Status of Wildlife Populations, Fall 1997

(Including 1984 - 1996 Hunting and Trapping Harvest Statistics)

Minnesota Department of Natural Resources
Section of Wildlife
Wildlife Populations and Research Unit
St. Paul, Minnesota

Status of Wildlife Populations, Fall 1997

(Including 1984-1996 Hunting and Trapping Harvest Statistics)

compiled by
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Note: Data in this report may change as a result of future verification and more comprehensive analysis.

Status of Wildlife Populations, Fall 1997

(Including 1984-96 Hunting and Trapping Harvest Statistics)

This is the 21st year that the Wildlife Populations and Research Unit has compiled this booklet; it is primarily an administrative document intended for DNR personnel. (Since 1984 we have also generated a companion volume containing annual summaries of activities and findings from each ongoing research project in the Unit).

Most of the field work associated with collection of census and survey data for farmland and forest wildlife is performed by wildlife biologists and managers (conservation officers also participate in August roadside counts). The Farmland and Forest Wildlife Population and Research groups coordinate these activities, analyze and interpret data, and prepare recommendations for harvest regulations and season setting.

Much of the census and survey work for wetland species is done by personnel in the Wetland Wildlife Populations and Research Group.

Most of the hunting and trapping harvest estimates are calculated and summarized by St. Paul central office personnel.

Additions and deletions to this year's edition are as follows: we have added results from a winter track survey begun in 1991 as a pilot study by the Forest Wildlife Population and Research group. We have not included the Nongame Wildlife section of Bald Eagle population information. A comprehensive report was not produced due to incomplete data statewide. Please note that in 1996 the Bald Eagle state status was changed from threatened to special concern.

CONTENTS

FARMLAND WILDLIFE POPULATIONS

Wildlife Research Group
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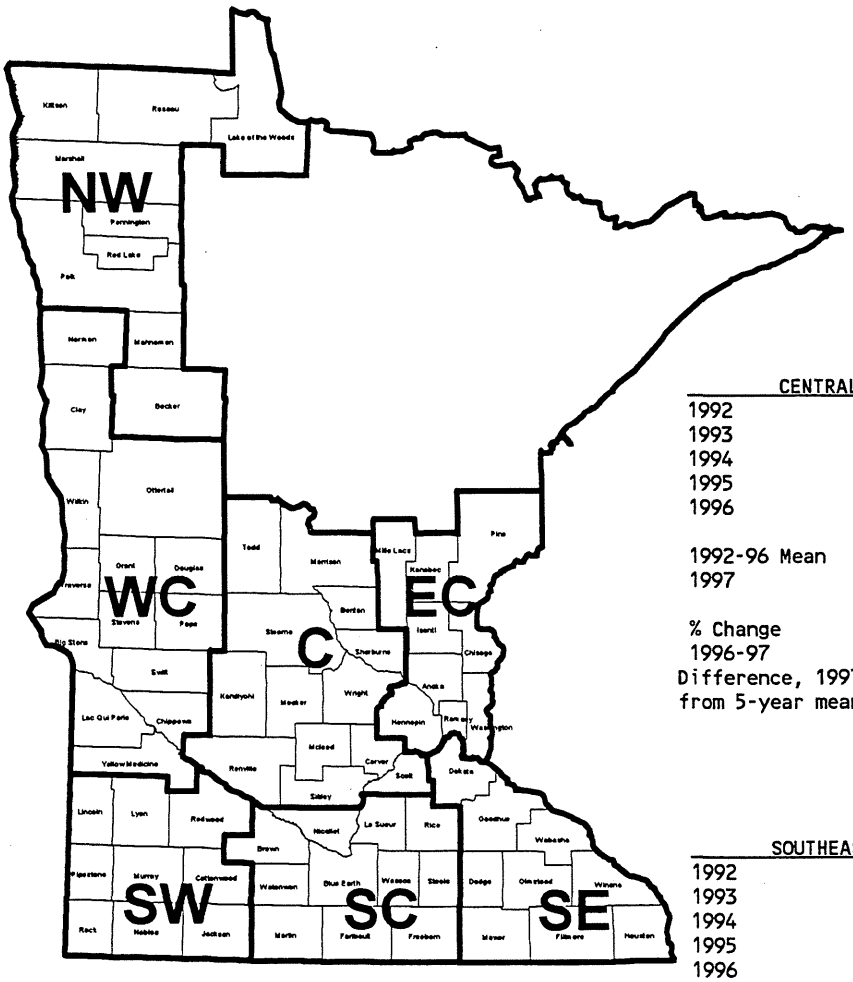
WEST CENTRAL	
1992	30
1993	11 (14)
1994	25
1995	21
1996	23
1992-96 Mean	20 (21)
1997	8
% Change 1996-97	-64%
Difference, 1997 from 5-year mean	-60% (-62%)

STATEWIDE	
1992	44
1993	24 (30)
1994	45
1995	59
1996	38
1992-96 Mean	40 (41)
1997	32
% Change 1996-97	-17%
Difference, 1997 from 5-year mean	-20% (-22%)

EAST CENTRAL	
1992	51
1993	20 (25)
1994	31
1995	25
1996	35
1992-96 Mean	31 (32)
1997	21
% Change 1996-97	-40%
Difference, 1997 from 5-year mean	-32% (-34%)



SOUTH CENTRAL	
1992	47
1993	31 (38)
1994	61
1995	102
1996	65
1992-96 Mean	63 (64)
1997	69
% Change 1996-97	+6%
Difference, 1997 from 5-year mean	+10% (8%)

CENTRAL	
1992	47
1993	23 (28)
1994	30
1995	39
1996	17
1992-96 Mean	30 (31)
1997	23
% Change 1996-97	+56%
Difference, 1997 from 5-year mean	-23% (-26%)

SOUTHWEST	
1992	37
1993	16 (19)
1994	52
1995	66
1996	42
1992-96 Mean	39 (40)
1997	20
% Change 1996-97	-52%
Difference, 1997 from 5-year mean	-49% (-50%)

SOUTHEAST	
1992	63
1993	52 (64)
1994	81
1995	109
1996	53
1992-96 Mean	68 (70)
1997	46
% Change 1996-97	-13%
Difference, 1997 from 5-year mean	-32% (-34%)

Figure 1. Ring-necked pheasants seen per 100 miles of August roadside count route, 1992-97, and percent change 1996-97 for routes surveyed both years. Numbers in parentheses are adjusted for the correction to the 1993 pheasant index.

Table 1. County, regional, and statewide August roadside count indices for ring-necked pheasants in Minnesota, 1992-1997.

Region and County	Miles surveyed 1997	Pheasants seen per 100 miles driven							Percent change[a]
		1992	1993	1994	1995	1996	1997	1992-96 Mean	1996-97
West Central	900	29.5	11.0	24.8	21.4	22.9	8.2	19.6	-64.1
Big Stone	75	19	17	3	19	0	0		
Chippewa	50	58	10	44	14	58	22		
Clay	75	12	1	0	25	0	0		
Douglas	50	52	0	0	2	8	0		
Grant	25	30	24	0	16	0	0		
Lac Qui Parle	75	45	36	116	70	98	31		
Norman	50	0	2	0	0	0	0		
Otter Tail	50	10	0	2	0	10	0		
Pope	75	57	16	88	17	4	35		
Stevens	75	36	3	19	28	23	5		
Swift	75	79	33	53	60	19	4		
Traverse	75	9	0	2	1	0	0		
Wilkin	75	3	0	0	0	0	0		
Yellow Medicine	75	4	5	16	21	81	9		
Central	700	46.6	23.1	29.9	39.5	17.3	23.0	29.9	+56.3
Benton	50	56	8	20	44	0	18		
Carver	50	28	54	40	52	52	--		
Kandiyohi	75	123	44	44	83	55	24		
McLeod	50	52	2	6	76	17	20		
Meeker	75	88	33	51	120	37	57		
Morrison	50	0	38	44	2	6	32		
Renville	50	0	0	0	14	26	14		
Scott	50	62	28	2	90	19	36		
Sherburne	50	12	2	0	0	0	0		
Sibley	75	49	0	58	27	0	24		
Stearns	75	20	41	41	12	1	11		
Todd	50	12	8	0	0	0	0		
Wright	50	70	20	42	10	0	40		
East Central	425	51.3	20.2	31.3	25.3	35.4	21.2	30.8	-40.3
Anoka	50	6	0	6	0	0	0		
Chisago	75	136	77	59	24	116	68		
Hennepin	25	36	4	0	88	77	16		
Isanti	75	5	1	20	5	9	0		
Kanabec	50	2	6	30	18	0	28		
Mille Lacs	50	104	34	28	22	32	12		
Pine	50	36	12	28	60	28	20		
Washington	50	58	0	56	26	16	10		

Table 1. Continued.

Region and County	Miles surveyed 1996	Pheasants seen per 100 miles driven 1992	1993	1994	1995	1996	1997	1992-97 Mean	Percent change[a] 1996-97
Southwest	475	37.5	15.6	51.8	65.9	41.6	20.0	38.7	-51.9
Cottonwood	50	26	24	12	172	147	38		
Jackson	50	12	4	98	92	38	28		
Lincoln	50	174	20	86	130	46	14		
Lyon	50	0	0	32	20	16	2		
Murray	50	32	44	4	38	10	2		
Nobles	75	31	7	53	52	32	25		
Pipestone	50	20	38	90	32	52	18		
Redwood	50	32	2	40	20	22	32		
Rock	50	14	6	50	44	16	18		
South Central	800	47.2	30.8	61.3	101.9	65.0	68.6	62.5	+5.6
Blue Earth	75	11	3	51	51	126	20		
Brown	75	5	4	60	68	49	69		
Faribault	75	--	1	12	72	48	60		
Freeborn	75	23	45	73	89	92	43		
LeSueur	75	224	111	113	259	147	200		
Martin	75	19	16	44	65	50	64		
Nicollet	75	5	1	9	20	15	1		
Rice	75	76	73	99	211	59	100		
Steele	50	72	34	74	110	38	92		
Waseca	75	43	49	112	143	52	72		
Watonwan	75	3	1	31	36	29	41		
Southeast	500	63.4	52.2	81.2	109.2	53.1	46.2	67.5	-13.0
Dakota	50	56	10	12	62	84	36		
Dodge	50	94	18	84	204	110	42		
Fillmore	50	134	162	134	184	15	68		
Goodhue	50	22	0	20	46	2	24		
Houston	50	14	6	60	62	22	8		
Mower	75	25	15	91	76	56	88		
Olmsted	75	151	180	228	182	85	59		
Wabasha	50	28	34	22	148	86	46		
Winona	50	22	0	2	0	0	18		
Statewide	3800	44.2	24.3	44.7	58.9	38.2	31.6	40.3	-16.9

[a] Percent change for 1995-96 calculated only for routes surveyed both years.

Table 2. Statewide pheasant population parameters calculated from August roadside count results, 1991-97.

Population Parameter	1992	1993	1994	1995	1996	1997	1992-96 Mean	Percent change[a] 1996-97
Cocks/100 Miles	3.8	2.6	3.8	4.5	3.0	3.4	3.5	12
Hens/100 Miles	6.5	2.6	5.5	7.7	4.9	3.8	5.4	-20
Broods/100 Miles	6.3	3.3	6.5	8.6	5.5	4.6	6.0	-12
Mean Brood Size	5.4	5.9	5.5	5.5	5.5	5.3	5.6	-5
Broods/100 Hens	98.0	126.0	118.0	111.0	112.0	121.0	113.0	10
Median Hatch Date	Jun 8	Jun 4	Jun 6	Jun 7	Jun 7	Jun 7	Jun 6[b]	

[a] Percent change for 1996-97 calculated only for routes surveyed both years.

[b] Median hatch date, 1992-96.

Table 3. Regional and statewide August roadside count indices for gray (Hungarian) partridge, 1992-97.

Agricultural Region	Miles Surveyed 1997	Partridge seen per 100 miles driven							Percent change[a]
		1992	1993	1994	1995	1996	1997	1992-96 Mean	1996-97
Northwest	475	1.7	0.0	0.2	0.0	0.0	0.0	0.4	-
West Central	900	6.3	0.8	2.2	2.1	1.0	0.2	2.5	-78
Central	700	5.5	1.9	7.4	2.8	0.1	3.1	3.5	2100
East Central	425	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
Southwest	475	11.8	3.2	36.0	23.5	7.9	18.5	16.5	134
South Central	800	10.1	1.0	22.1	24.5	15.4	35.4	14.6	130
Southeast	500	10.4	11.8	23.4	15.0	22.5	18.4	16.6	-18
Statewide	4365	6.7	2.4	12.5	9.8	6.5	11.4	7.6	72

[a] Percent change 1996-97 for routes surveyed both years only.

Table 4. Statewide gray (Hungarian) partridge population parameters calculated from August roadside count results, 1992-97.

Agricultural Region	Adults per 100 miles driven	Broods per 100 miles driven	Mean Brood size	Broods per 100 adults	Median hatch date
Northwest	0.0	0.0	Na[a]	NA	NA
West Central	0.2	0.0	NA	0.0	NA
Central	1.0	0.4	5.0	42.9	June 27
East Central	0.0	0.0	NA	NA	NA
Southwest	5.7	1.5	8.7	25.9	June 25
South Central	8.1	2.8	9.9	33.8	June 20
Southeast	3.8	1.8	8.1	47.4	July 2
Statewide[b]	2.8	1.0	9.0	34.2	June 26

[a] NA is Not Applicable.

[b] Statewide means include the Northwest agricultural region.

Table 5. August roadside count indices for selected farmland wildlife species and percent change 1996-97 by agricultural region.

Agricultural Region	Miles Surveyed 1997	Animals seen per 100 miles driven											
		Eastern Cottontail			White-tailed Jackrabbit			Mourning dove			White-tailed deer		
		1996	1997	Percent change[a]	1996	1997	Percent change[a]	1996	1997	Percent change[a]	1996	1997	Percent change[a]
Northwest	475	0.2	0.2	0	0.8	0.4	-65	70.1	120.4	+83	18.9	10.9	-42
West Central	900	1.4	1.2	-15	0.8	0.6	-29	425.3	368.4	-13	12.8	11.9	-7
Central	700	2.9	3.3	+10	0.1	0.1	0	138.0	169.0	+15	4.8	8.1	+65
East Central	425	7.5	5.4	-27	0.0	0.5	-	75.8	111.3	+47	11.9	6.8	-43
Southwest	475	6.6	2.3	-65	0.2	0.6	+200	141.4	309.5	+119	10.9	8.4	-23
South Central	800	10.5	4.9	-53	1.0	0.5	-50	181.4	195.6	+8	4.3	4.3	-1
Southeast	500	6.5	5.6	-14	0.2	0.0	-100	232.7	162.0	-30	20.3	24.2	+19
Statewide[b]	4275	5.0	3.2	-36	0.5	0.4	-28	203.6	219.6	+7	11.1	10.9	+3

[a] Percent change 1996-97 calculated only for routes surveyed both years.

[b] Statewide means include the Northwest agricultural region.

Table 6. Statewide August roadside count indices for selected farmland wildlife species, 1993-1997.

Species	Animals seen per 100 miles driven					Percent change[a]
	1993	1994	1995	1996	1997	1996-97
Ring-necked pheasant[b]	24.3	44.7	58.9	38.2	31.6	-17
Gray (Hungarian) partridge	2.4	12.5	9.8	6.5	11.4	+72
Mourning dove	133.5	167.1	173.4	203.6	219.6	+7
Eastern cottontail	3.8	3.4	4.4	5.0	3.2	-37
White-tailed jack rabbit	0.2	0.4	0.4	0.5	0.4	-28
White-tailed deer	9.2	10.3	10.5	11.1	10.9	0
Sharp-tailed grouse	0.02	0.00	0.02	0.00	0	-
Greater prairie-chicken	0.00	0.00	0.00	0.00	0	-
Sandhill crane	2.58	4.71	4.63	2.67	3.16	+21
Badger	0.00	0.02	0.02	0.02	0.02	0
Gray and fox squirrel	1.30	0.83	1.34	0.39	1.03	+161
Gray and red fox	0.43	0.67	0.28	0.51	0.09	-82
Striped and spotted skunk	0.16	0.25	0.25	0.18	0.19	+1

[a] Percent change 1996-97 calculated only for routes surveyed both years.

[b] Ring-necked pheasant means do not include the Northwest agricultural region.

Table 7. Animals seen per 100 miles of August roadside count for 5 species in Minnesota, statewide, 1955-1997.[a]

Year	Animals seen per 100 miles driven								
	Ring-necked Pheasant	Gray Partridge		Eastern Cottontail		White-tailed Jackrabbit		Mourning Dove	
1955	368.1	9.9		17.8		7.0		324.5	
1956	290.0	6.6		13.0		5.6		422.6	
1957	272.6	5.5		11.2		6.3		274.5	
1958	409.1	8.7		14.8		8.5		326.0	
1959	266.8	9.3		6.2		4.0		311.4	
1960	276.3	4.4		9.8		3.6		300.8	
1961	336.0	4.5		9.4		3.5		392.4	
1962	197.4	5.8		7.9		2.7		334.6	
1963	248.1	5.1		7.4		3.6		396.5	
1964	149.8	1.6		5.4		2.0		375.9	
1965	77.2	3.6		4.4		1.6		271.6	
1966	105.0	4.9		5.6		1.8		299.6	
1967		61.9	4.6		5.5		2.8		NC[b]
1968	71.4	3.5		5.8		1.9		293.5	
1969	39.2	3.7		5.1		2.7		245.6	
1970	69.6	9.1		4.9		1.8		348.3	
1971	66.4	10.8		3.7		2.1		415.4	
1972	47.3	7.5		3.9		1.9		349.8	
1973	63.3	19.1		5.8		1.9		428.2	
1974	76.3	12.0		6.2		1.5		380.8	
1975	34.8	14.6		3.3		1.3		405.8	
1976	44.8	17.6		5.2		2.2		407.4	
1977	85.0	32.1		6.8		2.4		409.8	
1978	79.0	37.0		8.9		3.8		344.5	
1979	54.2	33.9		7.3		3.7		347.9	
1980	104.9	44.6		6.4		2.8		352.2	
1981	133.5	42.9		10.2		2.5		347.6	
1982	60.2	24.5	(22.1)	5.6	(5.2)	1.8	(1.7)	325.0	(313.6)
1983	56.2	24.4	(23.4)	7.2	(6.7)	1.0	(1.0)	298.9	(286.6)
1984	28.6	21.3	(20.0)	3.3	(2.9)	0.9	(0.8)	292.0	(279.2)
1985	34.6	40.7	(37.0)	4.8	(4.4)	1.3	(1.2)	273.7	(270.1)
1986	21.2	22.4	(20.6)	4.4	(4.0)	0.4	(0.5)	207.0	(204.1)
1987	50.0	37.1	(33.4)	7.7	(6.9)	0.7	(0.7)	257.1	(252.4)
1988	34.8	41.5	(37.3)	4.3	(4.0)	0.7	(0.7)	252.3	(245.0)
1989	39.8	41.5	(39.7)	5.9	(5.4)	1.7	(1.6)	297.9	(283.4)
1990	57.5	37.1	(35.2)	7.3	(6.7)	1.4	(1.4)	266.0	(255.6)
1991	76.9	21.5	(20.9)	5.7	(5.3)	0.7	(0.8)	252.8	(248.3)
1992	44.2	7.4	(6.7)	5.2	(4.7)	0.6	(0.6)	224.7	(222.2)
1993	24.3	2.7	(2.4)	4.2	(3.8)	0.2	(0.2)	139.8	(133.5)

(Table 7 cont.)

Year	Animals seen per 100 miles driven									
	Ring-necked Pheasant	Gray Partridge		Eastern Cottontail		White-tailed Jackrabbit		Mourning Dove	
1994	44.7	14.0	(12.5)	3.8	(3.4)	0.4	(0.4)	179.7	(167.1)
1995	58.9	11.1	(9.8)	4.9	(4.4)	0.4	(0.4)	184.1	(173.4)
1996	38.2	7.4	(6.5)	5.6	(5.0)	0.5	(0.5)	219.4	(203.6)
1997	31.6	12.8	(11.4)	3.6	(3.2)	0.4	(0.4)	232.0	(219.6)

[a] Eight counties in the Northwest agricultural region were added to the August Roadside Count in 1982. Numbers in parentheses are statewide means which include the Northwest agricultural region. These were not calculated for ring-necked pheasants because the Northwest counties are outside the pheasant range.

[b] No count.

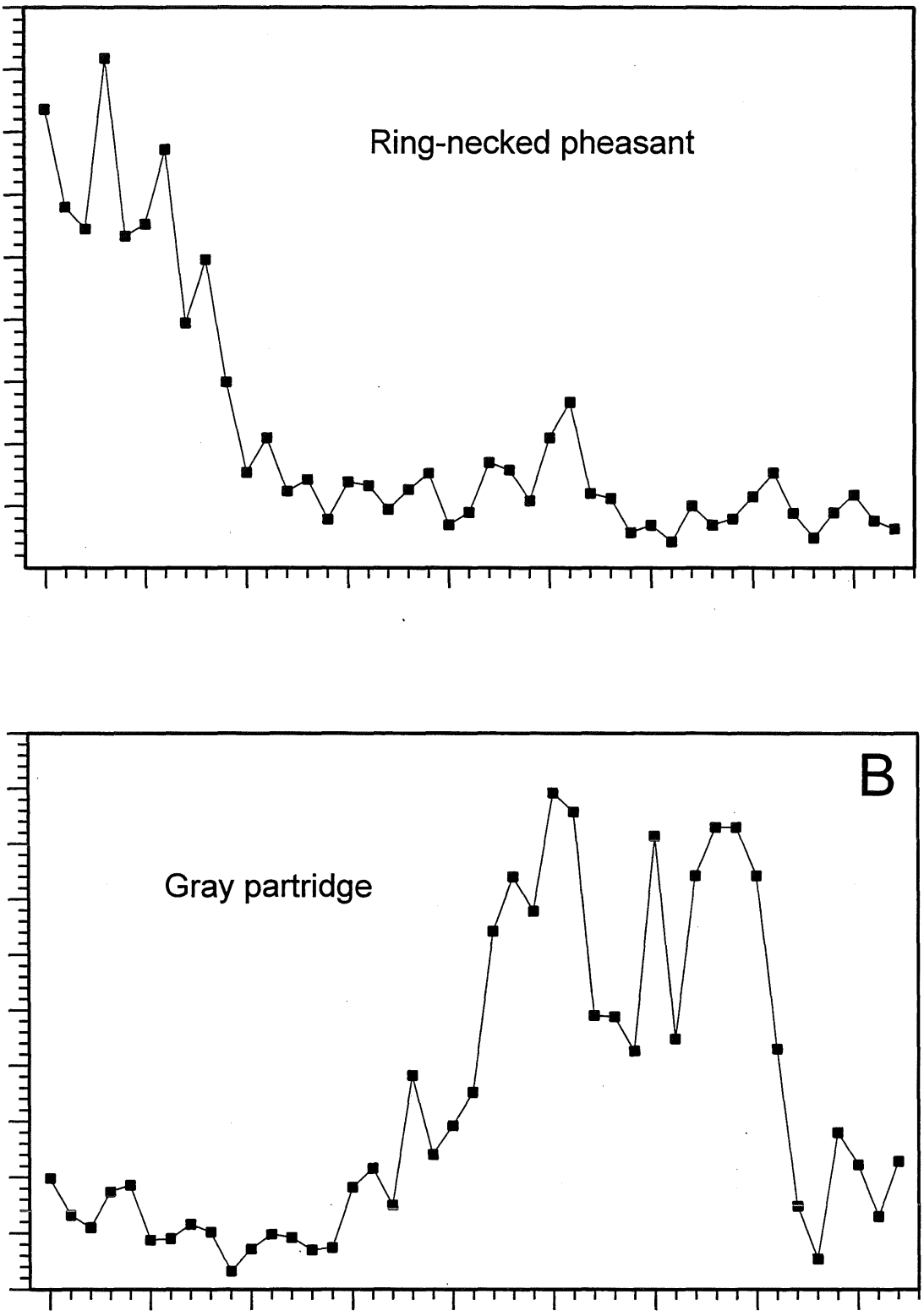
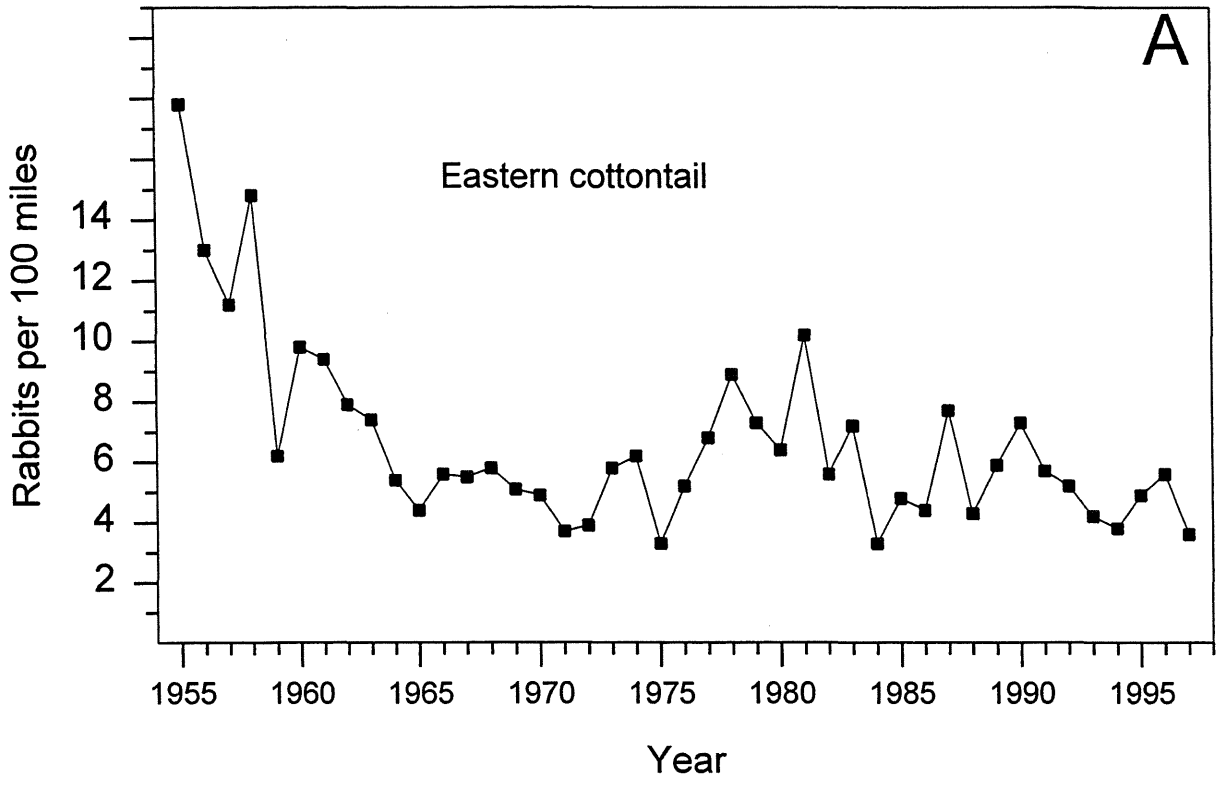


Figure 2. August roadside count indices (birds seen per 100 miles driven) for (A) Ring-necked pheasant and (B) Gray partridge, 1955-1997. Pheasant and partridge indices do not include the Northwest agricultural region.



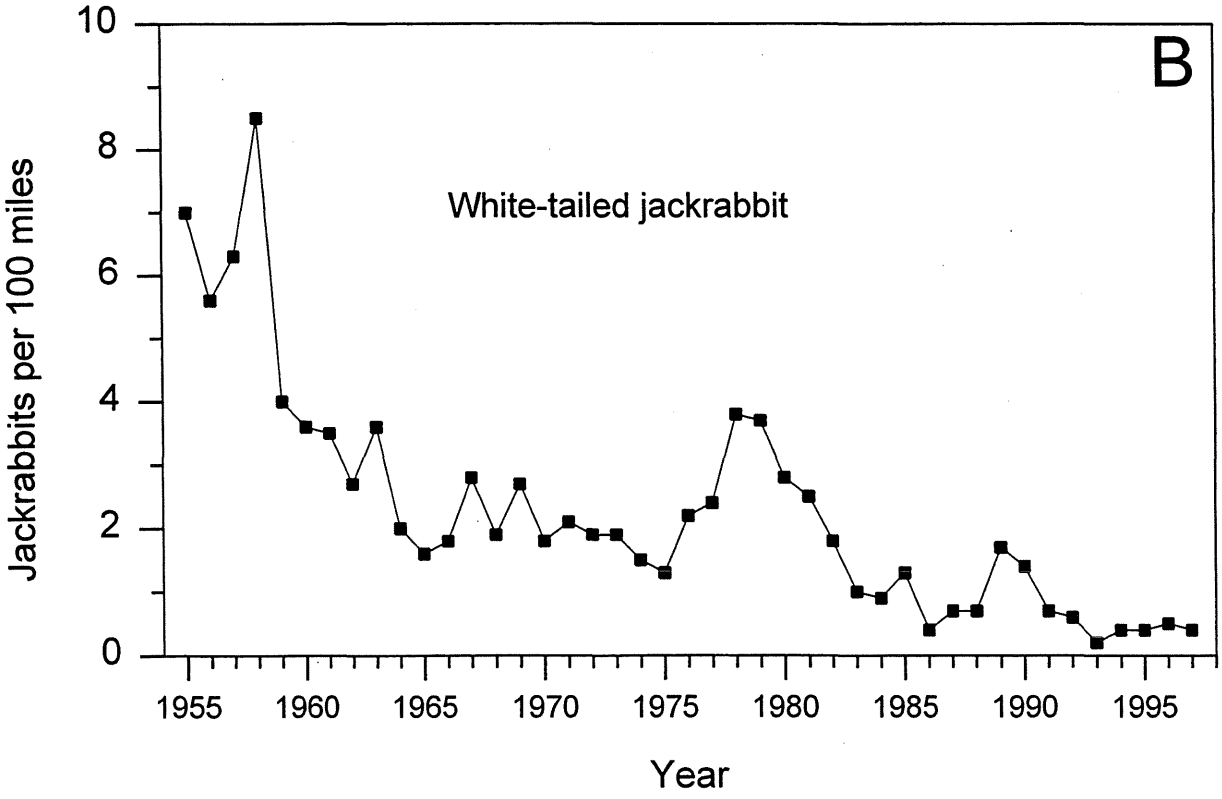


Figure 3. August roadside count indices (animals seen per 100 miles driven) for (A) Eastern cottontail and (B) White-tailed jackrabbit, 1955-1997. Indices do not include the Northwest agricultural region.

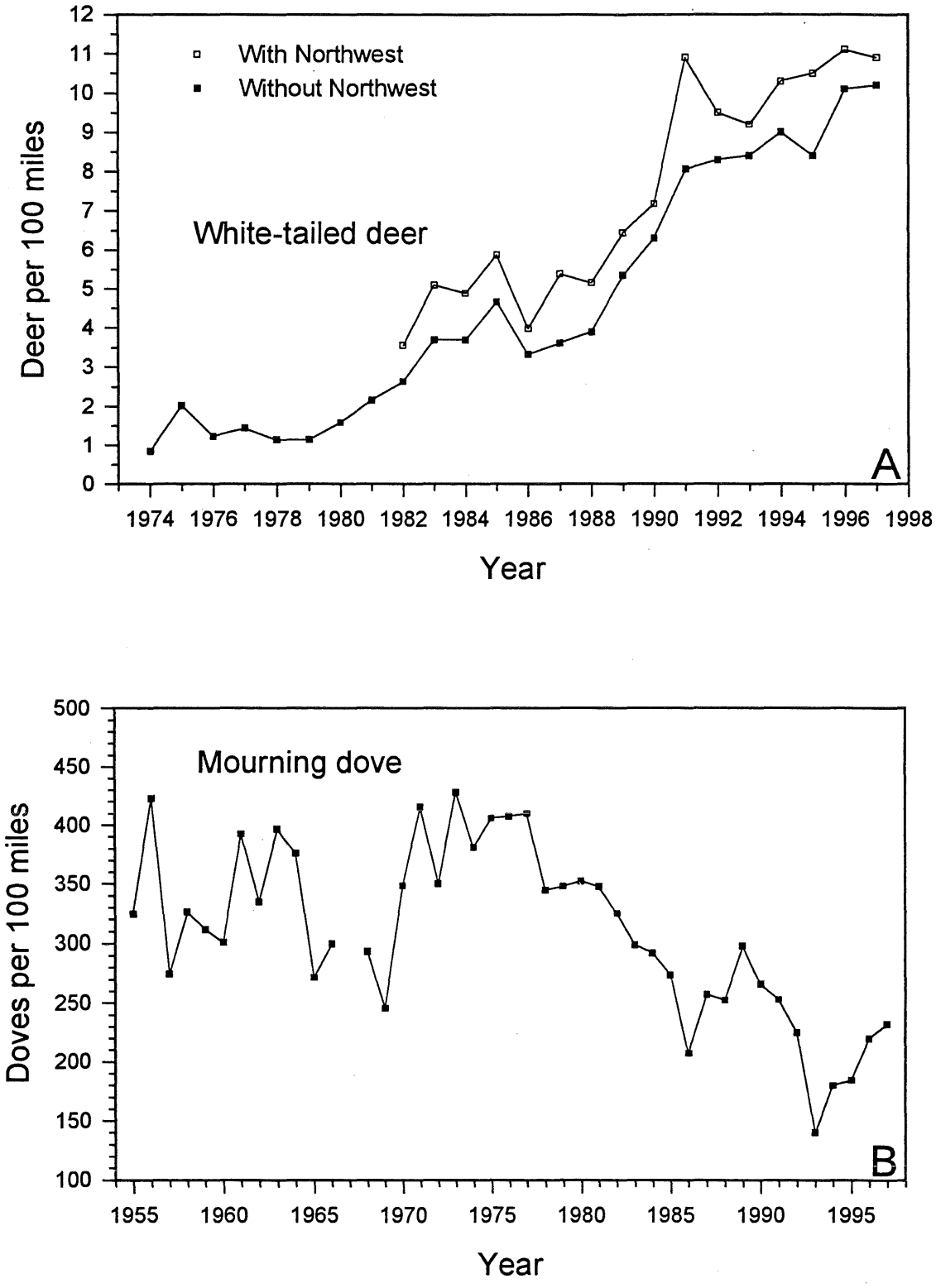


Figure 4. August roadside count indices (animals seen per 100 miles driven) for (A) White-tailed deer, including and excluding the Northwest agricultural region, 1974-1997; and (B) mourning dove, 1955-1997. Dove means do not include the Northwest agricultural region. Doves were not counted in 1967.

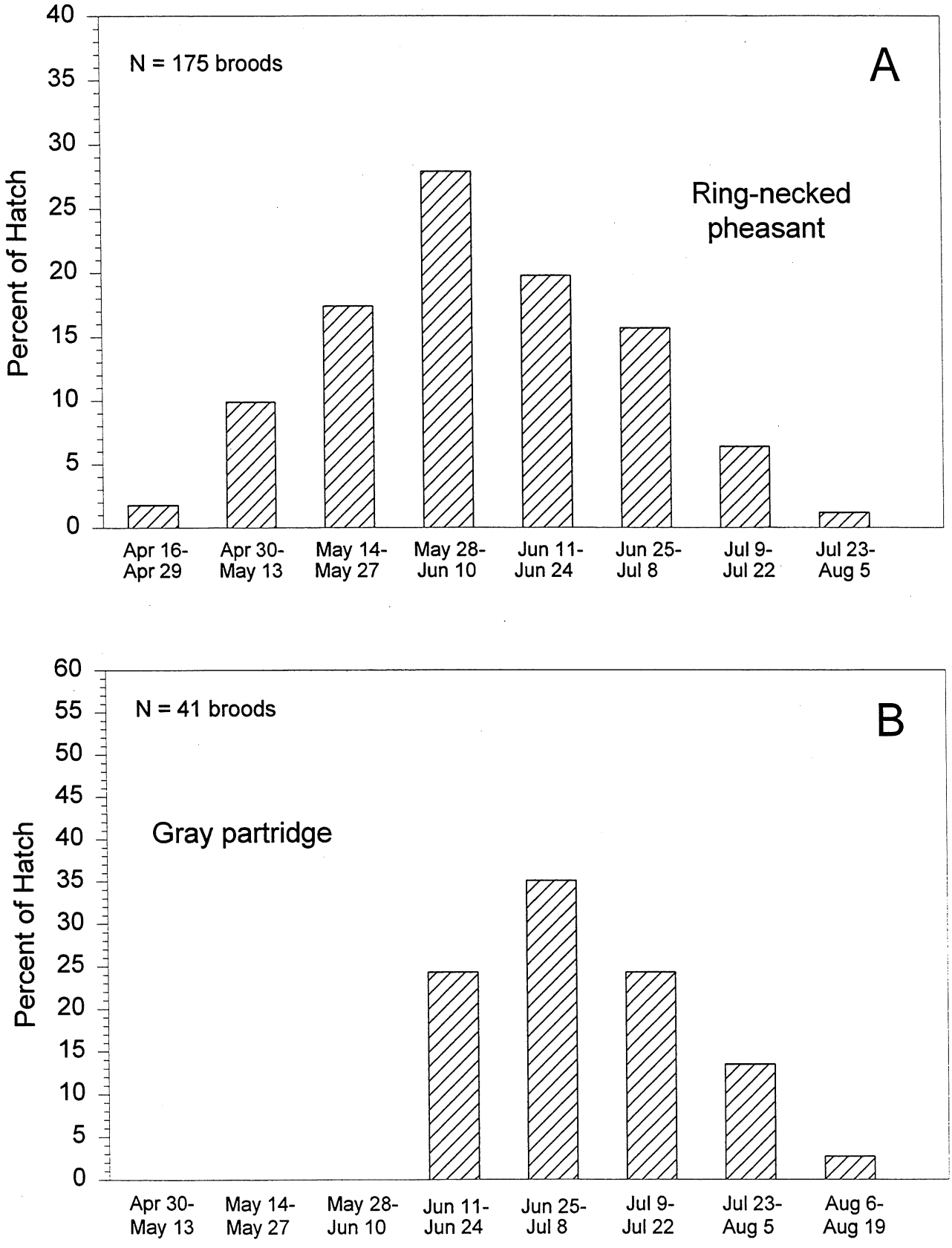


Figure 5. Biweekly distribution of (A) Ring-necked pheasant, and (B) Gray partridge hatch, 1997.

Table 8. Ring-necked pheasants seen per 100 miles of August roadside count in Minnesota, by agricultural region, 1955-1997.

Year	Agricultural region							State-[a] wide
	WC	C	EC	SW	SC	SE	NW	
1955	334.8	163.2	140.0	580.5	620.2	212.0	NO	368.1
1956	248.8	208.1	175.2	357.2	477.5	169.0	COUNT	290.0
1957	260.2	130.4	134.6	336.6	522.2	179.6		272.6
1958	490.3	261.9	300.0	473.4	592.9	125.6		409.1
1959	306.6	187.3	73.1	509.5	412.8	55.3		266.8
1960	367.0	243.4	202.5	294.3	356.8	37.7		276.3
1961	494.3	266.7	254.5	365.8	381.3	115.1		336.0
1962	264.2	140.5	143.8	214.7	239.3	114.0		197.4
1963	443.8	191.5	156.9	251.8	227.4	134.8		248.1
1964	224.5	83.1	26.3	185.3	211.1	83.8		149.8
1965	121.4	38.1	8.7	90.4	98.1	68.8		77.2
1966	109.6	67.2	26.3	108.8	175.5	101.8		105.0
1967	56.4	29.7	10.4	51.5	126.2	81.0		61.9
1968	64.9	39.7	16.9	78.1	124.7	94.0		71.4
1969	12.8	22.3	20.2	33.3	68.3	101.9		39.2
1970	19.7	26.9	8.9	55.2	108.6	194.2		69.6
1971	40.3	44.0	14.8	59.3	76.7	175.2		66.4
1972	19.9	28.0	44.0	37.3	66.7	104.8		47.3
1973	38.3	35.4	53.0	36.2	74.5	168.0		63.3
1974	50.6	73.3	84.7	59.8	93.0	107.5		76.3
1975	13.1	33.7	75.1	6.7	24.6	78.6		34.8
1976	11.9	28.1	68.2	2.1	82.8	80.8		44.8
1977	45.8	84.7	101.4	6.4	145.0	125.8		85.0
1978	36.1	79.9	178.4	23.2	106.0	77.2		79.0
1979	44.6	61.7	100.5	13.4	53.3	54.7		54.2
1980	78.8	116.8	221.2	19.5	110.0	84.9		104.9
1981	123.8	139.1	267.8	75.8	125.8	95.2		133.5
1982[b]	70.8	43.7	155.1	26.1	49.1	28.9	0.0	60.2
1983	89.7	51.5	107.3	10.1	24.9	51.4	0.0	56.2
1984	66.5	13.6	10.1	8.4	25.8	20.6	0.4	28.6
1985	62.9	16.3	41.3	14.3	29.6	31.6	2.5	34.6
1986	19.6	10.7	22.4	19.8	23.5	37.4	0.0	21.2
1987	79.5	36.4	24.5	60.4	41.7	39.0	0.0	50.0
1988	45.3	31.2	40.0	24.7	31.6	30.1	0.0	34.8
1989	33.1	42.3	53.6	32.0	39.6	43.4	0.0	39.8
1990	45.6	60.5	72.0	59.6	61.8	53.6	0.0	57.5
1991	78.0	80.0	88.2	83.6	79.0	51.0	0.0	76.9
1992	29.5	46.6	51.3	37.5	47.2	63.4	0.0	44.2
1993	11.0	23.1	20.2	15.6	30.8	52.2	0.0	24.3
1994	24.8	29.9	31.3	51.8	61.3	81.2	0.0	44.7

(Table 8 cont.)

Year	Agricultural region							State-[a] wide
	WC	C	EC	SW	SC	SE	NW	
1995	21.4	39.5	25.3	65.9	101.9	109.2	0.0	58.9
1996	22.9	17.3	35.4	41.6	65.0	53.1	0.0	38.2
1997	8.2	23.0	21.2	20.0	68.6	46.2	0.0	31.6

[a] Statewide means do not include the Northwest agricultural region because counties there are outside the pheasant range.

[b] Eight counties in the Northwest agricultural region were added to the August Roadside Count in 1982 for all species except ring-necked pheasants.

Table 9. Gray partridge seen per 100 miles of August roadside count in Minnesota, by agricultural region, 1955-1997.

Year	Agricultural region							Statewide Mean	
	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1955	16.4	8.0	0.0	10.8	9.5	9.0	NO	9.9	
1956	2.9	8.3	0.0	14.7	6.0	7.8	COUNT	6.6	
1957	6.4	4.5	0.0	11.7	7.0	0.2		5.5	
1958	20.4	8.6	0.0	10.2	0.3	6.0		8.7	
1959	13.0	17.3	0.0	20.4	5.3	0.0		9.3	
1960	3.9	6.5	0.0	12.1	0.6	4.9		4.4	
1961	5.6	13.4	0.0	2.1	0.6	0.0		4.5	
1962	2.5	10.4	0.0	3.1	0.3	22.0		5.8	
1963	3.3	10.8	0.0	11.1	0.9	4.8		5.1	
1964	0.9	2.5	0.0	2.0	1.9	2.4		1.6	
1965	5.3	2.9	0.0	6.8	2.3	4.0		3.6	
1966	1.8	3.5	0.0	18.3	0.1	11.4		4.9	
1967	2.6	2.2	0.0	8.2	13.5	0.0		4.6	
1968	4.4	3.1	0.0	9.5	0.0	5.0		3.5	
1969	5.2	2.6	0.0	10.9	0.0	4.5		3.7	
1970	7.1	8.2	0.0	32.8	3.7	4.0		9.1	
1971	12.7	3.8	0.0	28.9	7.2	10.1		10.8	
1972	6.7	3.3	0.0	18.3	1.6	18.4		7.5	
1973	8.2	7.8	0.0	66.9	11.7	26.0		19.1	
1974	6.9	10.3	0.0	27.4	8.4	20.2		12.0	
1975	11.0	2.3	0.0	67.5	8.6	5.6		14.6	
1976	10.6	8.7	0.0	59.3	15.4	22.4		17.6	
1977	16.0	32.8	0.0	93.3	31.0	31.6		32.1	
1978	26.1	22.6	0.2	144.2	30.7	14.8		37.0	
1979	43.0	24.3	0.0	88.5	34.8	12.2		33.9	
1980	57.9	41.7	0.0	99.0	41.2	27.6		44.6	
1981	38.1	26.8	0.5	138.7	44.4	19.0		42.9	
1982[a]	23.6	23.0	0.7	69.7	17.1	16.0	3.6	24.5	22.1
1983	29.3	18.7	0.0	64.6	22.8	8.0	15.2	24.4	23.4
1984	18.2	17.3	0.0	49.7	26.5	16.2	9.5	21.3	20.0
1985	30.7	17.5	0.0	94.9	63.3	42.2	2.2	40.7	37.0
1986	10.1	4.6	0.0	59.6	45.3	20.8	3.5	22.4	20.6
1987	14.7	15.1	0.0	99.2	47.0	66.6	3.6	37.1	33.4
1988	25.9	18.2	3.1	110.7	63.6	40.4	3.8	41.5	37.3
1989	20.0	13.1	0.0	93.5	84.1	42.0	24.8	41.5	39.7
1990	14.8	19.5	0.0	101.5	62.7	34.6	20.4	37.1	35.2
1991	15.5	11.6	0.7	66.5	23.9	18.4	15.3	21.5	20.9
1992	6.3	5.5	0.0	11.8	10.9	10.4	1.7	7.4	6.7
1993	0.8	1.9	0.0	3.2	1.0	11.8	0.0	2.7	2.4
1994	2.2	7.4	0.0	36.0	22.1	23.4	0.2	14.0	12.5

(Table 9 cont.)

Year	Agricultural region							Statewide Mean	
	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1995	2.1	2.8	0.0	23.5	24.5	15.0	0.0	11.1	9.8
1996	1.0	0.1	0.0	7.9	15.4	22.5	0.0	7.4	6.5
1997	0.2	3.1	0.0	18.5	35.4	18.4	0.0	12.8	11.4

[a] Eight counties in the Northwest agricultural region were added to the August Roadside Count in 1982.

Table 10. Eastern cottontails seen per 100 miles of August roadside count in Minnesota, by agricultural region, 1955-1997.

	Agricultural region							Statewide Mean	
Year	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1955	8.1	15.0	14.5	20.3	19.6	32.0	NO	17.8	
1956	9.6	16.2	12.4	16.2	12.8	12.7	COUNT	13.0	
1957	6.6	9.7	8.3	18.3	13.7	14.0		11.2	
1958	12.8	13.5	16.2	22.1	17.2	6.5		14.8	
1959	5.0	16.0	5.6	6.5	5.3	2.2		6.2	
1960	5.9	13.6	6.4	15.6	11.9	4.9		9.8	
1961	6.2	12.4	6.1	13.8	10.9	5.6		9.4	
1962	5.6	7.3	4.2	12.6	10.0	8.2		7.9	
1963	6.8	4.2	4.9	11.6	9.3	8.6		7.4	
1964	5.2	3.3	1.0	11.8	6.6	5.4		5.4	
1965	3.9	4.4	0.9	5.4	5.7	5.8		4.4	
1966	5.3	3.2	1.8	9.5	7.5	6.0		5.6	
1967	5.8	4.6	2.1	7.1	8.7	3.2		5.5	
1968	4.6	3.2	3.5	9.3	8.8	5.8		5.8	
1969	3.6	3.9	0.9	9.5	8.3	4.5		5.1	
1970	3.6	5.0	1.5	6.9	5.7	6.2		4.9	
1971	4.8	2.6	1.5	6.7	3.2	2.1		3.7	
1972	3.8	4.7	3.6	4.8	3.5	3.5		3.9	
1973	5.0	8.6	6.0	6.5	5.4	4.2		5.8	
1974	3.4	6.5	14.2	6.5	6.1	6.4		6.2	
1975	2.3	4.4	8.3	1.6	1.5	3.1		3.3	
1976	3.7	5.5	6.5	2.1	6.1	7.6		5.2	
1977	4.8	6.7	12.9	6.4	4.9	7.8		6.8	
1978	5.0	8.6	21.4	11.8	7.3	4.6		8.9	
1979	4.6	7.7	7.5	12.7	8.0	4.4		7.3	
1980	4.4	7.0	9.9	6.7	7.2	3.8		6.4	
1981	7.0	10.3	18.1	9.9	8.4	12.0		10.2	
1982[a]	4.8	6.6	7.8	3.2	6.7	4.9	1.9	5.6	5.2
1983	7.0	5.9	13.2	5.7	3.6	12.2	1.9	7.2	6.7
1984	2.4	2.0	3.5	3.8	4.1	4.8	0.2	3.3	2.9
1985	2.4	4.4	4.7	6.5	5.7	7.6	0.2	4.8	4.4
1986	1.5	4.8	5.9	6.3	5.3	4.8	0.2	4.4	4.0
1987	5.7	7.0	11.5	8.2	6.6	10.6	0.6	7.7	6.9
1988	2.7	3.2	6.4	6.4	3.9	5.9	1.3	4.3	4.0
1989	3.6	5.9	8.9	6.7	4.2	9.2	1.3	5.9	5.4
1990	3.6	6.3	10.6	4.0	6.6	16.8	1.9	7.3	6.7
1991	2.8	5.8	8.9	4.2	6.0	9.2	2.0	5.7	5.3
1992	3.0	6.1	8.5	4.0	4.7	7.2	0.4	5.2	4.7
1993	1.1	3.1	8.5	2.1	5.7	7.8	0.4	4.2	3.8
1994	1.1	4.0	4.9	2.3	5.4	6.4	0.0	3.8	3.4

(Table 10 cont.)

Year	Agricultural region							Statewide Mean	
	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1995	2.3	3.7	6.7	4.2	6.5	8.1	0.6	4.9	4.4
1996	1.4	2.9	7.5	6.6	10.5	6.5	0.2	5.6	5.0
1997	1.2	3.3	5.4	2.3	4.9	5.6	0.2	3.6	3.2

[a] Eight counties in the Northwest agricultural region were added to the August Roadside Count in 1982.

Table 11. White-tailed jackrabbits seen per 100 miles of August roadside count in Minnesota, by agricultural region, 1955-1997.

Year	Agricultural region							Statewide Mean	
	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1955	9.0	2.6	1.5	13.0	10.6	1.6	NO	7.0	
1956	5.8	3.7	1.9	10.1	7.7	2.4	COUNT	5.6	
1957	4.8	5.2	0.9	19.5	6.1	1.3		6.3	
1958	7.3	6.4	0.7	20.1	11.9	0.9		8.5	
1959	1.4	0.7	0.4	15.4	7.8	0.6		4.0	
1960	3.7	4.8	0.2	9.8	2.5	0.2		3.6	
1961	3.7	5.0	0.0	6.5	3.5	0.2		3.5	
1962	4.2	2.3	0.2	4.5	2.8	0.7		2.7	
1963	9.7	2.2	0.0	2.4	3.0	1.0		3.6	
1964	2.9	1.3	0.0	3.7	2.4	0.6		2.0	
1965	1.9	1.9	0.2	4.2	1.2	0.4		1.6	
1966	2.3	1.8	0.2	4.6	1.1	0.6		1.8	
1967	5.3	1.2	0.2	4.2	4.0	0.0		2.8	
1968	1.7	0.8	0.0	6.9	1.9	1.0		1.9	
1969	3.1	0.7	0.5	10.1	1.8	0.7		2.7	
1970	4.0	1.5	0.0	1.9	1.3	0.4		1.8	
1971	5.3	1.6	0.0	2.9	0.8	0.0		2.1	
1972	3.6	1.3	0.0	1.5	2.1	0.5		1.9	
1973	4.0	0.2	0.0	2.9	1.7	0.2		1.9	
1974	3.9	1.5	0.0	1.5	0.7	0.0		1.5	
1975	3.2	0.6	0.3	2.1	0.2	0.2		1.3	
1976	4.4	0.6	0.0	5.2	1.7	1.2		2.2	
1977	3.5	2.8	0.2	4.9	1.6	0.8		2.4	
1978	3.4	2.8	0.7	13.1	3.0	1.0		3.8	
1979	4.6	5.3	0.5	6.4	2.7	1.1		3.7	
1980	3.7	1.2	1.2	8.3	1.5	2.7		2.8	
1981	2.1	2.2	0.0	7.2	1.5	3.0		2.5	
1982[a]	2.6	0.9	0.5	4.6	1.1	0.9	1.5	1.8	1.7
1983	2.3	0.9	0.0	0.0	0.9	0.8	1.3	1.0	1.0
1984	1.5	0.8	0.0	1.7	0.4	0.6	0.4	0.9	0.8
1985	1.7	0.4	0.0	3.2	1.5	0.7	1.0	1.3	1.2
1986	0.4	0.4	0.0	0.6	0.9	0.0	1.0	0.4	0.5
1987	1.2	0.3	0.0	0.4	1.0	1.0	0.4	0.7	0.7
1988	0.6	0.4	0.0	2.0	1.0	0.4	0.6	0.7	0.7
1989	2.6	1.1	0.0	2.1	2.4	0.6	1.1	1.7	1.6
1990	2.2	0.4	0.2	1.3	2.1	1.2	2.1	1.4	1.4
1991	1.4	0.7	0.0	0.4	0.4	0.4	2.3	0.7	0.8
1992	0.3	0.8	0.0	1.1	0.8	0.4	0.4	0.6	0.6
1993	0.0	0.3	0.0	0.2	0.2	0.4	0.6	0.2	0.2
1994	0.6	0.1	0.2	0.2	1.0	0.0	0.0	0.4	0.4

(Table 11 cont.)

Year	Agricultural region							Statewide Mean	
	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1995	0.4	0.3	0.0	0.2	1.0	0.4	0.2	0.4	0.4
1996	0.8	0.1	0.0	0.2	1.0	0.2	0.8	0.5	0.5
1997	0.6	0.1	0.5	0.6	0.5	0.0	0.2	0.4	0.4

[a] Eight counties in the Northwest agricultural region were added to the August Roadside Count in 1982.

Table 12. Mourning doves seen per 100 miles of August roadside count in Minnesota, by agricultural region, 1955-1997.

Year	Agricultural region							Statewide Mean	
	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1955	334.8	274.6	116.0	539.1	395.7	196.8	NO	324.5	
1956	347.4	552.6	277.7	591.5	461.0	285.9	COUNT	422.6	
1957	303.3	245.9	167.7	243.3	382.8	200.4		274.5	
1958	350.2	296.8	192.3	270.1	455.6	292.8		326.0	
1959	377.4	307.3	220.9	358.0	447.3	94.4		311.4	
1960	273.7	333.5	121.7	336.8	430.4	186.7		300.8	
1961	377.3	372.7	135.7	480.8	563.0	316.7		392.4	
1962	338.1	337.5	215.3	312.5	395.7	314.3		334.6	
1963	636.2	273.2	212.0	506.2	435.4	313.4		396.5	
1964	680.6	256.5	167.1	399.7	395.3	217.4		375.9	
1965	311.7	244.5	185.2	460.0	217.2	270.8		271.6	
1966	363.4	210.2	152.0	505.3	310.9	229.3		299.6	
1967[a]									
1968	411.4	207.7	124.9	261.3	254.2	385.0		293.5	
1969	268.3	280.1	124.9	476.5	132.0	194.9		245.6	
1970	601.2	217.9	113.2	527.1	203.7	273.5		348.3	
1971	580.4	256.9	181.6	365.8	258.9	751.7		415.4	
1972	600.2	233.8	169.0	307.7	229.6	314.3		349.8	
1973	601.7	279.6	288.0	480.3	392.1	329.1		428.2	
1974	588.4	321.1	241.5	352.4	269.1	381.5		380.8	
1975	653.5	302.5	152.9	546.0	338.3	259.8		405.8	
1976	599.9	373.4	224.0	535.7	367.0	281.8		407.4	
1977	699.2	308.2	168.0	679.5	281.5	223.7		409.8	
1978	502.1	326.2	173.9	430.6	275.9	282.4		344.5	
1979	600.7	406.1	138.0	379.5	197.5	212.8		347.9	
1980	695.7	302.1	140.3	421.5	235.0	182.3		352.2	
1981	634.1	284.6	153.0	513.6	213.0	178.9		347.6	
1982[b]	557.3	242.8	175.1	304.0	277.7	213.1	225.1	325.0	313.6
1983	517.0	289.2	130.5	277.9	213.9	193.3	188.6	298.9	286.6
1984	530.9	233.2	128.7	267.4	183.2	269.0	175.6	292.0	279.2
1985	500.6	245.4	93.2	242.5	212.5	151.1	233.9	273.7	270.1
1986	325.0	180.1	115.1	204.0	160.5	180.4	176.8	207.0	204.1
1987	440.9	222.9	104.7	257.3	208.1	161.1	215.2	257.1	252.4
1988	385.7	203.9	121.5	300.0	202.6	210.2	184.4	252.3	245.0
1989	501.4	242.5	125.9	329.7	257.3	180.0	165.9	297.9	283.4
1990	443.1	232.4	128.0	159.4	175.5	353.4	170.3	266.0	255.6
1991	316.9	255.0	187.3	169.5	234.9	287.0	205.8	252.8	248.3
1992	261.2	241.2	134.8	198.3	222.3	236.6	202.1	224.7	222.2
1993	175.4	179.5	86.8	92.8	100.2	165.2	82.1	139.8	133.5
1994	282.4	189.4	86.6	158.5	133.5	153.2	63.6	179.7	167.1

(Table 12 cont.)

Year	Agricultural region							Statewide Mean	
	WC	C	EC	SW	SC	SE	NW	Without NW	With NW
1995	242.2	169.1	74.5	112.9	197.5	234.5	85.2	184.1	173.4
1996	425.3	138.0	75.8	141.4	181.4	232.7	70.1	219.4	203.6
1997	368.4	169.0	111.3	309.5	195.6	162.0	120.4	232.0	219.6

[a] Mourning doves were not counted in 1967.

[b] Eight counties in the Northwest agricultural region were added to the August Roadside Count in 1982.

Table 13. Greater prairie-chicken spring booming ground counts for 14 northwestern counties, 1986-97 (counts coordinated and summarized by AWM Terry Wolfe, Crookston).

	Number of booming males (Number of booming grounds)											
County	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Becker	99 (11)	53 (7)	19 (3)	18 (3)	69 (7)	30 (3)	69 (6)	58 (10)	21 (3)	20 (2)	2 (1)	14 (1)
Cass	52 (14)	60 (15)	59 (13)	48 (9)	51 (8)	52 (12)	55 (10)	38 (8)	30 (5)	18 (5)	17 (5)	7 (2)
Chippewa	0	0	0	0	0	0	0	0	0	0	0	0
Clay	86 (9)[a]	87 (9)	0	83 (8)	307 (18)	411 (28)	654 (45)	366 (36)	306 (31)	422 (38)	539 (46)	335 (32)
Hubbard	16 (4)	22 (5)	24 (4)	19 (5)	29 (5)	24 (5)	18 (2)	17 (3)	14 (3)	9 (3)	9 (3)	3 (1)
Mahnomen	102 (17)	63 (9)	29 (5)	0	46 (6)	21 (3)	143 (13)	76 (76)	31 (4)	21 (6)	11 (2)	53 (4)
Marshall	0	0	0	0	1 (1)	0	0	0	0	0	0	0
Norman	128 (10)	87 (9)	111 (9)	73 (7)	145 (11)	215 (12)	339 (15)	221 (26)	248 (25)	278 (30)	314 (37)	160 (19)
Ottertail	0[a]	0	21 (3)	0	0	1 (1)	4 (1)	16 (2)	5 (1)	0	28 (3)	19 (3)
Pennington	0	0	0	0	9 (1)	0	0	0	0	0	0	0
Polk	96 (17)[a]	72 (8)	72 (10)	150 (17)	204 (23)	267 (25)	311 (27)	190 (22)	189 (18)	228 (27)	197 (19)	154 (21)
Red Lake	0	0	0	5 (1)	34 (6)	38 (6)	38 (5)	12 (2)	21 (3)	25 (4)	32 (4)	33 (6)
Wadena	17 (7)[a]	105 (20)	99 (16)	59 (13)	134 (17)	145 (21)	38 (7)	43 (8)	12 (4)	9 (2)	15 (3)	18 (2)
Wilkin	81 (9)[a]	99 (8)	58 (3)	100 (6)	199 (15)	228 (13)	244 (13)	142 (11)	207 (12)	213 (16)	283 (19)	138 (12)
Total	677 (98)	648 (90)	492 (66)	555 (69)	1,228(118)	1,432(129)	1,913(144)	1,179(138)	1,084 (109)	1,274 (133)	1,447 (142)	934 (103)
males/ground	6.9	7.2	7.4	8.0	10.4	11.1	13.3	8.5	9.9	9.6	10.2	9.1

[a] Data include only grounds on which counts were conducted. In several counties booming grounds were located but counts were not made, they are not included in the data presented.

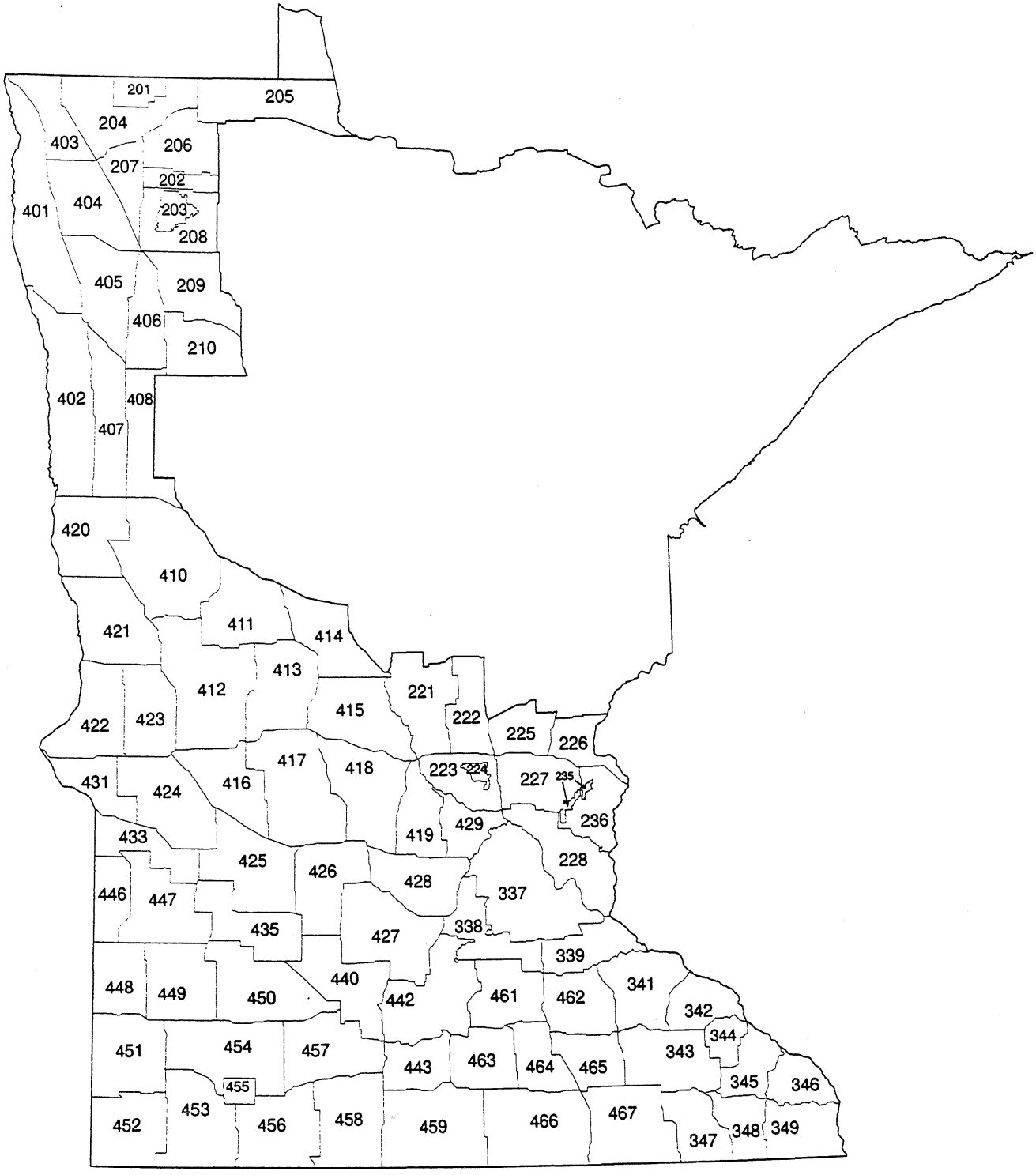


Figure 6. Deer Permit Areas in the Farmland zone.

Table 14. Reproductive performance of white-tailed deer in Minnesota for the Northwest[a] Deer Management Unit (DMU), 1992-1997. The mean values (1992-96) are provided as references.

	Fawns			Adults		
Year	n	Percent pregnant	Fetuses per doe	n	Percent pregnant	Fetuses per doe
1997	4	0	0.00	12	100	1.50
1996	5	0	0.00	21	81	1.33
1995	4	25	0.25	6	100	2.00
1994	7	14	0.14	13	92	1.38
1993	7	0	0.00	11	100	1.64
1992	13	8	0.08	21	95	1.57
Mean (1992-96)		9	0.09		94	1.58

[a] Red River (East and West) and Agassiz DMUs were combined into the Northwest DMU due to the small sample sizes.

Table 15. Reproductive performance of white-tailed deer in Minnesota for the Big Woods Deer Management Unit, 1992-1997. The mean values (1992-96) are provided as references.

	Fawns			Adults		
Year Subunit	n	Percent pregnant	Fetuses per doe	n	Percent pregnant	Fetuses per doe
1997	40	33	0.35	96	88	1.64
North	5	20	0.20	18	100	1.83
Central	12	25	0.25	17	76	1.53
Metro	20	30	0.35	41	83	1.41
Southeast	3	100	1.00	20	95	2.00
1996	59	9	0.17	112	96	1.84
1995	21	19	0.19	54	91	1.78
1994	46	15	0.17	99	94	1.67
1993	45	38	0.40	92	93	1.71
1992	65	22	0.25	96	95	1.82
Mean (1992-96)		21	0.24		94	1.76

Table 16. Reproductive performance of white-tailed deer in Minnesota for the Prairie Deer Management Unit, 1992-1997. The mean values (1992-96) are provided as references.

Year / Subunit	Fawns			Adults		
	n	Percent pregnant	Fetuses per doe	n	Percent pregnant	Fetuses per doe
1997	26	4	0.04	49	92	1.67
North	4	0	0.00	5	80	1.20
River	14	0	0.00	20	90	1.80
Southwest	7	0	0.00	17	94	1.53
Southeast	1	100	1.00	7	100	2.00
1996	28	14	0.14	30	90	1.57
1995	39	21	0.26	50	92	1.72
1994	32	16	0.22	46	98	1.89
1993	39	38	0.41	74	93	1.74
1992	37	19	0.22	44	93	1.93
Mean (1992-96)		22	0.25		93	1.77

Table 17. Estimated pre-fawning deer density[a] (deer/mi²), permit and harvest summary, and pre-fawning population goals (deer/mi²) by deer management unit (DMU), sub-unit (DMSU), and permit area (PA) in Minnesota's farmland zone, 1996-97.

DMU / DMSU / PA	1996 Density	1996 Total permits issued[b]	1996 Registered harvest Buck	1996 Registered harvest Antlerless	1996 Registered harvest Total[c]	1997 Density	1997 Total permits offered[d]	1997 Projected harvest Buck	1997 Projected harvest Antlerless	1997 Projected harvest Total[c]	Pre-fawning population goal
RED RIVER											
West											
401	1.9	378	318	548	866	1.4	700	219	650	869	0.8-1.2
402	2.7	742	478	522	1,000	2.2	1,600	341	909	1,250	1.7-2.3
Total	2.3	1,120	796	1,070	1,866	1.8	2,300	560	1,559	2,119	
East											
403	3.8	559	266	286	552	3.0	400	170	167	337	2.2-2.8
404	4.5	1,121	493	643	1,136	3.5	950	340	468	808	2.7-3.3
405	3.7	1,104	417	565	982	2.9	1,500	305	635	940	2.2-2.8
406	6.2	1,068	416	985	1,401	4.1	1,800	302	1,320	1,622	2.7-3.3
407	3.7	1,240	420	733	1,153	2.6	1,700	277	832	1,109	3.6-4.4
408	3.9	1,013	352	525	877	3.0	2,000	260	835	1,095	3.6-4.4
Total	4.2	6,105	2,364	3,737	6,101	3.1	8,350	1,654	4,257	5,911	
RED RIVER TOTAL	3.5	7,225	3,160	4,807	7,967	2.6	10,650	2,214	5,816	8,030	
AGASSIZ											
201	4.1	100	92	54	146	3.6	0	68	0	68	9.0-11.0
202	10.4	600	218	221	439	8.9	150	158	52	210	10.0-12.0
203	2.5	200	32	62	94	1.9	0	38	0	38	13.5-16.5
204	6.3	1,899	653	769	1,422	5.1	800	469	297	766	5.0-6.0
205	6.0	1,500	609	615	1,224	4.5	600	387	227	614	6.2-7.4

Table 17. Continued.

DMU / DMSU / PA	1996 Density	1996 Total permits issued[b]	1996 Registered harvest Buck	1996 Registered harvest Antlerless	1996 Registered harvest Total[c]	1997 Density	1997 Total permits offered[d]	1997 Projected harvest Buck	1997 Projected harvest Antlerless	1997 Projected harvest Total[c]	Pre-fawning population goal
206	7.1	1,372	485	625	1,110	5.8	600	348	227	575	5.3-6.3
207	5.1	800	238	264	502	4.1	300	169	97	266	7.7-9.2
208	2.5	600	172	156	328	2.3	200	131	52	183	2.7-3.3
209	3.5	1,078	347	408	755	2.8	1,100	250	317	567	2.3-2.7
210	5.6	1,814	474	672	1,146	4.4	1,800	341	531	872	2.3-2.7
AGASSIZ TOTAL	5.3	9,963	3,320	3,846	7,166	4.3	5,550	2,359	1,800	4,159	
BIG WOODS North											
409	19.1	2,710	1,118	2,579	3,697	15.5	6,000	905	3,942	4,847	5.6-6.8
410	7.9	4,461	1,455	2,293	3,748	5.9	7,500	812	2,617	3,429	5.5-6.5
411	11.5	4,461	1,473	2,324	3,797	8.5	7,500	803	2,910	3,713	5.0-6.0
412	6.5	4,005	1,431	2,221	3,652	5.1	3,800	905	1,657	2,562	3.6-4.4
413	8.7	3,319	1,183	1,908	3,091	6.5	3,500	634	1,631	2,265	5.0-6.0
414	9.9	2,000	1,038	1,269	2,307	8.4	3,500	655	2,120	2,775	8.0-10.0
415	6.2	2,554	831	1,364	2,195	4.7	3,000	437	1,425	1,862	4.0-6.0
416	6.0	1,812	698	1,161	1,859	4.4	2,200	361	1,085	1,446	3.6-4.4
417	6.3	3,306	1,370	2,007	3,377	4.6	4,000	654	2,040	2,694	3.0-5.0
418	4.6	2,393	814	1,330	2,144	3.2	2,900	358	1,311	1,669	4.0-6.0
419	7.3	1,494	545	866	1,411	6.0	2,600	306	910	1,216	4.0-6.0
429	3.5	652	236	318	554	3.0	1,100	138	348	486	3.0-4.0
Total	7.8	33,167	12,192	19,640	31,832	6.0	47,600	6,968	21,996	28,964	

Table 17. Continued.

DMU / DMSU / PA	1996 Density	1996 Total permits issued[b]	1996 Registered harvest Buck	1996 Registered harvest Antlerless	1996 Registered harvest Total[c]	1997 Density	1997 Total permits offered[d]	1997 Projected harvest Buck	1997 Projected harvest Antlerless	1997 Projected harvest Total[c]	Pre-fawning population goal
Central											
221	7.5	1,250	726	916	1,642	6.7	1,000	525	795	1,320	9.0-11.0
222	11.0	2,000	650	852	1,502	10.1	2,100	573	1,015	1,588	10.8-13.2
223	9.3	1,748	528	864	1,392	8.5	1,800	352	673	1,025	6.0-8.0
224	14.9	200	88	74	162	16.2	200	75	82	157	14.0-18.0
225	10.1	2,035	626	920	1,546	8.4	2,500	368	1,050	1,418	7.2-8.8
226	11.1	2,102	592	898	1,490	9.4	2,500	411	885	1,296	5.4-6.6
Total	9.6	9,335	3,210	4,524	7,734	8.6	10,100	2,304	4,500	6,804	
Metro[e]											
227	12.2	2,586	871	1,163	2,034	11.8	5,300	756	1,839	2,595	4.8-5.8
235	15.8	125	74	112	186	18.9	125	64	50	114	23.0-28.0
236	17.1	2,379	946	1,153	2,099	16.1	3,500	850	1,299	2,149	2.0-2.5
338	4.2	1,010	382	541	923	4.3	1,000	326	327	653	4.5-5.5
339	5.0	894	401	585	986	5.0	1,500	300	538	838	3.2-3.8
Total	10.3	6,994	2,674	3,554	6,228	9.9	11,425	2,296	4,053	6,349	
Southeast											
341	8.0	2,223	969	1,346	2,315	7.4	3,000	743	1,335	2,078	4.5-5.5
342	10.9	1,584	742	948	1,690	10.7	2,400	660	1,066	1,726	7.0-9.0
343	7.5	1,636	1,010	1,210	2,220	7.4	2,800	805	1,338	2,143	4.5-5.5
344	20.1	1,400	699	888	1,587	20.4	1,600	657	962	1,619	18.0-22.0

Table 17. Continued.

DMU / DMSU / PA	1996 Density	1996 Total permits issued[b]	1996 Registered harvest Buck	1996 Registered harvest Antlerless	1996 Registered harvest Total[c]	1997 Density	1997 Total permits offered[d]	1997 Projected harvest Buck	1997 Projected harvest Antlerless	1997 Projected harvest Total[c]	Pre-fawning population goal
345	8.6	1,588	569	978	1,547	7.5	1,400	438	700	1,138	8.1-9.9
346	16.9	2,267	1,006	1,343	2,349	17.5	3,000	978	1,528	2,506	9.0-11.0
347	8.9	1,269	778	915	1,693	8.9	2,000	675	1,059	1,734	5.4-6.6
348	13.4	1,783	895	1,320	2,215	12.4	1,900	770	1,315	2,085	9.0-11.0
349	12.6	1,954	1,252	1,261	2,513	13.0	2,800	1,180	1,710	2,890	9.0-11.0
Total	10.8	15,704	7,920	10,209	18,129	10.6	20,900	6,906	11,013	17,919	
BIG WOODS TOTAL	9.1	65,200	25,996	37,927	63,923	7.9	90,025	18,474	41,562	60,036	
PRAIRIE North											
420	3.4	877	391	558	949	2.8	1,400	298	731	1,029	1.7-2.3
421	2.7	946	401	573	974	2.1	1,600	300	803	1,103	1.6-2.2
422	3.3	505	365	396	761	3.0	650	307	434	741	1.4-2.0
423	3.6	795	369	484	853	2.8	850	290	533	823	1.3-1.9
424	4.8	1,584	720	1,537	2,257	2.8	1,650	538	1,491	2,029	1.8-2.0
425	2.4	658	335	508	843	2.0	650	267	404	671	1.0-2.0
426	3.1	500	316	333	649	3.0	700	318	481	799	2.0-3.0
427	1.9	750	308	396	704	1.5	400	239	236	475	1.3-1.7
428	3.4	1,000	361	432	793	2.8	1,100	260	506	766	2.3-2.8
Total	3.1	7,615	3,566	5,217	8,783	2.5	9,000	2,817	5,619	8,436	

Table 17. Continued.

DMU / DMSU / PA	1996 Density	1996 Total permits issued[b]	1996 Registered harvest Buck	1996 Registered harvest Antlerless	1996 Registered harvest Total[c]	1997 Density	1997 Total permits offered[d]	1997 Projected harvest Buck	1997 Projected harvest Antlerless	1997 Projected harvest Total[c]	Pre-fawning population goal
River											
431	6.0	747	395	687	1,082	4.8	850	331	638	969	2.2-2.5
433	7.8	1,111	569	869	1,438	6.4	1,300	482	886	1,368	4.0-5.0
435	5.0	1,281	582	814	1,396	4.2	1,450	528	941	1,469	3.2-3.8
440	3.8	600	514	519	1,033	3.8	1,000	466	878	1,344	3.2-3.8
442	4.1	1,000	731	778	1,509	3.8	900	577	656	1,233	3.2-3.8
443	5.2	700	402	566	968	4.4	600	339	484	823	3.2-4.0
Total	5.0	5,439	3,193	4,233	7,426	4.4	6,100	2,723	4,483	7,206	
Southwest											
446	4.2	600	270	397	667	3.4	660	215	438	653	2.7-3.5
447	2.4	583	315	420	735	2.0	350	247	252	499	2.5-3.1
448	3.7	270	288	296	584	3.3	270	254	297	551	3.2-4.0
449	3.5	450	418	484	902	3.0	450	307	444	751	3.2-4.0
450	1.7	500	249	337	586	1.4	500	209	346	555	1.2-1.8
451	3.2	500	408	472	880	2.8	500	310	437	747	2.4-3.0
452	2.4	458	268	377	645	2.0	500	175	318	493	1.4-2.0
453	2.4	450	370	327	697	2.2	450	285	311	596	1.4-2.0
454	3.1	700	555	681	1236	2.5	700	381	599	980	2.0-2.6
455	4.0	150	67	89	156	3.5	150	54	71	125	3.7-4.5
456	3.0	600	399	392	791	2.7	800	304	498	802	1.7-2.3

Table 17. Continued.

DMU / DMSU / PA	1996 Density	1996 Total permits issued[b]	1996 Registered harvest Buck	1996 Registered harvest Antlerless	1996 Registered harvest Total[c]	1997 Density	1997 Total permits offered[d]	1997 Projected harvest Buck	1997 Projected harvest Antlerless	1997 Projected harvest Total[c]	Pre-fawning population goal
457	2.4	300	331	368	699	2.0	400	232	445	677	1.7-2.3
458	3.0	500	422	423	845	2.8	700	341	542	883	1.5-2.1
459	3.0	650	614	652	1266	2.7	1,100	457	1,004	1,461	1.7-2.3
Total	2.9	6,711	4,974	5,715	10,689	2.5	7,530	3,771	6,002	9,773	
Southeast											
461	5.8	1,510	609	871	1,480	5.1	1,950	427	985	1,412	2.5-3.1
462	5.5	1,624	610	906	1,516	4.8	2,200	369	787	1,156	2.7-3.3
463	2.9	625	283	334	617	2.7	750	202	376	578	1.7-2.3
464	4.5	723	366	456	822	4.1	850	247	384	631	1.7-2.3
465	2.7	560	247	456	703	1.9	600	125	276	401	1.5-2.1
466	3.5	1,175	757	733	1,490	3.3	1,500	510	772	1,282	1.6-2.2
467	2.8	587	563	464	1,027	2.7	850	338	497	835	1.0-2.0
Total	3.8	6,804	3,435	4,220	7,655	3.5	8,700	2,218	4,077	6,295	
PRAIRIE TOTAL	3.4	26,569	15,168	19,385	34,553	2.9	31,330	11,529	20,181	31,710	
FARMLAND TOTAL	5.5	108,957	47,644	65,965	113,609	4.7	137,555	34,576	69,359	103,935	

[a] Pre-fawning deer density estimates are determined from population modeling. Historical density estimates may differ from those previously published due to periodic recalculation as more accurate modeling information is available.
[b] Total permits issued includes antlerless permits and management permits.
[c] Total harvest includes deer tagged with regular firearms, multizone firearms, muzzleloader, archery, and management permit licenses.
[d] Total permits offered includes projected antlerless permits based on research and management recommendations.
[e] Excluding permit areas 228 and 337, which are not modeled.

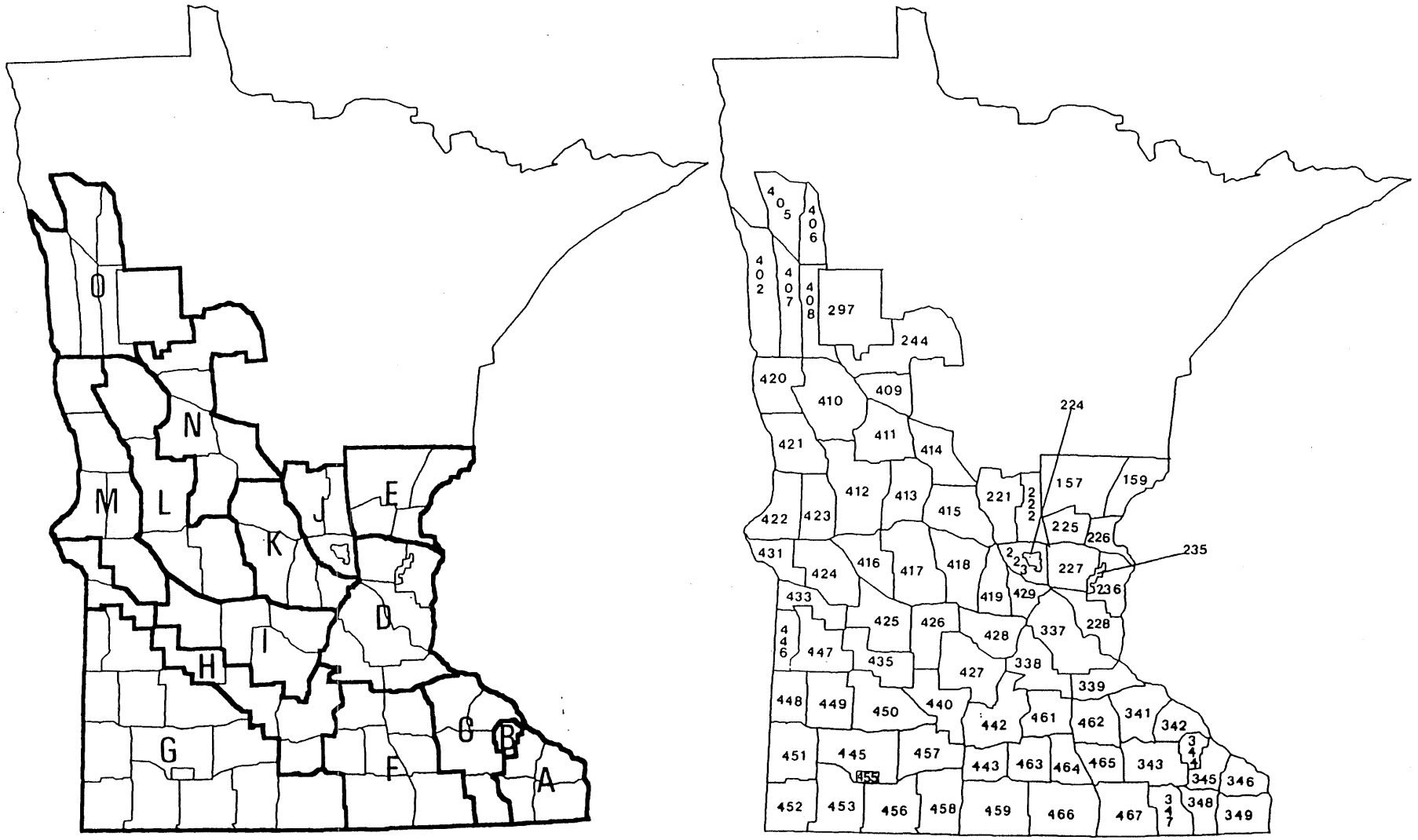


Figure 7. (a) Location of turkey management units (TMU's) and (b) antlerless deer permit areas used for the wild turkey survey, Minnesota, November-December, 1994.

Table 18. Percent of antlerless-deer hunters observing wild turkeys (HOWT) in Minnesota, November-December, 1993-94.

Note: No survey in 1995 or 1996, but is scheduled for 1997 and every other year following.

Turkey Management Unit	Year	n (Respondents)	HOWT	99% CI on HOWT for 1993-94
A	1992	629	62.8	
	1993	637	64.8	7.0
	1994	618	61.2	
B	1992	473	62.4	
	1993	467	53.1	8.6
	1994	421	59.6	
C	1992	632	52.4	
	1993	637	57.6	7.2
	1994	615	55.0	
D	1992	563	17.1	
	1993	633	17.4	5.6
	1994	633	19.3	
E	1992	581	3.4	
	1993	647	7.1	3.4
	1994	638	4.7	
F	1992	583	19.0	
	1993	594	24.8	6.4
	1994	652	27.6	
G	1992	625	3.7	
	1993	644	5.3	3.6
	1994	616	7.6	
H	1992	598	16.4	
	1993	655	16.0	5.3
	1994	636	17.1	
I	1992	596	4.5	
	1993	569	3.9	2.7
	1994	562	2.7	
J	1992	560	2.1	
	1993	609	1.6	2.7
	1994	539	4.6*	
K	1992	600	6.0	
	1993	624	5.6	3.7
	1994	614	8.5	
L	1992	653	1.7	
	1993	687	2.5	2.5
	1994	667	4.2	
M	1992	578	2.9	
	1993	597	3.4	2.6
	1994	613	3.1	
N	1992	663	2.1	
	1993	710	1.7	2.0
	1994	657	2.3	
O	1992	576	3.8	
	1993	626	1.9	2.2
	1994	620	2.6	

* Significant change in index from 1993 to 1994 ($p < 0.01$)

PREDATOR SCENT POST SURVEY

AND

WINTER TRACK INDICES

NOTE: This survey is organized and coordinated by the Forest Wildlife Populations and Research Group, 1201 E. Hwy 2, Grand Rapids, MN 55744. Results are presented at this location in the book because of the statewide nature of the data.

1996 SCENT STATION ROUTE SPECIFICS

Zone	Rts. Done	No. Segments	Segment Density	Station Nights
Forest	36	159	1/204 mi²	1,507
Transition	30	101	1/251 mi²	1,100
Farm	24	99	1/266 mi²	940
	90	359		3,547

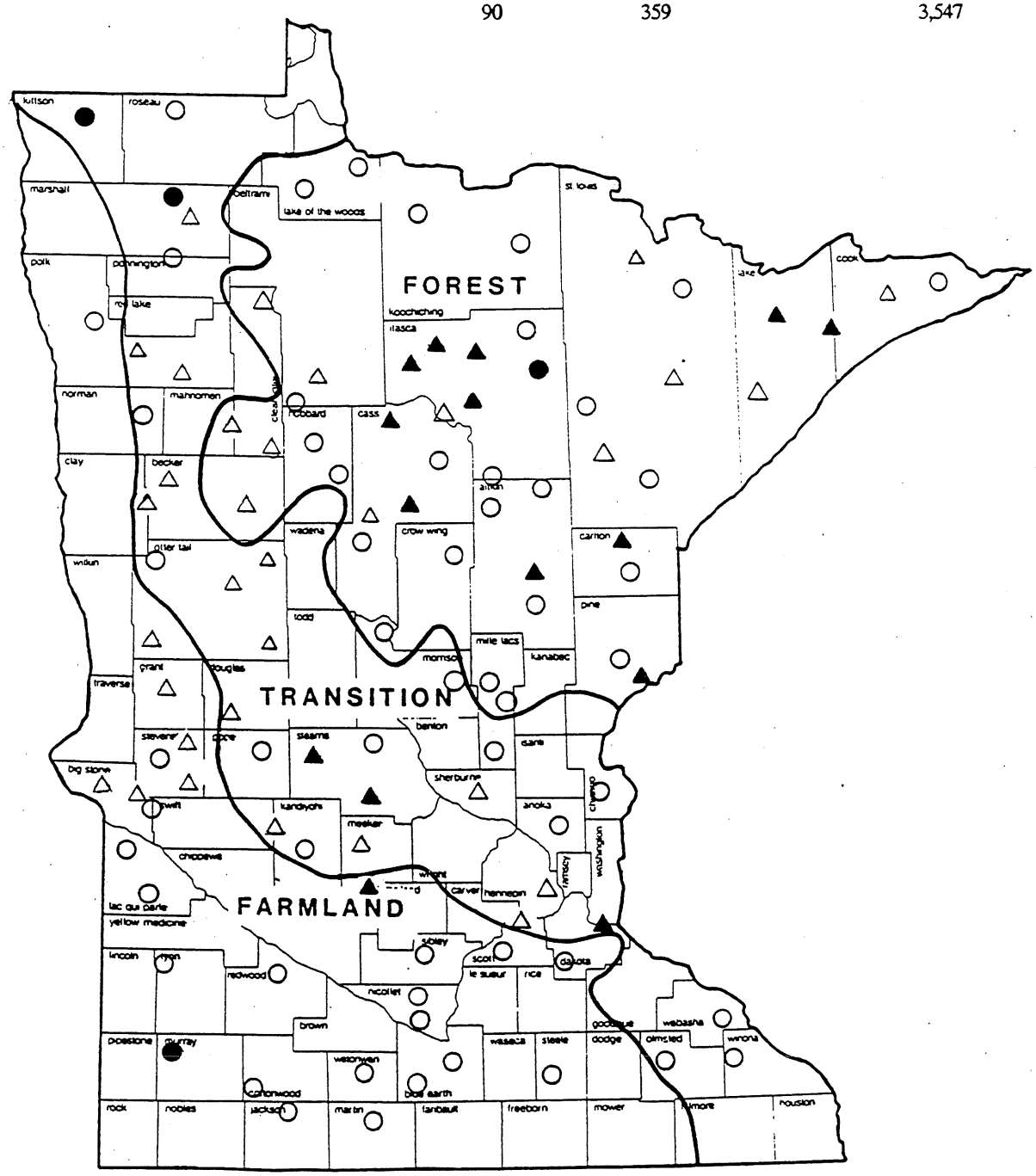


Figure 8. Approximate locations of scent station routes conducted by DNR Section of Wildlife (O) and interagency cooperators (Δ) in the Forest, Transition, and Farmland Survey Zones, 1996. Shaded symbols indicate routes not completed in 1996.

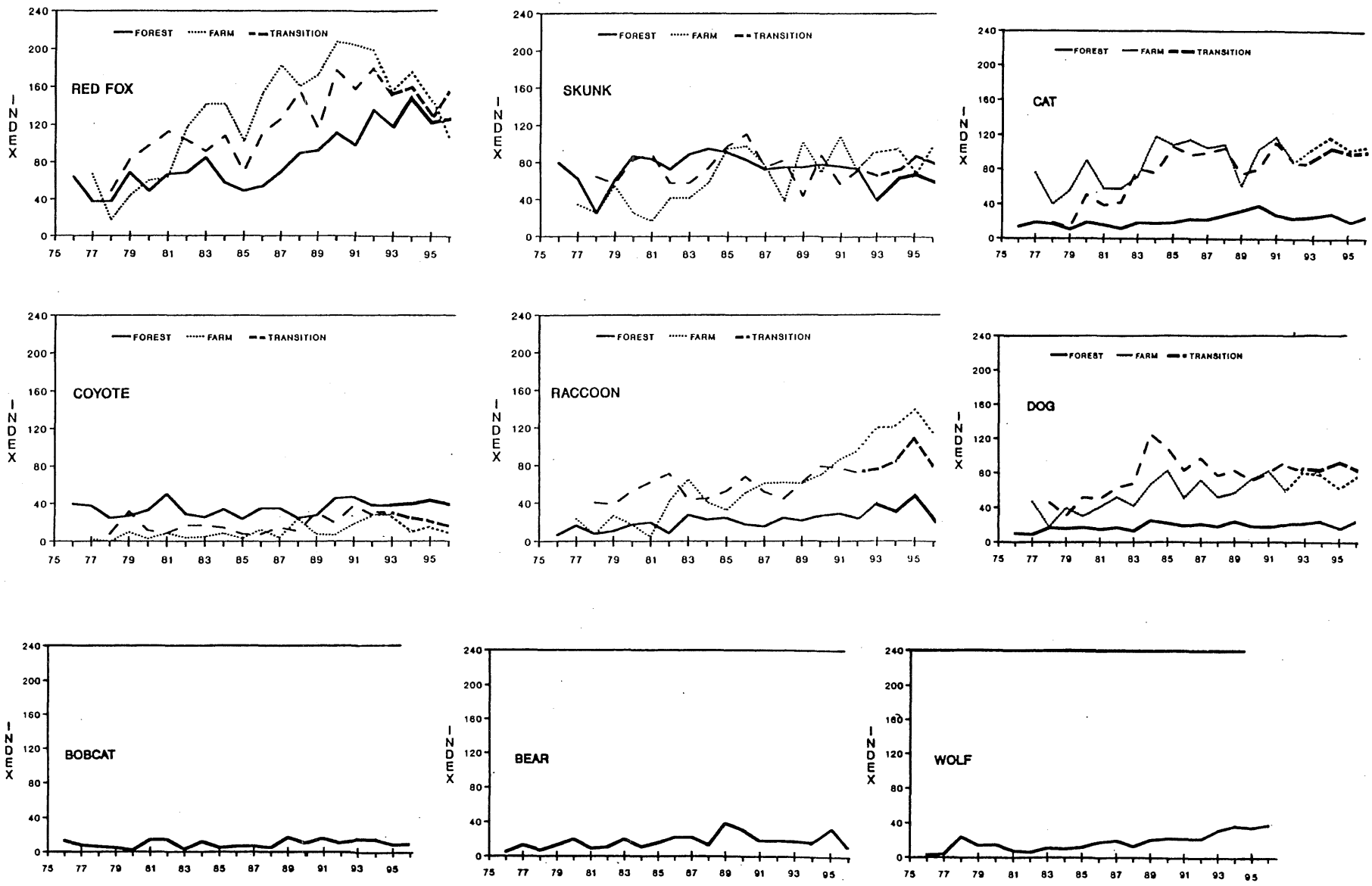


Figure 9. Scent post visitation indices for nine species in the Forest, Transition, and Farmland survey zones, 1976-96.

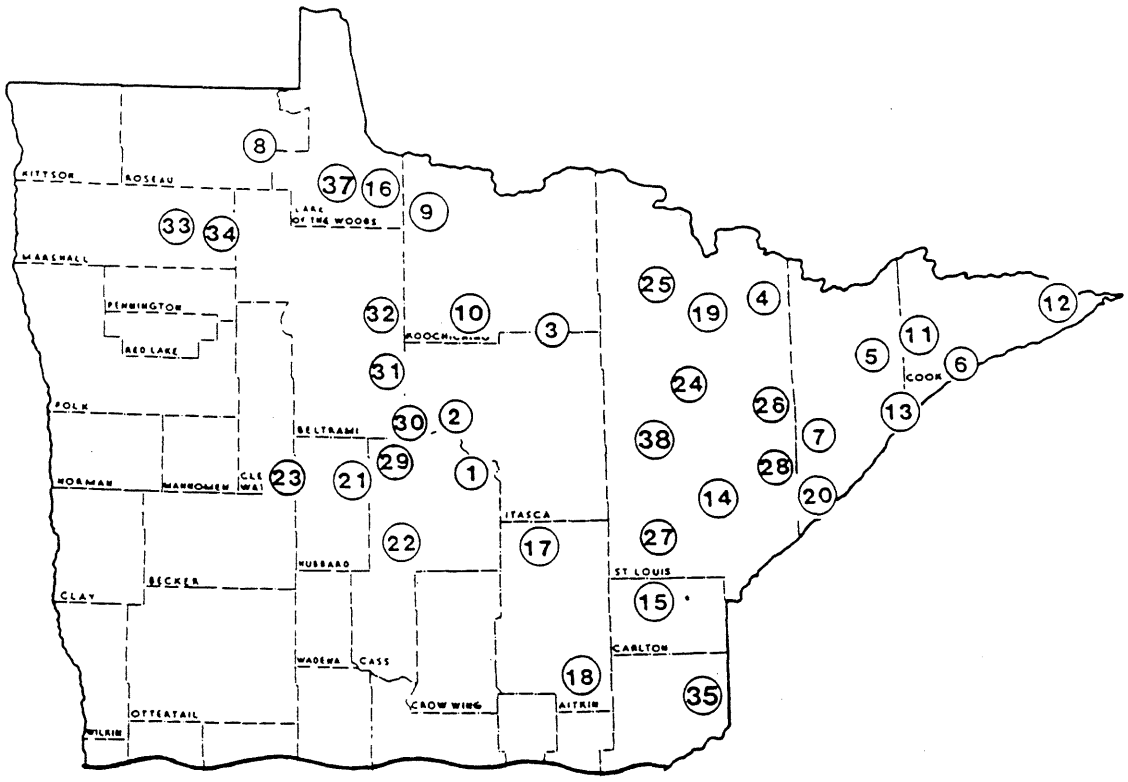


Figure10. General locations of 38 winter track routes, 1996.

Table 19. Range-wide winter track indices[1] for 7 species, 1991-96.

Species	1991	1992	1993	1994	1995	1996
Fisher	100	128	93	253	345	237
Marten	250	293	286	223	490	272
Red Fox	167	172	214	682	393	458
Coyote	0	43	71	39	150	117
Wolf	216	307	193	202	462	268
Hare[2]	1166	607	1000	1147	2107	1408
Weasel[3]	-	-	-	-	1186	612
No. Routes	6	7	7	22	21	30

[1] index = $\frac{\text{adjusted total tracks}}{\text{total miles}} \times 1000$

[2] index calculated from tracks on only 2 miles (20 0.1 segments) of each route

[3] weasel were first recorded in 1995

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Table 20. Mean number of ruffed grouse drums per stop by census zone, 1961-97.

	CensusZone					
Year	Northwest	North	Northeast	Central Hardwoods	Southeast	Rangewide mean
1961	1.4	2.2	0.9	1.0	1.0	1.4
1962	3.0	2.1	0.5	1.2	1.6	1.6
1963	0.4	0.6	0.5	0.4	1.1	0.6
1964	0.4	0.7	0.9	0.3	0.6	0.6
1965	1.5	1.3	0.7	0.6	1.4	1.0
1966	1.6	1.2	0.6	0.7	1.9	1.0
1967	2.8	1.9	1.3	1.0	2.2	1.6
1968	3.8	2.3	1.6	1.0	2.4	2.0
1969	3.3	2.7	1.4	1.4	2.3	2.2
1970	2.1	3.2	0.9	1.6	2.1	2.2
1971	1.4	3.6	1.0	1.7	3.7	2.4
1972	2.1	3.7	1.0	2.1	3.1	2.7
1973	0.5	1.5	0.6	0.9	3.7	1.1
1974	0.7	1.1	0.8	0.7	3.0	1.0
1975	1.2	1.4	0.8	0.8	2.6	1.3
1976	0.8	1.5	0.4	0.9	1.8	1.1
1977	0.9	1.6	0.7	0.9	2.5	1.2
1978	2.1	2.4	0.8	1.4	2.3	1.7
1979	1.7	2.2	0.7	1.3	2.2	1.6
1980	1.9	2.1	0.7	1.9	2.7	1.7
1981	1.2	1.7	0.8	1.8	2.4	1.4
1982	0.9	1.1	0.3	0.9	1.1	0.8
1983	0.6	1.1	0.6	0.8	1.5	0.9
1984	1.0	1.1	0.6	0.5	1.4	0.8
1985	0.7	1.2	0.6	0.6	1.5	0.9
1986	1.7	1.1	0.4	0.6	2.5	1.0
1987	1.6	1.6	0.7	0.8	1.2	1.2
1988	1.3	2.0	1.0	1.0	1.1	1.4
1989	2.2	2.6	1.5	1.2	1.2	1.9
1990	0.8	2.5	0.9	1.1	1.2	1.6
1991	1.0	1.7	0.8	0.7	0.7	1.2
1992	1.0	1.0	0.5	0.6	0.6	0.8
1993	0.9	0.8	0.5	0.6	0.5	0.7
1994	1.7	1.0	0.5	0.5	0.4	0.9
1995	2.1	1.5	0.6	0.9	0.5	1.2
1996	2.4	1.8	0.7	0.8	0.5	1.4
1997	2.0	2.3	1.5	0.9	0.4	1.7

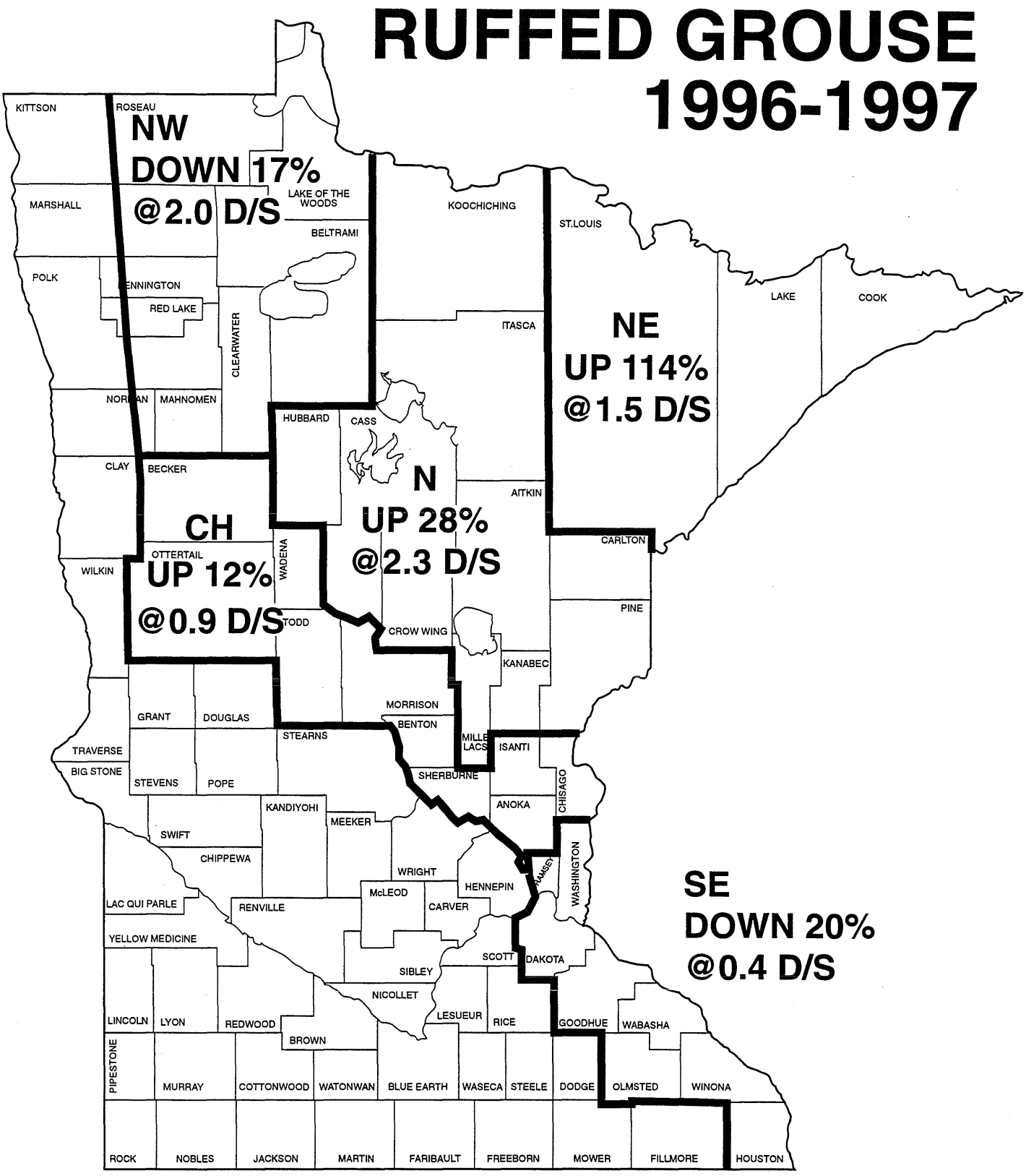

Figure 11. Changes in average numbers of ruffed grouse drums per stop (D/S) on roadside counts, 1996-97.

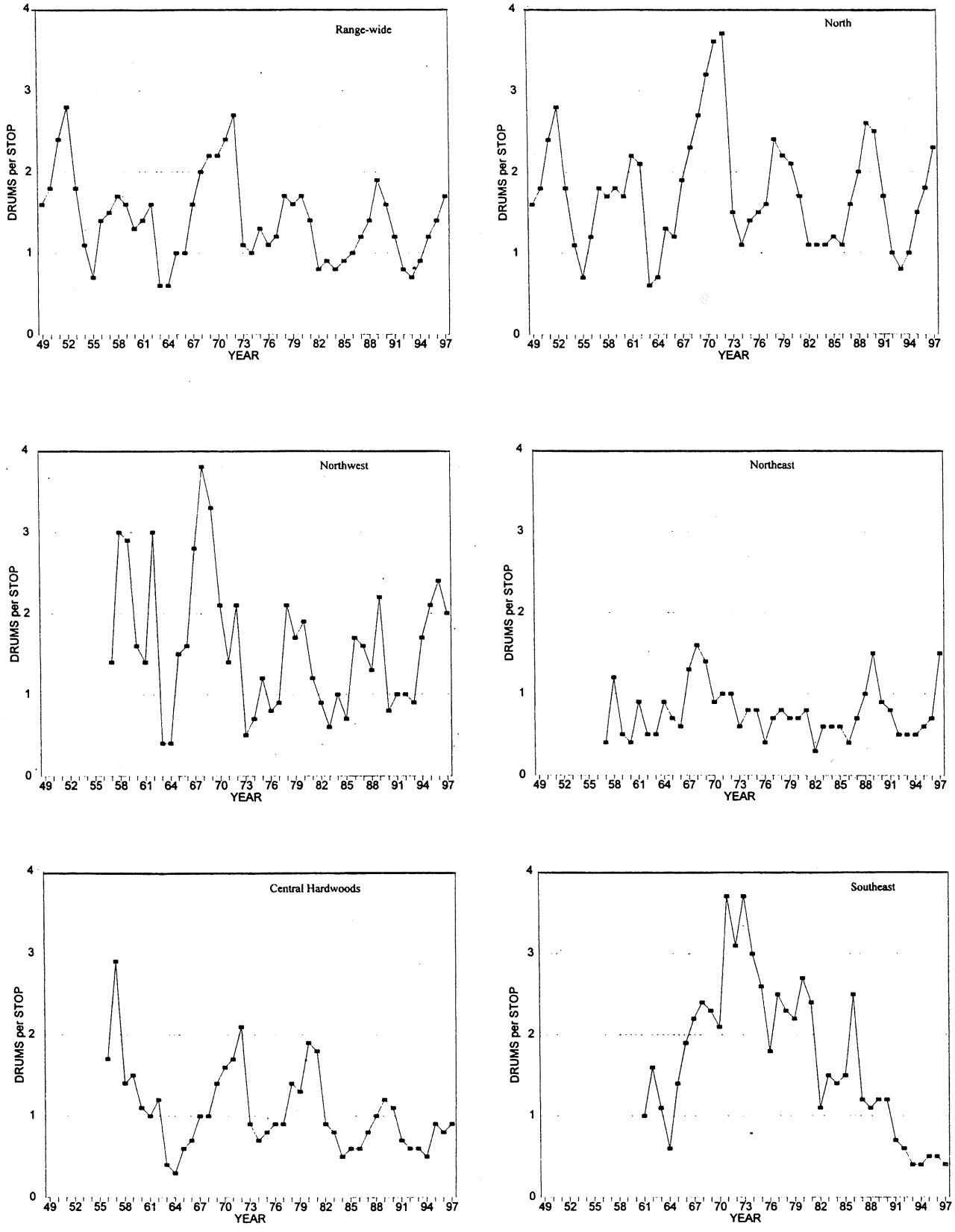

Figure 12. Summary of ruffed grouse drumming trends range-wide and in each of five survey zones, 1949-97.

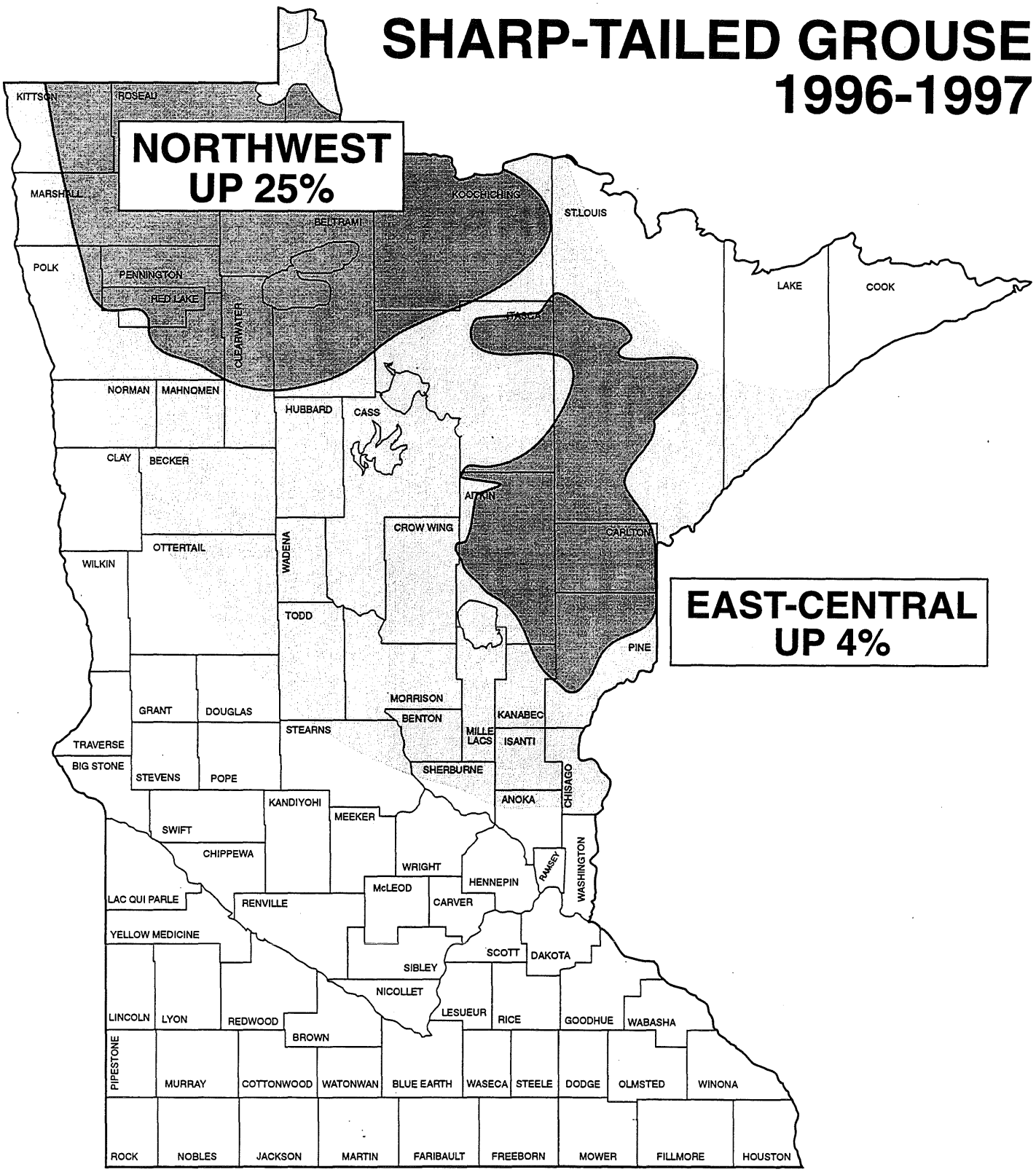

Figure 13. Status of male sharp-tailed grouse on 134 Northwest and 162 East-Central range dancing grounds, 1996-97

Table 21. Number of snowshoe hares seen per 100 km of ruffed grouse drumming routes in the North, Northwest, and Northeast survey zones, 1974-97.

Year	Hares seen per 100 km
1974	0.4
1975	0.0
1976	2.0
1977	2.8
1978	9.0
1979	8.8
1980	14.1
1981	9.8
1982	1.8
1983	0.7
1984	0.2
1985	0.3
1986	0.2
1987	0.5
1988	0.9
1989	2.7
1990	2.3
1991	1.2
1992	1.4
1993	0.5
1994	0.2
1995	0.5
1996	1.3
1997	0.9

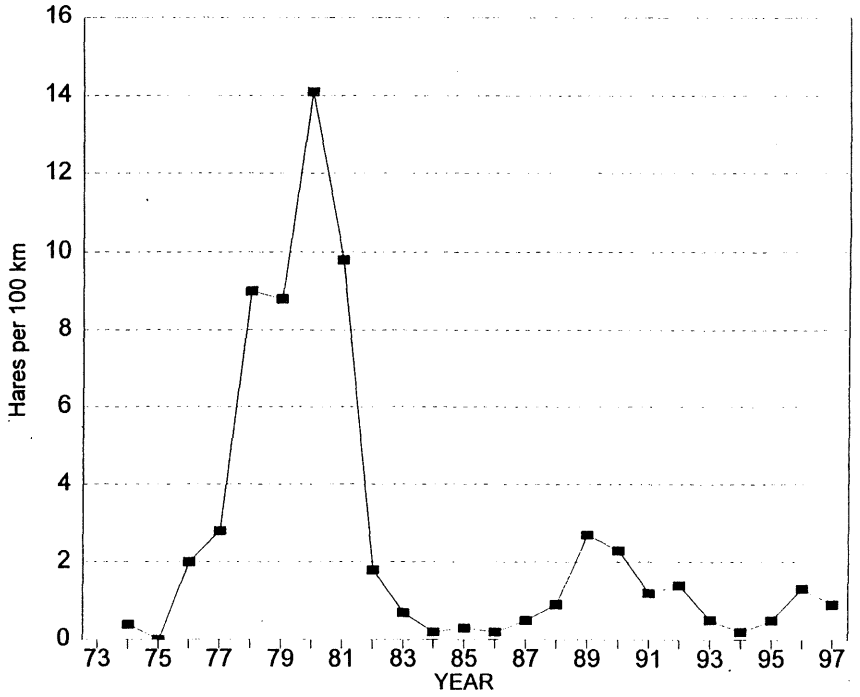

Figure 14. Snowshoe hare index (hares/100 km) based on hares seen on northern ruffed grouse drumming routes, 1974-97.

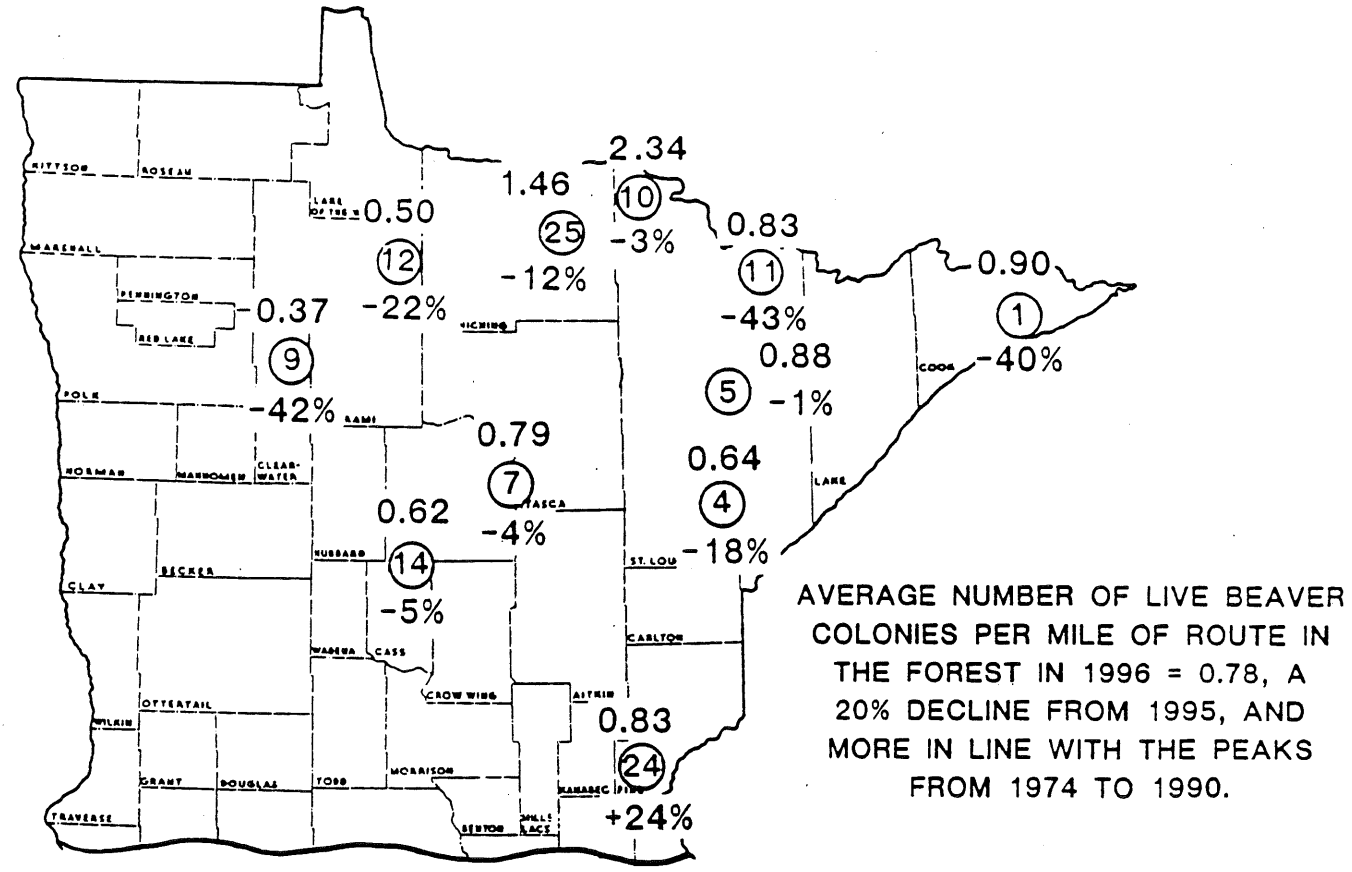

Figure 15. Approximate locations of 11 aerial beaver routes (Route numbers circled) surveyed in 1995 and 1996, live colonies per mile in 1996, and percent change from 1995.

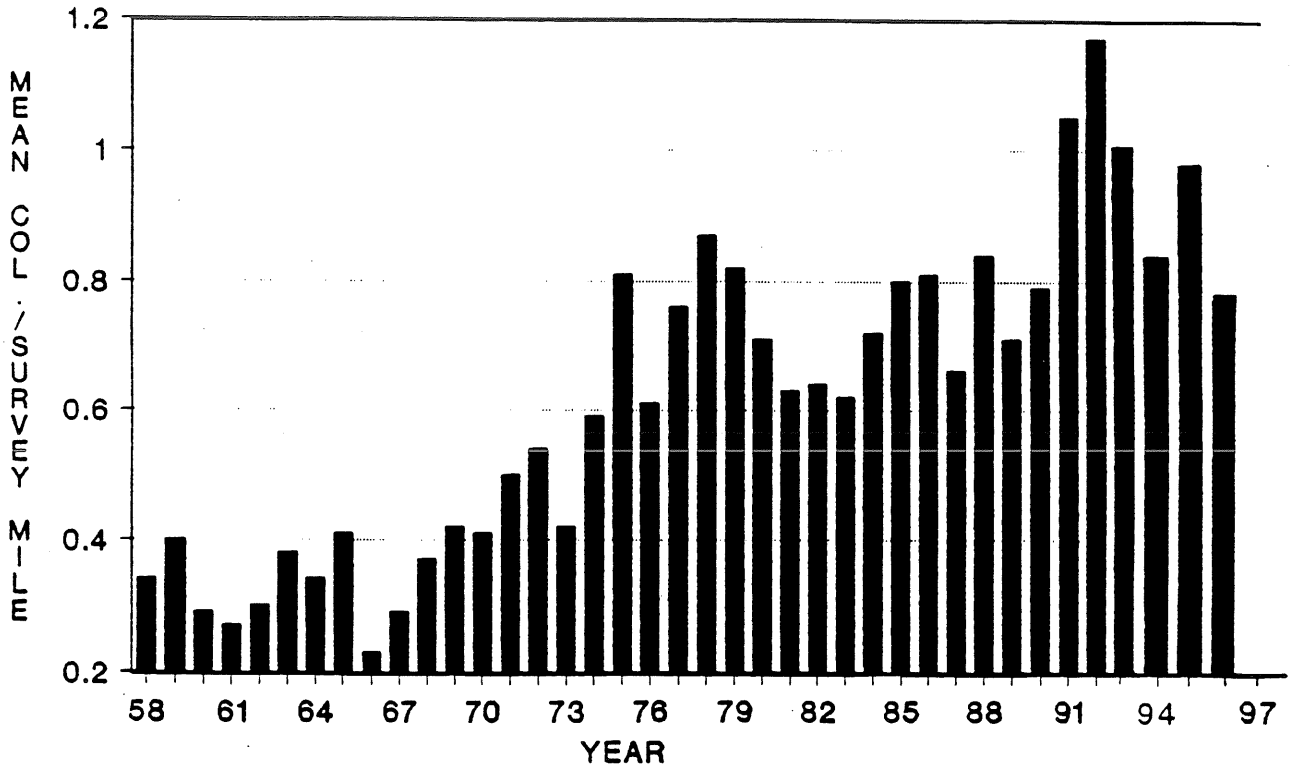

Figure 16. Range-wide (excluding Kabetogama peninsula) mean number of live beaver colonies per mile of survey route, 1958-96.

Table 22. Live beaver colonies per mile of census route in northern Minnesota, 1989-96.

Number	Route name	Year								1991-95 Mean
		1989	1990	1991	1992	1993	1994	1995	1996	
1	Cascade	0.43	0.44	1.13	1.50	0.68	0.43	1.51	0.90	1.05
2	Kawishiwi	0.47	0.80	1.03	1.08	-	-	-	-	0.42
3	Itasca	0.56	0.45	0.92	1.09	-	-	-	-	0.40
4	South St. Louis	-	0.92	1.35	0.87	0.70	0.57	0.78	0.64	0.85
5	Central St. Louis	0.83	0.81	1.12	1.02	0.98	1.06	0.89	0.88	1.01
6	Carlton & Pine	-	1.06	1.50	1.09	-	-	-	-	0.52
7	Cass	0.84	0.98	1.16	1.62	1.14	1.00	0.82	0.79	1.15
8	Balsam-Hennepin	0.59	0.46	0.61	-	-	-	-	-	0.12
9	Pinewood-Mississippi	0.36	0.49	0.41	-	0.79	0.40	0.64	0.37	0.45
10	Kabetogama Peninsula	2.92	3.3	2.62	2.85	3.10	3.33	2.40	2.34	2.86
11	Ely-Finger Lakes	1.09	1.20	1.67	1.35	1.40	1.52	1.45	0.83	1.48
12	Hay Creek-Kelliher	0.56	0.46	0.58	0.78	0.84	0.36	0.64	0.50	0.64
13	Cook County Transect	0.68	0.38	1.18	0.83	-	-	-	-	0.40
14	Cass-Crow Wing	0.89	0.87	0.96	0.88	0.75	0.77	0.65	0.62	0.80
15	Little Willow-Aitkin	0.59	0.63	0.68	-	-	-	-	-	0.14
16	East Aitkin County	0.80	-	-	-	-	-	-	-	-
17	West Vermilion	-	1.29	-	1.25	-	-	-	-	0.25
18	Blackduck	-	1.24	-	1.55	-	-	-	-	0.31
19	Splitrock	0.53	0.73	2.42	1.80	-	-	-	-	0.84
20	Isabella	-	-	-	-	-	-	-	-	-
21	Red Lake-Pine Island	0.36	0.33	0.51	0.56	-	-	-	-	0.21
22	Northome	-	1.14	0.78	1.08	-	-	-	-	0.37
23	Kanabec County	0.94	0.81	0.58	0.77	-	-	-	-	0.27
24	Southern Pine	1.03	0.93	0.89	1.15	0.86	0.86	0.67	0.83	0.89
25	Koochiching North	1.15	1.05	1.43	1.62	2.00	1.58	1.65	1.46	1.66

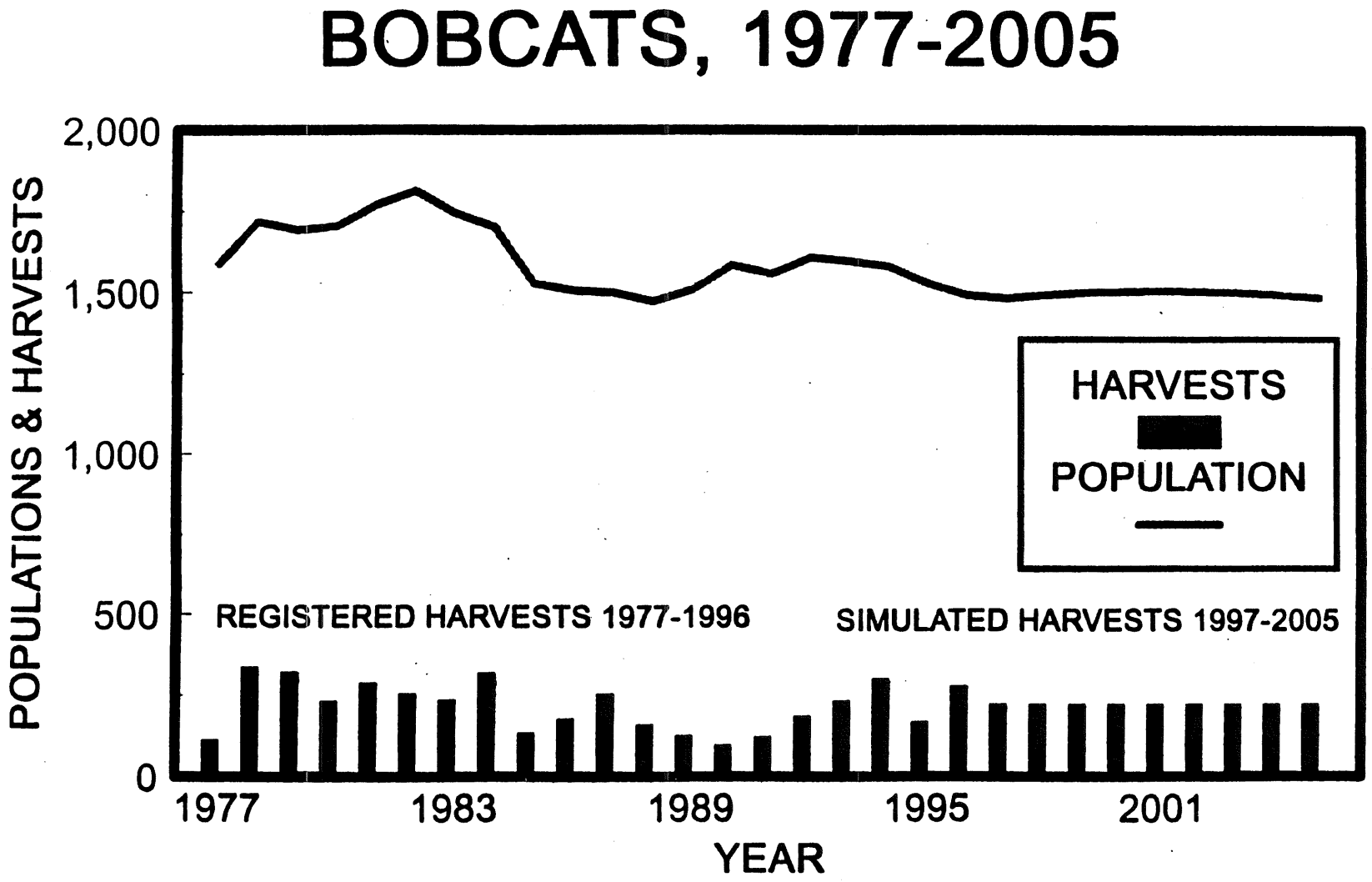

Figure 17. Population modeling summaries for bobcat, 1977-96.

Table 23. Bobcat harvest, age structure, and population index data, 1982 to 1996.

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Registered take	274	208	280	119	160	214	140	129	84	106	167	201	238	134	223
% autumn pop. taken[1]	14	10	13	6	8	11	8	6	5	6	9	12	14	9	13
Carcasses examined	261	205	288	99	132	163	114	119	62	93	151	161	187	96	164
% juvenules	35	37	37	33	26	33	49	39	20	35	28	32	26	31	35
% 1.7 yrs. old	15	26	13	19	17	16	18	17	34	33	22	20	16	15	20
% ≥ 2.7 yrs. old	50	37	50	48	57	51	42	44	46	32	50	48	58	54	45
Juv.::≥2.7 yr. females	1.3	1.5	1.4	1.2	0.9	1.4	1.7	2.0	0.8	3.6	1.2	1.4	0.8	2.7	1.5
% male juveniles	47	54	52	41	53	44	58	49	58	59	55	51	64	57	51
% male 1.7 yrs.	49	53	66	41	32	52	62	53	80	55	45	45	43	71	30
% male ≥ 2.7 yrs.	47	30	44	43	51	48	46	56	44	70	53	52	45	79	49
Overall % males	48	45	51	42	51	48	54	53	59	61	53	50	50	71	46
Mean pelt price	$66	$61	$76	$70	$120	$101	$68	$48	$43	$37	$28	$43	$36	$34	$33
Scent post index[2]	14	3	12	5	8	7	5	17	10	16	10	14	14	10	9
Snowshoe hare index[3]	0.7	0.2	0.3	0.2	0.5	0.9	2.7	2.3	1.2	1.4	0.5	0.2	0.5	0.8	-

[1] estimated from population model
[2] index for autumn prior to harvest
[3] index for spring after harvest season

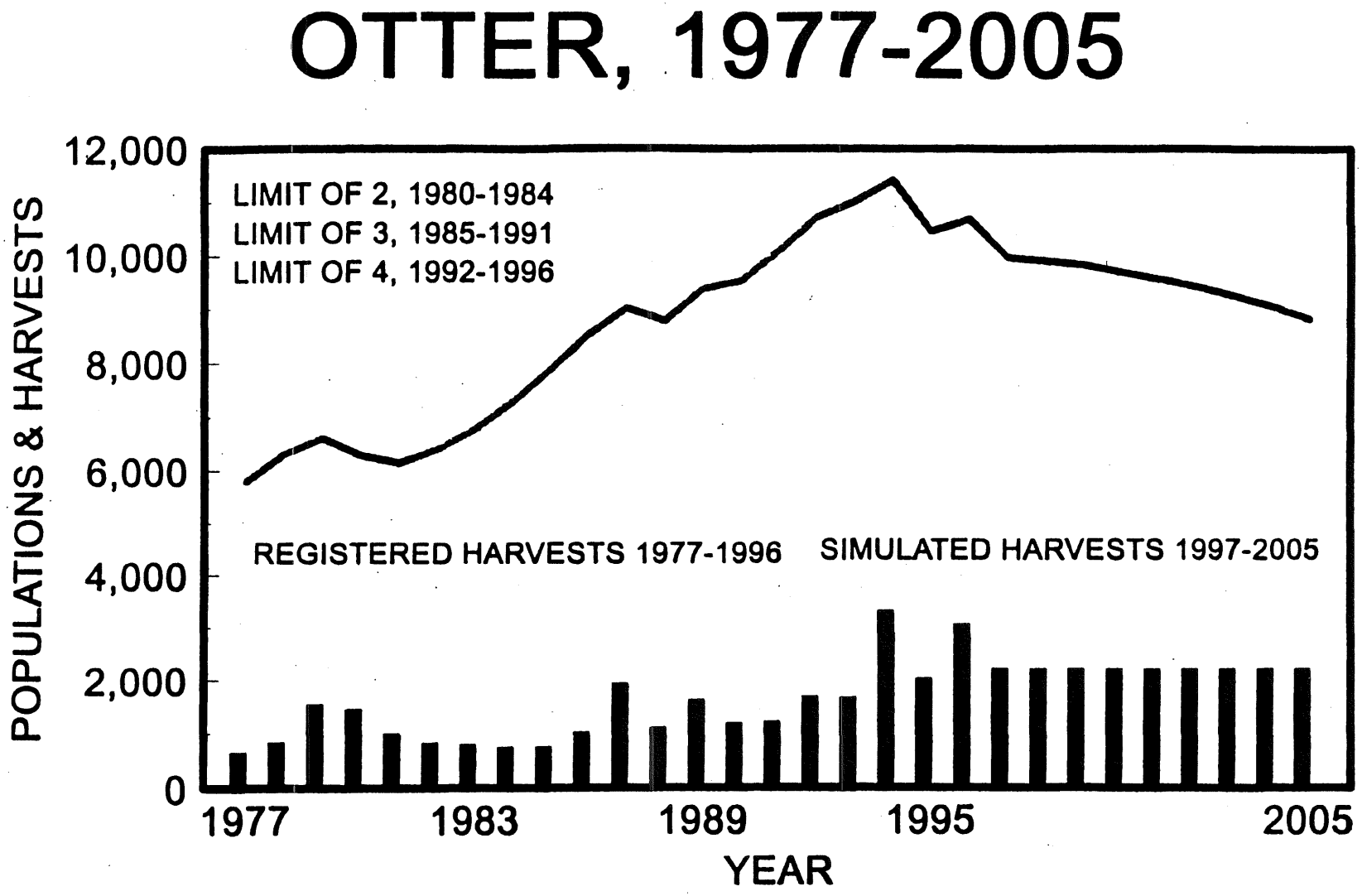

Figure 18. Population modeling summaries for otter, 1977-96.

Table 24. Otter harvest, carcass collection, and pelt price data, 1984-96. Carcasses were not collected after 1986.

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Season dates	11/17-12/01	11/16-12/15	10/24-11/29	10/24-11/29	10/29-11/27	10/28-12/17	10/27-1/6	10/26-1/5	10/24-1/3	10/23-1/9	10/29-1/8	10/28-1/7	10/26-1/5
Limit	2	3	3	3	3	3	3	3	4	4	4	4	4
Registered harvest	513	559	777	1,386	922	1,294	903	855	1,365	1,454	2,445	1,435	2,219
% of autumn pop. harvested[a]	9	9	11	20	12	17	13	13	17	18	22	14	21
No. of carcasses examined	549	572	745	---	---	---	---	---	---	---	---	---	---
% juveniles	47.9	43.4	45.2	---	---	---	---	---	---	---	---	---	---
% yearlings	23.3	22.9	23.3	---	---	---	---	---	---	---	---	---	---
% male juveniles	47.1	53.3	45.1	---	---	---	---	---	---	---	---	---	---
% males ≥ 1.7 yrs.	50.0	50.0	48.1	---	---	---	---	---	---	---	---	---	---
Mean pelt prices:													
Otter	$22	$21	$24	$23	$22	$22	$24	$25	$29	$43	$48	$38	$39
Beaver (fall)	$12	$15	$20	$17	$14	$12	$9	$9	$7	$11	$14	$13	$19

[a] From population modeling; includes additional accidental harvests of 30% to 1991, and 22% after 1991 over registered total.

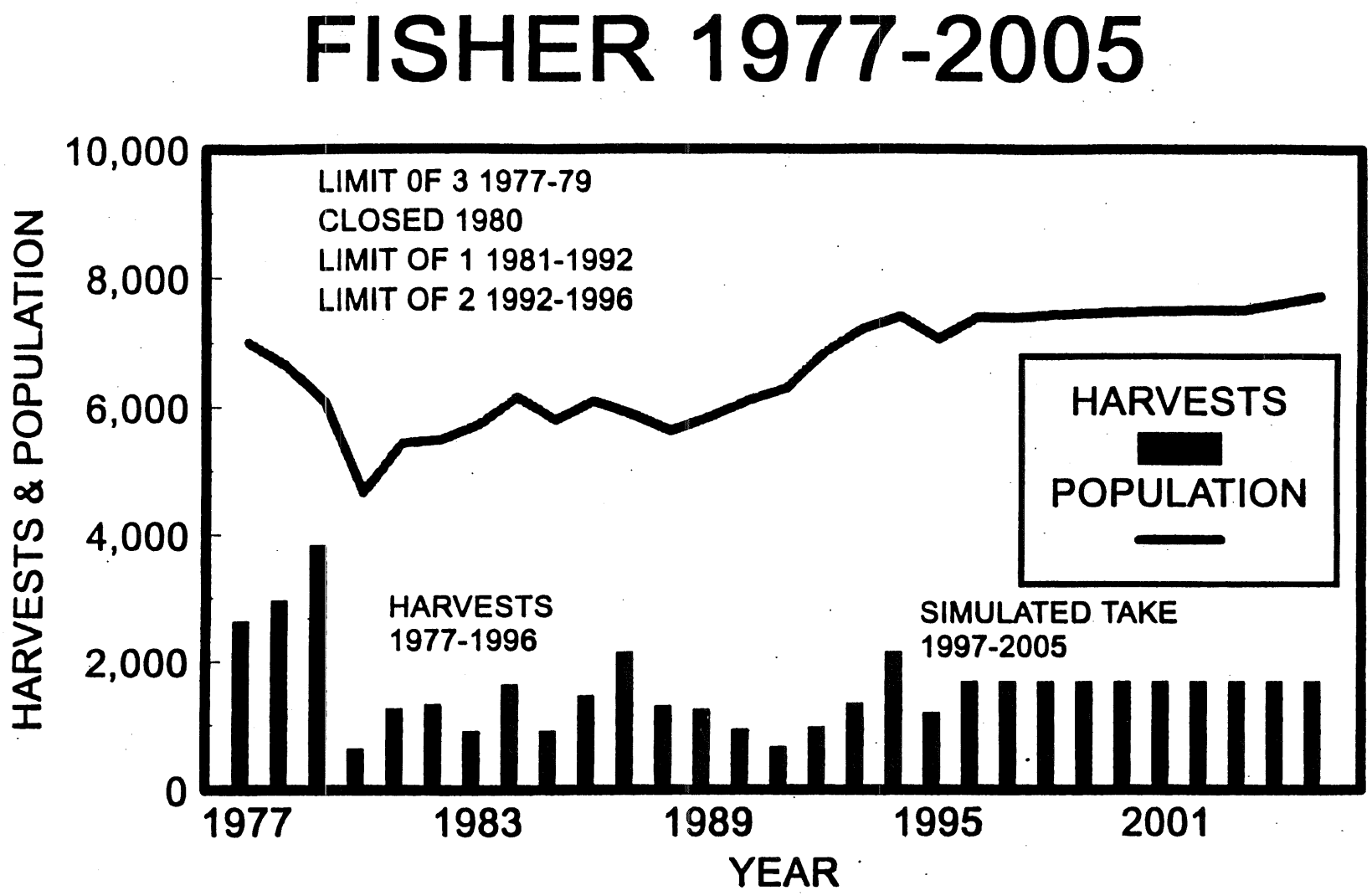

Figure 19. Population modeling summaries for fisher, 1977-96.

Table 25. Fisher harvest, carcass collection, and pelt price data, 1982-96.

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Season	12/1-12/10	12/1-12/11	12/1-12/16	11/30-12/15	11/23-12/4	11/28-12/13	11/26-12/11	12/2-12/17	12/1-12/16	11/30-12/15	11/28-12/13	12/4-12/19	12/3-12/18	12/2-12/17	11/30-12/15
Limit	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Registered Harvest	912	631	1285	678	1068	1642	1025	1243	746	528	777	1158	1771	942	1773
% of available fall population harvested[1]	17	10	18	10	14	21	16	15	12	10	11	16	21	12	22
No. carcasses examined[2]	1073	662	1270	712	1186	1534	805	1024	592	410	629	937	1360	---	---
% juveniles	66	69	63	63	59	53	70	64	65	66	54	59	56	---	---
% 1.7 yrs.	19	18	20	20	24	15	15	19	14	21	25	22	18	---	---
% ≥ 2.7 yrs.	15	13	17	18	18	22	15	17	21	13	21	19	26	---	---
Juv.:adult female ratio	9.4:1	8.8:1	7.2:1	5.4:1	5.3:1	4.7:1	6.8:1	5.8:1	4.5:1	7.8:1	4.9:1	5.3:1	4.0:1	---	---
% male juveniles	46	45	52	46	48	46	48	47	44	50	42	47	47	---	---
% male 1.7 yrs.	41	40	45	40	50	40	45	47	55	52	55	37	54	---	---
% male ≥ 2.7 yrs.	52	40	45	34	37	37	33	36	30	35	45	42	44	---	---
% males overall	46	44	49	43	46	43	45	45	43	48	46	44	48	---	---
Pelt price: males	$70	$71	$70	$74	$84	$84	$54	$26	$35	$21	$16	$14	$19	$16	$25
females	$99	$121	$122	$130	$162	$170	$100	$53	$46	$48	$29	$28	$30	$25	$34
Snowshoe hare index[3]	0.7	0.2	0.3	0.2	0.5	0.9	2.7	2.3	1.2	1.4	0.5	0.5	0.5	0.8	---

[1] estimated from population model
[2] may exceed registration totals due to accidental catches, Indian Reservation season framework, etc.
[3] index for Spring after harvest season.

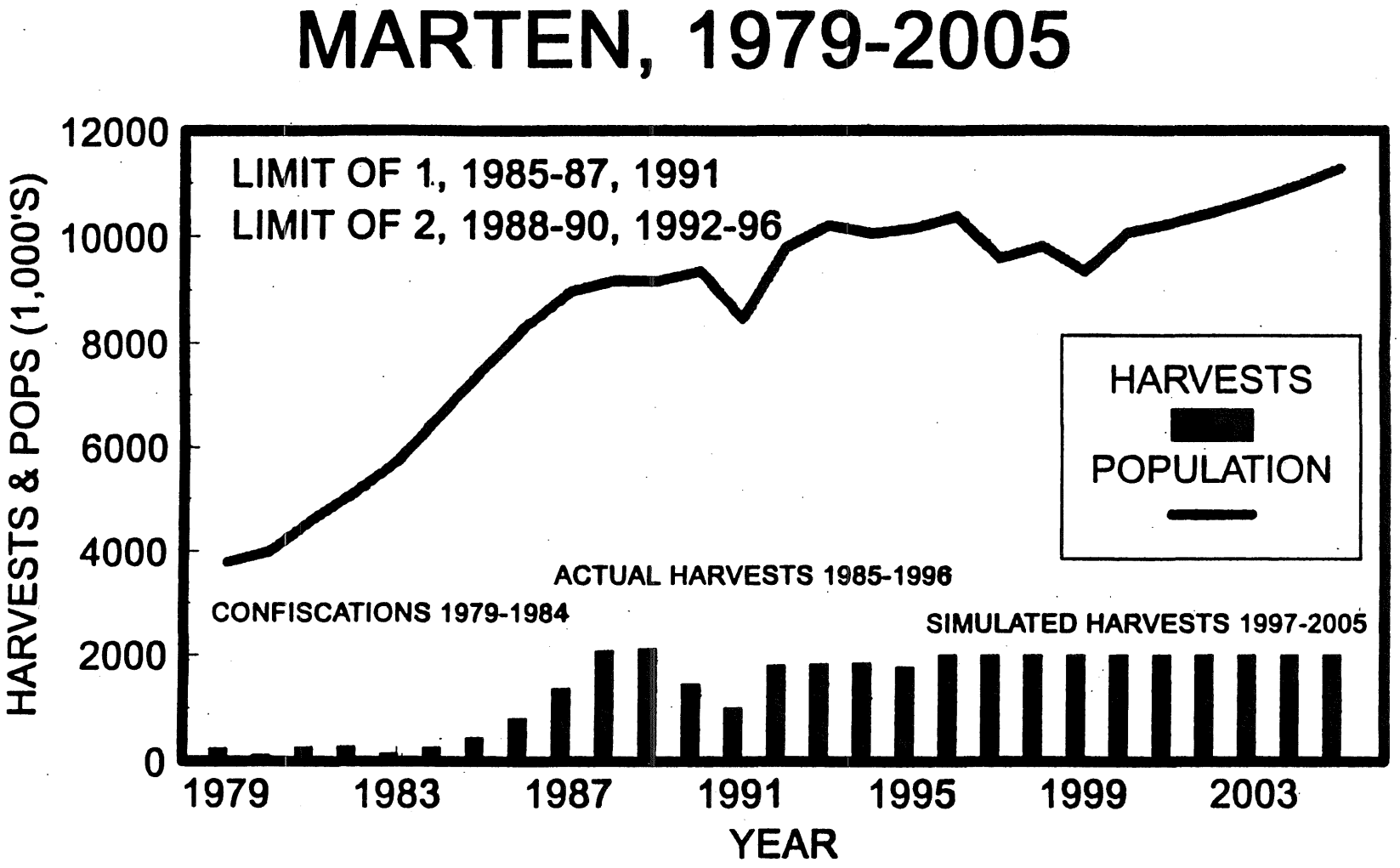

Figure 20. Population modeling summaries for pine marten, 1979-96.

Table 26. Pine marten harvest, carcass collection, and pelt price data, 1985-96.

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Season	11/30-12/15	11/29-12/14	11/28-12/13	11/26-12/11	12/ 2-12/17	12/ 1-12/16	11/30-12/15	11/28-12/13	12/ 4-12/19	12/3-12/18	12/2-12/17	11/30-12/15
Limit	1	1	1	2	2	2	1	2	2	2	2	2
Registered take	430	798	1,363	2,072	2,119	1,349	656	1,601	1,436	1,527	1500	1625
% of available fall population harvested[1]	6	9	16	20	20	16	12	17	22	18	18	18
No. carcasses examined[2]	507	884	1,754	1,977	1,014	1,375	716	1,661	1,396	1,452	1,393	1,372
% juveniles	73	64	66	66	68	48	74	65	57	58	60	48
% 1.7 yrs.	18	21	18	11	12	18	9	18	20	15	18	22
% ≥ 2.7 yrs.	9	15	16	23	20	34	17	17	23	27	22	30
juv.:adult female ratio	17.0:1	12.3:1	11.2:1	8.6:1	9.7:1	3.6:1	16.1:1	15.1:1	7.5:1	6.4:1	8.2:1	4.8:1
% male juveniles	69	65	65	58	57	59	69	63	61	62	63	62
% male 1.7 yrs.	68	71	67	50	63	54	71	70	71	76	68	69
% male ≥ 2.7 yrs.	82	81	75	66	65	61	72	75	67	67	66	67
% males overall	70	69	67	59	59	59	70	66	64	66	65	65
Pelt price: male	$30	$36	$43	$50	$48	$44	$40	$28	$36	$34	$28	$34
female	$28	$27	$39	$43	$47	$41	$27	$25	$30	$28	$21	$29

1 estimated from population model
2 may exceed registration totals due to harvests by Indians, accidental catches, etc.

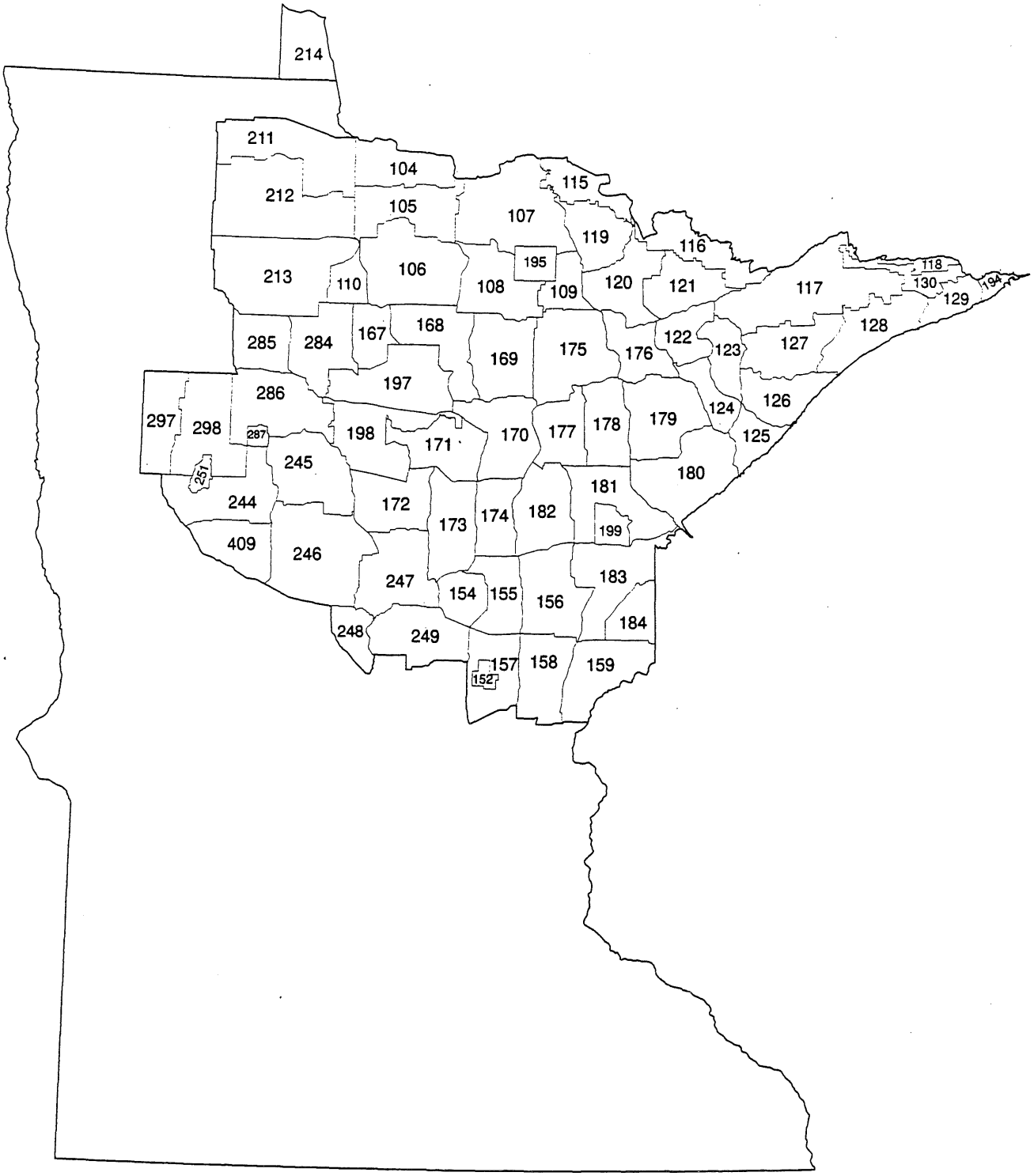

Figure 21. Deer Permit Areas in the Forest zone.

Table 27. Spring white-tailed deer densities estimated from population modeling in Deer Management Units of Minnesota's Forest zone, 1988-97[a]

Permit Area	Deer per square mile									
DMU	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Permit Area 167-169	24	21	23	24	25	23	20	19	12	11
Permit Area 170-171	14	12	14	15	15	13	12	12	8	7
Permit Area 172	20	17	20	22	22	18	15	14	7	7
Permit Area 173-174	16	14	17	19	16	15	14	14	9	9
Permit Area 175-179	10	8	9	10	10	9	9	9	6	6
Permit Area 180-184, 199	11	10	11	11	11	10	9	9	6	6
Permit Area 197-198	12	10	11	11	11	10	10	10	7	6
Permit Area 284-286	19	17	19	22	23	21	20	20	13	11
ITASCA DMU	15	13	14	15	15	14	13	13	8	8
Permit Area 154-156	11	10	12	12	11	9	8	8	7	6
Permit Area 157-158	13	15	18	20	17	13	11	12	10	9
Permit Area 159	14	15	17	18	15	13	14	16	14	14
Permit Area 244	17	17	21	25	27	25	23	25	17	15
Permit Area 245	20	19	22	24	25	22	20	21	14	13
Permit Area 246	16	16	19	21	22	20	18	18	15	12
Permit Area 247	14	14	16	18	18	18	17	17	14	11
Permit Area 248	15	15	17	19	20	19	18	18	15	13
Permit Area 249	10	10	12	14	14	12	11	11	9	7
Permit Area 297-298	10	9	9	9	10	10	8	9	6	5
MILLE LACS DMU	14	14	16	17	17	15	14	14	11	10
Permit Area 104-106	12	10	11	11	11	11	11	11	6	5
Permit Area 107-109, 195	9	8	9	9	10	9	10	10	6	5
Permit Area 110	22	20	23	24	25	21	21	20	11	8
Permit Area 211-213	9	8	9	9	10	9	10	10	6	4
RAINY RIVER DMU	11	9	10	10	11	10	10	10	6	5
Permit Area 119-121	18	17	19	20	21	20	19	21	15	14
Permit Area 122-125	8	6	7	7	6	5	5	5	3	3
Permit Area 126, 128-129	6	5	5	5	5	4	4	4	3	2
SUPERIOR DMU	11	9	11	11	11	10	9	10	7	7

[a] Historical density figures may differ from those previously published because of annual recalculation as more accurate modeling data are available.

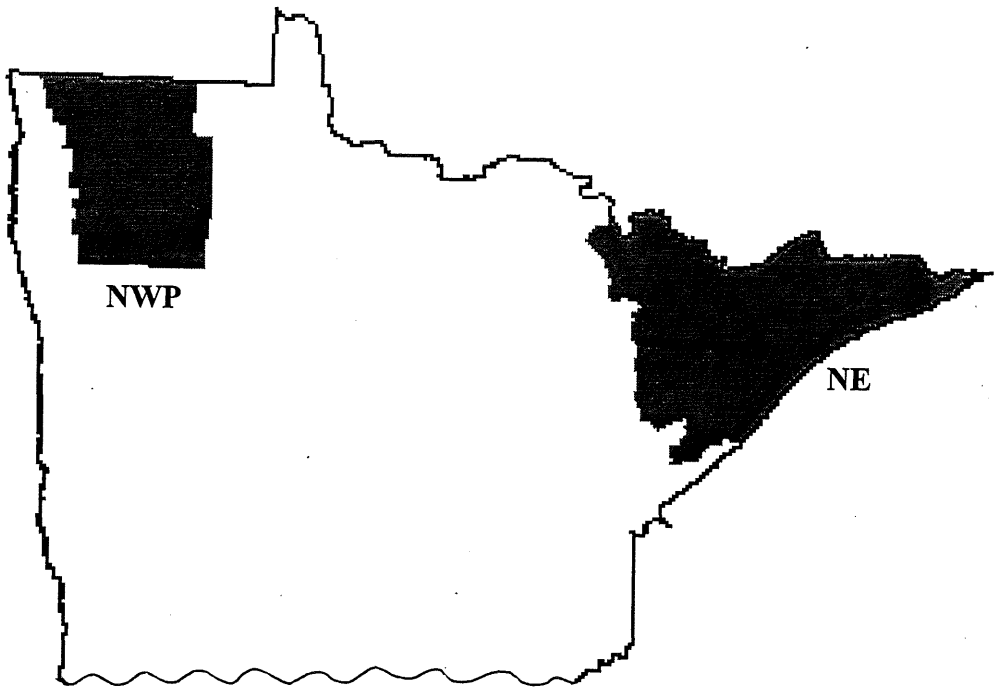

Figure 22. Aerial moose survey area boundaries.

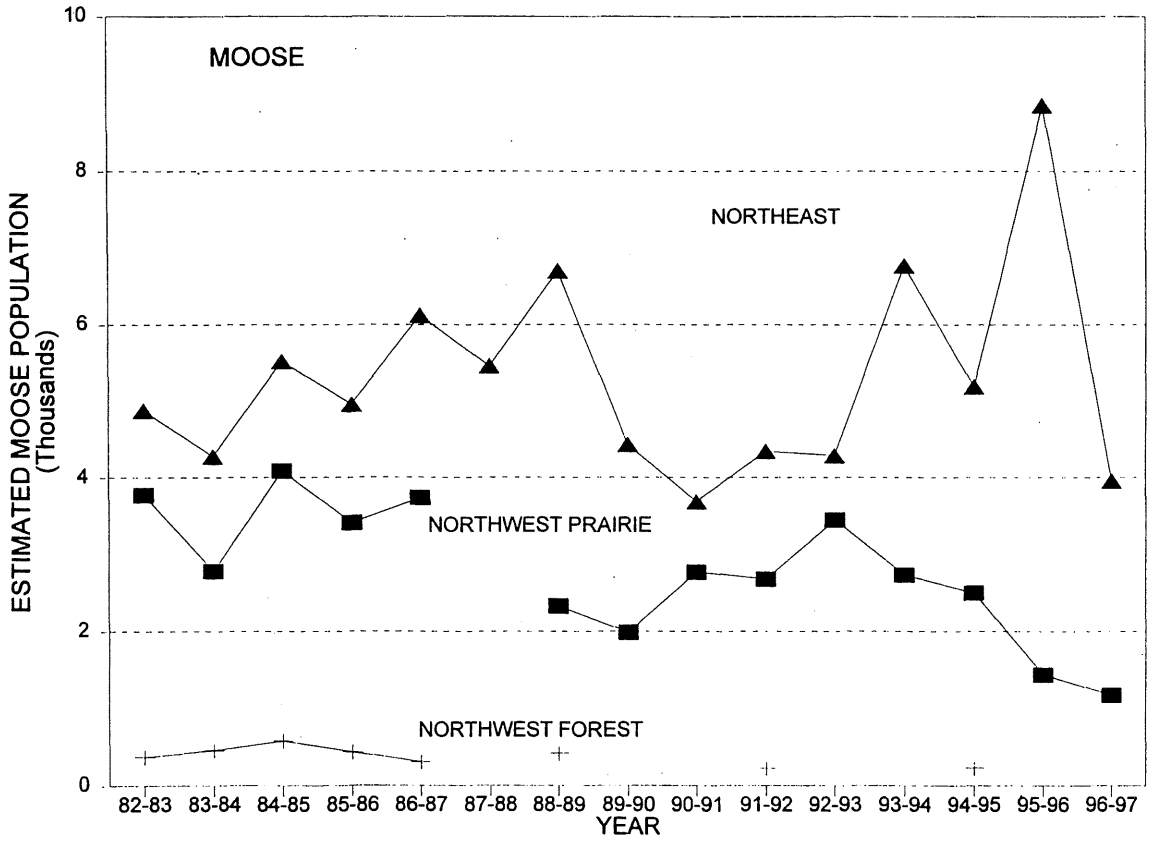

Figure 23. Moose population trends by survey area in northern Minnesota. Trend lines are broken where survey information was not collected.

Table 28. Moose population estimates from aerial moose survey in Minnesota, 1982-97.

Year	Population Estimate by Survey Area (+90% CI) Northwest Prairie	Northwest Forest	Northeast
1982-83	3772 (930)	370 (124)	4877 (999)
1983-84	2784 (567)	446 (139)	4274 (925)
1984-85	4086 (518)	578 (148)	4451 (±774)
1985-86	3415 (412)	433 (100)	4918 (±1029)
1986-87	3740 (747)	307 (83)	5994 (±1438)
1987-88	no survey	no survey	5492 (±1090)
1988-89	2328 (474)	419 (153)	6938 (±2502)
1989-90	1985 (435)	no survey	4492 (±1227)
1990-91	2771 (817)	no survey	3572 (±1670)
1991-92	2678 (± 629)	223 (± 65)	4362 (±1323)
1992-93	3452 (± 640)	no survey	4292 (±1371)
1993-94	2735 (± 491)	no survey	6768 (±1807)
1994-95	2500*	229 (± 88)	5193 (± 1516)
1995-96	1436*	no survey	8854 (± 9513)
1996-97	1170 (± 359)†	no survey	3960 (± 1416)
change 1995-96 to 1996-97	- 19%		- 55%

* The Northwest Prairie (NWP) survey area was re-stratified and split into two separate survey areas, the Northwest Prairie East (NWPE) and the Norhtwest Prairie West (NWPW). Results from these two areas were combined to give the NWP population estimate.

† Because of reduced moose numbers, the Northwest Prairie East and West survey areas were combined into a single area for this year's survey.

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Table 29. Estimates of Minnesota mallard breeding populations, 1975-97.

Species	Year	Unadjusted population index	Visibility factor	Adjusted population estimate (thousands)
Mallard	1975	55,093	3.19	176
	1976	69,844	1.69	118
	1977	60,617	2.21	134
	1978	56,152	2.61	147
	1979	61,743	2.57	159
	1980	83,775	2.05	172
	1981	79,562	1.95	155
	1982	51,655	2.33	121
	1983	73,424	2.12	156
	1984	94,514	1.99	188
	1985	96,045	2.26	217
	1986	108,328	2.16	235
	1987	165,881	1.16	192
	1988	155,453	1.75	272
	1989	124,362	2.19	273
	1990	140,879	1.65	232
	1991	128,315	1.75	225
	1992	144,125	2.50	360
	1993	123,771	2.47	306
	1994	138,482	3.08	426
	1995	142,557	2.24	319
	1996	153,473	2.05	315
	1997	160,629	2.54	407

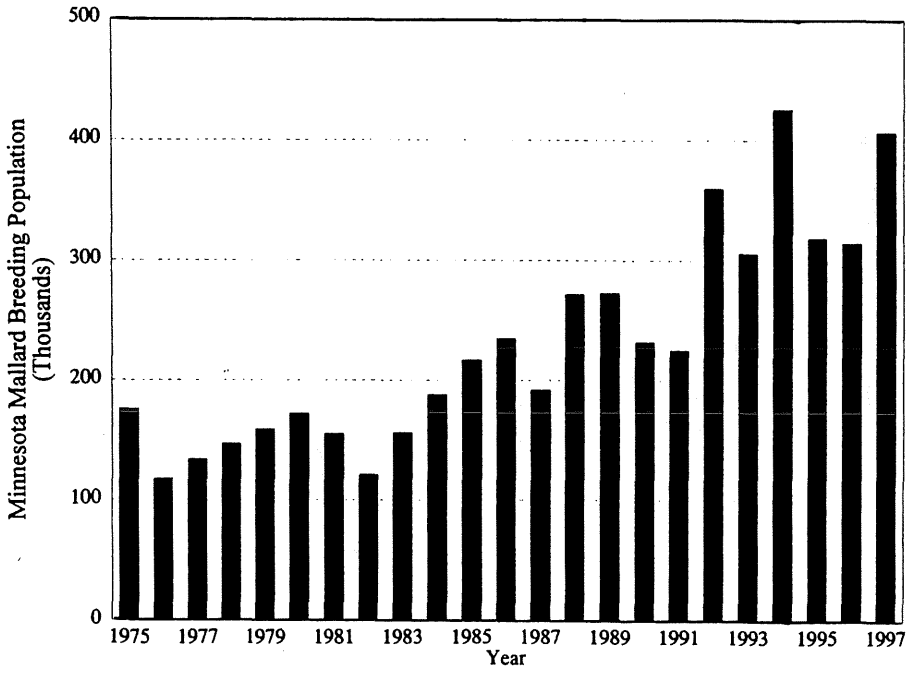


Figure 24. Minnesota Mallard breeding populations, 1975-97.

Table 30. Estimates of Minnesota Blue-winged teal breeding populations, 1975-97.

Species	Year	Unadjusted population index	Visibility factor	Adjusted population estimate (thousands)
Blue-winged teal	1975	45,948	3.95	181
	1976	89,370	4.87	436
	1977	37,391	3.86	144
	1978	28,491	8.53	243
	1979	46,708	5.21	243
	1980	50,966	6.49	331
	1981	64,546	2.59	167
	1982	42,772	4.75	203
	1983	42.728	2.81	120
	1984	89,896	2.82	254
	1985	90,453	2.91	264
	1986	68,235	2.69	183
	1987	102,480	1.99	204
	1988	101,135	2.38	240
	1989	90,300	3.16	286
	1990	107,183	3.09	331
	1991	91,495	2.90	265
	1992	93,107	3.83	357
	1993	64,670	4.02	260
	1994	70,324	5.48	385
	1995	47,737	4.40	210
	1996	57,196	5.05	289
	1997	45,496	5.57	253

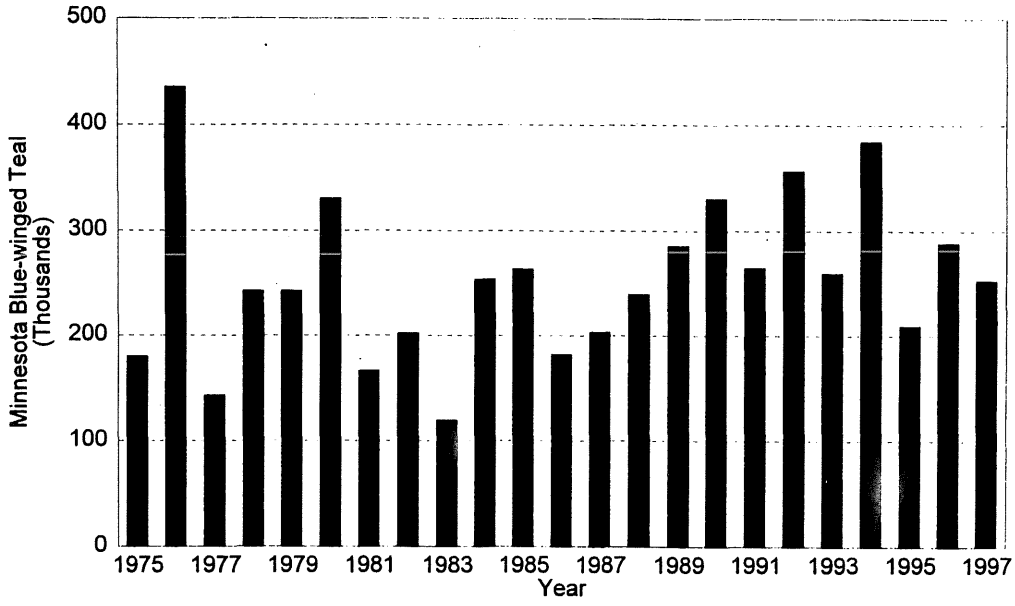


Figure 25. Minnesota Blue-winged teal breeding population, 1975-97.

Table 31. Winter population estimates (post hunting season) of the Canada goose eastern prairie flock, 1963-96 (taken from: U.S. Fish and Wildlife Service/Canadian Wildlife Service. 1997. Waterfowl population status, 1997. July 1997. 32pp).

Year	Population
1963	110,000
1964	103,000
1965	104,000
1966	121,000
1967	145,000
1968	134,000
1969	107,000
1970	121,000
1971	152,000
1972	177,000
1973	187,000
1974	188,000
1975	199,000
1976	254,000
1977	270,000
1978	207,000
1979	172,000
1980	151,000
1981	175,000[a]
1982	210,000
1983	163,000[b]
1984	168,000
1985	169,000
1986	183,000
1987	228,000
1988	184,000
1989	325,000
1990	218,000
1991	189,000
1992	146,000
1993	116,000
1994	234,000
1995	256,000
1996	Incomplete

[a] In 1983, U.S.F.W.S. revised a previously published estimate (145,000) due to supplemental information.

[b] Supplemental information suggests that the 1983 population was 170,000 - 190,000 birds.

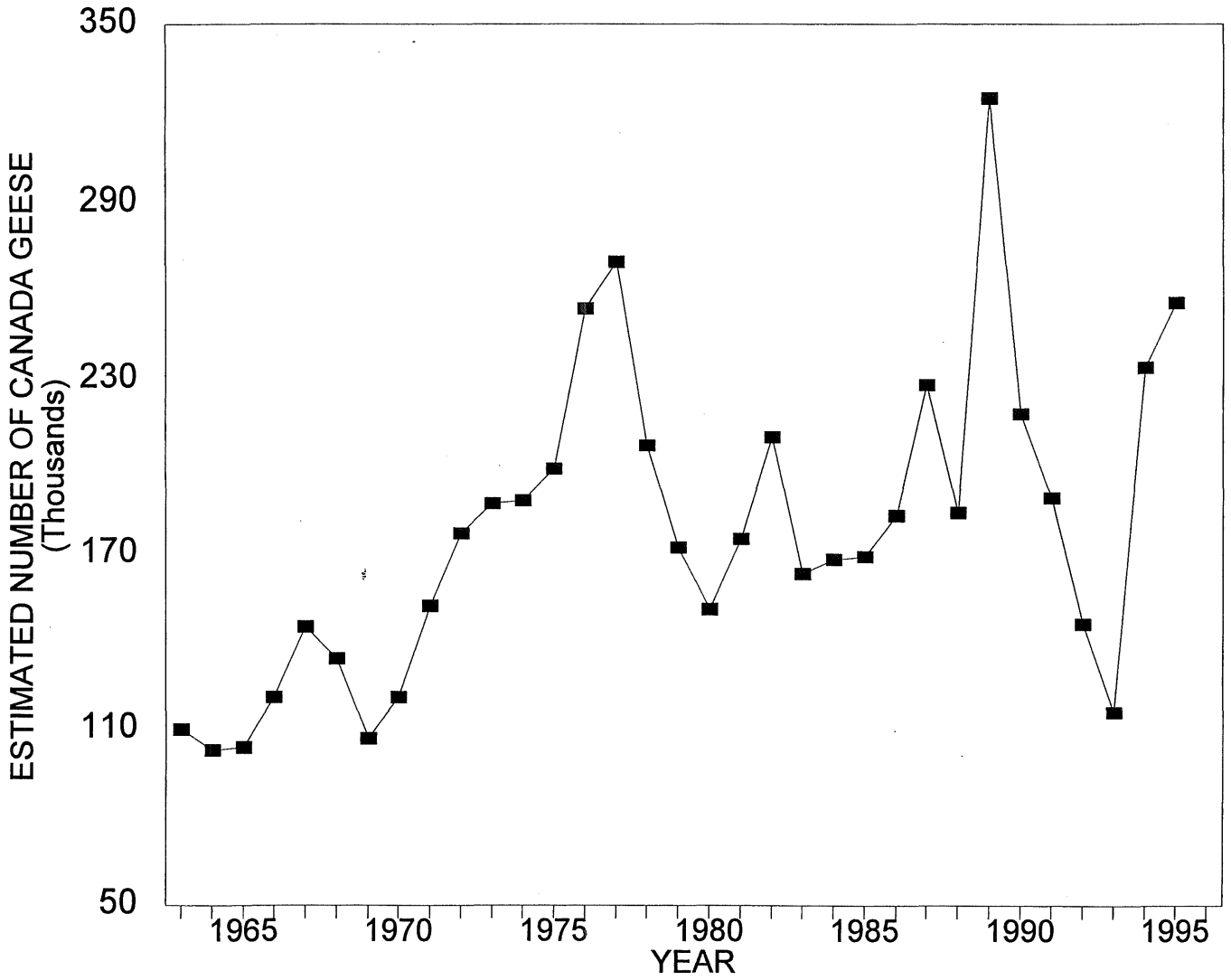


Figure 26. Winter population estimates of the Eastern Population of Canada geese, 1963-97 (from: U.S. Fish and Wildlife Service/ Canadian Wildlife Service reports 1997. Waterfowl population status, 1997. July 1997. 32 pp).
Winter survey for 1996 was incomplete.

Table 32. Numbers of Canada geese represented by singles (singles x 2 x 1.4), pairs (pairs x 2 x 1.4) and groups (not corrected for visibility), (from: 1997 EPP Breeding population survey. Humburg, Dale D., Missouri Dept. of Conservation; Paul Telander, Minnesota DNR; and Robert Foster, U.S. Fish and Wildlife Service.)

	SINGLES		PAIRS		GROUPS		TOTAL	
Year	No.	95% CI	No.	95% CI	No.	95% CI	No.	95% CI
1972	51,200	9,800	63,100	11,600	32,800	11,400	147,100	19,000
1973	52,900	9,100	76,800	15,200	22,100	7,400	151,800	19,200
1974	40,900	7,700	66,500	13,600	28,100	8,400	135,500	17,700
1975	71,600	12,700	66,500	11,800	26,300	10,800	164,400	20,400
1976	78,500	17,300	109,200	20,800	49,600	15,300	237,300	31,100
1977	56,300	12,300	78,500	17,200	68,700	21,400	203,500	22,200
1978	35,800	9,100	97,200	15,900	93,000	28,300	226,000	33,700
1979	39,200	8,600	52,900	13,700	47,300	36,400	139,400	39,800
1980	No survey conducted in 1980							
1981	47,800	9,700	49,500	11,500	70,400	40,300	167,700	43,000
1982	61,400	11,700	59,700	11,300	47,700	24,200	168,800	29,200
1983	40,900	8,800	76,800	12,700	109,500	56,600	227,200	58,700
1984	68,200	11,500	69,900	13,100	39,300	20,300	177,400	26,800
1985	51,200	12,900	69,900	12,100	77,700	25,900	198,800	31,400
1986	73,300	13,000	85,300	15,400	92,600	28,400	251,200	34,800
1987	61,400	12,700	121,100	20,300	65,100	17,700	247,600	29,800
1988	78,500	14,000	95,500	15,400	90,600	29,800	264,600	36,400
1989	75,100	12,700	83,600	15,200	121,300	40,600	280,000	45,200
1990	90,100	15,500	124,500	18,600	89,600	21,400	304,200	31,900
1991	95,500	17,200	141,600	22,000	71,000	31,300	308,100	42,000
1992	90,400	15,600	126,200	21,400	53,100	14,400	269,700	30,200
1993	95,500	14,700	88,700	16,500	28,300	13,500	212,500	25,900
1994	92,100	15,700	88,700	16,600	156,400	66,400	337,300	70,200
1995	66,500	12,100	116,000	18,900	108,100	46,600	290,600	51,800
1996	73,300	12,200	112,600	20,800	86,000	40,900	271,900	47,500
1997	71,700	13,000	95,600	15,900	90,100	30,100	257,500	36,400

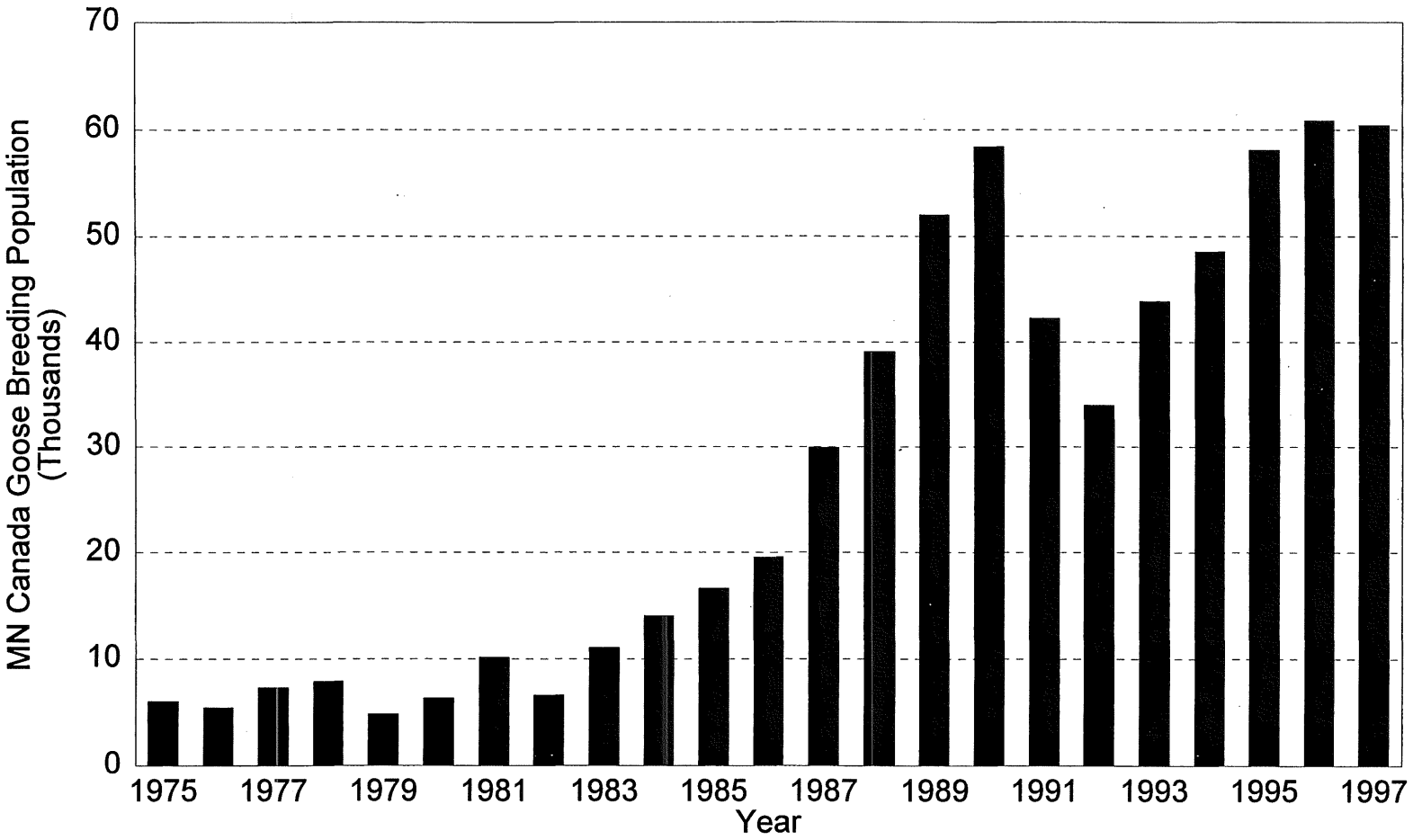


Figure 27. Minnesota Canada goose breeding population, 1975-96 (from: Lawrence, J.S. 1997. 1997 waterfowl breeding population survey for Minnesota. Minnesota Department of Natural Resources and U.S. Fish and Wildlife Service. Unpublished report. 14pp.)

Table 33. Estimated number of May ponds (adjusted for visibility) in Prairie Canada (portions of Alberta, Saskatchewan and Manitoba) 1961-97 and north-central U.S. (North Dakota, South Dakota and Montana) 1974-97. (from: U.S. Fish and Wildlife Service/Canadian Wildlife Service, 1997. Waterfowl population status, 1997. July 1997. 32pp).

Year	Ponds (thousands) Prairie Canada	North Central U.S.[a]
1961	1,977	--
1962	2,369	--
1963	2,482	--
1964	3,371	--
1965	4,379	--
1966	4,555	--
1967	4,691	--
1968	1,986	--
1969	3,548	--
1970	4,875	--
1971	4,053	--
1972	4,009	--
1973	2,950	--
1974	6,390	1,841
1975	5,320	1,911
1976	4,599	1,392
1977	2,278	771
1978	3,622	1,590
1979	4,859	1,522
1980	2,141	761
1981	1,443	683
1982	3,185	1,458
1983	3,906	1,259
1984	2,473	1,766
1985	4,283	1,327
1986	4,025	1,735
1987	2,524	1,348
1988	2,110	791
1989	1,693	1,290
1990	2,817	691
1991	2,494	706
1992	2,784	825
1993	2,261	1,351
1994	3,769	2,216
1995	3,893	2,443
1996	5,003	2,480
1997	5,061	2,397
Average	3,420	1,398
1997	5,061	2,397
% Change in 1997 from:		
1996	+ 1	- 3
Long term Average	+48	+71

[a] No comparable survey data available for the north-central U.S.during 1961-73.

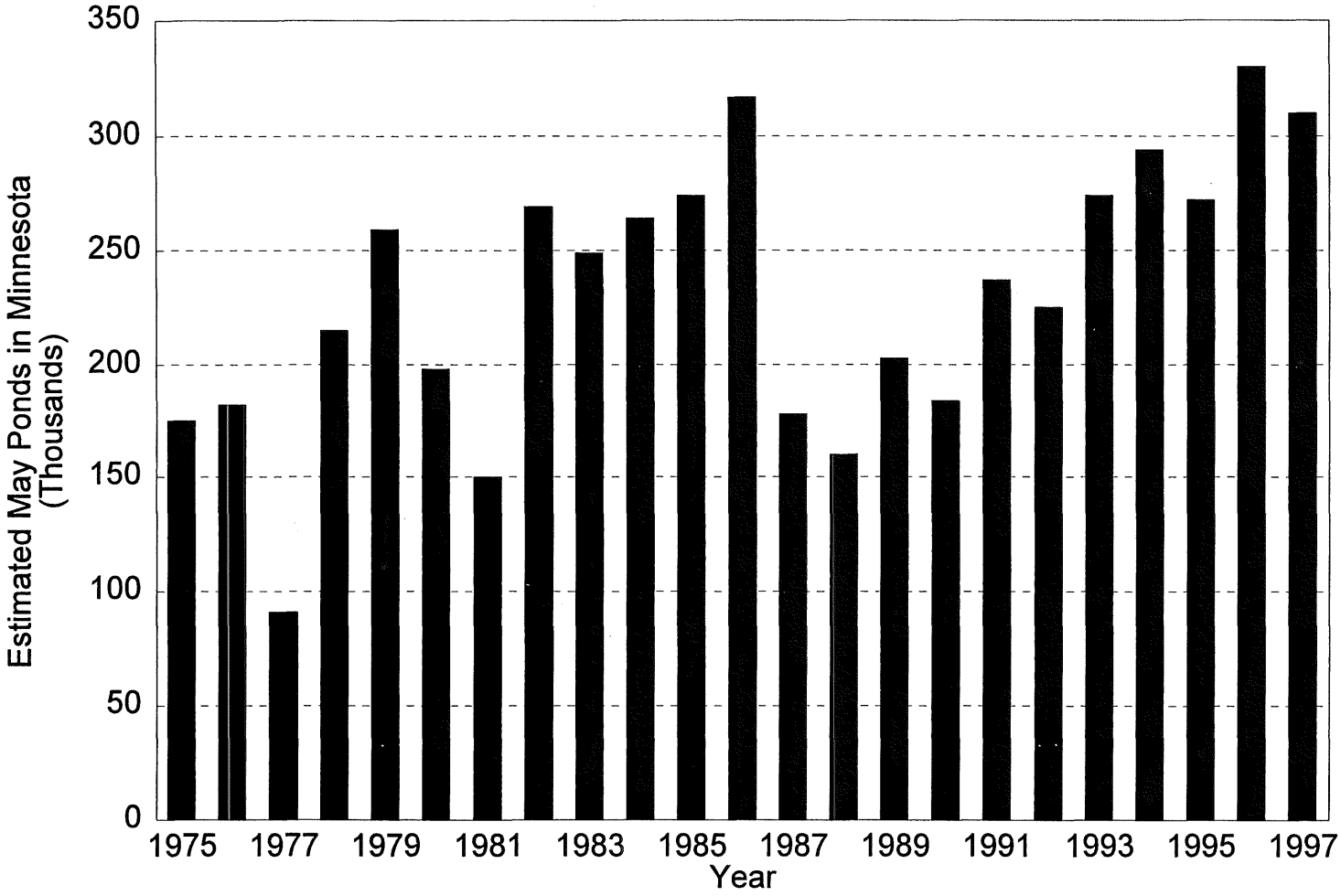


Figure 28. Estimated number of May ponds for Minnesota, 1975-97.

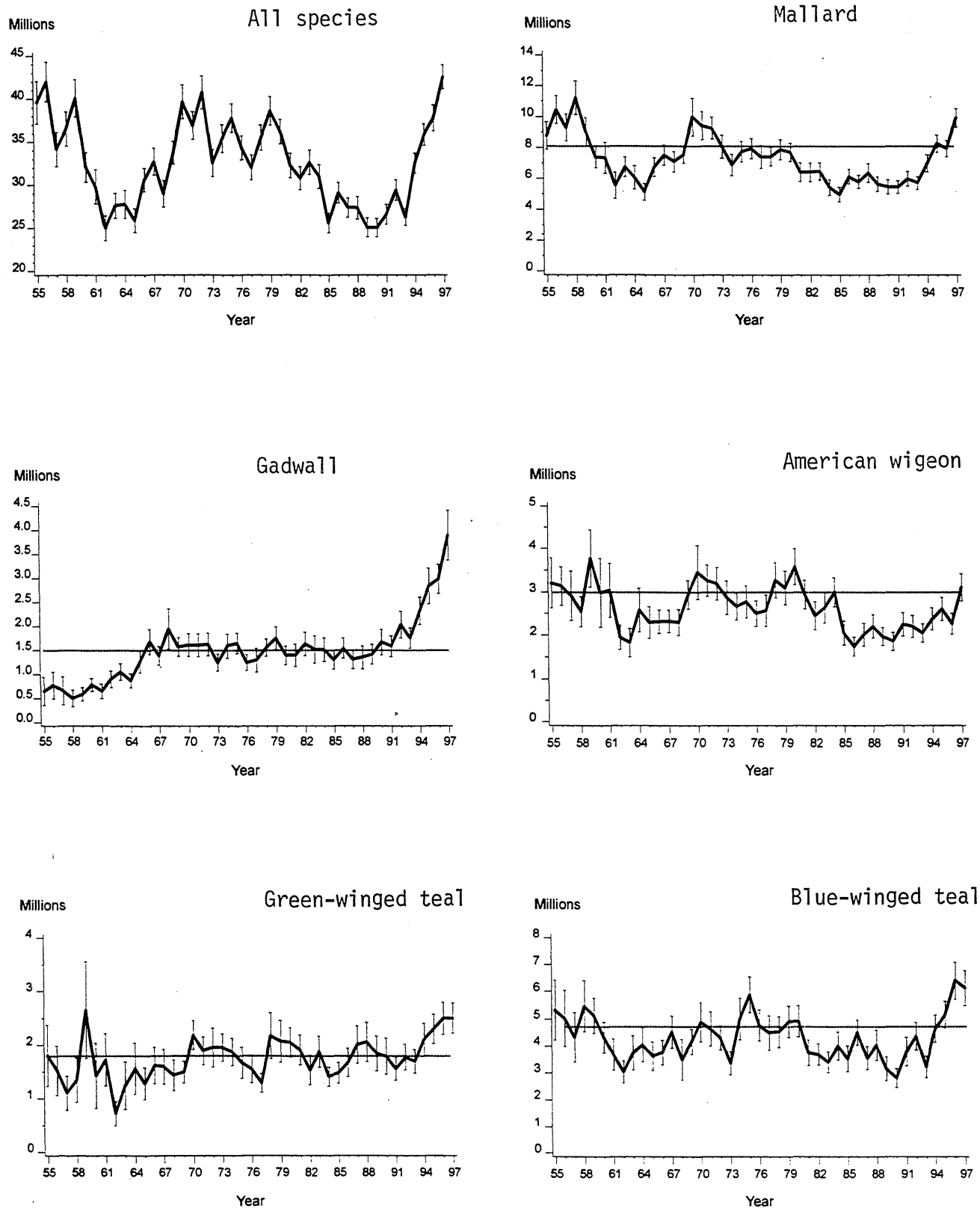
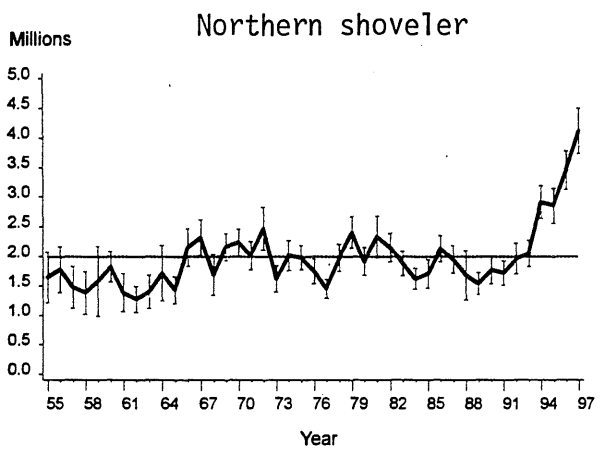
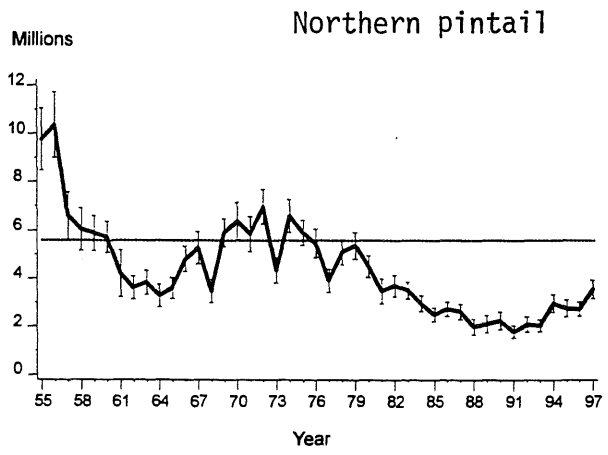
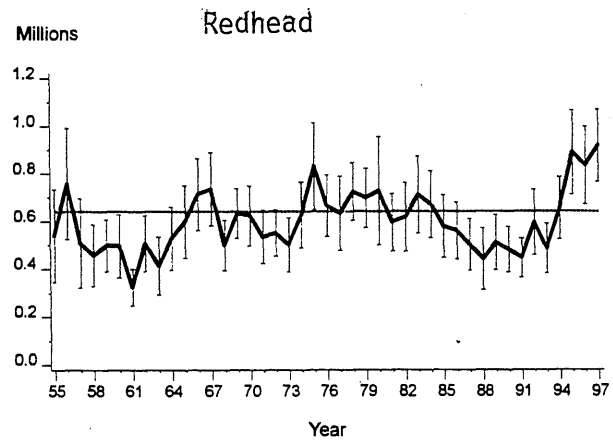
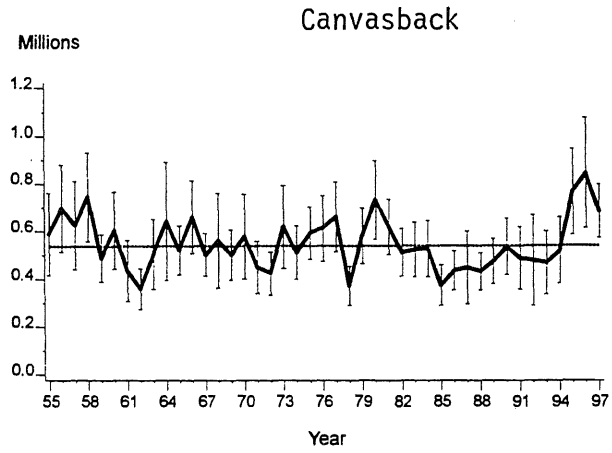


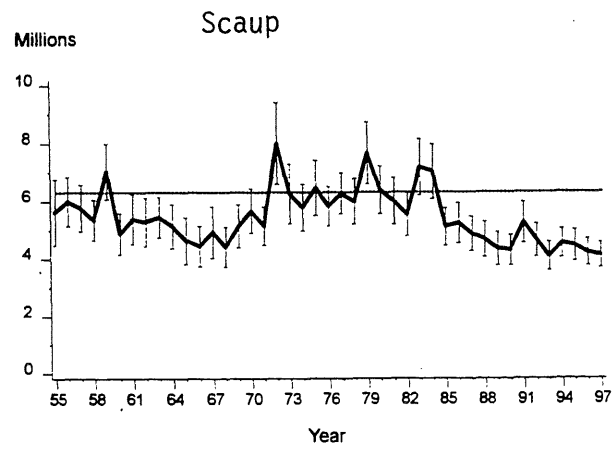
Figure 29. Estimates of North American breeding populations of selected ducks and number of water areas in May in Prairie Canada and Northcentral U.S. (from: U.S. Fish and Wildlife Service/Canadian Wildlife Service 1997. Waterfowl population status, 1997 July 1997. 32 pp).











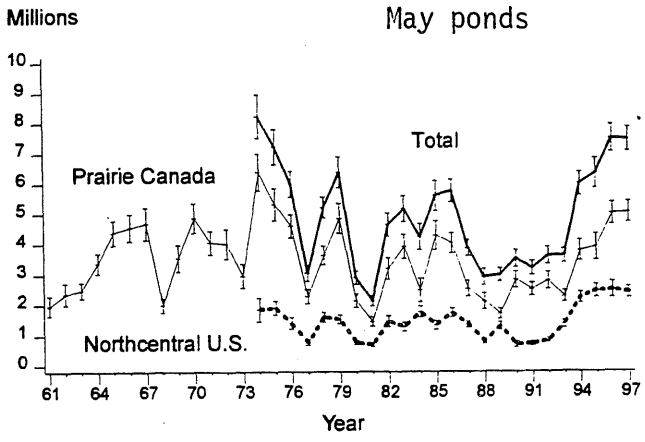


Figure 29. (continued)

Table 34. North American breeding population estimates for 10 species of ducks, 1955-97. (from: U.S. Fish and Wildlife Service/Canadian Wildlife Service, 1997. Waterfowl population status, 1997. July 1997. 32pp). In thousands.[a]

Year	Mallard		Gadwall		American wigeon		Green-winged teal		Blue-winged teal		Northern shoveler		Northern pintail		Redhead		Canvasback		Scaup	
	N	SE*	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE
1955	8355.9	383.5	662.7	56.0	3066.7	269.0	1822.8	265.0	5381.2	368.5	1571.3	108.6	9387.1	554.1	572.1	69.0	599.2	68.3	5608.9	453.3
1956	9841.5	394.6	782.6	51.4	3117.6	321.7	1479.5	153.2	4762.9	308.3	1630.4	86.1	9897.3	605.6	755.1	94.5	695.8	80.5	5733.8	571.9
1957	9151.3	398.9	691.0	75.3	2851.5	296.8	1053.3	143.5	4312.4	263.2	1458.7	110.4	6310.7	421.1	542.2	68.2	614.5	91.8	5745.3	436.9
1958	10993.6	521.8	453.8	36.4	2421.3	244.3	1326.1	223.1	5164.7	386.8	1187.3	143.0	5552.4	363.2	443.1	55.4	742.4	97.0	5285.8	473.0
1959	8746.1	649.3	527.2	59.8	3703.0	386.1	2601.1	505.1	5046.2	483.0	1455.8	288.1	5482.9	383.0	492.8	89.1	480.6	51.4	6961.3	602.3
1960	7164.1	347.5	720.9	54.8	2936.5	411.3	1389.8	349.4	4184.7	296.2	1743.1	124.4	5414.2	288.2	494.7	70.3	599.5	81.2	4825.9	411.8
1961	6912.0	502.3	594.3	66.7	2817.3	240.7	1708.7	272.7	3655.0	322.3	1256.4	127.9	3676.0	265.8	319.1	40.8	427.6	63.7	5335.3	459.6
1962	5139.4	271.7	846.3	77.0	1882.0	142.8	700.3	131.4	2940.2	190.0	1182.5	88.5	3395.4	199.2	503.3	69.1	353.7	41.3	5240.3	404.2
1963	6723.2	418.4	1092.0	91.0	1705.9	142.7	1155.3	199.7	3680.5	307.1	1278.3	120.1	3621.9	205.5	413.0	59.8	499.4	73.1	5396.4	393.2
1964	5740.2	368.6	825.1	61.6	2494.7	311.7	1505.0	256.6	3960.8	306.6	1608.1	233.8	3013.3	184.2	526.5	70.3	649.1	127.1	5057.9	387.4
1965	5101.2	246.1	1269.7	112.7	2312.3	192.6	1237.2	126.6	3569.6	253.7	1372.2	84.8	3549.4	186.8	599.0	76.2	520.2	50.0	4651.5	396.2
1966	6679.7	302.3	1672.3	130.1	2281.9	134.4	1579.6	185.0	3718.3	218.7	2102.8	154.8	4763.7	242.9	712.8	76.5	658.3	76.7	4431.8	320.6
1967	7470.4	334.5	1384.6	97.8	2320.0	139.5	1588.1	164.5	4509.2	310.9	2291.0	155.8	5270.4	327.5	734.2	78.9	500.2	45.0	4931.7	453.8
1968	7018.5	328.0	1947.0	213.7	2281.5	154.4	1405.3	144.3	3459.0	383.2	1645.6	165.7	3469.7	224.7	492.5	51.3	561.3	100.5	4360.3	323.9
1969	7536.0	274.6	1573.0	100.2	2918.6	170.2	1467.5	94.4	4132.7	239.4	2145.2	114.8	5900.2	280.2	632.5	53.5	500.8	53.4	5130.6	360.8
1970	9960.0	616.1	1606.1	123.5	3447.0	317.6	2171.0	133.4	4858.1	372.4	2220.1	116.3	6369.3	395.6	624.2	64.4	577.7	90.3	5633.9	397.4
1971	9305.9	438.2	1602.5	122.9	3281.3	182.3	1881.3	126.6	4606.5	316.9	2005.2	121.4	5873.7	369.3	534.4	56.7	443.8	48.6	5063.1	332.0
1972	9254.9	363.0	1620.5	120.1	3172.4	192.6	1894.9	189.0	4276.5	229.8	2441.4	182.0	7018.1	367.2	550.7	49.4	426.2	46.0	7932.0	721.7
1973	8060.2	372.9	1246.5	90.4	2863.7	200.0	1935.9	132.3	3333.8	220.4	1624.3	111.5	4351.1	266.9	498.2	57.8	617.0	89.3	6221.5	532.6
1974	6681.0	309.5	1591.8	128.1	2665.1	155.9	1839.9	129.8	4968.2	389.8	2006.3	128.6	6583.0	342.8	626.6	70.6	504.2	50.6	5720.4	408.8
1975	7494.0	306.8	1641.0	108.9	2692.0	185.9	1666.5	142.9	5828.8	335.6	1962.1	107.3	5878.1	267.3	828.7	93.3	591.3	49.6	6426.9	481.3
1976	7894.4	306.8	1244.7	85.5	2476.1	145.2	1535.8	131.9	4746.6	288.0	1755.8	106.9	5475.1	299.0	668.4	66.1	609.5	65.0	5778.7	341.0
1977	7395.8	366.4	1311.5	126.8	2559.8	180.9	1290.6	84.9	4589.0	347.9	1475.1	85.9	3935.2	246.7	637.1	79.7	667.0	70.3	6246.8	355.9
1978	7353.4	273.2	1560.5	92.2	3285.5	205.3	2193.9	215.4	4471.0	288.7	1977.6	115.6	5105.5	267.5	737.8	63.4	369.1	32.1	5935.8	399.3
1979	7815.5	295.1	1750.5	121.1	3087.3	193.5	2018.9	198.5	4860.5	291.8	2385.5	134.7	5382.2	274.2	694.7	63.6	572.8	53.5	7540.3	567.5
1980	7570.0	267.9	1390.6	98.7	3557.6	207.6	1993.7	137.5	4884.1	290.8	1901.9	119.3	4513.8	228.5	753.1	118.7	726.7	79.1	6314.2	415.6
1981	6367.1	274.1	1401.5	119.9	2923.5	167.5	1851.4	138.6	3725.9	236.5	2324.7	177.4	3472.3	260.5	595.7	61.8	610.3	52.3	5917.6	410.0
1982	6253.5	262.0	1637.3	126.4	2440.4	160.8	1542.9	143.1	3656.8	193.0	2140.6	121.6	3708.5	226.5	616.8	74.0	510.3	43.6	5468.1	371.8
1983	6312.9	249.8	1517.0	144.2	2605.9	176.9	1835.7	146.2	3366.4	188.1	1870.2	105.2	3506.1	178.0	708.7	83.0	522.7	52.6	7135.6	477.8
1984	5246.6	209.8	1531.6	126.0	2987.0	169.2	1361.0	84.9	3956.2	260.7	1619.5	91.8	2968.7	166.6	673.0	71.7	520.1	51.2	6909.1	477.3
1985	4754.2	184.8	1304.4	98.1	2039.7	137.8	1435.3	95.9	3459.1	231.6	1696.7	125.6	2511.4	142.7	578.6	66.8	373.0	34.0	5038.1	324.0
1986	6835.6	333.6	1539.6	107.5	1731.7	110.4	1681.7	137.1	4463.4	237.8	2117.7	112.4	2736.5	152.1	559.9	60.5	436.8	41.6	5204.3	354.1
1987	5612.8	209.6	1310.8	97.4	1982.3	131.3	2003.1	180.7	3517.6	221.7	1951.1	118.8	2629.2	159.4	502.3	54.9	450.5	77.9	4837.4	305.1
1988	6331.3	311.8	1349.2	120.6	2194.4	140.1	2057.9	189.2	3975.4	292.4	1680.2	210.5	2011.2	163.9	441.1	66.2	436.2	40.6	4683.8	309.1
1989	5649.7	245.8	1415.9	106.9	1973.9	106.1	1842.7	166.5	3128.3	230.7	1539.5	97.0	2112.5	181.3	510.9	58.6	477.9	48.5	4344.3	291.5

Table 34 (con't.)

Year	Mallard		Gadwall		American wigeon		Green-winged teal		Blue-winged teal		Northern shoveler		Northern pintail		Redhead		Canvasback		Scaup	
	N	SE*	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE	N	SE
1990	5452.1	238.5	1672.0	135.8	1860.2	108.3	1789.7	172.8	2776.4	178.7	1759.4	118.6	2256.7	183.3	480.9	48.2	539.3	60.3	4293.7	265.0
1991	5444.4	206.6	1583.6	111.8	2254.1	139.5	1557.9	111.3	3763.7	270.7	1716.2	104.6	1803.4	131.3	445.6	42.1	491.2	66.4	5255.4	364.7
1992	5976.1	241.0	2032.8	143.4	2208.4	131.9	1773.1	123.7	4333.1	263.2	1954.4	132.1	2098.1	161.0	595.6	69.7	481.5	97.3	4639.2	291.9
1993	5708.3	208.9	1755.2	107.9	2053.0	109.3	1694.5	112.7	3192.9	205.6	2046.5	114.3	2053.4	124.2	485.4	53.1	472.1	67.6	4080.1	249.4
1994	6980.1	282.8	2318.3	145.2	2382.3	130.3	2108.4	152.2	4616.2	259.2	2912.0	141.4	2972.3	188.0	653.5	66.7	525.6	71.1	4529.0	253.6
1995	8269.4	287.5	2835.7	187.5	2614.5	136.3	2300.6	140.3	5140.0	253.3	2854.9	150.3	2757.9	177.6	888.5	90.6	770.6	92.2	4446.4	277.6
1996	7941.3	262.9	2984.0	152.5	2273.3	124.4	2459.2	153.1	6415.9	354.0	3449.0	165.7	2735.9	147.5	834.2	83.1	848.5	118.3	4250.1	235.1
1997	9939.7	308.5	3897.2	264.9	3117.6	161.6	2506.6	142.5	6124.3	330.7	4120.4	194.0	3558.0	194.2	918.3	77.2	688.8	57.2	4112.3	224.2
1955-95 Avg.	7135		1424		2589		1708		4224		1888		4322		594		547		5441	
Percent change in 1996 from:																				
1995	+ 25		+ 31		+ 37		+ 2		- 5		+ 19		+ 30		+ 10		- 19		- 3	
1955-95 Avg.	+ 28		+ 63		+ 17		+ 32		+ 31		+ 54		- 21		+ 35		+ 21		- 32	

[a] All duck indexes adjusted for visibility bias.

* 95% CI = N ± 1.96 * SE
90% CI = N ± 1.645* SE

Example: for 1992, the Mallard breeding population is estimated to be in a range between 5503.7 - 6448.5, or 5976.1 ± 1.96 x 241.0.

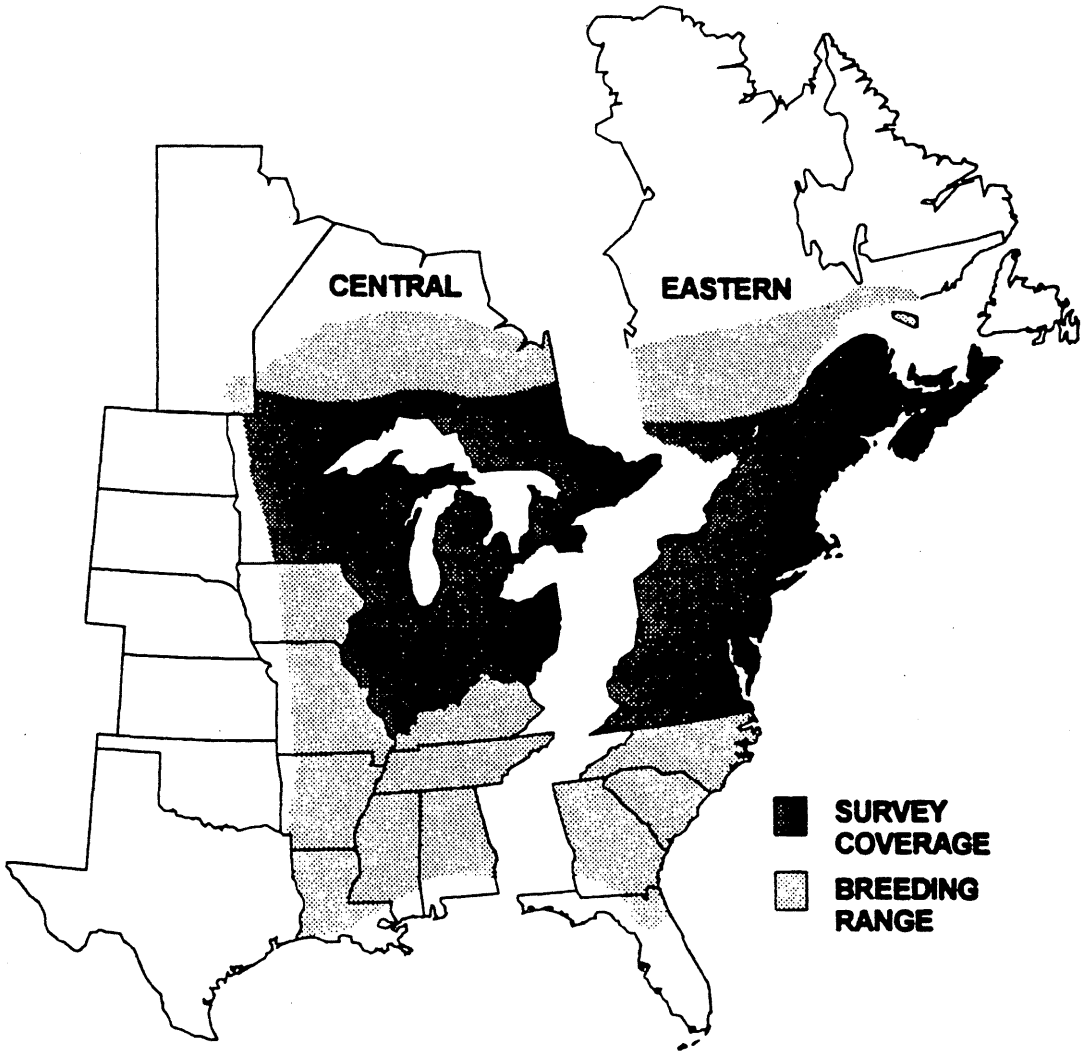


Figure 30. Woodcock breeding range, singing ground survey coverage, and woodcock management regions (from: Bruggink, John G., 1997. American woodcock harvest and breeding population status, 1997. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, MD. 14pp.)

Table 35. Trends (% change per year[a]) in number of American woodcock heard in singing-ground survey as determined by the estimating equations technique(Link and Sauer, 1994) (from: Bruggink, John G., 1997. American woodcock harvest and breeding population status, 1997. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, MD. 14pp).

Management Unit/State	2 year N[b]	(1996-97) % Change	Routes Run[c]	10 year N	(1987-97) % Change	29 year N	(1968-97) % Change
CENTRAL	171	- 3.0	337	456	- 4.4***[d]	592	- 1.7***
IL	2	-46.3	3	12	- 6.1	23	1.9
IN	4	- 3.3	12	9	- 6.5***	38	- 4.7
MB	6	-35.5***	19	12	- 1.0	12	- 1.1
MI	60	0.7	89	126	- 3.0***	140	- 1.3***
MN	31	-13.2	63	75	- 4.0***	96	- 1.2**
OH	10	-52.1***	30	29	- 4.6*	51	- 6.4***
ON	18	36.8	46	113	- 4.8***	135	- 1.4***
WI	40	- 2.1	75	80	- 7.6***	97	- 2.0***

[a] Mean of weighted route trends within each State, Province, or Region. To estimate the total percent change over several years, use: $100(\%\ change/100+1)^{y}-100$ where y is the number of years.

[b] Total number of routes surveyed in 1997 for which data were received prior to 2 June.

[c] Number of routes comparable in ≥ 2 years with ≥ 2 two counts ≥ 0.

[d] Indicates slope is significantly different from zero: * $P \leq 0.10$; ** $P \leq 0.05$; *** $P \leq 0.01$; significance levels are approximate for states where $N < 10$.

[e] Manitoba began participating in the Singing-ground survey in 1990.

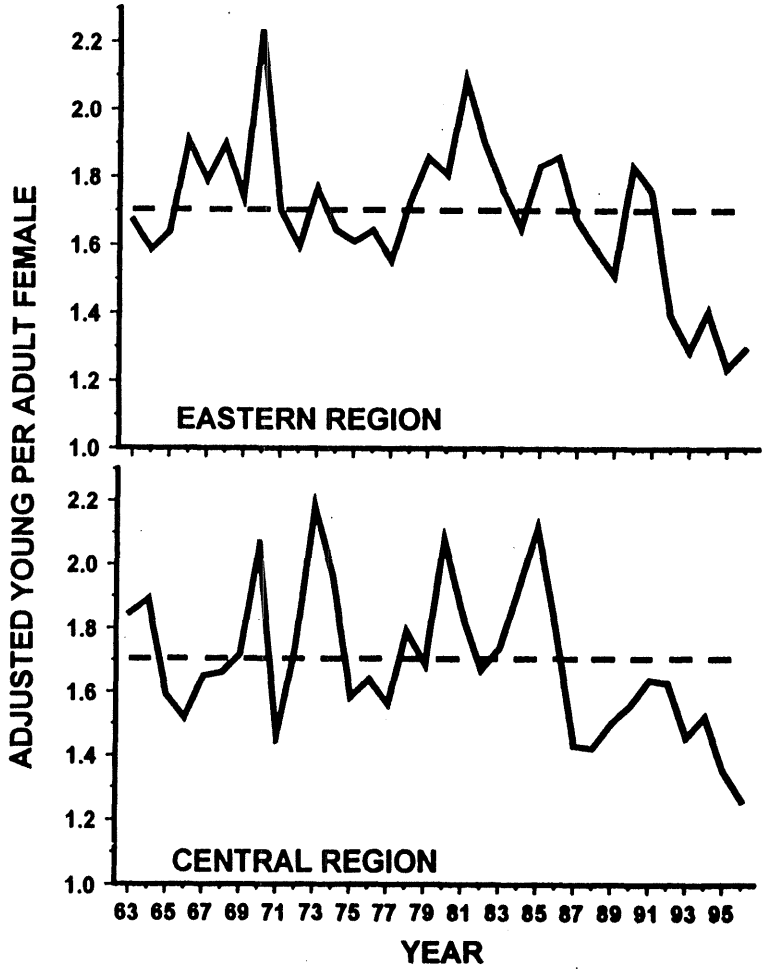


Figure 31. Adjusted index of American woodcock recruitment, 1963-96. Dashed line is the index based on all 1963-95 average. (from: Bruggink, John G., 1997. American woodcock harvest and breeding population status, 1997. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, MD. 14pp).

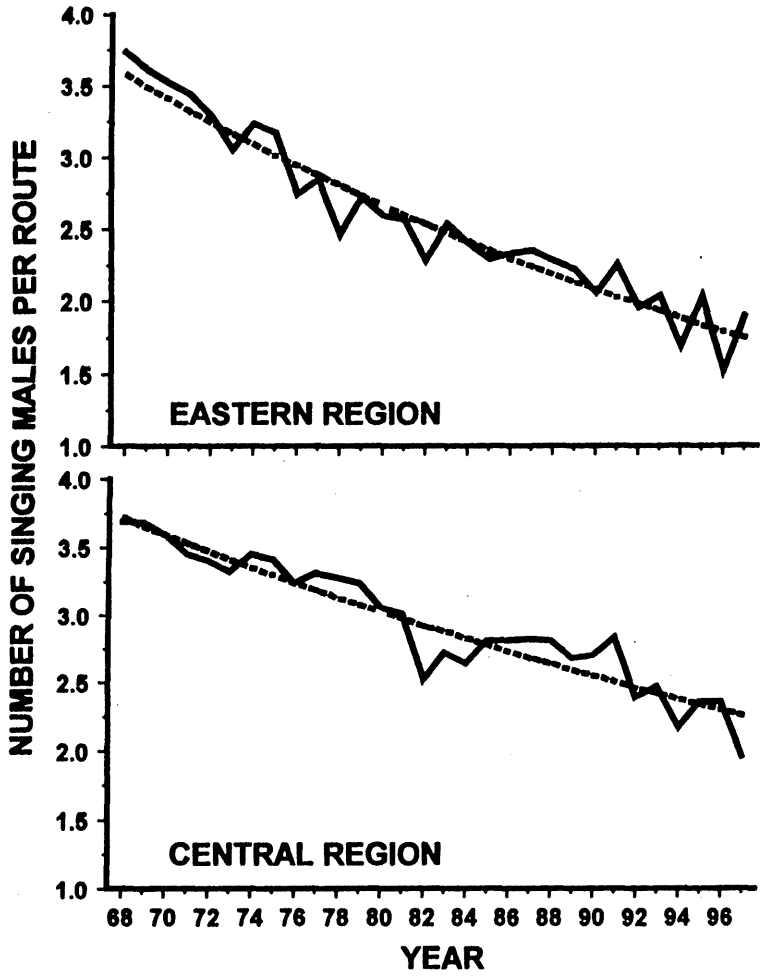


Figure 32. American woodcock singing ground survey long term trends and annual indices, 1968-97. (from: Bruggink, John G., 1997. American woodcock harvest and breeding population status, 1997. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, MD. 14pp)

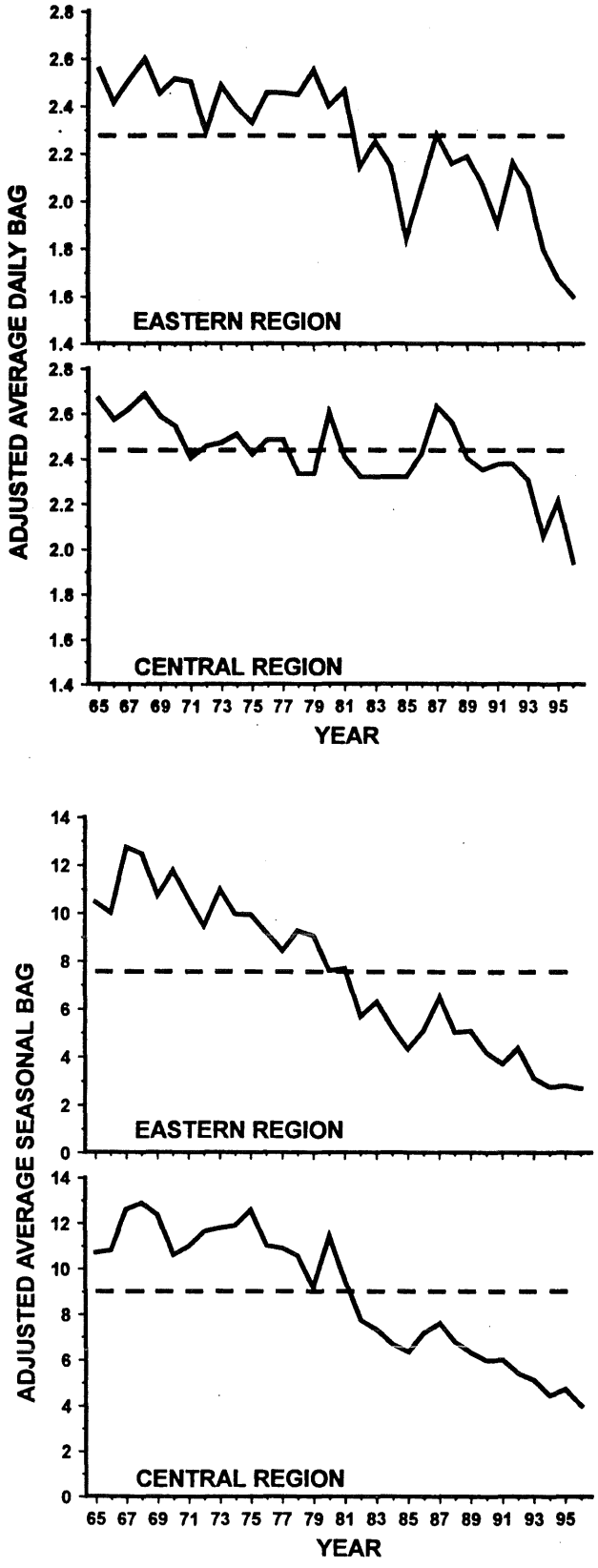


Figure 33. Adjusted indices of daily and seasonal hunting success of American woodcock, 1965-96, Base year is 1969. Dashed line is 1965-95 average. (from: Bruggink, John G., 1997. American woodcock harvest and breeding population status, 1997. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, MD. 14pp).

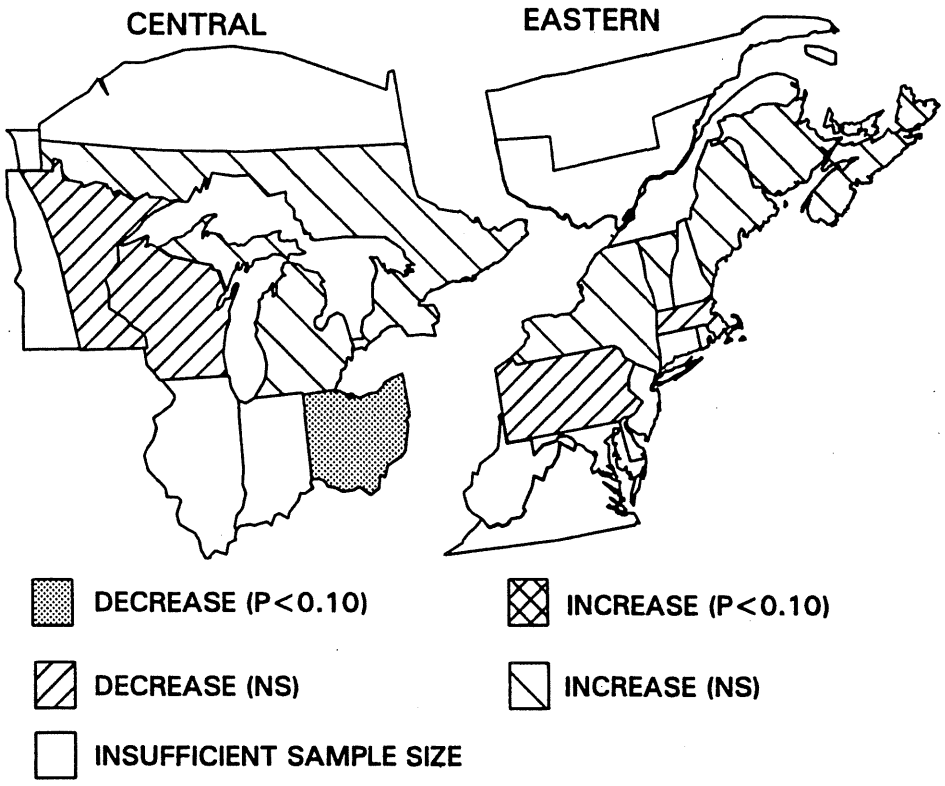


Figure 34. Short-term trends in number of American woodcock heard on the Singing-ground Survey; 1996-97. (from: Bruggink, John G., 1997. American woodcock harvest and breeding population status, 1997. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, MD. 14pp.

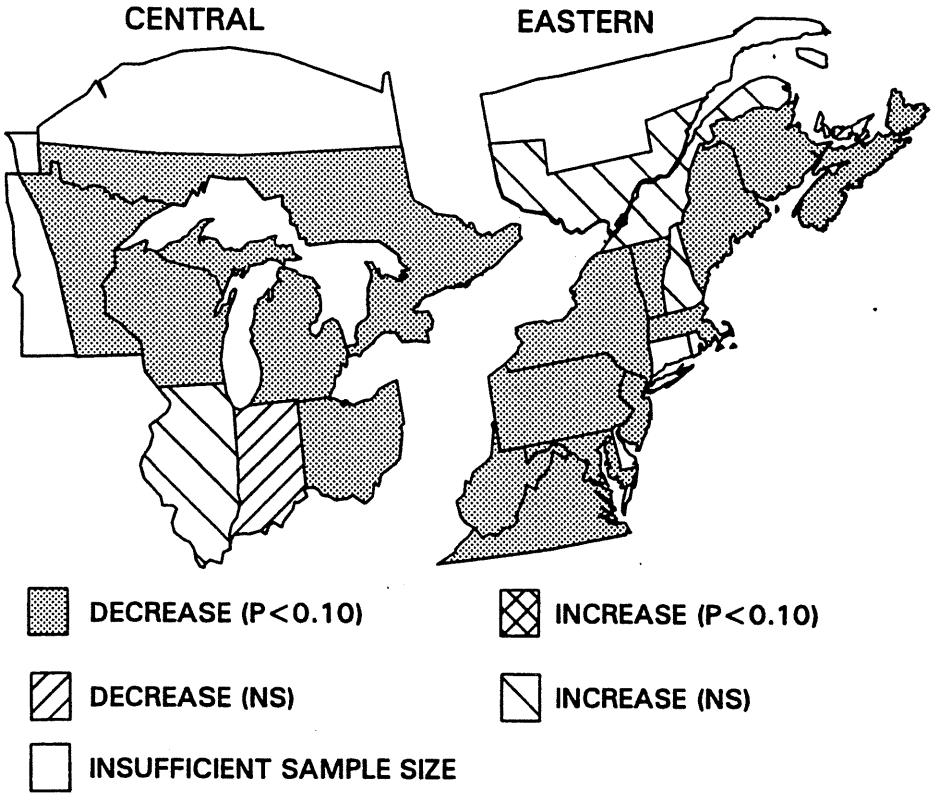


Figure 35. Long-term trends in number of American woodcock heard on the Singing-ground Survey; 1968-97 (from: Bruggink, John G., 1997. American woodcock harvest and breeding population status, 1997. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, MD. 14pp.

A HISTORY OF MINNESOTA WATERFOWL REGULATIONS, 1915-1997

Wetland Wildlife Populations and Research
102 23rd Street
Bemidji, MN 56601
(218) 755-2973

Table 36. Minnesota Waterfowl Hunting Regulations 1915-1997

Duck Season																							
Dates					Shooting Hours			Last Day	Bag Limits														
									Aqua	Overall					Species Restrictions								
Year	Open	Close	Day	Length	Opener	Start	End	4 P.M.	Fowl	Daily	Poss.	Bonus	Merg	Coot	MAL	Mal F	BLK	PIN	WDK	CAN	RED	RUD	BUF	HME
1915	07-Sep	01-Dec	Tues	86		sunrise	sunset		10+15duck	15	45								closed					
1916	07-Sep	01-Dec	Thur	86		sunrise	sunset		10+15duck	15	45								closed					
1917	16-Sep	01-Dec	Sun	77		sunrise	sunset		10+15duck	15	45								closed					
1918	07-Sep	01-Dec	Sat	86		sunrise	sunset		10+15duck	15	45								closed					
1919	16-Sep	31-Dec	Tues	107		sunrise	sunset		15	15	45			15					closed					
1920	16-Sep	31-Dec	Thur	107		sunrise	sunset		15	15	45			15					closed					
1921	16-Sep	31-Dec	Fri	107		sunrise	sunset		15	15	45			15					closed					
1922	16-Sep	31-Dec	Sat	107		sunrise	sunset		15	15	45			15					closed					
1923	16-Sep	31-Dec	Sun	107		1/2 hr before	sunset		15	15	45			15					closed					
1924	16-Sep	31-Dec	Tues	107		1/2 hr before	sunset		15	15	45			15					closed					
1925	16-Sep	31-Dec	Wed	107		1/2 hr before	sunset			12	36			12					closed					
1926	16-Sep	31-Dec	Thur	107		1/2 hr before	sunset			12	36			12					closed					
1927	16-Sep	31-Dec	Fri	107		1/2 hr before	sunset			12	36			12					closed					
1928	16-Sep	31-Dec	Sun	107		1/2 hr before	sunset			12	36			12					closed					
1929	16-Sep	31-Dec	Mon	107		1/2 hr before	sunset			12	36			12					closed					
1930	16-Sep	31-Dec	Tues	107		1/2 hr before	sunset			12	30			12					closed					
1931	01-Oct	31-Dec	Thur	92	noon	1/2 hr before	sunset			12	30			12					closed					
1932	01-Oct	30-Nov	Sat	61	noon	1/2 hr before	sunset			12	30			12					closed	10	10	closed	closed	
1933	01-Oct	30-Nov	Sun	61	noon	1/2 hr before	sunset			12	24			12					closed	8	8	closed	closed	
1934	03-Oct	11-Nov	Wed	40	noon	sunrise	sunset			12	24			12					closed	5	5	closed	closed	
1935	21-Oct	19-Nov	Mon	30	noon	7 am	4 pm			10	10			10					closed			closed	closed	
1936	10-Oct	08-Nov	Sat	30	noon	7 am	4 pm			10	10			10					closed	closed	closed	closed	closed	
1937	09-Oct	07-Nov	Sat	30		7 am	4 pm			10	10			12					closed	closed	closed	closed	closed	
1938	01-Oct	14-Nov	Sat	45		7 am	4 pm			10	20			12					closed	3	3			
1939	01-Oct	14-Nov	Sun	45		7 am	4 pm			10	20			15					closed	3	3			
1940	01-Oct	29-Nov	Tues	60		sunrise	4 pm			10	20			15					closed	3	3			
1941	01-Oct	29-Nov	Wed	60		sunrise	4 pm			10	20			25					closed		3			
1942	26-Sep	04-Dec	Sat	70		sunrise	sunset			10	20			25					1		3			
1943	25-Sep	03-Dec	Sat	70		1/2 hr before	sunset			10	20			25					1		3			
1944	20-Sep	08-Dec	Wed	80		1/2 hr before	sunset			10	20			25					1					
1945	20-Sep	08-Dec	Thur	80		sunrise	sunset			10	20		25	25					1					
1946	05-Oct	18-Nov	Sat	45		1/2 hr before	1/2 hr before			7	14		25	25					1					
1947	07-Oct	05-Nov	Tues	30	noon	sunrise	1 hr before			4	8		25	25					1					
1948	08-Oct	06-Nov	Fri	30	noon	1/2 hr before	1 hr before			4	8		25	15					1					
1949	07-Oct	15-Nov	Fri	40	noon	1/2 hr before	1 hr before			4	8		25	10					1					
1950	06-Oct	09-Nov	Fri	35	noon	1/2 hr before	1 hr before			4	8		25	10					1					
1951	05-Oct	18-Nov	Fri	45	noon	1/2 hr before	1 hr before			4	8		25	10					1					
1952	01-Oct	24-Nov	Wed	55	noon	1/2 hr before	1 hr before			4	8		25	10					1					
1953	03-Oct	26-Nov	Sat	55	noon	1/2 hr before	sunset			4	8		25	10					closed					1
1954	02-Oct	25-Nov	Sat	55	noon	1/2 hr before	sunset			4	8			10					closed					1
1955	08-Oct	16-Dec	Sat	70	noon	1/2 hr before	1/2 hr before			4	8			10					closed					1
1956	06-Oct	29-Nov	Sat	55	noon	1/2 hr before	1/2 hr before			5	10			10					closed					1
1957	05-Oct	13-Dec	Sat	70	noon	1/2 hr before	sunset			4	8		5	10					closed					1
1958	04-Oct	12-Dec	Sat	70	noon	1/2 hr before	sunset			4	8		5	10					closed	2	2			1
1959	07-Oct	25-Nov	Wed	50	noon	sunrise	sunset			3	6		5	3					1	or 1	or 1			1

Table 36. (Continued)

Duck Season																									
	Dates				Shooting Hours				Bag Limits																
								Last Day	Aqua	Overall						Species Restrictions									
Year	Open	Close	Day	Length	Opener	Start	End	4 P.M.	Fowl	Daily	Poss.	Bonus	Merg	Coot	MAL	Mal F	BLK	PIN	WDK	CAN	RED	RUD	BUF	HME
1960	08-Oct	16-Nov	Sat	40	noon	1/2 hr before	sunset			4	8		5	6					1	closed	closed			1
1961	14-Oct	12-Nov	Sat	30	noon	sunrise	sunset			2	4		5	6					1	closed	closed			1
1962	13-Oct	06-Nov	Sat	25	noon	sunrise	sunset			2	4	2/4 ls	5	6/6	1		or1		2	closed	closed			1
1963	05-Oct	08-Nov	Sat	35	noon	sunrise	sunset			3	6		5	8/16	2		or 2		2	closed	closed			2
1964	03-Oct	11-Nov	Sat	40	noon	sunrise	sunset			4	8		5/10	10/20	2/4				2/2	2/2	or 2/2			1/2
1965	09-Oct	17-Nov	Sat	40	noon	sunrise	sunset			4	8	early teal	5/10	10/20	1/2			1/2	2/2	2/2	or 2/2			1/2
1966	08-Oct	21-Nov	Sat	45	noon	1/2 hr before	sunset			4	8	2/4 m,ls	5/10	10/20	2/4				2/4	2/2				1/2
1967	07-Oct	15-Nov	Sat	40	noon	1/2 hr before	sunset			4	8		5/10	10/20	2/4				1/2	1/1				1/2
1968	05-Oct	13-Oct	Sat	9	noon	1/2 hr before	sunset			3	6		5/10	10/20	1/2		2/2		2/4	1/1	or 1/1			1/2
	26-Oct	12-Nov	Sat	18																				
1969	04-Oct	12-Nov	Sat	40	noon	sunrise	sunset			4	8	2/4 bt,ls	5/10	10/20	1/2				2/4	1/1	or 1/1			1/2
1970	03-Oct	16-Nov	Sat	45	noon	1/2 hr before	sunset			4	8	2/4 bt,ls	5/10	15/30					2/4	1/1	or 1/1			1/2
1971	02-Oct	20-Nov	Sat	50	noon	1/2 hr before	sunset			4	8	2/4 bt,ls	5/10	15/30					2/4	1/1	or 1/1			1/2
1972	01-Oct	19-Nov	Sat	50	noon	1/2 hr before	sunset			4	8	2/4 bt,ls	5/10	15/30					2/4	closed	closed			1/2
1973	01-Oct	10-Oct	Mon	10	noon	1/2 hr before	4 pm			4	8		5/10	15/30		1/2			2/4	closed	closed			1/2
	20-Oct	18-Nov	Sat	30																				
1974	02-Oct	15-Nov	Wed	45	noon	1/2 hr before	4 pm			4	8		5/10	15/30	2/4		or 2/2		2/4	1/1	or 1/1			1/2
1975	01-Oct	19-Nov	Wed	50	noon	1/2 hr before	4 pm			4	8		4/8	15/30	2/4		or 2/2		2/4	1/1	or 1/1			1/2
1976	02-Oct	20-Nov	Sat	50	noon	1/2 hr before	4 pm			5	10		5/10	15/30	3/6	1/2	inc 2/4		2/4	1/1	or 1/1			1/2
	23-Oct	11-Dec	Sat	50	NORTHERN 40 COUNTIES DELAYED DUE TO FIRE DANGER																			
1977	01-Oct	14-Nov	Sat	45	noon	1/2 hr before	sunset	29-Oct		5	10		5/10	15/30	2/4		or 2/4		2/4	1/1	or 1/1			1/2
1978	01-Oct	19-Nov	Sun	50	9 am	1/2 hr before	sunset	20-Oct		5	10		5/10	15/30	2/4		or 2/4		2/4	1/1	or 1/1			1/2
1979	29-Sep	17-Nov	Sat	50	noon	1/2 hr before	sunset	19-Oct		5	10		5/10	15/30	3/6	2/2	1/2		2/4	1/1	or 1/1			1/2
1980	04-Oct	22-Nov	Sat	50	noon	1/2 hr before	sunset	17-Oct		5	10		5/10	15/30	3/6	2/2	1/2		2/4	1/2	1/2			1/2
1981	03-Oct	21-Nov	Sat	50	noon	1/2 hr before	sunset	16-Oct		5	10		5/10	15/30	3/6	2/2	1/2		2/4	1/2	1/2			1/2
1982	02-Oct	20-Nov	Sat	50	noon	1/2 hr before	sunset	22-Oct		5	10		5/10	15/30	3/6	2/2	1/2		2/4	1/2	1/2			1/2
1983	01-Oct	19-Nov	Sat	50	noon	1/2 hr before	sunset	21-Oct		5	10		5/10	15/30	3/6	2/2	1/2		2/4	1/2	1/2			1/2
1984	29-Sep	17-Nov	Sat	50	noon	1/2 hr before	sunset	19-Oct		5	10		5/10	15/30	3/6	2/2	1/2		2/4	1/2	1/2			1/2
1985	05-Oct	13-Nov	Sat	40	noon	1/2 hr before	sunset	18-Oct		4	8		5/10	15/30	2/4	1/2	1/2	2/4	2/4	1/2	1/2			1/2
1986	04-Oct	12-Nov	Sat	40	noon	1/2 hr before	sunset	17-Oct		4	8		5/10	15/30	2/4	1/2	1/2	2/4	2/4	closed	1/2			1/2
1987	03-Oct	11-Nov	Sat	40	noon	1/2 hr before	sunset	16-Oct		4	8		5/10	15/30	2/4	1/2	1/2	2/4	2/4	closed	1/2			1/2
1988	08-Oct	06-Nov	Sat	30	noon	sunrise	sunset	21-Oct		3	6		5/10	15/30	2/4	1/2	1/2	1/2	2/4	closed	1/2			1/2
1989	07-Oct	05-Nov	Sat	30	noon	sunrise	sunset	20-Oct		3	6		5/10	15/30	2/4	1/2	1/2	1/2	2/4	closed	1/2			1/2
1990	06-Oct	04-Nov	Sat	30	noon	sunrise	sunset	19-Oct		3	6		5/10	15/30	2/4	1/2	1/2	1/2	2/4	closed	1/2			1/2
1991	05-Oct	13-Oct	Sat	30	noon	1/2 hr before	sunset	18-Oct		3	6		5/10	15/30	2/4	1/2	1/2	1/2	2/4	closed	1/2			1/2
	17-Oct	03-Nov	Thur																					
	08-Nov	10-Nov	Fri																					
1992	03-Oct	11-Oct	Sat	30	noon	1/2 hr before	sunset	16-Oct		3	6		5/10	15/30	2/4	1/2	1/2	1/2	2/4	closed	1/2			1/2
	15-Oct	01-Nov	Thur																					
	06-Nov	08-Nov	Fri																					
1993	02-Oct	10-Oct	Sat	30	noon	1/2 hr before	sunset	22-Oct		3	6		5/10	15/30	2/4	1/2	1/2	1/2	2/4	closed	1/2			1/2
	14-Oct	31-Oct	Thur																					
	05-Nov	07-Nov	Fri																					
1994	01-Oct	09-Nov	Sat	40	noon	1/2 hr before	sunset	21-Oct		3	6		5/10	15/30	2/4	1/2	1/2	1/2	2/4	1/2	1/2			1/2
1995	30-Sep	18-Nov	Sat	50	noon	1/2 hr before	sunset	20-Oct		5	10		5/10	15/30	4/8	1/2	1/2	1/2	2/4	1/2	1/2			1/2
1996	28-Sep	16-Nov	Sat	50	noon	1/2 hr before	sunset	18-Oct		5	10		5/10	15/30	4/8	1/2	1/2	1/2	2/4	1/2	2/4			1/2
1997	04-Oct	02-Dec	Sat	60	noon	1/2 hr before	sunset	11-Oct		6	12		5/10	15/30	4/8	2/4	1/2	3/6	2/4	1/2	2/4			1/2

Table 36. (Continued)

Goose Season																									
Statewide Regulations (excluding special zones)									Southeast Zone				West Zone & Northwest Zon				WC or LQP Zone				Lac qui Parle			
	Overall			Snow&Blue Goose		Bag Limit / Poss.						Cago				Cago				Cago		Harvest	Date Quota	
Year	Open	Close	Days	Open	Close	Aggr.	Canada	W-F	Open	Close	Days	Bag	Open	Close	Days	Bag	Open	Close	Days	Bag	Quota	Index	Reached	Days
1915	07-Sep	01-Dec	86			10/30																		
1916	07-Sep	01-Dec	86			10/30																		
1917	16-Sep	01-Dec	77			5/30																		
1918	07-Sep	01-Dec	86			5/5																		
1919	16-Sep	31-Dec	107			5/5																		
1920	16-Sep	31-Dec	107			5/5																		
1921	16-Sep	31-Dec	107			5/5																		
1922	16-Sep	31-Dec	107			5/5																		
1923	16-Sep	31-Dec	107			5/5																		
1924	16-Sep	31-Dec	107			5/5																		
1925	16-Sep	31-Dec	107			5/5																		
1926	16-Sep	31-Dec	107			5/5																		
1927	16-Sep	31-Dec	107			5/5																		
1928	16-Sep	31-Dec	107			5/5																		
1929	16-Sep	31-Dec	107			5/5																		
1930	16-Sep	31-Dec	107			4/5																		
1931	01-Oct	31-Dec	92			4/5																		
1932	01-Oct	30-Nov	61			4/5																		
1933	01-Oct	30-Nov	61			4/5																		
1934	03-Oct	11-Nov	40			4/5																		
1935	21-Oct	19-Nov	30			4/4																		
1936	10-Oct	08-Nov	30			4/4																		
1937	05-Oct	07-Nov	34			4/5																		
1938	01-Oct	14-Nov	45			4/5																		
1939	01-Oct	14-Nov	45			4/8																		
1940	01-Oct	29-Nov	60			3/6																		
1941	01-Oct	29-Nov	60			3/6																		
1942	26-Sep	04-Dec	70			6/6	2	2																
1943	25-Sep	03-Dec	70			6/6	2	2																
1944	20-Sep	08-Dec	80			6/12	2	2																
1945	20-Sep	08-Dec	80			6/12	2	2																
1946	05-Oct	18-Nov	45			4/4	2	2																
1947	07-Oct	05-Nov	30			4/4	1	or 1																
1948	08-Oct	06-Nov	30			4/4	2	or 2																
1949	07-Oct	06-Nov	31			4/4	2	or 2																
1950	06-Oct	09-Nov	35			4/4	2	or 2																
1951	05-Oct	18-Nov	45			5/5	2	or 2																
1952	01-Oct	24-Nov	55			5/5	2	or 2																
1953	03-Oct	26-Nov	55			5/5	2	or 2																
1954	02-Oct	25-Nov	55			5/5	2	or 2																
1955	08-Oct	16-Dec	70			5/5	2	or 2																
1956	06-Oct	29-Nov	55			5/5	2	or 2																
1957	05-Oct	13-Dec	70			5/5	2	or 2																

Table 36. (Continued)

Goose Season																									
Statewide Regulations (excluding special zones)									Southeast Zone				West Zone & Northwest Zon				WC or LQP Zone				Lac qui Parle			
	Overall			Snow&Blue Goose		Bag Limit / Poss.						Cago				Cago				Cago	Harvest		Date Quota	
Year	Open	Close	Days	Open	Close	Aggr.	Canada	W-F	Open	Close	Days	Bag	Open	Close	Days	Bag	Open	Close	Days	Bag	Quota	Index	Reached	Days
1958	04-Oct	12-Dec	70			5/5	2	or 2																
1959	07-Oct	15-Dec	70			5/5	2	or 2																
1960	08-Oct	16-Dec	70			5/5	2	or 2																
1961	01-Oct	29-Nov	60			5/5	2	or 2																
1962	06-Oct	04-Dec	60			5/5	2	or 2																
1963	05-Oct	13-Dec	70			5/5	2	or 2																
1964	03-Oct	11-Dec	70			5/5	2	or 2																
1965	02-Oct	10-Dec	70			5/5	2	or 2																
1966	01-Oct	09-Dec	70			5/5	2	or 2																
1967	30-Sep	08-Dec	70			5/5	2	or 2																
1968	28-Sep	06-Dec	70			5/5	2	or 2																
1969	04-Oct	12-Dec	70			5/5	2	or 2																
1970	03-Oct	16-Nov	45			5/5	1	or 2																
1971	02-Oct	10-Oct	9			5/5	1	or 2	02-Oct	10-Dec	70	1												
1972	01-Oct	12-Oct	12	01-Oct	09-Dec	5/5	1/1	or 2/2	01-Oct	09-Dec	70	1												
1973	01-Oct	21-Oct	21	01-Oct	18-Nov	5/5	1/1	or 2/2	01-Oct	09-Dec	70	1												
1974	02-Oct	31-Oct	30	02-Oct	15-Nov	5/5	1/2	or 2/2	02-Oct	10-Dec	70	1												
1975	01-Oct	14-Nov	45			5/5	1/2	or 2/2	01-Oct	04-Dec	65	1									4000			
1976	02-Oct 23-Oct	15-Nov 06-Dec	45			5/5	1/2	or 2/2	02-Oct	10-Dec	70	1	Southern counties only Northern 40 counties only								8000	7813	not reached	45
1977	01-Oct	14-Nov	45			5/5	1/2	or 2/2	01-Oct	09-Dec	70	1									5000	5799	02-Nov	33
1978	01-Oct	14-Nov	45			5/5	2/4	or 2/2	01-Oct	09-Dec	70	2/4								1/4	7000	6238	not reached	45
1979	29-Sep	17-Nov	50			5/5	2/4	or 2/2	29-Sep	07-Dec	70	2/4								1/4	7000	4988	not reached	50
1980	04-Oct	22-Nov	50			5/10	2/4	2/4	04-Oct	12-Dec	70	2/4								1/4	5500	5700	22-Nov	50
1981	03-Oct	21-Nov	50			5/10	2/4	2/4	03-Oct	11-Dec	70	2/4								1/4	5500	5560	09-Nov	37
1982	02-Oct	20-Nov	50			5/10	2/4	2/4	02-Oct	10-Dec	70	2/4								1/4	5500	5479	not reached	50
1983	01-Oct	19-Nov	50			5/10	1/2	2/4	01-Oct	09-Dec	70	2/4					01-Oct	19-Nov	50	1/2	4500	2392	not reached	50
1984	29-Sep	17-Nov	50			5/10	1/2	2/4	29-Sep	07-Dec	70	2/4					29-Sep	17-Nov	50	1/2	4500	4628	06-Nov	39
1985	28-Sep	16-Nov	50			5/10	1/2	2/4	28-Sep	06-Dec	70	2/4					28-Sep	16-Nov	50	1/2	4500	4592	07-Nov	41
1986	04-Oct	22-Nov	50			5/10	1/2	2/4	04-Oct	12-Dec	70	2/4					04-Oct	22-Nov	50	1/2	4500	4598	09-Nov	37
1987	03-Oct	11-Nov	40			5/10	1/2	2/4	03-Oct	11-Dec	70	2/4					03-Oct	01-Nov	30	1/2	4000	3910	not reached	30
1988	01-Oct	09-Nov	40			5/10	1/2	2/4	01-Oct	09-Dec	70	2/4					08-Oct	06-Nov	30	1/2	4000	4959	23-Oct	16
1989	30-Sep	08-Nov	40	30-Sep	16-Dec	7/14	1/2	2/4	30-Sep	08-Dec	70	2/4					30-Sep	29-Oct	30	1/2	4000	4303	19-Oct	20
1990	29-Sep	17-Nov	50	29-Sep	17-Dec	7/14	2/4	2/4	29-Sep	07-Dec	70	2/4					29-Sep	07-Nov	40	1/2	6000	4832	not reached	40
1991	28-Sep	16-Nov	50	28-Sep	16-Dec	7/14	2/4	2/4	28-Sep	06-Dec	70	2/4					28-Sep	06-Nov	40	1/2	6000	4799	not reached	40
1992	03-Oct	21-Nov	50	03-Oct	21-Dec	7/14	2/4	2/4	03-Oct	11-Dec	70	2/4					03-Oct	11-Nov	40	1/2	6000	3558	not reached	40
1993	02-Oct	20-Nov	50	02-Oct	20-Dec	7/14	2/4	2/4	02-Oct	10-Dec	70	2/4	02-Oct	10-Nov	40	1/2	02-Oct 16-Oct	10-Oct 05-Nov	9 21	1/2	1750 4000	3832	not reached	30
1994	01-Oct	19-Nov	50	01-Oct	19-Dec	7/14	2/4	2/4	01-Oct	09-Dec	70	2/4	01-Oct	09-Nov	40	1/2	01-Oct 15-Oct	09-Oct 04-Nov	9 21	1/2	1750 4000	2876	not reached	30
1995	30-Sep	18-Nov	50	30-Sep	18-Dec	7/14	2/4	2/4	30-Sep	08-Dec	70	2/4	30-Sep	08-Nov	40	1/2	30-Sep 14-Oct	08-Oct 03-Nov	9 21	1/2	7000 16000	12513	not reached	30
1996	28-Sep	06-Dec	70	28-Sep	16-Dec	7/14	2/4	2/4	same as overall season				28-Sep	06-Nov	40	1/2	05-Oct	13-Oct	9	1/2	7000			
																	17-Oct	06-Nov	21		16000	9768	not reached	30
1997	04-Oct	12-Dec	70	04-Oct	22-Dec	10/20	2/4	2/4	same as overall season				04-Oct	12-Nov	40	1/2	11-Oct	09-Nov	30	1/2	16000			

Table 36. (Continued)

Year	Other Points of interest
pre- 1915	No possession past 5 days after close of season.
1915	Ducks separated from other aquatic fowl limits, only use shotgun discharged from shoulder, law prohibited hunting aquatic fowl on open water. No possession past 5 days after season. Only geese could be taken by rifle. Poss = 50.
1916	No change from 1915.
1917	The 1915 law was amended so that wounded aquatic fowl could be pursued and killed on open water.
1918	Migratory Bird Treaty Act became law July 3, giving primary responsibility for the management of waterfowl to the fed. government. In Nov. the fed. government issued first annual pamphlet on waterfowl regulations for the country.
1919	Dates set by fed. reg. Gun limit to ten gauge to take waterfowl. Aid of a dog and decoys allowed. Limit inc. ducks, coots, rails, gallinules, snipe, yellowlegs.
1920	No change.
1921	No change.
1922	No change.
1923	Season limit of 135 ducks.
1924	No change.
1925	Not over 12 game birds (inc. waterfowl) were allowed in one day. Possession limit: 36 aquatic fowl. Season limit: 120 ducks. State law limited to 6 the number of decoys which could be used at any one blind.
1926	No change.
1927	No change.
1928	No change.
1929	Congress passed the Migratory Bird Conservation Act.
1930	Season limit for ducks 120.
1931	No change.
1932	Daily limit not >12 in aggregate of MAL, PIN, WIG, MERG, COOT, and >10 of in aggregate of SCP, GWT, BWT, Cin. Teal, CAN, RED, RNK, SHOV and GAD. Season limit of 120 ducks.
1933	Daily limit 15 mig. game birds of which not more than 12 can be a mixed bag of ducks and coots, and not > 8 in aggregate of SCP, GWT, BWT, Cin. Teal, CAN, RED, RNK, SHOV, OR GAD. season limit 120 ducks.
1934	No hunting on Mon. and Thur. of each week. Fed. duck stamp required. Not >5 CAN, RHD, SCP, RED, BWT, Cin. teal, SHOV, GAD.
1935	Daily and possession limit of 10 is for all migratory game birds and includes 4 geese. Baiting and the use of live decoys were outlawed in 1935. Not over 15 game birds of all kinds may be taken by in any one day.
1936	Daily and possession limit not over 10 migratory birds in aggregate of all kinds, of which not more than 4 can be geese. Not over 15 birds of all kinds may be taken in any one day.
1937	Daily limit of mig. birds 15 in aggregate of all kinds of which not more than 10 shall be ducks; 4 geese; 12 Coots; 12 Jacksnipe; 12 Rails and Gallinules.
1938	Season limit of 120 ducks. Daily limit-15 mig. game birds.
1939	Daily limit-15 mig. game birds.
1940	Daily limit-15 mig. game birds.
1941	Same as 1940 except no retrictions on Ruddy Duck and Canvasback.
1942	Only 3 of any one or 3 combined of RED and BUF. Four Blue Geese allowed in addition to the 2 geese of regular daily bag. Daily and possession limit of Blue Geese only is 6.
1943	Only 3 of any one or 3 combined of RED and BUF. Four Blue Geese allowed in addition to the 2 geese of regular daily bag. Daily and possession limit of Blue Geese only is 6.
1944	Daily duck limit 15 provided 5 are MAL, PIN, WIG (poss. limit 30). Daily snow/blue goose limit of 4 is in addition to 2 other goose limit.
1945	Daily snow/blue goose limit of 4 in addition to 2 other goose limit. 1st year Merg limit different than duck.
1946	Two snow/blue geese in addition to 2 of some other kind.
1947	White-Fronted goose bags combined with Canada Goose bag.
1948	Management by Flyways was commenced in 1948.
1949	No change.
1950	No change.
1951	No change.
1952	No change.
1953	No change.
1954	Mergs included in duck bag.
1955	No change.

Table 36. (Continued)

Year	Other Points of interest
1956	No change.
1957	Red-breasted and Common Merganser, 5 daily and, 10 possession which must be included in limit with other ducks. Goose limit may include 2 Canada, 2 W-F, or 1 of each.
1958	Mergs no longer included in duck bag.
1959	No change.
1960	No change.
1961	Shooting hours noon for both duck (14 Oct) and goose (1 Oct) openers.
1962	Shooting hours begin at noon on both duck (13 Oct) and goose (6 Oct) openers. Bonus scaup from Oct. 20 to Nov. 6, inclusive.
1963	No change.
1964	Shooting hours for geese sunrise to noon in Olmstead, Nobles, Cottonwood, Jackson and Murray counties. No goose hunting permitted in these areas Oct. 3. 2 Redheads or Canvasbacks or 1 of each.
1965	Teal: 11-13 SEP. Geese hours: sunrise to noon (noon to sunset on opening) in above mentioned counties and portions of Big Stone, Murray, and Nobles. 1st time Home included in mer limit. Coot season 9-Oct-17 Nov.
1966	Geese hours 1/2 hour before to noon (closed Oct. 8) in counties noted in 1965 comment. Bonus Rndu & Scaup from 1-21 Nov.
1967	Shooting hours 1/2 hour before sunrise to noon for geese in Cottonwood, Jackson, Traverse and portions of Murray and Nobles counties. Coots combined with Moorhens (gallinules).
1968	Shooting hours 1/2 hour before sunrise to noon for geese in Cottonwood, Jackson, and Traverse counties and portions of Murray and Nobles counties. Coot season 26-Oct to 12-Nov.
1969	Shooting hours 1/2 hour before sunrise to noon for geese in Jackson, Traverse, and portions of Cottonwood, Murray and Nobles counties. BONUS DUCKS: 2 BWT (4-12 Oct), 2 SCP (1-12 Nov).
1970	Shooting hours 1/2 hour before sunrise to noon for geese in Jackson and Traverse counties. BONUS DUCKS: 2 BWT (3-11 Oct), 2 SCP (31 Oct-16 Nov).
1971	Shooting hours 1/2 hour before sunrise to noon for geese in Jackson and Traverse counties. BONUS DUCKS: 2 BWT (2-10 Oct), 2 SCP (1-20 Nov).
1972	BONUS DUCKS: 2 BWT (1-19 Oct), 2 SCP (1-19 Nov).
1973	First hen MAL restriction, Season for all geese in SE Zone extends until 9 Dec.
1974	Closed areas for CAN and RED in effect.
1975	Closed areas for CAN and RED in effect.
1976	Closed areas for CAN and RED in effect.
	NORTHERN SEASON CHANGED DUE TO FIRE DANGER: in northern 2/3 of state (40 cos.) began 23 Oct, duck end 11 Dec, goose end 6 Dec., LQP quota inc. to 8,000.
1977	Closed areas for CAN and RED in effect. Steel shot required on WPA, NWR, & WMA.
1978	Closed areas for CAN and RED in effect.
1979	Closed areas for CAN and RED in effect.
1980	Closed areas for CAN and RED in effect. White-fronted goose bag separated from Canada goose bag.
1981	Closed areas for CAN and RED in effect.
1982	Closed areas for CAN and RED in effect.
1983	Closed SE area for CANV in effect.
1984	Closed SE area for CANV in effect.
1985	Closed SE area for CANV in effect. Noon shooting hours on both goose and duck opener. Pintail restrictions initiated.
1986	CANV season closed statewide
1987	STEEL SHOT REQUIRED STATEWIDE. Special Canada goose hunts: 1-10 Sept in TCGZ; 18-27 Dec in TCGZ and OCGZ.
1988	WCGZ established. Special Canada goose hunts: 1-10 Sep in TCGZ, 16-25 Dec in TCGZ and OCGZ.
1989	Special Canada Goose Hunts: 1-10 Sep in TCGZ, FFGZ, and SWBGZ; 15-24 Dec in TCGZ and OCGZ.
1990	Special Canada Goose Hunts: 1-10 Sep in TCGZ, FFGZ, and SWBGZ; 15-24 Dec in TCGZ and OCGZ.
1991	Special Canada Goose Hunts: 1-10 Sep in TCGZ, FFGZ, and SWBGZ; 14-23 Dec in TCGZ and OCGZ.
1992	Special Canada Goose Hunts: 1-10 Sep in TCGZ, FFGZ, and SWBGZ; 15-24 Dec in TCGZ and OCGZ.
1993	Waterfowl must be transported with wing and head; orange requirement dropped for waterfowl hunters; NW & W Goose Zones added; SCGH: 4-13 Sep in TC, FF, & SW; 15-24 Dec in TC & OC, 11-20 Dec in FFGZ.
1994	Canvasback season opened except for Heron Lk complex & Lk Christina. SCGH: 3-12 Sep in TC, FF, & SW ; 15-24 Dec in TC & OC, 10-19 Dec in FFGZ.
1995	Lake Christina open to Canv hunting; Bismuth-Tin shot approved; WC goose permit dropped. SCGH: 2-11 Sep in TC, FF, & SW; 15-24 Dec in TC & OC, 9-18 Dec in FFGZ. LQP harvest index adjusted.
1996	Snow/Blue and Ross geese limits separate from other goose limits. West zone boundary changed. Youth waterfowl hunting day 21 Sep. Special canada goose hunt 7-15 Sep. statewide except N.W. Dec 14-23 in TCGZ, FFGZ, OCGZ.
1997	Youth waterfowl hunting day 20 Sep. Special canada goose hunt 6-15 Sep. statewide except NW Dec 13-22 in TCGZ, FFGZ, OCGZ.

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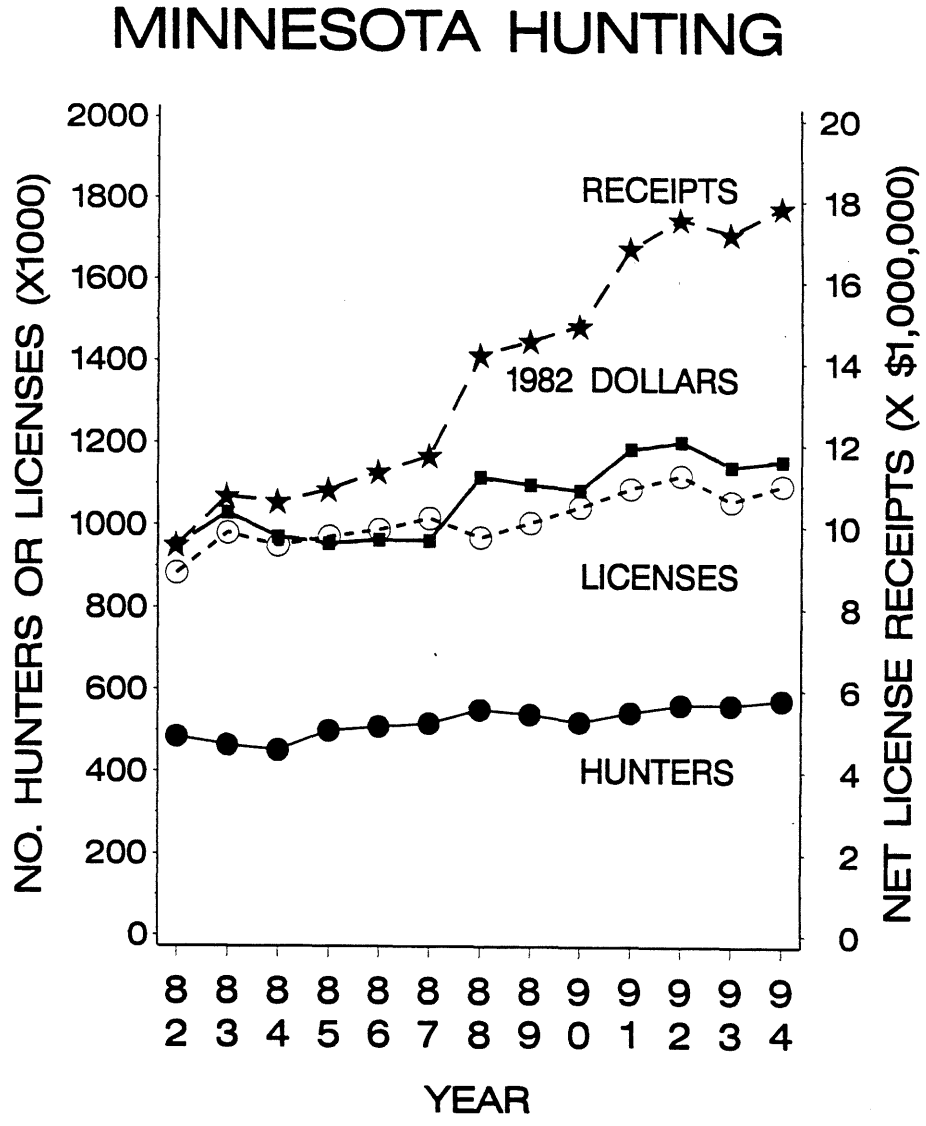


Figure 36. Minnesota hunting trends, 1982-94.

YEAR = license year (March -February)

● HUNTERS are paid license holders. A hunter is one individual regardless of the number of licenses purchased. Source: USFWS Division of Federal Aid.

○ LICENSES are the totals of hunting licenses, stamps and permits sold through the License Bureau, including duplicates but excluding trapping licenses and special goose hunt permits. Source: License Bureau.

★ RECEIPTS to the Game and Fish Fund are for all LICENSES except that bear, moose and turkey lottery licenses are also excluded because there is no good financial record for them over the entire period starting in 1982. Portion of receipts considered hunting licenses is 52.6% for individual sportsmen and 41.1% for combination sportsmen. Source: License Bureau.

■ 1982 DOLLARS are RECEIPTS expressed in constant 1982 dollars, which were calculated with Gross Domestic Product fixed-weighted price indexes of state and local government purchases. Sources: *Business Statistics 1963-91*, and *Survey of Current Business, December 1993*, and *July 1995*, U.S. Dept. of Commerce.

Note: The number of archers included in 1992 thru 1994 HUNTERS was calculated by a method also used in the 1980's. Calculations for 1991, 1990 and possibly 1989, were by a different method which gave lower values. The difference is important for federal aid certification, but does not affect the impression one gets from the graph. Plotted values are the same as federal aid certifications submitted to, and on file with, the USFWS Division of Federal Aid.

Table 37. Small game hunter response to mail surveys, 1979-80 through 1996-97.

Year	Number not mailed	Delivered questionnaires completed and returned		
Number		delivered	Number	Percent
1979-80	5,696	443	4,504	85.7
1980-81	6,434	385	4,963	82.0
1981-82	6,656	399	5,419	86.6
1982-83	5,963	266	4,792	84.1
1983-84	4,551	269	3,325	77.7
1984-85	4,096	127	3,280	82.6
1985-86	3,370	157	2,574	80.1
1986-87	4,668	208	3,623	81.2
1987-88	5,513	248	4,191	79.6
1988-89	15,388	857	11,431	78.7
1989-90[a]	10,893	735	7,790	76.7
1990-91[a]	5,000	394	3,467	75.3
1991-92[a]	5,050	387	3,541	75.9
1992-93[a]	5,000	288	3,625	76.9
1993-94[a]	5,011	282	3,320	70.2
1994-95[a]	5,000	387	3,353	72.7
1995-96[a]	5,000	321	3,293	70.4
1996-97[a]	5,000	170	3,334	69.0

[a] Includes resident and non-resident licensees, and excludes duplicate licenses.

Table 38. Use of small game hunter licenses, 1985-86 through 1996-97.

	Returns from mail survey	Projections from license sales
1985-86 Hunted	2,132 (82.8%)	213,883
Did not hunt	442 (17.2%)	44,342
	2,574 (100.0%)	258,225
1986-87 Hunted	3,006 (83.0%)	217,504
Did not hunt	617 (17.0%)	44,549
	3,623 (100.0%)	262,053
1987-88 Hunted	3,554 (84.8%)	242,875
Did not hunt	635 (15.2%)	43,395
	4,189 (100.0%)	286,270
1988-89 Hunted	9,391 (82.2%)	234,833
Did not hunt	2,040 (17.8%)	50,852
	11,431 (100.0%)	285,685
*1989-90 Hunted	6,924 (88.9%)	272,307
Did not hunt	866 (11.1%)	34,000
	7,790 (100.0%)	306,307
1990-91 Hunted	2,798 (88.5%)	275,327
Did not hunt	363 (11.5%)	35,777
	3,161 (100.0%)	311,104
1991-92 Hunted	3,004 (85.3%)	270,972
Did not hunt	519 (14.7%)	46,697
	3,523 (100.0%)	317,669
1992-93 Hunted	3,008 (83.9%)	249,973
Did not hunt	576 (16.1%)	47,968
	3,584 (100.0%)	297,941
1993-94 Hunted	2,787 (84.0%)	232,365
Did not hunt	533 (16.0%)	44,260
	3,320 (100.0%)	276,625
1994-95 Hunted	2,826 (84.6%)	244,654
Did not hunt	516 (15.4%)	44,535
	3,342 (100.0%)	289,189
1995-96 Hunted	2,714 (84.6%)	252,775
Did not hunt	494 (15.4%)	46,014
	3,208 (100.0%)	298,789
1996-97 Hunted	2,631 (79.6%)	237,476
Did not hunt	674 (20.4%)	60,861
	3,208 (100%)	298,337

* Previous years included only resident small game hunter information. For 1989 and on includes resident and non-resident information.
Excludes duplicates.

Table 39. Estimated number of hunters (thousands) for various species, 1982-83 through 1996-97.

	Estimated number of hunters (thousands)														
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Ducks	134	117	134	122	132	114	77	84	88	100	107	109	118	119	114
Canada goose	52	41	51	55	58	56	47	50	56	56	61	62	70	73	75
Other geese	11	10	9	9	7	9	5	7	6	6	6	9	7	10	6
American coot	11	12	9	11	11	8	3	4	5	5	5	6	7	9	6
Common snipe	4	6	5	5	5	6	4	5	5	4	3	2	2	2	2
Rails/gallinules	1	2	1	1	1	1	1	1	<1	<1	<1	1	1	1	<1
Crow*								9	13	12	11	10	12	15	13
American woodcock	20	16	17	19	21	27	26	30	30	27	21	17	21	21	18
Ring-necked pheasant	125	86	65	72	62	86	84	90	105	122	105	88	92	96	88
Ruffed grouse	115	78	87	94	107	132	139	163	163	146	124	102	107	116	118
Spruce grouse	13	9	12	12	12	16	15	20	19	16	13	11	12	14	11
Sharp-tailed grouse	14	9	9	10	9	10	12	14	14	14	10	8	7	8	7
Gray partridge	21	15	20	17	23	25	23	24	31	27	17	15	14	12	11
Gray squirrel	53	38	39	38	41	40	37	36	41	36	32	32	35	35	33
Fox squirrel	39	28	26	29	29	26	26	23	29	23	22	23	24	23	20
Eastern cottontail	36	29	22	22	24	26	27	24	32	31	24	21	21	23	19
White-tailed jackrabbit	11	7	6	6	4	5	5	6	7	6	5	4	4	5	4
Snowshoe hare	15	9	7	7	8	10	9	10	15	12	8	5	6	5	4
Raccoon (Sept 96-Feb97)	13	11	12	10	11	13	9	7	10	10	9	9	10	10	10
Raccoon† (March96- Aug96)													3	5	4
Red fox (Sept96-Feb97)	12	11	11	12	11	13	13	9	16	22	19	16	15	15	11
Red fox† (March96- Aug96)													3	4	3
Gray fox	3	2	3	2	2	3	3	2	3	4	3	3	2	3	
Coyote	3	3	3	5	4	5	6	4	9	13	14	14	11	15	13
Badger	1	1	1	1	1	1	1	<1	1	<1	1	1	1	<1	1

* Crow season added in 1989.

† Raccoon and red fox season changed to year round beginning May,1994.

Table 40. Estimated take per hunter, for respondants reporting that they hunted a particular species, 1982-83 through 1996-97.

	Estimated take per hunter														
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Ducks	8.1	10.6	10.8	9.1	9.0	8.2	6.9	6.5	7.0	8.0	8.1	7.6	8.1	9.7	10.7
Canada goose	1.6	1.6	1.6	1.9	1.8	1.9	2.4	2.1	2.3	2.6	2.5	2.5	2.4	2.5	4.3
Other geese	0.7	0.7	0.8	1.2	0.5	1.1	0.9	1.2	1.2	1.0	0.9	1.1	0.8	0.9	2.6
American coot	4.3	4.7	4.9	4.4	5.3	3.6	2.6	2.5	3.6	2.7	4.7	2.7	3.2	3.1	5.1
Common snipe	3.2	2.8	4.0	3.2	3.9	3.4	3.3	2.5	3.0	3.7	2.9	1.9	1.3	1.6	3.2
Rails/gallinules	3.1	1.2	1.4	2.3	1.1	3.6	1.8	4.2	1.0	7.6	1.7	1.5	1.3	2.3	2.0
Crow*								5.9	5.5	7.6	6.2	5.0	9.4	8.5	7.9
American woodcock	2.7	3.9	4.3	4.3	4.3	4.5	4.0	3.9	3.9	3.5	4.7	4.0	3.5	3.9	4.3
Ring-necked pheasant	2.1	3.5	2.3	3.0	2.6	3.2	3.9	3.6	4.6	4.6	3.9	3.8	3.5	4.2	5.4
Ruffed grouse	2.6	2.4	3.7	3.8	4.2	6.3	6.6	7.5	7.1	6.6	4.4	2.8	3.5	3.9	6.0
Spruce grouse	1.1	1.1	1.7	2.1	1.7	2.3	2.6	2.7	2.4	2.0	1.7	1.2	1.9	1.8	2.4
Sharp-tailed grouse	1.2	1.1	0.8	1.9	1.5	2.4	2.5	2.5	2.4	2.4	2.0	1.4	1.2	1.3	3.1
Gray partridge	3.6	2.1	4.3	3.3	3.1	3.8	4.6	3.7	3.7	3.8	2.9	2.4	1.8	2.2	3.3
Gray squirrel	5.1	5.3	5.3	5.2	5.7	5.6	5.8	5.5	5.8	4.9	4.6	5.5	5.4	4.9	5.8
Fox squirrel	4.2	4.5	4.1	5.0	5.1	4.7	5.2	5.0	5.1	4.6	4.2	4.5	4.2	4.6	4.7
Eastern cottontail	3.8	3.4	2.8	3.8	4.2	4.0	4.3	3.8	4.3	4.1	3.1	3.6	3.6	4.3	4.3
White-tailed jackrabbit	2.6	1.9	1.9	3.0	3.4	2.2	1.8	2.2	1.3	1.7	2.1	2.4	1.5	1.5	4.0
Snowshoe hare	4.2	2.3	2.3	2.3	3.2	2.6	3.7	4.8	4.6	5.9	3.2	3.2	3.2	2.0	3.7
Raccoon (Sept 96-Feb 97)	6.3	8.0	9.4	9.4	10.9	13.1	11.4	7.6	9.6	7.5	8.6	8.9	15.9	14.7	22.5
Raccoon† (March 96-Aug 96)													8.0	11.3	29.6
Red fox (Sept 96-Feb 97)	1.5	2.0	2.3	4.2	1.5	2.5	3.3	2.1	3.4	3.6	3.3	3.6	2.8	3.1	5.3
Red fox † (March 96-Aug 96)													1.4	1.5	2.4
Gray fox	0.9	0.9	1.4	2.0	0.8	1.3	0.9	1.2	1.4	1.0	1.3	0.8	0.6	1.0	
Coyote	0.8	0.8	1.8	3.1	1.6	1.1	1.2	1.7	1.6	2.1	1.5	1.3	1.1	1.8	4.1
Badger	1.9	0.3	3.9	1.8	1.0	1.6	1.5	1.3	1.4	2.2	0.9	0.7	1.4	1.4	2.1

* Crow season added in 1989.

† Raccoon and red fox season changed to year round beginning May 1994.

Table 41. Mean Harvest for successful hunters and hunter success rates (%), 1989-90 through 1996-97.

Mean harvest for successful hunters and (hunter success rate (%))								
	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Ducks	7.6 (85.8)	7.9 (88.8)	8.7 (89.7)	9.1 (89.0)	8.7 (87.3)	9.2 (88.5)	11.0 (88.2)	10.7 (90.2)
Canada geese	2.8 (75.0)	3.2 (71.6)	3.6 (72.2)	3.4 (72.7)	3.4 (74.3)	3.3 (71.9)	3.4 (72.2)	4.3 (75.1)
Other geese	2.2 (53.7)	3.1 (37.9)	2.2 (47.8)	2.5 (33.3)	2.1 (50.0)	2.3 (32.1)	2.4 (39.0)	2.6 (52.2)
American coot	3.6 (69.3)	4.9 (73.1)	3.8 (70.9)	6.0 (77.6)	3.8 (71.6)	4.1 (77.5)	4.4 (69.4)	5.1 (75.0)
Common snipe	2.9 (85.0)	3.3 (90.7)	3.9 (93.8)	3.5 (83.3)	2.9 (65.2)	2.2 (61.9)	2.5 (65.2)	3.2 (89.5)
Rails/gallinules	7.2 (58.8)	2.5 (40.0)	7.6 (100.0)	2.5 (66.7)	2.4 (62.5)	2.2 (60.0)	4.7 (50.0)	2.0 (50.0)
Crow*	6.8 (87.1)	6.3 (87.3)	9.1 (83.3)	7.0 (88.8)	5.7 (87.1)	10.5 (89.4)	9.0 (93.9)	7.9 (91.8)
American woodcock	4.3 (90.6)	4.4 (87.9)	4.1 (85.0)	5.8 (80.5)	5.4 (73.9)	4.7 (74.5)	5.0 (76.8)	4.3 (73.5)
Ring-necked pheasant	4.7 (76.6)	5.9 (78.6)	5.8 (79.2)	5.4 (73.1)	5.3 (70.6)	5.0 (68.9)	5.7 (73.6)	5.4 (71.2)
Ruffed grouse	8.5 (87.4)	8.3 (85.1)	8.2 (80.3)	6.0 (72.8)	4.3 (64.7)	4.9 (70.9)	5.3 (74.0)	6.0 (75.4)
Spruce grouse	3.4 (78.7)	3.6 (66.2)	3.0 (68.3)	2.8 (59.1)	2.4 (48.4)	3.3 (56.6)	3.2 (57.0)	2.4 (59.1)
Sharp-tailed grouse	3.6 (69.4)	3.8 (62.6)	3.7 (64.5)	3.3 (60.2)	3.0 (46.7)	3.5 (34.5)	2.7 (47.1)	3.1 (39.7)
Gray partridge	4.6 (80.0)	4.7 (78.2)	4.9 (78.0)	4.0 (71.5)	4.0 (59.7)	3.2 (54.8)	3.4 (62.9)	3.3 (66.7)
Gray squirrel	6.1 (89.8)	6.3 (91.6)	5.7 (86.1)	5.5 (83.8)	6.4 (86.9)	6.2 (87.1)	5.6 (87.9)	5.8 (84.3)
Fox squirrel	5.6 (90.2)	5.7 (89.6)	5.5 (84.7)	4.9 (85.3)	5.1 (88.5)	5.1 (82.6)	5.5 (83.8)	4.7 (80.1)
Eastern cottontail	4.5 (84.6)	5.0 (87.1)	4.9 (83.7)	3.9 (78.0)	4.5 (79.9)	4.5 (79.1)	5.2 (83.5)	4.3 (79.9)
White-tailed jackrabbit	3.0 (72.7)	2.0 (65.8)	2.4 (70.3)	3.0 (71.0)	3.9 (62.8)	2.4 (61.5)	2.5 (59.3)	4.0 (65.1)
Snowshoe hare	5.6 (86.3)	5.2 (88.6)	6.9 (85.7)	4.8 (65.6)	4.4 (73.8)	5.4 (59.7)	3.4 (59.3)	3.7 (60.4)
Raccoon (Sept 96 - Feb 97)	8.2 (93.6)	10.4 (92.6)	8.4 (89.2)	9.3 (91.7)	9.3 (95.3)	16.3 (97.5)	16.0 (92.0)	22.5 (94.4)
Raccoon† (Mar 96-Aug 96)						9.1 (88.6)	12.2 (92.5)	29.6 (82.2)
Red fox (Sept 96 - Feb 97)	3.0 (71.9)	5.0 (68.0)	4.9 (73.6)	5.6 (58.9)	5.4 (67.5)	4.4 (64.7)	4.8 (64.5)	5.3 (57.1)
Red fox † (Mar 96-Aug 96)						3.0 (46.9)	2.3 (65.1)	2.4 (51.6)
Gray fox	2.3 (68.2)	3.3 (44.4)	2.4 (40.0)	3.1 (41.5)	3.1 (26.7)	2.5 (23.1)	1.8 (58.1)	- (-)
Coyote	2.4 (69.5)	2.6 (62.1)	3.7 (56.6)	3.1 (50.0)	2.3 (57.1)	2.4 (48.1)	2.9 (61.1)	4.1 (55.9)
Badger	1.6 (83.3)	1.9 (77.8)	2.2 (100.0)	1.2 (71.4)	1.0 (71.4)	1.7 (85.7)	1.8 (80.0)	2.1 (100.0)

* Crow season added in 1989.
† Raccoon and red fox season changed to year round beginning May, 1994.

Table 42. Statewide small game hunting license sales and estimated hunter harvest, 1984-85 through 1996-97.

	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Small game license sales[a]	260,764	258,225	262,053	286,270	285,685	306,307	311,104	317,669	297,941	276,625	289,189	298,425	298,337
Federal duck stamp sales	138,820	134,594	139,391	125,831	92.772	97,939	103,971	110,197	108,332	110,738	149,428	132,546	142,353
State duck stamp sales	131,394	125,559	146,747	120,235	89,228	97,659	102,151	104,051	104,064	104,839	116,346	122,092	122,634
Pheasant stamp sales	81,587	85,252	81,027	102,944	100,478	108,124	122,260	133,384	117,934	94,443	104,621	105,093	95,866
Estimated harvest[b] (thousands)													
Ducks[c]	1,443	1,029	1,172	928	531	544	619	784	864	824	955	1,162	1,098
Canada goose[c]	82	86	101	106	114	103	128	144	150	156	166	180	241
Other geese[c]	8	9	3	11	5	9	7	6	5	9	6	9	8
American coot[c]	48	41	59	29	9	10	17	13	23	15	22	28	23
Common snipe	20	16	21	19	13	12	14	16	9	4	2	3	5
Rails/gallinules	1	2	1	5	1	3	<1	3	<1	1	1	1	<1
Crow						54	70	94	69	51	114	130	96
American woodcock	70	70	87	113	104	118	116	94	100	68	74	82	58
Ring-necked pheasant	148	179	159	277	332	325	483	565	411	332	319	398	341
Ruffed grouse	320	315	442	817	917	1,218	1,153	963	543	288	371	457	533
Spruce grouse	21	21	20	36	39	55	46	34	21	12	23	25	16
Sharp-tailed grouse	7	14	13	24	29	36	33	33	20	11	9	10	8
Gray partridge	31	77	54	69	95	86	115	102	49	35	26	26	24
Gray squirrel	208	186	235	222	217	194	234	174	147	178	187	169	159
Fox squirrel	107	140	145	122	134	113	115	109	92	105	99	105	75
Eastern cottontail	61	75	102	102	118	92	139	128	73	75	77	100	65
White-tailed jack rabbit	11	17	14	12	10	12	9	10	11	9	7	7	10
Snowshoe hare	16	12	25	26	32	48	69	70	24	16	19	11	10
Raccoon (Sept 95-Feb 96)	114	85	122	170	102	52	93	74	77	79	163	155	207
Raccoon[d] (May 95- Aug 95)											24	55	55
Red fox (Sept 95- Feb 96)	26	44	15	33	43	19	54	78	63	63	42	48	32
Red fox[d] (May 95- Aug 95)											4	6	4
Gray fox	4	4	2	4	2	3	5	4	4	2	1	3	
Coyote	5	11	7	6	7	6	14	27	21	18	13	26	30
Badger	<1	2	2	<1	2	<1	1	1	<1	<1	1	1	1

Harvest estimates in this table, and the number of hunters and mean take per hunter in Table 37, are calculated from different questions on the survey form. The sample used in calculations differs from one estimator to the next. This is because some respondents give specific answers to one question but not to a related one. A formula is used to calculate the total estimated take for each species which appears in this table. In most years the formula produces results rather close to those obtained by multiplying the average take per hunter times the number of hunters. However, in other years (e.g., 1985) results of the two methods are quite divergent, perhaps as a result of an unusual sample. This is being investigated further, and as a result, numbers may change somewhat in future reports. The most current report of survey findings will have the best data available at that time. Beginning in 1989-90 this table was changed from Resident harvest estimates to Statewide harvest estimates, which includes non-resident harvest estimates.

[a] Duplicate licenses not included.

[b] Estimates based upon response of hunters to questionnaires.

[c] U.S. Fish and Wildlife Service harvest estimates for 1994 are:

Ducks . . . . . 825,780 Other geese 0

Canada geese . . . . . 173,448 American coot 11,754

[d] Raccoon and red fox seasons changed to year round beginning May,1994.

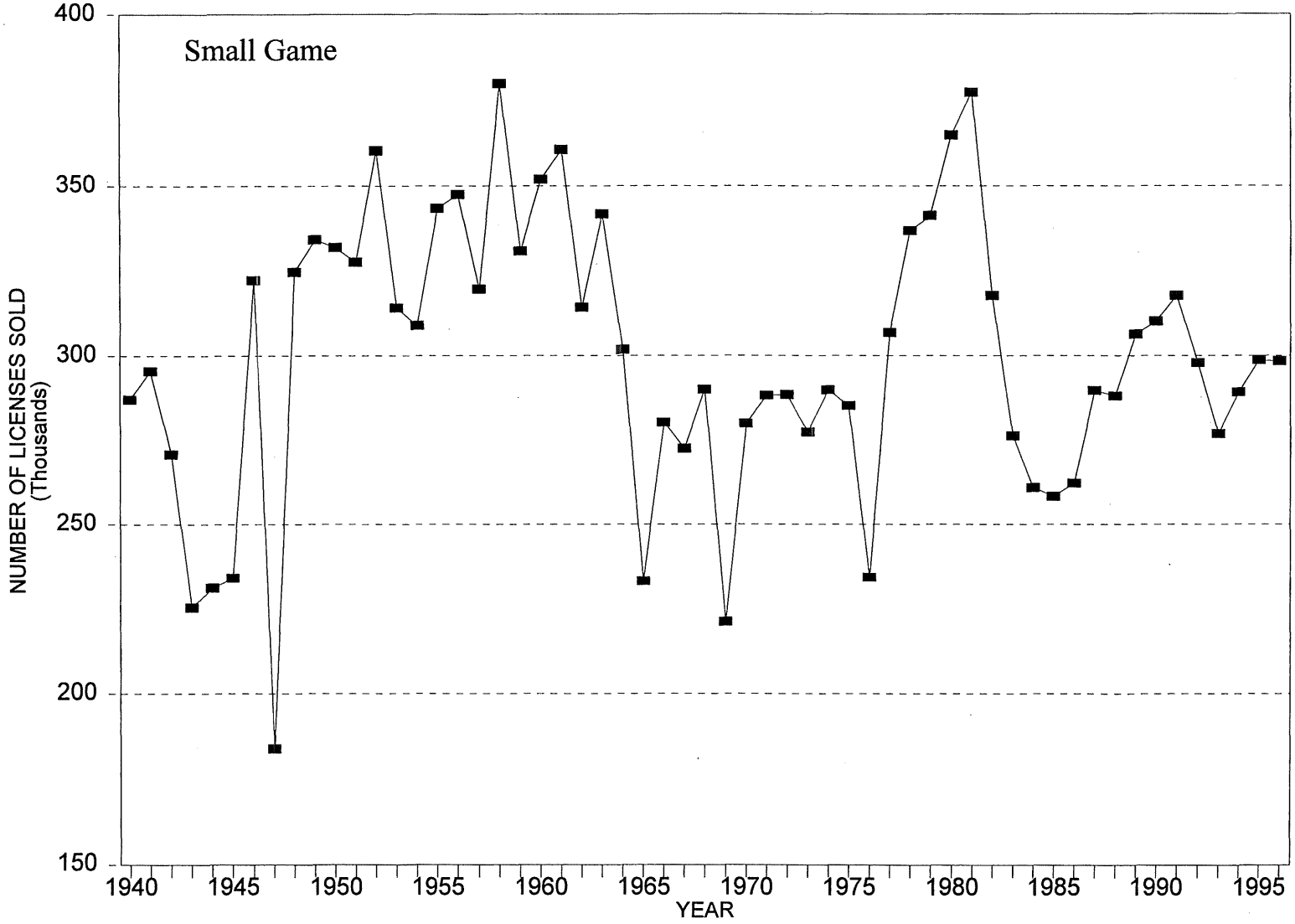


Figure 37. Numbers of Minnesota small game licenses sold, 1940-96.

Table 43. Mail survey results of nonresident small game hunters, 1985-86 through 1996-97.

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Nonresident licenses issued[a]	3,271	3,078	3,596	3,462	4,624	4,932	4,852	4,718	3,809	4,435	4,993	5,488
Questionnaires:												
Number mailed	338	406	429	436	553	82	114	170	229	182	205	51
Number not delivered	25	42	19	33	52	7	8	8	21	7	14	4
Number (percent) returned	246 (79)	290 (79)	328 (80)	327 (81)	396 (79)	54 (72)	89 (83)	32 (82)	149 (72)	128 (73)	140 (73)	32 (68)
Estimated nonresidents and (percent) of all nonresidents hunting:												
Ducks	1,900 (58)	1,810 (59)	990 (28)	1,130 (33)	1,521 (33)	1,342 (27)	1,308 (27)	1,751 (37)	1,789 (47)	1,975 (45)	2,354 (47)	1,029 (19)
Canada goose	800 (24)	850 (28)	515 (14)	700 (20)	866 (19)	1,074 (22)	491 (10)	1,001 (21)	792 (21)	1,005 (23)	1,248 (25)	686 (13)
Ruffed grouse	1,090 (33)	1,000 (32)	1,000 (28)	1,960 (57)	2,610 (56)	1,789 (36)	2,017 (42)	1,465 (31)	895 (24)	1,421 (32)	1,534 (31)	2,744 (50)
Ring-necked pheasant	720 (22)	510 (17)	400 (11)	690 (20)	1,042 (23)	895 (18)	1,743 (36)	894 (19)	741 (20)	832 (19)	820(16)	515 (9)
Raccoon[b]	70 (2)	85 (3)	80 (2)	42 (1)	59 (1)	0 (0)[c]	55 (1)	0 (0)[c]	26 (1)	0 (0)	107 (2)	172 (3)
Estimated nonresident take:												
Ducks	14,400	14,600	6,300	8,000	9,901	5,816	11,340	17,442	13,574	15,696	26,713	6,346
Canada goose	1,400	1,400	900	1,500	1,744	4,205	1,363	3,610	2,122	2,287	4,173	1,544
Ruffed grouse	3,500	3,800	6,100	12,300	20,739	14,852	18,100	10,758	4,985	7,242	9,415	23,153
Ring-necked pheasant	1,900	1,100	1,100	2,600	4,424	3,221	6,324	4,110	3,042	4,366	3,638	1,887
Raccoon	1,400	600	1,200	700	667	0	327	0	26	0	3,638	8,061

[a] Excludes duplicate licenses and nonresident shooting preserve licenses.

[b] Nonresident raccoon hunters were required to purchase a nonresident raccoon hunting license for the first time in 1979 in addition to the nonresident small game license. The initial season bag limit of 8 was increased to 12 in 1983 and to 20 in 1985.

[c] In 1990, 1992 and 1994 small game hunter survey no non-residents reported hunting/harvesting raccoons. * Non-resident raccoon hunting license was not required for 1994 and 1995.

	Raccoon take per hunter		Number of nonresident raccoon licenses
	Resident	Nonresident	
1978	6	14	0
1979	6	6	404
1980	4	5	93
1981	7	7	121
1982	6	7	95
1983	8	8	102
1984	9	8	111
1985	9	20	108
1986	11	7	86
1987	13	15	145
1988	11	17	73
1989	8	11	41
1990	11	0	20
1991	8	6	21
1992	9	0	20
1993	9	1	24
1994	16	0	*
1995	12	34	*
1996	23	47	52

Table 44. Species composition of the Minnesota waterfowl harvest, 1995 and 1996 (from: Martin, E.M. and P.I. Padding. 1997. Preliminary estimates of waterfowl harvest and hunter activity in the United States during the 1996 hunting season. U.S. Fish and Wildlife Service Adm. Rep., Office of Migratory Bird Management, Laurel, Maryland. July 1997. 34pp.). Note: All 1995 estimates are based on final duck stamp sales figures, whereas 1996 estimated are based on reports of duck stamp sales through March 1997. In recent years, final sales figures (and therefore hunter activity estimates) have been higher by an average of 2 to 3 percent overall.

Species	1995 Harvest	1995 Pct of harvest	1996 Harvest	1996 Pct of harvest	Percent change
Mallard	199,400	26.78	260,500	31.55	+ 30
Domestic mallard	600	0.08	600	0.07	0[b]
American black duck	500	0.07	1,200	0.14	- 2
Black x mallard	300	0.04	0	0.00	- 100
Gadwall	7,000	0.94	8,600	1.04	+ 23
American wigeon	17,100	2.29	16,800	2.04	- 6
Green-winged teal	32,900	4.42	58,100	7.03	+ 77
Blue-winged/cinnamon teal	92,600	12.44	116,400	14.09	+ 26
Northern shoveler	12,200	1.64	13,700	1.66	+ 12
Northern pintail	7,500	1.01	10,700	1.30	+ 43
Wood duck	155,600	20.89	160,000	19.38	+ 3
Redhead	19,100	2.57	23,500	2.84	+ 23
Canvasback	17,600	2.36	13,800	1.67	- 22
Greater scaup	3,900	0.52	5,000	0.60	+ 28
Lesser scaup	51,300	6.89	38,900	4.71	- 24
Ring-necked duck	83,900	11.27	53,900	6.53	- 36
Goldeneyes	17,700	2.38	15,500	1.88	- 12
Bufflehead	16,300	2.19	17,100	2.07	+ 5
Ruddy duck	2,100	0.28	3,700	0.45	+ 76
Scoters	400	0.05	0	0.00	- 100
Hooded merganser	5,900	0.79	5,900	0.72	0[b]
Other mergansers	700	0.09	1,900	0.23	+ 171
Total	744,709	100.00[a]	825,780	100.00[a]	+ 11

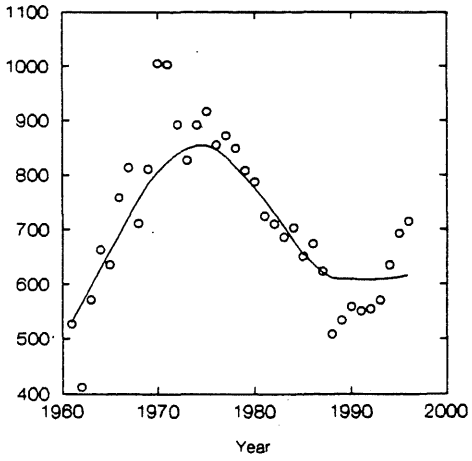
[a] Sum of all species does not equal total because of rounding error.
[b] No percentage change

Table 45. Top 10 states in number of adult waterfowl hunters, 1996, and number of hunter-days and retrieved duck kill, in each (from: Martin, E.M., and P. I. Padding. 1997. Preliminary estimates of waterfowl harvest and hunter activity in the United States during the 1996 hunting season. U.S. Fish and Wildlife Service Adm. Rep. Office of Migratory Bird Management, Laurel, Maryland. July 1997. 34pp.). Note: All 1996 estimated are based on reports of duck stamp sales through March 1997. In recent years final sales figures, and therefore hunter activity estimates, have been higher by an average of 2 to 3 percent overall.

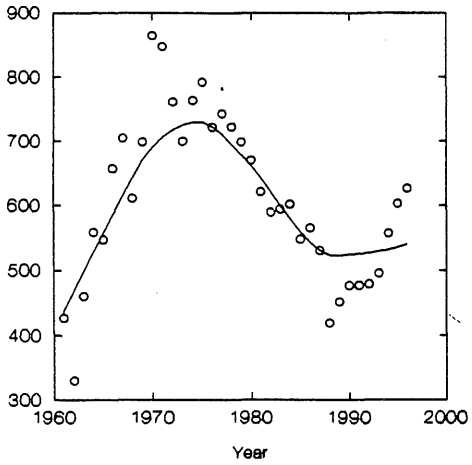
State	Number of active adult waterfowl hunters	Number of hunter-days	Retrieved duck kill	Ducks retrieved per hunter-day
Minnesota	129,310	1,132,682	825,780	0.73
Texas	86,225	841,680	1,093,965	1.30
Louisiana	82,656	1,221,365	2,136,114	1.75
Wisconsin	76,392	646,262	381,048	0.59
Michigan	68,848	658,603	360,941	0.55
California	57,914	786,919	1,323,842	1.68
Arkansas	49,786	790,115	1,227,739	1.55
Illinois	42,962	577,017	302,767	0.52
Washington	38,683	377,676	497,137	1.32
Pennsylvania	33,364	307,762	110,61	0.36
Mississippi Flyway	619,259	6,984,981	6,913,985	0.99
United States	1,274,042	13,356,810	13,876,832	1.04

Mississippi Flyway

Duck Stamp Sales (1,000's)



Active Adult Hunters (1,000's)



Adult Hunter Days (1,000's)

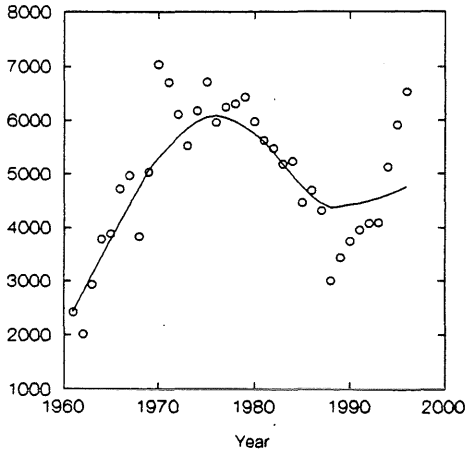
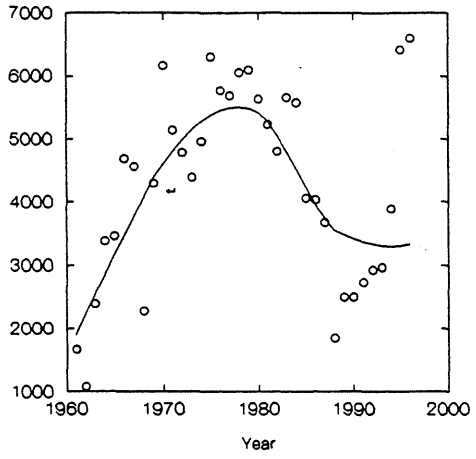


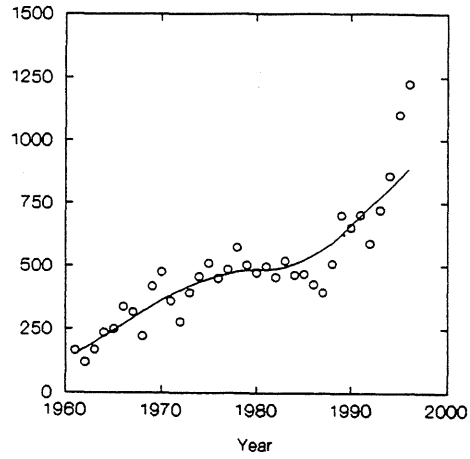
Figure 38. Federal duck stamp sales; Active adult hunters; Adult hunter days, (in 1,000's) for the Mississippi flyway. The 1961 through 1995 data are final, but the 1996 numbers are preliminary pending final duck stamp sales. The curves (locally weighted regression [lowess] lines; Cleveland and Devlin 1988, J. Am. Stat. Assoc.) fit a pattern to the majority of the estimates and identify estimates that deviate from that pattern (from Martin, E. M., and P.I. Padding. 1997. Preliminary estimates of waterfowl harvest and hunter activity in the United States during the 1996 hunting season. U.S. Fish and Wildlife Service Adm. Rep. Office of Migratory Bird Management, Laurel, MD. July 1997. 34pp.).

Mississippi Flyway

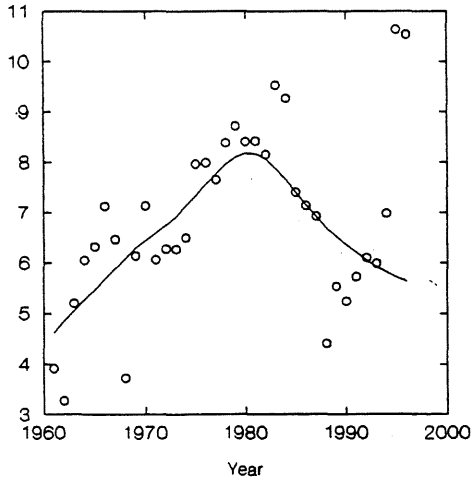
All Duck Harvest (1,000's) by Adult Hunters



All Goose Harvest (1,000's) by Adult Hunters



Seasonal Duck Bag Per Adult Hunter



Seasonal Goose Bag Per Adult Hunter

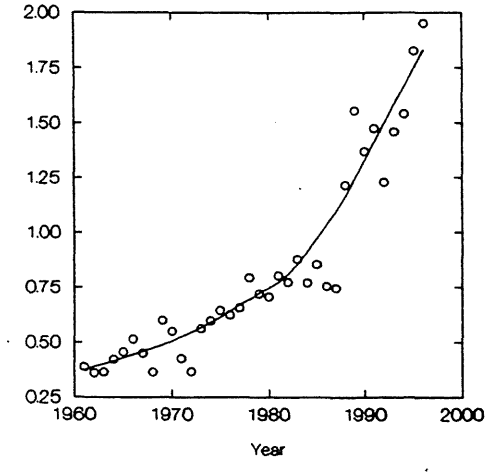


Figure 39. All duck harvest (1,000's) by adult hunters; all goose harvest (1,000's) by adult hunters; seasonal duck bag; and seasonal goose bag per adult hunters in the Mississippi flyway. The 1961 through 1995 data are final, but the 1996 numbers are preliminary pending final duck stamp sales. The curves (locally weighted regression [lowess] lines; Cleveland and Devlin 1988, J. Am. Stat. Assoc.) fit a pattern to the majority of the estimates and identify estimates that deviate from that pattern (from Martin, E. M., and P.I. Padding. 1997. Preliminary estimates of waterfowl harvest and hunter activity in the United States during the 1996 hunting season. U.S. Fish and Wildlife Service Adm. Rep. Office of Migratory Bird Management, Laurel, MD. July 1997. 34pp.).

Table 46. Ranking of the Six Most Numerically Important Species in Minnesota regular-season duck harvests, 1961-1995.

Year	Rank Position / % of Harvest												Combined % of Total Harvest
	1	%	2	%	3	%	4	%	5	%	6	%	
1961	Mallard	46.31	L. Scaup	13.57	GW Teal	11.16	Ringneck	7.55	Wigeon	5.56	Wood Duck	4.40	88.55
1962	Mallard	39.50	Ringneck	18.23	L. Scaup	8.03	BW Teal	7.90	Wood Dk	6.61	GW Teal	5.91	86.18
1963	Mallard	39.87	BW Teal	13.59	Wood Dk	12.58	Ringneck	10.72	GW Teal	6.43	Wigeon	4.66	87.85
1964	Mallard	30.53	Ringneck	18.48	BW Teal	9.50	GW Teal	7.91	Wood Dk	7.79	Wigeon	6.62	80.83
1965	Mallard	25.30	Ringneck	23.95	L. Scaup	11.99	Wood Dk	8.16	BW Teal	5.64	Wigeon	5.29	80.33
1966	Mallard	30.25	Ringneck	16.68	Wood Dk	9.44	BW Teal	7.79	L. Scaup	7.73	GW Teal	7.23	79.12
1967	Mallard	33.69	BW Teal	11.82	GW Teal	10.95	Ringneck	10.18	Wood Dk	7.89	L. Scaup	5.82	80.35
1968	Mallard	27.42	Ringneck	14.68	Wood Dk	11.94	GW Teal	11.53	BW Teal	8.13	Wigeon	6.32	80.02
1969	Mallard	20.71	L. Scaup	15.76	Ringneck	12.82	BW Teal	12.40	Wood Dk	10.36	GW Teal	7.18	79.23
1970	Mallard	31.43	Ringneck	11.39	BW Teal	10.63	Wood Dk	10.54	L. Scaup	9.86	GW Teal	7.50	81.35
1971	Mallard	26.32	BW Teal	16.93	Ringneck	13.92	L. Scaup	11.49	Wood Dk	7.19	GW Teal	6.15	82.00
1972	Mallard	36.92	L. Scaup	16.82	Ringneck	9.56	Wood Dk	8.94	BW Teal	7.41	GW Teal	5.69	85.34
1973	Mallard	27.75	BW Teal	15.18	Ringneck	14.63	Wood Dk	10.55	L. Scaup	9.26	GW Teal	7.85	85.22
1974	Mallard	33.12	Wood Dk	14.99	Ringneck	13.26	BW Teal	9.89	L. Scaup	7.72	GW Teal	7.53	86.51
1975	Mallard	28.13	Ringneck	16.07	BW Teal	15.76	Wood Dk	15.46	GW Teal	6.80	L. Scaup	5.37	87.59
1976	Mallard	27.73	Wood Dk	13.78	GW Teal	11.32	Ringneck	10.51	L. Scaup	10.48	BW Teal	8.20	82.02
1977	Mallard	29.04	Ringneck	12.91	Wood Dk	12.87	BW Teal	11.93	GW Teal	10.45	Wigeon	6.77	83.97
1978	Mallard	30.04	Ringneck	13.57	Wood Dk	12.23	BW Teal	11.25	GW Teal	6.86	Wigeon	5.61	79.56
1979	Mallard	31.35	Wood Dk	15.12	BW Teal	14.93	Ringneck	11.25	Wigeon	4.80	GW Teal	4.70	82.15
1980	Mallard	31.79	Ringneck	15.65	Wood Dk	15.49	GW Teal	6.02	L. Scaup	5.84	Wigeon	5.67	80.46
1981	Mallard	31.37	Wood Dk	13.34	L. Scaup	10.67	Ringneck	9.99	BW Teal	8.00	GW Teal	7.14	80.51
1982	Mallard	30.54	Wood Dk	14.76	BW Teal	14.36	Ringneck	8.83	L. Scaup	6.38	GW Teal	5.94	80.81
1983	Mallard	29.22	Wood Dk	17.06	BW Teal	13.28	Ringneck	11.60	GW Teal	6.74	L. Scaup	5.12	83.02
1984	Mallard	29.44	Wood Dk	18.00	BW Teal	11.90	Ringneck	9.95	GW Teal	8.23	L. Scaup	7.34	84.86
1985	Mallard	27.98	Ringneck	18.90	Wood Dk	12.78	L. Scaup	10.94	GW Teal	6.78	BW Teal	4.12	81.50
1986	Mallard	29.73	Wood Dk	17.18	Ringneck	16.52	L. Scaup	9.57	BW Teal	7.67	GW Teal	5.50	86.17
1987	Mallard	31.71	Wood Dk	18.73	Ringneck	14.47	GW Teal	10.28	L. Scaup	4.95	BW Teal	4.34	84.48
1988	Mallard	31.76	Wood Dk	14.56	L. Scaup	14.03	GW Teal	11.55	Ringneck	8.23	BW Teal	3.95	84.08
1989	Mallard	38.62	Wood Dk	15.72	GW Teal	11.48	Ringneck	8.67	L. Scaup	6.08	BW Teal	4.63	85.20
1990	Mallard	29.91	Wood Dk	17.16	Ringneck	11.51	GW Teal	11.23	BW Teal	7.16	L. Scaup	6.79	83.76
1991	Mallard	35.73	Wood Dk	19.47	Ringneck	9.75	GW Teal	6.73	L. Scaup	6.13	Wigeon	4.38	82.19
1992	Mallard	35.30	Wood Dk	17.28	Ringneck	12.95	L. Scaup	7.93	GW Teal	5.92	Wigeon	4.48	83.86
1993	Mallard	30.94	Ringneck	22.18	Wood Dk	18.77	L. Scaup	5.56	GW Teal	3.88	BW Teal	3.10	84.43
1994	Mallard	26.59	Wood Dk	21.51	Ringneck	14.68	L. Scaup	6.57	BW Teal	6.43	GW Teal	6.08	81.86
1995	Mallard	26.54	Wood Dk	20.72	BW Teal	12.43	Ringneck	11.51	L. Scaup	6.95	GW Teal	4.36	82.51
Avg. % of Harve		31.22		16.4		12.6		9.8		7.21		5.76	83.1
Range		20.71-46.31		11.39-23.95		8.03-18.77		5.56-15.46		3.88-10.48		3.10-8.20	

Among the various rank positions, the species shown below under each position occurred in that position the indicated number of years during the 35-year period.

1	2	3	4	5	6
Mallard-35	Wood Dk-16	Ringneck-11	Ringneck-11	L. Scaup-11	GW Teal-14
	Ringneck-12	Wood Dk- 8	GW Teal- 7	GW Teal- 9	Wigeon - 9
	BW Teal- 4	BW Teal- 8	BW Teal- 6	BW Teal- 7	BW Teal- 6
	L. Scaup- 3	GW Teal- 4	L. Scaup- 6	Wood Dk- 5	L. Scaup- 5
		L. Scaup- 4	Wood Dk- 5	Wigeon - 2	Wood Dk- 1
				Ringneck- 1	

Table 47. Estimates of regular-season duck harvests in Minnesota, 1961-1996.

YEAR	MALL		WODU		BWTL		GWTL		GADW		AMW		NOPI		AMBD		RNDU		LESC		CANV		REDH		COGO		BUFF		TOTAL
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		%		%	No.
1961	175,000	46	16,600	4	10,600	3	42,200	11	4,800	1	21,000	6	12,900	3	1,700	0	28,500	8	51,300	14	0	0	0	0	2,100	1	4,400	1	378,000
1962	113,600	39	19,000	7	22,700	8	17,000	6	3,100	1	9,500	3	6,100	2	2,800	1	52,400	18	23,100	8	0	0	700	0	4,200	1	5,300	2	287,600
1963	228,300	40	72,000	13	77,800	14	36,800	6	6,100	1	26,700	5	19,400	3	3,900	1	61,400	11	14,500	3	0	0	1,400	0	2,900	1	3,100	1	572,500
1964	271,000	31	69,100	8	84,300	9	70,200	8	20,900	2	58,700	7	24,000	3	4,800	1	164,000	18	48,400	5	8,500	1	23,900	3	6,000	1	9,200	1	887,600
1965	162,300	25	52,300	8	176,800	28	35,600	6	8,500	1	34,000	5	8,600	1	6,300	1	153,700	24	76,900	12	9,600	1	25,400	4	7,800	1	12,900	2	641,600
1966	284,600	30	88,800	9	73,300	8	68,000	7	19,000	2	52,900	6	20,200	2	6,500	1	156,900	17	72,800	8	14,600	2	32,900	3	9,200	1	12,800	1	940,800
1967	329,600	34	77,100	8	115,600	12	107,100	11	22,700	2	53,300	5	21,700	2	3,300	0	99,600	10	57,000	6	6,200	1	37,500	4	8,300	1	11,300	1	978,200
1968	152,100	27	66,200	12	45,100	8	64,000	12	9,900	2	35,000	6	16,300	3	3,500	1	81,400	15	32,600	6	7,200	1	10,100	2	6,700	1	9,600	2	554,700
1969	223,800	21	112,000	10	134,000	12	77,600	7	20,400	2	52,600	5	17,600	2	2,500	0	138,600	13	170,300	16	7,800	1	50,000	5	19,600	2	24,300	2	1,080,600
1970	298,900	31	100,200	11	101,100	11	71,300	7	11,100	1	44,100	5	29,200	3	4,900	1	108,300	11	93,700	10	6,300	1	29,200	3	7,600	1	19,000	2	950,800
1971	278,800	26	76,200	7	179,400	17	65,100	6	21,100	2	38,700	4	18,100	2	5,500	1	147,500	14	121,700	11	9,700	1	38,600	4	12,100	1	14,500	1	1,059,300
1972	354,900	37	85,900	9	71,300	7	54,700	6	16,400	2	35,700	4	11,200	1	7,400	1	91,900	10	161,700	17	500	0	1,000	0	13,600	1	19,000	2	961,400
1973	165,000	28	62,700	11	90,300	15	46,700	8	8,100	1	30,200	5	13,900	2	2,800	0	87,000	15	55,100	9	200	0	400	0	6,300	1	9,100	2	594,400
1974	254,800	33	115,300	15	76,100	10	57,900	8	8,300	1	34,400	4	11,300	1	2,300	0	102,000	13	59,400	8	3,000	0	5,700	1	8,800	1	13,300	2	769,400
1975	285,300	28	156,900	15	159,900	16	69,000	7	11,800	1	37,000	4	13,800	1	1,100	0	163,000	16	54,500	5	4,500	0	13,600	1	12,300	1	16,400	2	1,014,400
1976	157,800	28	78,500	14	46,700	8	64,400	11	17,200	3	22,900	4	4,500	1	400	0	59,800	11	59,600	10	10,000	2	13,100	2	6,500	1	9,800	2	569,100
1977	193,100	29	85,600	13	79,300	12	69,500	10	19,100	3	45,000	7	7,900	1	2,500	0	85,800	13	34,500	5	5,200	1	10,900	2	2,100	0	9,700	1	664,900
1978	304,100	30	123,800	12	113,900	11	69,500	7	28,100	3	56,800	6	18,700	2	1,000	0	137,400	14	48,300	5	5,300	1	35,000	3	8,600	1	20,700	2	1,012,300
1979	346,100	31	167,000	15	164,900	15	51,900	5	23,100	2	53,000	5	18,900	2	1,000	0	124,200	11	48,300	4	11,400	1	38,600	3	8,400	1	13,300	1	1,104,100
1980	258,000	32	125,700	15	43,300	5	48,800	6	23,700	3	46,100	6	18,700	2	2,800	0	127,000	16	47,400	6	6,700	1	24,800	3	9,700	1	10,600	1	811,500
1981	253,000	31	107,600	13	64,500	8	57,600	7	23,400	3	42,500	5	19,500	2	1,900	0	80,600	10	86,100	11	5,400	1	20,100	2	7,100	1	9,700	1	806,500
1982	249,500	31	120,600	15	117,300	14	48,500	6	23,700	3	35,900	4	13,600	2	4,100	1	72,100	9	52,100	6	6,800	1	28,300	3	7,600	1	15,500	2	817,000
1983	259,700	29	151,600	17	118,000	13	59,900	7	15,900	2	37,400	4	19,200	2	1,900	0	103,100	12	45,500	5	9,700	1	28,500	3	2,400	0	6,800	1	888,600
1984	303,400	29	185,400	18	122,600	12	84,800	8	21,800	2	30,100	3	23,900	2	1,800	0	102,500	10	75,600	7	7,200	1	26,300	3	8,600	1	11,200	1	1,030,500
1985	184,900	28	84,400	13	27,200	4	44,800	7	13,100	2	20,000	3	8,600	1	2,000	0	124,900	19	72,300	11	10,200	2	16,900	3	6,000	1	23,500	4	660,900
1986	230,300	30	133,100	17	59,400	8	42,600	5	11,000	1	30,100	4	4,400	1	500	0	128,000	17	74,100	10	0	0	19,900	3	5,400	1	14,800	2	774,600
1987	181,000	32	106,900	19	24,800	4	58,700	10	8,900	2	22,600	4	4,200	1	600	0	82,600	14	28,300	5	0	0	18,300	3	5,800	1	13,600	2	570,900
1988	76,900	32	35,300	15	9,600	4	28,000	12	2,600	1	7,500	3	6,600	3	700	0	19,900	8	34,000	14	0	0	3,100	1	3800	2	8500	4	242,000
1989	122,100	39	49,700	16	14,600	5	36,300	11	4,100	1	12,500	4	7,300	2	300	0	27,400	9	19,200	6	300	0	3,500	1	4,300	1	8,800	3	316,300
1990	109,500	30	62,800	17	26,200	7	41,100	11	10,200	3	13,200	4	6,100	2	500	0	42,200	12	24,900	7	0	0	5,000	1	5,600	2	8,700	2	366,200
1991	173,200	36	94,400	19	20,400	4	32,600	7	17,000	4	21,300	4	5,200	1	700	0	47,300	10	29,700	6	0	0	11,300	2	4,300	1	10,900	2	484,800
1992	184,200	35	90,200	17	20,000	4	30,900	6	16,000	3	23,400	4	8,100	2	700	0	67,600	13	41,400	8	100	0	7,500	1	5,900	1	14,400	3	522,000
1993	150,100	31	91,000	19	15,000	3	18,800	4	6,600	1	13,300	3	5,600	1	1,100	0	107,600	22	27,000	6	100	0	11,600	2	10,500	2	14,000	3	485,100
1994	160,600	27	129,900	22	38,800	6	36,700	6	9,100	2	20,100	3	8,100	1	800	0	88,600	15	39,700	7	11,100	2	18,700	3	5,600	1	15,300	3	603,800
1995	199,400	27	155,600	21	92,700	12	32,900	4	7,000	1	17,100	2	7,500	1	500	0	83,900	11	51,300	7	17,600	2	19,100	3	17,700	2	16,300	2	744,700
1996*	260,500	32	160,000	19	116,300	14	58,000	7	8,600	1	16,900	2	10,700	1	1,100	0	53,900	7	38,900	5	13,800	2	23,500	3	15,500	2	17,100	2	825,800
% chang	31		3		25		76		23		-1		43		120		-36		-24		-22		23		-12		5		11
AVERAGES:																													
61-65	190,040	34	45,800	8	74,440	13	40,360	7	8,680	2	29,980	5	14,200	3	3,900	1	92,000	17	42,840	8	3,620	1	10,280	2	4,600	1	6,980	1	553,460
66-70	257,800	29	88,860	10	93,820	10	77,600	9	16,620	2	47,580	5	21,000	2	4,140	0	116,960	13	85,280	9	8,420	1	31,940	4	10,280	1	15,400	2	901,020
71-75	267,760	30	99,400	11	115,400	13	58,680	7	13,140	1	35,200	4	13,660	2	3,820	0	118,280	13	90,480	10	3,580	0	11,860	1	10,620	1	14,460	2	879,780
76-80	251,820	30	116,120	14	89,620	11	60,820	7	22,240	3	44,760	5	13,740	2	1,540	0	106,840	13	47,620	6	7,720	1	24,480	3	7,060	1	12,820	2	832,380
81-85	250,100	30	129,920	15	89,920	11	59,120	7	19,580	2	33,180	4	16,960	2	2,340	0	96,640	11	66,320	8	7,860	1	24,020	3	6,340	1	13,340	2	840,700
86-90	143,960	32	77,560	17	26,920	6	41,340	9	7,360	2	17,180	4	5,720	1	520	0	60,020	13	36,100	8	60	0	9,960	2	4,980	1	10,880	2	454,000
91-95	173,500	31	112,220	20	37,380	7	30,380	5	11,140	2	19,040	3	6,900	1	760	0	79,000	14	37,820	7	5,780	1	13,640	2	8,800	2	14,180	2	568,080

*- PRELIMINARY

Table 48. Estimates of regular season all-duck harvests in the Mississippi flyway, 1961-1996.

YEAR	MN		WI	MI	IA	IL	IN	OH	MO	KY	AR	TN	LA	MS	AL	MFTOTAL
1961	378,000	22	310,600	124,900	139,400	204,600	25,200	50,700	124,600	23,400	68,700	47,700	211,000	22,700	15,000	1,746,522
1962	287,600	25	210,600	102,000	45,100	82,100	13,800	40,700	26,100	6,700	53,200	14,900	194,600	29,200	22,600	1,129,225
1963	572,500	23	294,100	134,500	139,200	183,500	16,700	65,700	60,400	13,300	138,400	69,900	665,400	86,500	65,400	2,505,523
1964	887,600	25	417,100	205,100	182,100	193,200	36,800	62,700	105,700	27,400	306,400	96,300	893,600	69,200	53,700	3,536,925
1965	641,600	19	472,800	217,600	174,600	189,000	29,300	90,700	110,700	21,500	213,500	57,400	958,200	70,100	64,600	3,311,619
1966	940,800	20	582,100	306,700	270,200	345,900	42,500	103,000	149,400	27,800	373,600	113,600	1,279,700	106,200	79,700	4,721,220
1967	978,200	22	545,200	363,100	229,400	353,200	45,900	125,700	228,400	35,500	371,100	98,900	959,400	112,300	60,200	4,506,522
1968	554,700	23	302,300	199,400	96,300	145,800	40,300	80,900	106,000	15,800	153,400	55,900	520,600	76,200	36,000	2,383,623
1969	1,080,600	25	557,300	345,900	183,700	243,300	63,800	111,100	200,400	15,300	232,000	55,400	969,900	155,500	63,900	4,278,125
1970	950,800	15	575,100	378,300	368,700	412,500	80,600	140,200	281,600	57,200	651,400	157,100	1,823,000	222,300	76,700	6,175,515
1971	1,059,300	20	654,200	313,800	376,200	280,400	111,200	106,400	246,300	40,200	613,400	173,300	1,024,700	155,600	52,000	5,207,020
1972	961,400	20	558,500	400,900	344,500	356,600	73,600	125,700	197,800	56,900	366,600	138,800	1,044,000	150,400	60,600	4,836,320
1973	594,400	13	518,400	356,900	211,900	311,600	68,200	112,800	161,200	36,100	492,700	194,000	1,138,200	152,300	72,600	4,421,313
1974	769,400	15	663,100	425,100	238,000	293,600	85,300	106,600	237,000	46,500	682,200	138,300	1,073,100	239,700	60,600	5,058,515
1975	1,014,400	16	727,800	373,000	313,600	392,300	100,600	119,700	311,600	75,600	781,000	143,500	1,616,300	313,800	104,500	6,387,716
1976	569,100	10	656,400	466,000	242,200	309,700	69,600	144,600	203,300	59,400	710,200	97,700	1,789,600	392,900	132,700	5,843,410
1977	664,900	11	488,500	255,700	280,000	330,500	68,100	101,800	257,900	74,200	839,400	133,100	1,836,400	327,000	136,800	5,794,311
1978	1,012,300	17	541,800	290,000	351,400	417,300	68,000	95,800	239,800	63,600	689,900	150,000	1,855,600	224,600	115,000	6,115,117
1979	1,104,100	18	569,000	314,800	441,000	404,400	83,700	110,500	254,000	72,100	631,400	179,100	1,666,500	261,200	105,400	6,197,218
1980	811,500	14	558,200	292,100	299,900	323,300	82,900	108,000	202,500	43,600	775,000	139,300	1,656,900	299,100	119,800	5,712,114
1981	806,500	15	438,900	238,800	301,100	374,100	54,500	118,500	232,000	48,000	591,500	114,800	1,508,700	356,400	102,400	5,286,215
1982	817,000	17	394,300	277,200	348,800	301,900	54,500	97,400	209,900	31,900	438,400	101,200	1,364,700	204,700	73,200	4,715,117
1983	888,600	16	459,300	288,900	324,200	342,700	80,600	116,100	243,500	36,100	422,400	130,900	1,873,800	274,700	99,000	5,580,816
1984	1,030,500	19	485,000	354,400	299,500	301,400	69,800	103,800	245,200	33,900	489,900	97,500	1,717,600	227,500	70,100	5,526,119
1985	660,900	17	353,600	250,300	199,800	255,700	64,900	90,000	190,800	28,600	511,900	71,500	1,076,700	149,100	62,000	3,965,817
1986	774,600	19	360,100	224,800	217,000	259,900	45,900	85,900	175,900	22,500	428,700	78,300	1,089,900	152,800	66,000	3,982,319
1987	570,900	16	334,400	216,600	161,100	208,200	50,600	69,400	158,100	32,400	430,100	98,100	1,062,700	137,000	75,500	3,605,116
1988	242,000	13	176,900	140,300	78,300	136,900	39,900	56,400	76,200	23,000	242,500	81,500	485,700	80,100	58,700	1,918,413
1989	316,300	12	230,900	198,100	87,800	176,300	45,100	74,900	119,200	32,300	275,400	92,900	737,100	112,400	98,500	2,597,212
1990	366,200	14	259,300	187,700	105,800	186,200	43,700	76,400	107,500	45,900	333,700	130,900	645,600	78,800	41,900	2,609,614
1991	484,800	17	299,700	207,800	154,200	229,700	54,500	70,700	116,600	36,400	372,400	98,300	567,700	91,100	51,500	2,835,417
1992	522,000	18	282,000	204,700	122,800	215,400	43,400	84,900	103,800	28,000	347,800	90,900	666,600	112,600	57,400	2,882,318
1993	485,100	16	276,900	234,800	100,900	182,400	56,600	88,200	101,600	33,500	460,400	122,700	625,400	131,800	57,200	2,957,516
1994	603,800	16	330,600	272,800	151,800	220,600	60,400	81,500	137,900	46,000	726,100	111,500	821,700	175,100	61,200	3,801,016
1995	744,700	12	399,900	382,200	282,800	264,400	90,300	101,000	223,900	82,300	1,010,300	251,400	1,914,700	374,400	114,400	6,236,700
1996*	825,800	13	381,000	360,900	233,500	293,600	81,500	119,278	261,364	135,614	1,222,992	238,300	1,844,000	396,600	140,500	6,534,948
% change	11	9	-5	-6	-17	11	-10	18	17	65	21	-5	-4	6	23	5
AVERAGES:																
61-65	553,460	23	341,040	156,820	136,080	170,480	24,360	62,100	85,500	18,460	156,040	57,240	584,560	55,540	44,260	2,445,963
66-70	901,020	20	512,400	318,680	229,660	300,140	54,620	112,180	193,160	30,320	356,300	96,180	1,110,520	134,500	63,300	4,413,001
71-75	879,780	17	624,400	373,940	296,840	326,900	87,780	114,240	230,780	51,060	587,180	157,580	1,179,260	202,360	70,060	5,182,177
76-80	832,380	14	562,780	323,720	322,900	357,040	74,460	112,140	231,500	62,580	729,180	139,840	1,761,000	300,960	121,940	5,932,434
81-85	840,700	17	426,220	281,920	294,680	315,160	64,860	105,160	224,280	35,700	490,820	103,180	1,508,300	242,480	81,340	5,014,817
86-90	454,000	15	272,320	193,500	130,000	193,500	45,040	72,600	127,380	31,220	342,080	96,340	804,200	112,220	68,120	2,942,535
91-95	568,080	22	317,820	260,460	162,500	222,500	61,040	85,260	136,760	45,240	583,400	134,960	919,220	177,000	68,340	2,568,595

* - PRELIMINARY

Table 49. Estimates of regular-season Mallard harvests in the Mississippi Flyway, 1961-1996.

YEAR	MN	WI	MI	IA	IL	IN	OH	MO	KY	AR	TN	LA	MS	AL	MFTOTAL
1961	175,000	151,700	46,500	88,500	128,800	13,200	17,700	81,700	17,500	62,600	32,700	35,500	11,600	3,800	866,800
1962	113,600	77,500	32,600	21,300	40,200	5,100	9,000	13,800	3,600	41,200	7,300	54,100	13,400	4,800	437,500
1963	228,300	97,800	40,500	43,000	101,500	8,100	18,800	29,400	8,300	93,900	30,300	177,100	36,400	13,000	926,400
1964	271,000	150,800	48,500	76,600	113,900	15,600	17,300	59,400	18,800	234,100	61,500	209,400	32,800	11,100	1,320,800
1965	162,300	106,000	43,400	79,800	89,600	11,300	20,700	49,600	14,200	137,700	27,700	146,400	18,600	11,800	919,100
1966	284,600	186,600	72,900	121,300	179,700	19,000	30,500	82,000	17,600	257,400	61,700	272,900	45,400	18,400	1,650,000
1967	329,600	175,900	99,700	124,900	208,600	20,800	40,500	124,500	22,400	270,800	50,100	205,100	44,800	14,700	1,732,400
1968	152,100	94,200	64,500	40,400	83,000	13,600	18,500	55,000	8,300	121,400	31,300	101,900	38,800	7,900	830,900
1969	223,800	157,100	99,500	89,900	140,200	21,700	33,800	124,700	9,600	183,200	31,900	230,900	67,000	18,300	1,431,600
1970	298,900	190,200	111,400	139,200	239,800	33,200	42,200	149,300	35,100	541,100	91,600	498,100	139,400	20,000	2,529,500
1971	278,800	225,200	84,500	160,900	166,700	58,700	34,200	161,900	27,800	514,400	105,400	240,000	90,300	14,900	2,163,700
1972	354,900	190,400	122,400	171,800	219,300	32,100	38,200	130,100	39,500	283,100	82,100	191,600	79,700	14,900	1,950,100
1973	165,000	187,000	154,900	99,900	168,600	35,600	46,500	108,100	21,200	349,900	127,100	125,900	82,100	16,100	1,687,900
1974	254,800	300,300	171,000	106,100	172,200	37,400	37,300	164,800	30,000	530,600	85,000	194,100	146,800	14,600	2,245,000
1975	285,300	244,200	154,000	117,400	199,900	40,300	47,000	170,400	38,400	588,700	93,300	294,300	224,400	20,500	2,518,100
1976	157,800	222,500	192,300	87,500	166,000	34,500	56,600	127,900	37,200	529,300	57,900	469,500	230,100	40,300	2,409,400
1977	193,100	177,000	107,000	138,700	175,700	37,900	43,800	143,500	46,100	582,800	80,100	321,700	186,500	36,300	2,270,200
1978	304,100	185,000	139,000	125,600	207,600	28,200	36,900	120,700	34,500	480,000	89,300	360,000	116,200	29,900	2,257,000
1979	346,100	199,600	138,600	183,300	192,000	34,800	42,100	146,800	44,300	435,500	113,200	301,800	135,600	32,400	2,346,100
1980	258,000	197,200	126,300	118,100	168,400	36,800	44,900	123,500	20,000	588,200	68,400	392,500	170,100	35,100	2,347,500
1981	253,000	168,400	112,300	130,200	174,600	28,900	44,200	119,500	26,600	386,600	66,700	332,800	186,500	31,700	2,062,000
1982	249,500	135,200	145,200	164,900	139,900	32,900	41,300	112,900	20,300	285,700	60,500	252,700	118,900	21,700	1,781,600
1983	259,700	136,500	131,000	115,200	176,900	38,100	44,500	151,500	23,800	294,600	86,300	352,000	175,100	32,700	2,017,900
1984	303,400	144,300	153,500	96,300	151,300	28,500	42,900	113,900	19,000	322,000	45,900	256,500	102,700	15,900	1,796,100
1985	184,900	113,500	102,200	62,000	136,000	26,900	33,800	91,600	17,600	397,800	45,300	227,900	79,100	14,300	1,532,900
1986	230,300	141,500	93,300	88,900	140,600	23,400	31,800	97,400	16,800	331,300	54,000	208,700	74,900	17,200	1,550,100
1987	181,000	124,200	112,100	64,800	111,600	22,400	31,500	90,500	20,300	309,800	59,000	236,900	70,000	24,700	1,458,800
1988	76,900	77,700	78,600	41,600	96,000	20,300	25,900	48,800	15,600	181,700	48,500	98,800	40,500	17,200	868,100
1989	122,100	98,600	96,000	32,200	114,900	23,700	34,200	68,700	19,400	173,900	55,800	168,100	55,900	31,000	1,094,500
1990	109,500	110,400	98,200	41,300	106,400	22,700	36,100	62,600	29,300	224,100	73,900	127,200	37,900	11,400	1,091,000
1991	173,200	117,400	101,000	63,100	107,000	27,700	31,600	56,800	22,100	270,000	61,800	99,800	44,900	13,200	1,189,600
1992	184,200	131,400	103,700	64,900	129,300	23,200	42,600	55,600	17,000	240,800	52,200	126,300	64,400	14,800	1,250,400
1993	150,100	128,600	113,200	52,700	108,500	34,700	44,100	72,700	21,900	329,500	73,900	121,000	71,800	15,500	1,338,200
1994	160,600	131,900	110,200	49,100	112,000	42,800	38,700	73,700	32,300	472,200	59,900	123,100	101,400	16,900	1,524,800
1995	199,400	141,000	164,300	100,500	158,200	49,600	44,600	124,600	52,000	588,500	151,400	339,500	229,400	25,500	2,368,500
1996*	260,500	164,600	156,900	86,600	166,800	47,700	65,800	129,700	68,900	777,900	153,600	242,300	189,900	38,300	2,549,500
% change	31	17	-5	-14	5	-4	48	4	33	32	1	-29	-17	50	8
AVERAGES:															
61-65	190,040	116,760	42,300	61,840	94,800	10,660	16,700	46,780	12,480	113,900	31,900	124,500	22,560	8,900	894,120
66-70	257,800	160,800	89,600	103,140	170,260	21,660	33,100	107,100	18,600	274,780	53,320	261,780	67,080	15,860	1,634,880
71-75	267,760	229,420	137,360	131,220	185,340	40,820	40,640	147,060	31,380	453,340	98,580	209,180	124,660	16,200	2,112,960
76-80	251,820	196,260	140,640	130,640	181,940	34,440	44,860	132,480	36,420	523,160	81,780	369,100	167,700	34,800	2,326,040
81-85	250,100	139,580	128,840	113,720	155,740	31,060	41,340	117,880	21,460	337,340	60,940	284,380	132,460	23,260	1,838,100
86-90	143,960	110,480	95,640	53,760	113,900	22,500	31,900	73,600	20,280	244,160	58,240	167,940	55,840	20,300	1,212,500
91-95	173,500	130,060	118,480	66,060	123,000	35,600	40,320	76,680	29,060	380,200	79,840	161,940	102,380	17,180	1,534,300

* - PRELIMINARY

Table 50. Estimates of all-season lesser scaup harvests in the Mississippi flyway, 1961-1996.

YEAR	MN	WI	MI	IA	IL	IN	OH	MO	KY	AR	TN	LA	MS	AL	MF TOTAL
1961	51,300	12,000	8,400	5,500	10,500	600	1,500	5,400	400	100	600	59,400	3,900	1,900	161,500
1962	23,100	6,100	6,900	800	500	100	1,000	300	TR	0	100	10,000	0	400	49,300
1963	14,500	5,300	6,600	2,600	3,100	200	1,500	3,100	400	700	100	127,600	1,400	2,800	169,900
1964	48,400	23,400	23,500	3,200	6,800	500	3,300	8,400	700	1,500	800	100,600	2,700	3,000	226,800
1965	76,900	27,200	15,600	10,200	13,200	1,100	4,700	11,500	600	1,700	900	178,600	6,200	4,600	353,000
1966	72,800	49,900	31,500	10,600	11,800	1,100	7,400	9,700	1,000	2,900	1,400	80,200	3,300	3,400	287,000
1967	57,000	48,000	41,000	4,700	14,500	2,000	8,500	17,100	300	800	1,200	47,900	10,100	2,900	256,000
1968	32,600	16,600	16,700	2,000	6,500	500	2,900	10,100	TR	0	100	6,800	1,200	100	96,100
1969	170,300	30,100	47,200	7,600	7,500	5,200	5,600	4,800	0	900	400	14,500	3,400	2,600	300,100
1970	93,700	32,200	33,400	7,800	11,400	1,500	7,300	7,300	1,000	1,100	1,900	49,200	2,300	1,100	251,200
1971	121,700	28,600	29,300	17,300	11,800	1,200	3,400	11,600	500	0	3,800	61,100	3,400	3,900	297,600
1972	161,700	37,100	39,600	16,100	11,400	800	3,600	8,000	1,000	7,500	1,900	36,400	1,200	800	327,100
1973	55,100	17,900	36,000	5,000	7,900	800	4,200	4,700	500	10,900	2,900	265,100	11,000	12,100	434,100
1974	59,400	26,000	46,000	5,000	15,100	900	5,100	8,700	400	9,800	3,500	137,700	8,400	4,800	330,800
1975	54,500	27,100	30,300	7,700	17,900	1,600	4,600	20,000	1,100	4,300	800	74,900	3,500	2,100	250,400
1976	59,600	33,200	33,300	8,000	24,100	2,800	6,300	12,000	600	13,900	100	119,400	4,200	9,200	326,700
1977	34,500	19,800	16,200	4,200	17,000	2,500	3,900	11,700	2,500	28,700	2,900	187,700	20,400	12,400	364,400
1978	48,300	10,400	9,600	5,700	19,700	1,000	2,100	12,600	100	5,400	1,000	55,400	2,700	3,300	177,300
1979	48,300	17,500	12,500	7,300	17,900	4,700	3,600	6,900	800	3,600	800	19,100	1,200	400	144,600
1980	47,400	32,000	11,700	7,900	10,800	5,000	3,300	6,000	1,300	2,700	1,200	23,500	0	1,500	154,300
1981	86,100	55,000	14,900	6,000	21,200	1,900	4,400	7,800	900	2,300	1,400	101,000	9,500	12,800	325,200
1982	52,100	25,000	12,900	5,900	21,900	600	3,900	4,100	700	12,400	1,400	91,900	1,800	6,400	241,000
1983	45,500	18,200	11,000	7,300	15,200	1,900	3,000	5,300	100	4,300	3,000	35,700	2,000	2,000	154,500
1984	75,600	46,800	13,000	12,100	16,900	4,000	5,800	18,600	800	17,900	7,300	150,700	2,500	8,800	380,800
1985	72,300	39,500	9,300	5,300	14,300	3,900	4,700	13,100	700	6,000	1,100	119,600	4,300	11,700	305,800
1986	74,100	19,600	9,200	3,900	14,400	1,100	4,400	9,700	0	2,700	0	21,500	100	3,300	164,000
1987	28,300	13,500	5,900	2,900	5,900	800	2,600	8,200	100	5,000	200	22,400	500	800	97,100
1988	34,000	10,900	5,900	1,700	3,200	1,100	1,400	1,600	100	1,300	2,500	16,700	1,400	1,500	83,300
1989	19,200	11,600	9,600	1,600	3,200	400	2,400	4,700	200	2,000	500	11,800	600	1,400	69,200
1990	24,900	10,400	5,000	1,600	4,900	300	2,500	2,200	100	1,800	1,500	3,600	100	TR	58,900
1991	29,700	15,200	5,500	7,200	17,500	1,100	1,400	6,900	100	2,600	1,100	11,600	100	2,600	102,600
1992	41,400	8,900	7,400	3,200	7,100	1,100	1,500	3,000	300	1,200	2,300	49,800	1,200	3,900	132,300
1993	27,000	7,700	10,000	2,100	4,200	700	1,600	2,100	0	1,100	1,000	5,200	0	1,000	63,700
1994	39,700	8,500	12,700	3,300	6,700	300	400	5,800	600	4,400	800	16,500	400	2,000	102,100
1995	51,300	15,400	17,600	6,300	4,400	1,000	3,100	5,200	0	11,600	800	70,000	600	1,600	188,900
1996*	38,900	10,800	11,200	4,100	4,200	1,200	3,500	2,400	6,800	28,500	3,000	169,600	6,800	7,800	298,800
% change	-24	-30	-36	-35	-5	20	13	-54	ERR	146	275	142	1033	388	58
AVERAGES:															
61-65	42,840	14,800	12,200	4,460	6,820	500	2,400	5,740	420	800	500	95,240	2,840	2,540	192,100
66-70	85,280	35,360	33,960	6,540	10,340	2,060	6,340	9,800	460	1,140	1,000	39,720	4,060	2,020	238,080
71-75	90,480	27,340	36,240	10,220	12,820	1,060	4,180	10,600	700	6,500	2,580	115,040	5,500	4,740	328,000
76-80	47,620	22,580	16,660	6,620	17,900	3,200	3,840	9,840	1,060	10,860	1,200	81,020	5,700	5,360	233,460
81-85	66,320	36,900	12,220	7,320	17,900	2,460	4,360	9,780	640	8,580	2,840	99,780	4,020	8,340	281,460
86-90	36,100	13,200	7,120	2,340	6,320	740	2,660	5,280	100	2,560	940	15,200	540	1,400	94,500
91-95	37,820	11,140	10,640	4,420	7,980	840	1,600	4,600	200	4,180	1,200	30,620	460	2,220	117,920

* - PRELIMINARY

Table 51. Estimates of Canada goose harvests in the Mississippi Flyway, 1962-1996.

YEAR	MN	WI	MI	IA	IL	IN	OH	MO	KY	AR	TN	LA	MS	AL	MF TOTAL
1962	5,200	19,100	9,700	6,600	11,500	2,000	1,100	22,700	1,100	0	1,800	0	400	1,700	82,900
1963	7,300	19,500	14,200	7,200	14,000	800	0	34,300	2,200	0	2,000	300	800	2,400	105,000
1964	7,300	42,900	11,900	4,300	27,500	2,500	2,200	33,600	1,900	0	3,100	300	100	4,300	141,900
1965	12,100	50,000	10,400	6,600	16,400	1,100	4,100	32,500	1,100	0	1,700	0	0	5,300	141,300
1966	20,000	27,900	9,500	7,200	28,000	3,100	3,500	40,300	3,700	0	2,800	800	0	5,400	152,200
1967	18,900	21,300	11,500	12,400	35,400	2,800	5,200	71,900	4,700	100	4,400	0	900	3,200	192,700
1968	10,100	25,300	19,400	10,600	21,200	3,100	6,200	47,200	4,900	0	7,200	700	0	2,200	158,100
1969	25,500	42,800	13,300	15,500	29,400	4,100	4,700	39,800	6,800	0	1,600	1,500	0	4,800	189,800
1970	22,000	28,600	25,100	12,600	37,700	1,600	9,100	33,500	11,200	0	9,500	1,600	0	400	192,900
1971	14,000	52,500	19,600	10,400	34,400	3,200	6,100	37,900	9,600	0	3,800	0	1,900	900	194,300
1972	17,600	35,800	16,400	5,000	33,800	3,000	5,200	41,000	4,400	0	1,900	0	0	1,600	165,700
1973	19,100	60,800	21,000	11,600	28,500	2,100	13,500	40,300	15,200	0	7,200	0	0	900	220,200
1974	31,500	77,000	26,500	7,700	47,100	4,100	9,200	64,400	12,600	0	7,100	0	800	1,000	289,000
1975	56,600	66,400	20,500	13,500	44,900	6,800	11,200	81,800	12,700	2,000	9,500	0	2,000	2,500	330,400
1976	56,100	45,700	27,500	9,300	53,700	3,400	8,500	59,900	15,000	8,700	29,800	0	18,000	5,000	340,600
1977	36,100	89,900	31,800	7,800	76,600	3,700	12,600	65,000	18,800	2,100	8,200	1,500	2,800	700	357,600
1978	53,600	85,700	23,300	11,900	118,700	2,300	10,700	68,300	23,400	4,100	16,500	0	3,900	3,400	425,800
1979	59,400	62,200	33,200	10,000	69,000	3,600	12,900	57,400	9,800	0	5,200	0	0	2,600	325,300
1980	61,800	57,600	32,000	11,700	57,700	9,300	11,500	44,700	17,800	0	7,400	1,700	1,300	1,800	316,300
1981	82,700	39,800	30,400	10,200	51,500	8,100	12,600	45,000	19,200	0	5,800	0	2,300	1,300	308,900
1982	76,600	45,800	52,200	10,200	27,200	5,900	12,600	42,100	6,600	0	6,800	1,000	2,000	1,100	290,100
1983	50,100	33,500	53,600	11,500	38,900	8,100	8,200	34,500	25,800	0	20,800	0	2,200	1,600	288,800
1984	79,700	40,600	56,700	13,300	31,200	5,700	16,700	41,500	11,600	400	12,200	0	500	300	310,400
1985	67,800	44,600	64,600	10,400	38,900	14,100	19,800	36,900	16,100	300	17,800	700	1,400	2,700	336,100
1986	67,200	49,600	61,100	17,200	49,400	12,000	17,200	30,000	17,900	0	11,400	0	0	4,000	337,000
1987	66,000	39,600	61,800	15,100	44,900	10,400	18,800	26,500	17,200	200	16,400	500	0	2,300	319,700
1988	81,800	67,700	70,600	12,100	91,000	16,800	27,500	31,300	20,300	100	17,900	300	1,000	2,600	441,000
1989	75,000	85,300	100,200	20,200	97,400	28,400	34,500	33,300	41,700	1,500	55,100	0	2,100	5,400	580,100
1990	88,800	125,300	71,500	26,600	88,500	14,700	20,800	33,900	11,500	1,900	23,500	2,400	900	100	510,400
1991	99,000	122,400	73,700	29,300	91,300	17,400	36,000	29,900	16,900	2,900	21,900	600	500	1,800	543,600
1992	104,400	63,900	90,000	28,700	77,300	21,500	43,900	27,100	9,000	3,500	12,200	1,400	200	1,200	484,300
1993	108,600	74,900	105,800	17,300	101,300	31,000	51,300	43,100	33,000	3,700	23,300	500	1,400	3,700	598,900
1994	145,800	76,900	150,600	26,100	79,500	31,000	47,000	39,400	15,300	9,500	17,400	2,900	1,600	1,400	644,400
1995	122,700	100,500	159,600	48,000	102,500	48,100	53,200	46,100	38,100	19,800	34,600	2,500	1,300	2,800	779,800
1996*	173,400	73,700	163,900	56,200	100,500	33,900	70,800	58,400	34,500	22,300	35,700	3,700	3,900	8,300	839,200
% change	41	-27	3	17	-2	-30	33	27	-9	13	3	48	200	196	8
AVERAGES:															
62-65	7,975	32,875	11,550	6,175	17,350	1,600	1,850	30,775	1,575	0	2,150	150	325	3,425	117,775
66-70	19,300	29,180	15,760	11,660	30,340	2,940	5,740	46,540	6,260	20	5,100	920	180	3,200	177,140
71-75	27,760	58,500	20,800	9,640	37,740	3,840	9,040	53,080	10,900	400	5,900	0	940	1,380	239,920
76-80	53,400	68,220	29,560	10,140	75,140	4,460	11,240	59,060	16,960	2,980	13,420	640	5,200	2,700	353,120
81-85	71,380	40,860	51,500	11,120	37,540	8,380	13,980	40,000	15,860	140	12,680	340	1,680	1,400	306,860
86-90	75,760	73,500	73,040	18,240	74,240	16,460	23,760	31,000	21,720	740	24,860	640	800	2,880	437,640
91-95	116,100	87,720	115,940	29,880	90,380	29,800	46,280	37,120	22,460	7,880	21,880	1,580	1,000	2,180	610,200

* - PRELIMINARY

Table 52. Estimates of active adult waterwfowl hunters in the Mississippi Flyway, 1961-1996.

YEAR	MN	WI	MI	IA	IL	IN	OH	MO	KY	AR	TN	LA	MS	AL	MF TOTAL
1961	74,100	73,400	50,900	33,500	52,400	15,100	20,800	32,400	5,200	14,800	12,600	32,300	5,200	4,100	426,800
1962	66,500	58,600	38,700	24,000	34,100	11,900	16,300	22,300	3,700	8,000	6,600	28,200	5,900	5,000	329,800
1963	98,100	76,000	53,900	29,700	40,100	12,100	19,200	27,100	4,600	14,400	12,400	53,000	10,500	9,100	460,200
1964	116,400	86,600	63,600	30,900	42,700	13,900	20,300	32,400	6,200	30,000	18,900	72,600	12,200	11,500	558,200
1965	110,400	92,400	63,000	34,000	48,100	14,100	22,200	30,900	6,100	19,100	14,400	69,700	11,100	11,200	546,700
1966	139,300	94,600	70,800	41,300	56,100	16,100	26,800	34,800	7,300	29,700	21,100	90,500	15,300	13,500	657,200
1967	145,200	94,700	79,000	44,300	64,300	18,200	26,200	46,100	7,900	33,500	21,700	92,400	16,800	14,400	704,700
1968	128,500	88,900	74,900	37,500	50,700	17,800	25,000	35,300	6,100	24,000	19,400	77,300	14,500	11,300	611,200
1969	130,900	107,100	87,300	47,500	59,000	20,800	30,600	43,500	6,600	29,600	20,200	86,200	17,300	12,400	699,000
1970	156,000	131,000	112,200	56,900	71,300	24,000	36,800	50,000	8,900	49,600	25,000	106,100	22,600	14,200	864,600
1971	161,000	135,500	94,000	58,700	66,800	26,700	37,600	49,400	9,800	47,600	29,300	97,500	23,500	10,100	847,500
1972	138,100	119,000	87,200	50,800	67,200	20,400	32,000	49,800	8,900	41,600	23,600	90,700	19,100	13,200	761,600
1973	110,600	105,800	86,900	48,700	62,700	20,800	31,500	45,700	9,000	38,100	27,200	83,100	19,400	10,500	700,000
1974	132,500	119,800	88,300	51,600	63,500	21,600	33,700	49,800	10,400	45,800	29,500	86,300	21,000	10,300	764,100
1975	147,200	129,700	88,100	49,700	53,600	20,000	34,100	52,400	11,200	51,300	23,600	93,300	26,300	11,700	792,200
1976	108,200	118,300	70,900	45,400	54,600	11,700	34,400	51,600	12,700	47,900	22,700	104,800	25,600	13,300	722,100
1977	135,400	122,300	59,400	46,200	55,100	12,300	32,000	53,100	12,400	46,800	25,600	103,700	25,500	13,400	743,200
1978	138,500	104,000	52,900	47,800	57,200	12,700	31,300	51,600	13,000	47,100	25,000	105,100	22,800	13,500	722,500
1979	143,100	89,300	53,400	44,400	57,700	13,500	32,300	45,100	13,100	43,500	24,000	107,100	22,600	10,200	699,300
1980	139,200	93,600	48,200	41,100	52,200	12,400	30,900	39,300	11,400	42,600	21,000	106,200	21,900	9,700	669,700
1981	126,200	85,000	42,100	35,900	51,100	12,500	30,400	41,200	11,700	35,900	20,700	98,600	20,700	9,500	621,500
1982	122,400	77,600	41,800	34,400	45,900	12,000	24,800	39,500	10,900	34,600	20,500	97,500	17,800	9,400	589,100
1983	121,700	77,800	42,600	34,000	45,400	11,800	23,500	37,700	10,900	32,000	20,300	106,900	19,900	9,500	594,000
1984	126,900	78,300	45,200	35,300	47,400	11,600	24,100	37,900	11,400	34,300	19,600	100,600	19,700	9,600	601,900
1985	116,500	74,600	44,600	27,900	42,600	11,000	23,500	32,500	10,300	34,400	19,200	86,700	15,200	8,900	547,900
1986	122,400	79,400	45,200	27,900	45,500	12,300	22,800	34,000	10,900	33,300	19,000	85,900	16,500	10,000	565,100
1987	111,000	75,200	46,500	25,500	43,900	11,900	21,400	31,000	10,600	30,500	19,000	81,100	13,500	9,100	530,200
1988	73,600	61,900	39,200	17,300	41,200	10,400	20,500	23,300	10,200	24,800	16,900	56,000	11,200	8,500	415,000
1989	81,100	71,300	44,200	16,600	45,900	10,700	21,500	24,500	11,400	23,300	18,500	56,500	12,200	8,800	446,500
1990	88,700	84,000	45,400	20,800	44,300	11,700	21,100	23,100	11,000	27,100	20,100	58,600	11,500	8,200	475,600
1991	95,200	79,600	45,200	21,400	43,800	11,700	21,400	23,200	11,100	30,100	18,400	57,600	10,900	7,800	477,400
1992	96,900	68,200	48,800	22,800	45,600	12,000	24,300	23,200	10,900	29,900	18,400	59,000	11,700	8,100	479,800
1993	99,299	73,249	54,042	21,092	44,220	12,919	26,059	22,453	10,737	33,643	18,671	59,642	11,527	7,754	495,307
1994	122,858	82,066	59,296	24,523	45,536	15,380	24,776	23,344	11,669	39,501	20,612	65,207	13,419	8,572	556,759
1995	119,900	87,400	65,100	30,500	47,100	14,400	24,200	27,500	13,900	44,600	24,300	78,100	16,000	10,200	603,200
1996*	130,200	77,900	69,900	24,800	47,200	14,400	26,400	33,600	14,500	50,100	25,000	83,000	18,100	11,400	626,500
% change	9	-11	7	-19	0	0	9	22	4	12	3	6	13	12	4
AVERAGES:															
61-65	93,100	77,400	54,020	30,420	43,480	13,420	19,760	29,020	5,160	17,260	12,980	51,160	8,980	8,180	464,340
66-70	139,980	103,260	84,840	45,500	60,280	19,380	29,080	41,940	7,360	33,280	21,480	90,500	17,300	13,160	707,340
71-75	137,880	121,960	88,900	51,900	62,760	21,900	33,780	49,420	9,860	44,880	26,640	90,180	21,860	11,160	773,080
76-80	132,880	105,500	56,960	44,980	55,360	12,520	32,180	48,140	12,520	45,580	23,660	105,380	23,680	12,020	711,360
81-85	122,740	78,660	43,260	33,500	46,480	11,780	25,260	37,760	11,040	34,240	20,060	98,060	18,660	9,380	590,880
86-90	95,360	74,360	44,100	21,620	44,160	11,400	21,460	27,180	10,820	27,800	18,700	67,620	12,980	8,920	486,480
91-95	94,909	66,915	48,906	20,728	39,065	11,543	21,021	21,903	10,401	32,551	17,912	57,508	11,666	7,691	462,710

* - PRELIMINARY

Table 53. Average seasonal bag per active adult waterfowl hunter in the Mississippi flyway, 1961-1996.

YEAR	MN	WI	MI	IA	IL	IN	OH	MO	KY	AR	TN	LA	MS	AL	MF AVG
1961	4.88	3.97	2.36	3.88	3.75	1.50	2.33	3.78	3.19	4.29	3.68	6.49	3.77	3.51	3.90
1962	4.20	3.24	2.49	2.09	2.32	1.07	2.36	1.20	1.55	6.35	1.83	6.53	5.34	4.27	3.27
1963	5.60	3.61	2.35	4.68	4.34	1.38	3.39	2.30	2.66	8.68	5.76	12.05	7.87	6.12	5.20
1964	7.34	4.52	3.00	6.21	4.20	2.62	3.14	3.30	4.10	9.19	5.56	12.06	5.35	3.83	6.10
1965	6.89	4.97	3.36	5.95	4.22	2.38	4.23	3.96	3.44	10.58	4.90	13.75	6.11	4.94	6.33
1966	6.63	5.52	4.13	7.37	6.57	3.07	3.96	4.39	3.36	11.23	6.75	14.60	6.61	5.49	7.18
1967	6.59	5.12	4.38	6.63	6.07	2.64	5.01	4.74	4.18	9.80	5.64	11.34	6.68	4.14	6.49
1968	4.40	3.13	2.50	2.61	2.93	2.23	3.29	2.89	2.10	5.89	3.45	6.35	4.86	3.17	3.79
1969	7.97	4.87	3.68	5.09	4.39	3.05	3.89	4.44	2.46	8.02	2.83	12.41	8.70	5.21	6.23
1970	5.95	4.19	3.19	5.97	6.09	3.66	4.02	5.70	5.17	11.60	8.16	18.25	10.40	5.56	7.18
1971	6.62	4.40	3.17	6.32	4.54	4.28	2.99	5.25	4.05	11.01	7.96	11.05	6.94	5.19	6.15
1972	6.74	4.37	4.41	6.35	5.35	4.17	3.83	4.02	5.13	8.17	6.64	12.23	7.85	4.60	6.28
1973	5.31	4.58	3.85	3.94	5.13	3.60	3.89	3.95	3.36	11.22	8.01	14.35	7.80	6.71	6.27
1974	5.76	5.18	4.53	4.29	4.37	4.16	3.33	4.92	4.28	11.60	8.52	12.85	10.24	5.31	6.46
1975	6.62	5.24	3.91	5.93	7.56	5.53	4.08	6.49	6.65	12.54	9.61	17.78	11.92	7.92	7.95
1976	5.38	5.14	6.14	4.95	5.96	7.10	4.34	4.16	4.57	13.01	8.54	17.38	13.82	9.36	8.03
1977	4.85	3.69	3.91	5.32	6.50	6.74	3.40	5.15	5.42	15.40	9.81	17.81	11.45	9.98	7.70
1978	7.59	4.72	5.08	6.70	7.33	6.35	3.55	4.92	4.68	12.02	9.93	18.03	9.01	8.24	8.42
1979	7.73	5.61	5.52	9.49	7.15	6.92	3.66	5.87	5.81	11.78	9.87	16.03	11.81	10.11	8.76
1980	6.06	5.35	5.62	6.58	6.44	6.02	3.82	5.47	4.17	14.71	10.01	16.47	13.00	10.92	8.45
1981	6.42	4.66	5.41	7.89	7.49	5.12	4.02	6.40	5.64	13.63	9.70	15.70	13.92	10.66	8.43
1982	6.44	4.88	6.09	9.60	6.66	5.35	4.32	5.89	4.03	10.23	9.11	15.33	8.80	7.64	8.10
1983	7.22	5.49	6.24	8.49	8.00	8.00	5.53	6.61	4.75	11.49	11.71	18.68	11.59	10.45	9.57
1984	8.07	5.92	7.01	7.54	6.76	6.96	4.83	6.84	5.05	13.04	8.06	18.04	9.90	7.77	9.29
1985	5.64	4.30	5.12	6.83	6.65	6.99	4.08	5.67	5.01	13.64	6.74	13.68	8.62	7.71	7.44
1986	6.30	4.03	4.78	7.29	6.23	4.70	3.88	5.28	4.16	10.85	7.22	13.98	8.21	6.88	7.20
1987	4.91	4.25	4.45	6.04	4.80	4.50	3.21	5.27	4.65	13.60	5.88	14.35	9.83	8.38	6.93
1988	3.14	2.73	3.43	4.33	3.18	3.66	2.63	3.12	2.69	9.35	5.08	8.29	6.83	6.56	4.46
1989	3.99	2.97	4.18	4.68	3.82	4.27	3.55	4.57	3.96	10.13	7.24	12.61	7.62	10.40	5.64
1990	4.06	2.73	3.97	4.90	4.39	3.78	3.41	4.70	4.11	11.00	7.52	10.80	6.20	6.21	5.34
1991	5.14	3.21	4.30	6.78	5.33	4.95	3.21	5.47	3.69	10.41	7.48	9.60	7.46	6.25	5.75
1992	5.33	3.64	3.91	5.12	4.96	4.01	3.88	4.72	3.40	10.05	7.44	12.62	8.74	6.74	6.10
1993	4.95	3.26	4.03	4.69	4.31	4.70	3.77	4.89	4.55	11.17	9.84	11.38	10.06	7.29	5.99
1994	5.04	3.58	4.38	5.97	4.99	4.17	3.58	6.40	5.49	15.29	9.13	14.90	11.75	6.39	6.98
1995	6.63	4.28	5.69	8.19	6.31	6.30	4.71	8.81	8.09	19.51	14.89	27.03	20.05	10.61	10.64
1996*	6.85	4.63	5.31	7.91	6.90	5.72	4.72	8.89	10.38	20.80	16.46	24.38	17.42	12.50	10.75
% change	3	8	-7	-3	9	-9	0	1	28	7	11	-10	-13	18	1
AVERAGES:															
61-65	5.78	4.06	2.71	4.56	3.77	1.79	3.09	2.91	2.99	7.82	4.35	10.18	5.69	4.53	4.96
66-70	6.31	4.57	3.58	5.53	5.21	2.93	4.03	4.43	3.45	9.31	5.37	12.59	7.45	4.71	6.17
71-75	6.21	4.75	3.97	5.37	5.39	4.35	3.62	4.93	4.69	10.91	8.15	13.65	8.95	5.95	6.62
76-80	6.32	4.90	5.25	6.61	6.68	6.63	3.75	5.11	4.93	13.38	9.63	17.14	11.82	9.72	8.27
81-85	6.76	5.05	5.97	8.07	7.11	6.48	4.56	6.28	4.89	12.41	9.06	16.28	10.56	8.85	8.57
86-90	4.48	3.34	4.16	5.45	4.48	4.18	3.34	4.59	3.91	10.99	6.59	12.01	7.74	7.69	5.91
91-95	5.42	3.59	4.46	6.15	5.18	4.83	3.83	6.06	5.04	13.29	9.76	15.11	11.61	7.46	7.09

* - PRELIMINARY

Table 54. Spring turkey hunting summary, 1978-97.

Year	Area of open hunt zone (mi^2)	Number of permit applicants	Number of permits available	Odds of drawing a permit[a]	Number of permits given	Number of persons hunting[b]	Registered turkey harvest	% success[c]
1978	389	10,740	420	25.6:1	411	398	94	23.6
1979	673	11,116	840	13.2:1	827	794	116	14.6
1980	858	9,613	1,200	8.0:1	1,191	1,072	98	9.1
1981	1,242	8,398	1,500	5.6:1	1,437	1,292	113	8.7
1982	1,490	7,223	2,000	3.6:1	1,992	1,625	106	6.5
1983	1,807	8,153	2,100	3.9:1	2,079	1,663	116	7.0
1984	2,061	7,123	3,000	2.4:1	2,837	2,270	178	7.8
1985	2,118	5,662	2,750	2.1:1	2,449	1,959	323	16.5
1986	1,897	5,715	2,500	2.3:1	2,251	1,801	333	18.5
1987	1,747	6,361	2,700	2.4:1	2,520	2,016	520	25.8
1988	1,781	8,402	3,000	2.8:1	2,994	2,395	674	28.1
1989	2,341	13,007	4,000	3.3:1	3,821	3,057	930	30.4
1990	3,819	14,326	6,600	2.2:1	6,126	5,513	1,709	31.0
1991	4,300	15,918	9,170	**	8,607	7,747	1,724	22.0
1992[d]	4,381	15,896	9,310	**	9,051	8,146	1,691	21.0
1993	4,921	17,224	9,625	**	9,265	8,339	2,082	25.0
1994	5,881	19,424	9,940	**	9,479	8,531	1,975	23.0
1995	7,740	20,849	9,975	**	9,550	8,600	2,339	27.0
1996	16,979‡	23,757	12,131	**	10,983	9,885	2,841	28.7
1997	19,552	25,958	12,530	**	11,610	10,449	3,302	31.6

[a] Calculated with total permits available to be given, and not adjusting for undersubscribed zones and time periods.
[b] For 1978-82, based on a post-hunt mail survey. Number actually hunting in 1983-89 was estimated at 80% (from last year survey results were tabulated). Beginning in 1991, number actually hunting was estimated at 90% (from preliminary results of 1991 survey).
[c] Registered turkey harvest divided by number actually hunting, expressed as %.
[d] Legislation allows NON-RESIDENT hunters.
** Computerized preference drawing began Spring 1990. ‡ Open hunt zone area now calculated using deer permit zones.

Table 55. Spring Wild Turkey harvest by permit area and season, 1997.

Permit Area	Time Period							
	A	B	C	D	E	F	G	Total
225	3	4	2	4	1	0	0	14
226	1	6	2	1	2	0	0	12
227	1	6	4	3	4	1	2	21
228 / 236	10	13	8	8	7	7	8	61
235	3	4	1	2	0	1	1	12
337 / 338	11	7	13	10	13	12	10	76
339 / 462	15	18	16	13	17	23	12	114
341 / 342	136	103	76	68	105	76	46	610
343 / 347	68	67	46	45	66	56	37	385
344	38	35	15	16	26	23	15	168
345 / 348	95	95	64	60	89	65	37	505
346	91	91	49	34	45	24	29	363
349	117	94	57	39	53	51	46	467
418	7	2	1	1	3	1	4	19
419	4	1	0	1	1	2	1	10
435	6	7	4	5	6	7	4	39
440	3	7	8	7	6	2	2	35
442	21	23	23	22	20	21	14	144
443	14	15	8	6	10	5	6	64
448/449/ 451	2	1	2	2	3	3	3	16
450	0	1	1	0	0	0	0	2
454 / 455 456 / 458	0	0	2	1	1	0	0	4
461	4	5	4	5	6	1	5	30
463	2	2	4	2	6	1	2	18
464 / 465	11	3	10	9	5	2	6	46
466 / 467	6	13	11	7	7	12	11	67
Total	669	623	441	371	501	396	301	3,302

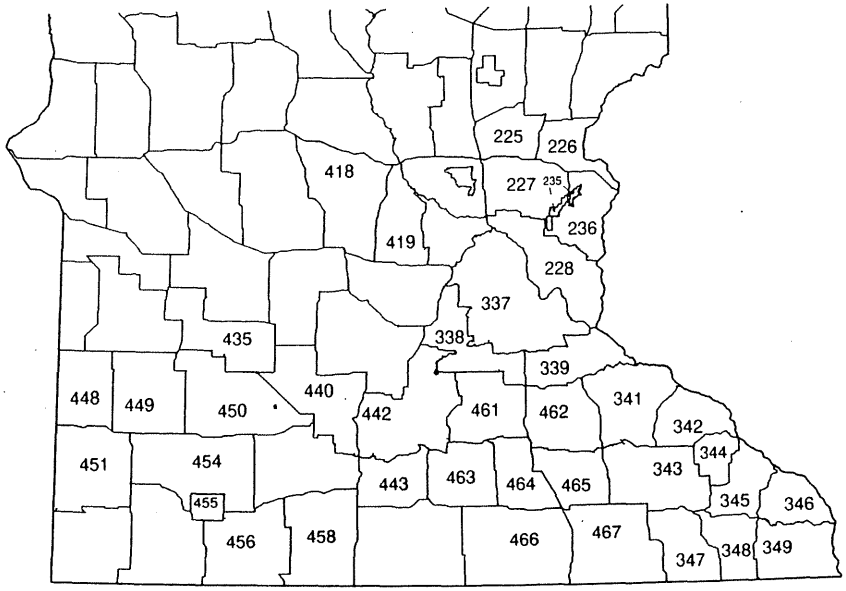


Figure 40. Spring wild turkey hunt permit areas, 1997.

Table 56. Fall turkey hunting summary, 1990-96.

Year	Area of open hunt zone (mi^2)	Number of permit applicants	Number of permits available	Number of permits issued	Number of persons hunting [a]	Registered turkey harvest	% Success[b]
1990		4,522	1,000	951	856	326	38
1991		2,990	2,200	2,020	1818	552	30
1992		2,750	2,200	2,028	1,825	588	32
1993		3,162	2,400	2,094	1,885	605	32
1994		3,124	2,500	2,106	1,895	601	32
1995		3,590	2,500	2,125	1,913	648	34
1996	7,241‡	4,366	2,500	2,289	2,060	685	33

[a] Number hunting estimated at 90% of permits issued based on survey results.
‡ Area of open hunt zone calculated from Deer Permit Zone information of area/$miles^2$

Table 57. Fall wild turkey harvest by permit area, 1996.

Permit Area	Female		Male		Total
	Juvenile	Adult	Juvenile	Adult	
339/462	9	9	1	6	25
341/342	55	37	8	31	131
343/347	54	30	13	20	97
344	7	17	2	10	36
345/348	41	64	17	30	152
346	15	26	11	24	76
349	56	38	44	17	155
361	3	--	--	--	3
365	3	1	--	2	6
466/467	1	2	--	1	4
Total	224	224	96	141	685

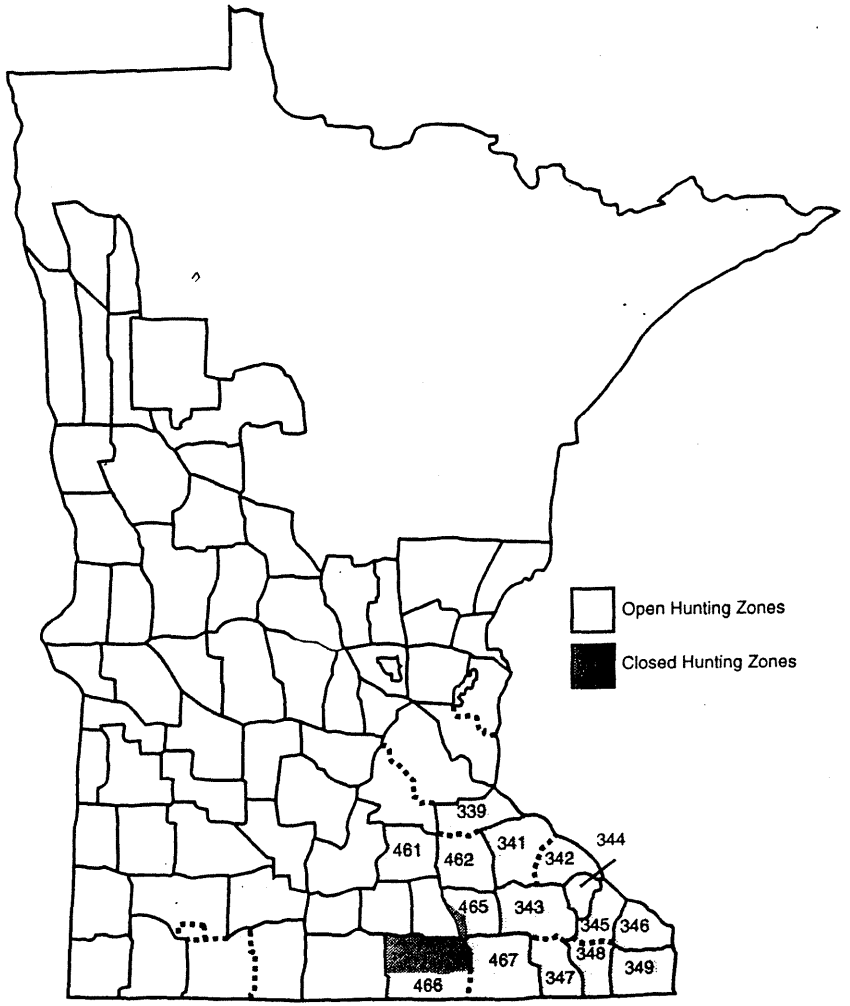


Figure 41. Fall wild turkey hunt zones, 1996.

Table 58. Deer hunting license sales, 1957-96[a].

Year	Firearms License Sales			Archery License Sales			Grand Total
	Resident	Non-resident	Total	Resident	Non-resident	Total	
1957	180,028	488	180,516	10,033	119	10,152	190,668
1958	203,430	552	203,982	10,968	118	11,086	215,068
1959	200,102	530	200,632	11,768	101	11,869	212,501
1960	233,593	621	234,214	11,834	122	11,956	246,170
1961	250,031	632	250,663	13,229	141	13,370	264,033
1962	244,166	676	244,842	11,776	150	11,926	256,768
1963	257,333	771	258,104	11,724	165	11,889	269,993
1964	278,032	1,021	279,053	13,472	193	13,665	292,718
1965	289,918	1,128	291,046	15,628	265	15,893	306,939
1966	284,195	1,287	285,482	17,203	277	17,480	302,962
1967	305,717	1,311	307,028	18,405	289	18,694	325,722
1968	302,216	1,442	303,658	20,188	292	20,480	324,138
1969	253,891	1,168	255,059	15,658	256	15,914	270,973
1970	188,166	334	188,500	12,277	220	12,497	200,997
1971	no firearms season			17,360	111	17,471	17,471
1972	257,998	959	258,957	21,985	326	22,311	281,268
1973	294,349	1,342	295,691	29,169	545	29,714	325,405
1974	296,248	1,747	297,995	30,701	644	31,345	329,340
1975	327,596	1,921	329,517	31,836	804	32,640	362,157
1976	263,868	1,029	264,897	21,773	263	22,036	286,933
1977	287,271	1,430	288,701	29,404	402	29,806	318,507
1978	307,910	1,776	309,686	32,546	476	33,022	342,708
1979	312,754	1,910	314,664	35,657	447	36,104	350,768
1980	344,516	2,378	346,894	41,328	634	41,962	388,856
1981	369,425	2,973	372,398	50,063	906	50,969	423,367
1982	369,018	3,038	372,056	54,084	848	54,932	426,988
1983	391,099	3,611	394,710	55,822	478	56,300	451,010
1984	396,074	4,307	400,381	61,576	583	62,159	462,540
1985	416,474	4,983	421,457	66,687	589	67,276	488,733
1986	413,542	4,476	418,018	68,689	547	69,236	487,254
1987	414,426	4,931	419,357	70,195	604	70,799	490,156
1988[b]	406,733	5,616	412,349	67,182	717	67,899	480,248
1989	405,469	6,141	411,610	66,992	714	67,706	479,316
1990	413,282	6,461	419,743	67,034	742	67,783	427,526
1991	424,576	6,854	431,430	71,168	800	71,968	503,398
1992	448,716	8,033	456,749	71,946	914	72,860	529,609
1993	443,931	8,521	452,452	70,053	1,142	71,195	523,647
1994	452,344	9,227	461,571	71,409	1,156	72,565	534,136
1995	451,164	9,401	460,565	72,477	1,180	72,477	533,042
1996	431,163	8,596	439,759	66,732	1,098	67,830	507,589

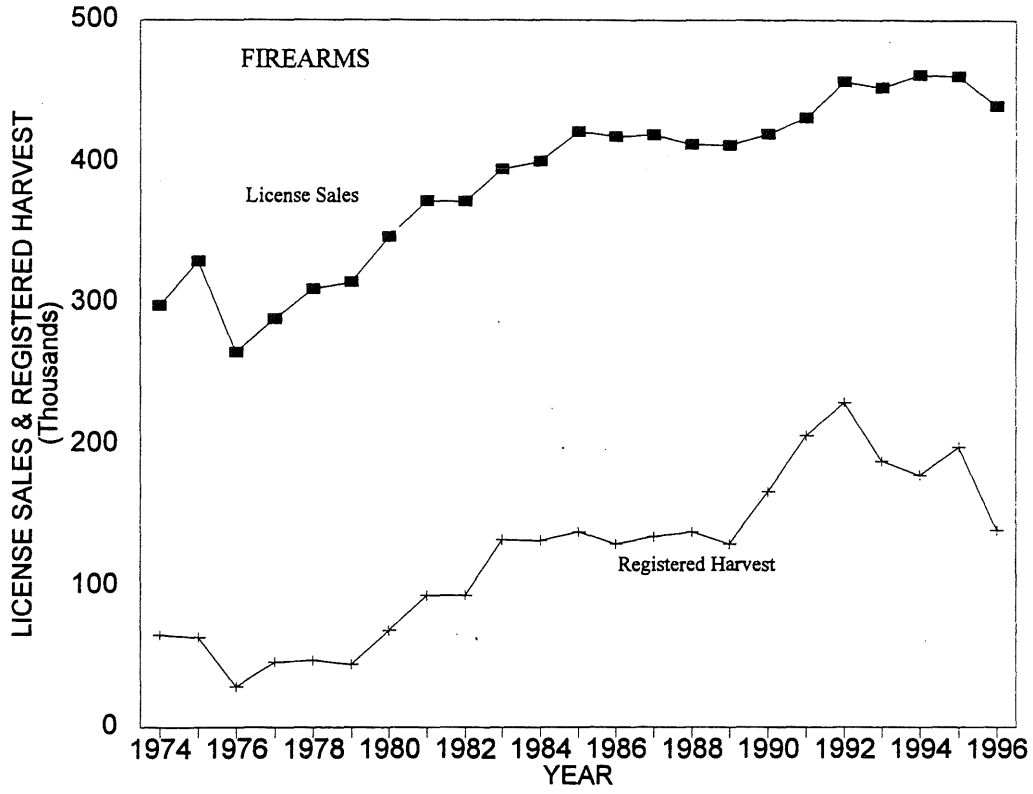
[a] Duplicate licenses not included. Leech Lake licenses are included during years they were issued.
[b] Bonus licenses not included beginning 1988.

Table 59. Registered deer harvest and hunter success rates, 1974-96.

	Registered Harvest				Percent Success	
	Regular firearms	Archery	Special Muzzleloader season[a]	Total	Regular firearms and special muzzleloader seasons	Archery
1974	64,997	2,176	-	67,173	21.8	6.9
1975	63,604	2,265	-	65,869	19.3	6.9
1976	28,613	1,167	-	29,780	10.8	5.3
1977	45,918	2,609	32	48,559	15.9	8.8
1978	47,372	2,608	346	50,326	15.4	7.9
1979	44,340	2,577	318	47,235	14.2	7.1
1980	68,539	3,641	294	72,474	19.8	8.7
1981	93,027	5,535	385	98,947	25.1	10.9
1982	93,045	5,566	441	99,052	25.1	10.1
1983	132,457	5,977	652	139,086	33.6	10.6
1984	132,042	6,390	532	138,941	33.0	10.3
1985	138,065	7,575	563	146,203	33.4	11.3
1986	129,770	7,610	593	137,923	31.2	11.1
1987	135,003	7,535	535	143,073	32.4	10.9
1988	138,946	8,262	686	148,394	33.6	12.0
1989	129,551	9,307	622	139,480	31.4	13.5
1990	166,589	11,106	730	178,425	39.4	16.1
1991	206,275	12,964	961	220,200	46.9	17.5
1992	229,236	13,004	828	243,068	46.1	14.9
1993	188,109	13,722	1,097	202,928	40.0	16.1
1994	178,283	13,818	1,725	193,826	37.1	16.1
1995	198,193	14,521	2,452	215,166	40.1	16.8
1996	139,348	14,338	3,367	157,317	31.9	18.9

[a] No special muzzleloader seasons were held before 1977.

a)



b)

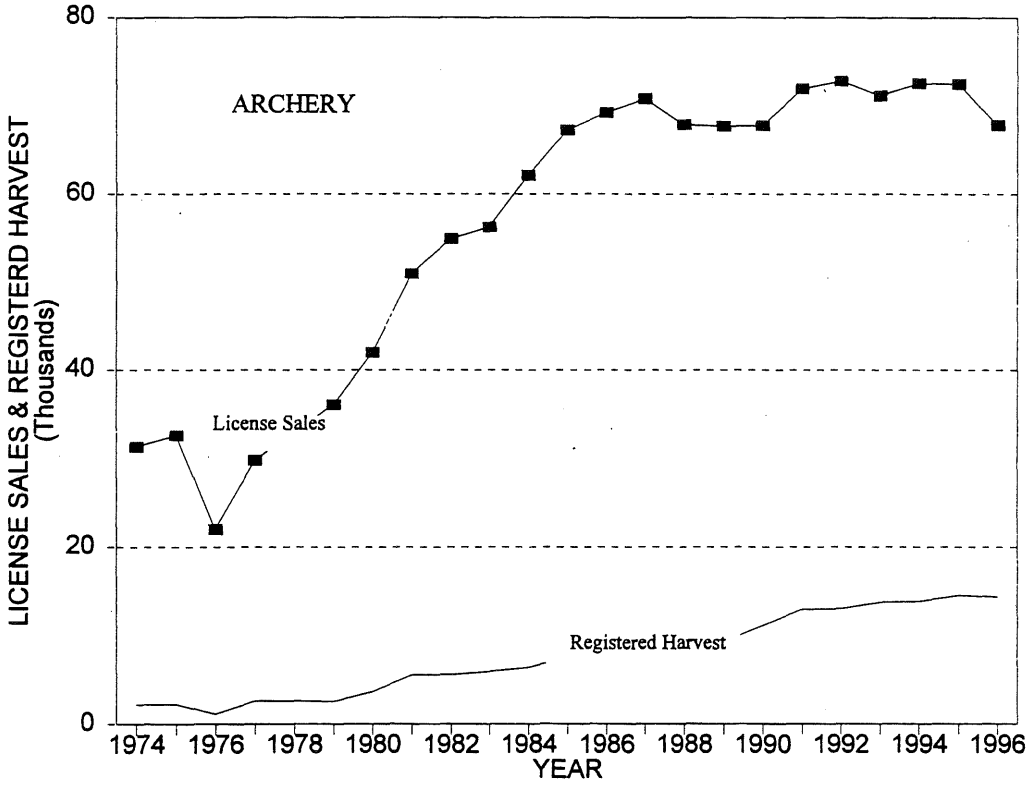


Figure 42. Numbers of Minnesota deer hunting licenses sold and registered harvest by (a) firearm and (b) archery hunters, 1974-96.

Table 60. White-tailed deer harvest by Sub-DMU and permit area, 1996[a].

Sub-DMU	Permit Area	Antlerless Registered	Bucks Registered	Total Registered Harvest
Red River West	401A(B)	221(201)	165 (113)	386 (314)
	402A(B)	292 (170)	310 (126)	602 (296)
	Total A(B)	513 (371)	475 (239)	988 (610)
Red River East	403 A(B)	126 (125)	113 (129)	239 (254)
	404 A(B)	330 (268)	272 (186)	602 (454)
	405 A(B)	362 (193)	283 (121)	645 (314)
	406 A(B)	497 (448)	264 (147)	761 (595)
	407 A(B)	429 (263)	254 (145)	683 (408)
	408 A(B)	299 (213)	233 (115)	532 (328)
	Total A(B)	2043 (1510)	1419 (843)	3462 (2353)
Aggasiz	201	51	85	136
	202	210	210	420
	203	61	30	91
	204	748	615	1363
	205	567	565	1132
	206	572	447	1019
	207	258	231	489
	208	154	158	312
	209	380	334	714
	210	657	470	1127
	Total	3658	3145	6803
Rainy River West	211	238	724	962
	212	115	386	501
	213	0	0	0
	214	0	60	60
	Total	353	1170	1523
Rainy River Central	104	0	150	150
	105	0	75	75
	106	0	250	250
	110	0	224	224
	Total	0	699	699
Rainy River East	107	0	552	552
	108	0	223	223
	109	0	306	306
	195	0	0	0
	Total	0	1081	1081
Superior West	119	0	556	556
	120	0	370	370
	121	0	206	206
	Total	0	1132	1132
Superior Wilderness	115	0	10	10
	116	0	39	39
	117	0	70	70
	118	0	2	2
	Total	0	121	121
Superior Central	122	0	122	122
	123	0	63	63
	124	0	65	65
	125	0	86	86
	Total	0	336	336

Table 60 (con't.)

Sub-DMU	Permit Area	Antlerless Registered	Bucks Registered	Total Registered Harvest
Grand Portage I.R.	194	0	2	2
Superior East	126	0	113	113
	127	0	44	44
	128	0	154	154
	129	0	30	30
	130	0	15	15
	Total	0	356	356
Itasca North West	167	0	404	404
	168	0	333	333
	169	0	725	725
	Total	0	1462	1462
Itasca North East	175	0	713	713
	176	0	254	254
	177	0	173	173
	178	0	158	158
	179	0	553	553
	Total	0	1851	1851
Itasca South East	180	0	514	514
	181	0	497	497
	182	0	314	314
	183	0	866	866
	184	0	299	299
	199	0	73	73
	Total	0	2563	2563
Itasca South West	170	0	507	507
	171	0	334	334
	172	0	791	791
	173	0	495	495
	174	0	285	285
	Total	0	2412	2412
Leech Lake I.R.	197	0	270	270
	198	0	172	172
	Total	0	442	442
Bemidji	284	447	942	1389
	285	264	579	843
	286	563	1057	1620
	287	220	118	338
	Total	1494	2696	4190
Mille Lacs West	244	1138	1295	2433
	245	474	1122	1596
	251	83	105	188
	Total	1695	2522	4217
Mille Lacs Central	246	1840	2039	3879
	247	654	1081	1735
	248	243	284	527
	249	623	757	1380
	Total	3360	4161	7521

Table 60 (con't.)

Sub-DMU	Permit Area	Antlerless Registered	Bucks Registered	Total Registered Harvest
Mille Lacs East	152	37	76	113
	154	143	291	434
	155	229	452	681
	156	354	839	1193
	157	379	709	1088
	158	554	1039	1593
	159	419	1143	1562
	Total	2115	4549	6664
White Earth I.R.	297	0	118	118
	298	0	465	465
	Total	0	583	583
Big Woods North	409 A(B)	1686 (673)	819 (249)	2505 (922)
	410 A(B)	1668 (478)	1138 (257)	2806 (735)
	411 A(B)	1590 (608)	1132 (276)	2722 (884)
	412 A(B)	1304 (699)	1008 (302)	2312 (1001)
	413 A(B)	1115 (577)	800 (278)	1915 (855)
	414 A(B)	833 (379)	732 (230)	1565 (609)
	415 A(B)	733 (505)	505 (206)	1238 (711)
	416 A(B)	514 (481)	440 (186)	954 (667)
	417 A(B)	1007 (841)	878 (311)	1885 (1152)
	418 A(B)	681 (502)	490 (195)	1171 (697)
	419 A(B)	377 (273)	311 (140)	688 (413)
	429 A(B)	102 (137)	123 (66)	225 (203)
	Total A(B)	11610 (6153)	8376 (2696)	19986 (8849)
Big Woods Central	221	845	663	1508
	222	821	620	1441
	223	608	424	1032
	224	69	76	145
	225	789	577	1366
	226	764	507	1271
	Total	3896	2867	6763
Big Woods Metro North	227	897	723	1620
	228	324	200	524
	235	42	48	90
	236	771	682	1453
	Total	2034	1653	3687
Big Woods Metro South	337 A(B)	341 (334)	327 (110)	668 (444)
	338 A(B)	0 (399)	208 (105)	208 (504)
	339 A(B)	0 (413)	203 (93)	203 (506)
	Total A(B)	341 (1146)	738 (308)	1079 (1454)
Big Woods Southeast	341 A(B)	0 (1156)	576 (276)	576 (1432)
	342 A(B)	0 (823)	484 (200)	484 (1023)
	343 A(B)	0 (826)	612 (226)	612 (1052)
	344 A(B)	0 (799)	477 (168)	477 (967)
	345 A(B)	0 (879)	351 (155)	351 (1034)
	346 A(B)	49 (1175)	630 (293)	679 (1468)
	347 A(B)	0 (708)	514 (187)	514 (895)
	348 A(B)	0 (1180)	580 (253)	580 (1433)
	349 A(B)	0 (1157)	881 (317)	881 (1474)
	Total A(B)	49 (8703)	5105 (2075)	5154 (10778)

Table 60 (con't.)

Sub-DMU	Permit Area	Antlerless Registered	Bucks Registered	Total Registered Harvest
Prairie North	420 A(B)	270 (197)	213 (110)	483 (307)
	421 A(B)	309 (194)	244 (122)	553 (316)
	422 A(B)	222 (130)	219 (106)	441 (236)
	423 A(B)	284 (171)	245 (111)	529 (282)
	424 A(B)	480 (874)	413 (254)	893 (1128)
	425 A(B)	175 (205)	166 (127)	341 (332)
	426 A(B)	142 (150)	171 (109)	313 (259)
	427 A(B)	206 (170)	176 (94)	382 (264)
	428 A(B)	186 (205)	182 (104)	368 (309)
	Total A(B)	2274 (2296)	2029 (1137)	4303 (3433)
Prairie River	431 A(B)	242 (300)	206 (131)	449 (431)
	433 A(B)	324 (371)	341 (133)	665 (504)
	435 A(B)	339 (399)	374 (145)	713 (544)
	440 A(B)	265 (177)	346 (93)	611 (270)
	442 A(B)	311 (302)	438 (180)	749 (482)
	443 A(B)	211 (263)	221 (113)	432 (376)
	Total A(B)	1692 (1812)	1927 (795)	3619 (2607)
Prairie Southwest	446 A(B)	166 (193)	185 (61)	351 (254)
	447 A(B)	229 (160)	249 (42)	478 (202)
	448 A(B)	134 (133)	154 (110)	288 (243)
	449 A(B)	221 (179)	271 (85)	492 (264)
	450 A(B)	165 (146)	153 (74)	318 (220)
	451 A(B)	188 (205)	212 (162)	400 (367)
	452 A(B)	129 (158)	95 (119)	224 (277)
	453 A(B)	132 (148)	198 (135)	330 (283)
	454 A(B)	289 (251)	290 (182)	579 (433)
	455 A(B)	25 (40)	34 (26)	59 (66)
	456 A(B)	183 (153)	216 (117)	399 (270)
	457 A(B)	164 (149)	172 (112)	336 (261)
	458 A(B)	162 (187)	195 (163)	357 (350)
	459 A(B)	240 (294)	307 (225)	547 (519)
	Total A(B)	2427 (2396)	2731 (1613)	5158 (4009)
Prairie Southeast	461 A(B)	381 (403)	372 (172)	753 (575)
	462 A(B)	313 (354)	327 (159)	640 (513)
	463 A(B)	155 (159)	179 (69)	334 (228)
	464 A(B)	166 (174)	154 (137)	320 (311)
	465 A(B)	106 (187)	98 (85)	204 (272)
	466 A(B)	262 (356)	341 (277)	603 (633)
	467 A(B)	153 (199)	203 (230)	356 (429)
	Total A(B)	1536 (1832)	1674 (1129)	3210 (2961)
Special Hunt Totals	--	759	158	917
GRAND TOTALS		68,068	60,444 (10,835)	102,284 (37,054)

Table 61. Archery deer harvest by Sub-DMU and permit area, 1991-96.

Sub-DMU	Permit area	1991	1992	1993	1994*	1995*	1996*
Red River West	401	88	95	79	97	159	131
	402	59	105	131	120	94	83
Red River East	403	46	37	55	76	121	49
	404	44	49	78	48	91	59
	405	27	38	27	40	20	18
	406	28	24	37	34	14	26
	407	67	140	145	114	98	53
	408	21	20	62	37	35	13
Aggasiz	201	21	15	17	11	9	6
	202	18	16	7	16	21	17
	203	9	9	3	2	2	2
	204	53	42	29	62	66	49
	205	72	77	113	151	183	79
	206	60	56	32	62	84	73
	207	15	18	11	14	23	13
	208	21	24	22	33	32	15
	209	28	44	57	48	44	37
	210	10	12	37	33	29	17
Rainy River West	211	76	43	67	96	116	70
	212	13	6	11	12	22	16
	213	0	1	0	0	1	1
	214	4	1	9	11	2	9
Rainy River Central	104	6	5	6	9	10	1
	105	5	2	2	1	3	0
	106	22	20	19	16	19	3
	110	20	10	19	11	17	4
Rainy River East	107	24	13	9	18	20	4
	108	19	10	17	9	9	1
	109	1	2	2	6	5	0
	195	0	0	0	0	0	0
Superior West	119	5	6	5	7	6	0
	120	12	4	8	8	9	2
	121	11	3	3	6	2	1
Superior Wilderness	115	0	1	1	0	0	0
	116	1	2	1	1	3	0
	117	2	3	3	4	5	0
	118	0	1	0	0	0	0
Superior Central	122	14	8	9	10	12	4
	123	2	2	1	3	5	0
	124	5	5	4	6	2	2
	125	25	27	13	17	3	4
Grand Portage I.R.	194	0	0	0	0	0	0
Superior East	126	28	14	16	9	20	7
	127	2	1	2		1	0
	128	23	10	6	6	18	3
	129	7	1	2	3	5	0
	130	1	1	2	1	3	1
Itasca North West	167	15	9	12	16	13	5
	168	57	20	31	24	32	2
	169	68	36	44	46	51	13

Table 61(con't.)

Sub-DMU	Permit area	1991	1992	1993	1994	1995	1996
Itasca North East	175	23	19	28	36	50	9
	176	12	22	15	15	13	2
	177	16	8	13	13	5	4
	178	15	13	10	15	12	5
	179	30	17	20	35	31	4
Itasca South East	180	73	65	46	81	86	3
	181	34	12	24	29	32	12
	182	32	13	21	17	14	4
	183	48	22	28	45	42	13
	184	19	7	5	25	17	2
	199	4	5	5	3	2	3
Itasca South West	170	77	34	50	60	60	15
	171	56	15	47	49	2	9
	172	107	68	55	36	47	14
	173	73	40	40	51	54	11
	174	35	35	24	31	24	8
Leech Lake I.R.	197	17	8	7	15	13	9
	198	6	5	5	2	2	0
Bemidji	284	106	129	61	143	113	99
	285	13	19	18	18	30	15
	286	111	146	136	189	155	82
	287	5	0	7	3	10	1
Mille Lacs West	244	78	123	102	68	54	15
	245	85	76	56	67	64	10
	251	4	2	11	2	7	1
Mille Lacs Central	246	168	244	120	159	129	80
	247	236	165	193	208	186	253
	248	74	92	55	51	49	56
	249	98	135	54	74	74	85
Mille Lacs East	152	32	8	3	5	3	6
	154	56	58	26	22	21	28
	155	49	41	23	19	20	22
	156	90	66	30	56	50	67
	157	223	123	44	70	62	66
	158	242	120	78	96	102	120
	159	354	176	121	163	122	147
White Earth I.R.	297	5	8	5	5	7	0
	298	5	2	10	3	2	1
Big Woods North	409	112	158	159	164	185	252
	410	120	132	269	227	242	175
	411	136	127	231	207	202	181
	412	139	173	287	213	269	288
	413	165	179	165	243	288	293
	414	107	98	112	86	234	123
	415	230	199	216	219	205	218
	416	106	86	84	65	84	161
	417	268	259	245	216	256	275
	418	287	318	214	252	252	248
	419	254	479	132	123	246	280
	429			57	156	76	118

Table 61(con't.)

Sub-DMU	Permit area	1991	1992	1993	1994	1995	1996
Big Woods Central	221	116	79	83	81	77	126
	222	64	31	100	42	57	48
	223	187	128	218	307	293	342
	224	22	13	16	11	10	17
	225	276	356	151	70	77	154
	226	235	339	259	263	243	212
Big Woods Metro North	227	297	280	381	382	353	382
	228				689	711	828
	235	94	52	35	35	44	41
	236	608	639	626	602	623	611
Big Woods Metro South	337	299	405	1,223	861	953	901
	338	394	368	195	112	215	158
	339	308	335	155	256	245	244
Big Woods Southeast	341	114	117	196	134	223	279
	342	68	58	118	88	129	133
	343	233	350	281	400	391	467
	344	124	131	99	91	88	105
	345	88	92	148	105	197	154
	346	177	221	197	116	105	190
	347	68	129	141	208	195	197
	348	79	137	153	101	70	163
	349	101	89	129	92	84	150
Prairie North	420	106	164	160	100	94	128
	421	60	105	108	81	81	83
	422	35	76	65	53	52	64
	423	22	22	49	30	46	35
	424	53	47	57	42	65	118
	425	40	130	41	44	102	90
	426	42	43	48	110	101	52
	427	98	87	53	33	51	45
	428	142	83	88	101	89	96
Prairie River	431	45	53	47	48	38	91
	433	195	147	171	174	122	137
	435	109	93	86	79	71	91
	440	113	109	113	74	112	122
	442	238	198	205	191	222	203
	443	92	68	82	94	76	97
Prairie Southwest	446	33	26	29	16	23	31
	447	64	58	48	41	38	45
	448	44	49	42	47	40	41
	449	128	113	92	78	100	113
	450	40	25	26	34	44	32
	451	105	73	76	45	57	79
	452	50	72	97	39	37	83
	453	50	42	46	42	43	57
	454	130	117	130	93	77	156
	455	30	20	19	21	18	11
	456	125	147	79	82	77	80
	457	66	79	61	71	33	78
	458	77	68	53	84	60	83
	459	107	96	71	74	84	106

Table 61(con't.)

Sub-DMU	Permit area	1991	1992	1993	1994	1995	1996
Prairie Southeast	461	92	118	86	145	131	108
	462	116	130	127	143	234	275
	463	50	55	43	47	47	44
	464	60	59	57	55	64	125
	465	91	86	82	85	171	172
	466	120	118	122	121	113	164
	467	126	113	129	153	173	162
Unknown	UNK	128	124	8	0	0	0
Camp Ripley		219	158	287	267	247	160
TOTAL		12,964	12,999	13,722	13,427	4,013 (527)†	14,338 (765)†

* Includes Regular licesnses, Management permits, Intensive harvest permits, and Special permit areas.
† Harvest in () shows Intensive Harvest Permit harvest.

Table 62. Special Muzzleloader Season harvest by block, 1996.
(Includes Special Permit Areas)

Block Number	Adult		Fawns		Total
	Male	Female	Male	Female	
104	1	0	0	0	1
121	3	0	0	0	3
152	1	7	1	1	10
154	1	1	0	0	2
156	2	6	0	0	8
157	1	5	3	1	10
158	6	7	2	0	15
159	3	11	4	1	19
174	1	0	0	0	1
175	2	0	0	0	2
176	0	0	1	0	1
179	1	0	0	0	1
201	4	0	0	0	4
202	2	0	0	0	2
203	1	0	0	0	1
204	5	3	2	2	10
205	5	6	1	1	13
206	3	11	2	2	18
208	1	0	0	0	1
209	2	1	0	1	4
210	2	0	0	0	2
211	14	20	3	3	40
212	2	5	2	1	10
214	0	3	0	0	3
221	3	2	2	1	8
222	5	4	1	3	13
223	3	7	6	2	18
225	6	13	5	2	26
226	2	2	2	1	7
227	2	15	9	6	32
228	2	11	1	0	14
235	4	5	5	6	20
236	10	16	7	2	35
244	0	0	0	1	1
245	1	0	1	0	2
246	3	12	5	5	25
247	3	22	4	3	32
248	4	6	1	2	13
249	2	7	0	1	10
284	1	4	1	1	5
285	0	1	0	0	1
286	0	5	0	1	6
337	13	28	9	9	59
338	10	30	5	8	53
339	8	17	2	6	33
341	7	11	2	8	28
342	13	22	6	9	50
343	19	43	17	10	89

Table 62. (Cont.)

Block Number	Adult Male	Adult Female	Fawns Male	Fawns Female	Total
344	1	23	7	7	38
345	0	6	2	0	8
346	7	4	0	1	12
347	10	39	20	18	87
348	3	23	8	5	39
349	3	3	2	0	8
401	6	15	9	5	35
402	10	7	1	1	19
403	3	5	1	1	10
404	5	7	4	5	21
405	3	1	0	1	5
406	2	6	9	2	19
407	1	4	2	2	9
408	0	3	1	0	4
409	0	10	2	6	18
410	6	13	6	7	32
411	1	5	2	2	10
412	8	23	11	9	51
413	2	12	10	4	28
414	3	5	2	0	10
415	6	15	3	4	28
416	12	42	13	10	76
417	15	32	11	7	65
418	3	14	8	3	28
419	9	15	2	4	30
420	14	12	4	1	31
421	2	9	6	5	22
422	4	10	2	4	20
423	0	5	1	1	7
424	26	56	20	16	118
425	15	43	16	9	80
426	6	12	6	1	25
427	4	6	2	1	13
428	8	8	2	2	20
429	4	1	1	2	8
431	24	54	19	14	111
433	25	59	29	19	132
435	16	19	13	0	48
437	0	1	0	0	1
440	7	15	6	2	30
442	19	33	10	13	75
443	13	32	10	8	63
446	14	12	3	2	31
447	3	1	3	3	10
448	6	4	1	1	12
449	10	13	8	2	33
450	6	6	2	2	16
451	9	19	2	4	34
452	22	27	6	6	61
453	7	13	5	2	27

Table 62. (Cont.)

Block Number	Adult Male	Adult Female	Fawns Male	Fawns Female	Total
454	17	34	11	6	68
455	2	9	4	5	20
456	15	18	4	5	42
457	8	10	3	3	24
458	22	19	8	6	55
459	24	38	21	11	94
461	7	25	9	3	44
462	9	47	21	11	88
463	5	4	1	1	11
464	19	22	16	9	66
465	8	21	15	11	55
466	30	45	9	6	90
467	35	27	8	10	80
931	0	4	4	2	10
933	0	40	24	15	79
934	0	13	6	1	20
935	0	3	0	4	6
936	0	8	2	3	13
937	0	0	1	0	1
938	0	11	7	5	23
Total	768	1,567	598	435	3,367

Table 63. Muzzleloader Special Permit Area Data, 1996.

Area	Dates	Permits Issued	Harvest				
		Regular	Adult male	Fawn male	Adult Female	Fawn Female	Total
Glacial Lakes S.P. (930)	12/11-12/15	30[a]	-	-	No Data	-	-
Lac qui Parle S.P. (931)	11/30-12/1	15[a,b]	0	4	4	2	10
Miesville Ravine P.R. (932)	11/30-12/15	60[b,c]	0	1	5	1	7
Myre-Big Island S.P. (933)	11/30-12/2	50[a,b]	0	24	40	15	79
Nerstrand S.P. and Game Refuge (934)	11/30-12/2	50[a,b]	0	6	13	1	20
Rice Lake S.P. (935)	11/30-12/3	15[a,b]	0	0	3	3	6
Sakatah S.P. (936)	11/30-12/2	20[a,b]	0	2	8	3	13
Zipple Bay S.P. (937)	11/30-12/15	55[a,b,c]	0	1	0	0	1
Upper Sioux S.P. (938)	11/30-12/1 12/ 7-12/8	50[a,b]	0	7	11	5	23

a Permits for these hunts were antlerless only.
b Management permits were available for these hunts.
c Intensive Harvest Permits were available for these hunts.

Table 64. Black bear registered harvest and hunter success, 1990-1996.

Quota Area	Harvest (success rate)						
	1990	1991	1992	1993	1994	1995	1996
12	79 (29%)	93 (32%)	109 (36%)	90 (27%)	130 (34%)	229 (49%)	114 (23%)
13	95 (37%)	93 (34%)	111 (36%)	98 (32%)	108 (34%)	258 (59%)	96 (22%)
22	29 (13%)	39 (18%)	40 (21%)	26 (13%)	33 (16%)	29 (14%)	5 (2%)
24	137 (30%)	155 (34%)	253 (45%)	199 (32%)	176 (26%)	288 (32%)	93 (10%)
25	167 (32%)	237 (37%)	331 (47%)	248 (33%)	199 (27%)	489 (40%)	149 (12%)
26	252 (40%)	337 (38%)	328 (40%)	330 (39%)	260 (30%)	513 (59%)	131 (15%)
31	323 (38%)	377 (39%)	554 (55%)	342 (34%)	260 (27%)	636 (47%)	188 (13%)
41	101 (39%)	74 (23%)	95 (28%)	85 (28%)	92 (31%)	148 (50%)	38 (13%)
44	348 (34%)	234 (24%)	436 (36%)	539 (37%)	294 (24%)	643 (43%)	231 (16%)
45					91 (14%)	173 (24%)	106 (13%)
51	433 (39%)	247 (20%)	521 (37%)	585 (35%)	432 (23%)	872 (37%)	431 (18%)
No Quota	417 (28%)	257 (19%)	397 (27%)	435 (29%)	254 (17%)	678 (35%)	292 (19%)
Total	2,381 (37%)	2,143 (30%)	3,175 (41%)	2,977 (35%)	2,329 (26%)	4,956 (43%)	1,874 (17%)

Table 65. Minnesota bear permits, licenses, hunters, harvests, and success rates during 1985-96.

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Permit applications	22,954	20,694	19,687	25,879	24,096	24,861	25,890	26,428	27,365	30,127	29,922	30,405
Permits available	4,290	4,730	4,810	5,310	5,520	6,370	7,140	7,920	8,630	9,400	11,950	12,030
Licenses purchased:												
Quota area	3,948	4,188	4,213	4,297	4,628	5,568	6,257	6,845	7,528	8,125	10,304	10,592
No-quota area	--	--	1,789	1,297	1,145	1,472	1,384	1,460	1,508	1,438	1,930	1,521
% Permit-holders buying license	92.0	88.5	87.6	80.9	83.8	87.4	87.6	86.4	87.2	86.4	86.2	88.0
Estimated number of hunters	3,700	3,900	5,500	5,100	5,400	6,500	7,100[a]	7,700[a]	8,400[a]	8,900[a]	11,400[a]	11,300
Harvest	1,340	1,438	1,577	1,509	1,930	2,381	2,143	3,175	2,976	2,329	4,956	1,874
% Success rate[b]	36	37	29	30	36	37	30	41	35	26	43	17

[a] In 1991 thru 1996 No-quota hunters were not surveyed, so the percent of license-holders hunting in the qutoa areas was used to calculate the total number of hunters.
Total number of people hunting was based on a three year average of survey data indicating that 93% of license holders hunt.

[b] Based on harvest divided by the estimated number of people hunting.

Table 66. Success rates of Minnesota bear hunters as measured by registered harvest/licenses sold, 1989-96.

Area	1989	1990	1991	1992	1993	1994	1995	1996
12	31	29	32	36	27	34	49	23
13	46	37	34	36	32	34	59	22
22	16	13	18	21	13	16	14	2
24	32	30	34	45	32	26	32	10
25	33	32	39	47	33	27	40	12
26	47	40	38	40	39	30	59	15
31	38	38	39	55	34	27	47	13
41	28	39	23	28	28	31	50	13
44	39	34	24	36	37	24	43	16
45						14	24	13
51	35	39	20	37	35	23	37	18
No Quota Areas	-	28	19	27	29	17	35	19

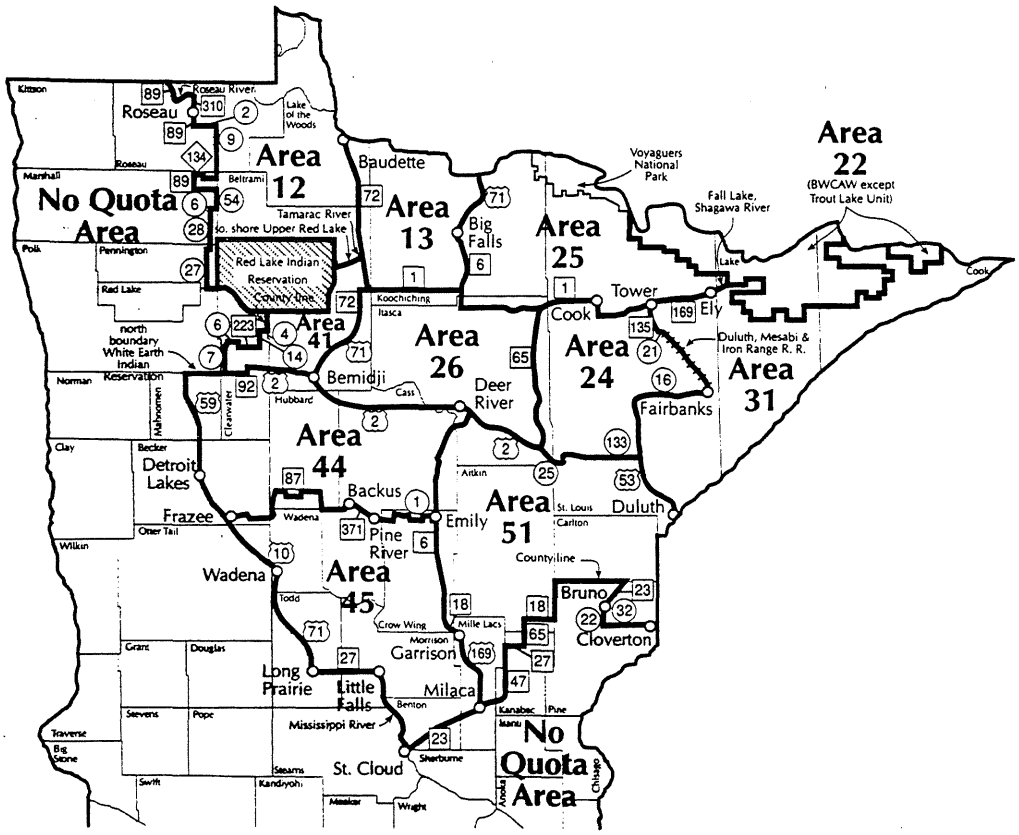


Figure 43. Black bear permit areas, 1996.

Table 67. Moose hunt quota and harvest statistics, 1975-96.

Year	Area	Number of 2,3 or 4-person licenses issued	Number of 2, 3 or 4-person license applications	Chances for permit	Harvest	Party success (%)	Sex of Moose	
							Male	Female
1975	NW NE	475 275	15,792	1:20	449 227	94 82	259 (58%) 147 (65%)	188 (42%) 80 (35%)
1977	NW NE	630 300	16,586	1:18	598 243	95 81	348 (58%) 172 (71%)	250 (42%) 71 (29%)
1979	NW NE	395 290	19,023	1:28	330 236	83 81	196 (59%) 158 (67%)	134 (41%) 78(33%)
1981	NW NE	505 375	20,521	1:23	455 309	90 82	283 (62%) 218 (71%)	172 (38%) 91(29%)
1983	NW NE	780 523	17,754	1:14	737 442	94 84	493 (67%) 273 (62%)	244 (33%) 169 (38%)
1985	NW NE	768 300	14,772	1:14	718 250	93 83	419 (58%) 165 (66%)	299(42%) 85 (34%)
1987	NW NE	772 528	14,234	1:11	727 436	94 83	505 (69%) 292 (67%)	222 (31%) 144 (33%)
1989	NW NE	449 545	15,381	1:15	438 444	98 81	291 (66%) 285 (64%)	147 (34%) 159 (36%)
1991	NW NE	365 0	5,665	1:16	359 -	98 -	258 (72%)	101 (28%)
1993	NW NE	446 315	9,925	1:13	419 264	94 84	317 (76%) 200 (76%)	102 (24%) 64 (24%)
1994	NW NE	262 189	11,351	1:25	245 155	93 82	166 (65%) 115 (74%)	77 (32%) 40 (26%)
1995	NW NE	191 188	10,753	1:28	172 156	90 83	112 (65%) 129 (83%)	60 (35%) 27 (17%)
1996	NW NE	39 207	16,899	1:69	38 156	97 75	31 (82%) 123 (79%)	7 (18%) 33 (21%)

TRAPPING HARVEST STATISTICS

Section of Wildlife
Box 7, 500 Lafayette Rd.
St. Paul, MN 55155
(612) 296-3344

Table 68. Trapper response to mail surveys, 1979-80 through 1996-97.

Year	Number mailed	Number not delivered	Delivered questionnaires completed and returned	
			Number	Percent
1979-80	1,011	29	888	90.4
1980-81	1,345	110	1,072	86.8
1981-82	1,345	36	1,167	89.2
1982-83	925	28	794	88.5
1983-84	770	10	663	87.2
1984-85	556	9	495	90.5
1985-86	581	13	506	89.1
1986-87	582	8	514	89.5
1987-88	721	11	607	85.5
1988-89	852	25	727	87.9
1989-90	3,302	120	2,804	88.1
1990-91	2,294	102	1,875	85.5
1991-92	2,643	149	2,062	82.7
1992-93	2,080	76	1,681	83.9
1993-94	2,828	100	2,194	80.4
1994-95	2,382	76	1,876	81.5
1995-96	3,244	118	2,467	80.3
1996-97	4,071	132	3,017	76.6

Table 69. Use of trapper licenses, 1984-85 through 1996-97.

		Return from mail survey	Projections from license sales
1984-85	Trapped	445 (89.9%)	15,136
	Did not trap	50 (10.1%)	1,700
		495 (100.0%)	16,836
1985-86	Trapped	420 (83.0%)	12,201
	Did not trap	86 (17.0%)	2,498
		506 (100.0%)	14,699
1986-87	Trapped	442 (86.0%)	13,240
	Did not trap	72 (14.0%)	2,155
		514 (100.0%)	15,395
1987-88	Trapped	512 (84.6%)	15,777
	Did not trap	93 (15.4%)	2,866
		605 (100.0%)	18,643
1988-89	Trapped	582 (80.1%)	9,789
	Did not trap	145 (19.9%)	2,432
		727 (100.0%)	12,221
1989-90	Trapped	2,251 (80.3%)	7,314
	Did not trap	553 (19.7%)	1,794
		2,804 (100.0%)	9,108
1990-91	Trapped	1,399 (80.6%)	4,972
	Did not trap	337 (19.4%)	1,197
		1,736 (100.0%)	6,169[a]
1991-92	Trapped	1,639 (79.5%)	4,150
	Did not trap	423 (20.5%)	1,070
		2,062 (100.0%)	5,220[a]
1992-93	Trapped	1,438 (85.5%)	4,927
	Did not trap	243 (14.5%)	836
		1,681 (100.0%)	5,763[a]
1993-94	Trapped	1,904 (85.5%)	4,862
	Did not trap	290 (13.2%)	739
		2,194 (100.0%)	5,601[a]
1994-95	Trapped	1,647 (87.8%)	6,054
	Did not trap	228 (12.2%)	841
		1,875 (100.0%)	6,895[a]
1995-96	Trapped	2,053 (83.2%)	4,684
	Did not trap	414 (16.8%)	946
		2,467 (100.0%)	5,630[a]
1996-97	Trapped	2,505 (84.8%)	5,660
	Did not trap	450 (15.2%)	1,015
		2,955 (100.0%)	6,675[a]

[a] excludes duplicates.

Table 70. Estimated number of trappers of various furbearers, 1983-84 through 1996-97.

	Estimated number of trappers (thousands)													
	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Muskrat	11	13	9	11	15	7	4	2	2	3	3	4	3	4
Mink	8	9	8	9	13	7	5	3	2	3	3	3	2	3
Short-tailed weasel	<1	1	<1	1	1	1	<1	<1	<1	<1	<1	1	<1	<1
Long-tailed weasel	1	1	<1	1	2	1	1	<1	<1	<1	<1	<1	<1	<1
Raccoon (Sept 96-Feb 97)	9	9	8	8	11	6	4	2	2	2	3	3	2	3
Raccoon (Mar 96-Aug 96)[a]												<1	<1	<1
Striped skunk	4	5	4	4	5	3	2	1	1	1	1	1	1	1
Eastern spotted skunk	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	Closed
Badger	1	1	1	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1
Opossum	<1	<1	1	1	2	1	1	1	1	1	1	1	1	1
Red fox (Sept 96-Feb 97)	6	6	5	5	6	4	2	2	2	2	2	2	2	2
Red fox (Mar.96-Aug 96)[a]												<1	<1	<1
Gray fox	2	2	2	2	2	1	1	<1	<1	<1	<1	<1	<1	
Coyote	2	2	1	2	2	1	1	1	1	1	1	1	1	1
Beaver (Oct 96 - Feb 97)	4	5	4	6	8	4	3	2	2	2	2	3	2	2
Beaver (Mar 96 - Apr 96)	4	3	4	4	4	2	2	1	1	1	1	2	1	2

[a] Raccoon and red fox season changed to year round beginning May, 1994.

Table 71. Estimated take per trapper of various furbearers, 1983-84 through 1996-97.

	Estimated take per trapper reporting that species													
	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Muskrat	76	75	52	73	69	28	27	24	20	36	64	90	70	55
Mink	7	8	8	9	9	9	9	10	8	12	12	12	11	11
Short-tailed weasel	5	4	3	4	5	4	5	3	4	5	6	12	10	9
Long-tailed weasel	4	2	2	5	4	5	5	3	5	4	4	6	5	5
Raccoon (Sept 96-Feb 97)	8	8	11	11	12	13	12	16	14	16	5	20	23	23
Raccoon (Mar 96-Aug 96)[a]												15	15	13
Striped skunk	9	9	10	10	10	10	10	12	9	8	9	8	8	10
Eastern spotted skunk	3	1	3	3	2	2	5	7	3	2	6	4	5	Closed
Badger	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Opossum	3	3	9	14	7	8	9	11	9	10	8	9	9	9
Red fox (Sept 96-Feb 97)	7	9	6	8	9	13	10	18	14	11	11	11	9	7
Red fox (Mar 96-Aug 96)[a]												9	5	4
Gray fox	3	3	4	3	3	4	3	3	2	4	3	2	2	
Coyote	5	5	5	4	3	4	4	3	4	5	5	4	5	4
Beaver (Oct 96-Feb 97)	7	10	10	12	16	11	15	13	15	13	16	18	14	16
Beaver (Mar - Apr 96)	25	30	22	22	23	14	20	19	27	29	29	37	29	31

[a] Raccoon and red fox season changed to year round beginning May, 1994.

Table 72. Minnesota trapper license sales and estimated annual harvest, 1983-84 through 1996-97[a]

	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Trapper license sales[b]	16,741	16,836	14,699	15,395	18,643	12,221	9,108	6,163	5,220	5,763	5,601	6,895	5,630	6,675
Estimated harvest[c] (thousands)														
Muskrat	865	963	477	826	1,007	185	118	55	45	92	202	355	195	202
Mink	58	75	57	77	110	59	40	25	21	32	33	40	26	35
Short-tailed weasel	2	3	1[d]	3	7	3	2	1	1	1	2	6	4	4
Long-tailed weasel	1	1	1	3	7	3	2	1	1	1	1	3	2	2
Raccoon (Sept 96- Feb 97)	69	78	89	95	134	74	41	34	31	34	56	58	53	69
Raccoon (Mar 96-Aug 96)[f]												1	5	5
Striped skunk	36	47	41	42	54	31	17	15	10	7	9	9	8	11
Eastern spotted skunk[g]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	closed
Badger	2	2	2	2	3	2	1	1	1	1	1	1	<1	1
Opossum	2	1	7	14	10	9	6	6	5	6	5	5	6	6
Red fox (Sept 96- Feb 97)	42	58	29	40	57	53	25	33	25	23	22	24	14	13
Red fox (Mar 96-Aug 96)[f]												1	1	1
Gray fox	5	5	6	6	5	5	2	1	1	1	1	1	1	
Coyote	9	10	7	7	7	3	4	3	3	4	4	5	3	3
Beaver (Oct 96- Feb 97)	30	51	43	71	132	47	48	24	25	22	29	49	25	38
Beaver (Mar 96-Apr 96)	101	103	92	101	26	-	31	20	26	34	32	64	41	48
Registered harvest														
Otter	408	529	559	777	1,386	922	1,294	88	855	1,368	1,459	2,445	1,435	2,219
Lynx[g]	9	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed
Bobcat[e]	208	280	119	160	214	140	129	84	106	168	201	238	134	223
Fisher	631	1,289	678	1,068	1,642	1,025	1,243	746	528	778	1,159	1,771	942	1,773
Marten	closed	closed	430	798	1,363	2,072	2,119	1,349	656	1,602	1,438	1,527	1,500	1,625

[a] Includes data for all seasons from October through April of years indicated.

[b] Separate licenses were issued for juveniles (13-17 years old) and adults (18 and older), beginning in 1982. As of August 1, 1994, 5,601 trapping licenses were sold in 1993, 662 (11.8%) were juvenile licenses and 4,939 (88.2%) were adult licenses. Duplicate licenses excluded.

[c] Based upon trappers' responses to mail surveys.

[d] 1 is any number which rounds to 1. <1 is any number which is <0.5.

[e] Registered harvest for bobcat includes animals taken by hunting.

[f] Raccoon and red fox seasons changed to year round beginning May 1994.

[g] Lynx (1984) and Eastern spotted skunk (1996) listed as Threatened species and are fully protected.

Table 73. Average price per pelt paid to hunters and trappers in Minnesota, 1982-83 through 1996-97.

Species	Average pelt prices paid hunters and trappers in Minnesota (dollars)														
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Muskrat	2.19	2.24	2.81	1.85	2.89	3.12	2.07	0.80	0.75	1.55	1.35	1.35	1.61	1.53	3.49
Mink (male)	24.43	30.33	28.40	25.29	35.75	40.54	39.76	30.38	23.06	27.30	24.74	21.89	14.90	11.75	20.82
Mink (female)	10.63	14.55	14.04	13.37	18.43	20.25	22.70	17.26	14.73	17.36	15.02	12.18	11.43	8.56	13.71
S.T. Weasel	0.56	0.56	0.77	0.98	0.98	0.89	1.11	1.20	1.55	0.77	1.31	1.72	1.73	1.84	2.32
L.T. Weasel	0.80	0.93	1.10	1.06	1.28	1.02	1.04	1.25	0.58	1.21	1.06	1.05	2.05	1.24	3.33
Raccoon	17.95	12.66	19.91	15.51	21.81	16.67	7.53	4.88	4.19	8.57	7.29	8.26	9.02	9.40	15.16
Striped Skunk	2.58	2.77	2.74	1.58	2.06	2.47	1.90	1.31	1.84	1.47	2.69	3.70	3.52	3.21	2.11
Eastern Spotted Skunk	1.75	N.A.	3.00	6.17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Badger	9.04	10.96	9.18	6.45	5.43	5.74	2.99	2.91	4.33	3.51	4.20	4.62	6.12	6.33	8.49
Opossum	0.87	0.71	1.14	0.62	0.97	0.91	0.62	0.76	3.51	0.96	0.78	0.89	0.98	0.97	1.04
Red Fox	31.10	32.81	29.07	17.51	22.07	16.69	9.89	8.58	7.17	10.81	8.88	10.59	13.42	14.21	14.81
Gray Fox	23.48	22.95	21.58	15.00	22.60	22.56	11.45	7.39	5.16	5.22	6.73	6.55	9.69	7.49	9.00
Coyote	25.41	18.79	19.06	18.19	22.03	18.35	8.43	6.42	8.95	14.85	15.55	14.68	13.55	10.89	12.25
Lynx	94.17	125.00	-	-	-	-	-	No Open Season		-	-	-	-	-	-
Bobcat	66.40	61.40	75.81	70.00	120.15	101.10	68.31	48.50	42.50	37.44	28.18	43.42	36.36	31.81	32.82
Beaver[a] (fall-winter)	10.69	9.52	12.51	15.03	20.32	16.75	13.84	12.49	9.44	9.00	7.10	11.24	13.80	12.56	19.24
Beaver[a] (spring)	11.60	12.24	16.11	17.90	-	17.12	12.62	10.99	9.66	9.25	7.89	9.41	14.48	10.96	19.14
Otter	25.65	24.79	21.56	20.81	24.15	22.85	22.02	22.01	24.21	24.74	29.90	43.14	47.50	38.76	38.75
Fisher[a] (male)	69.91	70.59	70.26	73.55	84.32	84.36	53.83	26.15	34.85	21.46	15.73	14.17	19.06	16.17	25.48
Fisher[a] (female)	99.08	121.08	121.76	130.47	162.29	170.31	99.63	52.92	46.25	47.93	28.79	28.40	29.93	24.90	34.47
Marten (male)	No Open Season			30.29	35.68	43.13	50.08	47.90	43.89	39.59	27.87	35.86	34.07	28.30	34.47
Marten (female)				27.61	26.58	39.20	43.46	46.88	40.84	27.24	24.96	29.58	28.34	21.42	29.26

[a] Differences in pelt prices were not calculated before 1979 for beaver, and 1978 for fisher.

REGISTERED FURBEARER HARVEST STATISTICS

Forest Wildlife Populations and Research Group
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Table 74. Registered furbearer harvests and total permits issued, 1985-96[a].

Year	Bobcat		Fisher		Marten		Otter	
	Permits	Harvest	Permits	Harvest	Permits	Harvest	Permits	Harvest
1985	--	119	--	678	746	430	--	559
1986	--	160	3,302	1,607	2,171	798	3,198	777
1987	--	214	4,952	1,642	3,025	1,363	4,708	1,386
1988	--	140	4,419	1,025	3,369	2,072	4,070	922
1989	--	129	3,712	1,243	3,074	2,119	3,549	1,294
1990	--	84	2,385	746	2,090	1,349	2,199	888
1991[b]	--	106	2,360	528	2,020	686	2,282	855
1992[b]	--	168	2,420	778	2,050	1,602	3,440	1,368
1993[b]	--	201	2,299	1,159	1,925	1,438	2,254	1,459
1994[b]	--	238	2,186	1,771	2,477	1,527	2,964	2,445
1995[b]	--	134	2,520	942	2,268	1,500	2,579	1,435
1996[b]	--	223	1,557	1,773	1,392	1,625	1,623	2,219

[a] Prior request tags and permits were required beginning in 1985 for marten and in 1986 for fisher and otter. No possession tags or permits are required for bobcat.

[b] Confiscation and 1854 Authority removed.

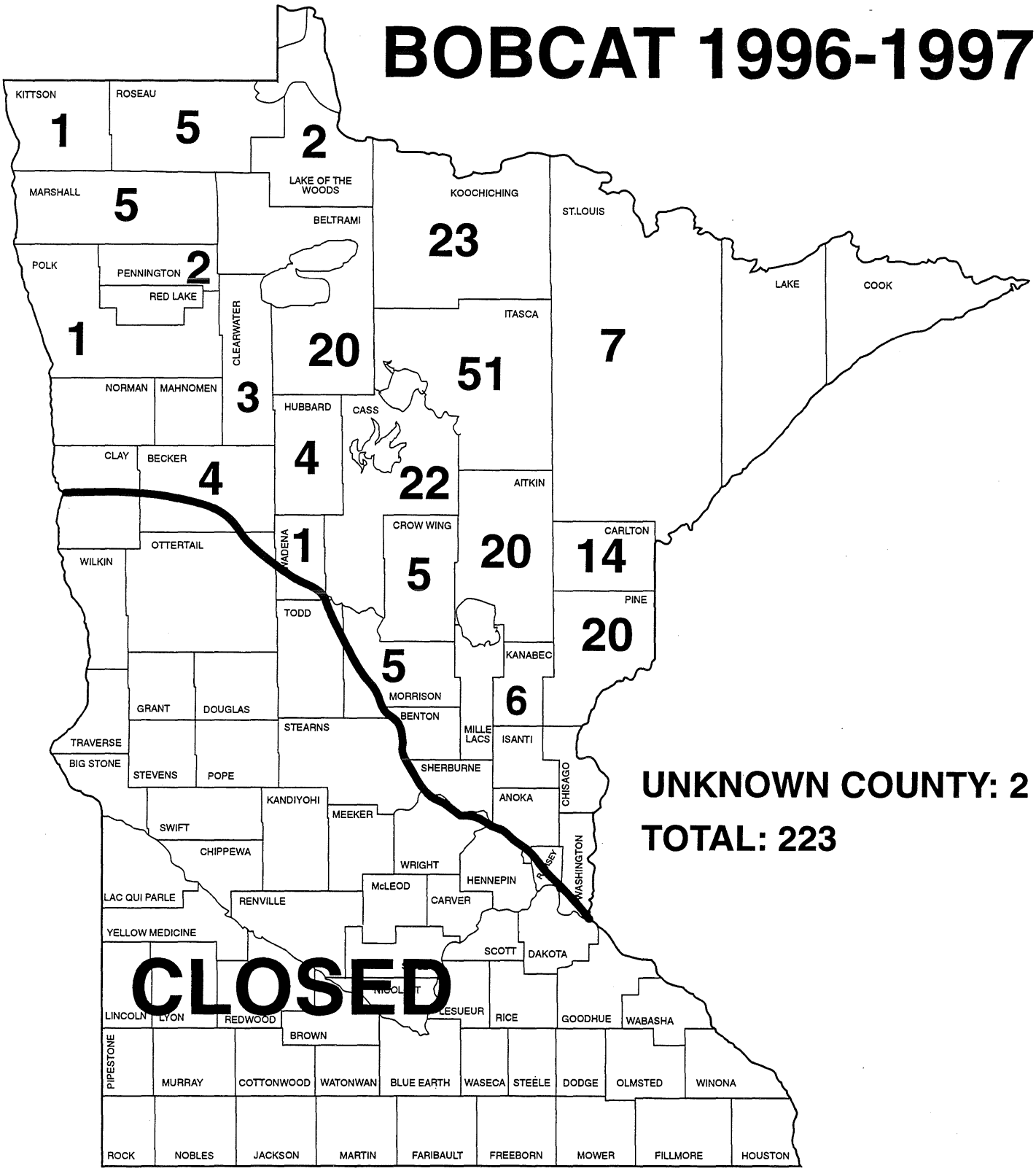

Figure 44. Bobcat harvest by county, 1996-1997.

Table 75. Time distribution of bobcat harvest by 5-day increments, 1996-97 season.

Interval	Sex			Total	% of Known Total	Cumulative Percent
	M	F	U			
Nov. 30 - 4	10	20	1	31	17	17
Dec. 5- 9	15	16	2	33	18	35
Dec. 10-14	10	30	4	44	24	59
Dec. 15-19	10	13	-	23	13	72
Dec. 20-24	7	13	-	20	11	83
Dec. 25-29	6	12	-	18	10	93
Dec. 30 - Jan. 3	1	11	-	12	6	99
Jan. 4-5*	-	2	-	2	1	100
Unknown	5	6	29	40	-	-
Total	64	123	36	223	100	100

* 2-day interval

Table 76. Distribution of bobcat harvest among takers, 1983-84 thru 1996-97.

Number of Takers	Number Taken (%)					
	1	2	3	4	5	Total
1983-84	108 (72.0)	32 (21.3)	6 (4.0)	4 (2.7)	0 (0.0)	150
1984-85	116 (65.2)	39 (21.9)	13 (7.3)	9 (5.1)	1 (0.5)	178
1985-86	70 (78.7)	11 (12.4)	6 (6.7)	1 (1.1)	1 (1.1)	89
1986-87	92 (76.7)	18 (15.0)	9 (7.5)	0 (0.0)	1 (0.8)	120
1987-88	104 (71.7)	23 (15.9)	10 (6.9)	6 (4.1)	2 (1.4)	145
1988-89	88 (81.5)	11 (10.2)	7 (6.5)	1 (0.9)	1 (0.9)	108
1989-90	56 (69.1)	13 (16.0)	5 (6.2)	3 (3.7)	4 (4.9)	81
1990-91	47 (77.0)	9 (14.7)	1 (1.6)	4 (6.5)	0 (0.0)	61
1991-92	42 (63.6)	15 (22.7)	4 (6.1)	3 (4.5)	2 (3.0)	66
1992-93	69 (64)	21 (20)	9 (9)	5 (5)	2 (2)	106
1993-94	90 (70)	17 (13)	13 (10)	7 (5)	2 (2)	201
1994-95	103 (68)	25 (17)	12 (8)	6 (4)	5 (3)	151
1995-96	67 (74)	13 (14)	5 (6)	4 (4)	2 (2)	91
1996-97	115 (73)	28 (18)	85 (5)	2 (1)	4 (3)	157
Total	1167(68.5)	275 (16.1)	185 (10.9)	55 (3.2)	27 (1.6)	1,547

Table 77. Bobcat harvest by method of take, 1980-1996.

Year	Total Harvest	Trapping				Hunting			
		Harvest	(% of Total)	Takers	Average Take	Harvest	(% of Total)	Takers	Average Take
1980	210	177	(84.3)	68	2.6	33	(15.7)	24	1.4
1981	260	219	(84.2)	143	1.5	41	(15.8)	30	1.4
1982	274	239	(87.2)	147	1.6	35	(12.8)	23	1.5
1983	208	168	(80.8)	118	1.4	40	(19.2)	32	1.3
1984	280	252	(90.0)	156	1.6	28	(10.0)	22	1.3
1985	119	83	(69.7)	62	1.3	36	(30.3)	27	1.3
1986	160	119	(74.4)	89	1.3	41	(25.6)	31	1.3
1987	214	177	(82.7)	118	1.5	37	(17.3)	26	1.4
1988	140	94	(67.1)	76	1.2	46	(32.9)	32	1.4
1989	129	90	(69.5)	49	1.8	39	(30.5)	28	1.4
1990	84*	61	(72.6)	43	1.4	22	(26.2)	17	1.3
1991	106*	59	(55.7)	31	1.9	43	(40.6)	33	1.3
1992	168	133	(80.0)	85	1.6	35	(20.0)	23	1.5
1993	201	147	(73.1)	88	1.7	54	(26.8)	41	1.3
1994	238	189	(79.4)	120	1.6	49	(20.6)	31	1.6
1995	134	73	(54.5)	53	1.4	61	(45.5)	38	1.6
1996	223	133	(59.6)	91	1.5	70	(31.4)	53	1.3

* Sum of trapping and hunting harvest is not equal to total harvest due to incomplete method of take data.

Table 78. Comparison of bobcat harvest by county, 1987-88 through 1996-97.

County	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Aitkin	25	18	31	4	3	22	28	14	12	20
Becker	3	2	1	3	5	1	1	7	5	4
Beltrami	15	7	8	4	6	8	15	23	6	20
Benton					1	0	0	0	1	0
Carlton	9	4	1	1	2	10	5	8	5	14
Cass	28	13	27	11	14	27	16	31	10	22
Chisago	0	1	0	0	0	0	0	0	0	0
Clearwater	0	1	2	0	0	5	2	7	6	3
Cook	2	4	2	3	0	0	1	0	2	0
Crow Wing	1	2	0	5	4	6	3	8	5	5
Hubbard	2	3	1	1	3	3	2	4	2	4
Isanti	0	0	1	0	0	0	0	0	0	0
Itasca	44	20	19	11	16	35	39	51	20	51
Kanabec	0	1	6	1	0	4	7	3	1	6
Kittson	6	2	0	3	3	3	1	3	3	1
Koochiching	9	13	1	0	5	5	3	6	1	23
Lake	4	2	1	0	1	5	1	0	2	0
Lake of the Woods	2	4	0	0	0	0	0	2	0	2
Mahnomen									1	0
Marshall	4	0	0	1	5	0	6	4	2	5
Mille Lacs	8	2	0	3	7	3	1	5	3	0
Morrison	4	2	2	2	2	5	14	5	6	5
Ottertail	1	2	1	0	1	0	2	0	0	0
Pennington	0	0	0	0	0	0	0	0	0	2
Pine	15	23	15	18	16	11	29	26	23	20
Polk	0	1	0	0	0	0	0	0	0	1
Red Lake	0	0	0	0	0	0	0	0	0	0
Roseau	2	2	0	2	1	3	5	9	1	5
St. Louis	26	10	7	8	3	8	10	15	7	7
Wadena	2	2	2	2	2	0	2	0	2	1
Unknown	0	0	1	1	6	5	8	7	8	2
Total	214	140	129	84	106	168	201	238	134	223

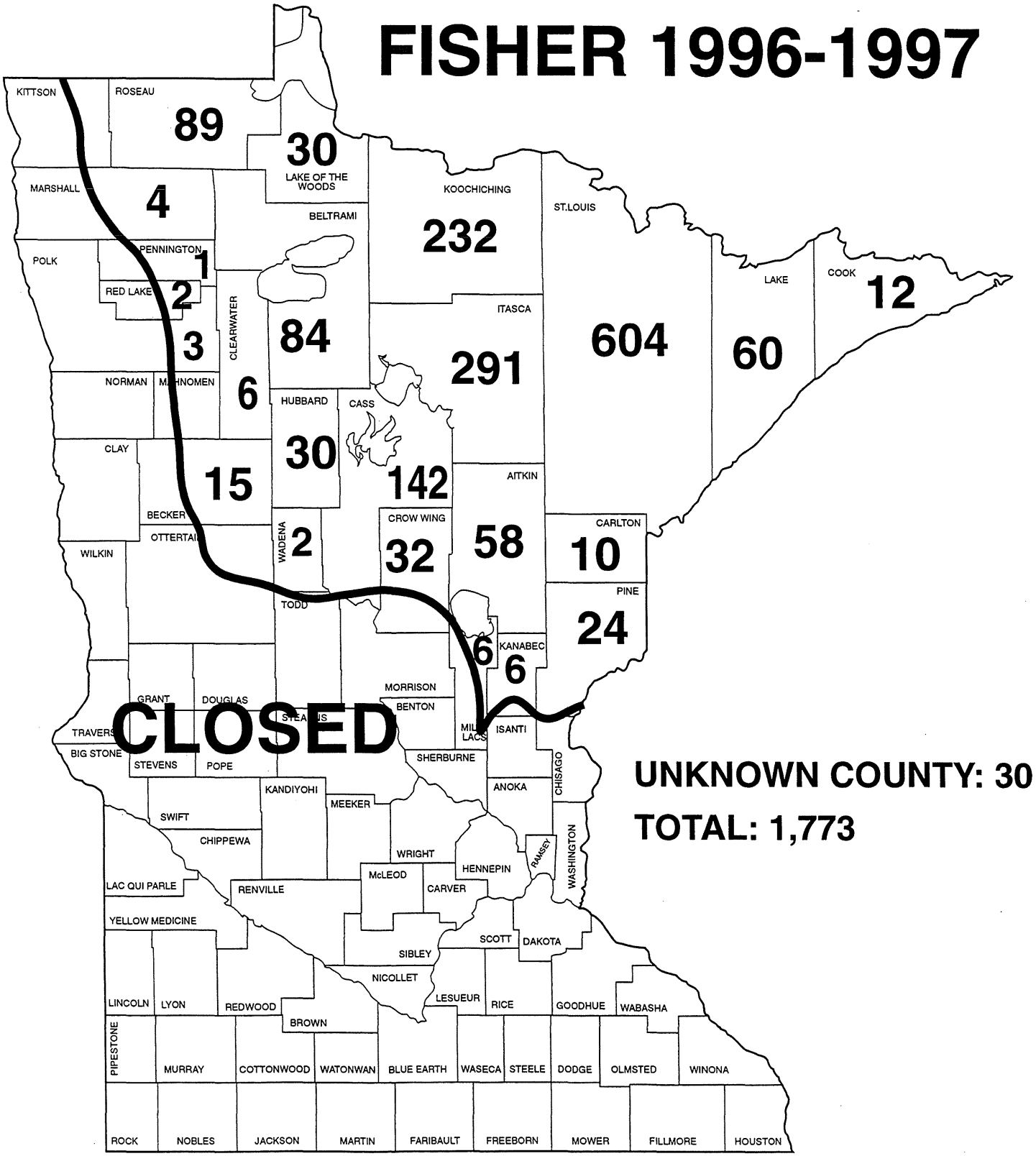

Figure 45. Fisher harvest by county, 1996-1997.

Table 79. Fisher harvest by date and sex, 1996-97 season.

Date	Sex			Total	% of known Total	Cumulative Percent
	Male	Female	Unknown			
Nov. 30	3	5	0	8	1	1
Dec. 1	29	35	0	64	5	6
Dec. 2	28	48	3	79	6	12
Dec. 3	54	44	0	98	7	19
Dec. 4	40	34	0	74	5	24
Dec. 5	44	42	1	87	6	30
Dec. 6	42	44	1	87	6	36
Dec. 7	72	75	3	150	11	47
Dec. 8	56	61	2	119	9	56
Dec. 9	41	31	0	72	5	61
Dec. 10	51	53	0	104	8	69
Dec. 11	36	42	1	79	6	75
Dec. 12	34	31	0	65	5	80
Dec. 13	30	30	1	61	5	85
Dec. 14	55	50	2	107	8	93
Dec. 15	48	45	0	93	7	100
Unknown	118	124	184	426	--	--
Total	781	794	198	1,773	100	100

Table 80. Fisher harvest by county and sex, 1996-97 season.

County	Male	Sex		Total
		Female	Unknown	
Aitkin	29	20	9	58
Becker	10	5	0	15
Beltrami	48	36	0	84
Carlton	5	5	0	10
Cass	52	70	20	142
Clearwater	3	3	0	6
Cook	7	5	0	12
Crow Wing	21	11	0	32
Hubbard	14	16	0	30
Itasca	74	73	144	291
Kanabec	5	1	0	6
Kittson	0	0	0	0
Koochiching	108	124	0	232
Lake	33	25	2	60
Lake of the Woods	16	14	0	30
Mahnomen	0	0	0	0
Marshall	1	3	0	4
Mille Lacs	5	1	0	6
Pennington	0	1	0	1
Pine	13	11	0	24
Polk	1	2	0	3
Red Lake	1	1	0	2
Roseau	34	55	0	89
St. Louis	293	308	3	604
Wadena	1	1	0	2
Unknown	7	4	19	30
Total	781	795	197	1,773

Table 81. Comparison of fisher harvest by county, 1984-96.

County	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Aitkin	8	8	24	14	26	17	8	15	17	23	26	58
Becker	1	4	2	4	4	5	4	6	4	22	17	15
Beltrami	27	71	115	68	78	34	34	34	44	103	27	84
Carlton	0	3	6	3	2	3	3	8	12	14	14	10
Cass	17	32	60	24	43	34	30	33	57	100	58	142
Clearwater	4	4	3	1	3	3	2	3	3	13	0	6
Cook	9	15	29	29	10	14	4	17	17	16	12	12
Crow Wing	6	11	14	3	12	12	14	18	23	30	24	32
Hubbard	1	7	9	6	8	4	6	7	6	8	15	30
Itasca	84	183	247	135	184	99	73	76	177	299	116	291
Kanabec	0	0	0	1	0	0	0	2	0	1	0	6
Kittson	1	1	4	2	1	2	1	0	1	1	0	0
Koochiching	157	195	303	128	211	77	96	97	148	250	92	232
Lake	49	81	114	78	80	78	17	57	82	99	43	60
Lake of the Woods	46	58	91	66	58	27	21	26	8	43	4	30
Mahnomen	0	0	0	5	0	0	0	0	1	1	0	0
Marshall	5	2	19	7	4	3	2	3	7	9	2	4
Mille Lacs												6
Norman	---closed------		1[a]	1[a]	----------closed----------							
Pennington	0	0	0	1	0	0	0	0	0	1	0	1
Pine	0	0	1	1	3	2	0	3	17	23	20	24
Polk	0	1	0	1	0	0	0	0	1	2	3	3
Red Lake	0	0	1	0	0	0	1	0	1	0	0	2
Roseau	68	75	90	68	53	32	21	32	68	93	26	89
St. Louis	195	316	509	377	463	279	187	229	463	616	153	604
Wadena											1	2
Unknown	0	0	0	3	0	21	4	112	2	5	289	30
Total	678	1068	1642	1025	1243	746	528	778	1,159	1,771	942	1,773

[a] The reported harvest is accidental take - Norman County is closed to fisher trapping.

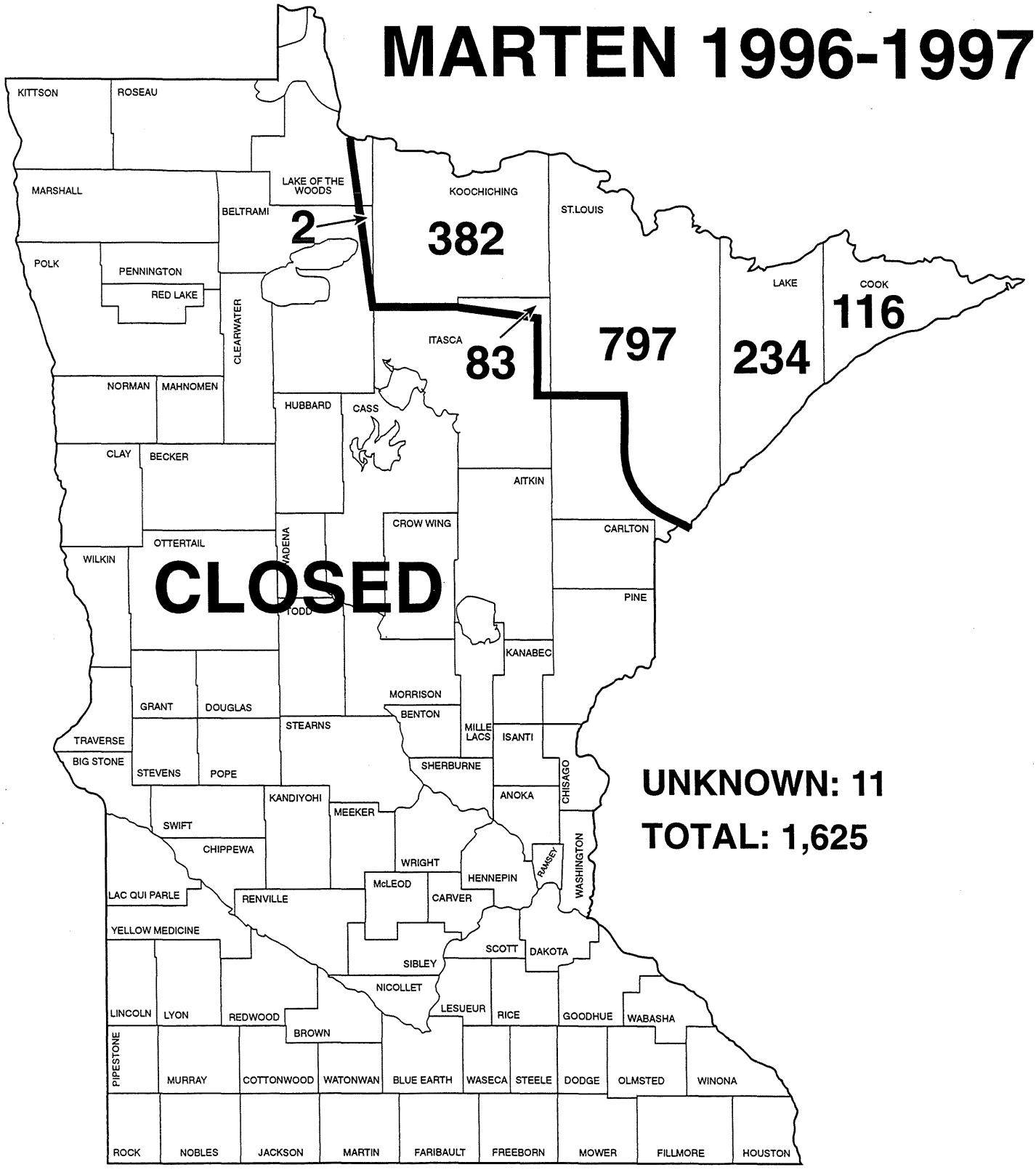

Figure 46. Pine marten harvest by county, 1996-1997.

Table 82. Marten harvest by date and sex, 1996-97 season.

Date	Cumulative Male	Sex			Total	% of Known Percent
		Female	Unknown	Total		
Nov. 30	0	1	0	1	0	0
Dec. 1	95	39	1	135	10	10
Dec. 2	87	37	1	125	9	19
Dec. 3	64	26	1	91	7	26
Dec. 4	62	26	0	88	7	33
Dec. 5	51	25	0	76	6	39
Dec. 6	44	21	2	67	5	44
Dec. 7	98	40	2	140	10	54
Dec. 8	69	49	4	122	9	63
Dec. 9	67	28	4	99	7	70
Dec. 10	50	39	2	91	7	77
Dec. 11	39	22	0	61	5	82
Dec. 12	45	21	2	68	5	87
Dec. 13	32	15	0	47	3	90
Dec. 14	48	34	2	84	6	96
Dec. 15	36	18	1	55	4	100
Unknown	155	91	29	275	-	-
Total	1,042	532	51	1,625	100	100

Table 83. Marten harvest by county and sex, 1996-97 season.

County	Sex			Total
	Male	Female	Unknown	
Beltrami	2	0	0	2
Cook	87	19	10	116
Itasca	43	24	16	83
Koochiching	230	150	2	382
Lake	143	85	6	234
Lake of the Woods	0	0	0	0
St. Louis	530	253	14	797
Unknown	7	1	3	11
Total	1,042	532	51	1,625

Table 84. Comparison of marten harvest by county, 1986-96.[a]

County	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Beltrami	0	0	0	0	0	0	1	0	1	0	2
Cook	75	143	305	288	178	69	180	133	164	156	116
Itasca	---closed---		11	18	16	12	28	43	41	26	83
Koochiching	59	275	266	204	123	115	206	232	313	251	382
Lake	60	270	457	481	446	123	357	252	299	252	234
Lake of the Woods	---closed---		1	0	0	0	0	1	2	0	0
St. Louis	401	675	1,032	1,123	567	336	666	771	707	396	797
Unknown	3	0	0	5	19	1	164	6	0	419	11
Total	798	1,363	2,072	2,119	1,349	656	1,602	1,438	1,527	1,500	1,625

[a] No open season on marten prior to 1985.

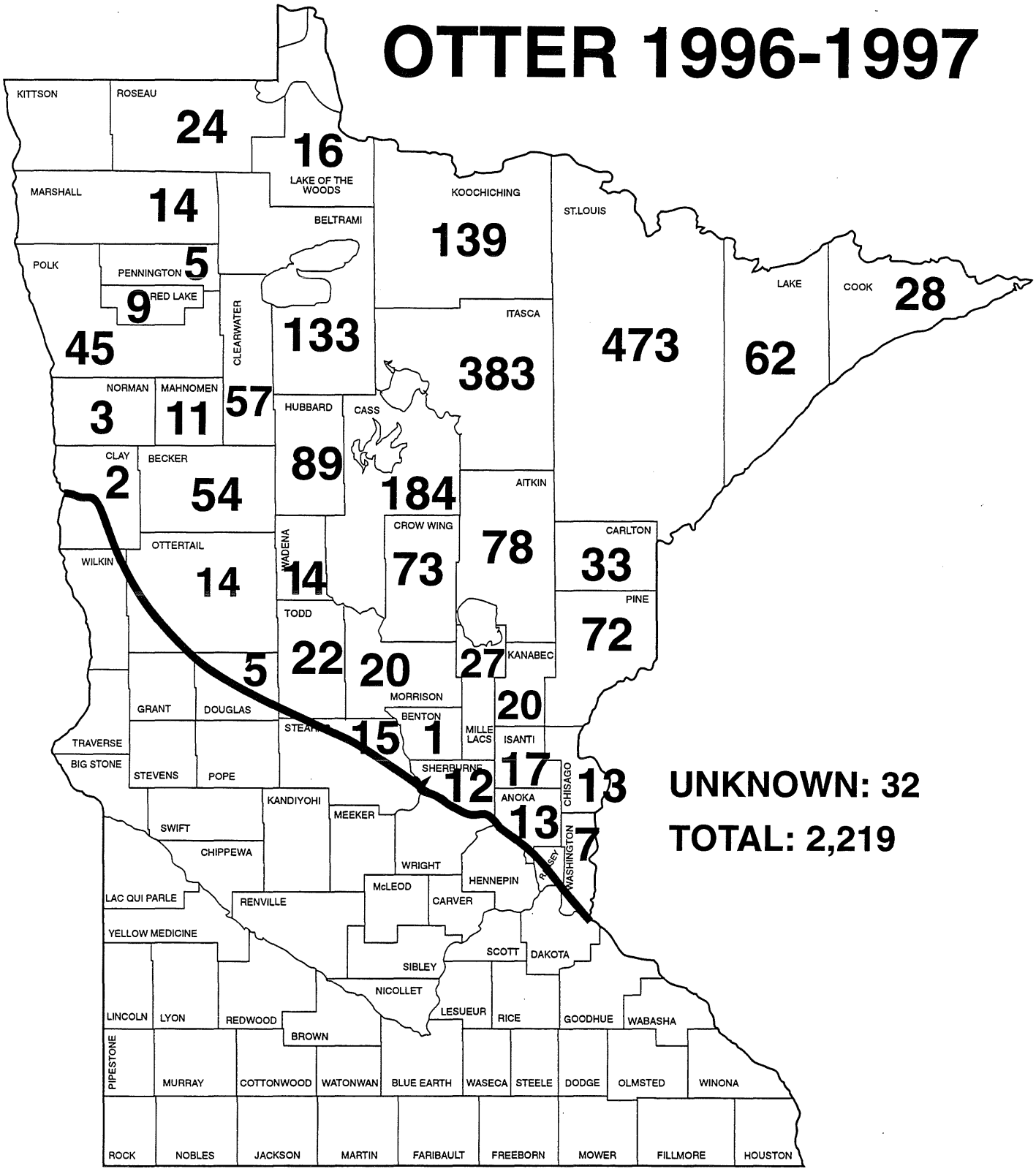

Figure 47. Otter harvest by county, 1996-1997.

Table 85. Otter harvest by 5-day interval and sex, 1996-97 season.

Interval	Sex			Total	% of Known Total	Cumulative Percent
	Male	Female	Unknown			
Oct. 26-30	86	65	2	153	9	9
Oct. 31-Nov. 4	123	131	2	256	14	23
Nov. 5- 9	153	139	8	300	17	40
Nov. 10-14	88	75	3	166	9	49
Nov. 15-19	77	55	0	132	7	56
Nov. 20-24	62	52	2	116	7	63
Nov. 25-29	53	41	1	95	5	68
Nov. 30-Dec. 4	90	66	0	156	9	77
Dec. 5- 9	78	53	3	134	8	85
Dec. 10-14	46	43	6	95	5	90
Dec. 15-19	29	19	4	52	3	93
Dec. 20-24	33	13	2	48	3	96
Dec. 25-29	24	22	0	46	3	99
Dec. 30-Jan. 3	11	9	3	23	1	100
Jan. 4-5*	4	4	0	8	0	100
Unknown	93	69	277	439	-	-
Total	1,050	856	313	2,219	100	100

* 2-day interval.

Table 86. Otter harvest by county and sex, 1996-97 season.

County	Sex			Total
	Male	Female	Unknown	
Aitkin	44	28	6	78
Anoka	7	6	0	13
Becker	27	27	0	54
Beltrami	64	68	1	133
Benton	1	0	0	1
Carlton	15	17	1	33
Cass	74	72	38	184
Chisago	11	2	0	13
Clay	1	1	0	2
Clearwater	29	28	0	57
Cook	15	13	0	28
Crow Wing	40	33	0	73
Douglas	4	1	0	5
Hubbard	46	43	2	89
Isanti	10	7	0	17
Itasca	90	60	233	383
Kanabec	3	17	0	20
Kittson	0	0	0	0
Koochiching	71	68	0	139
Lake	32	30	0	62
Lake of the Woods	12	4	0	16
Mahnomen	6	5	0	11
Marshall	8	6	0	14
Mille Lacs	10	17	0	27
Morrison	10	9	1	20
Norman	1	2	0	3
Ottertail	6	8	0	14
Pennington	2	3	0	5
Pine	38	34	0	72
Polk	22	22	1	45
Red Lake	6	3	0	9
Roseau	15	9	0	24
St. Louis	287	181	5	473
Sherburne	8	4	0	12
Stearns	9	6	0	15
Todd	14	8	0	22
Wadena	6	8	0	14
Washington	4	3	0	7
Unknown	2	3	27	32
Total	1,050	856	313	2,219

Table 87. Comparison of otter harvest by county, 1985-1996.

County	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Aitkin	17	43	55	57	62	49	44	78	70	83	57	78
Anoka	-closed-	4	2	8	21	14	7	14	18	20	13	13
Becker	24	34	41	55	49	32	21	36	38	62	64	54
Beltrami	46	66	125	87	92	74	93	97	91	166	59	133
Benton	-closed-	0	0	1	0	1	1	0	4	5	0	1
Carlton	10	13	24	12	13	25	23	39	38	40	17	33
Cass	59	67	147	84	130	73	67	107	114	184	124	184
Chisago	-closed-	4	11	9	8	10	5	9	17	26	9	13
Clay												2
Clearwater	6	17	19	5	13	6	14	14	27	52	13	57
Cook	5	20	33	25	31	24	30	28	44	53	37	28
Crow Wing	26	27	57	31	65	40	41	83	75	111	59	73
Douglas	----------	----------	----------	----------	----------	closed	----------	----------	----------	----------	2	5
Hubbard	25	27	36	19	39	45	34	44	30	43	48	89
Isanti	-closed-	12	24	12	17	7	5	10	19	20	10	17
Itasca	96	123	199	141	207	108	110	193	259	432	245	383
Kanabec	4	14	28	31	30	18	11	24	32	57	13	20
Kittson	0	1	0	0	0	0	0	1	0	1	1	0
Koochiching	38	45	77	48	59	31	59	52	65	147	68	139
Lake	25	47	61	33	40	26	21	91	44	76	33	62
Lake of the Woods	5	9	39	16	11	6	21	15	1	20	9	16
Mahnomen	14	6	5	8	13	8	0	0	2	21	18	11
Marshall	1	0	1	1	3	0	2	6	7	13	3	14
Mille Lacs	4	0	28	17	12	7	10	5	16	40	7	27
Morrison	-closed-	3	17	9	13	12	3	16	13	34	12	20
Norman	-closed-	0	1	6	1	1	0	0	0	0	4	3
Ottertail	1	4	1	1	3	5	4	5	10	10	19	14
Pennington	1	0	1	0	1	1	1	0	0	0	0	5
Pine	20	21	70	41	64	49	12	76	52	92	59	72
Polk	6	5	7	8	10	7	12	14	28	33	36	45
Ramsey	0	0	0	0	0	1	0	0	0	0	0	0
Red Lake	0	0	1	0	4	0	5	2	5	8	1	9
Roseau	5	7	12	9	13	6	7	14	11	29	3	24
St. Louis	119	145	256	135	248	180	159	187	286	507	148	473
Sherburne	-closed-	1	1	4	5	0	1	8	7	11	10	12
Stearns	----------	----------	----------	----------	----------	closed	----------	----------	----------	----------	3	15
Todd	0	0	0	0	3	0	0	0	1	1	19	22
Wadena	2	1	4	1	7	5	7	2	4	3	9	14
Washington	-closed-	0	3	3	4	3	1	3	0	1	0	7
Unknown	0	2	0	5	3	12	24	91	31	44	203	32
Total	559	777	1,386	992	1,294	888	855	1,368	1,459	2,445	1,435	2,219