2012 Forest Grouse Parts Collection Summary

Sooty grouse avoiding parts collection survey in downtown Drain, Douglas County, October 2012. Photo by Tod Lum

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INTRODUCTION

Since 1980, wings and tails of blue[1] (*Dendragapus spp*), ruffed (*Bonasa umbellus*), and spruce grouse (*Falcipennis 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. Since that time the effort has increased to nearly statewide participation. In 2012, wings and tails were obtained from 24 of the 36 counties in Oregon (Table 1). A total of 922 wings and tails were examined at the two forest grouse wing bees; 25% more than in 2011. The recent 5 year average total has been around 900 wings. Statewide blue grouse submissions were down 5% and ruffed grouse wings were up 64% from 2011. Union and Grant counties accounted for a large portion of the increase in ruffed grouse wings. Spruce grouse wings represent only a small part of all grouse wing submissions, but the 12 wings submitted in 2012 represented a 50% increase over 2011, ten of these wings were from Union County and two from Wallowa Co. There is no open spruce grouse season in Oregon.

[1]Dusky and Sooty grouse considered collectively as "blue" grouse.

USE OF INFORMATION

Data from wings can be used by biologists to better understand the distribution and timing of grouse harvest (Figures 1 & 3) 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 2 & 4). Distribution and timing of kill 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. Hatching data may be used to understand the timing of reproduction in specific areas and provide information to develop appropriate census procedures. For example, if hatching times

Table 1. Forest Grouse wings submitted to the 2012 Oregon forest grouse wing bees at Ladd Marsh Wildlife Area, 23 January 2013 and ODFW HQ April 18, 2013. Wing bee counts from 2011 are provided for comparison.

County	"Blue" Grouse		Ruffed Grouse		Spruce Grouse		Total Wings		%change from 2011
	2012	2011	2012	2011	2012	2011	2012	2011	
Unk. Co.	2		2	1			4	1	300.0
Baker	68	65	32	24			100	89	12.4
Crook			2				2	0	
Grant	87	69	163	83			250	152	64.5
Harney	4	5					4	5	-20.0
Jefferson		1					0	1	-100.0
Klamath	13		5				18	0	
Lake	25	29					25	29	-13.8
Morrow	10	32	2	10			12	42	-71.4
Umatilla		2		3			0	5	-100.0
Union	29	33	101	39	10	5	140	77	81.8
Wallowa	121	150	143	120	2	3	267	273	-2.2
Clackamas			1				1	0	
Columbia			1				1	0	
Coos	2		13				15	0	
Curry	3		2				5	0	
Douglas	14	12	25	16			39	28	39.3
Hood River	1	7	4	5			5	12	-58.3
Jackson			1				1	0	
Lane	3	1	13	1			16	2	700.0
Linn	4			4			4	4	0.0
Marion	3	3	1	3			4	6	-33.3
Tillamook	3	3		1			3	4	-25.0
Wasco	4	4	3	2			7	6	16.7
Yamhill				2			0	2	-100.0
TOTAL	396	416	514	314	12	8	922	738	25.1

differed substantially among regions of the state, the timing of summer censuses could be adjusted because the probability of observing a bird is a function of bird age and habitat conditions. Samples obtained through hunter harvest may not adequately reflect sex and age ratios of a population and may change through the course of the season**.** Age ratios during the first two weeks of the season provide the best index to reproduction, while there is no significant change in sex ratios during the course of the season (Hansen et al. 2012). This report provides age ratios for the first two weeks of the season and for the entire season. The age ratios for the entire season will allow comparison to data collected in previous years.

METHODS

District wildlife biologists collect grouse parts 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. They are also 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. Field staff also distributed wing bags to known grouse hunters. Additionally, wing bags are mailed to a list of cooperating hunters by wildlife division staff prior the hunting season and an advertisement requesting 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 winter biologists gather at wing bees to collect information from the parts. In 2012, wing bees were held at Ladd Marsh Wildlife Area and at ODFW Headquarters. Data collected from each set of parts are: 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). 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, provided they were harvested prior to 10 October (immature molt, primaries 1 to 8, is usually complete by 10 October).

BLUE GROUSE RESULTS

During 2012, 396 wings and tails from "blue" grouse were collected in Oregon, a decrease of about 5% from the previous year and below the recent 5-yr average of 430 wings. The 2012 hunting season allowed a daily bag limit of 3 birds with 6 in possession. The season started 1 September statewide and ended 31 December in eastern Oregon and 31 January in western Oregon (western Oregon includes Hood River and Wasco counties). Wings from birds harvested during the first two week of the season represented 45% of the sample. Similar to

most previous seasons, there was a second peak of submissions during late September and early October; the beginning of many firearm deer and elk seasons (Figure 1).

For eastern Oregon, (and statewide) the majority (70%) of wings were collected from just three counties. Wallowa County accounted for 31% of wings and tails submitted, while Grant County contributed 22%, and Baker 17%. The remainder of the eastern Oregon submissions came from 5 other counties. Only 37 wings were collected from Western Oregon (includes Hood River and Wasco Cos).

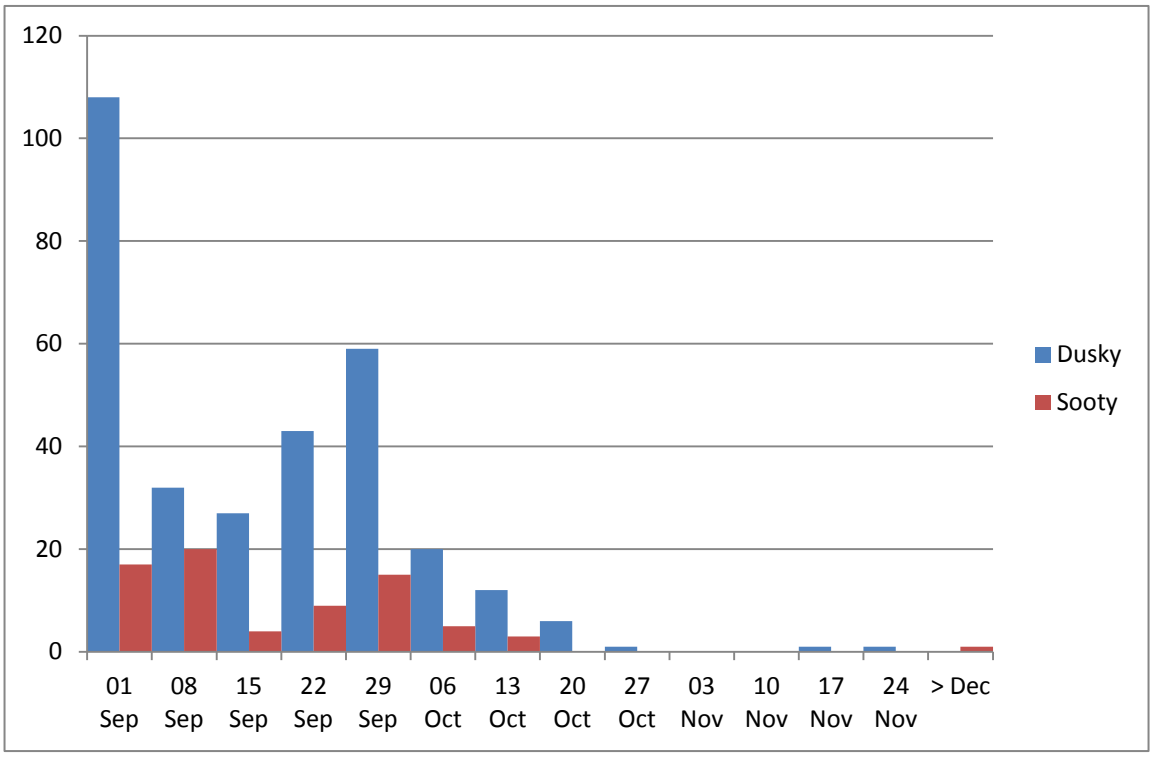

Figure 1. The number of Sooty and Dusky grouse wing/tail collections, by week of reported harvest during 2012-13 Oregon hunting season.

Age and Sex Ratios

Immature grouse comprised 60% of the sample for both Sooty and Dusky grouse during the first two weeks of the season (Table 2). For the entire season, immatures comprised 57% of the statewide harvest of "blue" grouse. The proportion of immatures in the harvest indicates

production in 2012 was below average (~65% immature). Males represented 51% of the statewide sample, 66% of adult sample, and 38% of immatures in 2012.

Hatching Chronology

Statewide, hatch dates for dusky and sooty grouse harvested during the 2012 hunting season ranged from 6 May to 11 July, which is similar to previous years. Dusky grouse hatch dates ranged from 6 May to 5 July ($\bar{x}$ = 1 June) and Sooty grouse hatch dates ranged from 23 May to 11 July ($\bar{x}$ = 15 June). For Dusky grouse, 75% hatched between 17 May and 11 June, while 75% of Sooty grouse hatched between 1 June and 24 June. Typical of most years, the peak sooty grouse hatch was later than the dusky grouse hatch. Mean hatch dates were closer to average and earlier than hatch dates in 2010 and 2011 which were among the latest recorded during this study (1980 – 2012).

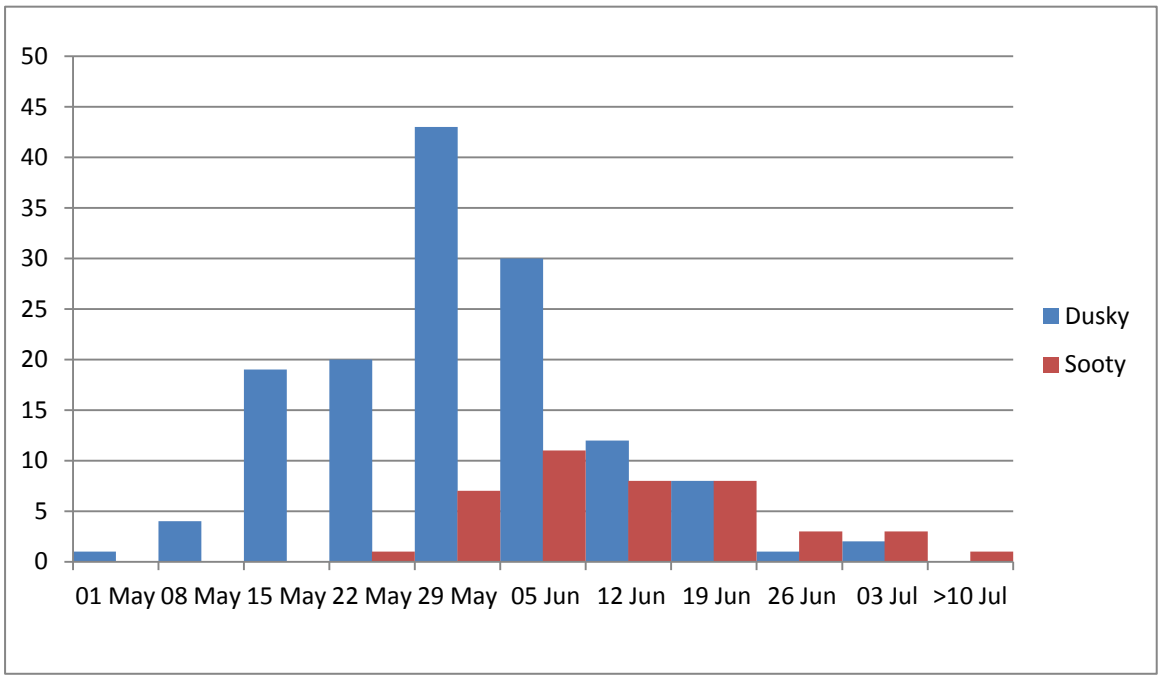

Figure 2. Week of hatch for "blue" grouse in Oregon as estimated from primary feathers from hunter-harvested wings during 2012. Hatch dates were only estimated for birds that were harvested on or before October 10.

Table 2. "Blue" grouse sex ratios, age ratios and hatch dates by species in 2012 from hunter submitted wings. Ratios presented for first two weeks of season and for entire season, because the first two weeks are the best indicator for age ratios (Hansen et al. 2012). Hatching date only estimated for grouse harvested before October 10, 2012.

	Gender Ratios				**Age Ratios**			**Hatch Dates**	
	n	M:F	AM:AF	IM:IF	n	I:A	I:AF	n	Median, Range
Dusky									
1st 2wks	140	51:49	70:30	37:63	140	59:41	83:17		
total	319	52:48	68:32	39:61	319	57:43	80:20	140	Jun 1, May 6 -Jul 5
Sooty									
1st 2wks	36	35:65	54:46	39:61	36	64:36	79:21		
total	75	45:55	59:41	35:65	75	57:43	77:23	42	Jun 15, May23–Jul11
All									
1st 2wks	176	49:51	67:33	38:62	176	60:40	82:18		
All Total	394	51:49	66:34	38:62	394	57:43	80:20	182	Jun 4, May 6 – Jul 11

Wallowa County – 1980 to 2010

From 1980 through 2012 hunters in Wallowa County submitted parts representing 8,984 dusky grouse. In 2012, 121 wings were collected, which is down about 50% from the average since the wing bee began in 1980. Males comprised 46% of the sample, which is less than average (Table 3).

The immature proportion (52%) of the harvest was similar to last year and suggests a year of slightly below average production (Table 3). The proportion of immatures in Wallowa County ranged from a low of 38% in 1982 to a high of 76% in 2008 (1982–2010, $\bar{x}$ = 62%). Over the past 32 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 10 years of good production as measured by a proportion of immatures >65% (1980, 1983, 1985, 1986, 1989, 1996, 1998, 2007, 2008, 2009; Table 3).

Mean hatch dates have ranged from 26 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 3). In 2012, the median hatch date was 1 June and ranged from 15 May to 26 June.

Table 3. Sex ratios, age ratios and hatching dates of dusky grouse determined from parts submitted by hunters from harvest in Wallowa County, Oregon, 1980 to 2012.

Season	*n*	Sex Ratios			Age Ratios		Mean	Hatch Range		
		M:F	AM:AF	IM:IF	I:A	I:AF	Hatch			
1980	59	54:46	83:17	41:59	69:31	93:7				
1981	125	57:43	60:40	55:45	62:38	80:20	29-May	7-May	to	29-Jun
1982	95	53:47	53:47	53:47	38:62	56:44	31-May	16-May	to	16-Jun
1983	165	53:47	57:43	51:49	72:28	86:14	30-May	8-May	to	25-Jun
1984	155	57:43	63:37	53:47	52:48	74:26	4-Jun	13-May	to	8-Jul
1985	258	53:47	63:37	49:51	72:28	88:12	1-Jun	4-May	to	4-Jul
1986	598	58:42	74:26	52:48	70:30	90:10	26-May	3-May	to	15-Jul
1987	736	58:42	72:28	51:49	65:35	87:13	26-May	2-May	to	14-Jul
1988	471	54:46	60:40	47:53	53:47	75:25	2-Jun	28-Apr	to	19-Jul
1989	371	53:47	59:41	51:49	70:30	85:15	30-May	29-Apr	to	10-Jul
1990	286	58:42	65:35	55:45	54:46	77:23	27-May	5-May	to	1-Jul
1991	260	60:40	68:32	50:50	43:57	70:30	1-Jun	9-May	to	13-Jul
1992	284	54:46	61:39	47:53	57:43	78:22	25-May	2-May	to	26-Jun
1993	200	58:42	61:39	57:43	65:35	83:17	2-Jun	10-May	to	28-Jun
1994	249	59:41	66:34	52:48	58:42	80:20	28-May	10-May	to	21-Jun
1995	140	47:53	61:39	30:70	43:57	66:34	6-Jun	14-May	to	10-Jul
1996	261	61:39	75:25	54:46	67:33	89:11	30-May	10-May	to	8-Jul
1997	205	54:46	78:22	41:59	61:39	88:12	30-May	10-May	to	24-Jun
1998	361	59:41	73:27	53:47	66:34	88:12	25-May	8-May	to	30-Jun
1999	453	59:41	69:31	51:49	59:41	82:18	6-Jun	11-May	to	5-Jul
2000	379	60:40	82:18	51:49	68:32	92:8	27-May	3-May	to	3-Jul
2001	570	52:48	62:38	47:53	65:35	83:17	31-May	3-May	to	7-Jul
2002	376	59:41	64:36	56:44	63:37	83:17	5-Jun	5-May	to	29-Jul
2003	460	64:36	74:26	58:42	65:35	88:12	3-Jun	6-May	to	17-Jul
2004	251	50:50	56:44	47:53	51:49	70:30	25-May	5-May	to	30-Jun
2005	209	64:36	80:20	56:44	59:41	88:12	1-Jun	9-May	to	14-Jul
2006	163	61:39	70:30	54:46	48:52	76:24	1-Jun	10-May	to	8-Jul
2007	172	55:45	55:45	56:44	70:30	84:16	27-May	6-May	to	4-Jul
2008	104	53:47	56:44	53:47	76:24	88:12	5-Jun	10-May	to	22-Jul
2009	173	58:42	64:36	55:45	68:32	87:13	30-May	9-May	to	12-Jul
2010	128	47:53	58:42	38:62	55:45	76:24	5-Jun	9-May	to	6-Jul
2011	150	57:43	61:39	46:54	57:43	83:17	5-Jun	8-May	to	15 Jul
2012	**126**	**46:54**	**66:34**	**29:71**	**52:48**	**76:24**	**1-Jun**	**15 May**	**to**	**26 Jun**

RUFFED GROUSE RESULTS

In 2012, a total of 514 ruffed grouse wings and tails were collected in Oregon, a 64% increase from the previous year and just above the recent 5-year average of 495 wings. Much of the increase is due to the number ruffed grouse wings collected in Grant (up 96%) and Union (up 159%) Cos. (Grant Co. also observed a record numbers of birds during summer brood counts.) The number of wings collected from western Oregon in 2012 was 40% below average, but was more than double the number of wings received in 2011 (Table 1). The 2012 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 31 December in eastern Oregon and 31 January 2013 in western Oregon (the "western" Oregon season includes Hood River and Wasco counties). Typically the highest number of ruffed grouse wings is submitted during the first week of season, with a second peak in harvest occurring during the start of many firearm big game seasons, usually the first week in October. In 2012, the peak of ruffed grouse wing returns occurred during the start of the big game rifle seasons (Figure 3). Only 12% of the ruffed grouse parts were submitted during the first week of the season and 44% were reported harvested during the first 4 weeks of the season (Figure 3). The extremely dry weather during September may have reduced interest and hunter access due to fire danger.

In eastern Oregon, 448 samples were collected, a 57% increase over 2011 and above the recent 5-year average of 380. Most of the samples collected in eastern Oregon were from Grant, Union, and Wallowa Counties. In western Oregon, only 64 ruffed grouse samples were collected, but it represented a 137% increase over last year. Douglas County accounted for 25 of the submissions with remainder from eight other counties.

Age and Sex Ratios

Because of the lack of tails, or the rump feathers attached to the tail, gender could not be determined for 47% of the submissions. Age was determined for 98% and 100% of the samples from eastern and western Oregon, respectively.

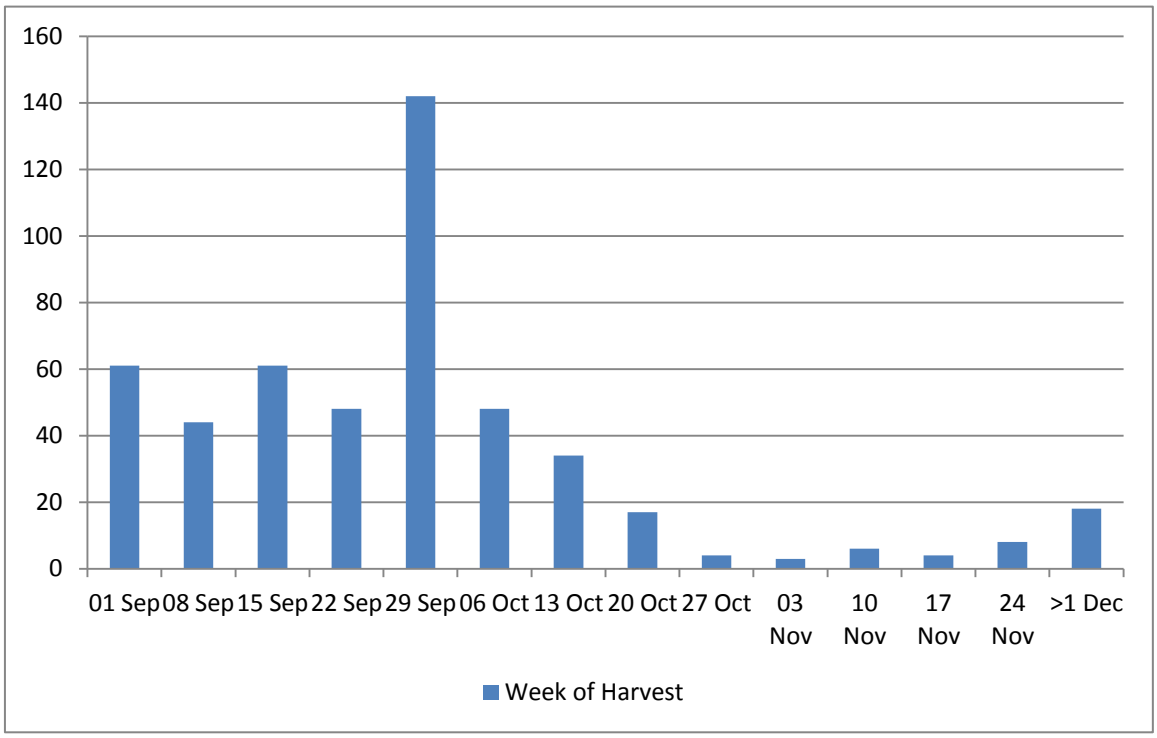

Figure 3. Timing of Oregon's 2012 ruffed grouse harvest as estimated from 514 ruffed grouse wings obtained from hunter harvest.

Immature grouse comprised 49% of the sample during the first two weeks of the season. Age ratios during the first two weeks of the season provide the best index to reproduction because age ratios in the harvest can change over the course of the season (Hansen et al. 2012). For the entire season, immatures comprised 47% of the statewide harvest of ruffed grouse. In eastern Oregon, 46% of ruffed grouse samples were from immatures and 51% of submissions from western Oregon were immatures (Table 4). The proportion of immatures indicates below average production. An analysis of wings from the previous 26 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 of all ages accounted for 53% of the wings collected. The proportion of adult wings that were male was 55% and 83% for eastern Oregon and western Oregon, respectively. 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 2012, males were 43% of the immature birds submitted from eastern Oregon. Confidence in the sex ratios would be improved if gender could be determined for a higher proportion of the samples. In 2012, 53% of the ruffed grouse samples included diagnostic feathers for gender identification.

Hatching Chronology

The mean hatch date for ruffed grouse collected during the 2012 hunting season was 2 June. Hatch dates were estimated from 198 wings, of which 6 were from the western Oregon season. Given the small sample from the west side wings from both sides of the state were pooled for analysis (Table 4). Similar to "blue" grouse, peak hatch dates for ruffed grouse were closer to average, and a few days earlier than the late hatches of 2011. Hatching dates ranged from 6 May to 18 July, but >75% ruffed grouse in the harvest hatched between 22 May and June 11 (Figure 4).

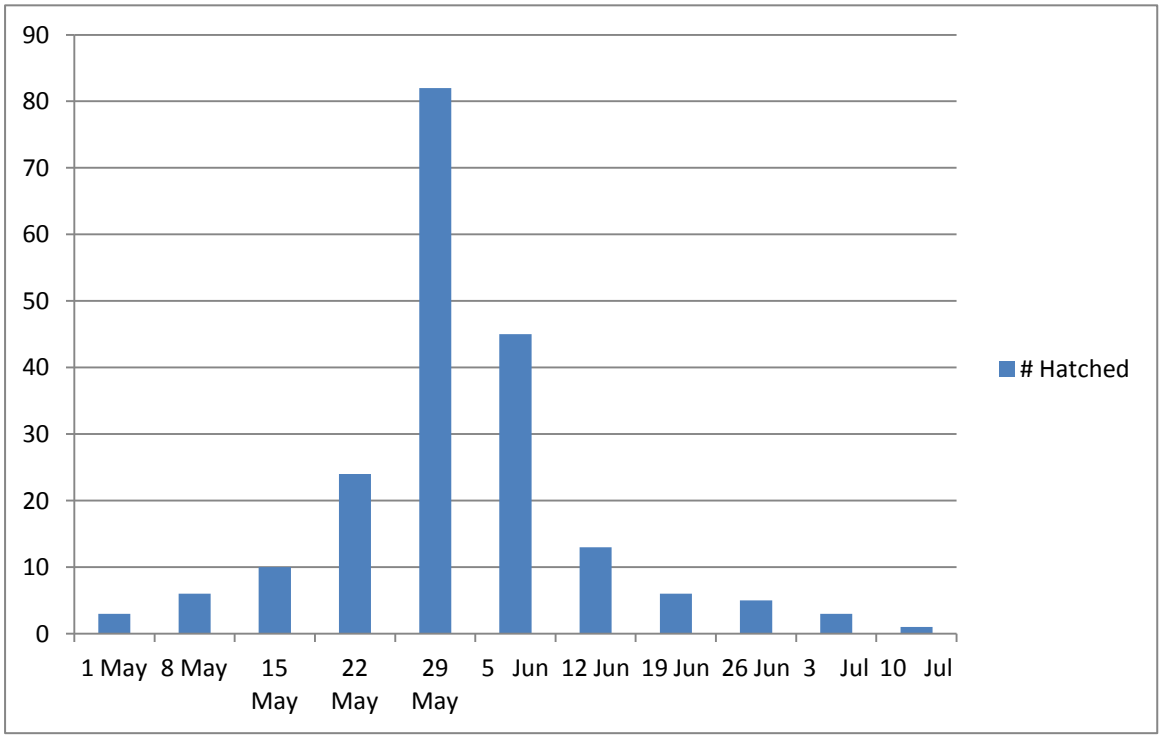

Figure 4. Timing of Oregon's 2012 ruffed grouse hatch as estimated from 198 wings obtained from hunter harvest.

Table 4. Sex ratios, age ratios and hatching dates of ruffed grouse as determined from parts submitted by hunters from Oregon harvest during the 2012-13 hunting season.

Location	**Gender Ratios**				**Age Ratios**			**Hatch Dates**
	n	M:F	AM:AF	IM:IF	I:A	I:AF	n	Median, Range
East	196	49:51	55:45	43:57	46:54	66:34	192	Jun 2, May 5-Jul 18
East, 1st 2 wks	43	51:49	59:41	43:57	49:51	70:30		
West	47	70:30	83:17	58:42	51:49	86:14	6	Jun 2, May 16-Jun 13
Statewide	243	53:47	60:40	46:54	47:53	69:31	198	Jun 2, May 5-Jul 18

Wallowa County - 1983 to 2012

From 1983 through 2012, hunters submitted 5,837 ruffed grouse wings and tails from Wallowa County. The proportion of immatures (55 %) in the 2012 wing sample was down from last year (61%). Wing data collected since 1983 in Wallowa County indicated exceptional production from 1983–1990, then age ratios declined and stabilized until they again increased in 1999 through 2001. Age ratios have since been stable and slightly higher than during the early 90s except for 2004 and 2010. The ratio of males (46%) in the sample was the same as last year but below the long-term average (~58%), however only 76 submissions contained the diagnostic feathers to determine sex. A large proportion of hunter submissions continue to lack the diagnostic rump feathers or other keys to gender identification. The median hatch date of 30 May was 6 days earlier than in 2011 and the same as long term mean.

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 2012.

Season	*n*	Sex			Age		Mean	Hatch Range		
		M:F	AM:AF	IM:IF	I:A	I:AF	Hatch			
1983	70				83:17					
1984	47	50:50	0:100		66:34	97:3	5-Jun	22-May	to	20-Jun
1985	193	56:44	64:36	52:48	75:25	92:8	28-May	3-May	to	7-Jul
1986	395	61:39	69:31	56:44	72:28	93:7	29-May	5-May	to	14-Jul
1987	372	59:41	51:49	64:36	70:30	88:12	27-May	4-May	to	28-Jun
1988	212	69:31	78:22	64:36	68:32	95:5	1-Jun	13-May	to	1-Jul
1989	139	55:45	50:50	57:43	74:26	90:10	2-Jun	2-May	to	29-Jun
1990	189	61:39	71:29	56:44	67:33	93:7	28-May	11-May	to	20-Jun
1991	155	64:36	62:38	65:35	63:37	88:12	3-Jun	7-May	to	6-Jul
1992	220	65:35	64:36	66:34	61:39	87:13	27-May	30-Apr	to	5-Jul
1993	55	65:35	71:29	60:40	62:38	86:14	1-Jun	15-May	to	2-Jul
1994	112	53:47	52:48	54:46	55:45	76:24	25-May	12-May	to	26-Jun
1995	84	61:39	68:32	52:48	57:43	89:11	30-May	12-May	to	26-Jun
1996	180	62:38	70:30	54:46	57:43	85:15	29-May	3-May	to	20-Jun
1997	169	61:39	84:16	34:66	58:42	92:8	31-May	3-May	to	18-Jun
1998	279	53:47	59:41	48:52	55:45	81:19	25-May	7-May	to	26-Jun
1999	370	44:56	48:52	41:59	64:36	89:11	2-Jun	8-May	to	6-Jul
2000	339	61:39	67:33	55:45	58:42	89:11	26-May	3-May	to	21-Jul
2001	434	61:39	75:25	50:50	62:38	92:8	31-May	7-May	to	14-Jul
2002	165	51:49	60:40	42:58	56:44	83:17	5-Jun	11-May	to	7-Jul
2003	284	65:35	66:34	64:36	54:46	87:13	1-Jun	8-May	to	3-Jul
2004	98	48:52	57:43	35:65	49:51	76:24	28-May	7-May	to	18-Jun
2005	180	53:47	68:32	41:59	58:42	89:11	1-Jun	6-May	to	1-Jul
2006	152	56:44	62:38	48:52	59:41	87:13	26-May	5-May	to	10-Jul
2007	198	49:51	55:45	41:59	58:42	83:17	25-May	2-May	to	15-Jun
2008	94	56:44	61:39	52:48	63:37	87:13	4-Jun	7-May	to	27-Jun
2009	222	66:44	75:25	58:42	69:31	94:6	30 May	6-May	to	6-Jul
2010	167	54:46	56:44	50:50	43:57	73:27	6-Jun	14-May	to	28-Jun
2011	150	57:43	61:39	46:54	57:43	83:17	5-Jun	8-May	to	15-Jul
2012	**143**	**47:53**	**51:49**	**41:59**	**55:45**	**68:32**	**30-May**	**6-May**	**to**	**1-Jul**

SPRUCE GROUSE

Wing Collections – 1985 to 2012

Incidental to the harvest of dusky and ruffed grouse in Baker, Wallowa and Union counties, 187 spruce grouse wings and tails were collected from wing barrels from 1985 through 2012. During 2012, two spruce grouse wings were collected from Wallowa Co. and ten from Union County. Wallowa County typically had the highest incidental harvest of spruce grouse but Union Co. has received more spruce grouse wings in recent years. During 1997, spruce grouse wings were obtained from Baker County for the first time, likely related to an increased effort in wing collection rather than range expansion. The 1988 wing bee recorded the highest number of spruce grouse wings (27). During the past 25 years, immatures and adults composed nearly equal proportions of the sample. In 2012, 3 adult, 1 yearling and 8 juvenile wings were received. Oregon is on the southwest periphery of the natural range of spruce grouse and they are currently listed as vulnerable on Oregon's Sensitive Species List.

Summary

Estimates of the statewide harvest of "blue" and ruffed grouse indicate declines from the previous year by 14% and 6%, respectively. However, the majority of the wings submitted in 2012 came from NE Oregon, where in contrast to the remainder of the state, estimated harvest increased from 2011. Specifically, for harvest region 5 (Baker, Union, and Wallowa Cos) estimated harvest was up by 6% and 46% for dusky and ruffed grouse, respectively. Corresponding to the increase harvest in NE Oregon, the number of hunter harvested forest grouse parts submitted to ODFW was up 25% from the previous year (738 wings in 2011).

For all species (ruffed, sooty and dusky grouse), mean hatch dates in 2012 were earlier than the late hatches of the last couple of years. However, the proportion of immature grouse in the harvest remained below long term averages suggesting 2012 was another year that experienced below average recruitment.

Sample submissions for western Oregon continue to remain disproportionately low. In 2012, about 11% of the submitted wings came from western Oregon, yet western Oregon accounted for 46% of the statewide "blue" grouse harvest and 61% of ruffed grouse harvest. This underscores the need to explore methods for increasing the submission rates for grouse harvested in western Oregon.

Statewide education efforts should continue to increase hunter awareness and participation for the need and value of 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. Despite the desire for additional wings from Oregon forest grouse hunters, these wing collections still provide a valuable and reasonably low cost method of obtaining demographic profiles of grouse populations.

ACKNOWLEDGEMENTS

These data would simply not be available without the continued support and cooperation of Oregon hunters – for this we thank all the hunters who provided wings and tails! Forest grouse wing collection can also be a large workload for the wildlife districts, and their effort is greatly appreciated. Some wildlife districts have embraced this challenge and the results are self-evident – most of the forest grouse wings collected each year come from four NE Oregon counties – thank you.

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