

## 2014 Sharp-tailed grouse Harvest Report

The 2014 sharp-tailed grouse report provides information on the estimated harvest of mountain sharp-tailed grouse. A stratified random sample of 3,501 sharp-tailed grouse hunters was drawn from among Harvest Information Program (HIP) participants. The sample was stratified as follows:

- 1 = Not likely to hunt
- 2 = Somewhat likely to hunt
- 3 = Very likely to hunt
- 4 = Very likely to hunt  $\geq$  3 years

The post-season survey, conducted by telephone and email, contacted 1,484 (42.4% response rate) hunters. In total, 79 respondents, or 5.3%, reported they had hunted sharp-tailed grouse in 2014 and 51 reported harvesting sharp-tailed grouse. The number of birds harvested ranged from 1 (10 respondents) to 20 (1 respondent), with 17 hunters reporting a harvest of 2 birds. Days hunted ranged from 1 (22 hunters) to 20 (1 hunter). Statewide harvest was estimated at **461  $\pm$  163 (298 – 623)**.

### **Comparison with 2013 survey results:**

Harvest was significantly higher than 2013 when an estimated 195  $\pm$  80 (129 – 293) grouse were harvested. Hunter numbers in 2014, estimated at **410  $\pm$  223 (186 – 633)** were significantly higher than 2013 when 114  $\pm$  27 (90 – 145) reported hunting. Days hunted increased to **1,198  $\pm$  871 (336 – 2060)** in 2014, from 294  $\pm$  94 (214 – 404) in 2013.

### **Discussion**

According to survey data, sharp-tailed grouse harvest increased by a factor of 2.3 between the 2013 and 2014 harvest estimates, while total hunter numbers and days hunted increased similarly (3.6X and 4X respectively). While these increases in harvest estimate, hunter number and days hunted do not follow recent trends (2010-13), they are not out of line with estimates from the 2008-2010 period when harvest estimates exceeded 400 in every year.

CPW performed an analysis of the survey and survey results to determine why these increases occurred. One major change that occurred between 2013 and 2014 was that CPW used a different vendor to perform the survey. However, both vendors used the same methodology (internet and live operator survey) and survey standards as the previous vendor, using a CPW-provided stratified, random sample from Harvest Information Program (HIP) response data. No changes in CPW sampling protocols occurred in 2014, and CPW has been unable to find errors within the data set that would contribute to large increases in harvest estimate, hunter numbers and effort (days hunted).

What did change between years was that a larger than normal number of hunters in HIP stratum's 1-3 responded to the post season harvest survey that they did hunt sharp-tailed grouse in 2014, which generated significantly higher estimates of hunters in stratum 1-3 (see table below).

Strata	2013	2013	2014	2014
	Hunter Estimate	Harvest Estimate	Hunter Estimate	Harvest Estimate
(1) Not Likely	5	0	166	0
(2) Somewhat Likely	8	0	59	0
(3) Very Likely	51	78	133	258
(4) Very Likely for >3 years	50	117	52	203

As part of this analysis, CPW calculated an estimate of average birds harvested per hunter from 1999-2014. In 2014, hunters averaged 1.1 birds per hunter, suggesting that average hunting success was lower than the long term average of 1.6 birds per hunter or the 2013 estimate of 1.7 birds per hunter.

#### **Hunter Statistics and Harvest Estimates by Strata and County**

The following summary tables provide estimates of hunter numbers, days in the field and sharp-tailed grouse harvest statewide and by county. Estimates are followed by the standard error of the estimate, and 95% upper (UCI) and lower (LCI) confidence intervals around the estimate. In 2014, Colorado Parks and Wildlife attempted to reduce erroneous harvest location responses by allowing answers that correspond to mountain sharp-tailed grouse occurrence and where legal hunting seasons occur. All other location responses – for instance if a hunter said he hunted sharp-tailed grouse in Yuma County, were cached into an “Unknown” category, and eliminated from the data set.

Summary tables provide estimates of hunter numbers, days in the field and sharp-tailed grouse harvest state and by county. Estimates are followed by the standard error of the estimate, and 95% upper (UCI) and lower (LCI) confidence intervals around the estimate.

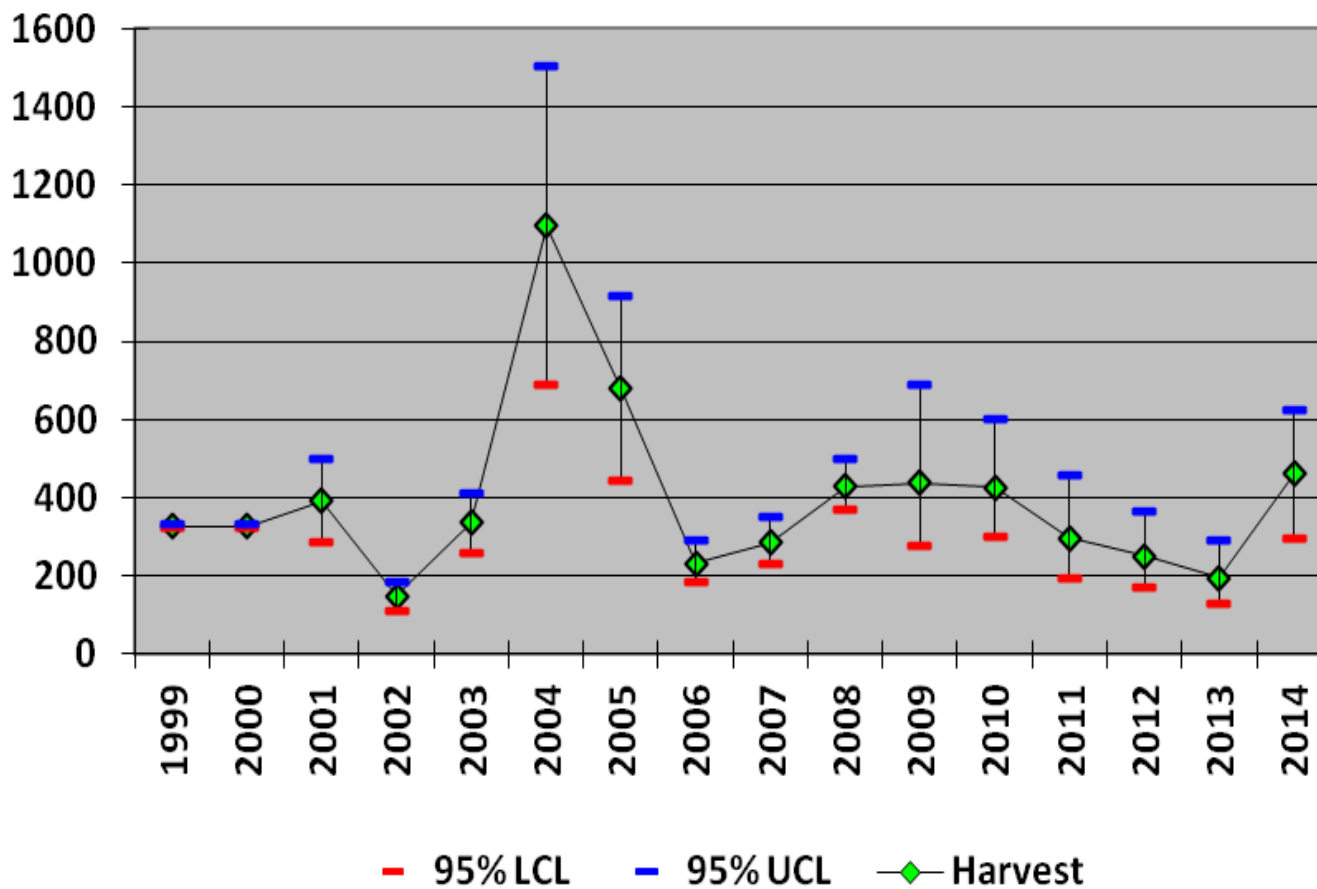
**2014 Sharp-tailed grouse harvest,  
by strata**

<b>Strata</b>	<b>Hunters</b>	<b>SE (Hunters)</b>	<b>LCL (Hunters)</b>	<b>UCL (Hunters)</b>	<b>Days Hunted</b>	<b>SE (Days Hunted)</b>	<b>LCL (Days Hunted)</b>	<b>UCL (Days Hunted)</b>	<b>Harvest</b>	<b>SE (Harvest)</b>	<b>LCL (Harvest)</b>	<b>UCL (Harvest)</b>
<b>Not Likely</b>	166	96	58	474	498	395	127	1958	0	0	0	0
<b>Somewhat Likely</b>	59	59	12	302	177	177	35	905	0	0	0	0
<b>Very Likely</b>	133	18	103	172	351	68	240	512	258	66	158	422
<b>Very Likely for &gt;3 years</b>	52	7	39	69	172	37	113	262	203	51	125	328
<b>Total</b>	<b>410</b>	<b>114</b>	<b>186</b>	<b>633</b>	<b>1198</b>	<b>440</b>	<b>336</b>	<b>2060</b>	<b>461</b>	<b>83</b>	<b>298</b>	<b>623</b>

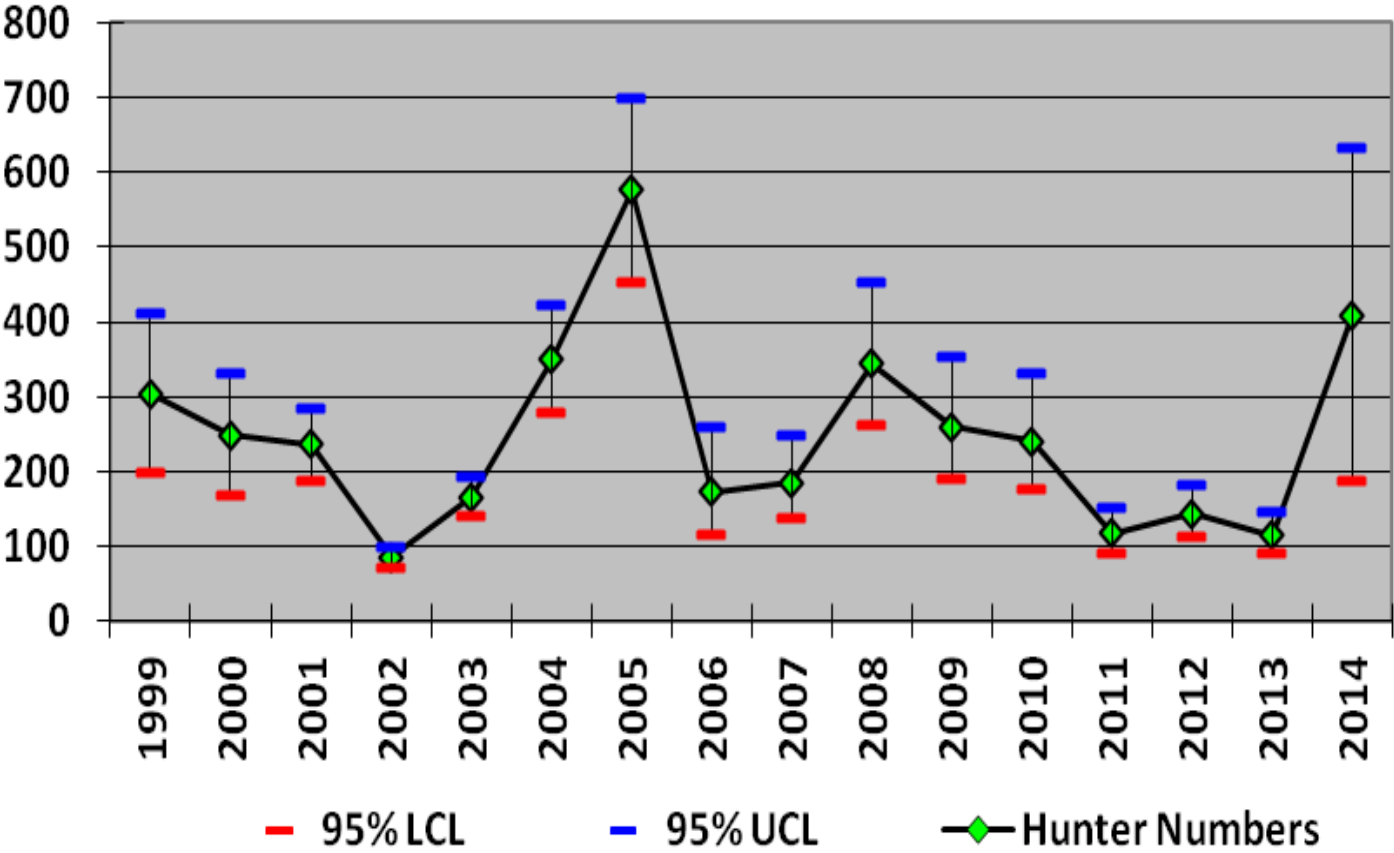
**2014 Sharp-tailed grouse harvest,  
by county**

<b>County</b>	<b>Hunters</b>	<b>SE (Hunters)</b>	<b>LCL (Hunters)</b>	<b>UCL (Hunters)</b>	<b>Days Hunted</b>	<b>SE (Days Hunted)</b>	<b>LCL (Days Hunted)</b>	<b>UCL (Days Hunted)</b>	<b>Harvest</b>	<b>SE (Harvest)</b>	<b>LCL (Harvest)</b>	<b>UCL (Harvest)</b>
<b>Moffat</b>	217	99	93	507	331	187	118	929	51	27	19	135
<b>Rio Blanco</b>	273	162	93	803	417	388	89	1958	17	11	5	56
<b>Routt</b>	749	248	398	1409	445	92	299	664	393	79	266	580

Sharp-tailed grouse Harvest Estimates,  
Colorado (1999-2014)



### Sharp-tailed grouse Hunter Numbers Colorado (1999-2014)



### Sharp-tailed grouse Hunters and Harvest Colorado (1999-2014)

