



2008 Forest Grouse Parts Collection Summary



2008/09 Winning Oregon Upland Game Bird Stamp Artwork
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INTRODUCTION

Since 1980, wings and tails of sooty (*Dendragapus fuliginosus*), dusky (*D. obscurus*) ruffed (*Bonasa umbellus*), and spruce grouse (*Falcapennis canadensis*) have been collected from hunters in Wallowa County. Hunting regulations combine sooty and dusky grouse as one species “blue grouse,” and are referred to as such in this report. In 1984, collections for forest grouse were expanded to other counties in northeastern Oregon and portions of southwestern Oregon. Since that time the effort has increased to nearly statewide participation. In 2008, wings and tails were obtained from 20 of the 36 counties in Oregon where forest grouse were hunted (Table 1). Hereafter, western Oregon refers to all counties west of the crest of the Cascades plus Hood River and Wasco counties and eastern Oregon refers to all other counties. Wing-bees for the 2008 collection effort were held at Ladd Marsh Wildlife Area on 14 January 2009 and at the SW Region Office in Roseburg on 28 January 2009. A total of 804 wings and tails were examined; about 5% fewer than 2007 and 20% fewer than the long term. For eastern Oregon, blue and ruffed grouse samples increased 18% and decreased 22%, respectively. In Western Oregon, blue and ruffed grouse samples decreased by 8% and 10%, respectively. The following results were arranged by species (blue, ruffed, and spruce grouse). Additionally, long-term results are provided for blue and ruffed grouse collections in Wallowa County.

USE OF INFORMATION

Data from wings can be used by biologists to better understand the distribution and timing of grouse harvest (Figures 1 & 2) in their areas, the relative proportions of harvest among species, the sex and age structure of the population, and the chronology of

breeding activity (Figures 3 & 4). Distribution and timing of harvest have relevance to obtaining information about grouse populations, season structure, and to hunter participation for coordination of law enforcement activities. Sex and age data reveal the reproductive performance in a population (productivity), and in conjunction with abundance information, provide insight into population trends. Estimated hatch dates can be used to understand spatial variation in timing of reproduction, and to assist in developing appropriate census techniques. For example, if hatching times vary substantially among regions, the timing of summer censuses could be adjusted to maximize the probability of observing birds of various age classes. Harvest vulnerability may vary by age and gender, and if so, harvest statistics on grouse may not be representative of sex and age ratios of a population. Presumably, the aforementioned biases would be constant for hunter-harvested birds among years, thus providing an index of the various parameters for the population.

METHODS

District wildlife biologists collect grouse wings and tails from hunters by placing “wing barrels” in locations where grouse hunters are likely to encounter them. Bags are placed at the barrels which instruct hunters to remove one wing and the tail from each grouse they kill and place it in a single bag. Participants are asked to record the date, county and general location of the kill. Barrels are checked periodically throughout the season and any bags not dated or labeled by hunters are labeled with the barrel location and date of collection. A subset ($n = 184$) of wing bag collection packets are mailed to a list of cooperating hunters and field staff distributes some prior the hunting season. A request for participation in the program is placed in the annual game bird regulations and

on the Department's website. Finally, further opportunities to solicit participation such as magazine articles and news paper interviews are utilized when available.

Each year wing bees are conducted to collect information from the wing and tail feathers. Currently, wing bees are held at Ladd Marsh Wildlife Area and at the Roseburg Regional Office. The data collected from each set of feathers: species, location of kill, date of kill, sex, age, and the stage of primary wing feather molt for immatures. Age is recorded as adult or immature and in addition, the adult class is further subdivided to adult or yearling (if discernable) for blue grouse. After the wing bees, data is entered into a spreadsheet which contains formulas for estimating the age, in days, of immatures based on the sequential replacement of primary wing feathers. Hatch dates are then back calculated for birds of known harvest date.

BLUE GROUSE RESULTS

The 2008 hunting season allowed a daily bag limit of 3 birds with 6 in possession. The season started 1 September statewide and ended 30 November in eastern Oregon and 31 January 2009 in western Oregon. During 2008, 429 wings and tails from blue grouse were collected in Oregon, an increase of 19% from 2007 and a decrease of 16% from the previous 28-year average (Table 1 and Appendix A). Twenty-five percent of the grouse were harvested during the first week of the season and 58% by the end of September (Figure 1). In contrast to last season but similar to most previous seasons, there was an evident second peak of submissions during late September and early October.

For eastern Oregon, 30% of wings and tails submitted were from Wallowa County. Seven other eastern Oregon counties were represented with Grant (27%), Baker (22%) and Union (18%) having significant contributions (Table 1 and Appendix A). For

Western Oregon, 38% were submitted from Douglas County. The remainder of western Oregon wings was submitted from ten other counties (Table 1 and Appendix A).

Age and Sex Ratios

Immature grouse comprised 72% and 55% of the sample from eastern and western Oregon, respectively (Table 2). These proportions indicate increased (eastern Oregon) and decreased (western Oregon) productivity compared to 2007 (67% increases for both regions). Statewide, the proportion of immatures in 2008 was comparable to 7 of the last 10 years (Figure 3). Males were 51% of the statewide sample, 59% of the adults, and 49% of immatures in 2008. The mean sex ratio for the previous 28 years for immatures is 49:51 in favor of females and the mean sex ratio for adults is 63:37, in favor of males.

Hatching Chronology

Hatch dates for grouse harvested during the 2008 hunting season ranged from 5 May to 22 July (\bar{x} = June) in eastern Oregon and 16 May to 22 July in western Oregon (\bar{x} = 21 June). Compared to the previous year, mean hatch was 9 and 11 days later in eastern and western Oregon, respectively. For eastern Oregon mean hatch date was 7 days later than the previous 27-year average. This is the latest estimated mean hatch date of blue grouse since collections began in 1980. Similar to previous years, the mean hatch date in western Oregon occurred later than the mean hatch date in eastern Oregon (Figure 5), and statewide, most (56%) grouse in the sample hatched from 15 May – 11 June (Figure 6), which is substantially lower than previous years.

Wallowa County – 1980 to 2008

From 1980 through 2008 hunters in Wallowa County submitted 8,579 blue grouse wings and tails (Table 3 and Appendix A). In 2008, 104 wings were collected, the fewest collected since 1983. Males comprised 53% of the sample, slightly lower than the long-term average for the 28-year collection period (48 to 66%, $\bar{x} = 57\%$). Female blue grouse outnumbered males only in 1995, when they were 52% of the sample.

The immature proportion (76%) of the harvest was up slightly compared to 2007 (70%) and represents another year of above average productivity. The proportion of immatures in Wallowa County ranged from a low of 38% in 1982 to a high of 80% in 2002 (1982–2008, $\bar{x} = 62\%$). Over the past 29 years, blue grouse populations in Wallowa County appeared to have four years of poor production as measured by a proportion of immatures <50% (1982, 1991, 1995, and 2006) and nine years of good production as measured by a proportion of immatures >65% (1980, 1983, 1985, 1986, 1989, 1996, 1998, 2007, 2008; Table 3 and Figure 7).

From 1985 to 2008, the proportion of yearling females accounted for 17–47% ($\bar{x} = 26\%$) of the adult female sample; and yearling males from 9–32% ($\bar{x} = 22\%$) of the adult male sample. In 2008, the proportions of female yearlings to adult females (36%) was higher than the previous year and above the previous 28-year mean, however male yearlings to adult males (14%) was lower than the previous year and below the previous 28-year mean.

Mean hatch dates have ranged from 25 May (1986 and 2004) to 6 June (1995) with the preponderance of young hatched during a 3-week interval between late May and

early June (Table 4). In 2008, the mean hatch date was 5 June and ranged from 10 May to 22 July.

Douglas County – 2008

Since 1984, 937 blue grouse wings and tails have been examined from Douglas County in southwestern Oregon, with 30 collected in 2008. Collection numbers were similar to the previous 3-year average, but down from the long-term average of 48 (excludes years when no parts were collected.). Immatures comprised 43% of the sample, indicating relatively poor production during 2008, and males comprised 37% of the sample. The mean hatch date was June 14. However, we were only able to determine hatch date for 4 of the 13 juvenile grouse in the sample.

RUFFED GROUSE RESULTS

The 2008 ruffed grouse hunting season allowed a daily bag limit of 3 birds with 6 in possession. Statewide the season began 1 September and extended through 30 November in eastern Oregon and 31 January 2009 in western Oregon. In 2008, 396 ruffed grouse wings and tails were collected from eastern and western Oregon, a 16% decrease from 2007 and a 20% decrease from the previous 25-year average (Table 1; Appendix B). During the first week of the season, 17% of ruffed grouse were harvested, and by the end September 52% of harvest had occurred (Figure 2). A second peak in harvest occurred during the first week in October and coincided with start of many firearms deer seasons.

In eastern Oregon, 297 samples were collected, a 22% decrease from the previous year. Most of the samples collected in eastern Oregon were from Grant, Union, and Wallowa Counties. In western Oregon, 99 ruffed grouse samples were collected, a 10%

increase from the previous year. Most of the ruffed grouse samples (64%) in western Oregon were from SW Oregon counties.

Age and Sex Ratios

Gender could not be determined for 55% and 35% percent of the submissions from eastern and western Oregon, respectively, because of the lack of tails or rump feathers attached to the tail. Age could be determined for 98% and 100% of the samples from eastern and western Oregon, respectively.

Sixty-two percent of ruffed grouse samples from eastern Oregon and 52% of samples from western Oregon in 2008 were immatures (Table 5), an indication of good productivity in eastern Oregon and fair productivity in western Oregon. An analysis of wings from the previous 25 years in Oregon found that immatures accounted for 33–74% of the sample. Ruffed grouse populations in other states have also displayed highly variable productivity that ranged from 39–80% of immatures in fall populations (Dorney 1963, Davis and Stoll 1973). The differences in production may be related to local variations and naturally occurring population cycles.

Males accounted for 53% and 58% of wings were sex could be determined from eastern ($n=135$) and western ($n=64$) Oregon, respectively. Fifty-eight percent of adult wings in eastern Oregon were males, compared to 65% in western Oregon. Males accounted for 55–61% of the adult population in several states in the mid-West (Dorney 1963, Davis and Stoll 1973, Major and Olson 1980). In 2008, 48% of immatures in eastern Oregon were male, and 50% of immatures from western Oregon were male. Sex ratios may lack accuracy because 55% of the eastern Oregon samples and 35% of western

Oregon samples lacked diagnostic feathers for gender identification and sample sizes in western Oregon were relatively small.

Hatching Chronology

The mean hatch date for ruffed grouse in 2008 was 7 and 11 June for eastern and western Oregon, respectively (Table 6). Peak hatch was 10 days later in eastern Oregon and 13 days later in western Oregon as compared to 2007. Hatching dates ranged from 7 May to 16 July, and 24 May to 26 June for eastern and western portions of the state, respectively. Statewide most grouse nests hatched from 22 May to June 18 (eastern Oregon 72%, western Oregon 86%) (Figure 4).

Wallowa County - 1981 to 2008

From 1981 through 2008, hunters submitted 5,618 ruffed grouse wings and tails from Wallowa County. Percent immatures in the samples ranged from 49% (2004) to 83% (1983). Productivity (percent immatures [63 %]) in the 2008 wing sample increased 8% from the previous year. Information collected since 1983 in Wallowa County indicated well above average productivity from 1983–1990, then age ratios declined and stabilized until they again increased in 1999 through 2001. Productivity has since been stable and slightly higher than during the early 1990s except for 2004 when it declined to an all time low (Figure 8). The ratio of males (56%) in the 2008 sample was higher than last year and slightly below the average for 1986–2007 (58%). The mean hatch date of 4 June was 6 days later than the average hatch date for the previous 25 years (29 May). In 2008, as in previous years, a large proportion of the sample (45%) did not include diagnostic rump feathers for gender identification and may confound results for sex ratios.

Douglas County – 2008

Since 1984, 1,172 ruffed grouse wing and tail samples have been examined from Douglas County in southwestern Oregon, with 38 collected in 2008. Samples were up 15% from last year and the previous 3-year average, but down 37% from the long-term average of 60. Males comprised 48% of the sample while immatures comprised 47% of the sample, indicating poor production during 2008. The mean hatch date was 6 June, however it was only possible to estimate hatching dates for 3 immature grouse in 2008.

SPRUCE GROUSE Wing Collections – 1985 to 2008

Incidental to the harvest of blue and ruffed grouse in Baker, Wallowa and Union counties, 157 spruce grouse wings and tails were collected from wing barrels from 1985–2008. During 2008, 6 spruce grouse wings were collected from Wallowa County and one each from Union and Baker counties. Wallowa County typically has the highest incidental harvest of spruce grouse, and likely harbors the largest amount of spruce grouse habitat as evidenced by observations (Figure 9) and wing collections (Appendix 3). The 1988 wing bee recorded the highest number of spruce grouse wings (27). During 1997, wings were obtained from Baker County for the first time, likely related to an increased effort in wing collection rather than range expansion. During the past 23 years, immatures and adults composed nearly equal proportions of the sample. Spruce grouse are currently listed as *vulnerable status* on Oregon’s Sensitive Species List.

Mike Baird, under contract to ODFW, and students from Enterprise High School initiated a pilot project in 2005 to collect basic life history information about spruce grouse in Wallowa County, particularly the McCully Basin. The project is ongoing with several new birds captured and marked during spring and summer, and were tracked into

winter. These and previously marked grouse will be monitored throughout the year, and capture and marking attempts occurred in spring 2009. Mike and his students continue to place posters at trailheads to solicit spruce grouse observations from the public and to educate hunters.

CONCLUSIONS

The number of hunter harvested forest grouse wing and tail samples submitted to ODFW was down from the previous year; however, this likely due to lower forest grouse harvest in 2008/09 as compared to 2007/08 and not entirely the result of decreased participation. Mean hatch dates for both grouse species were later in 2008 than in 2007. The mean eastern Oregon blue grouse hatch date was the latest on record. The proportion of immature grouse increased compared to 2007, and above the long term average, an indication of increased productivity in 2008.

Samples for western Oregon were down in 2008 and continue to be relatively small in nearly all counties. In 2008, blue and ruffed grouse in western Oregon made up 52% and 67% of the estimated statewide harvest, yet they only composed 13% and 17% of the parts collected in this region. There is a need for improved collection efforts to provide adequate samples from different regions particularly in areas of northwestern Oregon. Statewide, there is a need to continue education efforts to increase hunter awareness and participation in returning wings and tails. These efforts should emphasize the need for hunters to include both a wing and a tail fan from blue grouse and a wing and a tail fan with attached rump feathers for ruffed grouse gender identification. Continuing hunter education efforts are critical for the success of future wing-bees.

Data collected from eastern Oregon blue grouse wings and tails for 2008 suggested the number of immatures in the harvest was higher than average, at least in northeastern Oregon where most of the sample was obtained. In contrast, the proportion of immature wings in western Oregon declined compared to last year, a possible indication of reduced productivity this year; however, small sample sizes make it difficult to extrapolate to the larger population.

Ruffed grouse harvest estimates in 2008 indicated fewer grouse were available to hunters compared to 2007, and the number of wings and tails collected in NE Oregon was the lowest since 1995. Productivity, as measured by the proportion of immatures in the sample, was greater in NE Oregon compared to 2007, with Wallowa and Grant Counties increasing, Union and Baker Counties decreasing. The age ratio in Wallowa County, after remaining stable for the past three years, increased to 63% immatures, its highest level in 10 years. Collections of grouse wings from hunters provide a valuable and reasonably low cost method of obtaining demographic profiles of grouse populations in Oregon. Consistency in wing collections is important to compare harvest and hatch dates, and age and sex ratios between areas and years. Wing collections were down 5% statewide for all species of grouse collectively. However, blue grouse wing collection increased in eastern Oregon, but showed a slight decrease in western Oregon. Ruffed grouse collections were down statewide, with decreases of 22% and 9% noted in eastern and western Oregon, respectively (Appendices A and B).

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Table 1. Forest Grouse wings submitted to the 2008 Oregon forest grouse wing-bees and, data from 2006 and 2007 are included for comparison.

County	Blue			Ruffed			Spruce			Totals		
	2008	2007	2006	2008	2007	2006	2008	2007	2006	2008	2007	2006
Baker	76	17	34	21	27	17	1			98	44	51
Crook										0	0	0
Deschutes			3	2						2	0	3
Grant	93	32	18	63	87	57				156	119	75
Jefferson										0	0	0
Morrow	5	12		7	1					12	13	0
Umatilla	2	1		3	8					5	9	0
Union	62	32	54	107	60	102	1	3		170	95	156
Wallowa	104	172	163	94	198	152	6		2	204	370	317
Wheeler			1							0	0	1
NE. OR TOTAL	342	266	273	297	381	328	8	3	2	647	650	603
Harney	5	7	3							5	7	3
Klamath	2	7			2	1				2	9	1
Lake		16	24							0	16	24
Malheur										0	0	0
SE. OR TOTAL	7	30	27	0	2	1	0	0	0	7	32	28
Benton										0	0	0
Clackamas	3		4	1						4	0	4
Clatsop	1			1						2	0	0
Columbia					1					0	1	0
Coos				2	5	2				2	5	2
Curry	1	12	1		13					1	25	1
Douglas	30	28	13	38	33	10				67	61	23
Hood River	5	8	12	7	4	18				12	12	30
Jackson	8	5	3	21	8					13	13	3
Josephine	1			1						0	0	0
Lane	12	8	5	9	9	9				14	17	14
Lincoln					1					0	1	0
Linn	7	4	7	4	1	6				8	5	13
Marion	2		1	3	6					5	6	1
Polk										0	0	0
Tillamook			2		1	4				0	1	6
Wasco	10	8	6	10	8	10				20	16	16
Washington			1			2				0	0	3
Yamhill										0	0	0
Unknown		1		2						2	1	0
W. OR TOTAL	80	74	55	99	90	61	0	0	0	150	164	116
GRAND TOTAL	429	370	355	396	473	390	8	3	2	804	846	747

Table 2. Sex ratios, age ratios and hatching dates of blue grouse determined from parts submitted by hunters from Oregon harvest during the 2008/09 hunting season.

County	n	Sex Ratios				Age Ratios						Mean Hatch	Hatch Range		
		M:F	AM:AF	IM:IF	YM:YF	I:A	I:AF	IM:AM	IF:AF	YM:AM	YF:AF				
Baker	76	50:50	84:16	36:64	100:0	65:35	92:8	45:55	88:12	6:94	0:100	8-Jun	10-May	to	7-Jul
Grant	93	49:51	55:45	50:50	0:100	65:35	81:19	63:37	67:33	0:100	21:79	6-Jun	5-May	to	8-Jul
Morrow	5	60:40	100:0	50:50		80:20	100:0	67:33	100:0	0:100		2-Jun	20-May	to	15-Jun
Umatilla	2	50:50	50:50			0:100	0:100	0:100	0:100	0:100	0:100				
Union	62	52:48	62:38	49:51	67:33	79:21	91:9	75:25	83:17	25:75	20:80	7-Jun	11-May	to	26-Jun
Wallowa	104	53:47	56:44	53:47	33:67	76:24	88:12	75:25	77:23	14:86	36:64	5-Jun	10-May	to	22-Jul
Total NE	342	51:49	63:37	48:52	38:62	71:29	87:13	66:34	77:23	9:91	24:76	6-Jun	5-Jul	to	22-Jul
Harney	5	60:40		60:40		100:0	100:0	100:0	100:0			11-Jun	31-May	to	17-Jun
Klamath	2	50:50	100:0	0:100		50:50	100:0	0:100	100:0	0:100		2-Jul			
Total SE	7	57:43	100:0	50:50		86:14	100:0	75:25	100:0	0:100		15-Jun	31-May	to	2-Jul
Clackamas	3	33:67	0:100	50:50		67:33	67:33	100:0	50:50		0:100				
Clatsop	1	100:0	100:0			0:100		0:100		0:100					
Curry	1	0:100		0:100		100:0	100:0		100:0						
Douglas	30	37:63	41:59	31:69	0:100	43:57	56:44	36:64	47:53	0:100	10:90	14-Jun	16-May	to	1-Jul
Hood River	5	40:60	100:0	25:75		80:20	100:0	50:50	100:0	0:100					
Jackson	8	50:50	67:33	40:60		63:37	83:17	50:50	75:25	0:100	0:100	28-Jun	21-Jun	to	7-Jul
Josephine	1	100:0	100:0			0:100		0:100		0:100					
Lane	12	58:42	33:67	83:17	33:67	50:50	60:40	71:29	20:80	50:50	50:50	28-Jun	25-Jun	to	2-Jul
Linn	7	86:14	100:0	80:20		71:29	100:0	67:33	100:0			1-Jul	21-Jun	to	22-Jul
Marion	2	50:50	0:700	100:0		50:50	50:50	100:0	0:100		0:100	27-Jun			
Wasco	10	60:40	33:67	71:29		70:30	78:22	83:17	50:50	0:100	0:100	10-Jun	29-May	to	27-Jun
Total W	80	63:37	47:53	52:48	25:75	55:45	70:30	58:42	53:47	6:94	16:86	21-Jun	16-May	to	22-Jul
Grand Total	429	51:49	59:41	49:51	35:65	68:32	84:16	64:36	73:27	7:93	21:79	8-Jun	5-May	to	22-Jul

Table 3. Sex ratios, age ratios and hatching dates of blue grouse determined from parts submitted by hunters from harvest in Wallowa County, Oregon. 1980 to 2008.

Season	n	Sex Ratios				Age Ratios							Mean Hatch	Hatch Range			
		M:F	AM:AF	YM:YF	IM:IF	I:A	I:AF	IM:AM	IF:AF	Y:A	YM:AM	YF:AF					
1980	59	54:46	83:17		41:59	69:31	93:7	53:47	89:11								
1981	125	57:43	60:40		55:45	62:38	80:20	61:39	65:35				29-May	7-May	to	29-Jun	
1982	95	53:47	53:47		53:47	38:62	56:44	38:62	38:62				31-May	16-May	to	16-Jun	
1983	165	53:47	57:43		51:49	72:28	86:14	69:31	74:26				30-May	8-May	to	25-Jun	
1984	155	57:43	63:37		53:47	52:48	74:26	47:53	58:42				4-Jun	13-May	to	8-Jul	
1985	258	53:47	63:37	50:50	49:51	72:28	88:12	67:33	79:21	17:83	13:87	23:77	1-Jun	4-May	to	4-Jul	
1986	598	58:42	74:26	76:24	52:48	70:30	90:10	62:38	81:19	23:77	24:76	22:78	26-May	3-May	to	15-Jul	
1987	736	58:42	72:28	65:35	51:49	65:35	87:13	56:44	76:24	31:69	28:72	38:62	26-May	2-May	to	14-Jul	
1988	471	54:46	60:40	48:52	47:53	53:47	75:25	46:54	60:40	28:72	23:77	37:63	2-Jun	28-Apr	to	19-Jul	
1989	371	53:47	59:41	58:42	51:49	70:30	85:15	66:34	73:27	22:78	22:78	22:78	30-May	29-Apr	to	10-Jul	
1990	286	58:42	65:35	72:28	55:45	54:46	77:23	49:51	59:41	25:75	28:72	20:80	27-May	5-May	to	1-Jul	
1991	260	60:40	68:32	61:39	50:50	43:57	70:30	35:65	53:47	28:72	25:75	34:66	1-Jun	9-May	to	13-Jul	
1992	284	54:46	61:39	52:48	47:53	57:43	78:22	50:50	64:36	22:78	19:81	28:72	25-May	2-May	to	26-Jun	
1993	200	58:42	61:39	67:33	57:43	65:35	83:17	63:37	67:33	21:79	23:77	19:81	2-Jun	10-May	to	28-Jun	
1994	249	59:41	66:34	42:58	52:48	58:42	80:20	52:48	66:34	18:82	12:88	31:69	28-May	10-May	to	21-Jun	
1995	140	47:53	61:39	52:48	30:70	43:57	66:34	27:73	58:42	26:74	22:78	32:68	6-Jun	14-May	to	10-Jul	
1996	261	61:39	75:25	60:40	54:46	67:33	89:11	58:42	79:21	12:88	9:91	19:81	30-May	10-May	to	8-Jul	
1997	205	54:46	78:22	68:32	41:59	61:39	88:12	45:55	81:19	32:68	27:73	47:53	30-May	10-May	to	24-Jun	
1998	361	59:41	73:27	68:32	53:47	66:34	88:12	59:41	78:22	26:74	24:76	31:69	25-May	8-May	to	30-Jun	
1999	453	59:41	69:31	58:42	51:49	59:41	82:18	51:49	69:31	34:66	29:71	47:53	6-Jun	11-May	to	5-Jul	
2000	379	60:40	82:18	72:28	51:49	68:32	92:8	56:44	84:16	26:74	23:77	41:59	27-May	3-May	to	3-Jul	
2001	570	52:48	62:38	66:34	47:53	65:35	83:17	58:42	72:28	19:81	20:80	18:82	31-May	3-May	to	7-Jul	
2002	376	59:41	64:36	57:43	56:44	63:37	83:17	59:41	67:33	27:73	24:76	32:68	5-Jun	5-May	to	29-Jul	
2003	460	64:36	74:26	65:35	58:42	65:35	88:12	59:41	74:26	24:76	21:79	32:68	3-Jun	6-May	to	17-Jul	
2004	251	50:50	56:44	59:41	47:53	51:49	70:30	46:54	55:45	30:70	32:68	27:73	25-May	5-May	to	30-Jun	
2005	209	64:36	80:20	82:18	56:44	59:41	88:12	50:50	76:24	20:80	21:79	18:82	1-Jun	9-May	to	14-Jul	
2006	163	61:39	70:30	72:28	54:46	48:52	76:24	41:59	58:42	23:77	22:78	20:80	1-Jun	10-May	to	8-Jul	
2007	172	55:45	55:45	56:44	56:44	70:30	84:16	71:29	70:30	31:69	32:68	30:70	27-May	6-May	to	4-Jul	
2008	104	53:47	56:44	53:47	53:47	76:24	88:12	75:25	77:23	24:76	14:86	36:64	5-June	10-May	to	22-July	

Table 4. The proportion of immature blue grouse harvested by hunters in Wallowa County, Oregon hatched during individual weekly periods. 1981-2008.

Sample Size	Year															
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
	n=47	n=34	n=97	n=80	n=158	n=339	n=373	n=219	n=216	n=129	n=99	n=119	n=95	n=92	n=45	n=127
24 April-30 April								1								
1 May-7 May	2				1	5	5	1	1	5		1				
8 May-14 May	4		6	3	5	19	8	4	4	17	7	15	2	9	2	7
15 May-21 May	23	9	7	6	13	18	22	7	13	12	9	26	6	20	11	20
22 May-28 May	19	26	36	24	22	17	20	22	29	19	25	15	21	17	13	28
29 May-4 June	30	41	24	24	27	17	31	30	28	22	23	24	34	33	16	17
5 June-11 June	13	12	12	23	13	12	8	17	11	12	17	14	31	16	27	9
12 June-18 June	2	12	7	14	13	5	3	8	6	7	9	3	4	4	20	7
19 June-25 June	1		7	5	4	4	2	5	4	2	4	1	1	1	7	7
26 June-2 July	2			4	1	2	1	3	2	3	2	1	1		4	2
3 July-9 July				1	1		1				2					3
10 July-16 July						1		1			1				2	

Table 4. Continued

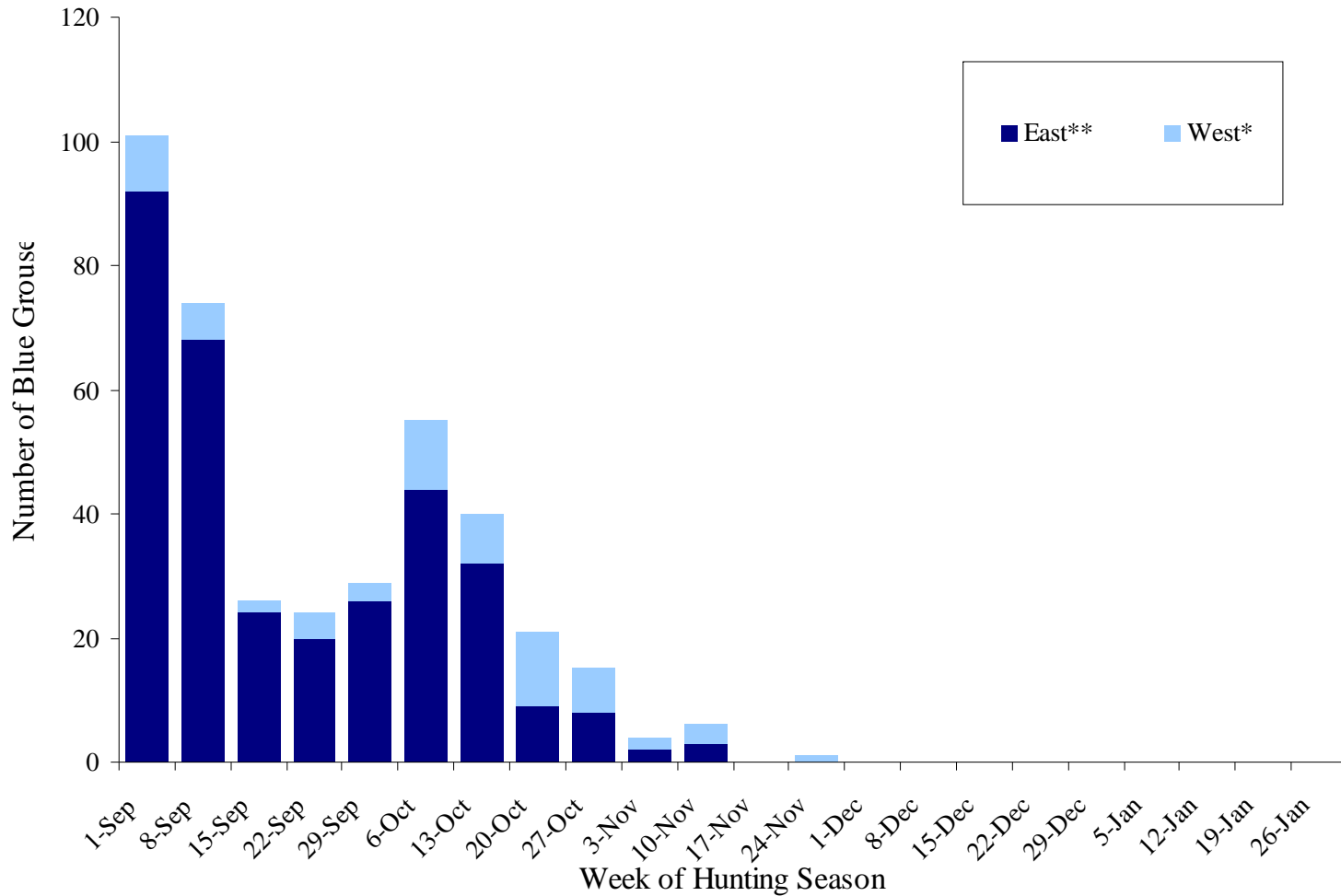
Sample Size	Year											
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	n=109	n=207	n=211	n=213	n=288	n=209	n=231	n=99	n=86	n=68	n=95	n=69
24 April-30 April												
1 May-7 May				3	1			4			3	
8 May-14 May	7	14	3	15	4	3	4	14	12	7	4	6
15 May-21 May	11	27	4	18	10	10	10	22	14	16	26	14
22 May-28 May	26	27	18	17	17	17	20	23	20	16	22	10
29 May-4 June	30	15	21	19	38	20	25	19	19	25	26	14
5 June-11 June	19	10	19	16	18	21	16	12	17	13	8	30
12 June-18 June	4	3	21	7	6	20	15	2	8	10	6	14
19 June-25 June	3	2	9	3	4	3	8	2	5	4	1	3
26 June-2 July		1	3			1	1	1	3	4	1	3
3 July-9 July			1		1	1			1	3	1	1
10 July-16 July						1			1			
17 July-23 July						1						3

Table 5. Sex ratios, age ratios and hatching dates of ruffed grouse as determined from parts submitted by hunters from grouse harvested in Wallowa County, Oregon. 1983 to 2008.

Season	n	Sex			Age				Mean Hatch	Hatch Range		
		M:F	AM:AF	IM:IF	I:A	I:AF	IM:AM	IF:AF				
1983	70				83:17							
1984	47	50:50	0:100		66:34	97:3	100:0	0:100	5-Jun	22-May	to	20-Jun
1985	193	56:44	64:36	52:48	75:25	92:8	61:39	72:28	28-May	3-May	to	7-Jul
1986	395	61:39	69:31	56:44	72:28	93:7	62:38	73:27	29-May	5-May	to	14-Jul
1987	372	59:41	51:49	64:36	70:30	88:12	66:34	54:46	27-May	4-May	to	28-Jun
1988	212	69:31	78:22	64:36	68:32	95:5	60:40	75:25	1-Jun	13-May	to	1-Jul
1989	139	55:45	50:50	57:43	74:26	90:10	71:29	65:35	2-Jun	2-May	to	29-Jun
1990	189	61:39	71:29	56:44	67:33	93:7	63:37	76:24	28-May	11-May	to	20-Jun
1991	155	64:36	62:38	65:35	63:37	88:12	65:35	62:38	3-Jun	7-May	to	6-Jul
1992	220	65:35	64:36	66:34	61:39	87:13	55:45	53:47	27-May	30-Apr	to	5-Jul
1993	55	65:35	71:29	60:40	62:38	86:14	50:50	62:38	1-Jun	15-May	to	2-Jul
1994	112	53:47	52:48	54:46	55:45	76:24	53:47	51:49	25-May	12-May	to	26-Jun
1995	84	61:39	68:32	52:48	57:43	89:11	50:50	67:33	30-May	12-May	to	26-Jun
1996	180	62:38	70:30	54:46	57:43	85:15	43:57	60:40	29-May	3-May	to	20-Jun
1997	169	61:39	84:16	34:66	58:42	92:8	27:73	79:21	31-May	3-May	to	18-Jun
1998	279	53:47	59:41	48:52	55:45	81:19	47:53	58:42	25-May	7-May	to	26-Jun
1999	370	44:56	48:52	41:59	64:36	89:11	60:40	66:34	2-Jun	8-May	to	6-Jul
2000	339	61:39	67:33	55:45	58:42	89:11	45:55	58:42	26-May	3-May	to	21-Jul
2001	434	61:39	75:25	50:50	62:38	92:8	47:53	72:28	31-May	7-May	to	14-Jul
2002	165	51:49	60:40	42:58	56:44	83:17	37:63	55:45	5-Jun	11-May	to	7-Jul
2003	284	65:35	66:34	64:36	54:46	87:13	45:55	48:52	1-Jun	8-May	to	3-Jul
2004	98	48:52	57:43	35:65	49:51	76:24	35:65	57:43	28-May	7-May	to	18-Jun
2005	180	53:47	68:32	41:59	58:42	89:11	42:58	69:31	1-Jun	6-May	to	1-Jul
2006	152	56:44	62:38	48:52	59:41	87:13	40:60	54:46	26-May	5-May	to	10-Jul
2007	198	49:51	55:45	41:59	58:42	83:17	38:62	51:49	25-May	2-May	to	15-Jun
2008	94	56:44	61:39	52:48	63:37	87:13	52:48	61:39	4-Jun	7-May	to	27-Jun

Table 6. Sex ratios, age ratios and hatching dates of ruffed grouse as determined from parts submitted by hunters from Oregon harvest during the 2008/09 hunting season.

County	n	Sex Ratios			Age Ratios				Mean Hatch	Hatch Range		
		M:F	AM:AF	IM:IF	I:A	I:AF	IM:AM	IF:AF				
Baker	21	63:37	100:0	33:67	56:44	100:0	25:75	100:0	11-Jun	14-May	to	16-Jul
Grant	63	45:55	30:70	60:40	71:29	86:14	67:33	36:64	7-Jun	12-May	to	8-Jul
Morrow	7	80:20	100:0	0:100	29:71	100:0	0:100	100:0	1-Jun	26-May	to	8-Jun
Umatilla	3	100:0	100:0	-	33:67	100:0	0:100	-	-	-		-
Union	107	47:53	53:47	43:57	61:39	88:12	57:43	65:35	9-Jun	7-May	to	8-Jul
Wallowa	94	56:44	61:39	52:48	63:37	87:13	52:48	61:39	4-Jun	7-May	to	27-Jun
NE Total	295	53:47	58:42	48:52	63:37	88:12	50:50	60:40	7-Jun	7-May	to	16-Jul
Deschutes	2	-	-	-	50:50	100:0	-	-	3-Jul	-		-
SE&C Total	2	-	-	-	50:50	100:0	-	-	3-Jul	-		-
Clackamas	1	100:0	100:0	-	0:100	-	0:100	-	-	-		-
Clatsop	1	0:100	0:100	-	0:100	0:100	-	0:100	-	-		-
Coos	2	100:0	-	100:0	100:0	100:0	100:0	-	-	-		-
Douglas	38	48:52	54:46	40:60	47:53	75:25	36:64	50:50	6-Jun	24-May	to	19-Jun
Hood River	7	33:67	33:67	33:67	57:43	67:33	50:50	50:50	24-May	-		-
Jackson	21	61:39	67:33	57:43	62:38	87:13	50:50	60:40	12-Jun	11-Jun	to	12-Jun
Josephine	1	100:0	100:0	-	0:100	-	0:100	-	-	-		-
Lane	9	50:50	100:0	33:67	66:33	100:0	50:50	100:0	10-Jun	3-Jun	to	17-Jun
Linn	4	67:33	100:0	50:50	75:25	100:0	50:50	100:0	15-Jun	14-Jun	to	17-Jun
Marion	3	100	100:0	100:0	33:67	100:0	50:50	-	-	-		-
Wasco	10	83:17	100:0	50:50	40:60	100:0	20:80	100:0	20-Jun	24-May	to	26-Jun
Unknown	2	50:50	50:50	-	0:100	0:100	0:100	0:100	-	-		-
W Oregon	99	58:42	65:35	50:50	58:42	81:19	41:59	56:44	11-Jun	24-May	to	26-Jun
Grand Total	396	54:46	61:39	49:51	60:40	86:14	47:53	59:41	7-Jun	7-May	to	16-Jul



*Includes Hood River and Wasco Counties

**Hunt season closed after 30-November

Figure 1. The number of blue grouse represented by parts collected in Oregon by the hunting season week they were reported shot, 2008/09.

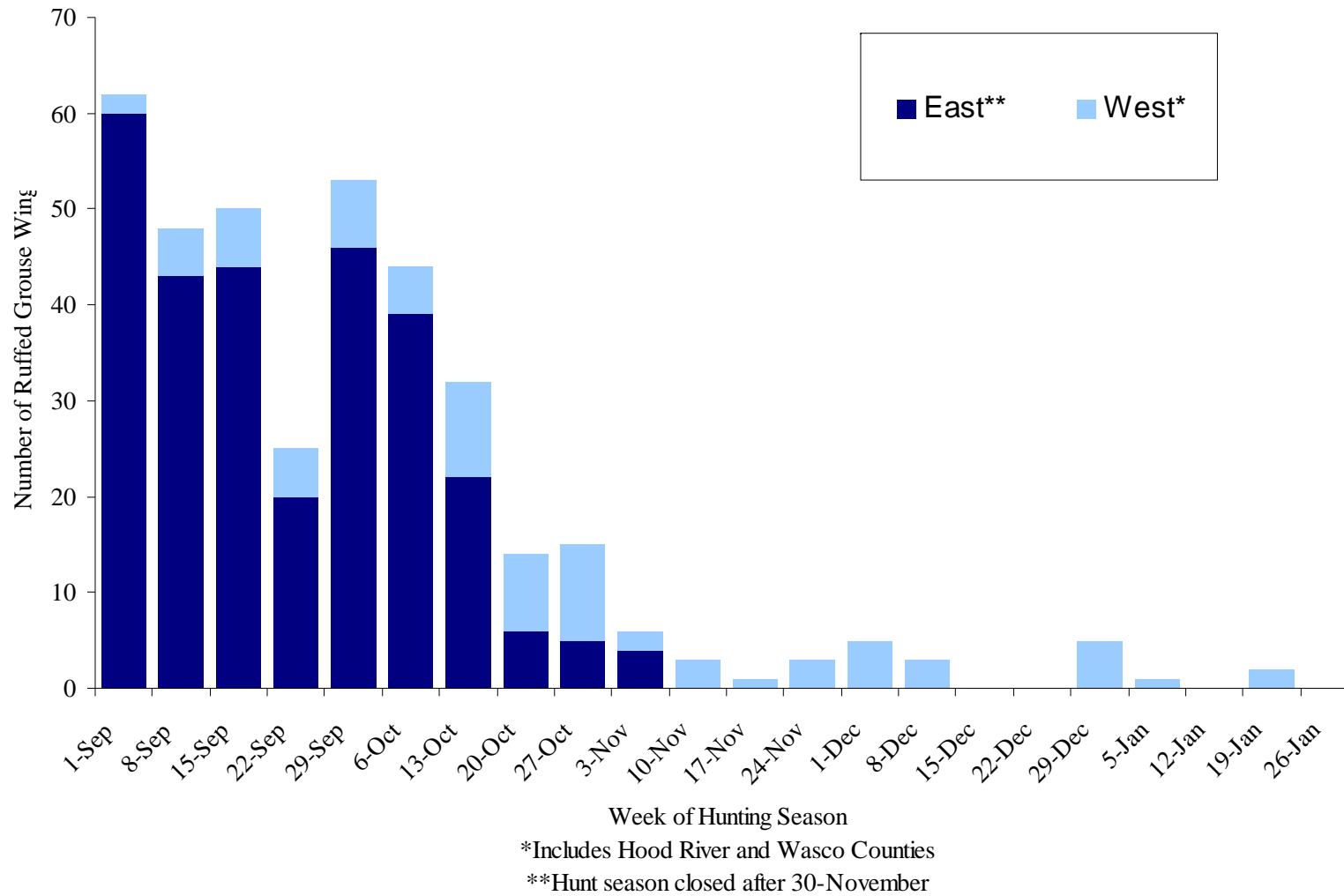


Figure 2. The number of ruffed grouse represented by wing and tails collected in Oregon by the hunting season week they were reported shot, 2008/09.

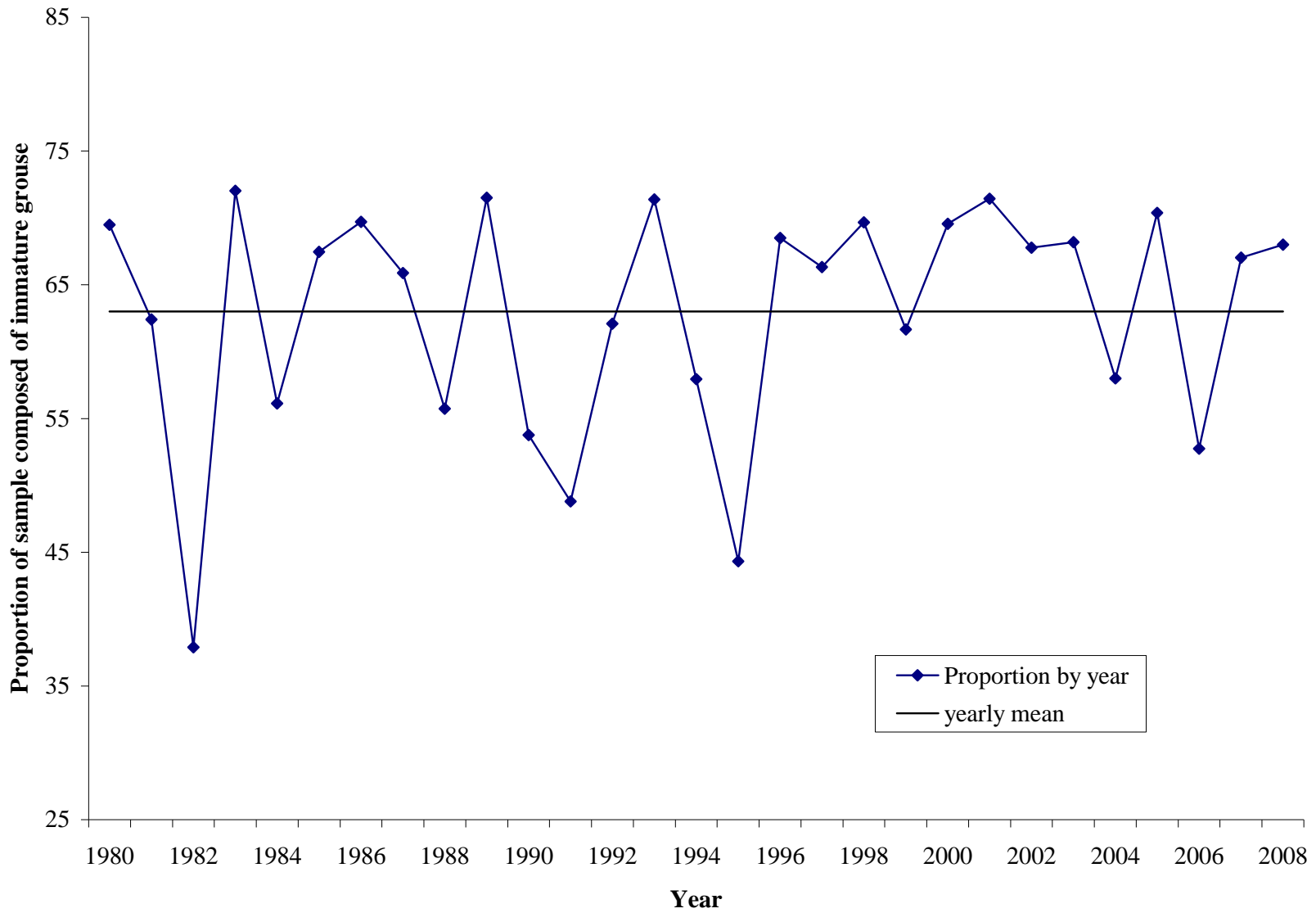


Figure 3. Statewide proportion of the blue grouse wing and tail sample composed of immature blue grouse. 1980-2008.

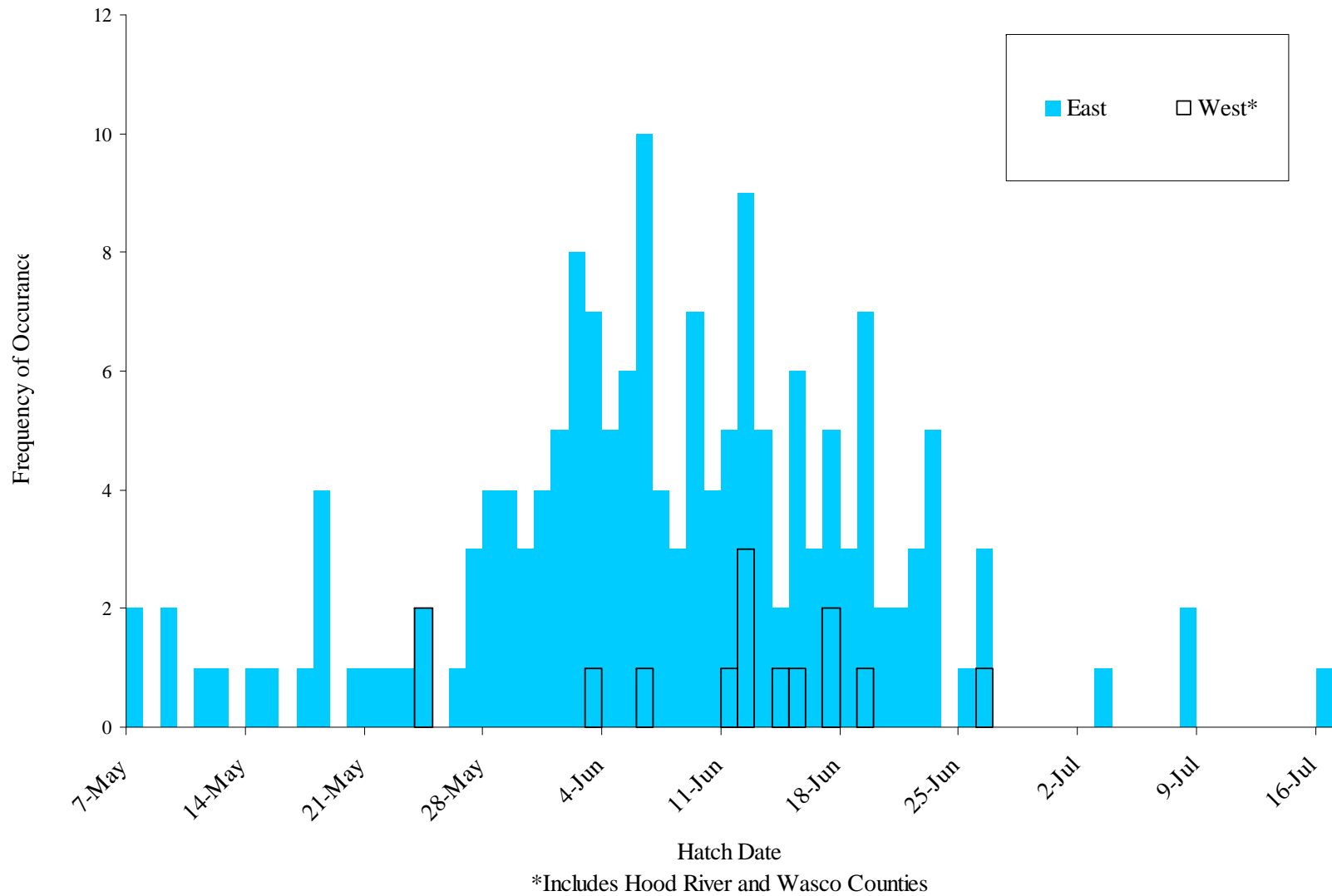


Figure 4. Hatching dates of immature ruffed grouse as determined by the progression of primary feather molt of wings submitted by hunters from grouse shot during the 2008/09 hunting seasons.

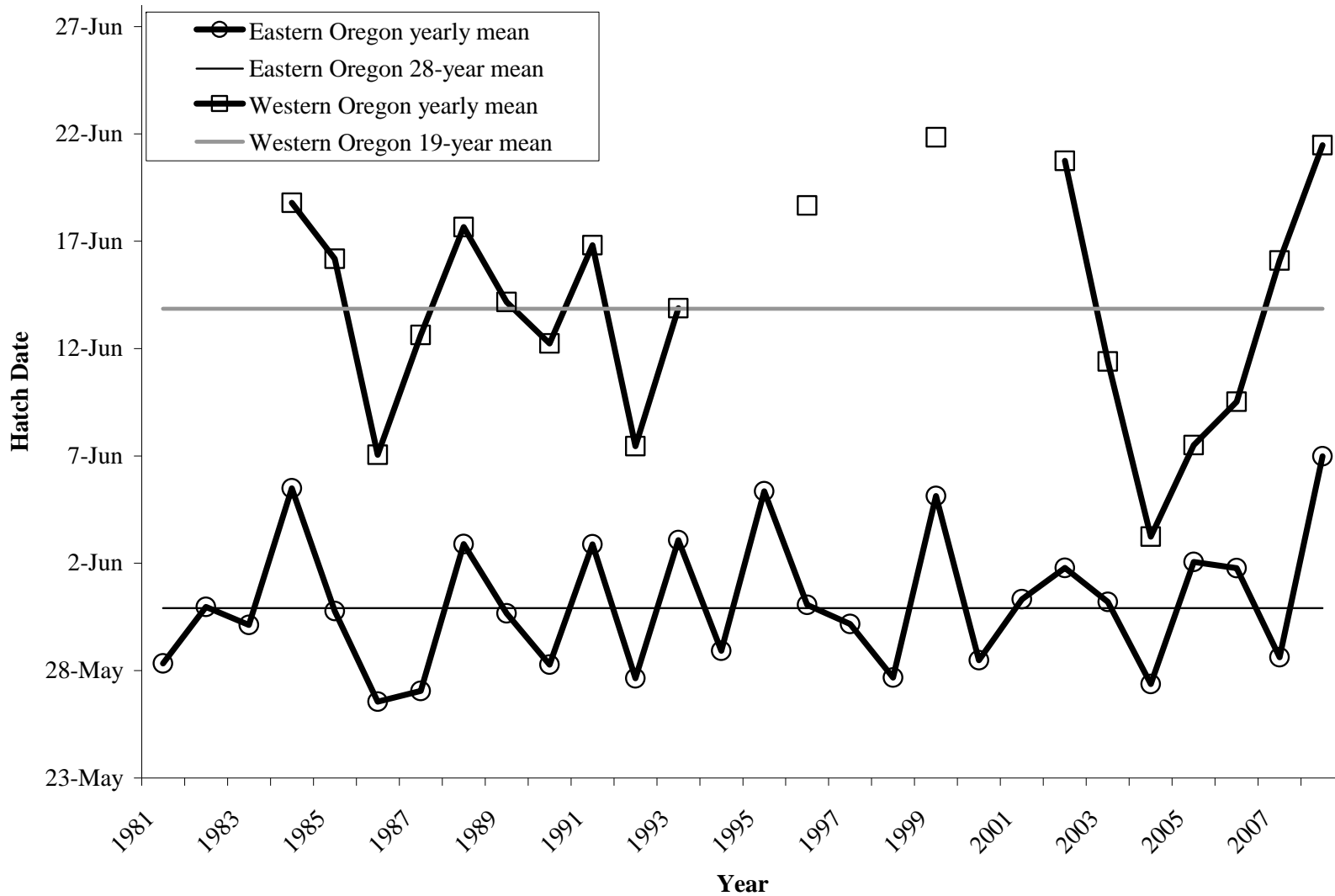
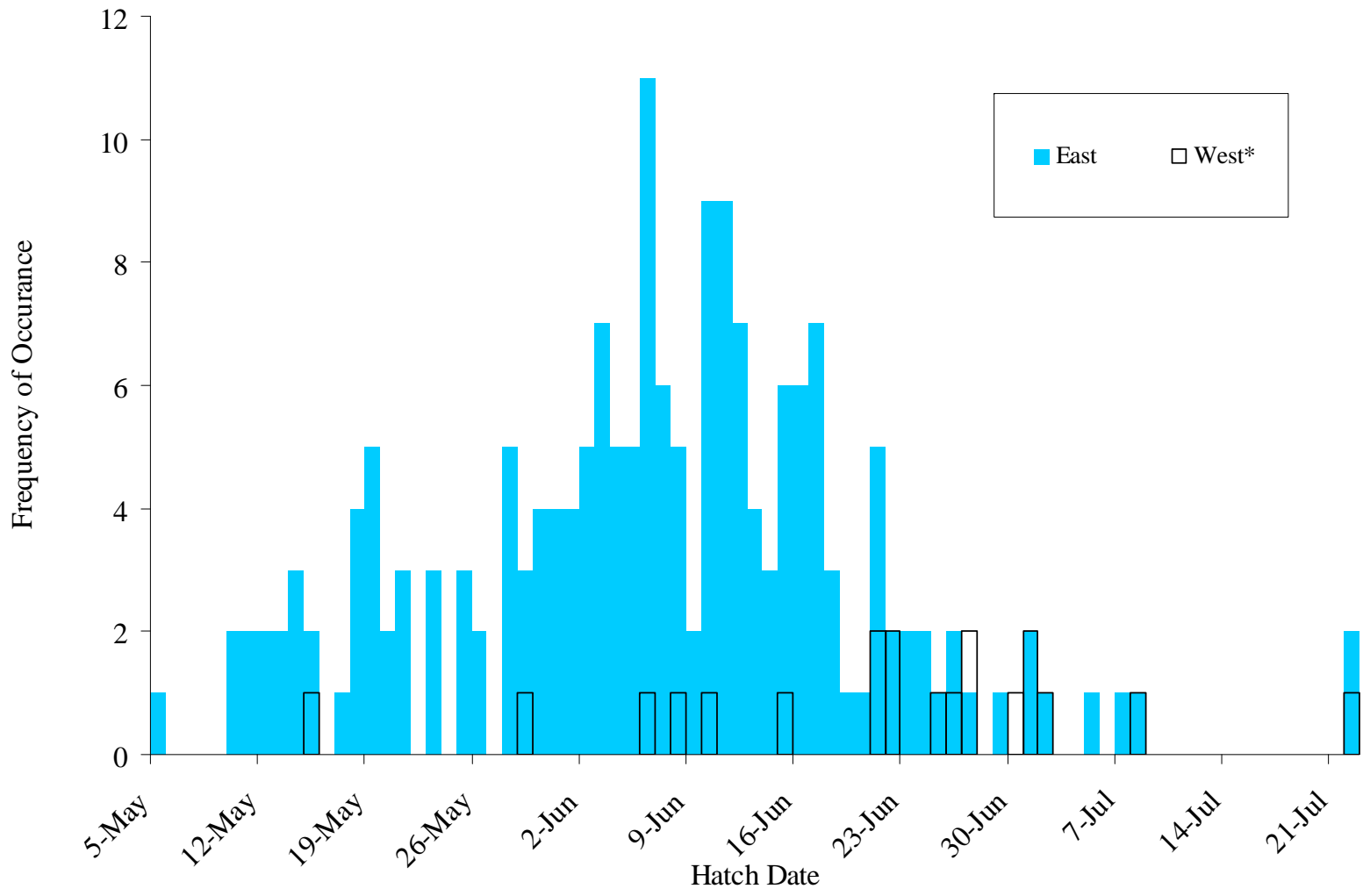


Figure 5. Estimated hatching dates as determined by the progression of primary feather molt of immature blue grouse shot by hunters and examined at wing bees by the Oregon Department of Fish and Wildlife, 1981-2008.



* Includes Hood River and Wasco Counties

Figure 6. Hatching dates of immature blue grouse as determined by the progression of primary feather molt of wings submitted by hunters from grouse shot during the 2008 hunting season in Oregon.

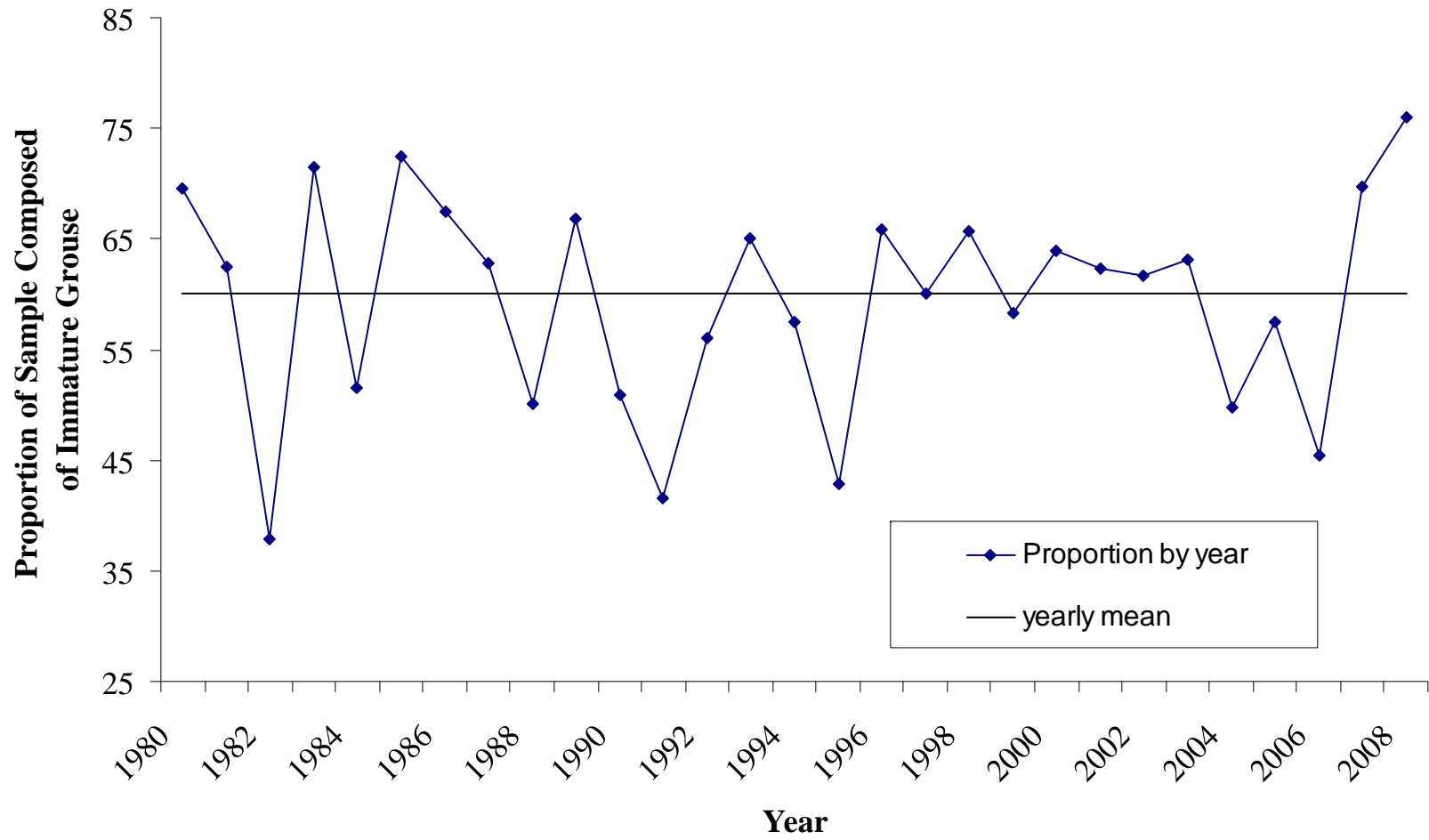


Figure 7. Proportion of blue grouse parts sample collected from Wallowa County, Oregon composed of immature blue grouse, 1980-2008.

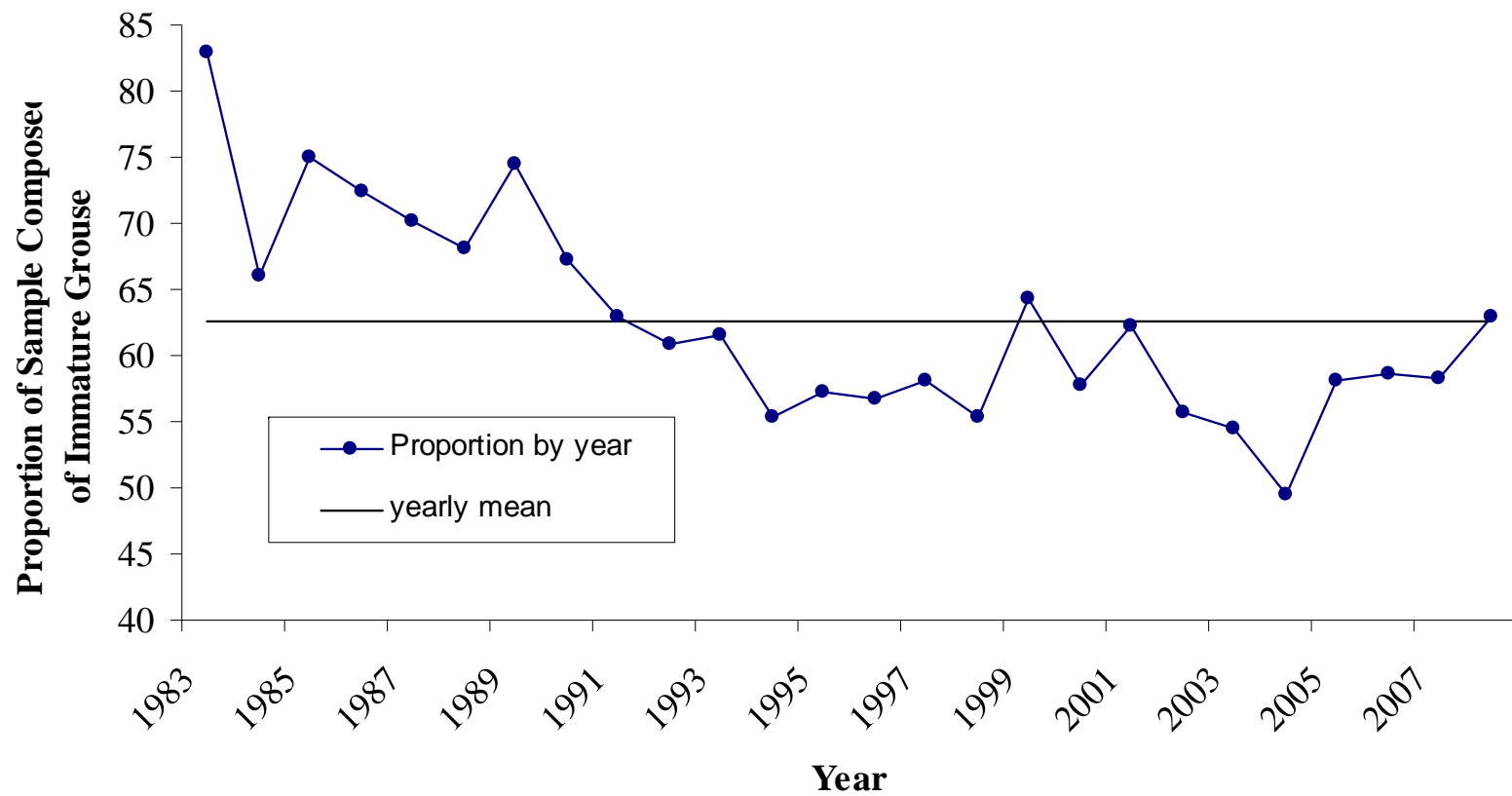


Figure 8. Proportion of immature ruffed grouse in parts sample collected from Wallowa County, Oregon. 1983-2008.

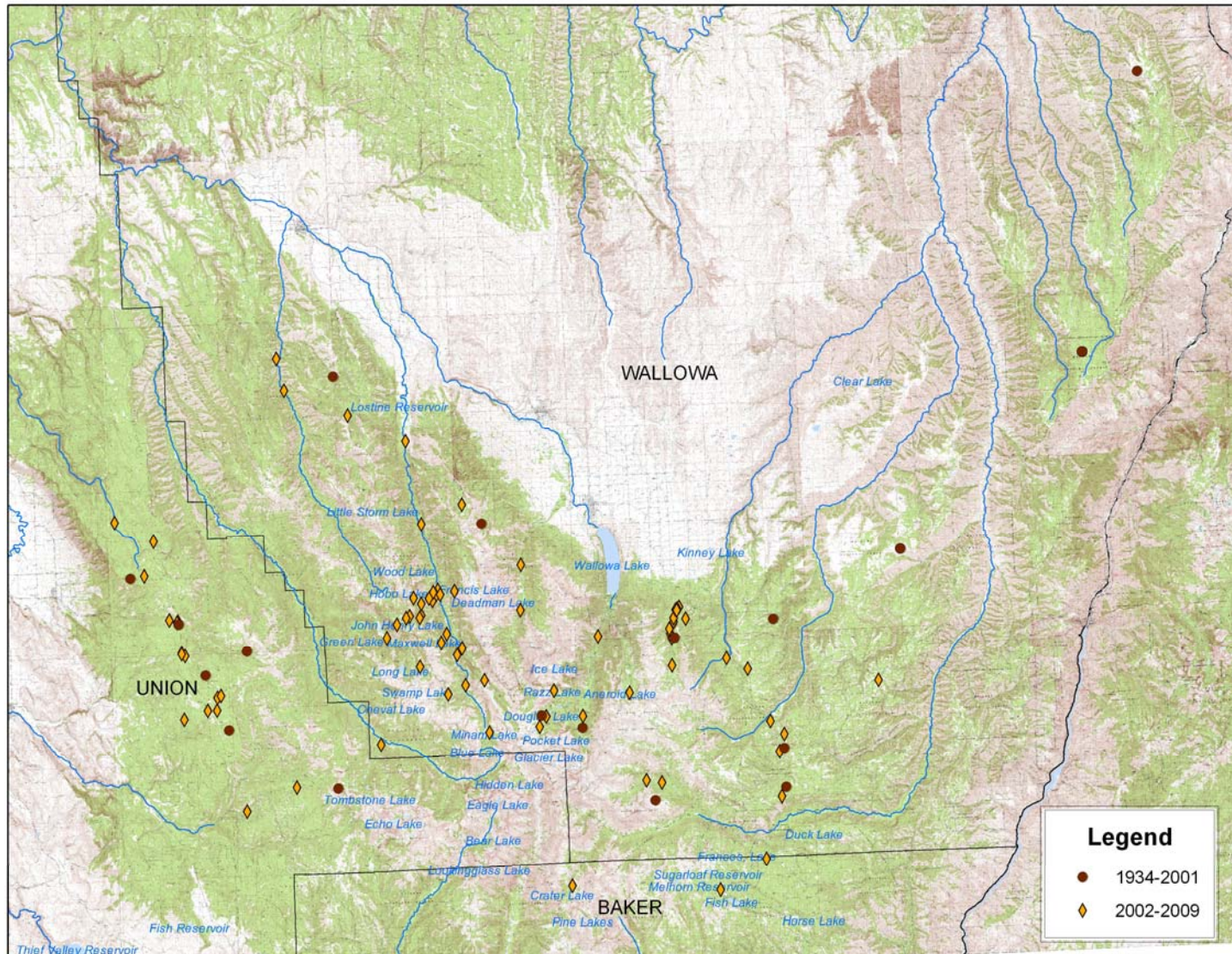


Figure 9. Spruce grouse observation locations in Baker, Union, and Wallowa counties, Oregon. 1934-2009

APPENDICES

Appendix A. Blue grouse wings collected by county in Oregon, 1980-2008.

County	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Baker							2	23		1					16		84	153	100
Grant						27	18	60	24	32	4						13	5	29
Morrow							3												
Umatilla						2	37	41		12	6	18	3	8	2	17	4	4	15
Union						21	192	243	171	81	104	30	53	27		19	79	104	90
Wallowa	59	125	95	166	155	275	596	719	463	372	291	260	286	234	242	140	260	204	364
Wheeler																			
Total NE	59	125	95	166	155	325	848	1086	658	498	405	308	342	296	260	176	437	470	598
Deschutes																			
Harney									1										
Jefferson																			
Klamath										17	7								
Lake								27	48	11			38		5			13	18
Malheur								1											
Total SE	0	0	0	0	0	0	0	0	29	65	18	0	38	0	5	0	0	13	18
Clackamas							1												
Clatsop																			
Columbia																			
Coos													2						
Curry																			
Douglas					24	92	51	67	48	49	32	45	68	17	12				
Hood River										7									
Jackson						6	19	13		5			2						
Josephine																			
Lane					40	82	59	23	16	23	4	1							
Linn						4					1								
Marion													3						
Polk																			
Tillamook																			
Wasco										3									
Washington																			
Unknown													8						
Total West	0	0	0	0	64	184	130	103	64	87	37	46	83	17	12	0	0	0	0
Total	59	124	95	166	219	509	978	1189	751	650	460	354	463	286	277	176	437	483	616

Appendix A, continued

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Totals
Baker	69	114	178	146	162	54	84	34	17	76	1313
Grant	49	28	53	37	51	66	50	18	32	93	689
Morrow						15	1		12	5	33
Umatilla	18	9	5	12	8	6	4		1	2	234
Union	104	68	165	86	110	69	49	54	32	62	2010
Wallowa	451	384	567	376	460	252	209	163	172	104	8444
Wheeler								1			1
Total NE	691	603	968	657	791	459	397	270	266	342	12724
Deschutes							1	3			2
Harney						2	3	3	7	5	21
Jefferson							1				1
Klamath				3		18	10		7	2	64
Lake	44			4		38	28	24	16		314
Malheur	1						5				7
Total SE	45	0	0	7	0	58	48	30	30	7	409
Clackamas					4		2	4		3	14
Clatsop					1	1				1	3
Columbia						2					2
Coos					3	2	6				13
Curry				3	7	9		1	12	1	32
Douglas	67	9	36	58	122	38	31	13	28	30	937
Hood River					5	7	15	12	8	5	59
Jackson				17	11	15	4	3	5	4	108
Josephine										1	1
Lane	8			19	8	16	6	5	8	9	330
Linn								7	4	4	22
Marion						3	2	1		2	11
Polk						1					1
Tillamook								2			2
Wasco				1		10	22	6	8	10	60
Washington								1			1
Unknown					7				1		16
Total West	75	9	36	98	168	104	88	55	74	80	1612
Total	811	612	1004	762	959	621	533	355	370	429	14745

Appendix B. Ruffed grouse wings collected by county in Oregon, 1981-2008.

County	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Baker						7	13									56	24	61	24
Grant					69	46	59	59	45	2						34	26	82	83
Morrow																			
Umatilla					11	36	56		15	6			5	4	10	26	15	27	31
Union					11	326	345	163	105	158	64	121	18		45	163	163	189	146
Wallowa					183	396	373	213	139	184	165	219	55	117	84	181	178	299	371
Total NE	0	0	0	0	274	811	846	435	304	350	229	340	78	121	139	460	406	658	655
Deschutes																			
Harney									1										
Klamath																			
Lake												1					5	1	
Malheur																			
Total SE	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	5	1	0
Benton												1							
Clackamas					2	14													
Clatsop																			
Columbia																			
Coos									1			4							
Curry																			
Douglas					7	17	47	19	13	40	67	104	24				3		71
Hood River									1										
Jackson					7	12	11		2	2		4							
Josephine																			
Lane					50	95	23	8	28		5	13							
Lincoln					1	6		2		3		3	1						
Linn					3							1							
Marion																			
Tillamook																			
Wasco									2	2									
Washington																			
Total West	0	0	0	0	70	144	81	29	47	47	72	130	25	0	0	0	3	0	71
Unknown	16		70	224							5	5				51			11
Total	16	0	70	224	344	955	927	464	352	397	306	476	103	121	139	511	414	659	737

Appendix B, continued.

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	Totals
Baker	31	29	25	32	12	9	17	27	21	388
Grant	87	98	128	75	90	68	57	87	63	1258
Morrow					3	1		1	7	12
Umatilla	44	14	12	13	15	4		8	3	355
Union	200	260	167	160	83	109	102	60	107	3265
Wallowa	342	462	165	270	99	181	152	198	94	5120
Total NE	704	863	497	550	302	372	328	381	295	10398
Deschutes									2	2
Harney					4					5
Klamath			5		7	1	1	2		16
Lake						1				8
Malheur					3					3
Total SE	0	0	5	0	14	2	1	2	2	34
Benton					1					2
Clackamas			3	13	2	2			1	37
Clatsop				1		1			1	3
Columbia				18	10	2		1		31
Coos			3	12	15	3	2	5	2	47
Curry			4	11	10	1		13		39
Douglas	74	129	155	163	103	55	10	33	38	1172
Hood River			7	14	24	22	18	4	7	97
Jackson			19	18	4	2		8	21	110
Josephine				3	2	0			1	6
Lane			31	5	25	3	9	9	9	313
Lincoln			4	3	2	0		1		26
Linn							6	1	4	15
Marion				3	2	3		6	3	17
Tillamook					1	0	4	1		6
Wasco					12	11	10	8	10	55
Washington			4		30	0	2			36
Total West	74	129	230	264	243	105	61	90	97	2012
Unknown				28	1	3			2	416
Total	778	992	732	842	560	482	390	473	396	12860

Appendix C. Spruce grouse wings collected in Oregon, 1985-2008.

Year	County	Location	Age	Sex	Date of Harvest
1985	Union	Lick/Catherine Crs.	A	M	7 September
1985	Union	Point Prominence	I	F	2 October
1985	Wallowa	Little Sheep Cr.	A	F	5 October
1985	Wallowa	Unknown	A	M	Unknown
1985	Wallowa	Memaloose	I	M	12 September
1985	Wallowa	Jaynes Ridge	I	?	2 September
1986	Wallowa	Little Sheep Cr.	A	M	31 August
1986	Wallowa	Little Sheep Cr.	A	M	31 August
1986	Wallowa	Little Sheep Cr.	A	F	31 August
1986	Wallowa	Little Sheep Cr.	A	M	17 September
1986	Wallowa	Little Sheep Cr.	I	M	17 September
1986	Wallowa	Little Sheep Cr.	A	F	17 September
1987	Union	Mt. Harris	A	M	30 August
1987	Union	Mt. Harris	A	M	30 August
1987	Wallowa	Little Sheep Cr.	A	M	9 October
1987	Wallowa	Jaynes Ridge	A	F	8 September
1987	Wallowa	Jaynes Ridge	I	M	8 September
1987	Wallowa	Jaynes Ridge	I	F	8 September
1988	Union	Point Prominence	A	F	27 August
1988	Union	Point Prominence	I	M	27 August
1988	Union	Point Prominence	A	M	1 October
1988	Wallowa	Little Sheep Cr.	A	F	18 September
1988	Wallowa	Little Sheep Cr.	A	F	26 September
1988	Wallowa	Little Sheep Cr.	A	M	13 September
1988	Wallowa	Little Sheep Cr.	I	F	13 September
1988	Wallowa	Little Sheep Cr.	I	M	13 September
1988	Wallowa	Little Sheep Cr.	I	F	13 September
1988	Wallowa	Little Sheep Cr.	A	M	13 October
1988	Wallowa	Little Sheep Cr.	A	F	13 October
1988	Wallowa	Little Sheep Cr.	I	M	13 October
1988	Wallowa	Little Sheep Cr.	I	F	13 October
1988	Wallowa	Little Sheep Cr.	A	M	13 October
1988	Wallowa	Little Sheep Cr.	A	F	13 October
1988	Wallowa	Little Sheep Cr.	I	F	13 September
1988	Wallowa	Little Sheep Cr.	I	F	13 September
1988	Wallowa	Little Sheep Cr.	A	F	13 September
1988	Wallowa	Little Sheep Cr.	A	M	Unknown
1988	Wallowa	Little Sheep Cr.	A	F	Unknown
1988	Wallowa	Little Sheep Cr.	A	F	Unknown
1988	Wallowa	Little Sheep Cr.	I	M	Unknown

Appendix C, continued.

Year	County	Location	Age	Sex	Date of Harvest
1989	Wallowa	Little Sheep Cr.	A	M	4 September
1989	Wallowa	Carrol Cr.	A	F	9 September
1989	Wallowa	Carrol Cr.	I	M	9 September
1989	Wallowa	Jaynes Ridge	I	F	21 September
1989	Wallowa	Jaynes Ridge	I	M	21 September
1989	Union	Ladd Canyon	A	M	3 September
1989	Wallowa	Little Sheep Cr.	A	M	28 August
1989	Wallowa	Little Sheep Cr	A	F	28 August
1989	Wallowa	Little Sheep Cr	I	F	28 August
1989	Wallowa	Little Sheep Cr	I	?	28 August
1989	Wallowa	Little Sheep Cr	A	?	28 August
1989	Wallowa	Little Sheep Cr	I	F	28 August
1989	Wallowa	Cloverdale	I	M	4 September
1989	Wallowa	Cloverdale	I	F	4 September
1989	Wallowa	Cloverdale	I	F	4 September
1989	Wallowa	Cloverdale	I	F	4 September
1989	Wallowa	Cloverdale	I	F	4 September
1989	Wallowa	Unknown	A	F	Unknown
1989	Wallowa	Unknown	I	?	Unknown
1989	Wallowa	Unknown	I	?	Unknown
1990	Wallowa	Little Sheep Cr.	A	F	4 September
1990	Wallowa	Little Sheep Cr.	I	M	4 September
1990	Wallowa	Little Sheep Cr.	I	F	4 September
1990	Wallowa	Little Sheep Cr.	I	M	Unknown
1990	Wallowa	Little Sheep Cr.	A	M	Unknown
1990	Wallowa	Little Sheep Cr.	I	M	Unknown
1991	Wallowa	Lick Cr.	I	M	14 September
1991	Wallowa	Lick Cr.	A	F	14 September
1991	Wallowa	Lick Cr.	I	M	11 October
1991	Wallowa	Lick Cr.	I	M	11 October
1991	Wallowa	Lick Cr.	I	F	11 October
1991	Wallowa	Lick Cr.	I	M	11 October
1991	Wallowa	Sheep Cr.	I	F	4 September
1991	Wallowa	Sheep Cr.	I	M	4 September
1991	Wallowa	Sheep Cr.	I	F	4 September
1992	Wallowa	Little Sheep Cr.	I	F	8 September
1992	Wallowa	Little Sheep Cr.	A	F	8 September
1992	Wallowa	Mt. Harris	A	M	9 September
1992	Wallowa	Mt. Harris	I	M	Unknown
1993	Wallowa	Little Sheep Cr.	A	F	9 September
1993	Wallowa	Little Sheep Cr.	I	M	9 September
1993	Wallowa	Little Sheep Cr.	I	F	9 September
1994	Wallowa	Little Sheep Cr.	A	F	18 October

Appendix C, continued.

Year	County	Location	Age	Sex	Date of Harvest
1994	Wallowa	Little Sheep Cr.	I	M	18 October
1994	Wallowa	Unknown	A	F	Unknown
1995	Wallowa	Little Sheep Cr.	I	F	21 September
1995	Wallowa	Little Sheep Cr.	A	F	21 September
1995	Wallowa	Little Sheep Cr.	I	M	21 September
1996	Union	Catherine Cr.	I	M	4 October
1996	Union	Catherine Cr.	I	M	4 October
1996	Union	Catherine Cr.	A	M	7 September
1996	Union	Catherine Cr.	I	M	3 September
1996	Union	Catherine Cr.	A	F	3 September
1996	Union	Catherine Cr.	I	F	3 September
1996	Union	Mt. Harris	A	F	12 September
1996	Union	Mt. Harris	I	F	12 September
1996	Union	Mt. Harris	I	F	12 September
1996	Wallowa	Jaynes Ridge	A	F	Unknown
1997	Baker	Eagle Fork	A	F	6 September
1997	Baker	Eagle Fork	I	M	6 September
1997	Baker	Eagle Fork	A	M	6 September
1997	Baker	Eagle Fork	I	F	6 September
1997	Baker	Eagle Fork	A	M	4 October
1997	Baker	Eagle Fork	A	M	3 September
1997	Wallowa	Little Sheep Cr.	A	M	20 September
1998	Wallowa	Salt Cr. Summit	A	M	4 October
1999	Union	Hess Cabin Rd.	I	F	6 September
1999	Union	Hess Cabin Rd.	A	F	6 September
1999	Union	Mt. Harris	A	F	11 September
1999	Wallowa	Little Sheep Cr.	A	M	9 October
2000	Wallowa	Little Sheep Cr.	A	?	5 September
2000	Wallowa	Little Sheep Cr.	I	?	5 September
2000	Wallowa	Little Sheep Cr.	A	?	5 September
2000	Wallowa	Little Sheep Cr.	I	?	5 September
2000	Wallowa	Little Sheep Cr.	I	?	5 September
2000	Wallowa	Little Sheep Cr.	I	?	5 September
2001	Union	Catherine Cr.	A	F	22 September
2001	Union	Mt. Harris	A	F	10 September
2001	Union	Mt. Harris	A	F	10 September
2001	Union	Mt. Harris	I	M	24 September
2001	Union	Mt. Harris	I	F	24 September
2001	Union	Mt. Harris	I	F	24 September
2001	Wallowa	Little Sheep Cr.	I	M	2 September
2001	Wallowa	Little Sheep Cr.	I	M	2 September
2001	Wallowa	Little Sheep Cr.	I	F	2 September
2001	Wallowa	Little Sheep Cr.	I	F	2 September

Appendix C, continued.

Year	County	Location	Age	Sex	Date of Harvest
2001	Wallowa	Little Sheep Cr	A	F	2 September
2001	Wallowa	Little Sheep Cr	I	F	6 October
2001	Wallowa	Lick Cr.	A	M	4 September
2002	Union	Prominence Pt	I	U	22 September
2002	Wallowa	Little Sheep Cr.	A	M	13 October
2002	Wallowa	Little Sheep Cr.	A	M	13 October
2003	Wallowa	Door Cr.	A	F	1 September
2003	Union	Catherine Cr.	I	U	12 September
2003	Union	Catherine Cr.	A	U	Unknown
2004	Wallowa	Little Sheep	A	F	2 October
2005	Baker	Pine Cr. Meadows	I	M	25 September
2005	Baker	Pine Cr. Meadows	I	M	25 September
2005	Union	Mt. Harris	A	M	28 September
2005	Union	Buck Cr.	A	F	6 September
2005	Union	Pt. Prominence	A	F	3 September
2005	Union	Pt. Prominence	A	F	3 September
2005	Union	Pt. Prominence	I	M	3 September
2005	Union	Pt. Prominence	I	M	3 September
2006	Wallowa	Little Sheep Cr.	A	M	25 September
2006	Wallowa	Lostine River	I	F	10 October
2007	Union	Mt. Harris	I	M	23 September
2007	Union	Hess Cabin	I	F	9 October
2007	Union	Moss Springs	I	F	10 October
2008	Baker	Pine Creek	A	F	2 October
2008	Wallowa	Big Sheep Cr.	A	U	5 October
2008	Wallowa	230 Rd	J	U	5 October
2008	Wallowa	230 Rd	J	U	5 October
2008	Wallowa	3930-040 Rd	A	U	7 October
2008	Wallowa	3930-040 Rd	A	U	8 October
2008	Wallowa	230 Rd	J	U	8 October
2008	Union	NF Catherine Creek	A	F	19 October