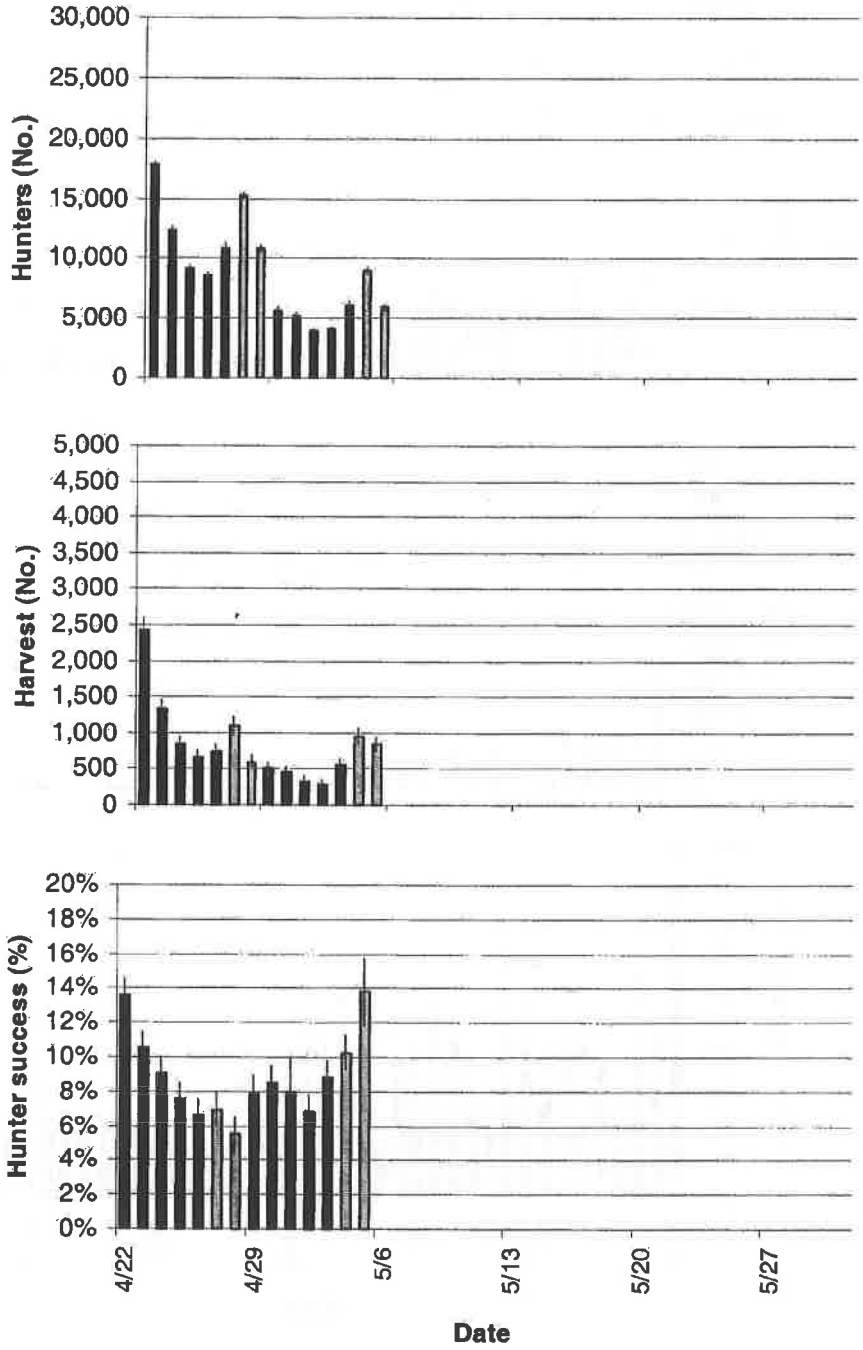

Figure 6. Number of hunters, harvest of turkeys, and hunter success by date during Hunt 301 of the 2002 spring turkey hunting season (April 22-May 5). An additional 873 $\pm$ 110 birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

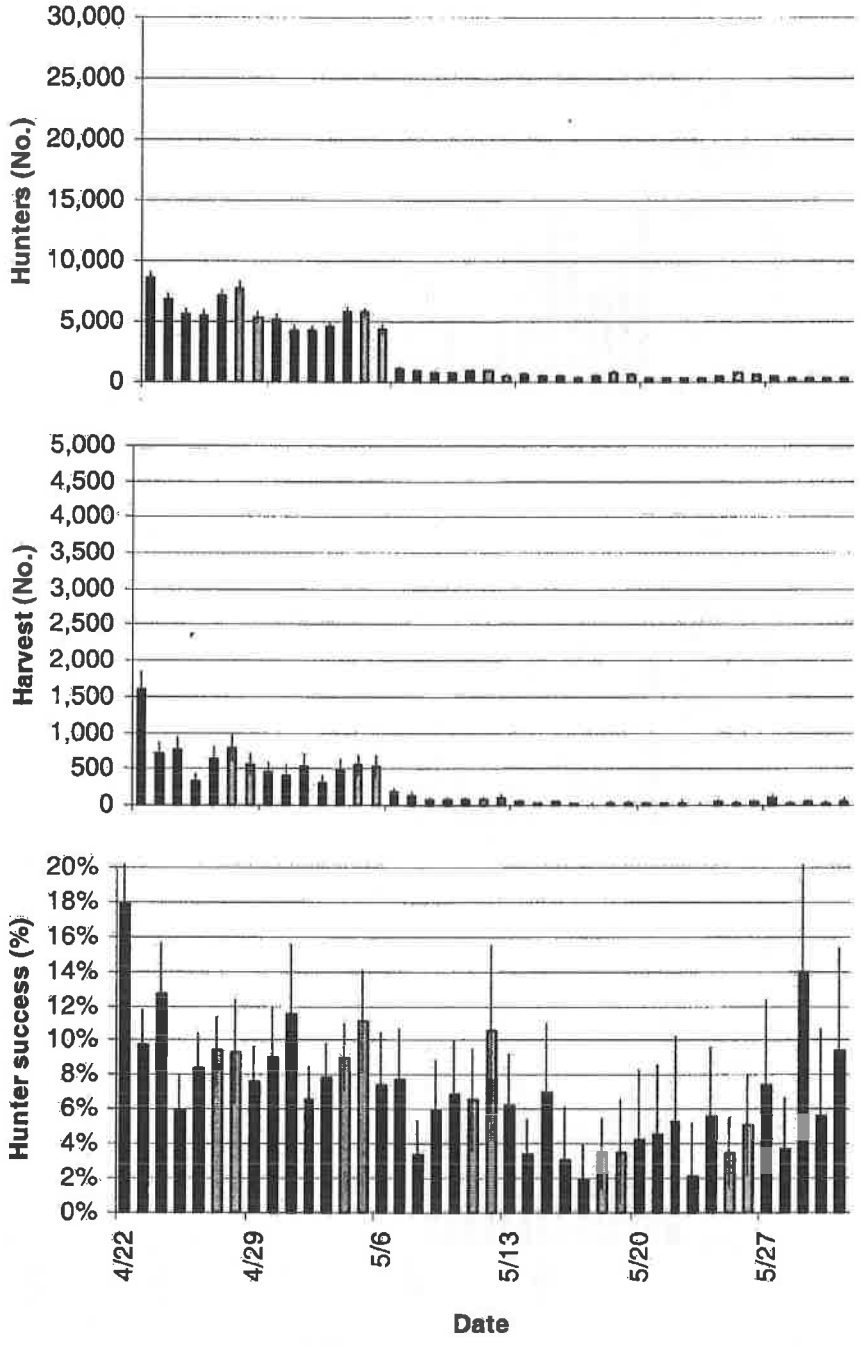

Figure 7. Number of hunters, harvest of turkeys, and hunter success by date during all hunts except hunts 234 and 301 of the 2002 spring turkey hunting season. An additional 186 $\pm$ 78 birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

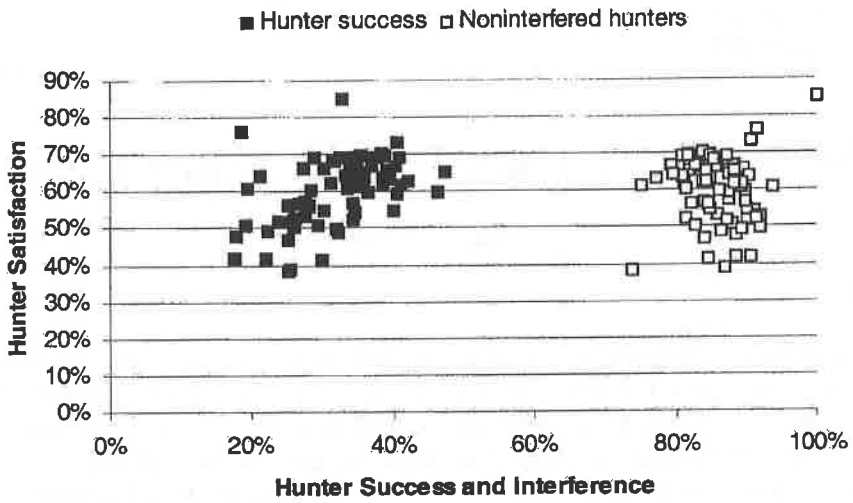

Figure 8. Hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) associated with hunter success and hunter interference for each of 73 counties in Michigan during the 2002 spring turkey hunting season. Noninterfered hunters were the proportion of hunters that indicated that they experienced no or only minor interference from other hunters.

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2002 MICHIGAN FALL TURKEY HUNTER SURVEY

Brian J. Frawley

ABSTRACT

A survey of turkey hunters was conducted following the 2002 fall hunting season to determine turkey harvest and hunter participation. During the 2002 fall hunt, an estimated 17,836 hunters harvested 5,450 turkeys. Harvest declined 27% between 2001 and 2002, although the 2002 fall turkey harvest was still among the largest harvest in Michigan's history. The harvest declined largely because fewer harvest tags were sold and hunters were less successful. About 31% of hunters successfully harvested a turkey in 2002, compared to 35% in 2001. About 58% of the hunters rated their hunting experience as excellent, very good, or good.

INTRODUCTION

Fall wild turkey (*Meleagris gallopavo*) hunting seasons were implemented in Michigan to maintain turkey populations at levels matching biological and social carrying capacity. In 2002, sixteen management units totaling 33,698 square miles were open for fall turkey hunting during October 7-November 9 (Figure 1). Hunting was permitted in four additional units (A, GC, Q, and QA) in 2002. In addition, the area of one unit was expanded (G).

People interested in obtaining a hunting license for the fall season could enter into a random drawing for licenses conducted by the Department of Natural Resources. Applicants could choose one hunt area. Any licenses available after the drawing was completed were first made available on a first-come, first-served basis to applicants that were unsuccessful in the drawing. Beginning one week after licenses were available to unsuccessful applicants, all remaining leftover licenses also were made available to people that had not been in the drawing. Leftover licenses were available for seven management units (G, GA, L, M, N, O, and W; Table 1). Licenses for units G, GA, GB,

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GC, H, L, Q, QA, W, and WA were valid on private lands only, while licenses for units A, E, J, M, N, and O were valid on all land ownership types (i.e., public and private land). Hunters were allowed to take one turkey of either sex (i.e., one harvest tag) with their license.

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 2002 fall turkey hunting season, a questionnaire was sent to 4,859 randomly selected people that had purchased a turkey hunting license. 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) and beard length of the harvested bird. Birds with a beard <4 inches were classified as juveniles (<1 year old), while birds with longer beards were adults (≥1 year old). Finally, all license buyers were asked to rate their overall hunting experience.

Estimates were calculated using a stratified random sampling design (Cochran 1977) and were presented along with their 95% confidence limit (CL). This confidence limit 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. Estimates were not adjusted for possible response or nonresponse bias.

Questionnaires were mailed initially during mid-November 2002, and a reminder note and two follow-up questionnaires were mailed to nonrespondents. Although 4,859 people were sent the questionnaire, 55 surveys were undeliverable resulting in an adjusted sample size of 4,804. Questionnaires were returned by 4,092 people, yielding an 85% adjusted response rate.

RESULTS

In 2002, the Wildlife Division offered 37,940 licenses for sale, and hunters purchased 21,951 licenses for the fall turkey hunting season (Table 1). Licensees included 17,587 people that were successful in the drawing for a license, and 867 applicants had been unsuccessful in the drawing. In addition, 3,497 people that had not entered into the drawing purchased a license. Most of the people buying a license were men (94%), and the average age of the license buyers was 46 years (Figure 2). About 5% of the license buyers were younger than 17 years old (N = 1,161).

The number of licenses sold in 2002 increased 14% from last year. Although more licenses were sold in 2002, there were fewer harvest tags available in 2002. In 2001,

people buying licenses for 7 units (units J, L, M, N, O, W, and WA) received two harvest tags with their license, allowing them to harvest two turkeys with each license. In 2002, all licenses included one harvest tag. In 2001 there were 32,675 harvest tags sold among 19,348 licensees. In contrast, there were 21,951 harvest tags among 21,951 licensees in 2002. Thus, the number of harvest tags available in 2002 decreased 33% from last year.

In 2002, about 17,836 hunters spent 93,911 days afield pursuing turkeys ($\bar{x}$ = 5.3 ± 0.2 days/hunter) and harvested 5,450 birds (Table 2). About 94% of the hunters that went afield were men (16,800 ± 344), and 6% of the hunters were women (1,036 ± 176).

The number of people pursuing turkeys increased by 9% from last year. This increase occurred because more licenses were available for sale (i.e., license quota increased 13%) and 3,497 hunters that were not in the drawing were allowed to purchase a license. Moreover, the area open to hunting increased 23%, from 27,329 to 33,698 square miles.

Hunter success was 31% in 2002, compared to 35% success last year. However, hunter success is not directly comparable between years because additional management units were opened to hunting in 2002. The area of 11 management units was the same in both 2001 and 2002. Hunter success in these 11 units was 35 ± 2% in 2001 and 31 ± 2% in 2002. Thus, hunter success appeared to decline slightly between 2001 and 2002.

Harvest declined 27% between 2001 and 2002, although the 2002 fall turkey harvest was still among the largest harvest in Michigan's history (Figure 3). Harvest declined primarily because fewer harvest tags were sold, but hunters also were less successful. Counties with hunters taking 200 or more turkeys included Montcalm, Calhoun, Van Buren, Delta, Barry, and Menominee (Table 3).

About 90% of turkey hunters hunted solely on private land, 6% hunted on public land only, and 3% hunted on both private and public lands (Table 4). Of the 5,450 turkeys harvested in 2002, 95% of these birds were taken on private land (5,168 ± 347 birds), while about 5% of the harvest (275 ± 49 birds) was taken on public land (Tables 5 and 6). Additionally, a few birds (7 ± 8 birds) were harvested from land of unknown ownership. About 45% of the harvested birds had a beard (2,477 ± 253). Most of these bearded birds (72%) were adults (1,773 ± 213); 26% were juvenile birds (639 ± 135).

Of the 17,836 turkey hunters in 2002, nearly 58% rated their hunting experience as either excellent (2,173 ± 242 hunters), very good (3,174 ± 302 hunters), or good (4,946 ± 347 hunters) (Table 7). About 20% of the hunters rated their experience as fair (3,496 ± 292 hunters), while 21% of the hunters rated their experience as poor (3,675 ± 304 hunters). Additionally, about 2% of the hunters (374 ± 119 hunters) failed to rate their hunting experience.

Changes in hunter satisfaction generally parallel changes in hunter success (Figure 4). Between 2001 and 2002, however, hunter success decreased slightly (decreased from

35% to 31%), while satisfaction remained essentially unchanged (increased slightly from 57% to 58%).

ACKNOWLEDGEMENTS

I thank all the hunters that provided information. Pat Bancroft, Theresa Riebow, Mindy Sweeney, and Becky Walker completed data entry. Mary Benson, Al Stewart, and Valerie Tuovila reviewed a previous version of this report.

LITERATURE CITED

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Table 1. Number of hunting licenses available and people applying for licenses during the 2002 Michigan fall turkey hunting season.

Management unit	Licenses available (quota)	Number of eligible applicants	Number of applicants successful in drawing[a]	Licenses left over after drawing	Number of licenses purchased by people successful in the drawing	Number of leftover licenses purchased by people in the drawing	Number of leftover licenses purchased by people not in the drawing	Licenses sold
A	900	2,081	900	0	538			538
E	1,700	2,852	1,701	0	1,017			1,017
G[b]	2,500	2,402	2,402	98	1,491	84	7	1,582
GA[b]	2,000	1,297	1,297	703	780	98	499	1,377
GB[b]	1,800	1,804	1,799	0	1,116			1,116
GC[b]	1,200	2,268	1,197	0	717			717
H[b]	5,100	8,455	5,099	0	3,020			3,020
J	2,000	3,725	2,000	0	1,143			1,143
L[b]	9,000	6,611	6,611	2,392	4,273	230	1,908	6,411
M	2,460	747	747	1,712	518	15	173	706
N	2,200	790	790	1,410	527	28	158	713
O	2,680	1,262	1,262	1,417	820	38	267	1,125
Q[b]	400	955	400	0	225			225
QA[b]	400	495	400	0	217			217
W[b]	3,400	1,672	1,672	1,728	1,053	374	485	1,912
WA[b]	200	793	199	0	132			132
Statewide	37,940	38,209	28,476	9,460	17,587	867	3,497	21,951

[a]Number of successful applicants was sometimes larger than the quota because of system processing errors.
[b]Licenses were valid on private lands only.

Table 2. Number of hunters, hunting efforts, harvest, and hunting success during the 2002 Michigan fall turkey hunting season.

Management unit	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunting success	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL
A	441	20	2,066	218	116	22	26	5
E	841	38	4,100	414	211	40	25	5
G[b]	1,328	58	6,744	707	411	69	31	5
GA[b]	1,157	53	5,635	691	439	67	38	6
GB[b]	942	41	4,724	488	351	52	37	5
GC[b]	583	27	3,298	357	165	30	28	5
H[b]	2,447	116	11,772	1,217	804	131	33	5
J	928	45	4,953	584	247	48	27	5
L[b]	5,336	248	30,320	3,444	1,433	277	27	5
M	555	30	3,124	382	181	32	33	5
N	576	29	2,552	312	208	33	36	6
O	846	49	5,082	695	315	51	37	6
Q[b]	194	8	1,137	128	63	11	32	5
QA[b]	180	8	978	90	50	9	28	5
W[b]	1,365	87	6,770	828	415	79	30	5
WA[b]	117	4	656	59	42	5	36	5
Statewide	17,836	315	93,911	4,085	5,450	350	31	2

[a]Column totals may not equal statewide totals because of rounding errors.
[b]Licenses were valid on private lands only.

Table 3. Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan fall turkey hunting season, summarized by county.

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Alcona[c]	0	0	0	0	0	0				
Alger	31	18	201	143	8	9	26	26	52	30
Allegan	735	212	4,054	1,523	170	107	23	13	54	15
Alpena[c]	0	0	0	0	0	0				
Antrim	215	49	1,299	432	45	22	21	10	40	12
Arenac	161	36	719	219	67	25	42	12	59	12
Baraga[c]	0	0	0	0	0	0				
Barry	904	230	4,640	1,769	226	123	25	12	57	14
Bay	14	11	61	46	3	2	19	18	19	18
Benzie	64	42	383	277	9	16	13	23	13	23
Berrien	264	132	1,772	1,328	57	62	21	21	64	24
Branch	286	136	1,202	815	57	62	20	20	47	24
Calhoun	814	221	3,820	1,629	321	145	39	14	79	12
Cass	302	141	1,376	1,004	75	72	25	21	75	21
Charlevoix	109	34	405	148	41	21	37	16	63	16
Cheboygan	195	44	847	252	65	27	33	12	46	12
Chippewa[c]	0	0	0	0	0	0				
Clare	292	47	1,368	295	60	23	20	7	42	9
Clinton	266	59	1,271	401	106	39	40	12	71	11
Crawford[c]	0	0	0	0	0	0				
Delta	562	57	3,185	626	232	46	41	7	56	7

[a]Number 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.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.
[c]Not open for turkey hunting.

Table 3 (continued). Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan fall turkey hunting season, summarized by county.

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Dickinson	551	34	3,147	391	181	32	33	6	45	6
Eaton	243	57	1,212	389	86	36	35	12	71	12
Emmet	162	40	644	225	57	25	35	13	53	13
Genesee	68	10	357	64	22	6	32	8	61	9
Gladwin	248	44	1,184	295	77	26	31	9	57	10
Gogebic[c]	0	0	0	0	0	0				
Gd. Traverse	60	41	265	213	26	27	43	35	29	31
Gratiot	235	57	1,168	366	81	35	34	12	66	12
Hillsdale	128	44	931	433	28	14	22	11	52	17
Houghton[c]	0	0	0	0	0	0				
Huron[c]	0	0	0	0	0	0				
Ingham	137	46	767	407	47	17	35	14	76	12
Ionia	322	64	1,566	440	127	43	39	11	74	10
Iosco	171	26	764	153	46	15	27	8	50	9
Iron[c]	0	0	0	0	0	0				
Isabella	403	78	2,110	574	174	55	43	11	60	11
Jackson	132	29	900	390	33	15	25	10	72	10
Kalamazoo	358	153	1,848	1,070	151	101	42	22	74	19
Kalkaska	143	63	586	289	60	41	42	22	54	22
Kent	380	58	1,889	392	166	40	44	9	69	8
Keweenaw[c]	0	0	0	0	0	0				

[a]Number 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.

[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.

[c]Not open for turkey hunting.

Table 3 (continued). Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan fall turkey hunting season, summarized by county.

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Lake	299	89	1,129	418	111	56	37	15	54	16
Lapeer	200	17	1,113	133	63	11	31	6	69	6
Leelanau	57	40	461	501	34	31	60	34	55	35
Lenawee[c]	0	0	0	0	0	0				
Livingston[c]	0	0	0	0	0	0				
Luce[c]	0	0	0	0	0	0				
Mackinac[c]	0	0	0	0	0	0				
Macomb[c]	0	0	0	0	0	0				
Manistee	103	54	522	305	26	27	25	23	33	25
Marquette	147	38	785	256	67	27	46	14	43	14
Mason	109	55	703	501	34	31	31	24	47	26
Mecosta	286	86	1,236	461	51	38	18	12	43	15
Menominee	550	35	2,480	322	208	33	38	6	52	6
Midland	499	84	2,291	531	192	58	39	10	57	10
Missaukee	106	54	468	271	43	35	40	25	48	26
Monroe[c]	0	0	0	0	0	0				
Montcalm	1,070	66	5,259	698	439	67	41	6	71	5
Montmorency[c]	0	0	0	0	0	0				
Muskegon	254	53	1,238	360	147	42	58	11	80	9
Newaygo	375	102	1,618	587	180	70	48	14	59	14
Oakland	64	10	349	72	28	7	44	9	78	8

[a]Number 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.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.
[c]Not open for turkey hunting.

Table 3 (continued). Number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunt interference during the 2002 Michigan fall turkey hunting season, summarized by county

	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]	
County	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Oceana	113	56	589	325	43	35	38	25	53	25
Ogemaw	170	25	646	130	65	17	38	8	48	9
Ontonagon[c]	0	0	0	0	0	0				
Osceola	317	91	1,412	533	103	54	32	14	68	14
Oscoda[c]	0	0	0	0	0	0				
Otsego	158	40	981	374	41	21	26	12	44	14
Ottawa	170	40	761	252	55	24	33	12	63	13
Presque Isle[c]	0	0	0	0	0	0				
Roscommon[c]	0	0	0	0	0	0				
Saginaw	95	16	540	80	39	5	41	8	69	7
St. Clair[c]	0	0	0	0	0	0				
St. Joseph	269	132	1,307	869	94	80	35	24	58	25
Sanilac[c]	0	0	0	0	0	0				
Schoolcraft[c]	0	0	0	0	0	0				
Shiawassee	109	29	430	133	53	18	49	14	74	14
Tuscola[c]	0	0	0	0	0	0				
Van Buren	679	204	4,903	1,867	283	136	42	16	69	15
Washtenaw[c]	0	0	0	0	0	0				
Wayne[c]	0	0	0	0	0	0				
Wexford	163	67	787	396	60	41	37	20	79	17
Unknown	3,081	288	15,961	1,961	89	39	3	1	43	5

[a]Number 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.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.
[c]Not open for turkey hunting.

Table 4. Number and proportion of hunters hunting on private and public lands during the fall 2002 Michigan turkey hunting season.

Management unit	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
A	209	26	47	5	202	25	46	5	30	12	7	3	0	0	0	0
E	535	50	64	5	197	39	23	5	109	31	13	4	0	0	0	0
G[a]	1,328	58	100	0	0	0	0	0	0	0	0	0	0	0	0	0
GA[a]	1,157	53	100	0	0	0	0	0	0	0	0	0	0	0	0	0
GB[a]	942	41	100	0	0	0	0	0	0	0	0	0	0	0	0	0
GC[a]	583	27	100	0	0	0	0	0	0	0	0	0	0	0	0	0
H[a]	2,447	116	100	0	0	0	0	0	0	0	0	0	0	0	0	0
J	478	57	52	6	288	50	31	5	158	40	17	4	4	7	0	1
L[a]	5,336	248	100	0	0	0	0	0	0	0	0	0	0	0	0	0
M	267	35	48	6	187	32	34	6	98	25	18	4	3	5	1	1
N	446	36	77	5	80	23	14	4	48	18	8	3	3	5	1	1
O	539	56	64	6	189	42	22	5	114	34	13	4	4	7	0	1
Q[a]	194	8	100	0	0	0	0	0	0	0	0	0	0	0	0	0
QA[a]	180	8	100	0	0	0	0	0	0	0	0	0	0	0	0	0
W[a]	1,365	87	100	0	0	0	0	0	0	0	0	0	0	0	0	0
WA[a]	117	4	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Statewide[b]	16,123	322	90	1	1,143	90	6	1	557	70	3	0	14	12	0	0

[a] Licenses were valid on private lands only.

[b] Number of hunters does not add up to statewide total because hunters can hunt in more than one unit for the unlimited quota hunt.

Table 5. Statewide turkey harvest during the 2002 Michigan fall turkey hunting season, harvest summarized by land ownership type and turkey sex and age.

Land ownership Sex and age of turkey	Harvest Total	 95% CL
Private lands		
Males	2,345	251
Juveniles	595	134
Adults	1,686	211
Unknown	64	63
Females	2,794	273
Unknown sex	29	37
Subtotal – Private lands[a]	5,168	347
Public lands		
Males	129	35
Juveniles	41	19
Adults	88	29
Unknown	0	0
Females	142	35
Unknown sex	4	7
Subtotal – Public lands[a]	275	49
Unknown lands	7	8
Grand total[a]	5,450	350

[a]Column totals may not equal subtotals and grand total because of rounding errors.

Table 6. Number of turkeys harvested on private and public lands during the 2002 Michigan fall turkey hunting season.

Management unit	Private lands		Public lands		Unknown ownership	
	Total	95% CL	Total	95% CL	Total	95% CL
A	79	19	37	13	0	0
E	179	38	32	17	0	0
G[a]	411	69	0	0	0	0
GA[a]	439	67	0	0	0	0
GB[a]	351	52	0	0	0	0
GC[a]	165	30	0	0	0	0
H[a]	804	131	0	0	0	0
J	174	42	73	28	0	0
L[a]	1,433	277	0	0	0	0
M	125	28	53	19	3	5
N	175	32	33	15	0	0
O	264	48	47	23	4	7
Q[a]	63	11	0	0	0	0
QA[a]	50	9	0	0	0	0
W[a]	415	79	0	0	0	0
WA[a]	42	5	0	0	0	0
Statewide[b]	5,168	347	275	49	7	8

[a] Licenses were valid on private lands only.

[b] Column totals may not equal statewide total because of rounding errors.

Table 7. How hunters rated their hunting experience during the 2002 Michigan fall turkey hunting season.

Management unit	Satisfaction level (% of hunters)					
	Excellent	Very good	Good	Fair	Poor	No answer
A	8	16	19	23	33	2
E	10	15	22	24	24	4
G[a]	18	19	31	17	14	2
GA[a]	21	17	32	17	11	2
GB[a]	16	18	34	18	13	1
GC[a]	17	14	32	18	18	1
H[a]	10	16	27	21	25	1
J	7	14	26	21	31	2
L[a]	11	22	28	17	19	3
M	7	13	25	28	25	3
N	9	19	24	23	24	2
O	9	14	26	24	26	1
Q[a]	22	18	27	16	16	0
QA[a]	11	19	33	19	17	1
W[a]	11	17	25	23	22	3
WA[a]	15	16	29	21	16	2
Statewide	12	18	28	20	21	2

[a]Licenses were valid on private lands only.

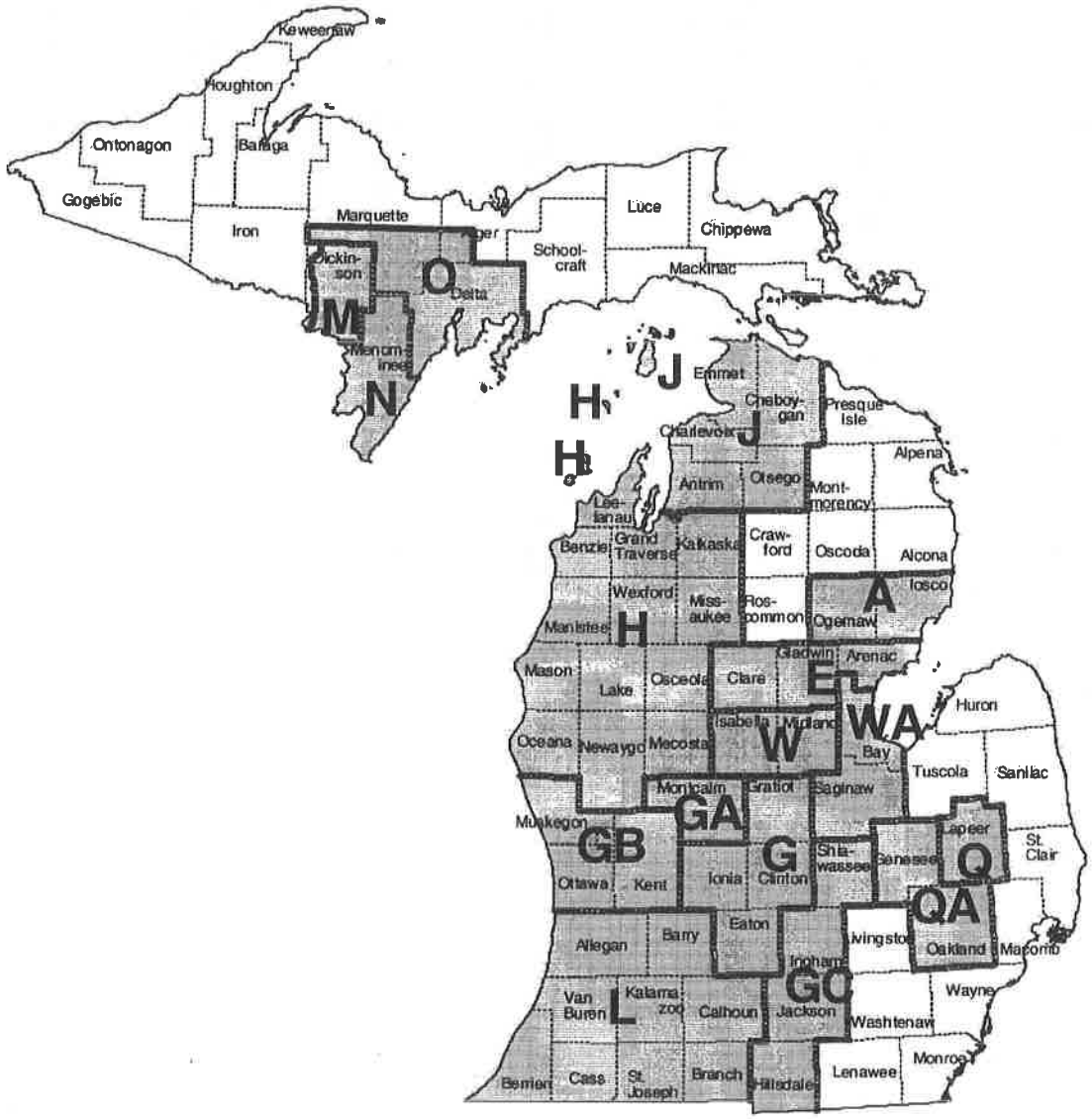

Figure 1. Management units in Michigan open for fall turkey hunting in 2002.

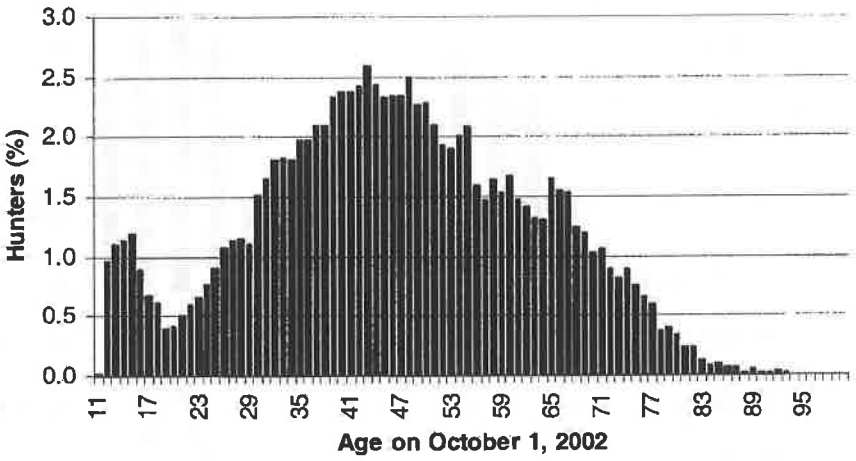

Figure 2. Age of people that purchased a turkey hunting license in Michigan for the 2002 fall hunting season ($\bar{x}$ = 46 years). Licenses were purchased by 21,951 people.

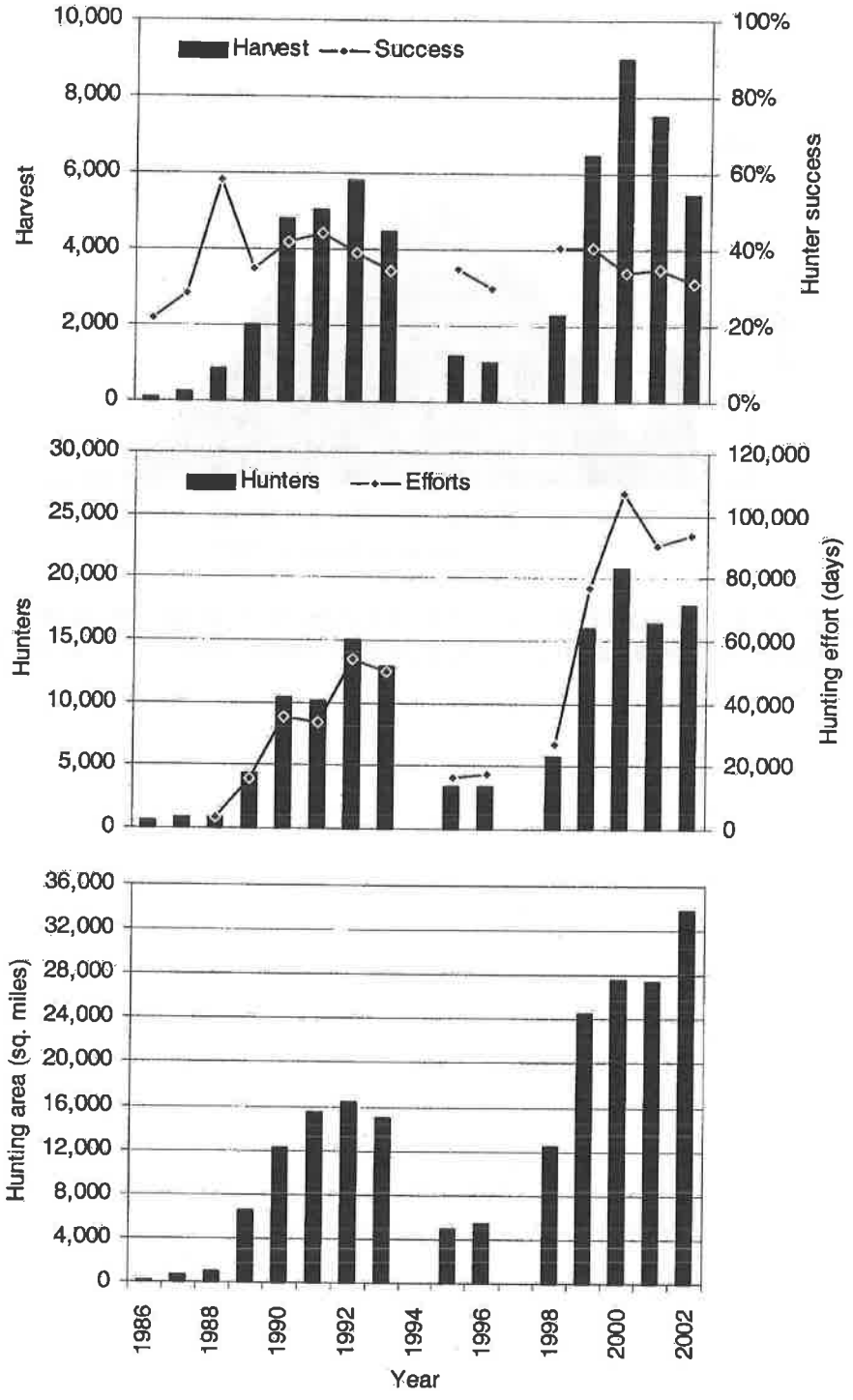

Figure 3. Number of hunters, harvest, hunting efforts, and hunting success during the fall turkey hunting season, 1986-2002. Turkeys were not hunted during the fall in 1994 and 1997.

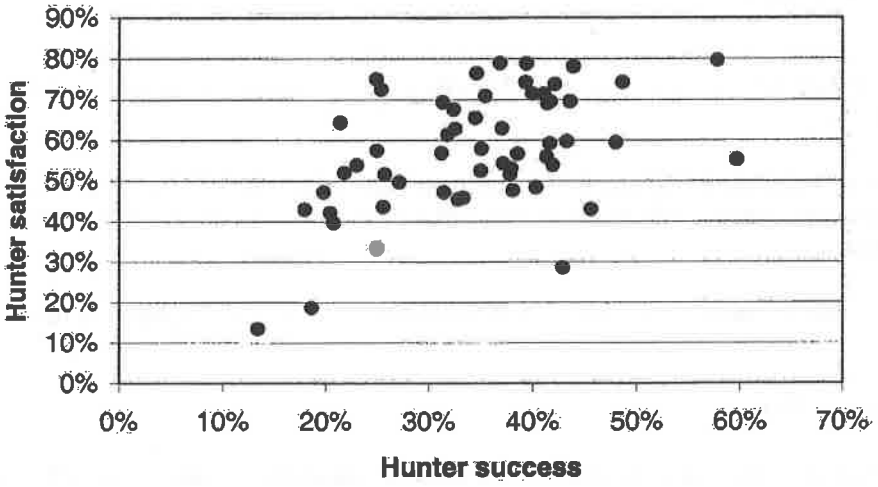

Figure 4. Hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) associated with hunter success for each of 56 counties in Michigan during the 2002 fall turkey hunting season.

Minnesota Wild Turkey Status Report

Gary Nelson, Wendy Krueger and Dick Kimmel
2003 Midwest Deer/Turkey Study Group Meeting

2002 Fall Turkey Season

Minnesota's 13th annual either-sex fall turkey hunt was 2, 5-day seasons that occurred October 16-20 and October 23-27. A total of 5,180 applications were received for the 3,790 available permits (Table 1).

A total of 594 turkeys were registered for a hunter success rate of 22%. Females comprised 65% of the harvest. More birds were harvested during the first time period (58%) than the second time period.

No hunting accidents were reported. There have been 2 non-fatal accidents reported in 13 fall seasons.

2002 Fall Turkey Survey

The fall wild turkey survey is scheduled once every 2 years to provide a fall turkey population index and monitor range expansion. Because of staffing and budget constraints, the previous survey was completed in 1999. Antlerless deer permit holders for the fall 2002 hunting season were asked to report their observations. Percent of hunters observing wild turkeys (HOWT) in 2002 was significantly higher than 1999 HOWT for 5 of the 15 turkey management units (TMUs), but significantly lower in 2 TMUs. HOWT was significantly higher in 14 of the 97 permit areas (PAs) where data was obtained in both years with a significant decrease in HOWT in 2 PAs. Wild turkey range in Minnesota has expanded since 1999.

2003 Spring Turkey Season

A total of 44,415 applications were received for the 26th annual spring gobbler season that took place from April 16-May 25 (8, 5-day time periods). A record number of permits (25,016) were available (Table 1). There were 62 permit areas open for hunting (Fig. 1) and new permit areas continue to open on the northern fringe of turkey range.

A record harvest occurred for the 9th consecutive year. A total of 7,650 turkeys were registered compared to 6,516 in 2002 (Table 1). Juvenile gobblers comprised 23% of the harvest. Good reproduction, an increase in permit numbers and additional hunting areas were factors in the record harvest.

Overall hunter success (33.6%) was the highest on record. Time period A (April 16-20) and B (April 21-25) had the highest success rates (42.0% and 42.5%, respectively). The 7th and 8th time periods (May 16-20 and May 21-25) had the lowest success rates at 27.2% and 24.9%, respectively.

Two hunting related incidents occurred this spring. A total of 12 spring hunting incidents/accidents have been reported in the 26 spring turkey seasons, none of which have been fatal.

Trap and Transplant Program

Trap and transplant efforts continued last winter and 135 turkeys were successfully captured in-state and relocated to 8 sites, including research study areas. Since 1976, approximately 4,250 turkeys have been trapped and released at 189 sites (Fig. 2). Crews used rocket-propelled nets to trap turkeys as the turkeys fed over bait piles.

2004 Spring Turkey Season

Permit levels will increase for 2004. Five new turkey permit areas will be open for spring hunting and established permit areas are either maintaining or increasing the number of permits offered. Next spring the last 2 time periods will be lengthened by 2 days to encourage more hunter participation in the late seasons. For the first time, all turkey registrations will be completed using the Electronic License System (ELS).

RESEARCH

Winter Survival Study

An investigation entitled, "Winter Survival of Eastern Wild Turkeys Translocated North of their Ancestral Range in Minnesota," is being conducted cooperatively between Minnesota Department of Natural Resources (MDNR) and St. Cloud State University (SCSU). Dale Kane was the graduate student at SCSU for the beginning of this study. Objectives are to determine winter survival of wild turkeys north of their ancestral range in east-central Minnesota and to investigate the value of corn food plots and supplemental feeding to enhance turkey survival. To date, we have monitored radio-tagged wild turkey hens on 1 study area with standing corn food plots and supplemental winter feeding during the severe winter (Jan 1 - Apr 1) of 2001 (25 hens) and on 4 study areas during the relatively mild winters of 2002 (82 hens) and 2003 (73 hens). During 2002 and 2003, 2 study areas had standing corn food plots and supplemental winter feeding, and 2 study areas had only natural foods.

Winter severity in 2001 was near record with snow depths >30 cm (to ≈ 70 cm) and minimum temperatures were low. During winter 2002, average snow depth remained ≤ 20 cm until early March, when it reached ≈ 40 cm. Minimum temperatures averaged warmer than 2001. In winter 2003 snow depths remained at ≤ 20 cm with periods of patchy bare ground and minimum temperatures were similar to 2001 (Fig. 3).

We used Kaplan and Meier (1958) with Pollock et al. (1989) modification to estimate cumulative survival probability (CSP). We censored hens not surviving 7 days beyond release (Kurzejeski et al. 1987, Vangilder 1996) to reduce potential effects of capture, handling, and transport. For 2001, CSP was 0.085 (Table 2). In winters 2002 and 2003, CSPs for study areas with supplemental food were significantly higher than for study areas with natural foods only (Table 2). This same trend was seen when data for 2002 and 2003 were combined.

Each winter, turkeys were released over a 5-8 week period. For 2001, releases occurred Jan-Mar on 1 study area with 42 ha of corn food plots located within 8 km of the release site. The CSP of <0.1 (Table 2) implies that had all hens been released early in the winter, none would have survived. Results suggest that survival of turkeys translocated during early winter may be limited if deep powder snow conditions occur even if food is provided. However, 5 hens from late winter 2001 releases survived and produced offspring during the following spring. During 2002 and 2003, turkeys in study areas with supplemental food had higher CSPs than in study

areas with natural foods (Table 2). This suggests food plots enhance turkey survival, even during milder years.

This is an on-going project that will continue, with support from the National Wild Turkey Federation (NWTF), during winters 2004 and 2005. Hopefully, future research will provide information on CSP during severe winters for turkeys on study areas with and without food plots.

Hunter Interference Study

A cooperative study conducted by Minnesota State University-Mankato graduate student, Kari Dingman, has been looking at relationships between hunter interference, access to land for hunting, and hunt quality.

A mail survey was sent to approximately 2,000 spring turkey hunters in 8 permit areas following the close of the spring 2002 and 2003 hunting seasons. Survey questions pertained to number of turkeys seen while hunting, number of turkeys shot at, ease of access to huntable land, feeling of danger while in the field, interference from other hunters, and hunt quality.

For 2002, after 3 mailings the response rate was 88.6%. Results for 2002 were compared to a similar turkey hunter survey from the 1999 spring season in Minnesota (Kimmel et al. 2000). Hunter interference rates decreased between 1999 and 2002 (Table 3). Hunter interference may have decreased due to hunters establishing hunting patterns over time and restricting movements between hunting areas.

Interference was not related to hunt quality rating in 6 of the 8 permit areas (Table 4). Hunter interference was negatively correlated with hunt quality in only the permit area that is entirely in public ownership (permit area 235) ($r^2 = -0.271$, $p = 0.01$). MDNR manages permit numbers to maintain acceptable hunter interference rates. Preliminary results show hunter interference was not a significant factor in determining hunt quality, possibly because hunter interference rates we observed were acceptable to hunters in the areas surveyed. We suggest the relationship between hunter interference and hunt quality would be negatively correlated, if turkey hunters in Minnesota experienced higher interference rates.

The percent of hunters denied access to huntable land decreased between the 1999 and 2002 surveys ($p = 0.009$) (Table 5). Increased ease of access could be due to hunters establishing contacts with landowners and returning to these same areas to hunt. Also, with increasing turkey numbers throughout much of Minnesota, landowners observing more turkeys on their property may be more likely to allow turkey hunter access.

Hunters were asked to rate access on a 4-point scale of "Very Easy," "Somewhat Easy," "Somewhat Difficult," and "Very Difficult". Access was positively correlated with hunt quality in 4 of 8 permit areas ($0.268 < r^2 < 0.470$, $p < 0.01$). In the other 4 permit areas, access was not significantly correlated with hunt quality (Table 6).

In this investigation, successful hunters during 2002 reported a higher hunt quality ($p < 0.0001$). Although success is not the only factor that defines a quality hunt (Hazel et al. 1990), it is important (Stankey et al. 1973, Hendee 1974). Hawn et al. (1987) found that although success may be a predictor of hunt quality, it may not be causally related. Stankey et al. (1973) concluded that hunt quality ratings were not significantly different between successful and unsuccessful hunters.

The average rating for hunt quality ranged from 6.00 to 7.24, on a scale of 0 (poor) to 10 (excellent) (Fig. 4). We suggest that the number of available wild turkey hunting permits will probably increase over time, while the amount of huntable turkey habitat will remain the same or decline. Therefore, hunter interference and ease of access may need to be periodically monitored to maximize permit numbers while providing a quality hunting experience.

Regression tree analysis was used to determine factors that best described a quality hunt. "Number of Birds Shot At", "Ease of Access" and "Number of Birds Seen" were the top 3 factors defining a quality hunt (Fig. 5). "Success" and "Number of Birds Shot At" are highly correlated.

Survey results for 2003 are currently being analyzed.

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Table 1. *Spring and fall wild turkey applications, permits and harvest in Minnesota, 1978-2003.*

Year	Spring Applications	Spring Permits Available	Spring Permits Issued	% of Available Issued	Spring Harvest	Spring Hunter Success (%)[a]	Fall Applications	Fall Permits Available	Fall Harvest
1978	10,740	420	411	97.9	94	22.9	-	-	-
1979	11,116	840	827	98.5	116	14.0	-	-	-
1980	9,613	1,200	1,191	99.3	98	8.2	-	-	-
1981	8,398	1,500	1,437	95.8	113	7.9	-	-	-
1982	7,223	2,000	1,992	99.6	106	5.3	-	-	-
1983	8,153	2,100	2,079	99.0	116	5.6	-	-	-
1984	7,123	3,000	2,837	94.6	178	6.3	-	-	-
1985	5,662	2,750	2,449	89.1	323	13.2	-	-	-
1986	5,715	2,500	2,251	90.0	333	14.8	-	-	-
1987	6,361	2,700	2,520	93.3	520	20.6	-	-	-
1988	8,402	3,000	2,994	99.8	674	22.5	-	-	-
1989	13,007	4,000	3,821	95.5	930	24.3	-	-	-
1990	14,326	6,600	6,126	92.8	1,709	27.9	4,521	1,000	326
1991	15,918	9,170	8,607	93.9	1,724	20.0	2,290	2,200	552
1992	16,401	9,310	9,051	97.2	1,691	18.7	2,782	2,200	588
1993	17,800	9,625	9,265	96.3	2,082	22.5	3,186	2,400	605
1994	19,853	9,940	9,479	95.4	1,975	20.8	3,124	2,500	601
1995	21,345	9,975	9,550	95.7	2,339	24.5	3,685	2,500	648
1996	23,757	12,131	10,983	90.5	2,841	25.9	4,443	2,500	685
1997	25,958	12,530	11,610	92.7	3,302	28.4	4,574	2,580	698
1998	29,727	14,035	13,229	94.3	4,361	33.0	4,526	2,710	828
1999	39,957	18,360	16,387	89.3	5,132	31.3	5,354	2,890	865
2000	42,022	20,160	18,661	92.6	6,154	33.0	5,263	3,090	735
2001	41,048	22,936	21,404	93.3	6,383	29.8	4,501	2,870	629
2002	42,415	24,136	22,607	93.7	6,516	28.8	5,180	3,790	594
2003	44,415	25,016	22,770	91.0	7,650	33.6			

[a] Success rate not adjusted for non-participants.

Table 2. *Cumulative survival probability (CSP) for radio-marked wild turkey hens on study areas with supplemental food/corn food plots or only natural foods during winters 2001, 2002, 2003, east-central Minnesota.*

Year	Treatment	# Hens	CSP	Standard Deviation	Compared SD	P-value
2001	Food provided	25	0.085	0.052		
2002	Food provided	43	0.758	0.084		
	Natural foods only	39	0.365	0.095		
					0.126	<0.001
2003	Food provided	38	0.682	0.094		
	Natural foods only	36	0.383	0.088		
					0.129	0.010
2002 & 2003	Food provided	80	0.718	0.090		
	Natural foods only	75	0.347	0.088		
					0.126	0.002

Table 3. *Interference rates by permit area in 1999 and 2002 from surveys of spring wild turkey hunters in Minnesota.*

Permit Area	1999 Interference Rate	2002 Interference Rate
235	25.6	18.7
344	26.1	22.6
349	25.2	16.5
440	24.7	11.0
442	19.8	11.3
450	10.0	0.0
457	16.7	5.9
459	33.3	7.7

Table 4. *Correlation coefficients of hunt quality and hunter interference from surveys of spring 2002 wild turkey hunters in Minnesota.*

Permit Area	Correlation Coefficient	Significance
235	-0.271	0.01
344	-0.108	0.051
349	-0.08	0.085
440	-0.078	0.265
442	-0.08	0.111
450	NA*	NA*
457	0.352	0.165
459	0.015	0.899

* - No interference was reported

Table 5. *Percent of hunters denied access by permit area for 1999 and 2002 from surveys of spring wild turkey hunters in Minnesota.*

Permit Area	% Denied Access	
	1999	2002
235	3.0	0.0
344	13.3	5.7
349	38.5	28.4
440	32.5	18.7
442	31.2	24.2
450	30.0	18.8
457	83.3	67.0
459	43.8	20.8

Table 6. *Correlation coefficients of hunt quality and access from surveys of spring 2002 wild turkey hunters in Minnesota.*

Permit Area	Correlation Coefficient	Significance
235	0.470	0.000
344	0.315	0.000
349	0.268	0.000
440	0.124	0.077
442	0.293	0.000
450	0.451	0.105
457	0.133	0.612
459	0.184	0.119

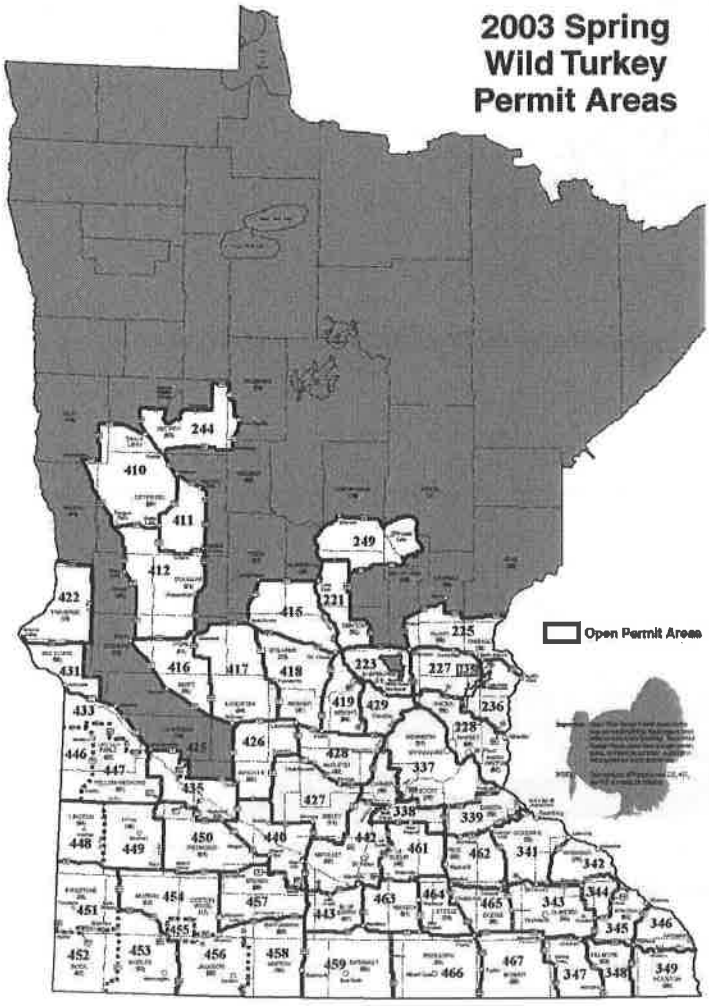

Figure 1. *Turkey permit areas in Minnesota open to spring hunting in 2003.*

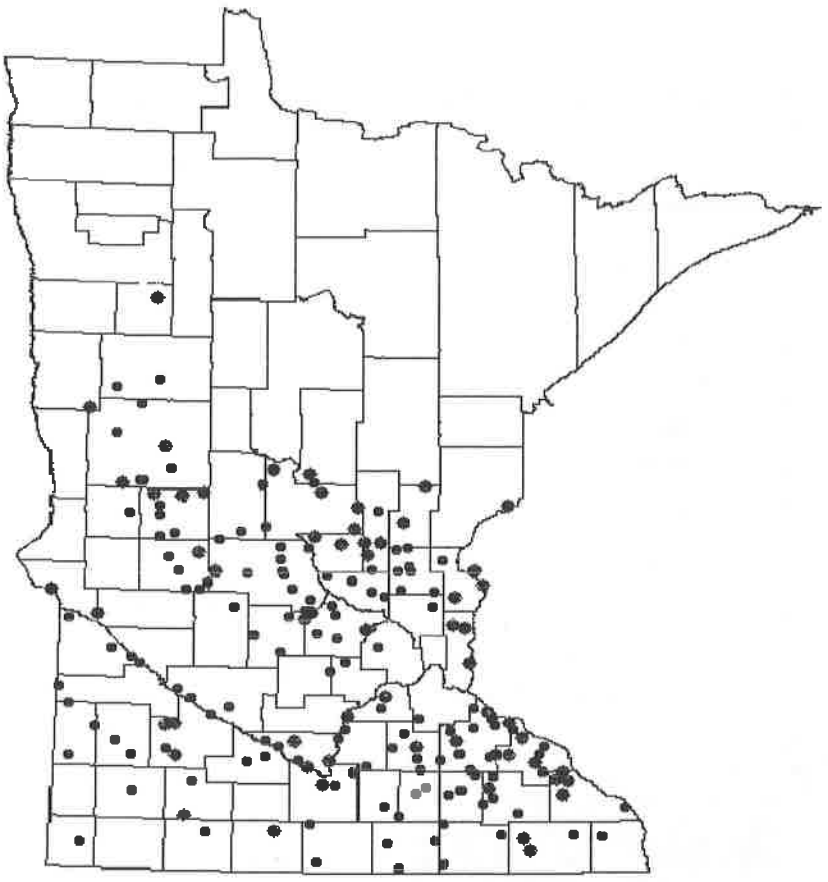

Figure 2. *Wild turkey release sites in Minnesota from 1976-2003.*

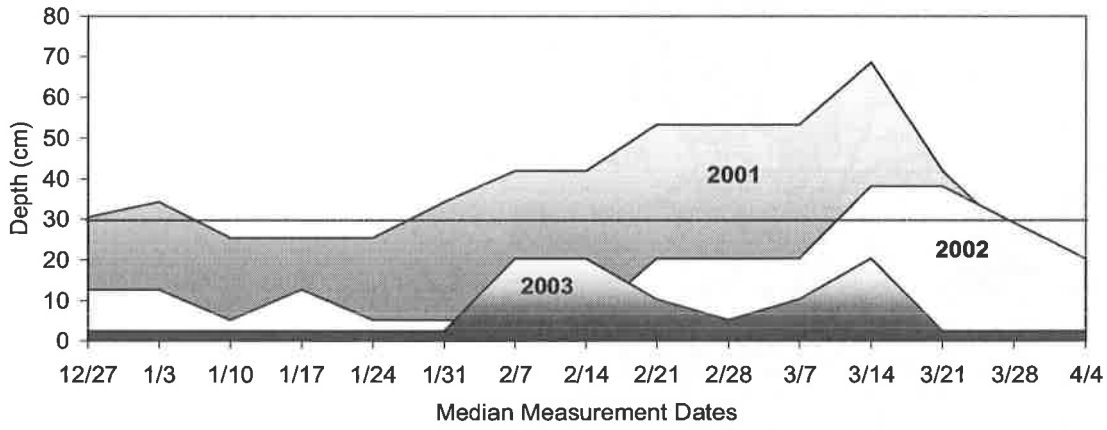

Figure 3. *Snow depth by year with 30cm depth line, east-central Minnesota, 2001-2003.*

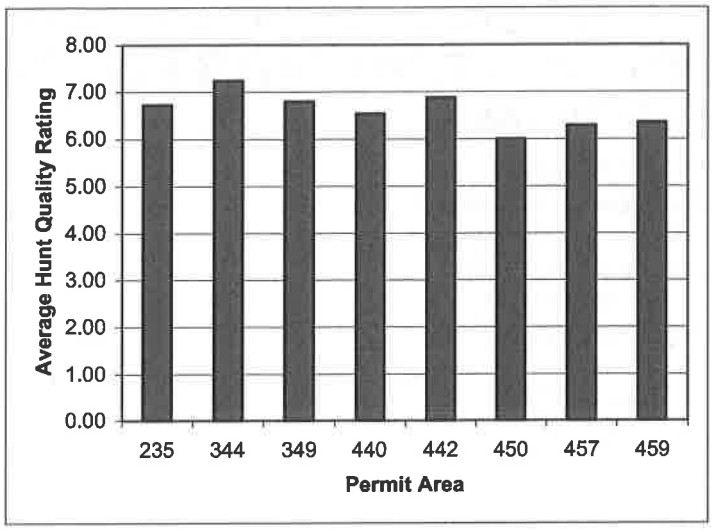

Figure 4. *Average hunt quality rating by survey respondents during spring 2002 wild turkey season in Minnesota.*

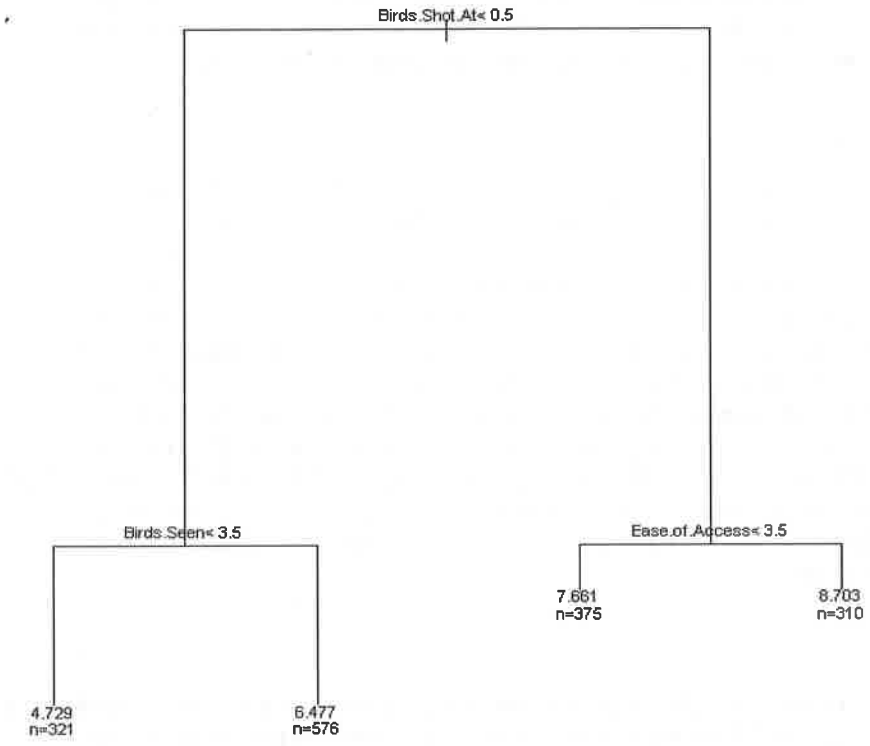

Figure 5. *Regression tree analysis used to determine what factors define a quality spring turkey hunt in Minnesota, 2002.*

MIDWEST DEER AND TURKEY STUDY GROUP MEETING
WILDLIFE HARVEST AND POPULATION STATUS REPORT
WILD TURKEY

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August 2003

2002 Fall Firearms Turkey Season

The 2002 fall firearms turkey season resulted in a harvest of 16,635 birds, an increase of 995 (6%) from the 2001 fall harvest (Table 1). Juvenile birds composed 50% of the harvest. Permit sales were up 1.2% from 2001 (Table 1). The pattern of permit sales and harvest (Table 1) indicate that Missouri's fall firearms season is "self regulating." When turkey numbers go up, hunter numbers go up, and the harvest increases; when turkey numbers go down, hunter numbers go down, and the harvest decreases. It appears that in Missouri only a core group of hunters are pursuing fall firearms turkey hunting opportunities. We have seen an increase in the proportion of adult gobblers harvested during fall over the past 20 years (Figure 1).

2003 Spring Turkey Season

The 2003 spring turkey season was again an outstanding success. The 2003 (including the 2 day youth season) spring harvest was 58,421 birds, up 2.4% from 2002 and an overall spring harvest record (Table 2). Juveniles composed 23% of the harvest reflecting the below average hatch in 2002. Spring started slow but by our 3rd week green-up was almost complete statewide. Gobblers were with hens during the early part of the season and many hunters reported difficult hunting conditions during the 3rd week, especially in South Missouri. Total permit sales for spring turkey hunting increased by 3.9% to 130,101 (Table 2). The number of nonresident turkey hunting permits issued decreased by about 5% from 2002 to 9,607 in 2003. In 2002, the nonresident spring turkey hunting permit price increased from $125 to $145. Top harvest counties in 2003 were Texas with 1,280, Laclede with 1,138 and Howell with 1,066 birds taken. Regionally the harvest was 8,034 in the Northeast region, 8,063 in Northwest, 7,973 in Central, 3,995 in Saint Louis, 8,013 in Ozark, 6,713 in Southwest, 5,369 in Southeast, and 6,623 in Kansas City region.

2002 Brood Survey

The 2002 statewide poult to hen ratio was 1.7 poults per hen (Figure 1) which was considerably lower than the 42 year average of 2.7 poults per hen and 19% below the previous 10-year average of 2.1 poults per hen. Turkey populations in most areas of the state have expanded to occupy the majority of the available habitat in Missouri. As Missouri turkey flocks expanded and occupied new habitat, tremendous production occurred. Consequently, the high long-term average is reflective of this high production. The previous 5 and 10 yr. averages are probably better estimates of what is necessary to maintain today's turkey populations at current levels. Poor poult production during 2002 may result in a decreased harvest in 2004. Variation

among turkey production regions was evident in the 2002 poult to hen ratios (Figure 2) although all regions were below their previous 5-year average (1997-2001). Only the Mississippi Lowlands showed an increase in production. Statewide poult:hen ratios have varied over time and have leveled off in recent years (Figure 3). Efforts are currently being undertaken to increase brood survey participation in all regions within the state with special focus on those regions with questionable return numbers.

Population Status

Since 1983, volunteer archers have recorded the number of wild turkeys, deer, and furbearers seen while bowhunting during October and November. On a statewide basis, the number of wild turkey sightings per 1,000 hours of bowhunting in 2002 was 773. This number is above the previous 15-year average (511) but similar to that observed during the last 3 years.

Populations are in good shape throughout the state. Hunters during the 2003 spring season encountered average numbers of jakes. Consequently, there should be fair numbers of 2-year olds during the 2004 spring season.

Spring turkey harvest, age structure in the spring harvest, population indices, hunter success, and hunter opinions and attitudes provide the information needed to determine whether spring turkey hunting quality is being impacted. These variables are being monitored closely.

Incidents

In the spring of 2003 there were 4 non-fatal incidents, the lowest number in recent (since 1985) history (Table 3). Even though hunters were able to hunt for three weeks, during full leaf-out the number of incidents did not increase. There were 8 non-fatal spring hunting incidents during spring of 2002 and none recorded during fall of 2002.

An analysis of incident data revealed that, although the average number of incidents before (1978-1986) and after (1987-1998) the safety regulations were implemented in 1987 was not quite statistically different (18.7 vs. 12.1), the incident rate (number of incidents/100,000 permits sold) was significantly lower (2.90 vs. 1.30).

Mistaken-for-game is still the primary cause of incidents. Even though the spring turkey hunting incident rate is on the decline in Missouri, the need to stress turkey hunting safety continues.

Restoration

Restoration has been complete in Missouri since 1979. However, parts of SW Missouri have had a history of low turkey densities despite reasonably good habitat. Local staff theorized that poaching and other mortality pressures were such that the depressed turkey population was unable to rebound. We released 360 birds (100 gobblers, 260 hens) at 13 sites during winter 2001-2002 in an attempt to flood the area with birds thus enabling them to bring off a hatch that was greater than yearly losses. A portion of the released birds were radio-marked. This past year we started the nesting season with 43 radioed hens but lost signals on 9. Signals are growing weak and we are quickly losing the ability to track birds. Of the mortalities we lost 5 nesting hens to predators, 1 to haying equipment, and 1 to a vehicle accident. Of the 23 nests that were flagged, 2 hens lost their nests to black snakes and 21 birds laid 162 eggs; 52 poults were counted at four weeks of age.

Regulation Changes

We are considering regulation changes to increase season length and daily bag limits for fall turkey season and all-day hunting for spring turkey season. Objectives of these changes are to increase opportunity, hunter participation, and success rates.

Table 1. *Fall firearms turkey season harvest and permit sales, 1985-2002.*

Year	Fall Firearms Harvest	% Change From Previous Year	Fall Permit Sales	% Change From Previous Year
2002	16,635	6	31,329	1.2
2001	15,640	18.2	30,949	-3.2
2000	13,230	-9.7	31,968	-2
1999	14,651	-4.5	32,606	0
1998	15,343	29.3	32,593	-3.5[d]
1997	11,866	-10.2	33,765	-2.2[c]
1996	13,207	-4.8	34,522	+2.6[c]
1995	13,866	-30.2	33,642	-12.6
1994	19,869	46.4	38,424	11.8
1993	13,569	-20.4	34,379	-4.6
1992	17,061	-13.8	36,033	-3.8
1991	19,788	23.6	37,469	1
1990[b]	16,015	-27.6	37,080	-21
1989	22,131	-4.1	46,946	-7.4
1988	23,080	-18	50,715	-4.2
1987	28,139	33.9	52,922	13.4
1986[a]	21,019	72.6	46,688	28.9
1985	12,181	-	36,218	-

[a]Bag limit was increased from 1 to 2 birds.
[b]Permit fee increase.
[c] New permit types in 1996 and 1997 (all conservation and all hunting) that include fall firearms turkey hunting privileges make comparisons with other years less meaningful. Although permit sales went up in 1996 and 1997 when compared with 1995, a higher proportion of permit buyers (those buying the all conservation and all hunting permit types) did not hunt. These permit types were eliminated in 1998.
[d] All conservation and all hunting permit types eliminated.

Table 2. *Spring turkey season harvest and permit sales, 1985-2003.*

Year	Spring Harvest	% Change From Previous Year	Percent Success[b]	Spring Permit Sales	% Change From Previous Year
2003	58,421	2.4	38	130,021	3.8
2002	57,034	-1.3	39	125,157	6.3
2001	57,842[e]	1.7	?	117,736[f]	2.2
2000[a]	56,841	13	39	115,190[f]	3.8
1999[a]	50,299	3.8	37	110,939[f]	5.1
1998[a]	48,462	45.9	36	105,518	5.6
1997	33,216	-12.4	27	99,933	0.1
1996	37,708	0.3	30	99,879	0.5
1995	37,472	-1.2	31	99,412	8.8
1994	37,721	9.8	33	90,810	0
1993	34,354	4	30	89,899	0.1
1992	33,035	2.5	30	89,803	0.8
1991	32,237	7.3	29	89,077	-3.3
1990[c]	30,056	-15.6	27	92,093	-0.9
1989	35,618	7.3	31	92,901	-1.5
1988	33,187	-7.7	29	94,301	10
1987	35,951	16.1	33	85,723	9.9
1986	30,965	25	31	77,972	10.3
1985[d]	24,770	-	25	69,945	-

[a]Three week season, 2 bird bag limit with only 1 the first week and only 1 per day.
[b]Percent of permittees who hunted who killed at least 1 bird.
[c]Permit fee increase.
[d]Two week season, 2 bird bag limit, 1 bird per week.
[e]Includes 2 day Youth-only spring season.
[f]Includes Youth Deer and Turkey hunting permits issued by end of spring turkey season.

Table 3. *Number of injuries during spring and fall firearms turkey season, 1992-2003.*

Year	SPRING SEASON		FALL FIREARMS SEASON	
	Non-fatal Injuries	Fatal Injuries	Non-fatal Injuries	Fatal Injuries
2003	4	0		
2002	8	0	2	0
2001	10	0	-	-
2000	4	0	4	0
1999	12[e]	0	2	0
1998	5	1[d]	2	0
1997	7	0	6	0
1996	5	0	0	0
1995	12	1[c]	5	0
1994	6	1[b]	5	0
1993	7	0	3	1[a]
1992	9	0	7	0
1991	14	0	4	0
1990	13	1	9	0
1989	22	0	9	0
1988	25	1	10	0
1987	15	0	15	0
1986	29	2	13	0

[a]Fatality due to illegal use of centerfire rifle in a case of the victim being mistaken for game.
[b]Fatality resulted from victim climbing into or out of a tree stand with a loaded shotgun which went off.
[c]Fatality resulted from victim being mistaken for game at 18 yards.
[d]Fatality resulted from victim being mistaken for game and shot by a person hunting illegally with a scoped 0.270 rifle. The shooter said he saw what he thought was a turkey at a little over 100 yards and fired.
[e] 1 incident from illegal activity.

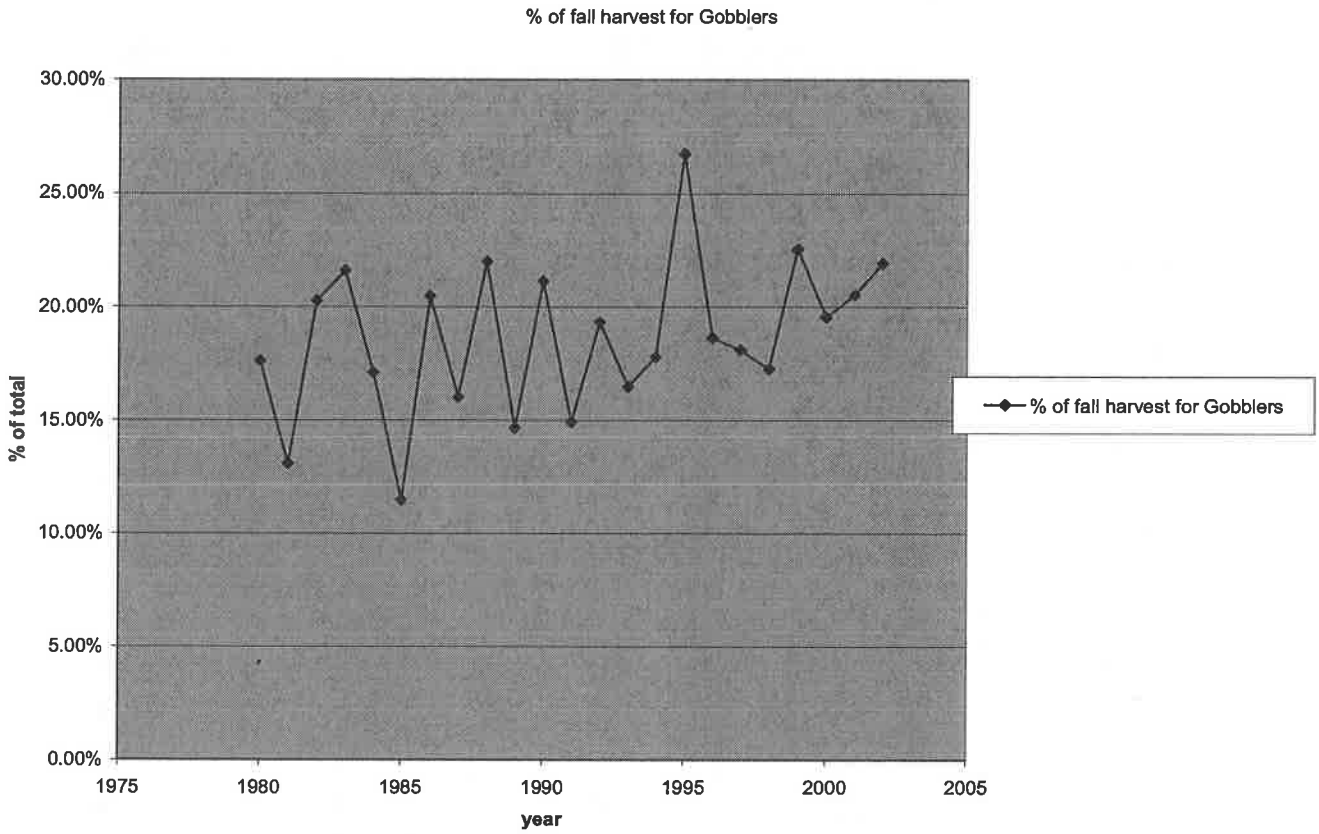

Figure 1. *Proportion of adult gobblers in fall harvest 1978-2002.*

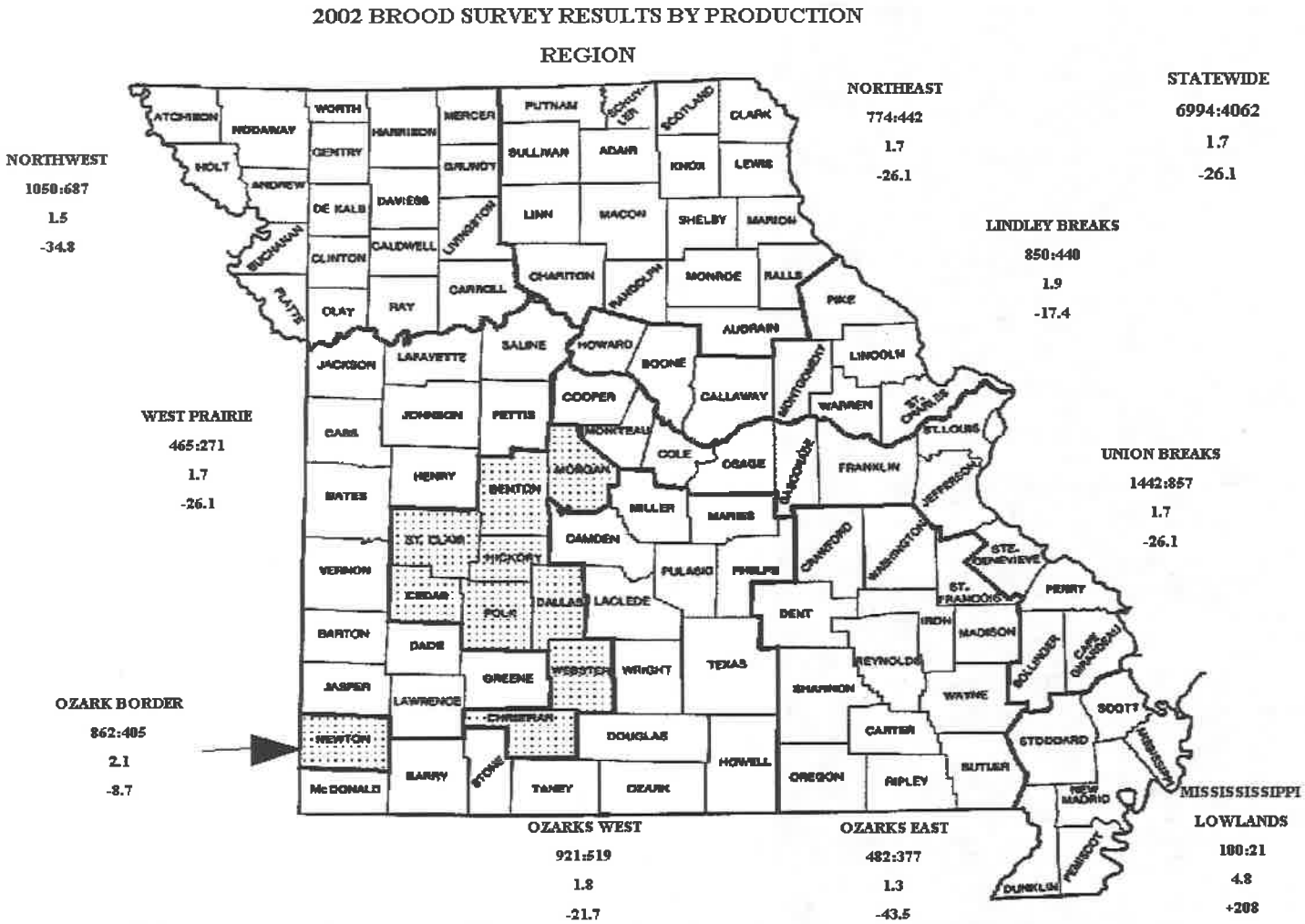

Figure 2. Wild turkey productivity indices for 2002. The values shown for each region are the number of poults observed:the number of hens observed, the poult to hen ratio, and the percent change of the 2002 poult to hen ratio from the previous 5-year average.

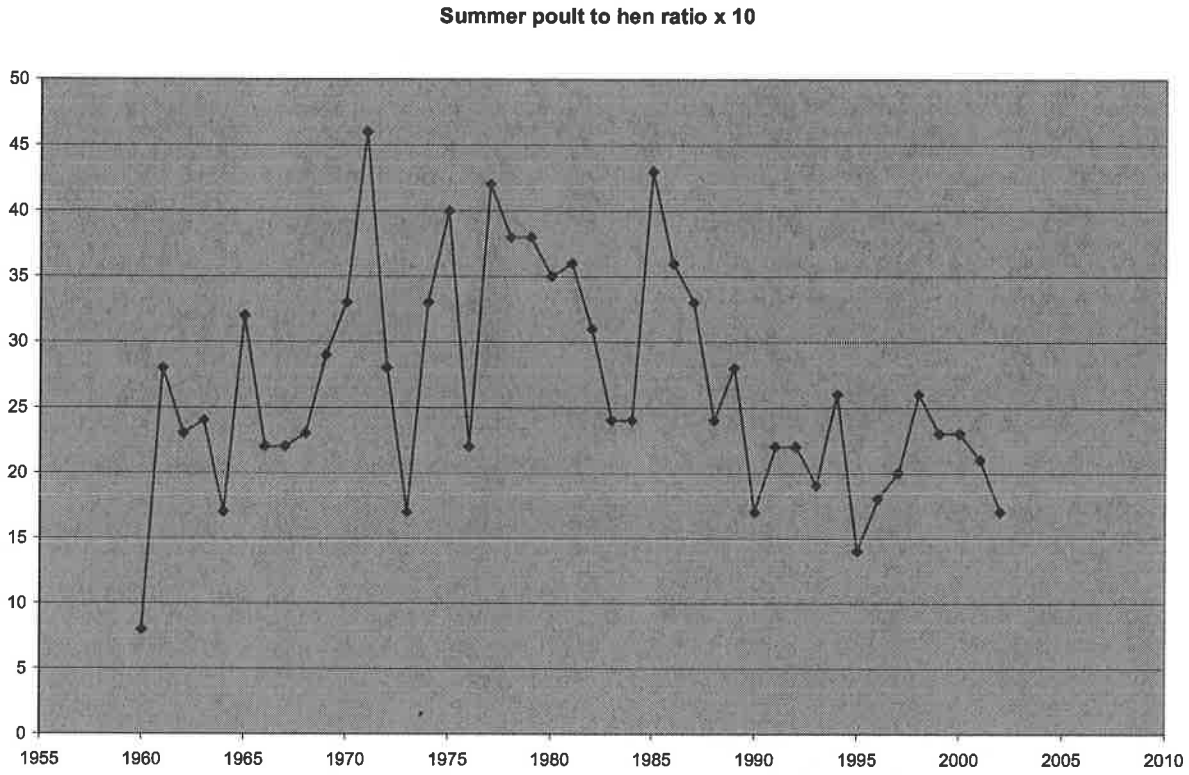

Figure 3. *Annual summer poult:hen ratios observed for Missouri 1960-2002.*

NEBRASKA SPRING TURKEY HARVEST, 2002

Unit Report PROJECT NO. W-15-R JOB NO. M-3

Karl Menzel
November 14, 2002

Permit success for the 2002 spring shotgun season was estimated at 42%, with 7,998 turkeys taken by persons who held 18,859 permits. About 7% of the permit buyers did not hunt, so success of active hunters was 46%. Shotgun permits increased 726 overall, with increases of 1,343 in limited units and a decrease of 657 in the unlimited Northwest Unit. Archery success was 30%, with 1,104 birds taken by 3,641 permittees (Table 1).

Table 1. *Turkey permits, hunters, harvest, and success, 2001 and 2002.*

Unit	Permits		Hunters		Harvest		% Success	
	2001	2002	2001	2002	2001	2002	2001	2002
East Early	2,218	2,523	2,038	2,267	923	1,002	42	40
East Late	2,200	2,700	1,904	2,464	781	1,225	36	45
Northwest	4,955	4,338	4,667	4,139	2,199	1,754	44	40
Southwest Early	2,449	2,405	2,074	2,289	932	1,168	38	48
Southwest Late	2,700	3,000	2,312	2,708	936	1,199	35	40
Verdigre Early	1,611	1,593	1,457	1,513	787	763	49	48
Verdigre Late	2,000	2,300	1,719	2,160	704	887	35	39
Total Gun	18,133	18,859	16,171	17,540	7,262	7,998	40	42
Archery	3,624	3,641	3,398	3,532	1,047	1,104	29	30

Questionnaires were mailed to 500 persons with regular permits in each unit. Based on prior surveys, persons who did not respond were considered to be 0.789 as successful as those who did, and non-hunters were 1.709 times greater among non-respondents. Responses were received for 2,311 (57.7%) of the 4,000 surveys mailed (Table 2).

Table 2. *Questionnaire mailings, returns, success, and non-hunters.*

Unit	No. Mailed	Returns		Successful		Did not Hunt	
		No.	%	No.	%	No.	%
East Early	500	263	53	116	44	20	8
East Late	500	224	45	115	51	13	6
Northwest	500	262	52	123	47	9	3
Southwest Early	500	206	41	114	55	7	3
Southwest Late	500	261	52	116	44	19	7
Verdigre Early	500	244	49	131	54	9	4
Verdigre Late	500	235	47	102	43	15	6
Total Gun	3,500	1,695	48	817	48	92	5
Archery	500	231	46	79	34	5	2

The 2002 spring season provided about 87,500 man days of recreation (Table 3). The number of man days required to bag a bird about the same as in 2001.

Table 3. *Average and total days hunted by unit.*

Unit	Average Days Hunted				Total Days Hunted		Hunter Days per Bird	
	Successful		Unsuccessful					
	2001	2002	2001	2002	2001	2002	2001	2002
East Early	2.64	4.36	3.87	4.80	5,960	10,443	6.4	10.4
East Late	4.38	2.61	4.58	3.37	8,546	7,372	10.9	6.0
Northwest	3.23	3.35	3.16	3.42	15,994	14,976	7.3	8.5
Southwest Early	2.82	2.50	3.33	3.21	6,431	6,523	6.9	5.6
Southwest Late	3.48	3.04	3.98	3.69	9,003	9,215	9.6	7.7
Verdigre Early	2.36	2.58	2.69	2.62	3,659	3,931	4.6	5.2
Verdigre Late	2.73	2.86	3.14	3.47	5,109	6,960	7.3	7.8
All shotgun	3.30	3.08	3.45	3.56	54,702	59,420	7.5	7.4
Archery	6.17	9.10	6.59	7.43	21,953	28,486	21.0	25.8

Envelopes for submission of wing feathers were included with each permit issued from Commission offices. Permits were also available over the Internet and anyone who obtained a permit directly that way did not receive an envelope. As a consequence returns (Table 4) were lower than during most preceding years. Thirty-three percent of the usable shotgun samples were from subadults (hatched in 2001), compared to 40% in 1995, 28% in 1996,32% in 1997, 33% in 1998,27% in 1999, 23% in 2000, and 28% in 2001.

Table 4. *Age determined from wing feather samples.*

Unit	No. Returned	% of Harvest	Age		Wrong Feathers	% Subadult	
			Subadult	Adult		2001	2002
East Early	212	21	72	111	29	30	39
East Late	225	18	60	144	21	28	29
Northwest	135	8	36	79	21	19	31
Southwest Early	163	14	49	88	26	32	36
Southwest Late	159	13	45	85	29	22	35
Verdigre Early	113	15	29	70	14	23	29
Verdigre Late	99	11	25	63	11	24	28
Total Gun	1,104	14	316	640	151	151	33
Archery	44	4	17	22	5	45	44

Harvest distribution by county was estimated from information provided on survey cards and from the proportion of feather collections submitted from each county. Both sets of data were projected based on the total harvest per unit from survey cards.

Season dates were March 25 to May 19 for Archery; April 13 to May 19 for Northwest; April 13 to 21 for East, Southwest, and Verdigre Early; and April 22 to May 19 for East, Southwest, and Verdigre Late.

NEBRASKA FALL TURKEY HARVEST 2002

Unit Report PROJECT NO. W-15-R JOB NO. M-3

Karl Menzel
January 13, 2003

Estimated permit success for the 2002 fall shotgun season was 53%, with 3,013 turkeys taken by persons who held 5,671 permits. About 12% of the permit buyers did not hunt, so success of active hunters was 60%. Archery success was 25%, with 229 birds taken by 911 permittees (Table 1). Archery season ran from October 1 to November 15 and shotgun season from October 18 to November 15.

Table 1. *Turkey permits, hunters, harvest, and success, 2001 and 2002.*

Unit	Permits		Hunters		Harvest		% Success	
	2001	2002	2001	2002	2001	2002	2001	2002
East	1,152	1,216	1,021	1,048	476	568	42	47
Northwest	1,448	1,287	1,369	1,161	663	676	46	53
Southwest	1,610	1,632	1,472	1,450	924	896	57	55
Verdigre	1,537	1,536	1,380	1,357	799	873	52	57
Total Gun	5,747	5,671	5,242	5,016	2,864	3,013	50	53
Archery	824	911	730	800	203	229	25	25

Questionnaires were mailed to 500 persons with regular permits in each unit, and non respondents received a second survey. Based on prior surveys, persons who did not respond were considered to be 0.789 as successful as those who did, and non-hunters were 1.709 times greater among non-respondents.

Responses were received for 1,298 (51.9%) of the 2,500 surveys mailed (Table 2).

Table 2. *Questionnaire mailings, returns, success, and non-hunters.*

Unit	No. Mailed	Returns		Successful		Did not Hunt	
		No.	%	No.	%	No.	%
East	500	284	57	146	51	30	11
Northwest	500	260	52	152	58	19	7
Southwest	500	264	53	161	61	22	8
Verdigre	500	245	49	156	64	21	9
Total Gun	2,000	1,053	53	615	58	92	9
Archery	500	245	49	69	28	22	9

The 2002 fall season provided about 18,000 man days of recreation (Table 3).

Table 3. *Average and total days hunted by unit.*

Unit	Average Days Hunted				Total Days Hunted		Hunter Days per Bird	
	Successful		Unsuccessful					
	2001	2002	2001	2002	2001	2002	2001	2002
East	2.61	2.70	3.29	3.93	3,037	3,147	6.4	5.5
Northwest	2.15	2.21	3.06	3.02	3,580	2,529	5.4	3.7
Southwest	2.30	2.74	3.42	4.54	4,002	4,869	4.3	5.4
Verdigre	2.09	1.89	2.77	2.53	3,280	2,876	4.1	3.3
Total Gun	2.26	2.33	3.12	3.33	13,899	13,671	4.9	4.5
Archery	4.18	5.36	5.11	5.58	3,539	4,416	17.4	19.3

An envelope for submission of wing and breast feathers was included with permits that were not purchased via Internet. Returns have not been examined at this time.

Harvest distribution by county was estimated from information provided with the harvest questionnaire and from location listed on the feather envelope.

NEBRASKA SPRING TURKEY HARVEST, 2003

Unit Report PROJECT NO. W-15-R JOB NO. M-3

Kit Harns
October 6, 2003

Permit success for the 2003 spring shotgun season was estimated at 46%, with 9,053 turkeys taken by persons who held 19,678 permits. About 5% of the permit buyers did not hunt, so success of active hunters was 50%. Shotgun permit sales increased by 819 as increases in permit quotas in all shotgun units resulted in increased sales in the East, Southwest Late and Verdigre Late units. Fewer permits were sold in all other units. Archery success was 36%, with 1,483 birds taken by 4,100 archers.

Table 1. *Turkey permits, hunters, harvest, and success, 2002 and 2003.*

Unit	Permits		Hunters		Harvest		% Success	
	2002	2003	2002	2003	2002	2003	2002	2003
East Early	2,523	2,902	2,267	2,687	1,002	1,303	40	45
East Late	2,700	3,241	2,464	2,939	1,225	1,367	45	42
Northwest	4,338	4,075	4,139	3,960	1,754	1,952	40	48
Southwest Early	2,405	2,343	2,289	2,106	1,168	1,163	48	50
Southwest Late	3,000	3,300	2,708	3,046	1,199	1,374	40	42
Verdigre Early	1,593	1,495	1,513	1,450	763	807	48	54
Verdigre Late	2,300	2,322	2,160	2,188	887	1,087	39	47
Total Gun	18,859	19,678	17,540	18,376	7,998	9,053	42	46
Archery	3,641	4,100	3,532	3,957	1,104	1,483	30	36

Questionnaires were mailed to 500 persons with regular permits in each unit. Based on prior surveys, persons who did not respond were considered to be 0.789 as successful as those who did, and non-hunters were 1.709 times greater among non-respondents. Responses were received for 1,913 (47.8%) of the 4,000 surveys mailed (Table 2).

Table 2. *Questionnaire mailings, returns, success, and non-hunters.*

Unit	No. Mailed	Returns		Successful		Did not Hunt	
		No.	%	No.	%	No.	%
East Early	500	240	48	126	52	13	5
East Late	500	259	52	129	50	18	7
Northwest	500	242	48	132	54	5	2
Southwest Early	500	221	44	130	59	16	7
Southwest Late	500	261	52	127	49	15	6
Verdigre Early	500	230	46	142	62	5	2
Verdigre Late	500	256	51	138	54	11	4
Total Gun	3,500	1,709	49	924	54	83	5
Archery	500	204	41	86	42	5	2

The 2003 spring season provided about 92,000 days of recreation (Table 3).

Table 3. *Average and total days hunted by unit.*

Unit	Average Days Hunted				Total Days Hunted		Hunter Days per Bird	
	Successful		Unsuccessful					
	2002	2003	2002	2003	2002	2003	2002	2003
East Early	4.36	2.51	4.80	3.30	10,443	8,857	10.4	6.8
East Late	2.61	4.15	3.37	4.31	7,372	12,664	6.0	9.3
Northwest	3.35	3.20	3.42	3.43	14,976	13,578	8.5	7.0
Southwest Early	2.50	2.61	3.21	3.50	6,523	7,363	5.6	6.3
Southwest Late	3.04	4.40	3.69	4.31	9,215	13,130	7.7	9.6
Verdigre Early	2.58	2.23	2.62	2.51	3,931	3,637	5.2	4.5
Verdigre Late	2.86	2.88	3.47	2.94	6,960	6,431	7.8	5.9
All shotgun	3.08	3.12	3.56	3.53	59,420	65,661	7.4	7.3
Archery	9.10	7.29	7.43	6.56	28,486	25,971	25.8	17.5

Envelopes for submission of wing feathers were included with each permit issued from Commission offices. Permits were also available over the Internet and anyone who obtained a permit directly that way did not receive an envelope. As a consequence returns have been declining as increasing numbers of hunters purchase Internet permits (Table 4). Twenty-four percent of the usable shotgun samples were from subadults (hatched in 2002), compared to 28% in 1996, 32% in 1997, 33% in 1998,27% in 1999, 23% in 2000, 45% in 2001 and 44% in 2002.

Table 4. *Age determined from wing feather samples.*

Unit	No. Returned	% of Harvest	Age		Wrong Feathers	% Subadult	
			Subadult	Adult		2002	2003
East Early	198	15	62	106	30	39	37
East Late	260	19	74	156	30	29	32
Northwest	102	5	27	63	12	31	30
Southwest Early	77	7	24	49	4	36	33
Southwest Late	180	13	55	104	21	35	35
Verdigre Early	50	6	18	27	5	29	40
Verdigre Late	94	9	31	45	18	28	41
Total Gun	961	11	291	550	120	33	35
Archery	25	2	5	16	4	44	24

Season dates were March 25 to May 18 for Archery; April 12 to May 18 for Northwest; April 12-20 for East Early, Southwest Early, and Verdigre Early; and April 21 to May 18 for East Late, Southwest Late and Verdigre Late.

NORTH DAKOTA WILD TURKEY REPORT
MIDWEST DEER/TURKEY STUDY GROUP MEETING

Bethel Horizons Prairie Center
Dodgeville, Wisconsin
August 24-27, 2003
Lowell A. Tripp

SPRING 2002 HUNTING SEASON

During the spring of 2002, twenty-six areas were open for wild turkey hunting. These areas were included in all or portions of 38 counties. The season was open from April 13 through May 12, 2002 and only bearded wild turkeys were legal to be harvested. There were 3,310 permits issued.

Of the issued permits, 2,888 people hunted (87.3 percent) and 1,679 hunters were successful in harvesting their turkey (58.1 percent). Primary feather tips collected from a sample of the harvested birds showed that 22.4 percent of the statewide harvest was sub-adults and 0.9 percent were bearded females. The opening weekend of the spring season accounted for 17.3 percent of the total harvest.

2002 BROOD SURVEY

The 2002 statewide brood survey, as reported by cooperating land-owners as well as department personnel, showed 1,433 poults and 249 hens for a poult per hen average of 5.8. This is an increase of 1.0 poults per brood over the year 2001. Our previous 5-year average was 4.8. Therefore, our reproduction in 2002 was above average.

FALL 2002 HUNTING SEASON

We have only one time period for fall hunting wild turkeys. The season was held from October 12, 2002 through January 5, 2003. There were 6,610 permits available and 6,752 were issued (500 gratis and 6,252 general).

From the wild turkey hunter questionnaires, it was determined that 5,234 permittees hunted (77.5 percent) and 60.3 percent of those hunters were successful and harvested 3,157 wild turkeys. Data regarding sex and age of the harvest was determined by a voluntary sample of wing tip and breast feathers sent in by hunters. This data indicated that, based upon 965 samples, 39.8 percent of the 2002 fall harvest were females and 38.7 percent were juveniles.

TRAP/TRANSPLANT PROGRAM

During the 2002-2003 wild turkey trapping period, 310 wild turkeys were trapped at 8 different sites in 7 counties. They were released at 12 sites in 9 counties. Of the total birds trapped and released, 71 were adult gobblers, 78 were adult hens, 78 were juvenile males and 83 were juvenile hens. The rocket-net, the drop-net and the walk-in type traps were all used in the trapping operation. All birds were Easterns.

Some of the areas selected for release were determined to have a good potential of supporting suitable wild turkey populations in huntable numbers. Other areas received transplants because of public requests and an indication that the local people would support wild turkeys in their areas. In a few cases, only a few birds were released to supplement an existing wild population.

SPRING 2003 HUNTING SEASON

There were 8,931 applicants for 3,710 permits during the 2003 spring season which opened on April 12 and closed on May 11(30 days). Permits were issued to 3,709 hunters (269 gratis and 3,440 general).

The spring hunter questionnaire data showed that 3,282 of the permittees hunted (88.5%) and killed 1,896 wild turkeys for a hunter success of 57.8 percent. Feather data collected from the spring 2003 harvest indicated that 16.6 percent of the harvest were sub-adults and 0.6 percent were bearded females.

2003 HUNTING SEASON

There are 9,065 permits available for our fall 2003 season. The season is set to open on October 11, 2003 and close on January 17, 2004. This is about 2 weeks longer than usual. The biggest change is that, for the first time, the entire state will be open to wild turkey hunting.

SPRING WING SURVEY				
Year	Sample Size	Number of Adults	Number of Sub-Adults	Percent Sub-Adults
1985	50	38	12	24.0
1986	87	58	29	33.3
1987	102	67	35	34.3
1988	130	81	49	37.7
1989	240	182	58	24.2
1990	242	196	46	19.0
1991	222	182	40	18.0
1992	312	232	80	25.6
1993	338	264	74	21.9
1994	246	216	30	12.2
1995	265	186	79	29.8
1996	270	216	54	20.0
1997	254	203	54	20.1
1998	403	290	113	28.0
1999	504	384	120	23.8
2000	619	500	119	19.2
2001	572	490	82	14.3
2002	661	513	148	22.4
2003	773	645	128	16.6

FALL WING SURVEY						
Year	Sample Size	Percent of Total				Young per Ad. Female
		Juv.	Ad.	Male	Female	
1983	588	41.4	58.6	53.2	46.8	1.44
1984	643	47.7	52.3	57.4	42.6	2.14
1985	560	51.1	48.9	61.1	38.9	2.46
1986	562	47.7	52.3	58.8	41.2	2.15
1987	682	52.9	47.1	65.6	34.4	2.80
1988	925	35.7	64.3	62.7	37.3	1.50
1989	977	44.4	55.6	59.4	40.6	1.81
1990	744	46.1	53.9	61.3	38.7	2.19
1991	635	42.8	57.2	59.5	40.5	1.96
1992	647	41.5	58.5	62.6	37.4	1.78
1993	469	27.8	72.2	59.7	40.3	0.96
1994	497	42.5	57.5	60.5	39.5	1.59
1995	568	39.8	60.2	61.2	38.8	1.61
1996	642	45.3	54.7	61.3	38.7	2.22
1997	627	41.2	58.8	63.7	36.3	1.78
1998	752	40.6	59.4	66.6	33.4	2.10
1999	953	41.9	58.1	66.1	33.9	1.93
2000	983	27.8	72.2	62.0	38.0	1.03
2001	887	34.7	65.3	62.9	37.1	1.51
2002	965	38.7	61.3	60.2	39.8	1.54

NORTH DAKOTA SPRING WILD TURKEY HUNTING SEASONS					
Year	Number of Applicants	Number of Permits Issued	Number of Hunters	Number of Birds Bagged	Percent Success
1976		30	22	9	40.9
NO SPRING WILD TURKEY HUNTING SEASONS 1977 THROUGH 1981					
1982	1,794	70	57	18	31.6
1983	470	160	146	61	41.8
1984	1,066	258	231	94	40.7
1985	1,735	283	257	130	50.6
1986	1,568	325	290	155	53.4
1987	2,122	455	387	232	59.9
1988	2,116	600	527	331	62.8
1989	2,680	843	753	502	66.7
1990	5,151	1,188	998	547	54.8
1991	6,043	1,490	1,319	658	49.9
1992	6,611	1,717	1,533	746	48.7
1993	5,673	1,807	1,605	696	43.4
1994	4,323	1,500	1,328	555	41.8
1995	4,243	1,322	1,174	581	49.5
1996	4,509	1,445	1,277	641	50.2
1997	4,318	1,528	1,272	669	52.6
1998	5,316	1,695	1,484	924	62.3
1999	6,748	2,075	1,835	1,173	63.9
2000	7,967	2,534	2,266	1,421	62.7
2001	8,460	2,925	2,556	1,449	56.7
2002	9,724	3,310	2,888	1,679	58.1
2003	8,931	3,709	3,282	1,896	57.8

NORTH DAKOTA FALL WILD TURKEY HUNTING SEASONS

Year	Number of Applicants	Number of Permits Issued	Number of Hunters	Number Birds Bagged	Percent Success
1958		376	376	88	23.4
1959	NO SEASON	--	--	--	--
1960	NO SEASON	--	--	--	--
1961		309	246	174	70.7
1962		426	392	241	61.5
1963		306	298	171	57.4
1964		404	386	198	51.3
1965		350	290	109	37.6
1966	NO SEASON	--	--	--	--
1967		200	183	103	56.3
1968		200	178	97	54.5
1969		197	186	117	62.9
1970		197	180	131	72.8
1971		201	185	134	72.4
1972		227	205	129	62.9
1973		203	195	151	77.4
1974		307	285	213	74.7
1975		359	308	186	60.4
1976		500	466	653	75.8
1977		650	513	411	80.1
1978		844	737	540	73.3
1979	2,834	961	881	583	66.2
1980	2,611	1,135	1,029	736	71.5
1981	4,969	1,514	1,310	976	74.5
1982	3,398	1,501	1,361	975	71.6
1983	3,185	1,678	1,488	1,181	79.4
1984	3,285	1,707	1,521	1,197	78.7
1985	4,064	1,946	1,631	1,269	77.8
1986	3,800	2,126	1,861	1,324	71.1
1987	3,640	2,417	2,177	1,668	76.6
1988	6,801	5,938	5,098	3,607	70.8
1989	5,890	5,760	4,818	3,233	67.1
1990	6,921	4,735	3,845	2,556	66.5
1991	7,305	4,593	3,683	2,236	60.7
1992	6,402	3,605	2,938	1,830	62.3
1993	6,030	3,546	2,735	1,331	48.7
1994	4,330	3,154	2,578	1,484	57.6
1995	3,862	3,212	2,608	1,619	62.1
1996	4,348	3,241	2,595	1,946	75.0
1997	4,717	3,273	2,695	1,835	68.1
1998	5,218	3,860	3,141	2,114	67.3
1999	4,977	4,620	3,941	2,750	69.8
2000	7,665	6,000	4,690	3,029	64.6
2001	8,119	6,622	5,224	3,083	59.0
2002	8,399	6,752	5,234	3,157	60.3

27th MIDWEST DEER AND TURKEY STUDY GROUP MEETING
WILD TURKEY MANAGEMENT AND RESEARCH IN OHIO
2002-2003

David A. Swanson
Forest Wildlife Research Project
Ohio Department of Natural Resources, Division of Wildlife
9650 State Route 356
New Marshfield, Ohio 45766

HARVEST MANAGEMENT

Spring Gobbler Season

Turkey Population Status

Entering the 2003 spring season, Ohio's wild turkey population was projected to be equal to or below that of previous years. Population estimates based on the method described by Lewis (1980) and range wide gobbling counts appeared to confirm this projection. Gobbling counts show substantial annual variability, but overall demonstrate increasing turkey abundance (Division of Wildlife 2003).

Hunters and Regulations

Permits for the 2003 turkey season (28 Apr-25 May) were available over-the-counter at regular license vending outlets. Hunting licenses and turkey permits for those individuals eligible for a free license and permit, primarily because they were 66 years old or older, were issued over-the-counter. Landowners and tenants hunting on land they owned or where they resided were exempt from all license and permit requirements. As in 2002, a basic 1-bird bag limit was in effect. However, landowners, tenants, free license recipients, and those hunters purchasing 2 turkey permits were eligible to harvest an additional turkey. The second turkey could be harvested during all 4 weeks of the 2003 season. The bag limit was 1 bearded bird per day.

Resident and nonresident hunting licenses and permit fees were the same in 2003 as in 2002 (license = $15.00 for residents and $91.00 for nonresidents, turkey permit = $20.00 each). For the 2003 season, 67,663 individuals purchased a spring turkey permit and 27,326 were issued free permits (Table 1). The number of permit holders (94,989) for the 2003 season was down 7.5% from the 2002 total of 102,670. Hunters purchasing a turkey permit received 2 "Be Safe" stickers which were attached to a turkey hunting safety brochure listing the turkey check station locations. The "Be Safe" stickers and safety brochure were a cooperative effort between the Division of Wildlife and the Ohio State Chapter, NWTF, as part of an ongoing turkey hunting safety awareness program. Individuals exempt from purchasing a permit could obtain safety stickers and a brochure from any Division of Wildlife office.

As in previous years, legal shooting hours were ½ hour before sunrise until noon. Turkeys could be hunted with a shotgun using shot, longbow, or crossbow. Successful hunters had until 2 p.m. on the day of harvest to register their bird at an official check station for permanent tagging. All 88 counties were open to turkey hunting. The spring turkey season length was 4 weeks in 2003, the same length as in 2002.

Harvest and Hunting Pressure

The 2003 harvest of 20,368 birds was 1,822 gobblers, or 8.2%, lower than the 2002 total of 22,190 (Table 1). Second turkeys made up 15.2% (3,088 birds) of the total harvest. Eighty-nine percent of the successful turkey hunters used a call to bring their bird into effective range and 67.6% reported harvesting their turkey before 9 a.m. Based on spur length measurements, juveniles comprised 26.9% of the 2003 harvest, higher than the 23.5% recorded in 2002 but lower than the 1985-03 average of 34.9%. Two- and 3-year-old birds comprised 25.0% of the harvest and birds ≥4 years old comprised 48.1%. Ashtabula County (1,127 birds) led the harvest followed by Muskingum (655 birds), Guernsey (618 birds), Tuscarawas (614 birds), and Belmont (611 birds). Collectively, these 5 counties accounted for almost 18% of the statewide harvest. Three non-fatal turkey hunting incidents were reported in 2003 compared to 4 non-fatal incidents in 2002 (Table 2). A 38-year summary of modern-day turkey hunting in Ohio is presented in Table 3.

An estimated 87,387 individuals of the 94,989 who received either a paid or a free permit pursued a turkey during the 2003 season (Swanson and Culbertson 2001*a*). The number of hunters decreased 7.8% from the 94,774 estimated hunters in 2002 (Table 1). Fewer hunters in 2003 resulted in an estimated 573,343 days hunted, down 4.0% from the 597,523 days in 2002. Because landowners and tenants are exempt from license and permit requirements when hunting on their own land or on land where they reside, the estimated number of hunters and the projected number of days afield are considered minimum estimates.

Public land in Ohio remains important to both turkeys and the sport of turkey hunting. In 2003, 11.6% of the spring turkey harvest occurred on public land. Public land comprises less than 5% of the land area open to turkey hunting (Ohio Department of Natural Resources 1991).

Age and Hunting Devices

Data collected from successful hunters checking their birds at the Waterloo Wildlife Research Station in Athens County indicate that the 12-gauge continues to be the most popular shotgun with 92% of the hunters reporting its use (Table 4). Over 78% of the hunters reported using a 3-inch or larger shell. Forty-three percent of the turkeys registered were harvested with no. 6 shot; over 95% were harvested with no. 4 shot or smaller. Reported decoy use was 35%, higher than the 33% observed in 2002. About 30% of the hunters used a "Be Safe" sticker which is comparable to past years. Roughly 65% of the hunters reported that they shot their birds at a range of between 20 and 40 yards. Two-year-old birds comprised 31% of the birds checked at Waterloo compared to 21% observed the previous year. Juveniles comprised a lower proportion of the harvest at Waterloo (11.0%) compared to the range-wide harvest (26.9%).

Fall Either-Sex Season

Hunters and Regulations

Ohio held its seventh fall either-sex wild turkey season 12-27 October 2002 in 35 counties. Compared to 2001, the 2002 fall turkey season was open in 3 additional counties (Ashland, Richland, and Scioto). Criteria applied to determine county eligibility for fall either-sex wild turkey hunting included a spring turkey harvest ≥200 birds the past 2 years, ≥30% forested, and not isolated but adjacent to 2 or more counties that meet the first 2 criteria.

Fall wild turkey permits (cost = $20.00) were available over-the-counter at regular license vending outlets. Hunting licenses and turkey permits for those individuals eligible for a free license and permit, primarily because they were 66 years old or older, were issued over-the-counter. Landowners and tenants hunting on land they owned or where they resided were exempt from all license and permit requirements.

Legal shooting hours were ½ hour before sunrise to sunset with a 1 bird of either sex bag limit. Turkeys could be hunted with a shotgun using shot, crossbow, or longbow. Successful hunters had until 8 p.m. on the day of harvest to register their bird at an official check station for permanent tagging.

Ohio held its first archery only fall wild turkey season in the same 35 counties 28 October to 1 December. Turkeys could be hunted only with a longbow or crossbow. Legal shooting hours were ½ hour before sunrise to ½ hour after sunset. Bag limit and registration requirements were the same as for the regular fall turkey season.

Harvest and Hunting Pressure

A total of 2,394 turkeys, 28.1% less than in 2001, was harvested during the 2002 fall season (Table 5). Ashtabula County, with a reported harvest of 160 birds, topped the list of open counties (Table 5). Rounding out the top 6 counties, which collectively accounted for over 28% of the 2002 fall harvest, were Guernsey (126 birds), Coshocton (120 birds), Muskingum (94 birds), Gallia (90 birds), and Knox (90 birds). There was 1 nonfatal hunting incident reported during the 2002 fall turkey season compared to 1 nonfatal incident in 2001 and 2 nonfatal incidents during the 2000 season. During the first 4 fall turkey seasons in Ohio, no hunting incidents were reported (Swanson and Culbertson 2001*b*).

For the 2002 season, 14,527 individuals purchased a fall turkey hunting permit and 19,582 were issued a free permit. An estimated 27,108 individuals from the 34,109 who either purchased or received a free permit pursued a turkey during the 2002 fall season. The number of hunters increased 11.3% from the 24,366 estimated hunters in 2001.

Weights, Ages, and Hunting Devices

Whole body weights were obtained from 1,982 birds harvested during the fall 2002 season. Average weight of adult males was 16.5 pounds (n = 532), adult females 9.7 pounds (n = 648), juvenile males 10.3 pounds (n = 258), and juvenile females 8.4 pounds (n = 544). Overall, mean body weights were similar to those from previous years (Swanson and Culbertson 2001*b*).

Adult females comprised the bulk of the harvest (745 birds, 31.1%), followed by adult males (607 birds, 25.4%), juvenile females (602 birds, 25.1%), and juvenile males (299 birds, 12.5%) (Table 5). One hundred forty-one (5.9%) birds were not classified by age or sex. The 37.6% juveniles in the 2002 harvest was similar to the 40.3% observed in 2001, a reflection of the similar poor reproductive success in 2001 and 2002 (Division of Wildlife 2003).

Over half (56.7%) of the turkeys were taken before noon and 40.1% of successful hunters used a calling device to bring their bird within shooting range. Almost 88% of successful hunters used a shotgun and 7.7% used a decoy. Only 13.8% of the birds were harvested on public land. The harvest was well distributed throughout the week with peaks on opening day (16.1%) and the second (8.9%) and third Saturday (8.5%). Three hundred seventy-eight (15.8%) birds were harvested on the 3 Sundays of the season.

NWTF TECHNICAL GUIDANCE

The Ohio State Chapter, NWTF, raised approximately $280,000 from fund raising events in 2002. This money was deposited in the NWTF-administered Ohio Super Fund and earmarked for in-state projects to benefit wild turkeys. Written guidelines have been developed cooperatively by the Division of Wildlife and the Ohio State Chapter, NWTF, which designate that 75% of the project expenditures go toward land acquisition and 25% toward management projects. A formal procedure for approval of individual Super Fund Projects and technical guidance provided by the Division help ensure that funds are spent on priority projects. Over $1,956,983 has been spent on projects benefiting wild turkeys from 1986 through 2002 (Table 6). Land acquisition projects presently make up 69.6% of expenditures.

TRAP AND TRANSPLANT

A total of 5 sites had been aerially inspected and approved for wild turkey transplanting entering the 2002-03 trapping period. Division of Wildlife trapping crews captured and stocked 112 birds covering all 5 approved sites (Table 7). Transplanting efforts were directed toward marginal habitats in western and central Ohio. Watersheds that were 5-10% forested and fairly well interconnected by brushland-woodland travel corridors were selected as transplant sites. Observation cards and gobbling count surveys will be used to monitor transplant success in these marginal sites.

In 2003, turkeys were present in all 88 counties. Occupied range in 2003 was estimated at 21,500 mi^2 compared to 6,000 mi^2 in 1990.

RESEARCH

Gobbler Banding Study

Work in Missouri and other states indicated that the higher the proportion of the wild turkey gobbler population harvested the lower the proportion of adult gobblers in the population and harvest the following spring. Hunter surveys in Missouri, Arkansas, and Ohio showed that spring turkey hunters believed that hearing gobblers, seeing turkeys, and calling turkeys contributed as much as or more to the quality of the hunt as harvesting a bird (Swanson and Culbertson 2001*a*). With a projected increase in the number of spring turkey hunters through the year 2010, the Division of Wildlife must address the effects of harvest on wild turkey populations and the quality of spring wild turkey hunting. The primary objective of this project is to estimate the harvest rate of wild turkey gobblers throughout their major occupied range in Ohio.

Crews captured, banded, and released 340 gobblers in 14 counties during the 2003 field season. The age ratio was about even with 165 (48.5%) adults and 175 (51.5%) juveniles banded. One hundred seventy-four (51.2%) birds were banded on public land and 166 (48.8%) on private land.

Eighty-six banded birds were harvested during the 2003 spring turkey season for a crude harvest rate of 25.3%. The harvest rate of adult birds was 33.3% (55 of 165), higher than the 17.7% (31 of 175) harvest rate of juvenile birds. Based on land ownership of the capture site, harvest rates were 29.9% (52 of 174) on public land and 20.5% (34 of 166) on private land.

Wild Turkey Hen Population Dynamics Study

Seventy-six wild turkey hens were captured and fitted with radiotransmitters during January – March 2003 in 5 southeastern Ohio counties. There were 13 known deaths, 1 trap-related mortality, and 6 dropped radios. Eleven of the deaths were from predation (4 mammalian and 7 avian), 1 road-kill, and 1 starvation.

DISCUSSION AND RECOMMENDATIONS

Spring Gobbler Season

A decrease of 8.2% in the 2003 harvest coupled with the small (4.0%) decrease in total hunter effort indicate that turkey abundance in 2003 was somewhat lower than in 2002. Compared to the 2002 spring turkey season, the harvest increased in 32 counties, decreased in 53, and stayed the same in 3. Turkey populations in several southeastern counties have reached carrying capacity. In recent years, with the exception of 1999, productivity has been below average in southeastern Ohio, indicative of populations at or near carrying capacity. As turkey populations reach carrying capacity in counties outside of southeastern Ohio, and the influence of annual productivity on turkey abundance becomes more pronounced, turkey hunters should expect spring harvests to level off or decline.
Between 2002 and 2003, spring turkey hunter numbers decreased 7.8%. However, interest in the sport of turkey hunting is expected to continue to increase in subsequent years.

The number of spring turkey hunting incidents decreased from 4 in 2002 to 3 in 2003 (Table 2). Obviously, this is a desirable decrease, but it also illustrates the highly variable nature of turkey hunting incidents. This decrease in hunting incidents should reinforce the continued need for turkey hunter education. Currently, the Division of Wildlife includes a section on turkey hunting in the *Ohio Hunter Safety Education Student Handbook* which is the manual used in Ohio's hunter education program. This training is required of all first-time hunters in Ohio before a hunting license can be issued. The Ohio Chapter, NWTF, has been assisting the Division in reaching even more hunters by providing "Be Safe" gun stickers and hunting safety brochures with each turkey permit sold. As the popularity of turkey hunting continues to grow, cooperation among individuals, conservation organizations, and the Division of Wildlife will become even more important in preserving safe and ethical turkey hunting in Ohio.

Fall Either-Sex Season

This was Ohio's seventh fall either-sex wild turkey season. The fall hunt was designed to be a conservative season with good control over harvest so the Division could evaluate and expand the hunt as appropriate. The harvest objective, <3% of the spring turkey harvest in each county, was very modest. Research from other Midwestern states indicated that up to 10% of the fall turkey population could be harvested without impacting subsequent growth and expansion. Based on mandatory check station results, 1.3% of the fall turkey population in the 35 counties open to hunting was harvested during the 2002 regular and archery only seasons.

Research

Seven years of spring gobbler harvest rate data have been collected. A total of 1,931 gobblers was banded in 17 counties during 1997-2003. Three hundred forty-five (17.9%) banded birds were harvested during the subsequent spring season. We recommend that gobblers be captured and banded by the 8 crews for 3 more years after which a radiotelemetry study will be

initiated. Radio-tagging of wild turkey hens to obtain information on survival, causes of mortality (e.g., legal harvest, predation, illegal harvest, and wounding), and reproductive parameters began during winter 2001-02 and will continue through 2005-06.

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Table 1. *Spring turkey gobbler hunting season statistics for 2003 compared to those from 2002.*

	2002 Season	2003 Season
Number of turkey permits issued		
Paid, 1-bird	48,821	67,663
Paid, 2-bird bonus	24,633	NA
Free	29,216	27,326
Total	102,670	94,989
Estimated total number of permittees who hunted[1]		
Paid, 1-bird	48,186	66,783
Paid, 2-bird bonus	24,559	NA
Free	22,029	20,604
Total	94,774	87,387
Total number of wild turkeys harvested	22,190	20,368
Number of hunters who harvested a second gobbler	3,626	3,088
Percent of successful hunters who used a turkey call	89.2	89
Percent of harvest before 9:00 a.m.	66.7	67.6
Percent juvenile gobblers in harvest	23.5	26.9

[1]Pariticipation rates based on mail survey results in Swanson and Culbertson (2001*a*)

Table 2. *Ohio's spring turkey hunting incident history.*

Year	Estimated hunters	Number of hunting incidents		Number of incidents per 10,000 hunters
		Fatal	Nonfatal	
1966-82		0	0	0
1983	4,402	0	0	0
1984	5,824	0	1	1.72
1985	8,849	1	3	4.52
1986	10,209	0	4	3.92
1987	11,521	0	3	2.60
1988	19,492	0	2	1.03
1989	24,740	0	3	1.21
1990	26,739	0	2	0.75
1991	32,431	1	3/4[1]	1.23/1.54
1992	33,906	1	5	1.77
1993	40,854	0	5	1.22
1994	40,459	0	9/10[1]	2.22/2.47
1995	47,568	0	1	0.21
1996	49,541	0	5	1.01
1997	50,712	0	6	1.18
1998	50,238	0	7	1.39
1999	55,912	0	9	1.61
2000	64,225	0	4	0.62
2001	91,827	0	6	0.65
2002	94,774	0	4	0.42
2003	87,387	0	3	0.34

[1]In both 1991 and 1994, 1 hunting incident involved 2 victims. Consequently, the data are shown as: no. of incidents/no. of victims.

Table 3. *Ohio's spring turkey season dates and harvest success, 1966-2002.*

Year	Season Dates	Number of Counties Open	Bag Limit	Permit Fee	Permits Sold	Estimated Number of Permittees Who Hunted[1]	Total Harvest[2]	Percent Successful[3]
1966	05/04-05/07	9	1	Free	500	321	12	3.7
1967	05/03-05/06	9	1	Free	898	706	18	2.5
1968	05/08-05/11	9	1	Free	914	765	20	2.6
1969	05/07-05/10	9	1	Free	945	815	37	4.5
1970	04/29-05/02	14	1	Free	909	774	30	3.9
	05/06-05/09				896	732	36	4.9
1971	04/28-05/01	14	1	Free	1,000	797	37	4.6
	05/05-05/08				1,000	790	17	2.2
1972	05/03-05/06	14	1	$5.35	917	824	32	3.9
	05/10-05/13				881	787	25	3.2
1973	05/02-05/05	14	1	$5.35	1,034	897	39	4.3
	05/09-05/12				1,034	884	32	3.6
1974	05/01-05/04	14	1	$10.50	999	900	61	6.8
	05/08-05/11				184	167	10	6.0
1975	04/28-05/03	14	1	$10.50	996	893	75	8.4
	05/05-05/10				267	242	19	7.9
1976	04/26-05/08	14	1	$10.50	1,471	1,296	139	10.7
1977	05/02-05/14	14	1	$10.50	1,751	1,504	137	9.1

Table 3. *Continued.*

Year	Season Dates	Number of Counties Open	Bag Limit	Permit Fee	Permits Sold	Estimated Number of Permittees Who Hunted[1]	Total Harvest[2]	Percent Successful[3]
1978	05/01-05/13	18	1	$10.50	2,000	1,711	147	8.6
1979	04/30-05/12	18	1	$10.50	2,000	1,714	265	15.5
1980	04/21-05/03	20	1	$10.75	2,097	1,882	387	20.6
1981	04/27-05/09	20	1	$10.75	3,458	2,954	577	19.5
1982	04/26-05/08	20	1	$10.75	4,262	3,636	651	17.9
1983	04/25-05/07	21	1	$10.75	5,141	4,402	764	17.4
1984	04/23-05/12	31	1	$10.75	6,935	5,824	1,233	19.9
1985	04/22-05/11	31	1	$10.75	10,084	8,849	1,583	17.3
1986	04/28-05/17	31	1	$10.75	11,913	10,209	1,816	17.0
1987	04/27-05/16	32	1	$10.75	13,396	11,521	2,268	18.9
1988	04/25-05/14	32	1	$11.00	16,208	19,492	2,629	16.0
1989	04/24-05/13	36	1	$11.00	18,887	24,740	3,171	15.6
1990	04/23-05/12	37	1	$16.00	19,613	26,739	4,096	20.2
1991	04/22-05/11	38	1	$16.00	22,898	32,431	5,009	21.1
1992	04/27-05/16	38	1	$16.00	28,974	33,906	5,678	19.4
1993	04/26-05/15	42	1	$16.00	29,538	40,539	7,470	15.4
			2	$32.00	4,106			12.4

Table 3. *Continued.*

Year	Season Dates	Number of Counties Open	Bag Limit	Permit Fee	Permits Sold	Estimated Number of Permittees Who Hunted[1]	Total Harvest[2]	Percent Successful[3]
1994	04/25-05/14	44	1	$16.00	29,334	40,459	9,098	16.6
			2	$32.00	5,187			10.7
1995	04/24-05/13	44	1	$20.00	30,496	47,568	10,892	17.0
			2	$40.00	6,015			15.3
1996	04/22-05/11	46	1	$20.00	31,003	49,541	12,098	15.9
			2	$40.00	7,700			15.5
1997	04/28-05/17	47	1	$20.00	30,511	50,712	12,393	14.9
			2	$40.00	8,130			14.6
1998	04/27-05/16	50	1	$20.00	31,037	50,238	13,251	16.9
			2	$40.00	8,133			16.7
1999	04/26-05/16	57	1	$20.00	42,363	55,912	14,419	22.0
			2	$40.00	7,846			27.2
2000	04/24-05/14	88	1	$20.00	49,982	64,225	20,276	34.8
			2	$40.00	9,720			30.7
2001	04/23-05/13	88	1	$20.00	54,841	91,827	26,156	40.2
			2	$40.00	11,092			39.8
2002	04/22-05/19	88	1	$20.00	48,821	94,774	22,190	36.9
			2	$40.00	24,633			14.7
2003	04/28-05/25	88	2	$20.00[4]	94,989	87,387	20,368	23.3

[1]Includes free permit recipients (mainly hunters ≥66 years old).
[2]Total recorded harvest reported by all hunter types (i.e., paid, free, and exempt).
[3]Success rates are for paid permit holders only. Beginning in 1993, success rates are for 1-bird permit holders harvesting 1 bird and 2-bird permit holders harvesting 2 birds.
[4]Beginning in 2003, the special bonus wild turkey permit was eliminated and hunters no longer could be classifiedas1-bird or 2-bird permit holders.

Table 4. *Shotgun, gauge, shell size, and shot size used by successful spring turkey hunters who checked their birds at the Waterloo Wildlife Research Station, Athens County, Ohio, 2003.*

Hunting Device, Decoy, and Safety Sticker Use	Number of Hunters	Percent of Hunters
Shotgun gauge (n = 106)		
20	3	3
16	1	1
12	98	92
10	4	4
Shell size (in.) (n = 117)		
2 3/4	25	21
3	55	47
3 ½	37	32
Shot size (n = 104)		
4	17	16
5	32	31
6	46	44
7 ½	5	5
2 x 5	1	1
4 x 6	3	3
Used a decoy (n = 107)	37	35
Used a safety sticker (n = 107)	32	30

Table 5. *Fall 2002 either-sex wild turkey harvest in 35 Ohio counties and comparisons with 2000 and 2001.*

County	No. turkeys harvested, 2002						Total harvest	
	Adult male	Adult female	Juvenile male	Juvenile female	Unknown age/sex	Total	2000	2001
Adams	12	28	8	11	3	62	63	88
Ashland	8	19	7	3	1	38	---	---
Ashtabula	40	53	33	23	11	160	---	214
Athens	12	16	8	9	2	47	60	84
Belmont	29	15	5	16	4	69	88	96
Brown	11	19	8	10	3	51	99	85
Carroll	19	22	4	17	3	65	84	92
Clermont	8	15	6	8	0	37	44	38
Columbiana	16	15	11	27	4	73	31	51
Coshocton	32	42	9	33	4	120	205	173
Gallia	27	30	9	20	4	90	67	98
Geauga	17	11	6	16	3	53	---	119
Guernsey	41	36	15	30	4	126	203	173
Harrison	25	13	6	20	1	65	140	136
Hocking	13	22	7	18	2	62	76	94
Holmes	4	26	7	19	3	59	87	102
Jackson	19	34	8	22	0	83	61	120
Jefferson	19	19	11	10	10	69	80	64
Knox	15	19	14	22	20	90	137	112
Lawrence	8	5	6	6	2	27	14	35
Licking	11	20	4	12	3	50	---	64
Meigs	12	18	2	7	13	52	60	100
Monroe	21	26	10	26	1	84	87	135

Table 5. *Continued.*

County	No. turkeys harvested, 2002						Total harvest	
	Adult male	Adult female	Juvenile male	Juvenile female	Unknown age/sex	Total	2000	2001
Morgan	13	18	14	14	2	61	96	96
Muskingum	21	32	13	24	4	94	175	161
Noble	18	18	8	32	1	77	114	121
Perry	19	31	9	19	3	81	93	140
Pike	7	4	3	10	3	27	18	47
Richland	25	26	4	12	7	74	---	---
Ross	6	10	6	16	3	41	26	51
Scioto	10	9	4	7	2	32	---	---
Trumbull	17	13	8	35	6	79	---	133
Tuscarawas	18	22	8	25	0	73	103	128
Vinton	18	23	9	10	7	67	67	120
Washington	16	16	9	13	2	56	50	61
Totals	**607**	**745**	**299**	**602**	**141**	**2,394**	**2,428**	**3,331**

Table 6. *Ohio State Chapter, National Wild Turkey Federation Super Fund expenditures, 1986 through 2002. The Division of Wildlife in cooperation with the National Wild Turkey Federation provides technical guidance for the expenditure of project funds raised at Ohio events.*

Project Category	Expenditures	Percent of Expenditures
Land acquisition*	$1,362,818.58	69.6
Management projects		
Habitat	$ 140,569.03	7.2
Restoration	$ 12,289.95	0.6
Education	$ 245,056.54	12.5
Enforcement	$ 11,575.59	0.6
Research	$ 5,036.70	0.3
Miscellaneous	$ 179,637.25	9.2
Grand Total	$1,956,983.64	100.0

*"Super Fund Guidelines" earmark 75% of expenditures for land acquisition.

Table 7. *Wild turkeys stocked in Ohio, 2002-2003.*

Release Site	Adult Male	Adult Female	Juvenile Male	Juvenile Female	Total
Pickaway County Muhlenburg Township	6	13	0	2	21
Pickaway County Deer Creek Township	0	13	8	2	23
Hardin County Washington Township	3	10	5	3	21
Ottawa County Salem Township	5	14	0	8	27
Putnam County Union Township	2	10	5	3	20
TOTAL	16	60	18	18	112

March 31, 2003

2002 ONTARIO WILD TURKEY STATUS REPORT

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Population Status

Wild turkeys were extirpated from Ontario in the early 1900's. Restoration efforts began in 1984, and by 1987 a total of 274 birds were transferred into Ontario from New York, New Jersey, Vermont, Michigan, Missouri, and Iowa (Table 1). Today, the population in Ontario is estimated at approximately 48,000 birds (Table 2), and they occupy an area greater than their historic range.

Estimates of population size and occupied range (Table 2) are "best guesses" by field staff based on spring harvests, brood reports, expected nesting success, public and staff observations, hunter reports and mortality rates reported in the literature.

Ontario's historic turkey range is estimated at 27,000 sq. km. (10,500 sq. mi.), which is ¼ of the estimate of suitable habitat currently existing in southern Ontario (110,000 sq. km.). More suitable range is available today due to the influences of agriculture, and to some extent, milder climatic conditions. Occupied range is estimated at 47,000 sq. km., (Table 2). For mapping purposes, the distribution of birds covers a much greater area, as birds are not uniformly distributed. The area of distribution is approximately 70,000 sq. km (Figure 1), which is about 75% of suitable habitat in southern Ontario.

Post card style observation forms, distributed to rural households are frequently used to monitor the success of new releases. Reported observations of wild turkeys by deer hunters have also been a valuable source of information. Since the fall of 1992, all deer hunters who participated in controlled deer hunts in southern Ontario were asked to record the number of wild turkeys seen during the deer season on their mandatory report. Controlled deer seasons cover approximately 50 percent of the occupied range of turkeys in Ontario. Deer hunter observations of wild turkeys have also been collected from our provincial mail survey of all deer license holders since 1994, as well as from a survey of antlerless deer tag holders since 1998. Approximately 10 to 40 percent of deer hunters reported seeing wild turkeys in wildlife management units where we have spring turkey seasons (Table 3). We hope that these observations, which are collected in a similar manner, each year, will serve as an annual indicator of wild turkey population size and distribution.

The winter of 2001 was very severe in parts of turkey range in Ontario. Areas south and east of Lake Huron received the most snow recorded in the past 40 years. Length of winter was also an issue in many areas, with snow arriving in mid-December and staying until the first week of April. Severity of winter declined from west to east and in the most easterly areas, winter conditions were

only moderate. Some reports of mortality were received, however spring harvests in areas hardest hit were stable or increased slightly.

In contrast the winter of 2002 was mild with little snow cover until the end of the winter (March). Casual observations of hens with poults appear to indicate good production in the spring of 2002 in many parts of the province.

Restoration Activities

Ontario's trap and transfer program is nearing completion with only a small number of local releases required in some Wildlife Management Units (WMU's). In addition, some northern release sites are being considered for possible introductions.

During the winter of 2001/02, trapping was undertaken at 8 locations across southern Ontario, as well as in Tennessee and Michigan. A total of 600 birds were captured and released at 37 sites (Table 4). A total of 319 birds were received from Tennessee, 53 from Michigan and 228 were captured in Ontario. Since 1987, 3,574 birds have been trapped and released at 228 sites in Ontario.

Spring Hunt Details

A record harvest of 4,692 turkeys was registered in Ontario in the spring of 2002 (Table 5, Figure 3). This represents a significant increase over the 2001 harvest of 3,496 birds. In 2002, 372 hunters harvested 2 wild turkeys (Table 6). Second birds accounted for 7.9% of the total harvest in 2002. In 2001, 2000 and 1999, second birds made up 16.7%, 13.0% and 13.9% of the harvest, respectively.

From March 13th to May 5th of 2002, employees of the Ontario Public Service were on strike. During this labor disruption which coincided with the first week of our wild turkey season, a number of wild turkey checkstations (normally found in government offices) were not operating and there were no enforcement activities. As a result, the reported harvest from our mandatory check stations may underestimate the actual spring harvest.

Hunter success rates increased steadily during the first 5 years of hunts in Ontario, as hunters gained experience and proficiency. Success rates then stabilized in the 15-20% range for several years as turkey populations increased and more units opened. Since 1998, success rates have been over 20%, and reached a record high of 23% in 2002 (Table 5).

License sales have been increasing by about 20-40% per year and totaled 19744 in 2002. From 1987 to 1997, the bag limit was one bearded wild turkey taken with archery equipment or a shotgun. In 1998, the bag limit was increased to 2 birds.

Spring wild turkeys seasons were initiated in Ontario in 1987. Seasons began with limited hunter numbers over two one-week seasons and have gradually evolved to a much longer season with no limit on resident or non-resident hunter numbers. In 1991, a number of changes were made to the spring turkey season allowing non-residents to hunt for the first time, and permitting bow hunting on Sundays. The 2002 season dates continued to be from April 25th to May 31st.

Each year new areas of the province are opened to spring hunts as the population expands (Figure 2). In the spring of 2002, 2 new wildlife management units (64B, 69A and the remainder of 65) were opened to hunting. Only shot sizes 4, 5, or 6 may be used. Legal hunting is allowed from

one-half hour before sunrise to noon each day. Information collected from the mail survey of hunters in 2000 and 2001 indicate that a majority of hunters are in favor of all day hunting. As a result we are considering a proposal to permit all day hunting in the future. It is mandatory for all hunters to check their bird. Artificial decoys were permitted for the first time in 1992. As in previous years, all hunters require a valid small game hunting license and a wild turkey license. Prior to purchasing a license, hunters require a certificate verifying that they attended a wild turkey hunter education seminar and passed the required examination. To date approximately 36,670 people have attended the mandatory wild turkey hunter education seminars.

Harvest data and other hunt information are collected from two sources. Biological data (e.g. weight, beard length and spur length, age and sex) are recorded at the mandatory check stations. Information on other aspects of the hunt including hunting effort, numbers of turkeys seen, number of other turkey hunters encountered and amount of money spent for turkey hunting, is collected from a voluntary questionnaire that is randomly mailed to a sample of turkey license holders. From the early 1990s to 2000, approximately 1,500 hunters have been surveyed annually. Due to growing hunter numbers, the number of hunters sampled since 2001 has been increased to 2,000. The mailed survey was not completed in 1997, but a random survey of turkey license holders was conducted annually from 1998-2002.

In the spring of 2002 wild turkey licenses were sold at license issuers outside of Ministry of Natural Resources offices, making them more easily accessible to hunters. Prior to 2002 all wild turkeys licenses were available only at Ministry of Natural Resources offices in southern Ontario.

Research and Management Activities

Thirty-five wild turkeys were released at an experimental release site near Sudbury, in late February and early March of 1999. An additional 13 hens were released in February 2000. This release site is approximately 160 kilometers north of our contiguous range of wild turkeys in southern Ontario. All hens were fitted with radio transmitters and were tracked by Laurentian University. Four successful broods were documented in 1999. Only two hens were seen with poults in the spring of 2000. Approximately 15 birds survived the winter of 2001 with only 2 hens reported and no verified reports of successful nesting. Radio telemetry work was completed in March of 2001. Preliminary results indicate that predation has had considerable impact on the survival of adult and juvenile birds, as well as nesting success. Since the conclusion of the radio telemetry study in the spring of 2001, local clubs have been monitoring wild turkeys in the Sudbury area using gobbling surveys, and sightings. They have been able to confirm a population of about 50-100 birds that appears to be persisting. Based on these results, other northern releases within the Mixedwood Plain Ecozone (Fig 1), but outside the known historical range, may be considered.

The final draft of the Wild Turkey Management Plan for Ontario was completed in 1994, with the goal of providing long-term direction for the wild turkey program and its partners. The term of the plan was 5 years and it is currently being revised.

Hunting Incident Statistics

In Ontario, no hunting incidents were reported between 1987 and 2000. Ontario's first incident related to turkey hunting occurred in May 2001. The non-fatal incident involved a turkey hunter who accidentally shot a friend. He was convicted of careless hunting, fined $1,250 and had his hunting license suspended for three years.

Upcoming Hunting Season Dates

The proposed spring season dates for 2003 are April 25th to May 31st. There are no fall seasons for wild turkey in Ontario at the present time.

Table1. *Re-introductions of wild turkeys to Ontario from American Sources, 1948-87.*

	RELEASE SITE Name(Lot,Con.,Twp.)	RELEASE DATE (M/D/Y)	NUMBER OF BIRDS RELEASED MALES Juv.	MALES Adult	FEMALES Juv.	FEMALES Adult	TOTAL	ORIGIN OF BIRDS
S - 1	Backus Woods (Lot 16,Con3,	03/03/84	0	0	2	9	11	Peck Ranch, Osark Mts.,S.Missouri
	S. Walsingham)	03/06/84	0	3	0	0	3	Peck Ranch, Osark Mts.,S.Missouri
							14	
S -2	Big Creek(Lot 15, Con7, 8	03/03/84	0	0	2	9	11	Peck Ranch, Osark Mts.,S.Missouri
	N. Walsingham)	03/06/84	0	2	0	0	2	Peck Ranch, Osark Mts.,S.Missouri
		01/16/85	0	1	1	8	10	S. Iowa
		01/23/85	0	2	0	2	4	S. Iowa
		02/12/86	2	3	1	9	15	S. Iowa
							42	
NA - 1	Old Wooler Road(Lot 14, Con3, Murray)	03/16/84	5	2	17	1	25	N. Michigan
		03/21/84	1	0	16	2	19	N. Michigan
		03/22/84	3	0	0	0	3	N. Michigan
							47	
NA - 2	Sager Conservation Area (Lot 19, Con 7, Sidney)	03/23/85	3	0	10	2	15	N. Michigan
		03/27/85	1	0	5	5	11	N. Michigan
							26	
NA - 3	Harrington Property (Lot 8, Con 5, Murray)	03/27/85	0	0	18	5	23	N. Michigan
H - 1	Kuepers(Lot 18,Con 1, Tosorontio)	01/11/86	8		27		35	NW. New York
NI - 1	Short Hills Provincial Park	01/13/86	0		12		12	Steuben Co., New York
		01/30/86	3		0		3	Steuben Co., New York
		02/11/86	0		7		7	Steuben Co., New York
		02/14/86	1	0	1		2	Steuben Co., New York
		02/16/86	1	0	0	2	3	Steuben Co., New York
		02/06/86	0	0	3	2	5	Vermont
		02/28/86	1	0	0	0	1	Vermont
							33	
C - 1	South Dumfries (Lot 1, Con. 4 S.Dumfries)	02/06/86	1	0	16		17	Vermont
		02/11/86	3	0	7		10	New York
		02/28/86	2	2	0	0	4	Vermont
							31	
L - 1	Manvers (Lot 15, Con 5, (Manvers)	01/24/87	0	2	5	4	11	Sussex Co. New Jersey
		02/11/87	2	4	0	0	6	Sussex Co., New Jersey
		02/25/87	0	0	0	6	6	Sussex Co., New Jersey
							23	

274 Birds from 6 States

Table 2. *Population Status of Wild Turkeys in Ontario in the Spring of 2002.*

MNR area/district office	WMU	Estimated # of wild turkeys	Estimated occupied range (km2)
Pembroke	48	100	300
Pembroke	55B	150	450
Minden	56	50	100
Pembroke	59	550	1850
Bancroft	60A	100	200
Bancroft	61	50	100
Kingston	62	150	400
Kemptville	63	500	1200
Kemptville	64A	700	2000
Kemptville	64B	300	300
Kemptville	65	700	2500
Kemptville	66A	1200	1400
Kemptville	67	2500	2500
Kingston	68	2200	1800
Kingston	69A	300	1000
Kemptville	69B	600	200
Kingston	70	1100	800
Peterborough	71	1800	600
Peterborough	72	600	1300
Peterborough	73	2000	1700
Peterborough	74A	50	100
Peterborough	74B	100	250
Peterborough	75	250	250
Midhurst	76	5300	2500
Midhurst	77	2000	1600
Aurora	78	2500	1650
Aurora	79	400	300
Guelph	80	600	2400
Midhurst	81	2600	1100
Owen Sound	82	3300	2200
Owen Sound	83A	200	100
Owen Sound	84	1500	1200
Clinton	85	600	2000
Clinton	86	200	350
Guelph	87	1000	2000
Vineland	88	360	200
Vineland	89	2000	1600
Aylmer	90	5000	2500
Aylmer	91	1200	900
Aylmer	92	2750	2500
Chatham	93A	1200	600
Chatham	94B	150	250
Chatham	95	50	20
TOTAL		**48,660**	**47,270**

Table 3. *Turkey sightings by deer hunters.*

ANTLERLESS POSTCARD SURVEY 1998-2000									
	1998			1999			2000		
WMU HUNTED MOST	# HUNTERS REPLYING	# HUNTERS SEEING 1 OR MORE TURKEYS	% HUNTERS SEEING 1 OR MORE TURKEYS	# HUNTERS REPLYING	# HUNTERS SEEING 1 OR MORE TURKEYS	% HUNTERS SEEING 1 OR MORE TURKEYS	# HUNTERS REPLYING	# HUNTERS SEEING 1 OR MORE TURKEYS	% HUNTERS SEEING 1 OR MORE TURKEYS
42				175	3	1.7	159	5	3.1
46							293	4	1.4
49							344	3	0.9
53A							288	7	2.4
54							237	4	1.7
55A							197	1	0.5
55B							120	1	0.8
56							182	5	2.7
57							292	1	0.3
58							310	6	1.9
59							276	15	5.4
60A	368	5	1.4	417	12	2.9	359	16	4.5
61	317	4	1.3	331	1	0.3	316	3	0.9
62	241	5	2.1	255	6	2.4	276	13	4.7
63	395	17	4.3	376	33	8.8			
63A							366	27	7.4
63B							154	26	16.9
64A	295	40	13.6	342	60	17.5	268	65	24.3
64B	127	7	5.5	151	19	12.6	189	41	21.7
65	241	35	14.5	280	58	20.7	299	73	24.4
66A	254	61	24.0	277	67	24.2	256	84	32.8
66B	6	0	0.0	2	0	0.0	2	2	100.0
67	354	83	23.4	377	90	23.9	300	97	32.3
68	167	47	28.1	225	62	27.6			
68A							118	50	42.4
68B							152	40	26.3
69A	97	5	5.2	120	14	11.7	91	19	20.9
69B	49	7	14.3	59	16	27.1	60	17	28.3
70	124	37	29.8	104	37	35.6	86	41	47.7
71	206	75	36.4	190.0	67	35.3	181	74	40.9
72A	166	27	16.3	220.0	43	19.5	171	47	27.5
72B	7	1	14.3	17.0	1	5.9	9	1	11.1
73	274	33	12.0	329.0	60	18.2	300	47	15.7
74A	99	1	1.0	120	6	5.0	111	7	6.3
74B	184	15	8.2	245	27	11.0	229	19	8.3
75	219	24	11.0	247.0	37	15.0	181	28	15.5
76	115	49	42.6	104.0	49	47.1	104	57	54.8
77	91	39	42.9	83.0	24	28.9	56	20	35.7
78	136	40	29.4	139.0	29	20.9	104	29	27.9
79	71	3	4.2	49.0	4	8.2	53	5	9.4
80	169	23	13.6	165.0	40	24.2	135	42	31.1
81	101	38	37.6	87.0	30	34.5	83	27	32.5
82A	379	73	19.3	389	94	24.2	312	100	32.1
82B	196	42	21.4	184	48	26.1	165	64	38.8
82C	7	4	57.1	0.0	0		0	0	
83A	326	38	11.7	305.0	51	16.7	253	45	17.8
84	340	79	23.2	322.0	92	28.6	282	111	39.4

Table 3. *Continued.*

ANTLERLESS POSTCARD SURVEY 1998-2000									
WMU HUNTED MOST	1998			1999			2000		
	# HUNTERS REPLYING	# HUNTERS SEEING 1 OR MORE TURKEYS	% HUNTERS SEEING 1 OR MORE TURKEYS	# HUNTERS REPLYING	# HUNTERS SEEING 1 OR MORE TURKEYS	% HUNTERS SEEING 1 OR MORE TURKEYS	# HUNTERS REPLYING	# HUNTERS SEEING 1 OR MORE TURKEYS	% HUNTERS SEEING 1 OR MORE TURKEYS
85	150	29	19.3	152.0	29	19.1	101	31	30.7
86	113	5	4.4	106.0	14	13.2	73	15	20.5
87	162	48	29.6	161.0	39	24.2	138	52	37.7
88	115	51	44.3	97.0	50	51.5	92	44	47.8
89	191	57	29.8	170.0	56	32.9	142	69	48.6
90	145	52	35.9	157.0	64	40.8	115	61	53.0
91	164	35	21.3	134.0	33	24.6	107	41	38.3
92	189	60	31.7	167.0	44	26.3	139	46	33.1
93	147	34	23.1	146.0	45	30.8	90	36	40.0
94	141	11	7.8	123.0	10	8.1	102	14	13.7
TOTAL	7638	1339	17.5	7924.0	1561	19.7	8180	1773	21.7
WMUs with open turkey seasons in 2000						**% of hunters seeing wild turkeys in WMUS with open seasons in 2000**			**31.7**

Table 4. *Summary of the number of wild turkeys trapped and transferred and the number of release sites, in Ontario, 1986/87 – 2001/2002.*

NUMBER OF BIRDS (# SITES) PER SEASON

DISTRICT/AREA	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	TOTAL[1]
Simcoe/ Aylmer	7(1)	37(6)	8(3)	40(5)	31(3)	74(7)	20(8)	43(6)	25(4)	17(2)	77	6	21	91	49	39	585
Midhurst	—	35(4)	37(5)	42(3)	17(2)	44(4)	44(9)	60(6)	9(3)	18(2)	45	50(9)	32	75	47	33	618
Lindsay (Peterborough)	—	—	27(2)	13(2)	—	—	—	43(3)	13(3)	3(1)	16	3(1)	—	—	—	—	118
Cambridge (Guelph)	—	7(1)	3(1)	7(1)	—	20(3)	5(1)	29(4)	9(2)	66(4)	35	22(4)	35	14	57	—	309
Niagara (Vineland)	1(1)	3(1)	29(2)	19(3)	—	—	—	—	—	—	27	22(4)	36	28	23	7	195
Napanee (Kingston)	—	—	—	—	—	9(1)	—	17(1)	18(4)	18(4)	18	—	35	—	37	—	152
Wingham (Clinton)	—	—	—	—	—	—	—	13(2)	—	—	18	24(5)	13	—	—	8	76
Maple (Aurora)	—	—	—	—	—	—	15	5(1)	—	—	4	—	31	23	39	8	125
Owen Sound	—	—	—	—	—	—	—	—	8(3)	—	12	5(1)	10	—	27	24	86
Kemptville	—	—	—	—	—	—	—	—	—	—	—	—	32	34	142	101	309
Chatham	—	—	—	—	—	—	—	—	—	—	—	—	—	60	10	—	70
Pembroke	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	8
New York	—	—	—	—	—	—	—	—	—	—	—	—	99	237	—	—	336
Michigan														57	—	53	110
Tennessee															188	319	507
TOTALS[2]	8(2)	82(11)	104(11)	121(11)	48(5)	147(13)	84(18)	210(18)	82(9)	122(6)	252(12)	132(9)	344(17)	619(39)	619(40)	600(37)	3574(228)

[1] Total number of sites per district may not add across the seasons as some sites received birds in more than one year.
[2] Total number of sites may not add across the districts as some sites received birds from more than one district.

Table 5. *Summary of wild turkey harvests in Ontario, 1987 – 2002.*

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
#WMUs/sub-WMUs with open seasons	3	3	7	16	19	19	23	32	32	33	36	36	46	57	61	63
#Validation tags available	1000	1200	2600	4000	no limit	no limit	no limit	no limit	no limit	no limit	no limit	no limit	no limit	no limit	no limit	no limit
#Licences sold	1000	754	1466	2008	2153	2497	approx. 2800	3708	3831	4202	5158	6503	9025	12649	15273	19744
#Birds harvested	64	71	124	212	340	416	561	527	631	672	750	1317	1934	2659	3496	4692
Success rate (%)	6.3	9.7	8.2	10.6	I5.7	16.9	20.0	14.2	16.5	16.0	14.5	20.3	21.4	21.0	22.9	23.7
Gobbler portion of harvest (%)	54	63	57	53	67	56	64	60	59	57	—	53	47	46	48	43
Jake portion of harvest (%)	46	37	43	47	33	44	36	40	41	43	—	47	53	54	52	57
Season dates	May 4 - 9 May II-I6	May 2 - 7 May 9 - 14	May 1 - 6 May 8 - 13	Apr30-May 5 May 7 –12	Apr 29 - May 17	Apr 27 - May 15	Apr 26 - May 21	May 2-20	May 1-19	Apr 25 - May 17	Apr 25- May 16	Apr 27- May 30	Apr.26- May 31	Apr 25 – May 31	Apr 25- May 31	Apr 25- May 31
Max. # hunting days per hunter	6	6	6	6	19	19	26	19	19	23	22	34	36	37	37	37
Total estimated $ spent per hunter in Ontario	$253	$197	$185	$172	$146	$98	$II8	$196	$212	---	—	$216	$170			
Total estimated $ spent in Ontario	$107,458	$80,561	$158,298	$190,702	$262,804	$222,013	$300,588			---	—	---	$1.8 M			
Average # Days Hunted	3.0	4.0	3.0	4.0	5.1	5.3	3.8	3.7								

Table 6. *Ontario wild turkey harvest data by year and WMU.*

WMU	YEAR															
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
59															4	24
60A															2	9
61															2	3
62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
63															37	36
64A	-	-	-	-	-	-	-	-	-	-	-	-	-	33	30	74
65															54	89
66A	-	-	-	-	-	-	-	-	-	-	-	-	-	61	83	126
67	-	-	-	-	-	-	-	-	-	-	-	54	177	150	266	325
68	19	22	40	61	75	107	92	107	89	86	78	109	185	180	174	226
69A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
69B	-	-	-	-	-	-	-	-	-	-	-	-	0	3	8	7
70	-	-	-	-	-	-	-	-	-	11	16	45	55	91	112	113
71	45	49	38	60	101	98	60	84	78	77	57	84	119	121	147	182
72	-	-	-	1	0	7	28	8	10	27	13	15	32	32	58	62
73	-	-	-	5	17	23	65	22	30	8	38	42	63	130	148	222
74	-	-	-	-	-	-	-	-	-	-	0	0	2	3	10	9
75	-	-	-	-	-	-	-	-	-	-	-	-	11	16	13	24
76	-	-	-	-	15	27	85	59	85	86	100	211	246	371	423	528
77	-	-	-	25	34	51	50	42	36	52	47	80	92	138	141	191
78	-	-	-	-	-	-	-	11	20	22	18	83	115	107	143	182
79	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4
80	-	-	-	-	-	-	-	-	-	-	-	-	21	37	46	57
81	-	-	-	4	10	22	40	35	50	47	67	89	141	168	194	251
82	-	-	-	-	-	-	-	-	-	-	-	-	87	158	239	336
83	-	-	-	-	-	-	-	-	-	-	-	-	-	30	20	13
84	-	-	-	-	-	-	-	-	-	-	-	-	-	71	71	154
85	-	-	-	-	-	-	-	-	-	-	-	17	22	38	43	72
86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
87	-	-	9	11	10	11	24	19	24	23	29	31	39	60	52	65
88	-	-	-	8	6	6	11	12	15	13	12	28	29	40	19	23
89	-	-	-	12	20	20	28	31	59	72	94	114	132	123	202	200
90	-	-	16	25	52	44	78	84	116	113	138	238	239	273	397	473
91	-	-	-	-	-	-	-	6	8	12	13	27	23	71	56	101
92	-	-	-	-	-	-	-	7	11	23	23	32	44	85	159	246
93	-	-	-	-	-	-	-	-	-	-	7	18	51	52	108	164
?	0	0	0	0	0	0	0	0	0	0	0	0	9	13	19	76
Total	64	71	103	212	340	416	561	527	631	672	750	1,317	1,934	2,659	3,484	4,692
# 2nd Birds	-	-	-	-	-	-	-	-	-	-	-	168	251	369	581	372

Figure 1.

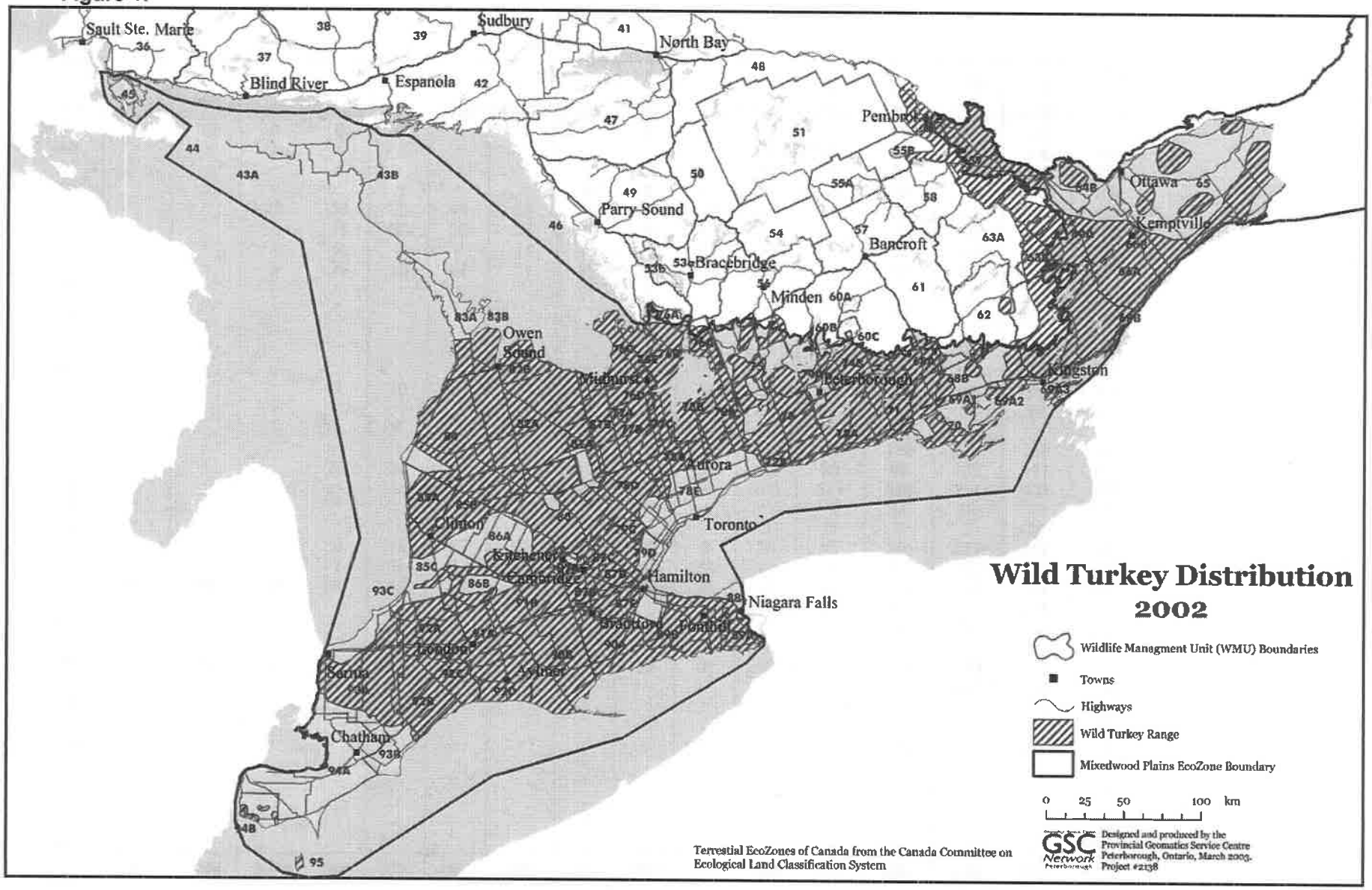
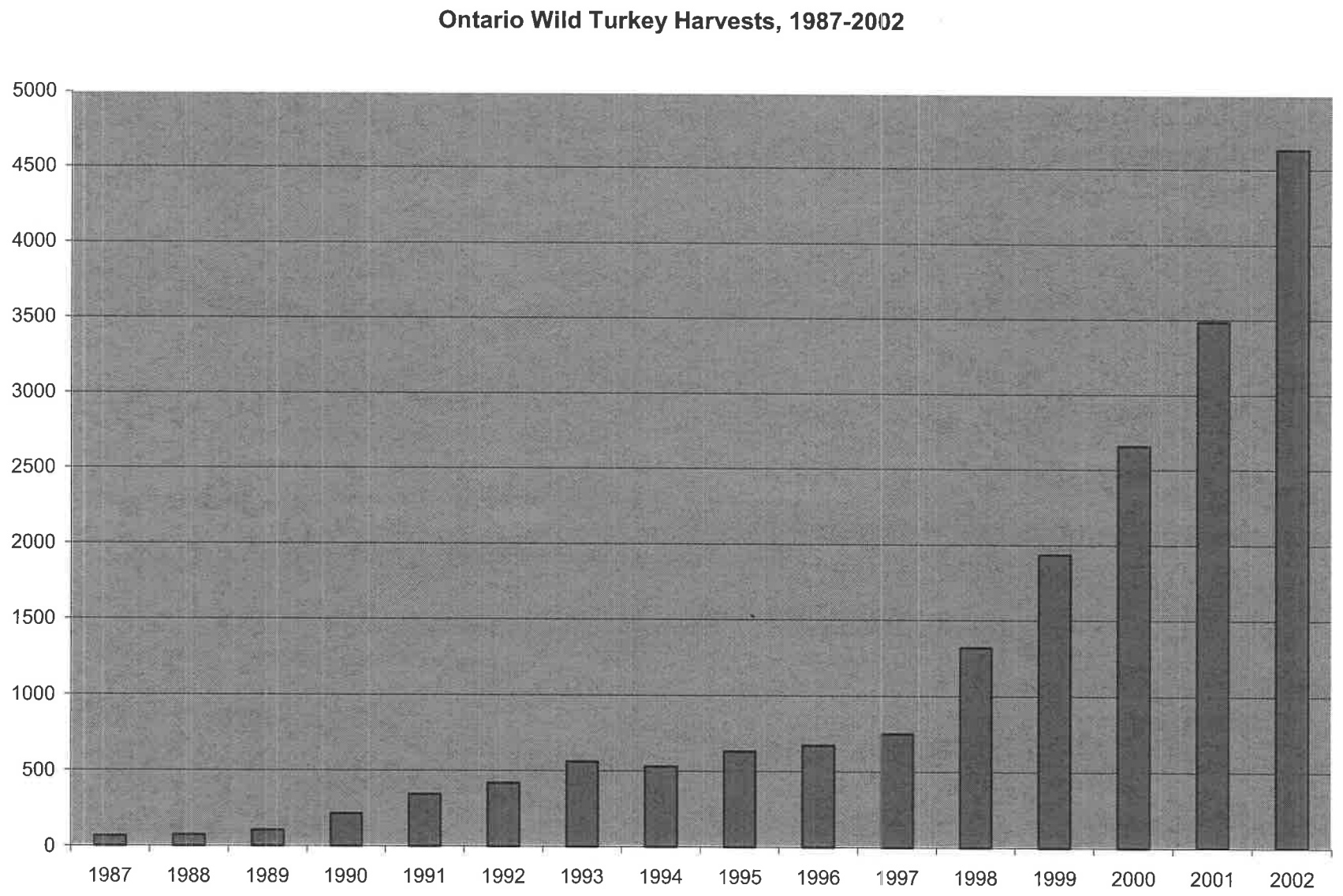

Sault Ste. Marie
Sudbury
North Bay
Blind River
Espanola
Pembroke
Ottawa
Kemptville
Parry Sound
Bancroft
Bracebridge
Minden
Owen Sound
Midhurst
Peterborough
Kingston
Aurora
Toronto
Oshawa
Kitchener
Cambridge
Hamilton
Niagara Falls
Brantford
London
Sarnia
Chatham
Wild Turkey Distribution
2002
Wildlife Managment Unit (WMU) Boundaries
Towns
Highways
Wild Turkey Range
Mixedwood Plains EcoZone Boundary
0 25 50 100 km
Terrestial EcoZones of Canada from the Canada Committee on Ecological Land Classification System
GSC Network Peterborough
Designed and produced by the Provincial Geomatics Service Centre Peterborough, Ontario, March 2003. Project #2138

Figure 2.


Wild Turkey Hunting Seasons for the Spring of 2002
Quebec
Georgian Bay
Lake Huron
Michigan
Lake Ontario
New York
Lake Erie
Pennsylvania
Ohio
WMUs with Wild Turkey Hunting in 2002
Scale 1:4,000,000m

Figure 3.


Ontario Wild Turkey Harvests, 1987-2002
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002

South Dakota Department of Game, Fish, and Parks
2002-2003 Turkey Status Report

Steven L. Griffin and Corey Huxoll

2002 Seasons

Black Hills Spring Turkey

An unlimited number of licenses were available and 4,761 licenses were issued for the 2002 Black Hills Spring Turkey season (2,855 residents, 1,906 nonresidents) and were all single tag, male turkey licenses.

The survey sample size was 1,187 (25% of the total number of hunters) and the response rate was 87.0%. The harvest success rate was 32% with a projected harvest of 1,503 male turkeys. Approximately 15.4% of hunters who were successful at harvesting a turkey did so on the opening weekend of the season.

Hunters reported an average of 3.81 days hunting (3.91 for residents, 3.66 for nonresidents), which projects into a total of 18,139 days of recreation for the season.

Shotgun was again the weapon of choice for Black Hills turkey hunting. In 2002, 79.5% of hunters reported that they used a shotgun, 9.6% used a rifle, 2.4% used a bow, and 8.5% did not report the weapon they used to hunt with.

Comparison of the 1997-2002 Black Hills Spring Turkey seasons

Year	Licenses	Tom Harvest	Avg Days Hunted	Success
1997	2,574	937	4	37%
1998	3,475	1,243	4	36%
1999	3,552	1,304	4	37%
2000	3,374	1,288	4	38%
2001	3,998	1,379	4	35%
2002	4,761	1,503	4	32%

Spring Firearm Turkey

In 2002 license sales totaled 5,136 (4,470 residents and 666 nonresidents) compared to 4,963 in 2001. There were 5,655 licenses available in 2002 (7,680 tags available and 7,028 tags sold). The units with unsold licenses at the end of the season were 115A-18 (1 was leftover), 120A-19 (99), 120A-36 (27), 120B-19 (71), 124A-19 (52), 141A-19 (127), 141A-36 (8), 149A-36 (1), 164A-36 (97), and 165A-19 (36).

The survey sample size was 2,375 (46% of the total number of hunters). The response rate was 89%. The projected overall success rate for hunters was 54% and the projected harvest was 3,766.

Spring Prairie Turkey hunters averaged 2.65 days hunting (2.85 Nonresident, 2.62 Resident) for a projected total of 13,610 hunting days for the April 13 through May 19 season (37 days). For those reporting, 10.0% said they purchased licenses but did not hunt this season.

Single and double tag licenses for the harvest of any turkey were available again as in 2001. With these tags, a total of 199 hens were harvested (5.3% of the total harvest, 12.1% of the any turkey licenses).

Respondents were asked to gauge their satisfaction of the season (1 being most satisfied, 7 being least satisfied) and the average response was 2.36. The breakdown in satisfaction answers was 1 = 37.6%, 2 = 20.9%,
3 = 10.0%, 4 = 16.2%, 5 = 6.4%, 6 = 4.7%, and 7 = 4.2%.

Shotgun was again the weapon of choice for turkey hunting. In 2002, 76.5% of hunters reported that they used a shotgun, 11.1% used a rifle, 2.4% used a bow, and 10.0% did not report the weapon they used to hunt with.

Approximately 20.1% of hunters who were successful at filling their first tags, and 18.8% of hunters who were successful at filling the second tags of their two-tag licenses did so on the opening weekend of the season.

Comparison of the 1992 - 2002 Spring Prairie Turkey seasons

Year	Res Lic	NR Lic	Res Tag	NR Tag	Harvest		Success	Avg Days Hunted	Satisf
					Toms	Hens			
1992	2,857	380	2,907	384	1,811	-	55%	2.91	-
1993	2,487	357	2,756	401	1,510	-	48%	2.6	-
1994	2,664	323	2,673	325	1,683	-	55%	2.53	-
1995	2,999	319	2,999	319	1,758	-	53%	2.37	-
1996	3,122	339	3,522	371	2,110	-	54%	2.67	-
1997	3,356	348	3,771	383	2,064	-	50%	2.39	-
1998	3,794	405	4,273	451	2,803	-	59%	2.22	2.2
1999	3,702	506	4,176	565	2,931	-	62%	2.48	2.33
2000	3,969	553	5,129	798	3,360	-	57%	2.75	2.52
2001	4,357	606	5,912	919	3,473	147	53%	2.49	2.53
2002	4,470	666	5,970	1,058	3,567	199	54%	2.65	2.36

Spring Archery Turkey

There were 825 resident and 237 nonresident licenses sold for a total of 1,062 licensed Spring Archery Turkey hunters in 2002, compared to 915 in 2001.

For harvest information, 25% of the license holders were sampled for an overall sample size of 268. The response rate was 89.6%.

The projected harvest based on survey respondents was 283 male turkeys, a success rate of 26.7%. Season length was April 13 through May 19, a total of 44 days. Approximately 7.0% of hunters who were successful at harvesting a turkey did so on the opening weekend of the season. Projected total days hunted was 4,811 for an average of 4.53 days per hunter (3.87 Nonresident, 4.73 Resident).

In 2002, approximately 22.6% of hunters harvested their turkey on public land, 77.4% on private land and 0% on walk-in areas.

Comparison of the 1992-2002 spring archery seasons:

Year	Licenses Sold		Tom Harvest	Success	Avg Days Hunted	Satisfaction
	Resident	Nonresident				
1992	527	61	112	19%	5	-
1993	432	74	54	11%	4	-
1994	469	88	114	20%	5	-
1995	593	84	135	20%	5	-
1996	677	105	215	27%	4	-
1997	658	96	127	17%	-	-
1998	698	90	188	24%	4	-
1999	576	124	174	25%	4	2.7
2000	668	158	168	20%	6	2.63
2001	702	213	219	23%	4	2.88
2002	825	237	283	0%	5	2.53

Fall Black Hills Turkey

In 2002 there were 325 Fall Black Hills Turkey licenses (303 resident, 22 nonresident) sold in South Dakota. All licenses were valid for either a tom or a hen.

A random sample of 153 hunters was taken (47% of total licensees), with a 90% response rate for the survey. Approximately 20% of responding hunters used the internet response system.

The fall season ran from October 12 through October 20, a total of 9 days. Respondents reported hunting an average of 2.2 days per hunter, which projected to a total of 715 recreation days for the season. From those responding, 10.1% reported they did not hunt.

The harvest projections indicated 104 toms were taken along with 78 hens -- a total of 182 turkeys. The overall projected success rate for this season was 56%. The mean satisfaction score reported by hunters was 2.1 (1 representing "very satisfied" and 7 representing "very dissatisfied").

Respondents indicated 87% hunted on public land, 13% on private land and none hunted on their own land.

Hunters were also asked to indicate the type of equipment they mostly used to hunt fall turkey. Hunters were only able to respond with a single weapon type. A summary of the weapon type question follows:

Equipment Type	Number Responding	% of Hunters	Proj. # Hunted	Avg Days Hunted
Shotgun	88	70.9%	207	2.54
Rifle	31	25.0%	73	2.35
Other	2	1.7%	5	3
Unknown	3	2.4%	7	2.67

Comparison of the 1999-2002 seasons:

Year	Licenses	Toms	Hens	%Success	Avg Days	Satisfaction
1999	675	172	222	58%	NA	NA
2000	628	123	210	54%	2.21	NA
2001	No Season	--	--	--	--	--
2002	325	104	78	56%	2.2	2.1

Fall Prairie Turkey

In 2002 there were 3,649 Fall Prairie Turkey licenses (3,383 resident, 266 nonresident) sold in South Dakota for a total of 5,520 tags (5,098 resident, 422 nonresident). All tags were valid for either a tom or a hen.

A random sample of 2,089 hunters was taken (57% of total licensees), with a 91% response rate for the survey. Approximately 19% of responding hunters used the internet response system.

The fall season ran from October 1 through December 31, a total of 92 days. Respondents reported hunting an average of 2.77 days per hunter, which projected to a total of 10,108 recreation days for the season. From those responding, 15.4% reported they did not hunt.

The harvest projections indicated 1,545 toms were taken along with 1,116 hens -- a total of 2,661 turkeys. The overall projected success rate for this season was 48%. The mean satisfaction score reported by hunters was 2.39 (1 representing "very satisfied" and 7 representing "very dissatisfied").

Successful respondents indicated 85% harvested their turkey(s) on private land, 12% on public land and 3% on walk-in areas.

Hunters were also asked to indicate the type of equipment they mostly used to hunt fall turkey. Hunters were only able to respond with a single weapon type. A summary of the weapon type question follows:

Equipment Type	Number Responding	% of Hunters	Proj. # Hunted	Avg Days Hunted
Shotgun	1,177	74.2%	2,255	3.23
Rifle	271	17.1%	519	3.15
Other	87	5.5%	167	4.92
Unknown	51	3.2%	98	3.37

Note: Equipment type comparison values in 2001 were listed incorrectly. Values for shotgun and rifle users were reversed, 63% of hunters used a shotgun, and 15% used a rifle.

Comparison of the 1997-2002 seasons:

Year	Licenses	Tags	Toms	Hens	%Success	Avg Days	Satisfaction
1997	3,212	4,556	1,463	1,156	57%	2.48	NA
1998	3,499	4,681	1,595	1,120	58%	2.40	2.48
1999	3,233	5,627	2,006	1,381	60%	2.49	2.49
2000	3,674	6,184	1,953	1,113	50%	2.33	2.52
2001	3,524	5,761	1,604	1,512	54%	2.69	2.41
2002	3,649	5,520	1,545	1,116	48%	2.77	2.39

2002 Brood Surveys

Black Hills Management Area

Brood surveys showed a ratio of 5.22 poults per hen, which was above the long-term average of 5.1 poults/hen. The last Brood Survey conducted that was over the long-term average was in 1990. While population growth has occurred, recruitment continues to be a concern.

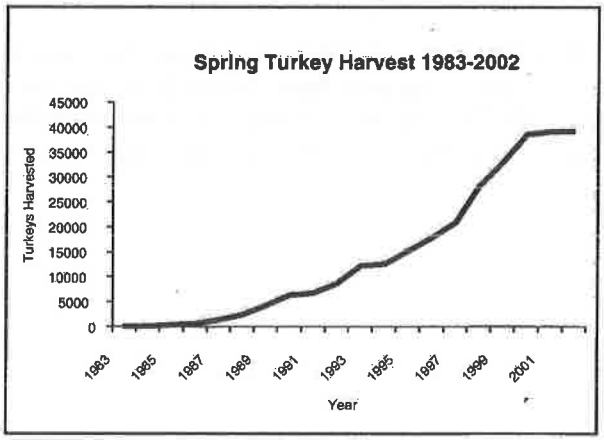
Prairie Management Area

Brood Survey ratio of 2.8 poults per hen was below the long-term ratio of 4.0 poults per hen. Surveys in this area have been conducted for a far shorter time frame than the Black Hills (1987 vs. 1963) which may explain the lower long-term ratio. Also, data sample sizes for these limited quota management units has not been very good.

2003 Wisconsin Wild Turkey Update

Spring 2002 Turkey Season

The 2002 spring hunt marked the 20th year spring turkey hunting has occurred in Wisconsin. This season saw a harvest of 39,336 birds, a slight increase over the 2001 wild turkey harvest of 39,211. The hunter permit success rate was 25%. The spring season ran from April 10 through May 19.



A total of 159,542 permits were issued throughout the 43 turkey management zones and 12 state parks open for the 2002 season. Approximately 19,021 second permits were issued. Permit numbers are evenly distributed throughout the six time periods to provide a quality hunting experience. Interference rates and hunter satisfaction data are gathered from annual hunter surveys sent out to 10,000 hunters after the spring season. This data is carefully reviewed when determining permit levels.

Recruitment was good in 2002, about even with 2001 statewide. Furthermore, in 2002, 72% of the birds registered were adults, a positive change from the 79% from 2001. A lower proportion of adults in the spring harvest is one indicator of better reproductive success during the previous spring. Results from the 2002 brood observation survey also showed an overall increase in the number of broods seen per observer.

During the spring hunt there are many unique hunting opportunities including the Learn to Hunt Program. This program focuses on educating inexperienced first-time turkey hunters both young and old. The Learn to Hunt Program provides an opportunity for first time hunters to have a high quality, safe and rewarding hunting experience under guidance from a hunting mentor. Mentors provide instruction, safety tips, and set-up for the hunt. Programs such as this are held throughout the state by conservation clubs and volunteers. If you are interested in attending or holding a Learn to Hunt Program in your area, contact your local wildlife manager for further information. The Loew Lake Unit at Kettle Moraine State Forest also annually conducts a hunt for first time hunters as well. For further information on the Loew Lake hunt call (262) 670-3400.

Preliminary permit levels for the spring 2003 season have been set. There will be 168,661 permits available for the 43 turkey management zones and 12 state park units this spring. In addition, three new state parks will be open to spring turkey hunting in 2003. They include Interstate, Willow River, and Newport State Parks. Successful applicants for the spring 2003 drawing in zones 34 and 37 in time periods A through C will be eligible to apply for a second drawing by February 15 that would allow them authorization to hunt in one of these three state park properties. If drawn, they will be allowed access to the park during the time period in which they hold a valid permit/carcass tag. This does not authorize the harvest of an additional turkey.

The spring season, which consists of 6 time periods, will begin April 16 and run through May 25.

Wisconsin 2002 Spring Turkey Harvest & Permit Success Rates

Success rates are uncorrected for nonparticipation.

	A		B		C		D		E		F		Total	
Zone	Kill	% Success	Kill	% Success	Kill	% Success	Kill	% Success	Kill	% Success	Kill	% Success	Kill	% Success
01	129	32%	125	31%	92	23%	81	20%	101	25%	59	15%	587	24%
02	301	33%	292	32%	175	19%	154	17%	129	14%	78	9%	1,129	21%
03	558	34%	451	27%	366	22%	277	17%	270	16%	191	12%	2,113	21%
04	268	32%	257	30%	194	23%	157	18%	152	18%	110	13%	1,138	22%
4A	12	100%	8	53%	3	25%	0	0%	0	0%	0	0%	23	59%
05	246	29%	274	32%	189	22%	167	20%	163	19%	102	12%	1,141	22%
5A	8	62%	6	50%	1	8%	0	0%	0	0%	0	0%	15	41%
5B	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
06	309	40%	271	35%	186	24%	161	21%	175	23%	141	18%	1,243	27%
07	408	40%	340	33%	257	25%	246	24%	231	23%	239	23%	1,721	28%
08	262	44%	201	33%	138	23%	119	20%	154	26%	124	21%	998	28%
09	146	42%	116	33%	82	23%	97	28%	55	16%	58	17%	554	26%
10	128	32%	126	32%	66	17%	52	13%	42	11%	37	9%	451	19%
10A	1	13%	2	25%	0	0%	0	0%	0	0%	0	0%	3	13%
10B	0	0%	1	50%	0	0%	0	0%	0	0%	0	0%	1	50%
11	239	37%	211	32%	138	21%	100	15%	89	14%	65	10%	842	22%
11A	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
12	246	38%	217	33%	171	26%	135	21%	126	19%	114	18%	1,009	26%
12A	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
13	236	39%	182	30%	168	28%	147	24%	116	19%	76	13%	925	26%
13A	3	25%	6	50%	1	8%	0	0%	0	0%	0	0%	10	27%
14	205	34%	141	23%	102	17%	138	23%	94	16%	59	10%	739	21%
15	160	27%	189	32%	147	25%	158	26%	102	17%	77	13%	833	23%
15A	1	17%	2	40%	0	0%	0	0%	0	0%	0	0%	3	19%
15B	1	50%	1	100%	0	0%	0	0%	0	0%	0	0%	2	40%
15C	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
16	181	36%	141	28%	121	24%	112	22%	84	17%	78	16%	717	24%
17	296	39%	257	34%	210	28%	163	22%	177	24%	144	19%	1,247	28%
18	369	31%	286	24%	263	22%	239	20%	212	18%	159	13%	1,528	21%
19	332	40%	287	34%	229	27%	205	24%	203	24%	197	23%	1,453	29%
20	251	37%	253	37%	162	24%	147	22%	153	23%	126	19%	1,092	27%
21	479	44%	392	36%	294	27%	248	23%	220	20%	201	18%	1,834	28%
22	1,090	36%	965	32%	722	24%	581	19%	517	17%	391	13%	4,266	24%
23	711	36%	553	28%	411	21%	359	18%	348	17%	271	14%	2,653	22%
24	68	39%	73	42%	65	37%	52	30%	42	24%	34	19%	334	32%
25	113	32%	102	29%	87	25%	69	20%	54	15%	39	7%	464	20%
25A	1	33%	0	0%	0	0%	0	0%	0	0%	3	100%	4	22%
26	90	30%	74	25%	62	21%	53	18%	65	22%	70	23%	414	23%
27	67	44%	65	43%	42	28%	36	24%	27	18%	27	18%	264	29%
28	75	27%	85	31%	63	23%	44	16%	53	19%	50	18%	370	22%
29	32	26%	28	22%	26	21%	12	10%	9	7%	12	10%	119	16%
30	83	37%	81	36%	60	27%	62	28%	55	24%	35	16%	376	28%
31	64	32%	41	21%	38	19%	35	18%	24	12%	14	7%	216	18%
32	61	31%	52	26%	37	19%	29	15%	29	15%	19	10%	227	19%
33	171	34%	165	33%	142	28%	125	25%	119	24%	104	21%	826	28%
34	238	53%	181	40%	161	36%	182	40%	143	32%	132	29%	1,037	38%
35	89	40%	96	43%	48	21%	56	25%	32	14%	41	18%	362	27%
36	180	45%	167	42%	118	30%	98	25%	65	16%	59	26%	687	31%
37	272	42%	264	41%	170	26%	106	16%	117	18%	156	24%	1,085	28%
38	97	28%	134	38%	75	21%	63	18%	58	17%	53	15%	480	23%
39	143	32%	140	31%	70	16%	67	15%	75	17%	52	12%	547	20%
40	32	32%	37	36%	32	31%	31	31%	24	24%	23	23%	179	30%
41	32	32%	44	44%	31	30%	34	34%	26	26%	22	22%	189	31%
42	147	49%	147	49%	110	37%	78	26%	82	27%	60	20%	624	35%
43	16	32%	22	44%	26	52%	22	44%	16	32%	22	44%	124	41%
FM	43	43%	45	39%	19	17%	13	16%	14	15%	4	8%	138	25%
Total	**9,690**	**36%**	**8,596**	**32%**	**6,370**	**24%**	**5,510**	**21%**	**5,042**	**19%**	**4,128**	**15%**	**39,336**	**25%**

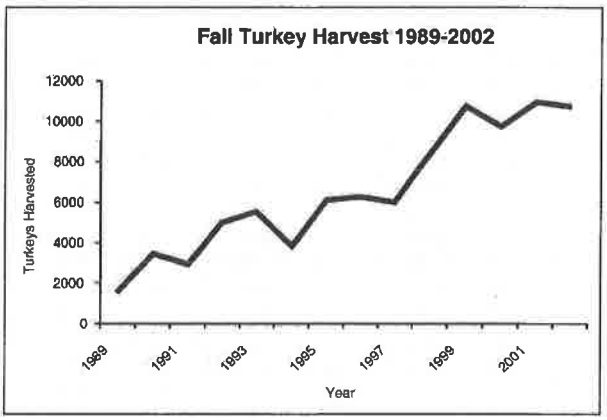
Fall 2002 Turkey Hunting Season

The fall wild turkey season was held October 12 through November 10. Approximately 75,040 permits were issued throughout 43 turkey management zones and Fort McCoy. State parks are not open to fall turkey hunting. Nearly 87,000 applications were received for the fall hunt. The total fall harvest was 10,850 turkeys taken statewide with the largest number of turkeys harvested in zone 22 with a harvest of 828 birds. The hunter success rate statewide was estimated at 14.5%. The zone with the highest success rate was zone 24 with 24.3% success. This compares to the 2001 harvest of 11,029 birds with a success rate of 15.4%. Although two new zones 42 and 43 opened for the first fall hunting season this year, the harvest and hunter success rates were lower than in 2001. Reasons for the decline may be due to hunters being preoccupied with the assortment of other hunting opportunities that are available during the fall.

During the fall season, all turkeys, male and female are legal for harvest. The fall harvest consisted of 39% males, 60% females, and 1% were registered as unknowns. Adults made up 57% of the harvest.

During the fall, turkeys spend a great deal of the daylight hours in hardwood habitat. Both brood flocks and adult male flocks make extensive use of areas dominated by oak and hickory. Before the fall season, hunters should monitor the acorn crop in the area they hunt, as the success or failure of acorns can determine where turkeys will be feeding. In years of poor acorn production, turkeys spend proportionately more time in cornfields.

The annual fall turkey hunting questionnaire was sent to 6,000 random fall turkey hunters. Data gathered showed that the majority of turkey hunters are inexperienced having 0–5 years of hunting experience. Approximately 30% of respondents reported that they had attended a turkey hunter education clinic sponsored by the National Wild Turkey Federation and Wisconsin DNR. The most commonly used method for hunting fall turkeys was ambushing from concealment, and still hunt, stalking. This was followed by 22.9% of respondents whom hunted turkeys incidental to other game hunting (such as archery or small game). Interference rates continued to remain low, less than 3%.



Permit Issuance

Hunters must apply by application to receive a permit to hunt turkeys in Wisconsin. The application deadline for the 2003 fall hunt is August 11, the deadline for the 2004 spring hunt is December 11. Deadlines are set early to allow for processing time of the applications.

In each zone, 30% of all permits are set aside for landowners. Residents that did not receive a permit the previous year, have the next highest preference ranking followed by other residents. Next in the preference ranking are non-resident landowners, followed by non-residents. Applicants in each preference category are randomly selected and their first choice is evaluated. If their first choice is not available, their second choice is looked. Each continuing choice is looked at until we are able to award a permit to the individual. If a person is not selected for an application, they will receive one preference point for the next year's corresponding season.

There is an attempt to issue a permit to all applicants based on the choices listed on the application. If permits remain after all choices on all applicants have been considered for one permit, a second drawing is conducted to issue additional tags. In this situation, it is possible for some applicants to receive no permit, while those applicants who would accept permits for any time period, may receive two.

Wisconsin 2002 Fall Turkey Harvest by Zone, Sex, Age, Permits Issued and % Success

Zone	Toms	Jakes	Hens	Juv Hens	Unknown	Total Harvest	Permits Issued	% Success
1	21	34	55	52	0	162	1,200	13.5%
2	45	27	85	95	0	252	1,800	14.0%
3	117	94	178	170	0	559	4,500	12.4%
4	26	11	33	36	4	110	1,000	11.0%
5	92	38	86	105	0	321	2,600	12.3%
6	33	19	39	46	0	137	2,400	5.7%
7	116	54	120	134	0	424	4,000	10.6%
8	55	27	42	55	0	179	1,401	12.8%
9	38	18	68	52	0	176	1,000	17.6%
10	11	12	25	26	0	74	600	12.3%
11	52	61	101	120	2	336	2,000	16.8%
12	78	66	177	173	16	510	3,000	17.0%
13	40	28	52	50	1	171	1,202	14.2%
14	32	27	59	62	0	180	1,600	11.3%
15	96	55	197	35	0	383	2,700	14.2%
16	51	31	55	53	6	196	1,500	13.1%
17	124	96	191	158	0	569	3,600	15.8%
18	157	98	200	155	7	617	4,500	13.7%
19	126	69	146	133	0	474	3,000	15.8%
20	123	45	94	91	0	353	2,700	13.1%
21	210	71	277	193	1	752	4,000	18.8%
22	209	101	266	212	40	828	5,002	16.6%
23	157	112	234	213	28	744	6,000	12.4%
24	66	22	55	49	2	194	800	24.3%
25	33	24	21	14	4	96	600	16.0%
26	12	10	17	20	4	63	400	15.8%
27	5	7	8	5	0	25	200	12.5%
28	19	8	27	16	18	88	604	14.6%
29	2	0	1	1	1	5	100	5.0%
30	36	16	45	34	1	132	800	16.5%
31	8	3	20	10	1	42	300	14.0%
32	14	4	8	4	2	32	200	16.0%
33	76	43	89	51	3	262	1,200	21.8%
34	136	40	155	116	20	467	2,000	23.4%
35	22	15	42	20	8	107	600	17.8%
36	49	24	53	22	6	154	700	22.0%
37	104	48	118	73	0	343	2,500	13.7%
38	22	11	28	22	0	83	800	10.4%
39	16	15	36	33	0	100	1,000	10.0%
40	1	4	5	6	0	16	100	16.0%
41	7	0	3	1	1	12	100	12.0%
42	13	7	17	12	0	49	250	19.6%
43	7	1	4	3	0	15	100	15.0%
FM	21	10	13	14	0	58	381	15.0%
UNK	0	0	0	0	0	0		
Totals	**2,678**	**1,506**	**3,545**	**2,945**	**176**	**10,850**	**75,040**	**14.5%**

Protecting Yourself from West Nile Virus

With the increased threat of West Nile Virus many hunters wonder how this may be affecting their turkey hunt this year. Health officials conclude that hunters' greatest risk of getting West Nile Virus is not from eating infected game, but from getting bit by an infected mosquito.

Because hunters spend a great deal of time outdoors, they are at an increased risk of getting infected by West Nile Virus. Thus hunters are urged to protect themselves by taking precautions to reduce their exposure to mosquitoes by wearing protective clothing and by using insect repellent.

State and federal officials do not know the extent to which West Nile virus may be present in wild gamebirds. In several states an increased amount of game birds are being found with the West Nile Virus, and in Minnesota a wild turkey tested positive for the virus last fall. It is not believed that WNV poses a significant threat to turkey populations.

Hunters should always handle their harvested game with care. We recommend wearing gloves when handling and cleaning game. Thoroughly cooking the meat will also eliminate any risk of contamination, as cooking inactivates the virus

According to Kerry Beheler, wildlife health specialist for Department of Natural Resources, waterfowl or upland birds infected with the disease are likely to be taken by predators and not seen by hunters.

"WNV infected birds are usually found vocalizing and showing abnormal behavior related to the brain encephalitis," she says. "They're going to be prime targets for the wide variety of predators such as fox, coyote, hawks, and owls before hunters would spot them."

Birds that get infected with West Nile Virus but do not become ill from it produce antibodies to the virus. Exposure to WNV antibodies in a bird carries no risk for humans.

For further information on West Nile Virus visit the Center of Disease Control Website at: **www.cdc.gov**

Research Update

Turkey research is important in helping to manage the wild turkey population in Wisconsin. Current turkey research is being conducted by the University of Wisconsin, Madison. This project is funded with moneys from the sales of the wild turkey stamp. This research project will help to gain further insight into wild turkey habitat suitability and population dynamics. The first stage of research involves analyzing harvest data and information gathered from the annual turkey hunting questionnaires sent to random turkey hunters. In the second stage of the project, turkeys will be radio-marked to help evaluate survival, hunting mortality, nest success, and quantify activity and habitat use.

Information gathered will help the DNR in optimizing spring and fall turkey hunting opportunities and improve the allocation of revenue available through the turkey stamp funds for habitat management and improvement projects.

Wisconsin Turkey Expansion

Wisconsin's wild turkey population began in 1974 when the Missouri Department of Conservation agreed to supply Wisconsin with wild trapped turkeys in exchange for ruffed grouse. In 1976 Wisconsin received its first birds, and over nine years released 334 wild turkeys from Missouri into the southwestern part of the state. Once their population numbers expanded, turkeys were trapped in areas of higher densities and relocated to other areas around the state that had suitable habitat. The first turkey hunting season occurred in the spring of 1983. Since then the population has expanded and grown dramatically. We now have 43 turkey management zones and 15 state parks open for turkey hunting.

Wisconsin is on the northern edge of the eastern wild turkey range and therefore winter habitat quality is one of the largest factors affecting turkey abundance and range. Survival is likely lower in northern and central Wisconsin where winters are more severe and agricultural food sources are limited. It has been theorized that the depth and persistence of snow combined with factors such as food abundance would define the northern limits of suitable habitat. Successive mild winters may be a contributing factor to the current expansions we see in the turkey population. The northern extent of the wild turkey range will likely fluctuate with severity of winters, changing agricultural practices, and annual recruitment.

While wild turkeys are expanding northward, many of these sightings may be the result of illegally stocked game farm turkeys. Releasing game farm turkeys is illegal and can be detrimental to the wild turkey population. Research has shown that the release of game farm turkeys does not benefit wild turkeys. Game farm turkeys do not develop the social behaviors needed to survive in the wild and interbreeding can pollute the wild turkey gene pool. Game farm turkeys can also be carriers of many diseases that can wipe out the wild turkey population in the area.

Many turkey sightings have been occurring for some time in the northern region of our state. With these sightings there is an increased interest in expanding our turkey management zones to include the northern quarter of Wisconsin. If biologists feel that the population is self-sustaining we may eventually see additions to our current management zones.

Keeping Safe During the Hunt

Since turkey hunting began in 1983, 61 accidents, three of these having fatalities, occurred during the spring and fall turkey hunting seasons. Of those, 37 accidents have occurred in the spring and 24 have occurred during the fall turkey season. (See table on page 7.)

Most of these accidents occur when the shooter fails to identify their target and mistakes another person for a turkey. One scenario is when a hunter loses track of their caller or hunting partner. They then see or hear a "turkey," shoot and then find out it was their hunting partner. During the 2002 turkey hunting season total of 6 accidents occurred during the spring season, and 2 accidents occurred during the fall season. In all accidents someone was seriously injured. Common fall accidents occur when turkey hunters don't look beyond their target. In the fall, turkey hunters need to be aware of other hunters in the woods bowhunting and small game hunting. Hunters need keep in mind ***safety*** at all times when hunting.

Turkey hunting can be dangerous because hunters are fully camouflaged and making calls to attract turkeys. But if hunters follow some basic hunting rules everyone can have a safe hunting experience. Assume every movement and every sound is another hunter. If another

hunter is approaching you do not wave to them to get their attention. Some hunters have mistaken a waving hand for a turkey fan, so call out to them until they notice you. When you hunt, don't hunt in heavy brush. The brush blocks your view and prevents other hunters from seeing you. Turkey hunting is an exciting sport. The adrenaline can really get pumping, but hunters need to learn how to control their emotions when hunting. Don't feel pressured to harvest a turkey. No bird is worth injuring or killing a person.

All hunting accidents can be prevented. Prevention involves knowing and obeying basic safety rules. By following the three basic rules for handling firearms, you can help prevent a potential firearm-related incident.

1) Treat every firearm as if it is loaded.
2) Always point the muzzle in a safe direction.
3) Be sure of your target and beyond. Responsible hunters are certain of their target before firing!

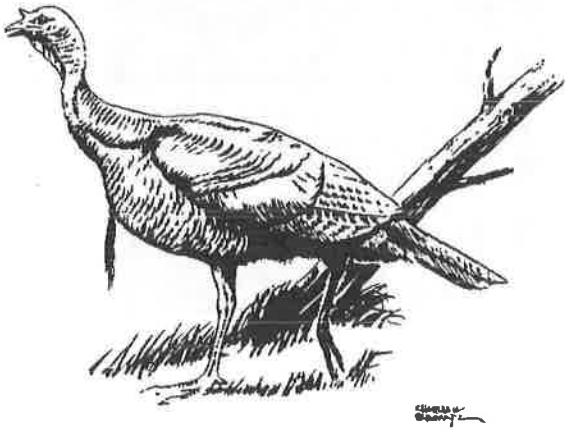
For more information on turkey biology, hunting safety, and hunting techniques, attend a *Free Turkey Hunter Education Clinic.* A listing of 2003 classes were sent to all successful applicants, but anyone can attend. Class lists are also available at DNR service centers and on the DNR website at:
www.dnr.state.wi.us/org/land/wildlife/hunt/turkey

Wisconsin Turkey Hunting Accidents, 1983-2002

Spring Season	Number of accidents	# of permits issued	# of accidents per 100,000 permits
1983	0	1,200	0.0
1984	0	1,900	0.0
1985	0	2,125	0.0
1986	0	3,495	0.0
1987	0	6,040	0.0
1988	1	11,071	9.0
1989	1	21,280	4.7
1990	2	29,887	6.7
1991	1	37,171	2.7
1992	2	43,972	4.5
1993	4	61,338	6.5
1994	3	71,420	4.2
1995	3	68,588	4.4
1996	0	75,360	0.0
1997	3	92,734	3.2
1998	1	100,347	1.0
1999	1	110,457	0.9
2000	3	132,318	2.3
2001	6	150,403	4.0
2002	6	159,542	3.8
Total=	37	1,180,648	Average= 2.9

Fall Season	Number of accidents	# of permits issued	# of accidents per 100,000 permits
1988*	1	0	~
1989	1	7,160	14.0
1990	1	12,465	8.0
1991	2	16,671	12.0
1992	0	24,998	0.0
1993	2	31,449	6.4
1994	4	17,600	22.7
1995	2	29,858	6.7
1996	0	30,779	0.0
1997	4	32,185	12.4
1998	0	40,750	0.0
1999	1	55,479	1.8
2000	2	69,566	2.9
2001	2	71,601	2.8
2002	2	74,659	2.7
Total=	24	515,220	Average= 6.6

*not a season, hunter went hunting illegally

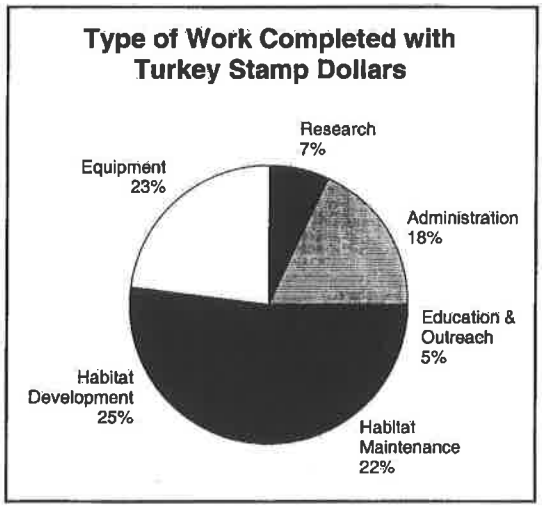


Where Does Your Turkey Stamp Money Go?

Your purchase of the wild turkey stamp helps to provide for future opportunities for turkey management and hunting in Wisconsin. All turkey hunters are required to purchase the $5.25 turkey stamp to legally hunt turkeys in Wisconsin. Sale of the turkey stamp brings in over $400,000 annually for habitat management and restoration projects, education, research, equipment, and for managing the turkey program in our state. Funds are available to DNR personnel, conservation groups, and other organizations. Project proposals that are submitted are reviewed and approved by the DNR turkey management committee and the Wildlife Policy Team.

In fiscal year 2001 over $283,480 was allocated to 63 projects. Many projects were only partially funded by turkey stamp funds. Cost-sharing from other organizations such as Wings Over Wisconsin, the National Wild Turkey Federation, and other conservation groups plays an important role in accomplishing these projects. Over $255,706 was contributed in cost-shared dollars. FY2001 projects affected over 8,267 acres and 41 miles of trails in Wisconsin.

Here are a few of the highlights from FY2001 Turkey Stamp Projects:



- **Develop and maintain barrens/oak savanna**—4,419 acres on the Glacial Lake Grantsburg Work Unit properties, Governor Knowles State Forest, and Burnett County Forest were affected by stamp dollars. The project expanded ongoing barrens/oak savanna management and development program and resulted in restoration of grasslands, brush prairie, and oak savanna. Maintenance activities included mowing, shearing, hand cutting, applying herbicide, and prescribed burning.
- **Purchase of four acorn planters and direct seeders**—Planters and seeders have a number of advantages including being able to plant more seeds or acorns per acre, with less labor, time, and money. These machines are in great demand and use of them is expected to increase over time.
- **Internship**—A conservation intern student was hired through USDA-NRCS office to work on Conservation Reserve Program (CRP) contracts in order to create and improve wildlife habitat. The student assisted and educated landowners in the process, specifically about site preparations and tree and shrub plantings for wildlife.
- **Burning of State Natural Areas**—Over 1,100 acres on State Natural Areas (SNAs) were burned during the two-year project. Burning every 3–5 years is recommended to preserve grasslands and prevent brush and tree growth.

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