



2005 Forest Grouse Harvest Summary



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INTRODUCTION

Since 1980, wings (and tails of some species) of blue (*Dendragapus obscurus*), ruffed (*Bonasa umbellus*), and spruce grouse (*Falcapennis canadensis*) have been collected from hunters in Wallowa County. In 1984, collections for forest grouse were expanded to other counties in northeastern Oregon and portions of southwestern Oregon. The effort has increased to nearly statewide participation in recent years. In 2005, wings and tails were obtained from 24 of the 36 counties in Oregon (Table 1). Wing-bees for the 2005 harvest were held at Ladd Marsh Wildlife Area on 25 January, and at SW Regional Office, Roseburg on 1 March, 2006. During these wing-bees 1,023 wings and tails were examined; about 13% fewer than examined 2004. The number of ruffed grouse wings from eastern Oregon increased from 2004, but decreased in western Oregon. Compared to 2004, fewer blue grouse wings were collected statewide in 2005. The following results were arranged by species (blue, ruffed, and spruce grouse). Long-term data were provided for the incidental spruce grouse harvest. Additionally, long-term results were provided for blue and ruffed grouse harvest in Wallowa County.

Data Collected

The information collected at wing-bees included:

1. Species
2. Location of kill
3. Date of kill
4. Sex
5. Age – adult, yearling (for blue grouse), or immature
6. Date of hatching – for immatures.

Table 1. Forest grouse wings submitted to Oregon forest grouse wing-bees in 2004 and 2005, by county.

County	Blue		Ruffed		Spruce		Total	
	2005	2004	2005	2004	2005	2004	2005	2004
Baker	84	79	9	12	2		95	91
Crook				2			0	2
Deschutes	1						1	0
Grant	50	66	68	95			118	161
Harney	3	2		4			3	6
Jefferson	1						1	0
Hood River	15	7	22	27			37	34
Klamath	10	18	1	7			11	25
Lake	28	38	1				29	38
Malheur	5			3			5	3
Morrow	1	12	1	3			2	15
Umatilla	4	6	4	15			8	21
Union	49	69	109	83	6		164	152
Wallowa	209	252	181	99		1	390	352
Wasco	22	10	11	12			33	22
E. OR TOT	482	559	407	362	8	1	897	922
Benton				1			0	1
Clackamas	2		2	3			4	3
Clatsop		1	1	1			1	2
Columbia		2	2	12			2	14
Coos	6	2	3	15			9	17
Curry		9	1	10			1	19
Douglas	31	38	55	103			86	141
Jackson	4	14	2	4			6	18
Josephine				2			0	2
Lane	6	16	3	25			9	41
Lincoln				2			0	2
Linn				3			0	3
Marion	2	3	3	2			5	5
Polk		1		2			0	3
Tillamook				1			0	1
Washington				9			0	9
Yamhill				1			0	1
Unk. Co.			3	1			3	1
W. OR TOT	51	86	75	197			126	283
GRAND TOTAL	533	645	482	559	8	1	1023	1205

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. Distribution and timing of kill have relevance to obtaining information about populations and to law enforcement activities. Sex and age data reveal the reproductive performance in a population, and in conjunction with abundance information, provide insight into population trends. Hatching data may be used to understand the timing of reproduction in specific areas and have implications regarding appropriate times for census procedures. For example, if hatching times differ substantially among regions of the state, the timing of summer censuses should be adjusted accordingly to obtain similar data because sightability is a function of age of birds as well as habitat conditions. Harvest statistics, however, may not precisely represent sex and age ratios in the grouse population. Immature grouse may be more vulnerable to harvest than adults, especially early in the season. In 2005, 76% ($n=196$) of blue grouse wings during the first week of the season were juvenile birds, while 69% of blue grouse in following 3 weeks consisted of juvenile birds ($n=199$). Presumably, the aforementioned biases would be constant for hunter-harvested birds among years.

RESULTS

BLUE GROUSE

Wing Collections – 2005

During 2005, 535 wings and tails from blue grouse were collected in Oregon which decreased 17% from 2004 (Table 1). The 2005 hunting season allowed a daily bag limit of 3 birds with 6 in possession and extended in eastern Oregon from 1 September to 27 November 2005 and in western Oregon from 1 September 2005 to 31 January 2006. Of the blue grouse wings, 39% were harvested during the first week and 79% by the end of September (Figure 1).

The sequential replacement of primary wing feathers was used to estimate hatching dates of immature grouse. Immature blue grouse taken after 8 October were not included in "back-dating" because most birds had completed the molt of their primaries. In 2005, the majority of wing and tail collections were from northeastern Oregon, particularly from Wallowa, Union, Grant, and Baker counties, (Table 1; Appendix A). Contributions from Douglas, Lane, and Jackson counties accounted for most of the western Oregon wing and tail collections (Table 1; Appendix A).

Age and Sex Ratios

Immatures comprised 70% of the statewide sample, and 71% from eastern Oregon in 2005 (Table 2), an indication of improved production compared to 2004 when immatures were 56% of the sample. Proportion of immatures in 2005 was comparable to 2003 (71%), and 2002 (73%). Females were 47% of the statewide sample, 30% of the adults, and 54% of immatures in 2005. Adult females were less well represented (26%) in the eastern Oregon blue grouse harvest. In 2005 the sex ratio of immatures was slightly skewed (54% female), but a 20 year average was approximately 50:50.

In western Oregon in 2005, sex ratios for adults were skewed in favor of females (59% female). Conversely, in eastern Oregon the ratios were skewed in favor of adult males (74%).

Immature blue grouse in western Oregon represented 64% of the sample, slightly more than in 2004, but less than 2003 (81%), and 2002 (68%).

Hatching Chronology

Hatch dates in 2005 ranged from 7 May to 15 July (\bar{x} = 3 June) in eastern Oregon and 16 May to 27 June in western Oregon (\bar{x} = 8 June). Mean hatch was 9 days later in eastern Oregon and 5 days later in western Oregon compared to the previous year (which had earlier than average hatches). Similar to previous years, the mean hatch date in western Oregon occurred later than the mean hatch date in eastern Oregon. Despite the later peak hatch, most (71%) nests hatched between 15 May – 11 June (Table 3), comparable to the previous year when 73% hatched during this same time period.

Wallowa County – 1980 to 2005

From 1980 through 2005, 7,470 blue grouse wings and tails from Wallowa County were examined (Table 4). In 2005, 209 wings were collected, the lowest number since 1997. Males were 66% of the sample and represented the highest proportion of males in the wing sample over the 26-year period of wing bees (48 to 66%, \bar{x} = 57%). Female blue grouse outnumbered males only in 1995 (52% vs 48%).

The immature proportion (60%) of the harvest was comparable to the 26 year average and was higher than 2004. The proportion of immatures in Wallowa County ranged from a low of 38% in 1982 to a high of 80% in 2002 (1982–2005, \bar{x} = 60%). Since the beginning (1980) of the wing collections in Wallowa County, adults outnumbered immatures only during three years (1982, 1991, and 1995), an indication that fall recruitment was poor during those years. Over the past 21 years, blue grouse populations in Wallowa County appeared to have 3 years of poor production (1982, 1991, and 1995) and 6 exceptionally good years (1983, 1985, 1986, 1989, 2000, and 2002; Table 4).

From 1982 to 2005, the proportion of yearling females accounted for 16-48% of the adult female sample; and yearling males from 9–32% of the adult male sample. In 2005, the proportion of female yearlings to adult females (18%) and male yearlings to adult males (23%) was low compared to past years, also an indication of relatively poor recruitment in 2004.

Mean hatch dates ranged from 25 May (1986 and 2004) to 9 June (1995) with the preponderance of young hatched during a 3-week interval between late May and early June (Table 5). In 2005, the mean hatch date was 2 June and ranged from 9 May to 15 July.

Douglas County – 2005

In 2005, 31 blue grouse wings were collected from Douglas County in southwestern Oregon compared to 39 in 2004 and 122 in 2003. Females represented 48% of the wings and immatures accounted for 70% of the wing sample. Mean hatch date was 6 June, one week later than last year and 3 days after the peak hatch in eastern Oregon.



*Left:
A blue grouse
wing is
examined to
determine age
and gender.*

Blue Grouse Wings by Week

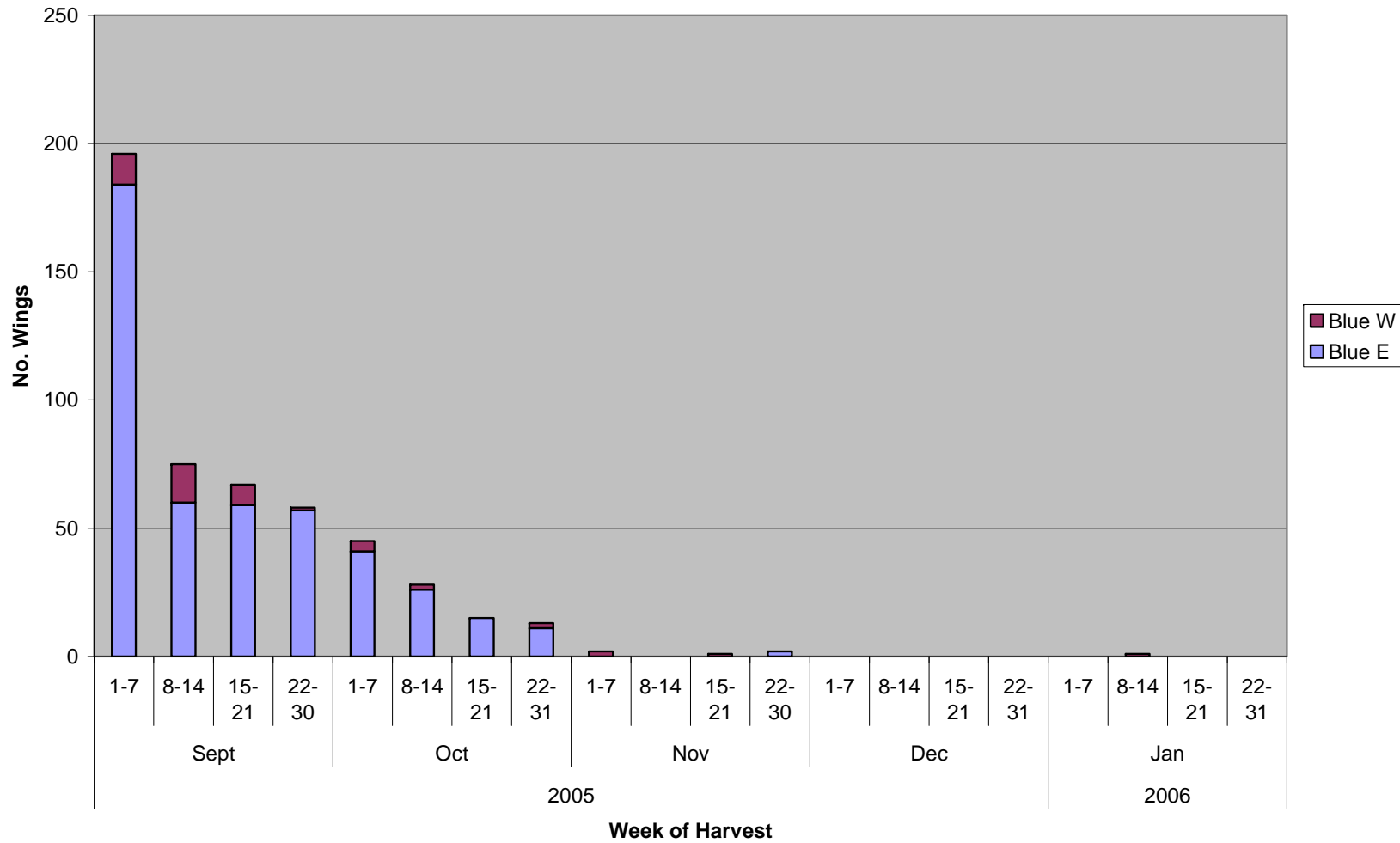


Figure 1. Blue grouse wings collected in Oregon by harvest date, 2005.

Table 2. Proportion of sex and age categories of blue grouse wings collected in eastern Oregon, northeastern counties, western Oregon, and Douglas County, 2005.

Category	All E	Baker	Grant	Union	Wallowa	All W	Douglas	Statewide
<i>N</i>	484	84	50	49	209	49	31	533
Sex, M:F	54:46	40:60	59:41	49:51	66:34	45:55	52:48	53:47
Age, A:I	29:71	25:75	23:77	27:73	40:60	36:64	30:70	30:70
Adult, M:F	74:26	48:52	50:50	77:23	79:21	41:59	44:56	70:30
Yearling, M:F	72:28	33:67	-	75:25	75:25	29:61	40:60	63:37
ImmatureM:F	46:54	38:62	64:36	39:61	56:44	46:54	53:47	46:54
Male, A:I	39:61	29:71	21:79	42:58	48:52	35:65	29:71	39:61
Female, A:I	16:84	22:78	28:72	12:88	24:76	40:60	36:64	19:81
Male, Y:A	23:77	30:70	17:83	30:70	14:86	29:71	50:50	23:77
Female, Y:A	25:75	54:36	-	33:67	18:82	50:50	60:40	32:68
Hatching, \bar{x}	3 Jun	30 May	4 June	3 Jun	2 Jun	8 Jun	6 Jun	4 Jun
Hatching, range	7 May- 15 Jul	7 May – 30 Jun	23 May – 18 Jun	14 May – 29 Jun	9 May – 15 Jul	16 May- 27 Jun	20 May – 18 Jun	7 May – 15 July

Table 3. Frequency of young blue grouse hatched during weekly periods in eastern Oregon, northeastern counties, western Oregon, and Douglas County, 2005.

Week	All E (n = 280)	Baker (n = 58)	Grant (n = 19)	Union (n = 33)	Wallowa (n = 102)	All W (n = 20)	Douglas (n = 12)	Statewide (n=300)
24 April-30 April	0	0	0	0	0	0	0	0
1 May-7 May	1	1	0	0	0	0	0	1
8 May-14 May	15	6	0	1	6	0	0	15
15 May-21 May	31	8	0	4	14	2	1	33
22 May-28 May	42	10	4	4	18	2	1	44
29 May-4 June	66	14	3	10	24	4	2	70
5 June-11 June	58	10	9	6	20	5	5	63
12 June-18 June	32	6	3	7	8	3	3	35
19 June-25 June	15	2	0	0	6	3	0	18
26 June-2 July	11	1	0	1	3	1	0	12
3 July-9 July	8	0	0	0	2	0	0	8
10 July-16 July	1	0	0	0	1	0	0	1
17 July-23 July	0	0	0	0	0	0	0	0

Table 4. Proportion of age and sex categories for blue grouse wings collected in Wallowa County, Oregon, 1980–2005.

Category	Year												
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
<i>n</i>	59	125	95	166	155	274	596	719	463	372	297	260	286
Male:Female	54:46	57:43	53:47	52:48	56:44	52:48	59:41	59:41	52:48	54:46	59:41	60:40	54:46
Adult:Immature	31:69	38:62	62:38	30:70	48:52	30:70	30:70	35:65	46:54	30:70	46:54	58:42	43:57
Adult, M:F	31:17	60:40	53:47	57:43	60:40	63:37	74:26	73:27	59:41	59:41	64:36	69:31	62:38
Immature, M:F	41:59	55:45	53:47	52:48	52:48	47:53	63:47	51:49	45:55	52:48	55:45	50:50	48:52
Male, A:I	47:53	39:61	62:38	32:68	52:48	36:64	38:62	44:56	54:46	34:66	51:49	66:34	49:51
Female, A:I	11:89	35:65	62:38	27:73	44:56	23:77	20:80	23:77	36:64	28:72	41:59	40:60	36:64
Male, Y:A							27:73	26:74	24:75	22:78	28:72	30:70	19:81
Female, Y:A			39:61	45:55	40:60	40:60	21:79	40:60	39:61	22:78	20:80	37:63	28:72
Hatching, \bar{x}		31 May	30 May	30 May	6 Jun	1 Jun	25 May	28 May	1 Jun	30 May	27 May	5 Jun	27 May
Hatching, range		1 May- 29 Jun	14 May- 18 Jun	5 May- 30 Jun	13 May- 9 Jul	5 May- 8 Jul	30 April- 5 Jul	4 May- 4 Jul	4 May- 1 Jul	7 May- 7 Jul	5 May- 26 Jun	13 May- 14 Jul	4 May- 27 Jun

Table 4. (continued)

Category	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>n</i>	232	242	140	240	204	364	451	384	567	376	460	252	209
Male:Female	57:43	56:44	48:52	62:38	56:44	60:40	58:42	61:38	53:47	59:41	63:37	52:48	66:34
Adult:Immature	33:67	42:58	57:43	33:67	39:61	33:67	41:59	25:75	35:65	20:80	29:71	50:50	40:60
Adult, M:F	56:44	65:35	61:39	76:24	78:22	73:27	75:25	85:15	63:37	67:33	64:35	59:41	79:21
Immature, M:F	57:43	50:50	30:70	54:46	42:58	53:47	51:49	52:48	66:34	72:28	58:42	48:52	56:44
Male, A:I	34:66	49:51	73:27	42:58	55:45	41:59	48:52	37:63	46:54	30:70	35:65	53:47	48:52
Female, A:I	32:68	34:66	43:57	22:78	19:81	22:78	30:70	10:90	28:72	25:75	19:81	45:55	24:76
Male, Y:A	22:78	9:91	23:77	12:88	23:77	-	29:71	23:77	20:80	24:76	20:80	32:68	14:86
Female, Y:A	16:84	28:72	32:68	30:70	41:59	-	48:52	38:62	18:80	32:68	30:70	27:73	18:82
Hatching, \bar{x}	5 Jun	31 May	9 Jun	1 Jun	31 May	27 May	5 Jun	30 May	3 Jun	3 Jun	3 Jun	25 May	2 Jun
Hatching, range	11 May- 9 Jul	9 May- 23 Jun	15 May- 21 Jul	10May- 9 Jul	10 May- 24 Jun	5 May- 2 Jul	8 May- 9 Jul	4 May- 15 Jul	5 May- 8 Jul	6 May- 8 Jul	7 May- 1 Jul	5 May- 22 Jun	9 May- 15 Jul

Table 5. Percent of young blue grouse hatched during weekly periods in Wallowa County, Oregon, 1981–2005.

	Year												
	1981 <i>n</i> =44	1982 <i>n</i> =34	1983 <i>n</i> =106	1984 <i>n</i> =81	1985 <i>n</i> =164	1986 <i>n</i> =379	1987 <i>n</i> =399	1988 <i>n</i> =218	1989 <i>n</i> =225	1990 <i>n</i> =130	1991 <i>n</i> =98	1992 <i>n</i> =126	1993 <i>n</i> =155
24 Apr-30 Apr	0	0	0	0	0	1	0	0	0	0	0	0	0
1 May-7 May	2	0	1	0	1	8	4	2	2	2	0	1	0
8 May-14 May	2	3	5	1	6	17	3	2	4	17	2	12	3
15 May-21 May	23	15	8	6	15	21	16	6	16	13	9	20	8
22 May-28 May	16	24	47	21	23	17	22	17	18	20	12	22	13
29 May-4 June	27	32	18	19	26	13	31	26	34	20	28	23	31
5 June-11 June	11	21	7	26	13	12	11	28	21	15	23	16	37
12 June-18 June	9	6	7	14	11	7	5	10	3	8	12	5	5
19 June-25 June	5	0	8	7	4	2	1	6	2	3	6	1	2
26 June-2 July	5	0	1	3	0	3	7	2	1	1	4	1	1
3 July-9 July	0	0	0	4	2	1	0	0	0	0	1	0	1
10 July-16 July	0	0	0	0	0	0	0	0	0	0	1	0	0
17 July-23 July	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. (continued)

	Year											
	1994 <i>n</i> =140	1995 <i>n</i> =42	1996 <i>n</i> =123	1997 <i>n</i> =123	1998 <i>n</i> =224	1999 <i>n</i> =266	2000 <i>n</i> =223	2001 <i>n</i> =305	2002 <i>n</i> =200	2003 <i>n</i> =249	2004 <i>n</i> =101	2005 <i>n</i> =102
24 Apr-30 Apr	0	0	0	0	0	0	0	0	0	0	0	0
1 May-7 May	0	0	0	0	0	0	1	2	1	0	4	0
8 May-14 May	4	0	5	4	12	2	14	4	3	4	14	6
15 May-21 May	21	10	29	7	24	4	17	9	9	9	25	14
22 May-28 May	10	7	26	19	25	14	17	13	16	17	20	18
29 May-4 June	28	17	26	36	21	21	24	37	26	27	19	24
5 June-11 June	28	31	15	25	9	18	13	25	16	18	13	20
12 June-18 June	8	19	14	7	4	26	10	5	21	15	4	8
19 June-25 June	1	7	6	2	3	10	1	4	6	8	3	6
26 June-2 July	0	7	0	0	1	4	1	1	1	1	0	3
3 July-9 July	0	0	2	0	0	1	1	1	1	0	0	2
10 July-16 July	0	0	0	0	0	0	30	0	0	0	0	1
17 July-23 July	0	2	0	0	0	0	0	0	0	0	0	0

RUFFED GROUSE

Wing Collections – 2005

For 2005, 482 ruffed grouse wings and tails were collected from eastern and western Oregon, a 14% decrease from 2004 (Tables 1 and 6). The 2005 ruffed grouse hunting season allowed a daily bag limit of 3 birds with 6 in possession and extended from 1 September to 27 November 2005 in eastern Oregon and 1 September 2005 to 31 January 2006 in western Oregon. Of the ruffed grouse wings submitted, 24% were harvested during the first week of the season and 59% were harvested by the end September (Figure 2). A second peak in harvest occurred during the first week in October and coincided with start of many deer seasons.

The sequential replacement of primary wing feathers was used to estimate hatching dates of immature grouse. Immatures typically complete the molt of primary feathers by 8 October, and birds collected after this date were not used to determine hatching chronology. In eastern Oregon (excluding Hood River and Wasco counties), 374 wing and tail samples were collected, a 35% increase over the previous year. Most of the wings collected in eastern Oregon were from Grant, Union and Wallowa counties. In 2005, 108 ruffed grouse wings and tails were collected from western Oregon (including Wasco and Hood River counties), a 45% decrease from the previous year. Most of the western Oregon ruffed grouse wings (51%) were from Douglas County.

Age and Sex Ratios

Gender could be determined for only 46% percent of the wings from eastern Oregon because of damage or insufficient samples submitted (e.g., no rump feathers and/or tail). Gender was determined for 80% of the wings/tails from western Oregon. Age could be determined for 99.7 % and 96.3% of the samples from eastern and western Oregon, respectively.

For eastern Oregon, 65% of ruffed grouse wing samples collected in 2005 were immatures (Table 6), an indication of average fall recruitment. Immatures were 50% of wing samples in western Oregon, an indication that fall recruitment improved over the previous year. Wings collected from the past 20

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% 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 49% of wings collected from eastern Oregon, and 61% of the wing samples collected in western Oregon. Sixty percent of adult wings in eastern Oregon were males similar to 63% 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 2005, 55% of immatures in eastern Oregon were female, and 45% of immatures from western Oregon were females. Sex ratios may be biased because (54%) of the eastern Oregon samples and (20%) of western Oregon samples lacked diagnostic feathers for gender identification.

Hatching Chronology

The mean hatch date for 2005 was 1 June for eastern Oregon, and 1 June western Oregon (Table 6). Peak hatch was 3 and 7 days later in eastern and western Oregon, respectively as compared to 2004 (which had an early hatch). Hatching dates in eastern Oregon ranged from 6 May – 2 July, while in western Oregon the hatch dates ranged from 9 May to 17 June. Most of the hatch occurred from 22 May to June 18 on both sides of the state (eastern Oregon 81%, western Oregon 90%) (Table 7).

Wallowa County - 1981 to 2005

From 1981 through 2005, 5,174 ruffed grouse wings and tails were collected from hunters in Wallowa County. Percent young in the samples ranged from 48% (2004) to 88% (1983). Percent immatures (59%) in the 2005 wing sample represented an increase and suggested improved recruitment as compared to the previous year. Information gathered since 1986 in Wallowa County indicated exceptional production from 1986–1989 and relatively poor production in 1993–1995, 2003, and 2004 (Table 8). The number of males (53%) in the 2005 sample was lower than the average for 1986–2004 (58%). The mean hatch date of May 31 was identical to the average hatch date for the past 20 years. In

2005, as in 2004, a large proportion of the samples did not include diagnostic rump feathers for gender determination and may confound results for sex ratios.

Douglas County – 2005

Douglas County contributed 55 ruffed grouse parts to the 2005 wing-bee, a 46% decrease from the previous year. Adults were 52% of the wings collected in Douglas County in 2005, indicating low fall recruitment, but represented a significant improvement from 2004 when 75% of the harvest consisted of adult birds. The mean hatch date in Douglas County (30 May) was six days later than in 2004, which was an earlier than average hatch date.



Left: Mountain quail expert Dr. Michael Pope is learning to determine the age and gender of a blue grouse wing using the presence and length of the primary feathers.

Ruffed Grouse Wings by Week

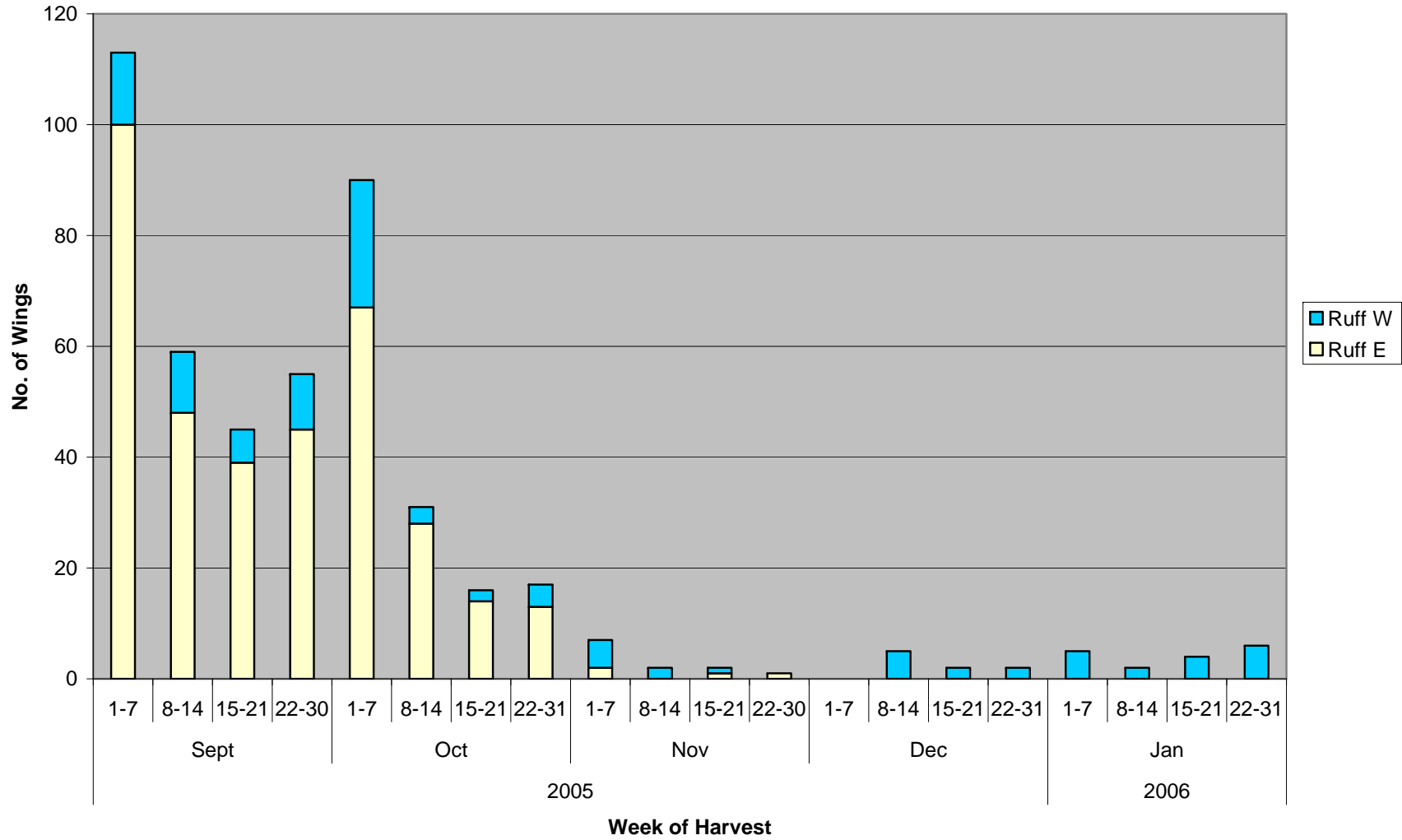


Figure 2. Ruffed grouse wings collected in Oregon by harvest date, 2005.

Table 8. Proportion of age and sex categories for ruffed grouse wings collected in Wallowa County, Oregon, 1986-2005.

Category	Year										
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
<i>N</i>	396	373	213	139	184	165	219	55	117	84	81
Male:Female	60:40	56:44	67:33	55:45	61:39	61:39	68:32	63:37	53:47	63:37	61:39
Adult:Immature	28:72	30:70	31:69	26:74	33:67	40:60	40:60	42:58	47:53	44:56	43:57
Adult, M:F	68:32	50:50	75:25	50:50	69:31	62:38	65:35	71:29	52:48	70:30	70:30
Immature, M:F	56:44	62:38	63:37	58:42	57:43	65:35	70:30	60:40	53:47	54:46	53:47
Male, A:I	38:62	34:66	40:60	29:71	37:63	35:65	45:55	76:24	47:53	52:48	57:43
Female, A:I	27:73	46:54	27:73	36:64	26:74	38:62	50:50	38:62	47:53	35:65	39:61
Hatching, \bar{x}	30 May	28 May	29 May	3 June	30 May	6 Jun	31 May	1 Jun	22 May	5 Jun	31 May
Hatching, range	4 May- 16 Jul	3 May- 30 Jun	30 Apr- 6 Jul	5 May- 3 Jul	13 May- 22 Jun	9 May- 24 Jun	2 May- 8 Jul	17 May- 12 Jun	13 May- 28 Jun	14 May- 15 Jul	5 May- 23 Jun

Table 8. Continued.

Category	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>N</i>	178	299	371	342	462	165	270	99	181
Male:Female	58:42	53:47	44:56	61:39	62:38	51:49	65:35	48:52	53:47
Adult:Immature	34:66	43:57	35:65	42:58	39:61	44:66	46:54	52:48	41:59
Adult, M:F	79:21	59:41	48:52	70:30	79:21	59:41	67:33	59:41	68:32
Immature, M:F	40:60	48:52	43:57	55:45	50:50	43:57	64:36	35:65	42:58
Male, A:I	58:42	51:49	39:61	58:52	53:47	61:39	56:44	63:35	57:43
Female, A:I	19:81	40:60	34:66	42:58	23:77	44:66	54:46	41:59	31:69
Hatching, \bar{x}	2 Jun	29 May	30 May	31 May	1 June	4 Jun	1 Jun	30 May	31 May
Hatching, range	5 May- 29 Jun	9 May- 30 Jun	8 May- 9 Jul	5 May- 20 Jul	8 May- 28 Jun	12 May- 9 Jul	10 May- 23 Jun	8 May - 20 Jun	5 May - 2 Jul

SPRUCE GROUSE

Wing Collections – 1985 to 2005

Incidental to the harvest of blue and ruffed grouse in Baker, Wallowa and Union Counties, 144 spruce grouse were collected from wing barrels from 1985 through 2005. During 2005, 8 spruce grouse wings were collected from Baker and Union counties and none from Wallowa County. Wallowa County typically has the highest incidental harvest of spruce grouse (Table 9). 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 20 years, immatures and adults composed equal proportions of the sample. Spruce grouse are listed as *status undetermined* 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. Four spruce grouse were captured and fitted with radio transmitters, and two others were fitted only with legbands. Mike and his students also placed posters at trailheads to solicit spruce grouse observations from the public and to educate hunters. A detailed report from 2005 effort is available. The pilot project is expected to continue into 2006.



Left: Mike Baird and students from Enterprise High School examining a female spruce grouse.

Table 9. Summary of spruce grouse wing and tails collected in Baker, Union and Wallowa counties, Oregon, 1980–2005.

Year	County	Location	Age	Sex	Date of Harvest
1980-1984 None reported					
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

Table 9. (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

Table 9, 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
2001	Wallowa	Little Sheep Cr.	A	F	2 September

Table 9. (continued)

Year	County	Location	Age	Sex	Date of Harvest
2001	Wallowa	Little Sheep Cr	I	F	6 October
2001	Wallowa	Lick Cr.	A	M	4 September
2002	Union	Prominace Pt	J	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.	J	U	12 September
2003	Union	Catherine Cr.	A	U	Unknown
2004	Wallowa	Little Sheep	A	F	2 October
2005	Baker	Pine Cr. Meadows	J	M	25 Sept
2005	Baker	Pine Cr. Meadows	J	M	25 Sept
2005	Union	Mt. Harris	A	M	28 Sept
2005	Union	Buck Cr.	A	F	6 Sept
2005	Union	Pt. Prominence	A	F	3 Sept
2005	Union	Pt. Prominence	A	F	3 Sept
2005	Union	Pt. Prominence	J	M	3 Sept
2005	Union	Pt. Prominence	J	M	3 Sept

CONCLUSIONS

The number of hunter harvested forest grouse wings submitted to ODFW was down from previous years, however, this may be due in part to the lower forest grouse populations in 2005 and not entirely the result of decreased participation. For both species of forest grouse, hatch dates in 2005 were later than 2004, and closer to long term averages. The number of immatures increased compared to 2004, an indication of improved recruitment for 2005.

On average, harvest data for western Oregon has improved in recent years, however collection efforts still need to increase to provide adequate samples from different regions particularly areas in northwestern Oregon. For both sides of the state, there is a need to continue education efforts to increase hunter awareness and participation. These efforts should emphasize the need for rump and/or tail feathers for gender identification. Continuing education efforts is critical for the success of future wing-bees.

Data collected from blue grouse wings and tails for 2005 suggested that immatures were a significant component of the harvest and likely was an indication of good fall recruitment. The exception was Wallowa County, which indicated lower fall recruitment than the remainder of eastern and western Oregon. Wallowa County is generally responsible for a major proportion (43% in 2005) of the blue grouse wings submitted from eastern Oregon. Immature blue grouse comprised the majority wings submitted in Grant, Lake, Union, Hood River and Wasco counties indicating very good production. Increased samples from these counties would help identify long term trends.

Ruffed grouse collections in 2005 also indicated a later peak hatch compared to 2004. Recruitment was better in northeastern Oregon, particularly in Union, Grant and Wallowa counties. Wallowa County contributed 58% immatures in 2005, compared to 48% in 2004, one of the lowest on record. The number of ruffed grouse wings from Wallowa County increased by 83% over 2004, further suggesting improved recruitment. Ruffed grouse populations in northeastern Oregon may be rebounding from low production.

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. Statewide wing collection was down (-14%) for both blue and ruffed grouse, however ruffed grouse wing collection increased (18%) in eastern Oregon, but showed a substantial decrease (-56%) in western Oregon from 2004 levels (Appendices A and B). Again, decreased hunter participation is not likely responsible for the entire decline, but fewer wings and tails were likely collected because of decreased hunter success.

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Appendix A. Blue-grouse wing collection by county.

County	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Baker							2	23		1					16		84
Grant						27	18	60	24	32	4						13
Morrow							3										
Umatilla						2	37	41		12	6	18	3	8	2	17	4
Union						21	192	243	171	81	104	30	53	27		19	76
Wallowa	59	125	95	166	155	275	596	719	463	372	291	260	286	234	242	140	260
Total NE OR	59	125	95	166	155	325	848	1086	658	498	405	308	342	269	260	176	437
Harney									1								
Klamath										17	7						
Lake									27	48	11		38		5		
Malheur									1								
Total SE OR									29	65	18	22	38		5		
Clackamas							1										
Clatsop																	
Columbia													2				
Coos																	
Curry																	
Douglas					24	92	51	67	48	49	32	45	68	17	12		
Hood River										7							
Jackson						6	19	13		5			2				
Lane					40	82	59	23	16	23	4	1					
Marion													3				
Linn						4					1						
Polk																	
Unknown													8				
Wasco										3							
Total W OR*					64	184	130	103	64	87	37	46	83	17	12		9
Total ALL	59	125	95	166	219	509	978	1189	751	650	460	376	463	286	277	176	446

Appendix A, continued.

County	1997	1998	1999	2000	2001	2002	2003	2004	2005
Baker	153	100	69	114	178	146	162	54	84
Grant	5	29	49	28	53	37	51	66	50
Morrow								12	1
Umatilla	4	15	18	9	5	12	8	6	4
Union	104	90	104	68	165	86	110	69	49
Wallowa	204	364	451	384	567	376	460	252	209
Total NE OR	470	598	691	603	968	657	791	459	397
Deschutes									1
Harney								2	3
Jefferson									1
Klamath						3		18	10
Lake	13	18	44			4		38	28
Malheur			1						5
Other E OR	13	18	45	20	0	7		58	47
Clackamas							4		2
Clatsop							1	1	
Columbia								2	
Coos							3	2	6
Curry						3	7	9	
Douglas			67	9	36	58	122	38	31
Hood River							5	7	15
Jackson						17	11	15	4
Lane			8			19	8	16	6
Marion								3	2
Linn									
Polk								1	
Unknown							7		
Wasco						1		10	22
Total W OR*			75	9	36	98	168	104	88
Total ALL	483	626	811	632	1004	762	959	621	533

*Includes Hood River and Wasco counties

Appendix B. Ruffed grouse collection by county

County	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Baker							7	13									56
Grant						69	46	59	59	45	2						34
Morrow																	
Umatilla						11	36	56		15	6			5	4	10	26
Union						11	326	345	163	105	158	64	121	18		45	163
Wallowa						183	396	373	213	139	184	165	219	55	117	84	181
Total NE OR		16	0	70	72	274	811	846	435	304	350	234	340	78	121	139	460
Harney										1							
Lake													1				
Klamath																	
Malheur																	
Total SE OR										1			1				
Benton													1				
Clackamas						2	14										
Clatsop																	
Columbia																	
Coos										1			4				
Curry																	
Douglas						7	17	47	19	13	40	67	104	24			
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																	
Unknown													5				
Wasco										2	2						
Washington																	
Total W OR*					52	70	144	81	29	47	47	72	135	25			51
Total ALL		16	0	70	124	344	955	927	464	352	397	306	476	103	121	139	511

Appendix B, continued.

County	1997	1998	1999	2000	2001	2002	2003	2004	2005
Baker	24	61	24	31	29	25	32	12	9
Grant	26	82	83	87	98	128	75	90	68
Morrow								3	1
Umatilla	15	27	31	44	14	12	13	15	4
Union	163	189	146	200	260	167	160	83	109
Wallowa	178	299	371	342	462	165	270	99	181
Total NE OR	406	658	655	704	863	497	566	302	372
Harney								4	
Lake	5	1							1
Klamath						5		7	1
Malheur								3	
Total SE OR	5	1	4	0	0	5	0	14	2
Benton								1	
Clackamas						3	13	2	2
Clatsop							1		1
Columbia							18	10	2
Coos						3	12	15	3
Curry						4	11	10	1
Douglas	3		71	74	129	155	163	103	55
Hood River						7	14	24	22
Jackson						19	18	4	2
Josephine							3	2	0
Lane						31	5	25	3
Lincoln						4	3	2	0
Marion							3	2	3
Tillamook								1	0
Unknown							12	1	3
Wasco								12	11
Washington						4		30	0
Total W OR*	3	0	82	74	129	230	273	243	108
Total ALL	414	659	741	778	992	732	839	559	482

*Includes Hood River and Wasco counties.