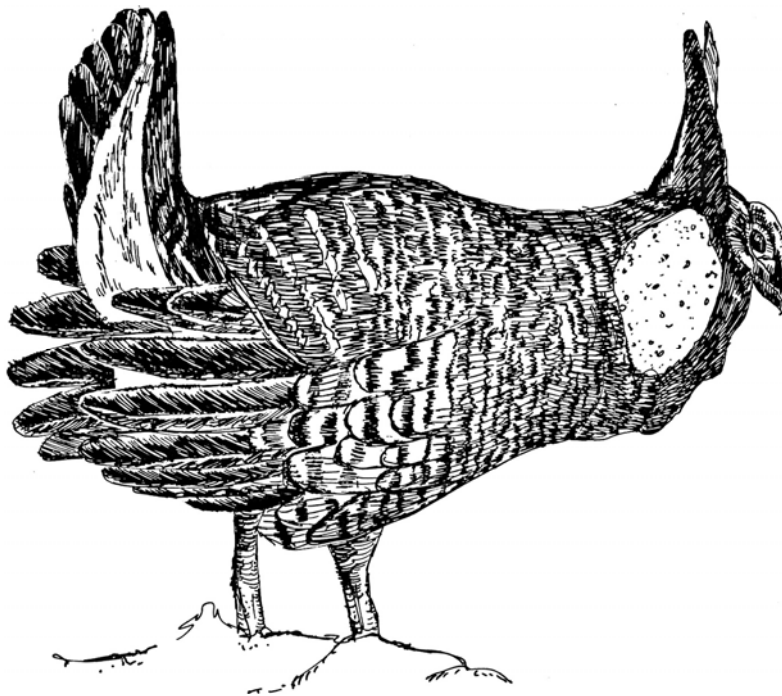


**CENTRAL WISCONSIN
GREATER PRAIRIE-CHICKEN SURVEY**

**FINAL REPORT
2008**



Compiled by:

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Abstract

There was a 26% decrease (based on the mean count) in the number of male Greater Prairie-Chickens (*Tympanuchus cupido pinnatus*) counted on booming grounds in central Wisconsin in the spring of 2008 compared to the spring of 2007. This decrease follows a 26% population increase (based on the maximum count) between the spring of 2006 and 2007. A mean of 423 (range 404-471) male prairie chickens were counted in April 2008 compared to a mean of 569 (range 520-616) for the same areas in 2007.

Background and Methods

In 2007, mandatory training was required for all survey personnel, including the establishment of detailed scouting and survey protocols (e.g. minimum number of surveys required during peak breeding season, increased use of observation blinds where binoculars and spotting scopes resulted in incomplete counts). The effects of these increased efforts on both the number of booming grounds detected and cocks counted is unknown. Further, it can be difficult to define separate grounds when they are close geographically. There can be significant movement of birds between these adjacent areas within the same breeding season. Therefore, caution should be given to interpretation of the number of grounds and the percent change in number of grounds from one year to the next. The most important index to population abundance continues to be the cumulative number of cocks counted on the grounds.

The survey goal is to provide an annual index to population abundance of the Greater Prairie-Chicken in Wisconsin with which to make informed management decisions. Survey objectives are to count the number of males on identified booming grounds and determine the distribution of Greater Prairie chickens by documenting the occurrence of booming grounds. Attendance at leks by cocks varies temporally, making single counts of males at a specific booming ground unreliable as an indicator of abundance. However, multiple counts also do not account for detection probability.¹ Consequently, our surveys are an index to population abundance, not a complete census.² Population indices can be influenced by many factors including but not limited to weather, observer skill and training, time of day, weather patterns, predator abundance, changes in habitat quality, variations in survival and reproductive success, and assumptions of sex ratios³, and a constant error in the use of >1 ground by cocks.⁴

Below is the survey protocol that was followed during the 2008 Greater Prairie-Chicken survey.

1. Conduct surveys during peak breeding activity, which may vary annually due to weather conditions. Historically, peak has been identified between ~ 10 April-25 April.²
2. Conduct surveys during clear, calm mornings (preferably temperatures 25-40°F, winds <10 mph).² Record the following weather conditions on each survey form (sky condition, wind code and direction, and temperature) at the start and end of surveys. Note: it can be difficult to hear vocalizations upwind.
3. Obtain a minimum of three good counts per booming ground⁵ (where sexes are distinguished). If inconsistencies exist in number of cocks, conduct additional surveys until counts are consistent.
4. Conduct surveys during highest activity: 45 minutes before sunrise to one to two hours after sunrise.²
5. Upon locating booming ground, count the number of males from one side to the other several times until the count of males is consistent. Count hens only after obtaining an

accurate count of cocks. Record total (maximum) number of cocks, hens, and unknown sex.⁶

6. If number of cocks and hens cannot be determined due to vegetation or topography:
 - a. First erect a ground blind, if possible, to conduct the survey at a later date.⁶
 - b. Arrive prior to cock arrival on booming ground (~ one hour before sunrise). Do NOT get out of a blind until all hens have left the booming ground.
 - c. If this is not possible, or when booming behavior is not occurring, you may attempt a flush count to get a count estimate⁶, although birds will have to be recorded as unknown sex and the count will not be used in the survey. Flush counts should ALWAYS be a last resort.
7. Record count method (binoculars, spotting scope, flush count) and other observations, such as number of birds of unknown sex, presence of predators, competitors (e.g. pheasants), and flushing behavior.
8. Mark the approximate center of each ground with a red dot on plat book map (provided with survey materials) and provide a legal description of the booming ground (to the nearest 40 acres).⁶

Results and Discussion

In 2008, a mean of 423 (range 404-471) Greater Prairie-Chicken cocks were counted on booming grounds compared to a mean of 569 (range 520-616) in 2007 (Table 1, 2). This represents a 26% decrease in cocks between 2007 and 2008 (based on mean counts). This year's count is the lowest count since the onset of the range-wide survey that was implemented in 1989, with the second lowest count occurring in 2005 (444 cocks).

Although winter conditions (snow depths, temperature, and winter duration) were more intense than previous years, conditions were closer to normal for central Wisconsin, compared to rather mild winters in recent years. It is possible that the winter conditions impacted the Greater Prairie-Chicken population, but the extent of such an impact is not known. Greater Prairie-Chickens commonly snow roost if sufficient depths are available. It has been suggested that winter cover is not limiting when herbaceous vegetation is covered with snow since birds use woody cover, which is relatively abundant in Wisconsin.⁷ Food availability may have been a limiting factor due to observed snow depths. During an experimental study of winter diet for prairie chickens, browse alone was not sufficient for survival, suggesting that winter grain was also necessary.⁸

Buena Vista Wildlife Area

There was a 33% decrease in the mean number of cocks (305 to 202) and a 26% decrease in the number of booming grounds between 2007 and 2008 (Table 1). Between those years, 10 booming grounds were lost and two grounds were gained (Table 3).

Leola Wildlife Area

Between 2007 and 2008, there was a 26% increase in the mean number of cocks (35 to 44) and no change in the number of booming grounds (Table 1). Between 2007 and 2008, the same booming grounds remained (Table 4). Since 2006, the number of booming grounds has remained low (N=4), resulting in more males concentrating on fewer grounds.

Paul J. Olson Wildlife Area

Between 2007 and 2008, the mean number of cocks decreased by 21% (162 to 128) and the number of booming grounds decreased by 5% (Table 1). Between 2007 and 2008, four booming grounds disappeared (Castleberg, Milano, two new grounds from 2007), one reappeared (Eron), and two were newly established (County K and Milano south; Table 5).

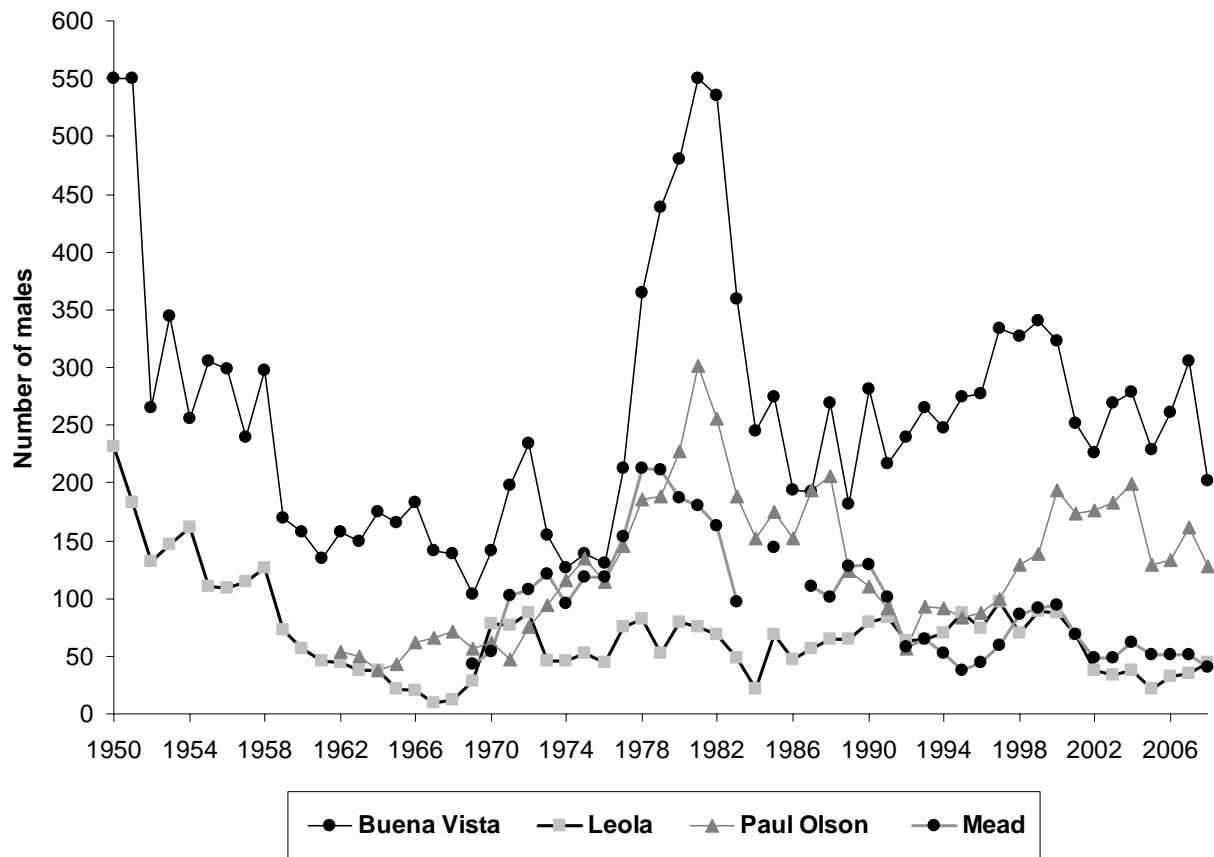
Mead/McMillan Wildlife Areas

The number of cocks decreased by 27% at Mead (51 to 40 cocks) and remained the same at McMillan (3 cocks, Table 1) between 2007 and 2008. The number of booming grounds decreased by 11% at Mead and remained the same at McMillan (one ground). At Mead, three grounds disappeared (Stashek East, Banding Pond Refuge South, Little Birch), and two new grounds appeared (Bauer, Horseshoe South Dike; Table 6). Due to significant amounts of melting snow and rainfall, a few booming grounds were under water this spring.

Outlying Areas

Unity Township in Clark County continues to be the only outlying area where prairie chickens are observed on grounds in the northern part of the Township. In 2007, a new ground with 6 cocks was observed in Section 29 in early May. No birds were observed in this area when checked from late April 2008 to late May 2008. Consequently, only one ground was observed with 6 cocks, resulting in a 54% decrease in the average number of cocks and a 50% loss in booming grounds (Table 1). The previously consistent ground near Sportsman Lake (Clark County) had no birds during four surveys from late April to late May, while northern Unity Township had 6 cocks consistently. The Stetsonville area (Taylor County) was additionally searched several times from late April to late May with no cocks being seen or heard.

Figure 1. The number* of Greater Prairie-Chicken cocks counted on booming grounds in Central Wisconsin, 1950-2008.



* Mean reported since 2007, average may not have always been reported in prior years.

Table 1. Number of booming grounds and cocks for Greater Prairie-Chickens in Central Wisconsin, 2004-2008.

Area	<u>Number of Booming Grounds</u>					<u>Number of Booming Cocks</u>					<u>% Change, 2007-08***</u>	
	2004	2005	2006	2007	2008	2004	2005	2006	2007*	2008*	BG	Cocks**
BUENA VISTA	25	26	27	31	23	278	229	261	305 (279-327)	202 (175-232)	-0.26	-0.33
LEOLA	11	8	4	4	4	34	22	32	35 (36-38)	44 (44-44)	0.00	+0.26
PAUL OLSON	29	23	22	19	18	199	129	133	162 (143-181)	128 (137-144)	-0.05	-0.21
MEAD	14	10	8	10	9	62	51	51	51 (46-53)	40 (40-40)	-0.11	-0.27
MCMILLIAN	1	2	1	1	1	5	4	5	3 (3-3)	3 (2-5)	0.00	0.00
OUTLYING AREAS	3	3	2	2	1	16	9	7	13 (13-14)	6 (6-6)	-0.50	-0.54
DEWEY *	0	0	0	0	0	0	0	0	0	0	--	--
SEARLES	0	0	0	0	0	0	0	0	0	0	--	--
Totals**	83	72	64	67	56	597	444	489	569 (520-616)	423 (404-471)	-0.16	-0.26

* Mean (Low count – high count)

** Mean count used for comparisons (prior to 2007, ranges not reported, means may not have been reported)

*** Percent increase or decrease between 2007 and 2008 for booming grounds (BG) and number of cocks

Table 2. Number* of Greater Prairie-Chicken cocks counted on booming grounds in Central Wisconsin, 1950-2008**

Year	Buena Vista	Leola	Paul Olson	Mead	McMillan	Dewey	Outlying Areas	Total
1950	550	232						782
1951	550	183						733
1952	265	132						397
1953	344	146						490
1954	256	162						418
1955	305	110						415
1956	299	109						408
1957	239	114						353
1958	297	126						423
1959	169	72						241
1960	157	56						213
1961	135	46						181
1962	157	44	54					255
1963	150	37	50					237
1964	175	38	38					251
1965	165	21	43					229
1966	183	20	62					265
1967	141	10	66					217
1968	139	12	71					222
1969	104	28	57	43				232
1970	141	78	62	54				335
1971	198	77	47	102				424
1972	234	88	76	108				506
1973	155	46	94	121				416
1974	126	46	116	96				384
1975	138	52	135	118				443
1976	131	45	114	119				409
1977	213	75	145	154				587
1978	365	82	186	212				845
1979	438	53	189	211				891
1980	480	79	228	187				974
1981	550	75	302	180	14			1121
1982	535	69	256	163	13			1036
1983	359	49	188	97	4			697
1984	245	22	152	*	*			419
1985	275	69	175	144	7			670
1986	194	47	152	*	*			393
1987	193	56	194	110	25			578
1988	269	65	206	101	31			672
1989	182	64	124	128	37		56	591
1990	281	80	110	129	60		49	709
1991	216	84	91	101	64		70	626
1992	239	63	56	58	30		60	506
1993	265	65	93	65	24		45	557
1994	247	70	91	53	19	16	30	526
1995	275	87	83	38	24	+	31	538
1996	277	74	87	44	20	+	39	541
1997	334	97	100	59	9	+	22	621
1998	327	70	129	86	14	+	30	656

Year	Buena Vista	Leola	Paul Olson	Mead	McMillan	Dewey	Outlying Areas	Total
1999	341	89	139	92	14	0	24	699
2000	323	88	194	94	14	+	36	749
2001	252	69	174	69	5	+	17	586
2002	226	38	176	48	7	+	27	522
2003	269	34	183	49	9	?	20	564
2004	278	37	199	62	5	?	16	597
2005	229	22	129	51	4	0	9	444
2006	261	32	133	51	5	0	7	489
2007	305	35	162	51	3	0	13	569
2008	202	44	128	40	3	0	6	423

* Maximum counts may have been recorded 2006 and earlier. Mean counts reported 2007-present.

** Blank: surveys not conducted; prairie chickens may have been present. + Birds present; not counted.

Table 3. Number of Greater Prairie-Chicken cocks counted on booming grounds in Central Wisconsin, Buena Vista Wildlife Area, 2007-2008.

Booming Ground		2007*			2008*			
Historical Name	Legal**	min.	mea n	ma x	Legal**	min.	mea n	ma x
SERR	NESW Sec 2, T21N R7E	13	13	13		10	11.1	14
Kruger	SENW Sec 10, T21N, R7E	1	1	1		2	3.25	5
Quarry/E. Shed	NENW Sec 11, T21N, R7E	9	10	10		3	4.6	6
Bohn's soybeans	SESW Sec 11, T21N, R7E	3	3	3		0	0	0
W. Meils	SENW Sec 12, T21N, R7E	16	18	21		23	24.3	25
Hambach	SENW Sec 14, T21N, R7E	6	6	6		9	11.8	14
Pio	SWNE Sec 14, T21N, R7E	5	5	5		0	0	0
Lyden	NESW Sec 15, T21N, R7E	21	22	25		10	12	14
Saeger	SENE Sec 21, T21N, R7E	2	2	2		0	0	0
Society	SESW Sec 23, T21N, R7E	11	11	12		7	7.5	8
Hakes	NESW Sec 27, T21N, R7E	20	24	27		14	15	16
Bertotto	Gov. lot 4, Sec 3, T21N, R8E	13	14	17		13	15.4	18
W Taft/Prairie Chicken Rd	Gov. lot 9, Sec 4, T21N, R8E	1	1	1		1	1	1
Richmeyer	SWSE Sec 5, T21N, R8E	7	11	15		7	8	9
Bertotto South	NENW Sec 10, T21N, R8E	1	2	2		2	2	2
Pichelmann N	SENW Sec 20, T21N, R8E	14	16	18		6	7.5	9
Blue Top	SENE Sec 25, T22N, R7E	6	7	7		0	0	0
Brandt	SWSE Sec 35, T22N, R7E	9	9	9		0	0	0
Silo	NWNE Sec 35, T22N, R7E	13	13	13		14	16	18
S. Silo	SWNE Sec 35, T22N, R7E	6	6	6		0	0	0
W. of Scrap House	NWSE Sec 36, T22N, R7E	2	2	2		0	0	0
Rozner	NWSW Sec 8, T22N, R8E	15	16	16		7	8.3	10
Prairie Star Ranch	NWNE Sec 17, T22N, R8E	2	2	2		0	0	0
John B	NWSE Sec 17, T22N, R8E	15	16	16		3	4	5
Dorr	SENE Sec 20, T22N, R8E	10	11	12		0	0	0
W. Dorr	SENW Sec 20, T22N, R8E	1	2	3		6	8	10
Bovee	SWSE Sec 21, T22N, R8E	3	4	4		0	0	0
SW Coddington	SWSE Sec 28, T22N, R8E	19	20	20		10	11.3	12
Damon (W Damon Bridge)	SENE Sec 29, T22N, R8E	3	3	4		2	2	2
Sumner	NENW Sec 29, T22N, R8E	18	18	18		14	16.5	20
E. Meils					NENW Sec 20,T21N, R8E	1	1.5	2
Heath					NWSE Sec 32, T22N, R8E	2	2	2
NW Heath (NWH)	SWNE Sec 31, T22N, R8E	14	17	17		9	9.3	10
Total		279	305	327		175	202	232

* Number of males counted among all surveys conducted for each ground: min (smallest number), mean, max (largest number)

** Area of ground may exist in >1 quarter quarter section

Table 4. Number of Greater Prairie-Chicken cocks counted on booming grounds in Central Wisconsin, Leola Wildlife Area, 2007-2008.

Booming Ground		2007*			2008*			max
Historical Name	Legal**	min.	mean	max.	Legal**	min.	mean	.
Lovalace	SWSE Sec 15, T20N, R7E	3	4	4		14	14	14
E. Gillis	NESW Sec 16, T20N, R7E	14	14	15		20	20	20
Petriken South	NESW Sec 21, T20N, R7E	1	1	2		3	3	3
Lucas	SESW Sec 22, T20N, R7E	17	17	17		7	7	7
Total		35	36	38		44	44	44

* Number of males counted among all surveys conducted for each ground: min (smallest number), mean, max (largest number)

** Area of ground may exist in >1 quarter quarter section

Table 5. Number of Greater Prairie-Chicken cocks counted on booming grounds in Central Wisconsin, Paul J. Olson Wildlife Area, 2007-2008.

Booming Ground		2007*			2008*			
Historical Name	Legal**	min.	mea n	max .	Legal**	min.	mea n	max .
Back/County F	NWNW Sec 4, T23N,R5E	7	11	14	add new legal	7	7.6	8
S. Brockman/Swetz	SWNE Sec 6, T23N,R5E	5	5	5		3	3.3	4
Ervin Rd/O'Connell	NWNE Sec 15, T23N, R5E	2	3	5		3	4.8	7
Tibbets/County Line Rd	SESW Sec 5, T23N,R6E	4	4	5		2	2.8	3
Zabawa/Reddin Rd	SWNW Sec 30, T23N, R6E	10	11	12		4	4	4
Castleberg	SENE Sec 36, T24N,R3E	1	1	1		0	0	0
Arpin	SWNW Sec 16, T24N R4E	6	9	10		8	8	8
Woboril	NWSE Sec 35, T24N,R4E	15	16	16		16	16.6	17
N. Brockman/Chestnut	NENE Sec 36, T24N,R4E	11	11	11		8	8	8
Mrozek	NWNE Sec 25, T24N,R5E	3	3	4		2	2	2
Kock/Lundberg Rd	NWSW Sec 34, T24N,R5E	16	19	23		15	16	17
King W./Hetze Rd	SENE Sec 35, T24N,R5E	10	12	14		8	8	8
Milano	SWNE Sec 22, T24N, R6E	2	2	2		0	0	0
Milano (south)						1	1	1
Flaig	NWNE Sec 31, T24N,R6E	22	23	24		12	13.7	15
Dobbs/County M	NENW Sec 33, T24N,R6E	3	3	3		10	10	10
Raikowski	NESW Sec 35, T24N,R6E	22	23	24		10	10.4	11
Eron					SESW Sec 35, T24N,R6E	12	13.4	14
Nordstrom/Sigel	SESW Sec 2, T23N, R5E	1	2	4		4	4	4
New ground	NENE Sec 3, T23N, R4E	1	2	2		0	0	0
New ground	NENE Sec 26, T24N, R4E	2	2	2		0	0	0
County K						3	3	3
Total		143	162	181		128	137	144

* Number of males counted among all surveys conducted for each ground: min (smallest number), mean, max (largest number)

** Area of ground may exist in >1 quarter quarter section

Table 6. Number of Greater Prairie-Chicken cocks counted on booming grounds in Central Wisconsin, Mead & McMillan Wildlife Areas, 2007-2008.

Booming Ground		2007*			2008*			
Historical Name	Legal**	min.	mean n	max.	Legal**	min.	mean n	max.
Mead								
Hollar, Hwy S	NENE S26 T25N R5E	3	4	4		4	4	4
Section 4	SENW S4 T25N R6E	5	5	5		2	2	2
Berard (Wolfe)	NESW S11 T25N R6E	4	4	5		5	5	5
Stashek East	SESW S29 T25N R6E	2	4	3		0	0	0
Albert's	SENE S30 T25N R7E	6	6	7	SWNE S30 T25N R7E	6	6	6
West Honey Island	NESW S28 T26N R5E	6	7	8	NWSW S28 T26N R5E	4	4	4
Berkhahn Flowage West	SWSE S25 T26N R5E	6	6	6		4	4	4
Banding Pond Refuge	NWNE S4 T25N R5E							
South		1	2	2		0	0	0
Honey Island	NESE S34 T26N R5E	11	11	11		11	11	11
Little Birch	NWNW S32 T26N R6E	2	2	2		0	0	0
Bauer					SESE S1 T25N R4E	2	2	2
Horseshoe South Dike					SWSW S27 T26N R5E	2	2	2
Total		46	51	53		40	40	40
McMillan								
Hwy. E & Balsam	NENE S32 T27N R3E	3	3	3		2	3.3	5
Total		3	3	3		2	3	5

* Number of males counted among all surveys conducted for each ground: min (smallest number), mean, max (largest number)

** Area of ground may exist in >1 quarter quarter section

Table 7. Number of Greater Prairie-Chicken cocks counted on booming grounds in Central Wisconsin, Outlying Area, 2007-2008.

Booming Ground		2007*			2008*			
Historical Name	Legal**	min.	mean n	max .	Legal**	min.	mean .	max .
Stopplemour/K & Badger	SENE S3, T27N, R1E	7	7	8		6	6	6
	SWSW S29, T27N, R1E	6	6	6		0	0	0
Total		13	13	14		6	6	6

* Number of males counted among all surveys conducted for each ground: min (smallest number), mean, max (largest number)

** Area of ground may exist in >1 quarter quarter section

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