2015

Gunnison Basin

Gunnison Sage-Grouse Lek Count Summary

And

Population Estimate

Final Report

22 March – 10 May Lek Season
Gunnison Basin, Colorado

Colorado Parks and Wildlife

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Summary

In 2015, 82 leks were visited, resulting in a high male count (HMC) of 974, an increase of 163 from the 811 males counted in 2014. This is the second highest HMC recorded since lek counts were standardized in 1996. The high female count (HFC) was 175, a decrease of 64 birds from the 239 birds counted in 2014. Population estimates for the Gunnison Basin were calculated using formulas presented in the Gunnison Basin local conservation plan (1997) and the Gunnison Sage-grouse Rangewide Conservation Plan (RCP 2005). Based on the local conservation plan formula, the minimum population estimate for the Gunnison Basin population is 3,897, an increase of 653 birds from 2014. Based on the RCP 2005 formula, the minimum population estimate for the Gunnison Basin is 4,779 birds, an increase of 801 birds from 2014.

The three-year HMC moving average for 2013–2015 is 878, a 5.78% increase from the 2012–2014 HMC moving average of 830. Total number of active Lek Areas in 2015 was 25 with an average of 39 males per active Lek Area, up from 33.8 males per active Lek Area in 2014. Male and female lek attendance peaked during the first count period (1–10 April). Three of the five Lek Zones increased (Doyleville, Ohio Creek, and Sapinero) in total number of males compared to 2014. Four zones (Doyleville, Gold Basin, Ohio Creek, and Sapinero) decreased in total number of females compared to 2014. In 2015, HMCs increased on 36 individual leks, 29 leks had the same number of males, and 17 leks had a decrease in the number of males observed compared to 2014, respectively. Overall the Gunnison Basin population trend continues to increase slightly.

Four leks at Pine Creek Mesa were not counted due to access issues. Their status is "unknown" for 2015 and ensure that population estimates are conservative. The Antelope Ridge lek went from “unknown” to “active” status after thirteen years of inactivity. North Parlin North and Taila’s leks went from “inactive” to “active” status after seven years and one year of inactivity. Three leks (Chance Gulch E, McCabe Lane, South Parlin 1) went from "active" to "annually inactive/officially unknown" status in 2015. After five years of annually “inactive” status, three leks (Antelope South 1&2 Substation, North Parlin South, and South Parlin #3) become officially “inactive”. After ten years of annually “inactive” status, five leks (Almont West, Iola 1, North Parlin Hupp, Signal Peak, and Tylers leks) become officially “historic”.

Acknowledgements

The 2015 Gunnison sage-grouse lek counting season was made possible because of the combined efforts of numerous individuals (Appendix A). We would like to thank all of you who dedicated your time, energy, and early mornings to count grouse. At least 50 people were directly involved in the 2015 Gunnison sage-grouse lek counts. Colorado Parks and Wildlife coordinated the effort and received help from the Bureau of Land Management (BLM), U.S. Forest Service (USFS), Natural Resources Conservation Service (NRCS), National Park Service (NPS), Western State Colorado University (WSCU), and numerous landowners who counted leks or allowed access on their lands. Thank you for your continued support and contribution to Gunnison sage-grouse conservation!

Introduction

The Gunnison sage-grouse (*Centrocercus minimus*) is a unique species of sage-grouse found only in portions of southwestern Colorado and southeastern Utah (Young et al. 2000). There are nine distinct sub-populations occurring within their range, with the largest inhabiting the Gunnison Basin (Gunnison sage-grouse Rangewide Conservation Plan 2005). The Gunnison sage-grouse received species status in January of 2000 from the American Ornithologist's Union based on long-term studies by grouse researchers Jessica Young and Clait Braun, among others. Shortly thereafter, a coalition of environmental groups petitioned the U.S. Fish and Wildlife Service (FWS) to emergency list the Gunnison sage-grouse under the Endangered Species Act (ESA). After review, the FWS designated the bird as a "priority 5" candidate species under the ESA, and precluded listing at that time. However, after re-evaluation in 2004, the FWS designated the species as a "priority 2" candidate species, which shifted the grouse into a higher priority status for listing. Principal areas of concern for Gunnison sage-grouse include overall population declines and reductions in the quantity and quality of their sagebrush habitats. On April 18, 2006, the FWS posted their final listing determination for the Gunnison sage-grouse. In the ruling, the FWS determined that based on the best scientific and commercial information, that listing under the ESA was not warranted. This ruling has since been revisited. On September 27, 2010, the FWS determined that the Gunnison sage-grouse warrants protection under the ESA, but that proposing the species for protection will be delayed while the Service addresses the needs of other higher priority species. On February 11, 2014, the Service announced a six-week extension of its final decision to protect the Gunnison sage-grouse under the ESA and to designate critical habitat for the species. A final determination on both proposals was expected on May 12, 2014, however on May 6, the FWS announced that the District Court granted a six-month extension of the deadline making the final listing decision due November 12, 2014. On November 12, 2014, the FWS announced that it determined the Gunnison sage-grouse required federal protection under the ESA as a threatened species.

Annual Gunnison sage-grouse lek surveys provide key information used by officials and interested parties for decisions pertaining to land management practices and regulations, population management actions, and federal ESA listing actions. Lek counts have been standardized over the past nineteen years and represent an objective method of projecting annual spring population size and assessing population trends. This report details the results of the 2015 lek count season, including counts of total number of males and females, estimated population size, changes in lek status, average number of males per active Lek Area, number of active Lek Areas, and changes throughout recent years. Included is information on projects that were conducted during the 2015 lek season and recommendations for future counting efforts.

Lek Counts as an index to population trend

Lek count data often generates considerable discussion and sometimes controversy. Lek count methodologies were developed many years ago, based on the premise that counts could aid in assessing grouse population trends. Research has demonstrated that male sage-grouse do not attend leks every day, and male attendance is variable depending on many factors including weather, social dynamics (such as male dominance or the presence of a receptive hen), time of day, predator disturbance, etc. From a lek counter standpoint, the number of birds observed may vary depending on factors such as observer experience, optic quality/distance to lek, access, vegetation composition of a particular lek, and vantage point.

Changes in the number of grouse counted should not be interpreted as an exact measurement of annual population variability, nor should they be construed as the actual number of grouse in the population. Standardized lek counts should allow managers to evaluate population trends over time. Lek counts presently provide the most efficient, low-impact means for acquiring meaningful data on local grouse population trends.

Methods

Definitions

Active Lek: To be considered Active for a given season, a lek must have at least two males in attendance during two count periods. Active leks need to be counted at least once each 10-day count period.

Inactive Lek: To be considered Inactive for a given season, a lek must have zero males in attendance for at least two count periods (i.e., not meet the active definition). If, however, birds are observed during either count period, at least one additional count period should be counted. For the official status of a lek to be considered Inactive, a lek needs to be seasonally Inactive for five consecutive years.

Unknown Lek: A lek is considered Unknown for a given season if it did not meet the requirements for Active or Inactive during a given season or was not counted the appropriate number of count periods to determine its status. For example, a lek that had five males on one count and only one male on the other counts would be Unknown, as would a lek that was only counted once with no males observed, or an Active lek that was only counted twice with 0 birds observed. A lek that is Active in one season and Inactive during the next season would have an official status of Unknown.

Historic Lek: A Historic Lek is one that has been Inactive for 10 consecutive years.

Official Status: The Official Status of a lek is given as a cumulative status and designated as Active, Historic, Inactive, or Unknown. To be Officially Active, a lek only needs to be designated as Active in the current year. A lek cannot be considered Officially Inactive unless it has been seasonally Inactive for five consecutive years. Thus, a lek might not have any birds for a given season, but its official status may be Unknown because the lek had not been Inactive all of the past five years. Historical lek status is not given until a lek has been Inactive for 10 consecutive years.

Lek Area: A lek area can be a single lek or a group of leks. The designation is loosely based on proximity to other leks and the potential for birds to move between multiple leks. For example, a lek that is far away from any other lek would be its own Lek Area. Three leks in close proximity to each other but spatially separated from any other leks would be grouped as one Lek Area.

Active Lek Area: An Active Lek Area must have at least one lek within its boundary that was designated as Active for that season.

Coordinated Count: Coordinated Counts are used to avoid double counting when there is evidence that grouse potentially fly between multiple leks on a given day. One day is scheduled during each count period when observers are positioned throughout the group of leks to count the birds and watch for movement among leks.

High Male Count (HMC): The high male count is the sum of individual male grouse observed on each lek on a given day used both on an individual basis and to describe the total number of males observed during the season. All leks, including those in coordinated count areas, are evaluated on an individual count basis when determining HMC numbers.

High Female Count (HFC): The high female count is determined the same as the high male count, but for the female portion of the population.

Count Methodology

Gunnison sage-grouse leks were counted using a slightly modified version of the protocol established in 1996. Each lek that was Active last season in the Gunnison Basin was counted once during each of four 10-day periods (1 April–10 April, 11 April–20 April, 21 April–30 April, 1 May–10 May). Inactive and Unknown leks were visited once during each of the first two count periods and then counted in later periods if grouse were observed. Coordinated counts were used where grouse were suspected to move frequently between multiple leks on a daily basis. All counts were conducted around sunrise. All lek count personnel used a standardized data form and were asked to count the number of males, females, and unknown Gunnison sage-grouse present at the lek at five minute intervals. If grouse were inadvertently flushed off of a lek, the total number of birds in flight were recorded as "unknown", and not used to calculate high counts. Counters also recorded weather conditions, disturbances to grouse, grouse behavior, and movements to and from the lek. Lek counters were also asked to indicate any activity on brush-beats or other use areas associated with their lek. For a more detailed explanation, see the count procedure (Appendix B). In the Gunnison Basin, grouse typically begin displaying earlier than the first official count period. Nine leks are annually counted during March 22–31 to gauge the level of early breeding activity.

Data Analysis

The information from each data sheet was entered into a database. Subsequent analyses provided the total number of individual males and females observed for each lek, the estimated male and female populations, the population estimate based on known leks counted, peak dates of attendance, revised status of leks and lek areas, the average number of males per Lek Area, and a three-year moving average of HMCs.

Population Estimate: In 2005, the Rangewide Steering Committee (RSC) completed the Gunnison Sage-grouse RCP, which in many ways is a continuation of the local Conservation Plans adopted throughout the species' range. As the title implies, this plan attempts to offer a broader, rangewide perspective and is intended to supplement local plans, "so as to ensure that the cumulative result of conserving local populations is conservation of the species" (Gunnison Sage-grouse Rangewide Conservation Plan 2005). With regard to this annual report, it is important to mention that the RCP addresses various issues surrounding population estimation for Gunnison sage-grouse. After review of the most current Gunnison sage-grouse research and scientific literature, the RCP recommends using an updated formula for calculating a population estimate based on lek count data. For comparison, population estimates are presented in this report using the traditional formula recommended in the local Gunnison sage-grouse Conservation Plan (1997), as well as the calculations recommended in the RCP. The key assumptions for each formula are outlined below:

Local Conservation Plan:
Male high count represents 75% of the male sage-grouse in the population
There are 2 females in the population for every 1 male

Rangewide Conservation Plan:
Male high count represents 53% of the male sage-grouse in the population
There are 1.6 females in the population for every 1 male

Peak Lek Attendance: The peak period of lek attendance was determined by comparing the four periods to determine when individual leks had their highest count of males and females. Whichever period had the highest number of leks with high counts was deemed the peak period of attendance (the

peak in attendance is separated into male and female peaks). It also determined which period had the highest total number of males/females observed regardless of gender specific lek peaks.

Lek Status: The revised status for each lek and Lek Area was determined based on the standard definitions, both for the 2015 season as well as the cumulative status.

Average Number Males/Lek Area: The high male count was divided by the number of Active lek areas.

3-Year Moving Average: The three-year moving average was calculated by averaging the HMC from the current season with the HMCs from the previous two seasons.

Results

Weather and Access

The Gunnison Basin had a warmer than average winter (November - April) during 2014/15 based on temperatures recorded at the National Oceanic and Atmospheric Administration (NOAA) weather station, site 053662 Gunnison 1 N Colorado. The average high and low temperatures were higher than normal in the 2014/15 winter. The average high temperatures were below average in November and January and above average for December, February, March, and April. The average low temperature was above average for all months except November (Table 1). These above average temperatures, most noticeable in February and March, caused Gunnison sage-grouse breeding behavior to start approximately 10–14 days earlier.

Table 1: Gunnison 121-year average monthly temperatures (°F) versus Winter 2013/14 monthly average temperatures, courtesy of National Oceanic and Atmospheric Administration weather station, site 053662 Gunnison 1 N Colorado.

Month	High 24 Hr. Temperature °F	Low 24 Hr. Temperature °F
November 2014	43.1	8.3
121 yr. avg.*	45.3	10.4
December 2014	32.5	4.6
121 yr. avg.	29.6	-2.6
January 2015	23.6	-5.2
121 yr. avg.	25.8	-7.3
February 2015	39.3	6.7
121 yr. avg.	31.1	-1.8
March 2015	49.8	16.1
121 yr. avg.	42.0	11.5
April 2015	58.7	23.0
121 yr. avg.	55.9	22.3

*monthly data from winter 1893/94 – 2014/15

Weather data compiled from the 053662 weather station run by the NOAA, recorded 43.2 inches of snowfall for October 2014 through April 2015 (Oct. = 0.0”, Nov. = 7.9”, Dec. = 13.0”, Jan. = 5.3”, Feb = 7.8", March = 3.9”, April = 5.3”). There was 0” snow during the May 1–10 count period. These snowfall amounts are from an in-town location, snowfall amounts varied around the basin with greater snowfall occurring in some areas depending on elevation.

The 121-year average snowfall recorded at NOAA site 053662 is 49.9″. Snow accumulations have been below average from winter 1997/98 – 2014/15 except for the winters of 2000/01 (53″), 2007/08 (99”) and 2008/09 (67.7”). The highest winter snowfall recorded at NOAA site 053662 from October through April was in 1955/56 with 101.3″. The following two tables summarize snowfall amounts and temperature by month for years of interest.

Table 2: Temperature Averages & Snowfall for 1983/84, 1996/97, and years 2004/05–2014/15 from National Oceanic and Atmospheric Administration weather station, site 053662 Gunnison 1 N Colorado.

	November			December			January			February			March			April		
YEAR	High	Low	Snow	High	Low	Snow	High	Low	Snow	High	Low	Snow	High	Low	Snow	High	Low	Snow
14/15	43.1	8.3	7.9	32.5	4.6	13.0	23.6	-5.2	5.3	39.3	6.7	7.8	49.8	16.1	3.9	58.7	23.0	5.3
13/14	42.5	13.7	1.6	22.5	-7.7	8.6	28.1	-6.0	3.5	31.9	4.9	15.6	41.4	12.6	4.5	54.5	22.1	1.4
12/13	49.3	8.6	0.2	28.7	-2.6	7.4	17.8	-15.4	3.6	27.6	-5.5	3.6	42.6	10.9	5.5	59.0	23.0	7.0
11/12	44.0	9.7	0.0	33.3	-1.7	2.4	35.2	-1.9	6.5	33.7	2.3	7.2	51.2	13.4	0.5	62.5	22.6	0.1
10/11	41.8	8.4	3.9	36.7	12.9	13.5	23.1	-8.9	2.6	26.7	-4.6	6.27	42.9	16.0	7.5	53.6	24.4	1.1
09/10	45.8	7.8	0	23.1	-10.9	6.3	27.2	-4.8	3.8	28.5	-4.0	9.6	41.9	10.7	3.43	54.5	23.1	1.92
08/09	45.8	11.2	3.7	25.8	-1.4	27.3	23.9	-5.5	5.5	30.4	-.09	8.0	42.7	13.2	5.9	52.4	20.9	16.7
07/08	50.2	7.7	T	19.8	-5	27.1	12.7	-17.6	31.9	24.1	-5.9	25.6	33.2	0.8	9.9	50.8	17.5	3.5
06/07	42.2	9.0	8.0	32.1	3.1	6.0	27.4	-9.4	4.5	39.1	9.25	6.0	49.8	14.2	2.25	56.8	23.8	1.0
05/06	45.4	13.7	4.5	19.8	-10.7	20	20.8	-12.2	10	23.5	-10.0	4.5	40.4	14.8	4.5	59.4	22.3	2.0
04/05	39.0	14.5	14	22.7	-6.4	2	27.3	1.4	18.5	30.3	2.8	6	41.8	14.7	4.8	56.5	21.6	2.7
96/97	45.5	16.2	7.1	26.4	-2.7	22.6	24.2	-2.4	19	22.2	-3.25	9.3	40.6	8.4	0.7	52.1	23.3	2.7
83/84	41.7	13.1	14.8	28.5	5.0	37.8	8.1	-17.7	2.5	18.9	-12.1	9.0	32.2	7.9	9.0	46.0	18.2	7.5

Average temperatures for 04/05 thru 14/15 averaged directly from NOAA site 053662 weather sheets for Nov. thru April.
Snow depth in inches, temperature in °F

Table 3: Snowfall in inches per month for 1955/56, 1983/84, 1996/97, and years 2005/06–2014/15.

YEAR	Oct	Nov	Dec	Cum. Total	Jan	Cum. Total	Feb	Cum. Total	March	Cum. Total	April	Cum. Total
2014/15	0.0	7.9	13.0	20.9	5.3	26.2	7.8	34.0	3.9	37.9	5.3	43.2
2013/14	1.6	4.1	8.6	14.3	3.5	17.8	15.6	33.4	4.5	37.9	1.4	39.3
2012/13	0.0	0.2	7.4	7.6	3.6	11.2	3.6	14.8	5.5	20.3	7.0	27.3
2011/12	0.0	0.0	2.4	2.4	6.5	8.9	7.2	16.1	0.5	16.6	0.1	16.7
2010/11	0.6	3.9	13.5	18.0	2.61	20.61	6.27	26.88	7.5	34.38	1.1	35.38
2009/10	0.8	0	6.3	7.1	3.8	10.9	9.6	20.5	3.43	23.93	1.92	25.85
2008/09	0.6	3.7	27.3	31.6	5.5	37.1	8.0	45.1	5.9	51.0	16.7	67.7
2007/08	1.0	T	27.1	28.1	31.9	60	25.6	85.6	9.9	95.5	3.5	99.0
2006/07	0.0	8	6	14	4.5	18.5	6.0	24.5	1.0	25.5	1.0	26.5
2005/06	0.0	4.5	20	24.5	10	34.5	4.5	39.0	4.5	43.5	2.0	45.5
1996/97	4.0	7.1	22.6	33.7	19	52.7	9.3	62.0	0.7	62.7	2.7	65.4
1983/84	0.0	14.8	37.8	52.6	2.5	55.1	9.0	64.1	9.0	73.1	7.5	80.6
1955/56	1.8	15.0	18.2	35.0	45.1	80.1	13.8	93.9	4.4	98.3	3.0	101.3

Snow partially covered the ground on some leks during the early and first count periods. Snow, rain, low clouds, and fog reduced visibility and impacted counts during the second and fourth count periods. Weather was identified as a factor impacting counts on 12 occasions during the four count periods.

Table 4. Weather summary from 22 March–10 May 2015 for the town of Gunnison, CO, courtesy of the National Oceanic and Atmospheric Administration weather station, site 053662 Gunnison 1 N Colorado.

	March 22–31		April 1–10		April 11–20		April 21–30		May 1–10	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Avg. High (°F)	45.2	58.9	48.0	59.9	57.4	54.1	58.0	60.2	60.9	62.5
Avg. Low (°F)	15.2	19.9	19.7	21.5	22.5	21.0	24.2	26.4	24.3	34.7
# Nights < 32°F	10	10	10	10	9	10	9	10	10	0
# Nights < 0°F	0	0	0	0	0	0	0	0	0	0
# Days w/ Precipitation	2	0	1	0	1	4	3	1	1	4
Total Water (in.)	1.7	0	0.07	0	0.05	0.61	0.09	0.12	0.07	1.02
Total Snow (in.)	0	0	0	0	0.1	5.3	0.3	0	0	0

Snow or rain events occurred on April 16, 17, 19, 27, and May 4, 5, 6, 7, impacting counts and sometimes access, possibly resulting in fewer birds observed those mornings.

Behavior

Colorado Parks and Wildlife personnel observed 301 grouse during annual big game classification flights. Birds were observed from January 5 through January 10, 2015. Areas of observations included Alder Creek, Bead Creek, Beaver Creek, Cabin Creek, Camp Kettle Gulch, Dry Gulch, Flattop, Goose Creek, Grafflin, Horn Gulch, Hot Springs Gulch, Kezar Basin, Leaps Gulch, Lost Canyon, Lower Sheeps Gulch, Parlin Flats, Sewell Gulch, Signal Peak, Stubbs Gulch, Sugar Creek, Watertank Gulch, and Woods Gulch. Number of grouse on winter range observed was higher in 2015 compared to 2014 (192 birds).

Nine active leks have been traditionally counted during the last 10 days in March prior to the official count season. South Parlin 1 was added in 2011 due to reports of grouse being present early in the season. Above average temperatures in February and March likely caused grouse breeding behavior to start earlier in 2015. Male and female attendance was higher in 2015 (HMC=115, HFC=30) compared to 2014 (HMC=39, HFC=2) (Table 5 and 6).

Table 5. Early lek counts (March 22–31) with high male and female data.

Lek	Date	Males	Females
Almont	3/27/15	5	0
Hartman Gulch	3/27/15	37	9
Miller	3/31/15	6	0
N. Parlin South	3/28/15	1	0
N. Parlin North	3/28/15	8	0
Razor Creek	3/26/15	15	6
Razor Creek Divide	3/28/15	24	10
South Parlin 1	3/30/15	1	4
Stevens Creek East	3/25/15	6	0
Woods Gulch	3/24/15	12	1
Total		**115**	**30**

Area Use by Zone

Doyleville Zone:
No birds were observed during any of the four official count periods on **Monson Gulch, Monson Gulch East Ridge, Needle Creek, Razor Creek 1 & 2, South Parlin 1,** or **South Parlin #3** leks this season. One male and four females were observed on South Parlin 1 during the early count. **Double D** lek (found 2006) had only one male during the third and fourth counts. Males and females were observed at **Razor Creek** lek during the early and the first count periods. Two hens were bred during the first count. A coyote on the lek during the second count flushed most of the males. Males were observed on **Razor Creek Divide** lek during the early count and all four official count periods. Females were observed during the early, first, and third count periods. **Razor Dome 1&2** was active during all four counts. Females were observed during the first three counts. A grouse mortality was discovered during the first count. A raven on the lek during the first count and coyotes howling during the third count elicited no response by grouse. A coyote hunting small mammals on the lek during the fourth count flushed grouse to another part of the lek. **South Parlin** (Lower and Upper) leks were counted all four periods. Males were observed during all counts at both **South Parlin Lower (#1)** and **Upper (#2)**. Females were not present during the fourth count on South Parlin Upper. A bobcat observed on South Parlin Lower during the first count flushed one male to another part of the lek. A hen was bred during the first count. One or two mortalities were discovered during the second count. **Vito** lek was counted all four count periods with males observed during all counts. No females were observed this year. Ravens on the lek during the second count resulted in grouse stopping displaying and hunkering down. Many elk on the lek during the third count did not have any effect. **Waunita** was counted all periods with males present all counts and females in attendance during the first, second, and fourth counts. Coyotes running through lek during the first and fourth counts apparently did not disturb the grouse. **Waunita Northwest** was counted all four count periods with males present all counts and females present during the second count. A coyote on lek during the fourth count resulted in no response from grouse. **Woods Gulch** lek was counted all four official count periods and the early count. Males were observed during all counts. Females were observed during the early, first and second counts. Copulations were observed during the first and second counts. Barking dogs may have flushed grouse during the second count. Four elk on the lek and a raven flyover had no impact on grouse during the third count, and jackrabbits on the lek, coyotes howling, raven and airplane flyovers had no impact on grouse during the fourth count.

Gold Basin Zone:
No birds were observed at **Chance Gulch C, Gold Basin 1&2, South Six Mile Hupp,** or **Tyler's** leks. **Big Mesa** was counted all four count periods with males seen during each count. No females were seen this year. Six pronghorn on the lek and an airplane flyover during the first count had no impact on the birds. Dense fog during the fourth count disrupted observation. Displaying males were in new areas off of the traditional lek site during the first three counts this year. **Chance Gulch** lek was counted all four counts with males present during all counts and females present all except the second count. Copulations were observed during the first and fourth counts. **Chance Gulch B** and **Chance Gulch C** were counted the first three counts with one male in attendance on Chance Gulch B during the second count. Ravens were seen flying over the lek at **Chance Gulch B** throughout the first count. **Chance Gulch E** was counted three times with males in attendance the first and fourth counts. Females were not present during any count. Since the lek does not meet the criteria for "active" or "inactive" status in 2015, lek status changes to annually/officially "unknown". Four ravens flyover, coyote howling, and dogs barking during the first count had no apparent impact. **Dutch Gulch** was counted four times with males in attendance the first three counts and a single female was observed during the third count. **Waterbar** and **Tyler's** leks were counted three count periods with no birds observed at Tyler's and one male observed at Waterbar during the first count. **Meyer's** lek was counted three times with males present all three counts and females present during only the first count. Birds continue to use an area south of **Meyer's** lek, as noted in the past years counts. Count sheet was updated in 2014. **McCabe Lane** lek was counted all four count periods. Males were observed during the first and second counts. No females were seen. Lek status changes back to "inactive"

for 2014. **Ridgeline** lek was counted all four count periods. Two males were present during the first count. No females were observed. Lek status changes to "inactive". **South Beaver Creek** lek was counted all four periods with birds in attendance. Females were present during the first three counts. Ravens disrupted lek activities during the first count. Three to five inches of new snow affected observations during the second count. **South Six Mile Meadow** lek was counted all four count periods with males present during first, third, and fourth counts and females were present for the first and third counts. **South Six Mile Ridge** had males on the lek during all four count periods. Females were present only during the first count. Coyotes were heard howling near all three of the Six Mile leks during the first count, no grouse response was noted. **Sugar Creek** was counted during all four count periods with males observed during the first, third, and fourth counts and females were present the first count. A golden eagle apparently kept all birds away from the lek during the second count.

Lost Canyon Zone:

Esty, Lost Canyon 1, Lost Canyon 2, North Parlin Hupp, Tomichi Village, and **Waycamp** had zero birds observed during all count periods. **Hippie Knob**, counted all four counts, had males present the first and third count periods. No females were observed. Eight to ten inches of new snow resulted in no birds observed during the second count. **North Parlin Hupp** lek has not been "active" for 17 years, but was considered "inactive" due to one year of "unknown" status. This year of "inactive" status is the tenth year, thus, the lek's official status in 2015 becomes "historic". **North Parlin North** and **North Parlin South** were counted during the early count and all four count periods. Both leks had birds present during the early count. **North Parlin South** had two males present during the first count and only one male present during the third count. Lek status remains annually "inactive". **North Parlin North** had males present during the first, third, and the fourth counts. Lek status is "active" for 2015. **Scout** lek was counted all four count periods this year with males present each count and females during the second and fourth counts. Dogs at an adjacent private residence flushed birds but the birds returned quickly and ignored a vehicle during the second count. **Sewell Gulch**, counted four times, had males present for the first, third, and fourth counts with one female present during the third count. As noted for Hippie Knob, eight to ten inches of new snow resulted in no birds observed during the second count. **Signal Peak**, an "inactive" lek, had two males present during the first count. However, no birds were seen during two other counts. This is the tenth year of seasonally "inactive" status. Lek status becomes "historic" for 2015. **Signal Peak West** lek was counted four count periods with males present all four counts and females present during the first three counts.

Ohio Creek Zone:

No birds were observed at **Almont West, Antelope South Substation 1&2 , Flattop, Haystack, Iola 1, Stevens Creek West**, and **Teachout 1&2**. **7MB** was counted all four count periods. Three males were observed during the second count period and one male was observed during the third. No females were seen. Since two males were not seen for two count periods and there were two count periods without any birds, annual status for 7 MB is "inactive". Deer were present on the lek during the first, second, and third count and a coyote was seen on the lek during the third count with no apparent impact on the birds. **7MB Hupp** was counted five times with males and females seen during all counts. Four counts were completed at **7MB Eagle Ridge** lek with males present all four counts and females in attendance during the first two counts. Elk on the lek during the second count had no apparent impact on grouse. Coyotes and cows on the lek during the fourth count moved several males off the lek. **Allen Lane** was counted three times with birds in attendance all three count periods. Females were present only during the first count. **Almont** was counted all four count periods plus the early count; grouse were present during all except the fourth count. Females were observed only during the second count. Two coyotes flushed grouse during the third count. **Antelope North Blinberry Gulch**, counted all four counts, was active with males all four count period and one female was observed during the first and second counts. A golden eagle predation attempt flushed most birds during the third count. **Antelope Ridge** was counted three times with males present during the first and second counts. No females were observed. **Campbell** lek was counted four times. There were males and females in attendance each count period. Coyotes were howling or near the lek during the first and second counts with no apparent impact to grouse, but a deer on the lek during the fourth count flushed all birds. **Flattop Section 31** was counted four times with males and females present all except no females

during the fourth count. Deer near the lek during the second count had no apparent impact on grouse. **Hartman Gulch** was counted all four official count periods plus the early count. Birds were observed during all counts, females during all but the third count. A northern harrier pushed birds off the lek during the early count. A raven flyover had no impact and a coyote on the lek flushed a couple of grouse off the lek during the third count. **Henkel Road** lek was counted four times with males present during the first three counts. Females were observed during the second and third counts. A coyote on the lek flushed most of the grouse during the first count. **Iola 2** was counted four times with one male on the lek during the first and second counts. **Miller** lek was counted six times, including the early count. Females were seen during all except the early count. Ravens on the lek harassed and disturbed the grouse during the early count. Coyotes on the lek during the first count rushed at and flushed two males. But coyotes, a raven flyover, and a golden eagle in the area during the second count, and coyotes during the third and fourth counts, had no apparent impact on the grouse. Deer and/or elk were present during all counts with no apparent disturbance to the grouse. **Ochs/Redden/Teachout 4** had males present during all four count periods, but females were present only during the first count. Coyotes were present on or near the lek during all four counts, flushing a male during the second count, but had no apparent impact on the grouse for all other counts. **Stevens Creek East** was counted five times, including the early count. Males were counted each of the count periods. Females were seen only during the first count. **Taila's** lek was counted four count periods with males and females seen all counts except no females the fourth count period. Two porcupines on the lek moved the birds into the sage brush during the first count. Deer on the lek during the second count period had no impact on grouse. Status for 2015 changes back to "active". **Teachout 3, 5, & 6** had males and females in attendance all four counts. A heavy rain during the fourth count may have reduced the number of grouse counted. A HMC of 142 during the third count and a HFC of 23 during the first count were the high counts of the season among all leks. A red-tail hawk flew over during the second count causing approximately 40 males to flush to another part of the lek. Grouse quickly returned to their original strutting areas after approximately 5 minutes.

Sapinero Zone:

Pine Creek Mesa (PCM) East, PCM South, PCM Powerline, and **PCM Ute Ranch** were not counted due to private land access issues. These four leks are not used in the current data analysis since these leks could not be observed, and have not been counted for several years. No birds were observed at **Big Springs**, **Ninemile, Sapinero 10 Mile Spring (2), Sapinero Corral,** and **Willow Creek Mesa**. **Big Springs** and **Ninemile,** counted only once this year with no birds counted, remain with an "unknown" annual and official status. **Kezar Basin North & Hupp** was counted during all four count periods with males present each count and five females present during the first count. Three pronghorn on the lek during the first count had no apparent impact. **Kezar Basin South** was counted all four count periods with males present during the second count. **Sapinero 10 Mile Spring (2)** was counted four times with no males or females present. Coyotes were heard howling near the lek during the fourth count. **Sapinero Powerline (1)** and **Sapinero South** were each counted four times with males in attendance each time. Females were present all but the second count at Sapinero South and only during the first count at Sapinero Powerline. **Sapinero Ridge** was counted all four counts with males present all but the third count and females present during the first and fourth counts. Snow and/or fog impacted visibility at the Sapinero leks during the second and fourth counts. Mule deer presence during the first and third counts and coyotes howling during the second count had no impact on grouse at Sapinero Powerline. Elk on the lek during the first count and coyotes howling and ravens on the lek at Sapinero Ridge during the fourth count resulted in no response by grouse. Coyotes howling during the first and fourth counts, and pronghorn on the lek during the fourth count at Sapinero South resulted in no response by grouse. **Willow Creek Mesa** lek is officially "historic" and was visited once with no birds observed.

Peak Lek Attendance

The total number of males observed on all leks visited peaked during the first count period at 821 (Table 6). A total of 41 leks were determined "active." The peak male attendance per individual lek occurred during

the first count period with 23 leks having their highest male counts (Table 7). Twelve leks peaked during the second count period, 17 during the third count period, and 9 during the fourth count period. Eight leks had multiple periods when the same HMC was observed. Female lek attendance peaked in the first count period with 161 individuals (Table 6). Seven leks had multiple periods with the same peak female attendance. Of leks determined "active," three were counted three count periods, 38 were counted all four count periods. Seventeen leks with males had no females observed. One lek had a female with no males observed.

Table 6. Number of individual Gunnison sage-grouse observed on leks in the Gunnison Basin from 22 March to 10 May 2015, compared to 2014 counts.

	22 – 31 March		1 – 10 April		11 – 20 April		21 – 30 April		1 – 10 May	
Year	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Males	39	115	452	821	605	632	604	782	629	651
Females	2	30	153	161	178	52	50	46	32	19

Table 7. Number of Gunnison sage-grouse leks that peaked per count period in the Gunnison Basin from 1 April to 10 May 2015

	1 – 10 April	11 – 20 April	21 – 30 April	1 – 10 May
Males	23	12	17	9
Females	28	8	6	2

Copulations

Fifteen copulations were observed this season during regular designated counts. No copulations were observed during the early count. In comparison, only four copulations were observed in 2014.

Mortalities

Two, possibly three, mortalities were documented at two different leks in 2015. Mortalities were determined by observing and/or collecting bird remains. Mortalities occurred at Razor Dome 1&2 and South Parlin Lower (#1) leks. Although these mortalities are thought to be as a result of predation, type of predator is unknown.

Count Data by Zone (Appendix D)

Doyleville Zone:
The Doyleville Zone consists of 16 leks that make up nine Lek Areas. This year, nine leks were active, five inactive, and two historic. The Official Status of the leks within this zone is nine active, two inactive, three unknown, and two historic. Six leks saw an increase in the number of males observed this year in comparison with last year, five leks had a decrease in the number of males, and five leks were the same. Seven of the nine Lek Areas are "active" this year with two lek areas "inactive". The total number of males observed in this zone was 228, up from the 214 males observed in 2014. The high female count was 63, down from 73 observed in 2014.

Gold Basin Zone:
The Gold Basin Zone consists of 17 leks that make up five Lek Areas. This year there were eight active leks, seven inactive leks, one unknown lek, and one historic lek. The Official Status of the leks within the zone is eight active leks, two inactive leks, four unknown leks, and three historic leks. Five leks decreased in the number of males observed this year compared with last year, seven leks increased, and five leks had no

change. All five of the Lek Areas are officially "active". The total number of males observed in this zone was 174, down slightly from 176 observed last year. The high female count was 25, down from 49 females observed in 2014.

Lost Canyon Zone:
The Lost Canyon Zone consists of 14 leks that make up four Lek Areas. There were five active leks, six inactive leks, and three historic leks this season. The Official Status of the leks within this zone are: five active leks, three inactive leks, one unknown leks, and five historic leks. Four leks increased in the number of males observed, four leks decreased, and six had no change. All four Lek Areas are officially "active" this year. The total number of males observed in this zone was 46, down from 47 males in 2014. Five females were observed this year, the same number observed in 2014.

Ohio Creek Zone:
The Ohio Creek Zone consists of 26 leks that make up six Lek Areas. This year there were 15 active leks, eight inactive leks, no unknown, and three historic leks. The Official Status of the leks within the zone are 15 active leks, two inactive leks, four unknown leks, and five historic. Fourteen leks increased in the number of males observed compared with 2014, three leks decreased, and nine leks had no change. All six Lek Areas are officially "active" this year. The total number of males observed in this zone was 408, a large increase from the 274 males observed in 2014. The high female count was 63, down from 86 observed in 2014.

Sapinero Zone:
The Sapinero Zone consists of 10 leks that make up five Lek Areas. The Pine Creek Mesa North and Pine Creek Mesa South Lek Areas are not included in this analysis. The leks in these areas cannot be counted due to land access issues. This year there were four active leks, three inactive leks, two unknown leks, and one historic lek that constitutes it own Lek Area. The Official Status of leks within the zone are four active leks, five unknown leks, and one historic lek. Four leks increased in the number of males observed this year compared with last year, one lek decreased. Three Lek Areas are officially "active" this year. The total number of males observed in this zone is 118, up from 100 males observed in 2014. Eighteen females were observed this year, down from 26 observed in 2014.

Population Estimate

1997 Conservation Plan Model
The high male count in 2015 is 974. The estimated minimum male population of Gunnison sage-grouse for the known leks is 1,299. The estimated minimum female population of Gunnison sage-grouse is 2,598 (double the number of estimated males). The population estimate for the minimum total number of Gunnison sage-grouse is 3,897 birds, up 653 birds from 2014 (Table 8). A target level of 867 is the minimum spring male population goal established in the Gunnison Sage-grouse Conservation Plan 1997.

Table 8. 1997 Gunnison Sage-grouse Conservation Plan - Summary of population data from Gunnison sage-grouse lek counts in the Gunnison Basin, 1995–2015. HMC = high male count, HFC = high female count, male population estimate = HMC/.75, female population estimate = (male population estimate) x (2), population estimate = male + female population estimates.

Year	HMC	% Δ in Males	Est. Male Population*	Relationship to Target Level (867)**	HFC	Est. Female Population	Population Estimate
1995	449	n/a	599	below	n/a	1,198	1,797
1996	587	30.7	783	below	n/a	1,565	2,348
1997	645	9.88	860	below	n/a	1,720	2,580
1998	706	n/a	941	above	203	1,883	2,824
1999	723	2.4	964	above	230	1,928	2,892
2000	636	-12	848	below	179	1,696	2,544
2001	712	11.9	949	above	154	1,899	2,848
2002	617	-13.3	823	below	216	1,645	2,468
2003	500	-19	667	below	156	1,333	2,000
2004	498	-0.4	664	below	66	1,328	1,992
2005	971***	92.4	1,295	above	193	2,555	3,885
2006	1061	9.3	1,415	above	165	2,830	4,245
2007	941	-11.3	1255	above	148	2,510	3,765
2008	748	-20.5	997	above	197	1,994	2,991
2009	778	4.0	1037	above	215	2,074	3,111
2010	745	-4.2	993	above	227	1,986	2,980
2011	763	2.4	1,017	above	233	2,034	3,051
2012	832	9.0	1,109	above	138	2,218	3,327
2013	848	1.9	1,131	above	236	2,262	3,393
2014	811	-4.4	1,081	above	239	2,163	3,244
2015	974	20.1	1,299	above	175	2,598	3,897

*Rounded prior to determining female population estimate
**Target level is minimum spring male population determined by the Gunnison Basin LWG in the Gunnison Sage-grouse Conservation Plan (1997) needed to sustain a viable Gunnison sage-grouse population
***includes count for Big Mesa lek in 2005 to present

2005 Rangewide Conservation Plan Model

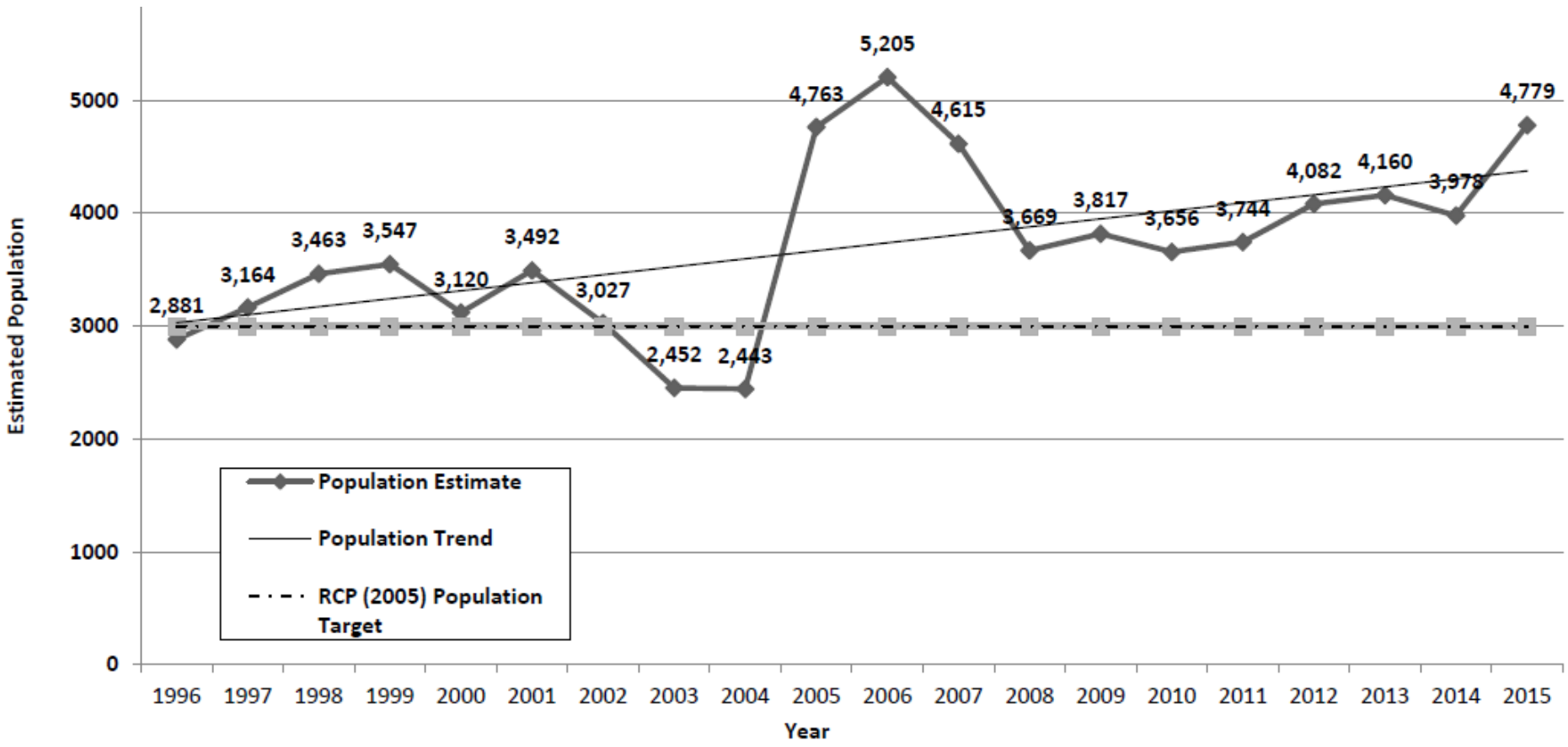
The high male count in 2015 is 974. The Basin-wide estimate of male Gunnison sage-grouse based on counted leks is 1,838 (number of males observed divided by 53%). The target level (836) is modeled population capability for males in occupied, vacant, and potential sage-grouse habitat in the Gunnison Basin. The estimated female population for the Gunnison Basin is 2,941 (multiply the estimated male population by 1.6). The population estimate for the entire Gunnison Basin, calculated using known lek counts, is 4,779 birds, up by 801 birds from 2014 (Table 9). The population target for the Gunnison Basin identified in the 2005 Gunnison Sage-grouse RCP is set at a long-term (10-year) average of 3,000 birds. The current 10-year average (2006–2015) population estimate is 4,171 birds, well above the 3,000 target.

Table 9. 2005 Gunnison Sage-grouse Rangewide Conservation Plan - Summary of population data from Gunnison sage-grouse lek counts in the Gunnison Basin, 1995–2015. HMC = high male count, HFC = high female count, male population estimate = HMC/.53, female population estimate = (male population estimate) x (1.6), population estimate = male + female population estimates.

Year	HMC	% Δ in Males	Est. Male Population*	Relationship to Target Level(836)**	HFC	Est. Female Population	Population Estimate
1995	449	n/a	847	above	n/a	1,355	2,202
1996	587	30.7	1,108	above	n/a	1,773	2,881
1997	645	9.88	1,217	above	n/a	1,947	3,164
1998	706	n/a	1,332	above	203	2,131	3,463
1999	723	2.4	1,364	above	230	2,183	3,547
2000	636	-12	1,200	above	179	1,920	3,120
2001	712	11.9	1,343	above	154	2,149	3,492
2002	617	-13.3	1,164	above	216	1,863	3,027
2003	500	-19	943	above	156	1,509	2,452
2004	498	-0.4	940	above	66	1,503	2,443
2005***	971	92.4	1,832	above	193	2,931	4,763
2006	1,061	9.3	2,002	above	165	3,203	5,205
2007	941	-11.3	1,775	above	148	2,840	4,615
2008	748	-20.5	1,411	above	197	2,258	3,669
2009	778	4.0	1,468	above	215	2,349	3,817
2010	745	-4.2	1,406	above	227	2,250	3,656
2011	763	2.4	1,440	above	233	2,304	3,744
2012	832	9.0	1,570	above	138	2,512	4,082
2013	848	1.9	1,600	above	236	2,560	4,160
2014	811	-4.4	1,530	above	239	2,448	3,978
2015	974	20.1	1,838	above	175	2,941	4,779

*Rounded prior to determining female population estimate
**Target level is modeled population capability for males in occupied, vacant, and potential sage-grouse habitat in the Gunnison basin from the 2005 Gunnison Sage-grouse Rangewide Conservation Plan
*** includes count for Big Mesa lek in 2005 to present

Figure 1. RCP (2005) Population Estimates for the Gunnison Basin from 1996–2015.



Three-Year Moving Averages

Three-year moving averages of HMCs are used to assess the sustainability of Gunnison sage-grouse in the Gunnison Basin. The three-year average for 2013–2015 is 878 males, which represents a 5.8% increase from the 830 males moving average calculated for 2012–2014 (Table 10).

Table 10. Three-year moving averages of male Gunnison sage-grouse based on spring lek counts from 1996–2015*. Also calculated is the percent change between yearly averages.

Year	HMC	1996-1998	1997-1999	1998-2000	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008
1996	587	avg = 646										
1997	645		avg = 691									
1998	706	% Δ = 15.3		avg = 688								
1999	723		% Δ = 7		avg = 690							
2000	636			% Δ = -0.4		avg = 655						
2001	712				% Δ = 0.3		avg = 610					
2002	617					% Δ = -5.1		avg = 538				
2003	500						% Δ = -6.9		avg = 652			
2004	498							% Δ = -12		avg = 839		
2005	958**								% Δ = 21.1		avg = 987	
2006	1061									% Δ = 28.7		avg = 916
2007	941										% Δ = 17.6	
2008	748											% Δ = -7.2

*continued on next page
**HMC does not include count for newly discovered Big Mesa lek

Table 10 (continued). Three-year moving averages of male Gunnison sage-grouse based on spring lek counts from 2007–2015.

Year	HMC	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015			
2007	941	avg = 822									
2008	748		avg = 757								
2009	778	% Δ = -10.3		avg = 762							
2010	745		% Δ = -7.9		avg = 780						
2011	763			% Δ = 0.7		avg = 814					
2012	832				% Δ = 2.4		avg = 830				
2013	848					% Δ = 4.4		avg= 878			
2014	811						% Δ = 1.9				
2015	974							% Δ = 5.8			

Conservation Plan Objectives

Males/Lek Area

According to the 1997 Gunnison Sage-Grouse Conservation Plan, a minimum of 25 Lek Areas should be active with a minimum of 26 males per area in order to meet the minimum male population goal of 867. This year, 25 Lek Areas are active, which does meets the plan objective of 25, with an average of 39.0 males/Lek Area (974 total males divided by 25 Active Lek Areas). The average number of males per area is up from the 33.8 males per Lek Area calculated in 2014. Appendix J shows a revised table with corrected male and female numbers per Lek Area. This table was not updated inadvertently in the 2014 Gunnison Basin lek count report.

Ungulate/Avian/Predator Disturbances

Ungulates were observed 49 times on or near leks. Antelope were recorded on or near leks sixteen times. Eight times there were antelope, but no birds. Eight times the antelope had no effect on strutting birds. Pronghorn did not flush or disturb grouse on any occasion. Deer were recorded seventeen times. Deer were on the lek with no birds in attendance on one occasion. Deer flushed or disturbed birds twice. Fourteen times deer had no effect on the birds. Elk were documented thirteen times. Elk had no effect on the birds on all thirteen occasions.

Birds other than grouse which were noted over, on, or near leks included: geese (1x), golden eagles (7x), northern harrier (1x), red-tail hawk (1x), rough legged hawk (1x), magpie (1x), and ravens (19x). Golden eagles flushed or disturbed grouse three times, had no impact three times, and no grouse were present once. Ravens flushed or disturbed a lek twice. Ravens had no impact on grouse at the lek twelve times and on five occasions no grouse were present. The northern harrier and red-tail hawk presence flushed the grouse, and the sharpshin and rough-legged hawks had no impact on grouse. The magpie was chased by a male grouse and the geese had no impact on grouse

Coyotes on or near leks were documented 44 times. Those observations yielded eleven instances of birds flushing, moving away from the lek, or stopped displaying, twenty seven times with no response noted, five times the coyote(s) were on a lek with no birds in attendance. Coyotes were heard howling twelve times. A bobcat flushed grouse once and an ermine running through a lek had no impact on grouse.

Runners were observed near the lek at Hartman Gulch, no response was noted. Vehicle activities were recorded twelve times, disrupting birds twice (both times at Waunita Northwest). Porcupines were reported once, apparently disturbing grouse at Taila's lek. Jackrabbits were seen on leks three times with no apparent impact on grouse. Cattle were reported on a lek twice with no response from the grouse. Dogs were heard barking or were on or near a lek on three occasions, with no response noted once and birds flushing twice.

Research and Monitoring

Colorado Parks and Wildlife continued an analysis of demographic and movement patterns of radio-collared Gunnison sage-grouse in the Gunnison Basin. Resource selection models based on seasonal habitats are being developed based on Dr. Mike Phillips's research conducted between 2005–2011. Colorado Parks and Wildlife researchers, Drs. Tony Apa and Mindy Rice, are working on this effort after the departure of Dr. Mike Phillips. No translocation of Gunnison sage-grouse from the Gunnison Basin to outlying populations occurred in the spring of 2015. Biologists continue to monitor radio-transmitter equipped grouse in the Crawford, San Miguel Basin, and Pinon Mesa populations.

Photography

The Gunnison Basin Sage-grouse Strategic Committee accepted applications from wildlife photographers wanting original photos of Gunnison sage-grouse for conservation projects (i.e., books, brochures, presentations) during the winter of 2014/15. Applications were due February 1st 2015. No applications were approved for the spring of 2015. Colorado Parks and Wildlife would like to thank landowners that have participated in the program in the past by granting permission for guides and photographers to access leks on private lands for this unique opportunity. A sub-set of grouse images are available for educational purposes by contacting Nathan Seward at (970) 641-7060 or at Nathan.Seward@state.co.us.

Wildlife photographers interested in applying for access to a Gunnison sage-grouse lek in the spring of 2016 should contact Nathan Seward or Jim Cochran, Gunnison County Wildlife Conservation Coordinator, at JCochran@gunnisoncounty.org or by phone (970) 641-7604 to discuss.

Searches/New Leks

In April and May of 2015, lek searches were conducted in areas previously suspected of having sage-grouse strutting activity. Areas checked were south of Camp Kettle (Section 9), west and south of Razor Dome, and Cochetopa SWA – Los Pinos Creek. All potential leks were checked early morning for strutting activity. One male and one female were observed at the Section 9 site on April 21 and two males and two females were observed on April 30. Additional visits on May 1 and 6 resulted in no grouse observations. It is suggested that this site be considered for regular counts (all four count periods) in 2016.

Historic Leks (where birds were observed)

Grouse were not observed on any “historic” lek in 2015.

Inactive Leks (where birds were observed)

Each year several leks receive an “inactive” designation, despite having male sage-grouse present during one or more of the four count periods. For example, if one male was observed displaying on a lek during the first count period and none observed in subsequent count periods, the lek would not be deemed “active” because it fails to meet the definition outlined in the status protocols.

In 2015, grouse were observed on the following “inactive” leks: North Parlin West (1, 0, 0, 0)* and Waterbar (1, nc, 0, 0). Their annual and official status remains "inactive". Signal Peak (2, 0, 0, nc) had birds observed during the first count but 2015 is the tenth year of inactive status, its annual status is “inactive” and official status for 2015 becomes “historic”.
* - number of males counted in each count period, nc = no count

Unknown Leks (where birds were observed)

If a lek had >2 males observed during a count period and zero or one male counted during consecutive counts, the lek would be classified as “unknown” if it did not meet the “inactive” criteria. Additionally, if some leks can’t be counted every count period and/or have bad weather days, their status may be classified as “unknown”. Data from the Waunita lek, accumulated everyday by both Sis-ka-dee and Jim Mendonca over the past several years has shown that inclement weather affects male attendance. For example in 2007 the HMC recorded by Jim Mendonca was 42. However, on inclement weather days the count dropped down between zero and two 2 males (April 10 = two males, April 24 = one male, April 28

= zero males). A lek would also be classified as “unknown” if it is not counted the appropriate number of times to determine its status.

In 2015, grouse were observed on nine leks with an "unknown" status. 7MB (0, 3, 1, 0)*, Chance Gulch B (0, 1, 0, nc), Double D (0, 0, 1, 1), Iola 2 (1, 1, 0, 0), Kezar Basin South (0, 4, 0, 0), North Parlin South (2, 0, 1, 0), Ohio Creek A&C (0, 0, 1 female, 0), and Ridgeline (2, 0, 0, 0). Their annual status becomes "inactive", official status remains "unknown" for all leks except North Parlin South which becomes “inactive”. Antelope Ridge (4, 2, nc, 0) had birds observed with at least 2 males seen during two counts, the status for 2015 becomes “active”.
* - number of males counted in each count period, nc = no count

Active Leks (where an insufficient number of birds were observed)

In 2015, three "active" status leks had an insufficient number of males counted to maintain an "active" status. McCabe Lane (3, 1, 0, 0)* was counted four count periods and South Parlin 1 (0, 0, nc, nc) was counted three times including the early count in 2015, but males counted were insufficient for active status. Since zero males were observed during two count periods and these leks do not meet the criteria for “active” status (2 counts with at least 2 males each), these previously “active” leks change to “inactive” in 2015. Their official status will be "unknown". Chance Gulch E (1, nc, 0, 4) was counted three count periods in 2015 with males observed during only one count. Since zero males were observed during only one count period and the lek does not meet the criteria for “active” status, annual and official status will be “unknown”.
* - number of males counted in each count period, nc = no count

Inactive and Historic Leks

Three leks, Antelope South 1&2 Substation, North Parlin South, and South Parlin (#3), went from official status “unknown” to “inactive” because 2015 represents their fifth year of seasonally inactive status. Five leks had ten years of seasonally inactive status in 2015. The Almont West, Iola 1, North Parlin Hupp, Signal Peak, and Tylers leks official status is now “historic”.

Recommendations

If spring trapping occurs, continued coordination between trapping personnel and lek counters is key. Leks should not be counted the morning after trapping has occurred in these areas. Explore the feasibility of trapping only during the fall.

In 2015, coordinated counts continued as modified in 2013. No additional changes were identified as needed. Coordinated counts should be reviewed annually as to whether they are advantageous and provide usable information.

In 2015, grouse were not displaying within the Antelope Ridge lek as displayed on the count sheet. Continued monitoring of the exact display locations for this lek should occur in 2016 and if needed, the mapped lek location should be adjusted.

The potential new lek known as Section 9 should be counted at least all four count periods in 2016 to determine its lek status.

Discussion

Gunnison sage-grouse breeding activity started earlier in 2015. This was likely attributed to above average temperatures in late February and March. Little to no snow cover provided good access to leks. Grouse distribution among leks was good with some higher elevation leks that are typically snow covered during the first count period having good grouse attendance. Distribution of birds on leks appeared more widespread, possibly because of younger, less dominant birds participating around the periphery of the lek. This may be an indicator that excellent range conditions observed during the summer of 2014 enhanced chick survival and recruitment, and number of birds observed during this year's lek counts. Other indices, such as the number of Gunnison sage-grouse observed during big game classification flights conducted in January of 2015, demonstrated that grouse numbers had increased compared to numbers observed in 2014. Overall, the population trend of Gunnison sage-grouse in the Gunnison Basin is increasing slightly.

Literature Cited

Gunnison Sage-Grouse Conservation Plan. 1997. Gunnison Sage-Grouse Working Group. Gunnison, Co. 108 pp.

Gunnison Sage-Grouse Rangewide Conservation Plan. 2005. Gunnison Sage-Grouse Rangewide Steering Committee. Denver, CO.

Young, J. R., C. E. Braun, S. J. Oyler-McCance, J. W. Hupp, and T. W. Quinn. 2000. A new species of Sage-grouse (Phasianidae: *Centrocercus*) from Southwestern Colorado. Wilson Bulletin 112(4): 445–453.

Appendices

Appendix A: Individuals involved with Gunnison sage-grouse counts in the Gunnison Basin during 2015.

Name	Affiliation	Contribution
Curtis Allen	Landowner	Access
John Alves	CPW	Lek Counter
Gay Austin	BLM	Lek Counter
Kristin Barker	CPW	Lek Counter
Kevin Blecha	CPW	Lek Counter
Andrew Breibart	BLM	Lek Counter
Brian Brown	BLM	Lek Counter
Rebecca Bruno	BLM	Lek Counter
Theresa Childers	NPS	Lek Counter
Jim and Pam Christian	Landowners	Access
Creed Clayton	USFWS	Lek Counter
Jim Cochran	Gunnison County	Keys/Gate Codes
Reesa Conrey	CPW	Lek Counter
Ronald Crist	WSCU	Lek Counter
Maggie deLauter	CPW	Lek Counter
Tara deValois	BLM	Lek Counter
Brandon Diamond	CPW	Lek Counter
Kathaleen Dixon	CPW	Office Support/ Lek Counter
Jeff Ewert	Volunteer	Lek Counter
Jessica Frey	NPS	Lek Counter
Nick Gallowich	CPW	Lek Counter
Burt and Sandy Guerrieri	Landowners	Lek Counters/Access
Dakin Henderson	Videographer/Photographer	Lek Counter
Lowell Inman	Castleton Ranch Manager	Lek Counter/Access
Mike Jackson	CPW	Lek Counter/Coordinator
Russ Japuntich	BLM	Lek Counter/Gates Codes
Paul Jones	CPW	Lek Counter
Pamela King	NPS	Lek Counter
Pat Magee	Sisk-a-dee, WSCU	Lek Counter
Tony Maldarella	Landowner	Lek Counter/Access
Lucas Martin	CPW	Lek Counter
Blane Mazzuca	Gunnison County	Keys/Gate Codes
Marnie Medina	BLM	Lek Counter
Sara Miller	USFS	Lek Counter
Val Organek	CPW	Lek Counter
Suzie Parker	USFS	Lek Counter
Chris Parmeter	CPW	Lek Counter
Greg Peterson	Landowner	Access
Ryan Pringle	Landowner	Access
Zenyth Propst	Volunteer	Lek Counter
Brett Redden	Landowner	Access
Logan Reese	NPS	Lek Counter
Dan Schneider	WSCU	Lek Counter
John Scott	NRCS	Lek Counter
Nathan Seward	CPW	Lek Counter/Lead Biologist
Reilly Seward	Volunteer	Lek Counter
Mascel Sudi	WSCU	Lek Counter
Bill Trampe	Landowner	Access
Brooke Vasquez	NRCS	Lek Counter
Gavin Vasquez	Volunteer	Lek Counter
Matt Vasquez	USFS	Lek Counter/Gate Codes
J Wenum	CPW	Lek Counter
Liz With	NRCS	Lek Counter
Danny Zadra	CPW	Lek Counter

Appendix B: Gunnison Sage-Grouse Lek Count Procedures 2015

I would like to thank everyone for their cooperation in assisting with the Gunnison sage-grouse lek counts this year. The following is a reminder of the lek count procedures and survey instructions for 2015.

1. Visit your leks prior to your count date to insure that you know exactly where you need to go and what equipment (4 wheeler, snowmobile, spotting scope, binoculars) you will need.

2. Attempt to arrive at the lek before sunrise and stay until all birds have left.

3. If your lek(s) requires a gate code or key to access, please check with me or the appropriate agency and **make sure that you lock the gate behind you**.

4. Attempt to use the observation point notated on the map/datasheet and notify me if you change it.

5. Limit the amount of disturbance created by your presence – minimal noise, movement, etc.

6. Counts should be taken **and documented** approximately every 5-10 minutes, differentiating between males, females, and unknowns.

7. Please take note of weather, bird disturbances including predators, and bird movement (direction and time) off/on the lek. If the weather is bad (windy, rainy, snowy, etc) or if the birds flush due to disturbance before you get an accurate count, try to conduct a second count for that count period.

8. Record on the datasheets exactly what you saw as accurately as possible, especially if you were counting multiple leks simultaneously and combining them on the sheet. For example, if you count leks A and B at the same time and you are using the same datasheet for both, make note of the high counts and abnormalities for each separately on the sheet. This includes "use" areas close to the lek.

9. If your birds have shifted from their "traditional" lek site, please note on the map where you actually saw the birds.

10. A schedule and listing of leks and their observers will be posted in the CPW office copy room with a tray to hand in datasheets.

11. Please look on the schedule or check your datasheets to see the "official" cumulative status of your leks (I will attempt to pencil in the status on data sheets this year) – this will help you determine how many times to count the lek:

    Active leks need to be counted at least once **each** 10-day count period starting April 1. The count periods are: 4/1-10, 4/11-20, 4/21-30, 5/1-10

    Unknown leks must be counted once during each of the **first two** count periods starting April 1. If you don't have any birds on both counts, you are finished. However, if you find birds during only one count, you need to go out at least a third time. If there are not at least two counts with at least two males, we cannot say that the lek is active.

Inactive leks need to be counted once during each of the first two count periods starting April 1. If you don't have any birds on both counts, you are finished. However, if you find birds during only one count, you need to go out at least a third time. If there are not at least two counts with at least two males, we cannot say that the lek is active.*

Historic leks need to be counted once during either of the first two count periods starting April 1. If you find birds at that count, please count at least two additional periods so that we can get an official designation.*

* The official protocol is that a lek must be inactive (<2 males for 2 count periods) for 5 consecutive years before we can officially say that the lek is cumulatively Inactive. Therefore, if we only count a lek once, we have to say that it was "Unknown" and the leks cumulative status has to start over again at 0 years Inactive. A lek must be Inactive for 10 consecutive years before we can officially say that the lek is Historic.

12. If you are responsible for a **Coordinated** lek, please follow the posted schedule, birds from these leks potentially travel between leks and we don't want to double count them (this is why you need to note bird movement (direction and time)). The same rules that we use for the uncoordinated leks (number and timing) also apply to the coordinated leks. An Inactive or Unknown coordinated lek only need to be counted on the first two dates listed on the schedule unless you find birds. **Please note,** some leks have been dropped from the coordinated counts because of a lack of movement observed between nearby leks. Please check your count sheet envelope, the count schedule, or call me to verify if your lek is part of a coordinated count.

13. **Please try to bring in the datasheets and mark off the lek on the schedule as soon as possible after you have completed the count.**

14. If, for any reason, you will not be able to complete a count for a given period, please let me know as soon as possible and I will try to find someone to cover that count.

If you have any questions, comments, or suggestions, please feel free to contact me.

Michael Jackson
Lek Count Coordinator
Work: 641-7060
Cell: 970-275-5595
mdjacks1@yahoo.com
mike.jackson@state.co.us

Appendix C: Weather summary from 22 March–10 May, 2015 for the town of Gunnison, CO, courtesy of the National Oceanic and Atmospheric Administration weather station, site 053662. Note: As weather data is for the town of Gunnison, differences exist for actual lek sites (typically more precipitation and lower temperatures). Also, measurements begin 24hrs before the date of collection at 8am, so data is realistically one day off. M = missing data; S = snow; T = trace amounts

Month	Date	Max (°F)	Min (°F)	Water (in.)	Snow (in.)
March	22	57	19	0	0
	23	53	23	0	0
	24	59	27	0	0
	25	53	18	0	0
	26	45	13	0	0
	27	56	14	0	0
	28	63	22	0	0
	29	68	23	0	0
	30	68	21	0	0
	31	67	19	0	0
April	1	69	25	0	0
	2	62	28	0	0
	3	57	23	0	0
	4	50	12	0	0
	5	59	19	0	0
	6	63	27	0	0
	7	64	21	0	0
	8	62	21	0	0
	9	59	18	0	0
	10	54	21	0	0
	11	61	21	0	0
	12	63	19	0	0
	13	61	14	0	0
	14	66	18	0	0
	15	67	25	0	0
	16	45	19	0.03	0.5
	17	48	27	0.46	4.5
	18	38	16	0	M
	19	39	23	0.10	M
	20	53	28	0	0
	21	55	23	0	0
	22	63	23	0	0
	23	64	25	0	0
	24	60	27	0	0
	25	55	26	0	M
	26	55	31	0	M
	27	59	28	0.12	0
	28	60	26	0	0
	29	63	27	0	0
	30	68	28	0	0
May	1	70	33	0	0
	2	74	32	0	0
	3	69	33	0	0
	4	68	36	0.40	0
	5	64	40	0.02	0
	6	50	41	0.54	0
	7	60	35	0.06	0
	8	61	33	0	0
	9	64	32	M	M
	10	45	32	M	M

Appendix D: Gunnison sage-grouse lek count data in the Gunnison Basin in 2014 and 2015, organized by zone. HMC=High Male Count, HFC=High Female Count

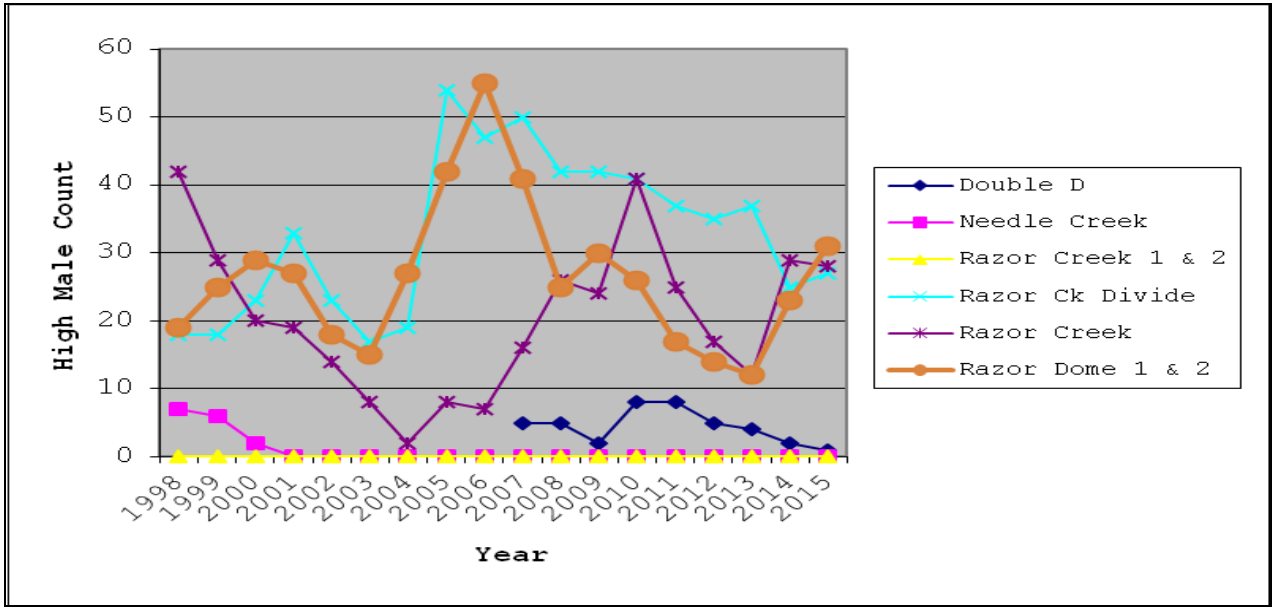
Zone	Lek Area	Lek Area Total Males / Females		Lek Site	2014 Annual Status	2014 HMC	2015 # Counts	2015 HMC	2015 HFC	2015 Annual Status	Official Status	High Count Date (Males / Females)
Doyleville	Cochetopa Dome	1	0	Double D	I	2	4	1	0	I	**U**	April 22/no females
	Needle Creek	0	0	Needle Creek	H	0	1	0	0	H	**H**	no birds
	Razor Creek	28	16	Razor Creek	A	29	5	28	16	A	**A**	April 4/April 4
				Razor Creek 1&2	H	0	1	0	0	H	**H**	no birds
	Razor Creek Divide	27	7	Razor Creek Divide	A	25	5	27	7	A	**A**	April 2/April 2
	Razor Dome	31	4	Razor Dome 1&2	A	23	4	31	4	A	**A**	April 21/May 2
	South Parlin	58	27	South Parlin Lower (#1)	A	26	5	18	7	A	**A**	April 4, 21/April 4
				South Parlin Upper (#2)	A	43	4	40	20	A	**A**	April 21/April 3
				South Parlin 1	A	11	3	0	0	I	**U**	no birds
				South Parlin (#3)	I	0	2	0	0	I	**I**	no birds
	Monson Gulch	16	0	Monson Gulch	I	0	2	0	0	I	**I**	no birds
				Monson Gulch on East Ridge	I	0	2	0	0	I	**U**	no birds
				Vito	A	12	4	16	0	A	**A**	April 9/no females
	Waunita	43	6	Waunita	A	7	4	24	4	A	**A**	May 8/April 13
				Waunita Northwest	A	17	4	19	2	A	**A**	April 13/April 13
	Woods Gulch	24	3	Woods Gulch	A	19	5	24	3	A	**A**	April 19/April 8, 19
Gold Basin	Chance Gulch	40	7	Chance Gulch	A	22	4	24	4	A	**A**	April 21/April 7
				Chance Gulch B	I	0	4	1	0	I	**U**	April 16/no females
				Chance Gulch C	I	0	4	0	0	I	**H**	no birds
				Chance Gulch E	A	13	3	4	0	U	**U**	April 28/no females
				Tylers	I	0	3	0	0	I	H	no birds
				Meyers	A	9	3	10	3	A	**A**	April 1/April 1
				Waterbar	I	0	3	1	0	I	**I**	April 1/no females
	Gold Basin	37	3	South Beaver Creek	A	24	4	37	3	A	**A**	May 8/April 29
				Gold Basin 1&2	H	0	1	0	0	H	**H**	no birds
	McCabe Lane	12	0	Big Mesa	A	7	4	7	0	A	**A**	April 8, May 7/no females
				McCabe Lane	A	9	4	3	0	I	**U**	April 2/no females
				Ridgeline	I	1	4	2	0	I	**U**	April 8/no females

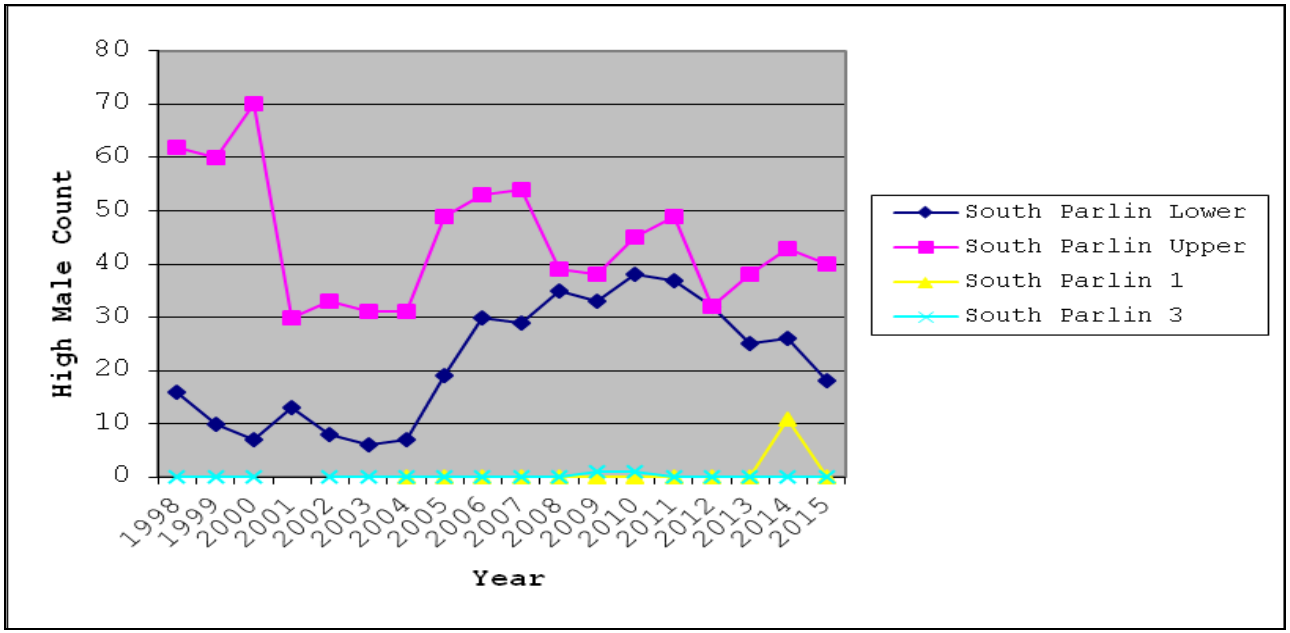
Zone	Lek Area	Lek Area Total Males / Females		Lek Site	2014 Annual Status	2013 HMC	2015 # Counts	2015 HMC	2015 HFC	2015 Annual Status	Official Status	High Count Date (Males / Females)
Gold Basin (cont)	Six Mile	33	13	Dutch Gulch	I	6	4	5	1	A	**A**	April 15/April 28
				South Six Mile Hupp	I	1	4	0	0	I	**I**	no birds
				South Six Mile Meadow	A	11	4	11	8	A	**A**	April 7/April 7
				South Six Mile Ridge	A	16	4	17	4	A	**A**	April 26/April 7
	Sugar Creek	52	2	Sugar Creek	A	57	4	52	2	A	**A**	April 7, May 8/April 7
Lost Canyon	Sewell Gulch/Hippie Knob	12	1	Hippie Knob	A	6	4	5	0	A	**A**	April 8/no females
				Sewell Gulch	A	3	4	7	1	A	**A**	April 23/April 23
	Lost Canyon	21	2	Esty	H	0	1	0	0	H	**H**	no birds
				Scout	A	25	4	21	2	A	**A**	April 27/April 20, May 9
				Waycamp	I	0	2	0	0	I	**I**	no birds
				Lost Canyon 1	H	0	2	0	0	H	**H**	no birds
				Lost Canyon 2	I	0	2	0	0	I	**U**	no birds
	North Parlin	7	0	North Parlin Hupp	I	0	4	0	0	I	**H**	no birds
				North Parlin North	I	2	5	4	0	A	**A**	April 23/no females
				North Parlin South	I	1	5	2	0	I	**I**	April 8/no females
				North Parlin West	I	0	4	1	0	I	**I**	April 8/no females
	Tomichi Village	6	2	Signal Peak	I	0	3	2	0	I	**H**	April 9/no females
				Signal Peak West	A	10	4	4	2	A	**A**	April 11/April 3
				Tomichi Village	H	0	3	0	0	H	**H**	no birds
Ohio Creek	Ohio Creek	208	33	Allen Lane	A	10	3	12	1	A	**A**	April 9/April 9
				Flattop	H	0	2	0	0	H	**H**	no birds
				Flattop Section 31	A	15	4	25	6	A	**A**	April 21/April 6
				Ochs/Redden/Teachout4	A	22	4	29	2	A	**A**	April 9/April 9
				Ohio Creek East A & C	I	0	2	0	1	I	**I**	no males/April 16
				Teachout 1 & 2	I	0	2	0	0	I	**U**	no birds
				Teachout 3, 5, & 6	A	81	4	142	23	A	**A**	April 29/April 16
	Eagle Ridge	113	23	Campbell	A	9	5	16	4	A	**A**	May 4/April 2, 22
				Henkel Rd	A	3	4	10	1	A	**A**	April 7/April 14, 24
				Miller	A	27	5	22	2	A	**A**	April 21/April 10
				Taila's	I	1	4	8	3	A	**A**	April 14, 24/April 7
				Triangle	H	nc	0	nc	nc	H	**H**	nc
				7MB	U	2	4	3	0	I	**U**	April 14/no females
				7MB Eagle Ridge	A	30	4	44	4	A	**A**	April 23/April 9
				7MB Hupp	A	5	5	10	9	A	**A**	April 24/April 7
	Almont	8	2	Almont	A	9	5	8	2	A	**A**	April 20/April 20
				Almont West	I	0	3	0	0	I	**H**	no birds

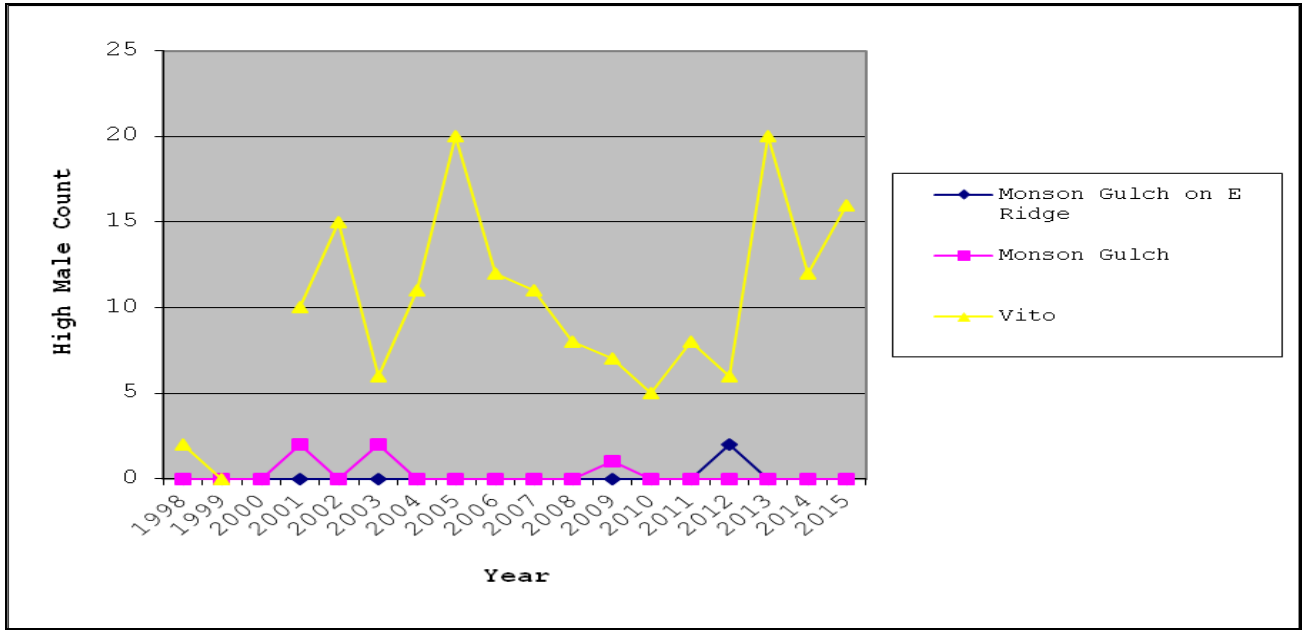
Zone	Lek Area	Lek Area Total Males / Females		Lek Site	2014 Annual Status	2014 HMC	2015 # Counts	2015 HMC	2015 HFC	2015 Annual Status	Official Status	High Count Date (Males / Females)
Ohio Creek (cont.)	Antelope	31	1	Antelope South Substation, 1, & 2	I	0	2	0	0	I	**I**	no birds
				Antelope North Blinberry Gulch (3)	A	17	4	27	1	A	**A**	April 13/April 7
				Antelope Ridge	U	0	3	4	0	A	**A**	April 7/no females
	Hartman Gulch	36	3	Hartman Gulch	A	29	5	36	3	A	**A**	April 8/April 8
	Iola	12	2	Iola 1	I	0	2	0	0	I	**H**	no birds
				Iola 2	U	3	3	1	0	I	**U**	April 6, 15/no females
				Haystack	I	0	2	0	0	I	**U**	no birds
				Steven's Creek East	A	11	5	11	2	A	**A**	April 6, 28/April 6
				Steven's Creek West	H	0	1	0	0	H	**H**	no birds
Sapinero	Kezar Basin	42	5	Kezar Basin North/Hupp	A	32	4	38	5	A	**A**	April15/April 3
				Kezar Basin South	U	nc	4	4	0	I	**U**	April 14/no females
	Ninemile	0	0	Big Springs	U	nc	1	0	0	U	**U**	no birds
				Ninemile	U	nc	1	0	0	U	**U**	no birds
	Pine Creek Mesa North	nc	nc	Pine Creek Mesa East (2)	U	NA	0	NA	NA	U	**U**	NA
				Pine Creek Mesa Powerline (1&3)	U	NA	0	NA	NA	U	**U**	NA
	Pine Creek Mesa South	nc	nc	Pine Creek Mesa South (5)	U	NA	0	NA	NA	U	**U**	NA
				Pine Creek Mesa Ute Ranch (4)	U	NA	0	NA	NA	U	**U**	NA
	Willow Creek	0	0	Willow Creek Mesa	H	0	1	0	0	H	**H**	no birds
	Sapinero South	68	12	Sapinero 10 Mile Spring (2)	I	5	4	0	0	I	**U**	no birds
				Sapinero Corral (3)	U	nc	2	0	0	I	**U**	no birds
				Sapinero Ridge (4)	A	5	4	5	2	A	**A**	April 5/April 5
				Sapinero South	A	53	4	63	10	A	**A**	April 30/April 8
	Sapinero North	8	1	Sapinero Powerline (1)	A	5	4	8	1	A	**A**	April 30/April 8

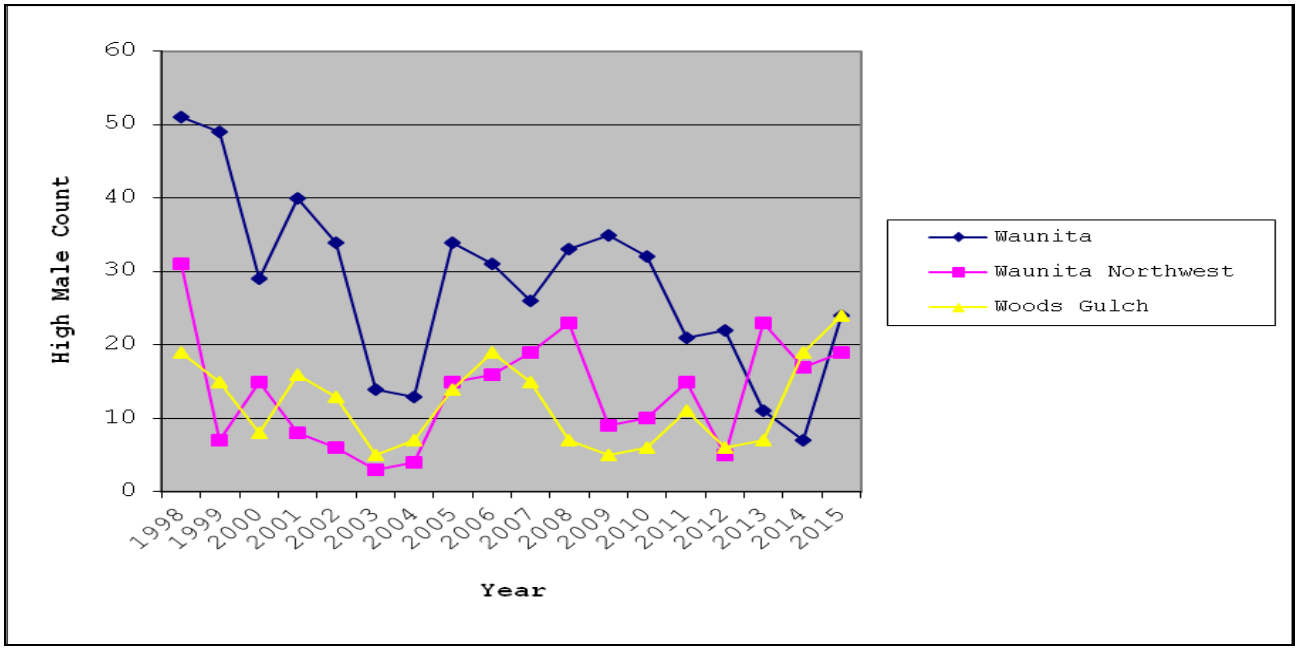
Shaded leks: These leks cannot be counted due to private land access, and as of 2007 they are not used in data analysis.

Appendix E: Gunnison sage-grouse high male counts on leks in the Doyleville Zone of the Gunnison Basin from 1998–2015.

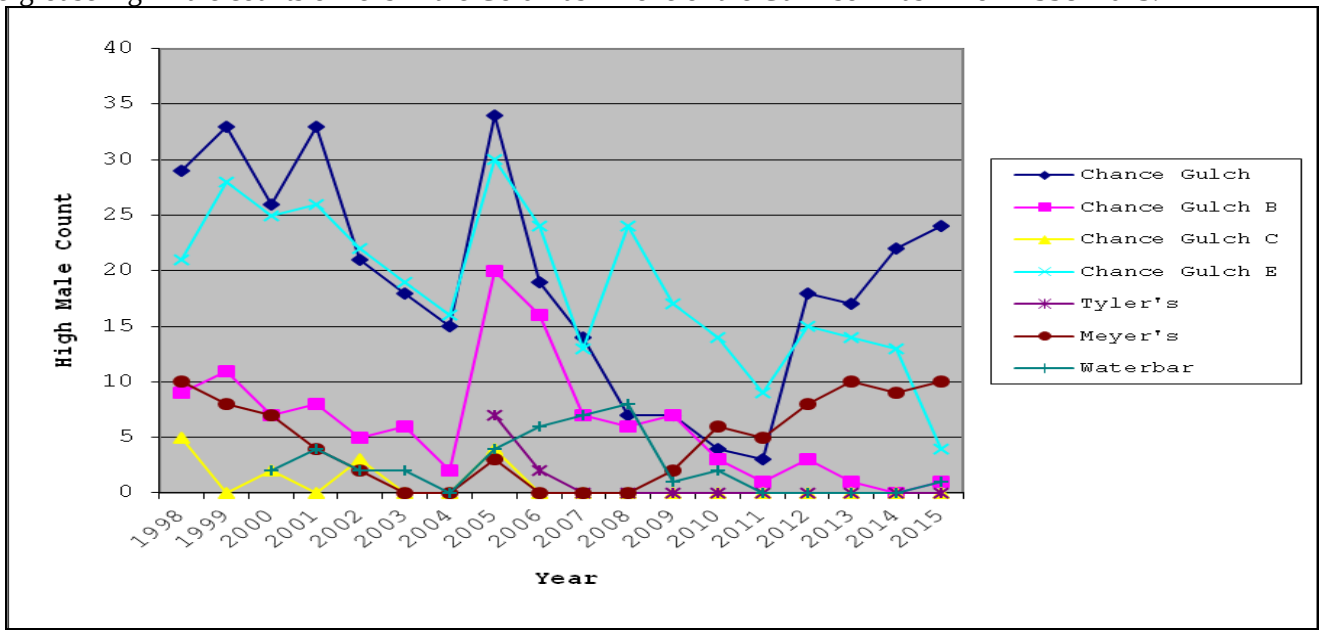


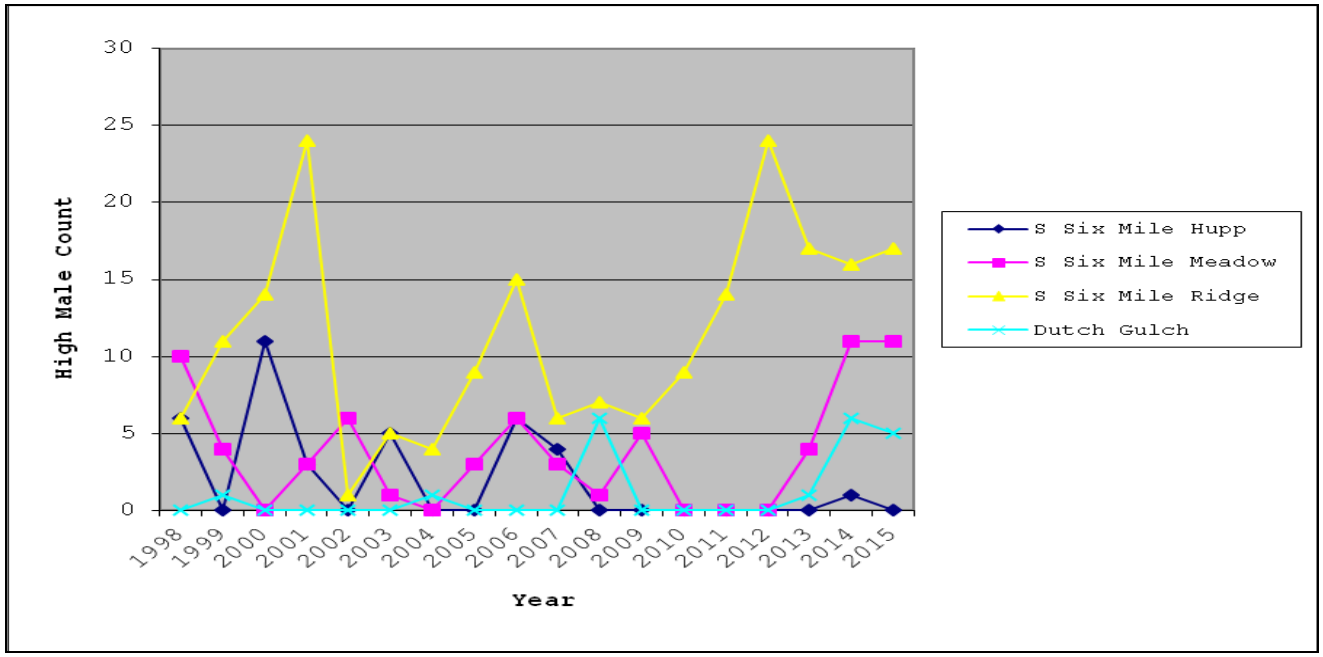


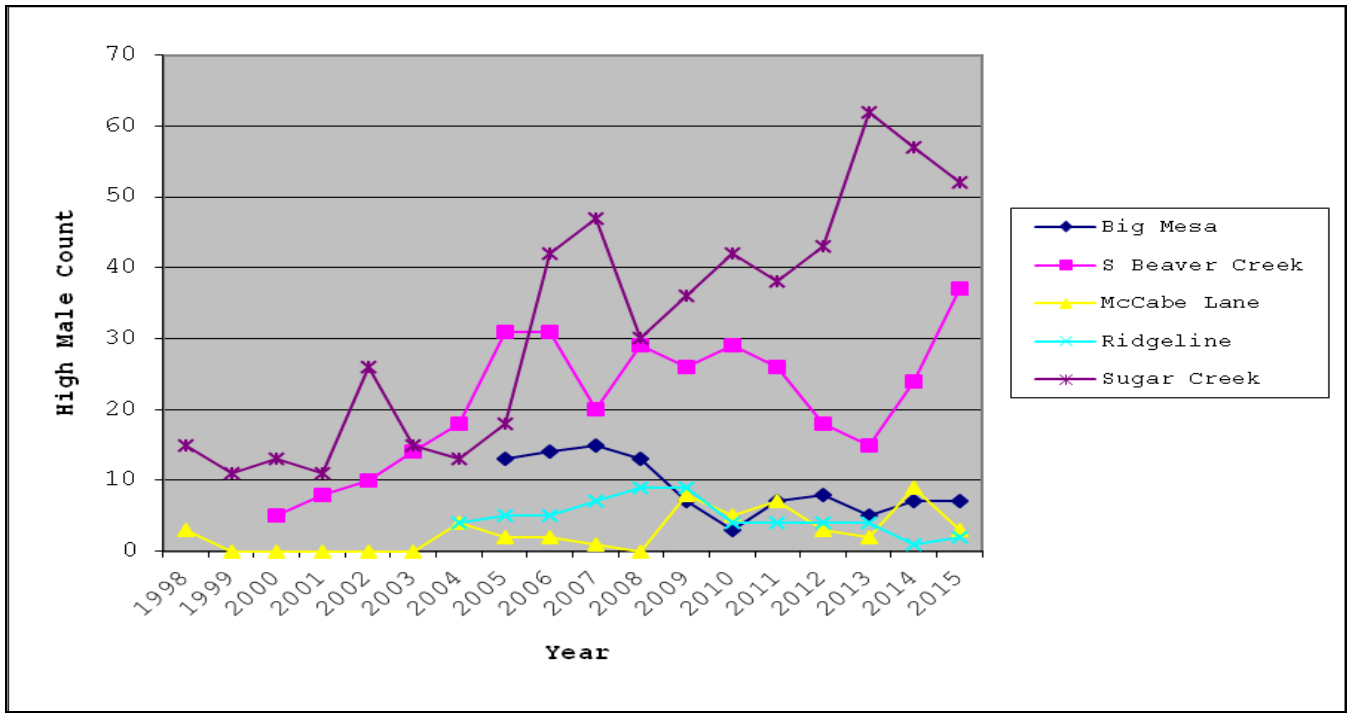

High Male Count
25
20
15
10
5
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year
Monson Gulch on E Ridge
Monson Gulch
Vito


High Male Count
60
50
40
30
20
10
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year
Waunita
Waunita Northwest
Woods Gulch

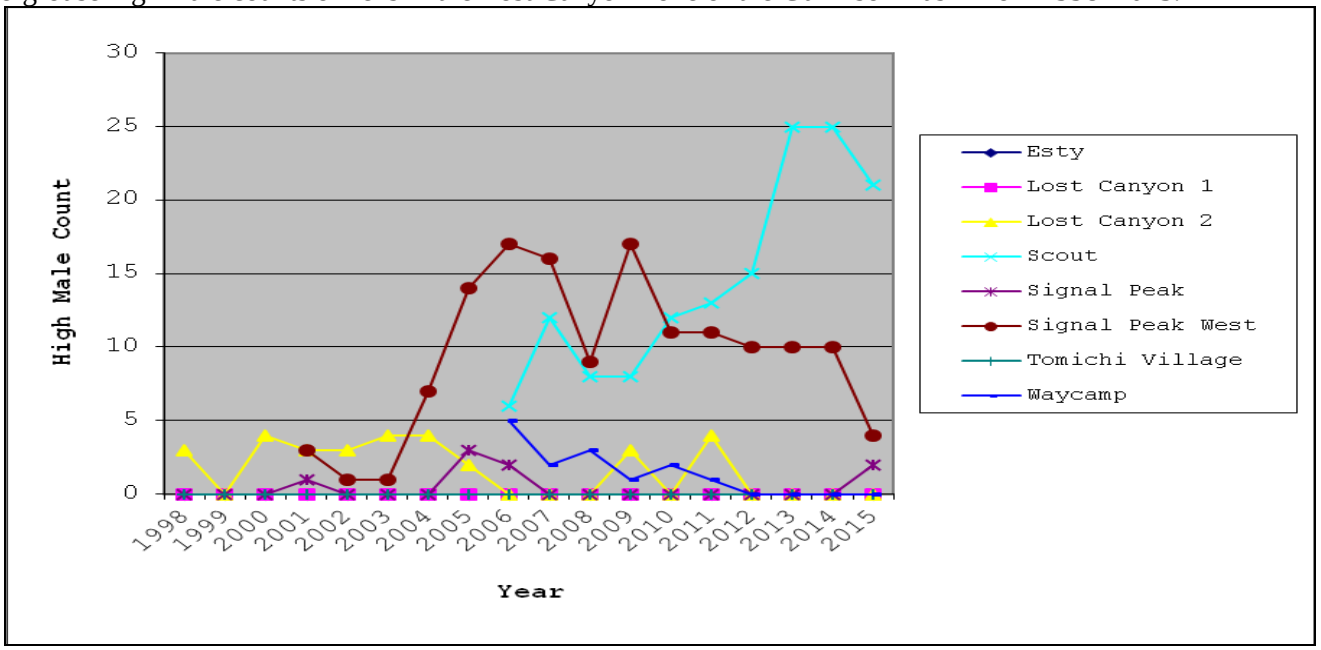
Appendix F: Gunnison sage-grouse high male counts on leks in the Gold Basin Zone of the Gunnison Basin from 1998–2015.

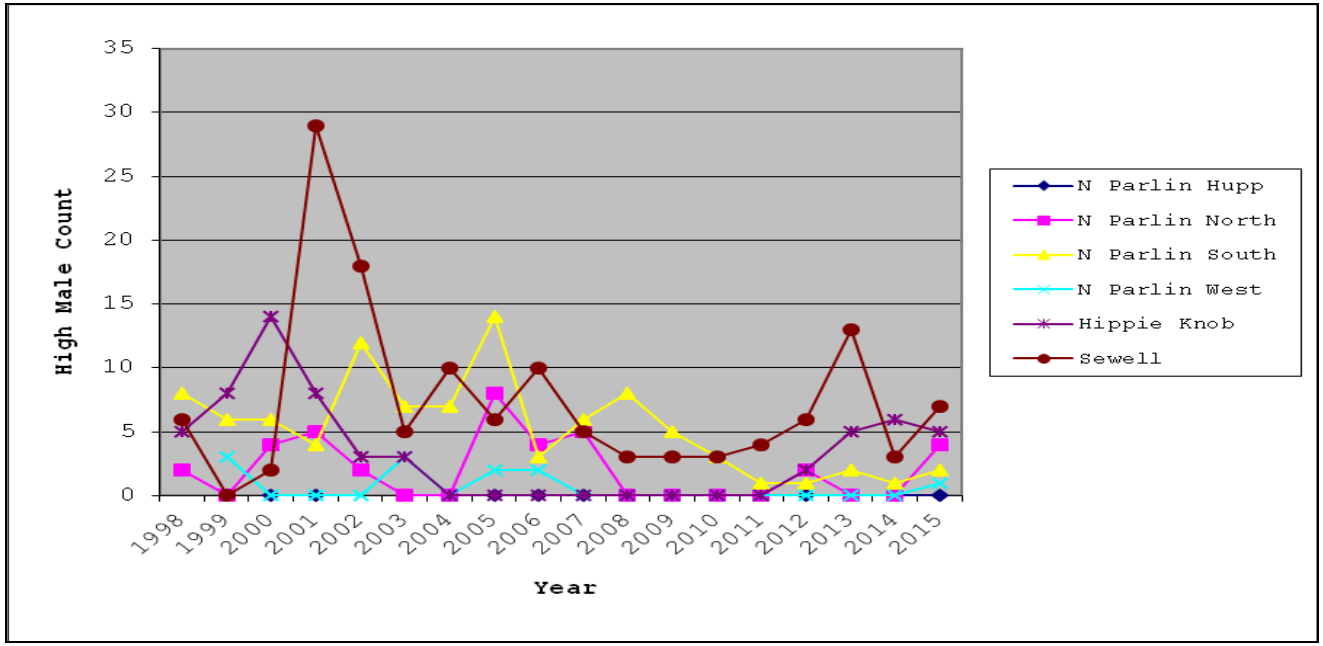




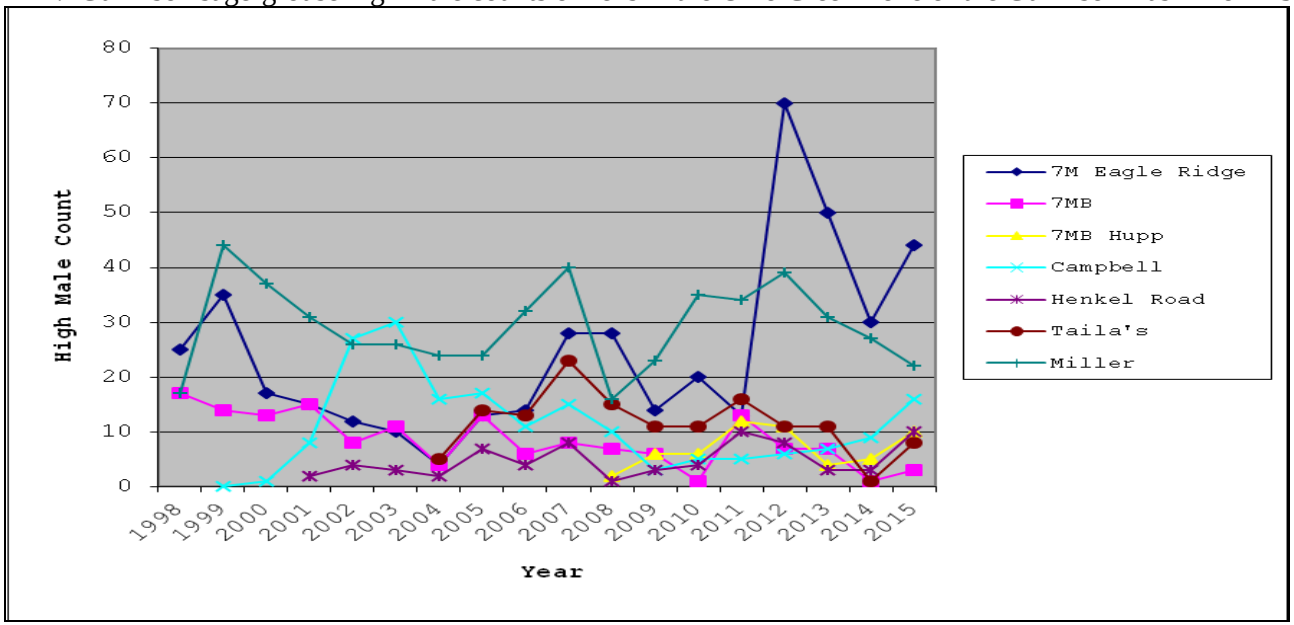

70
60
50
40
30
20
10
0
High Male Count
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year
Big Mesa
S Beaver Creek
McCabe Lane
Ridgeline
Sugar Creek

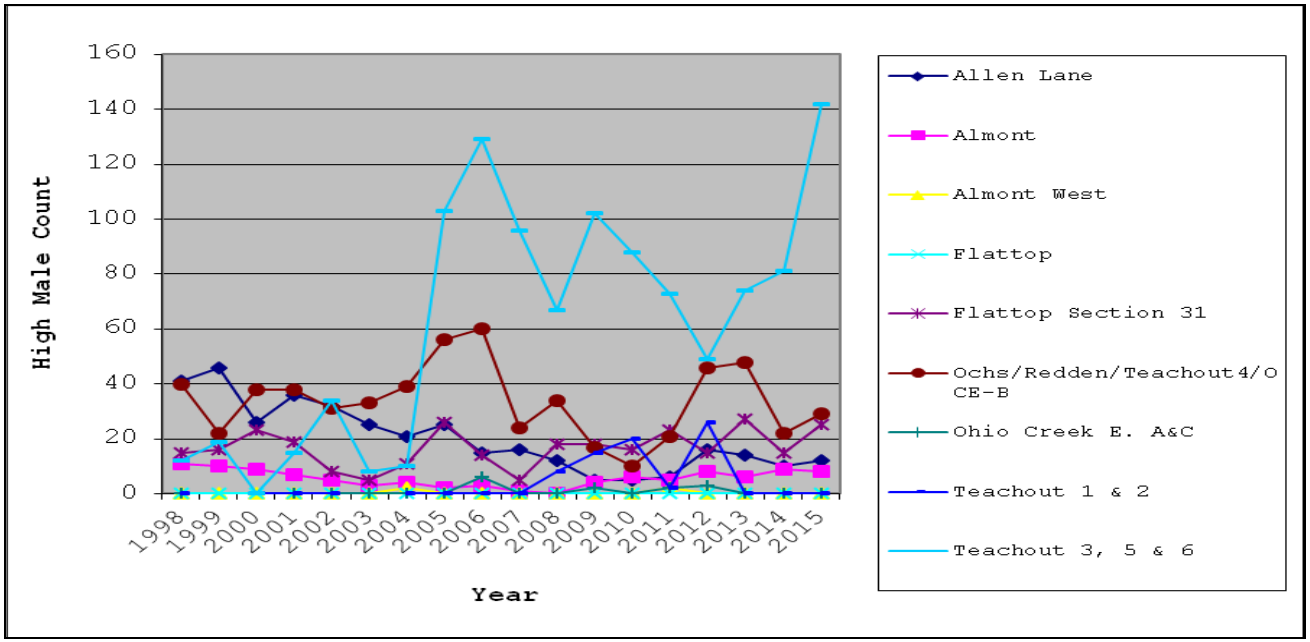
Appendix G: Gunnison sage-grouse high male counts on leks in the Lost Canyon Zone of the Gunnison Basin from 1998–2015.



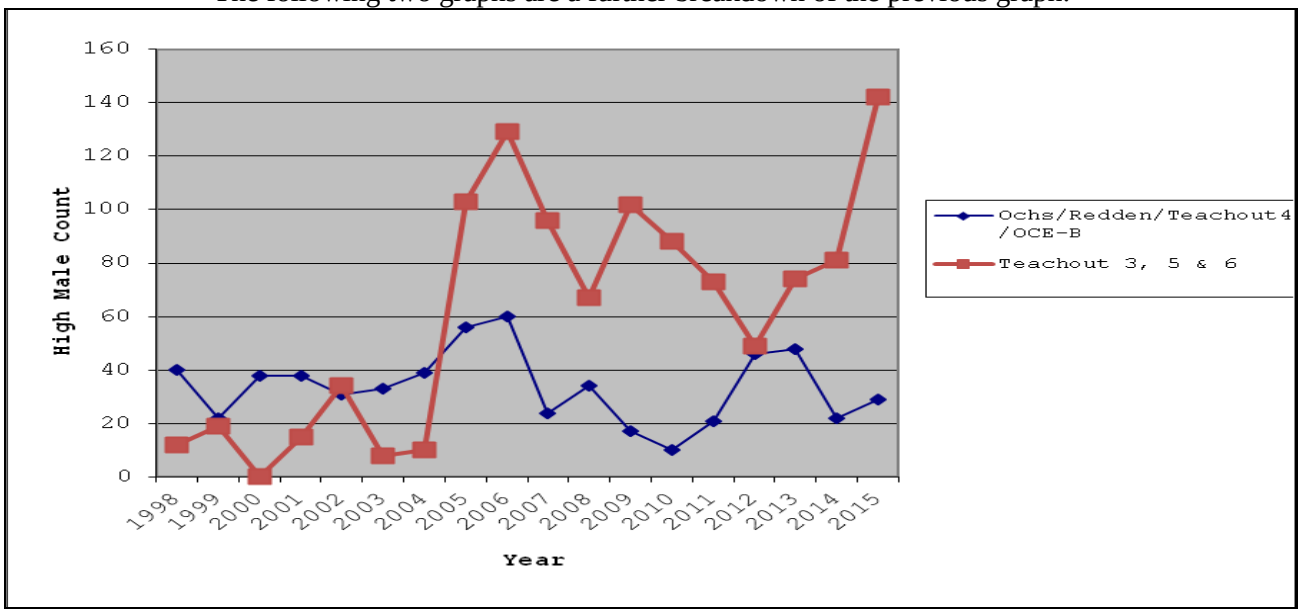


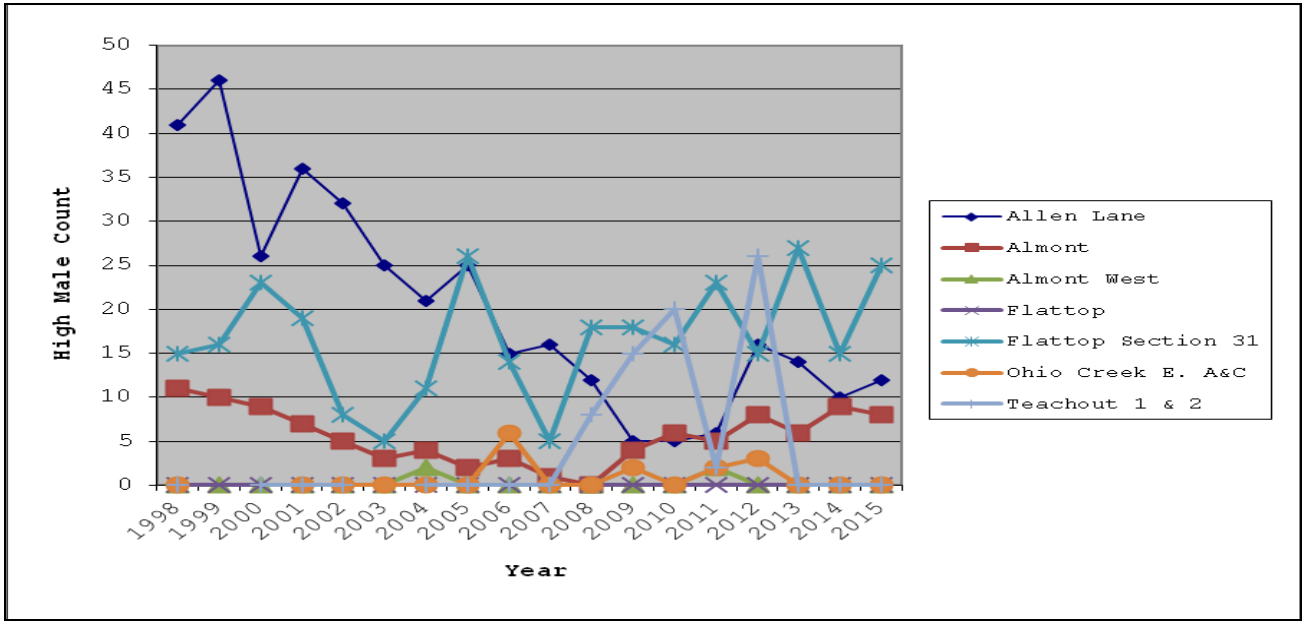
Appendix H: Gunnison sage-grouse high male counts on leks in the Ohio Creek Zone of the Gunnison Basin from 1998–2015.

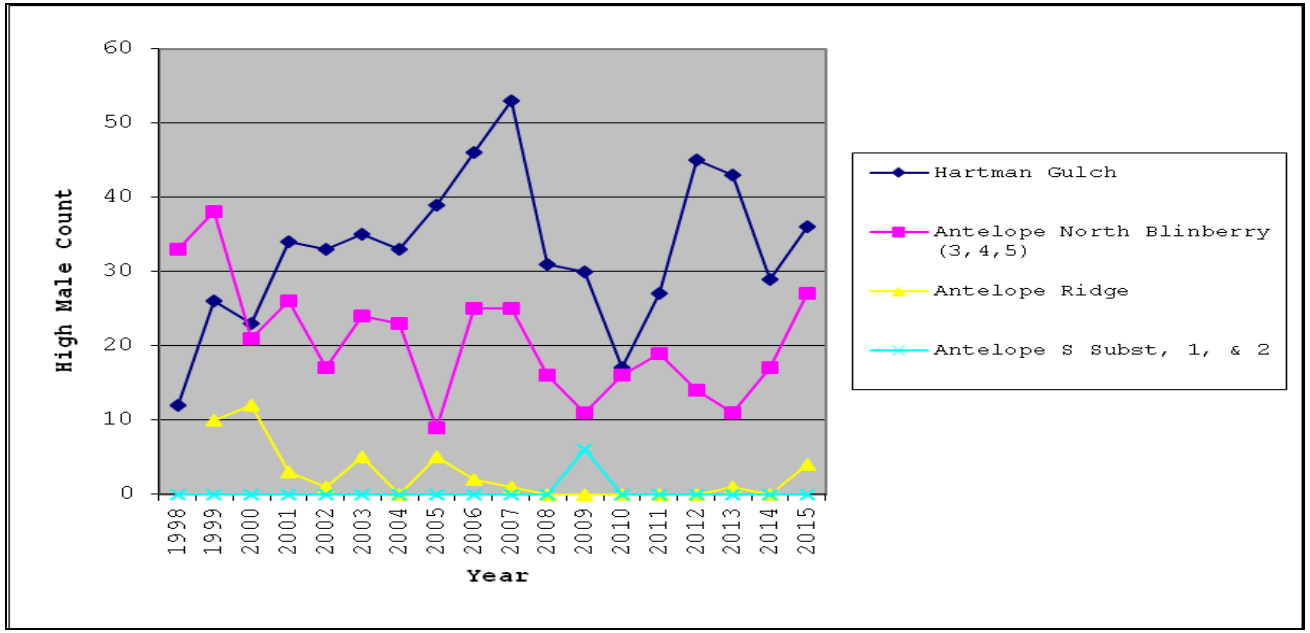


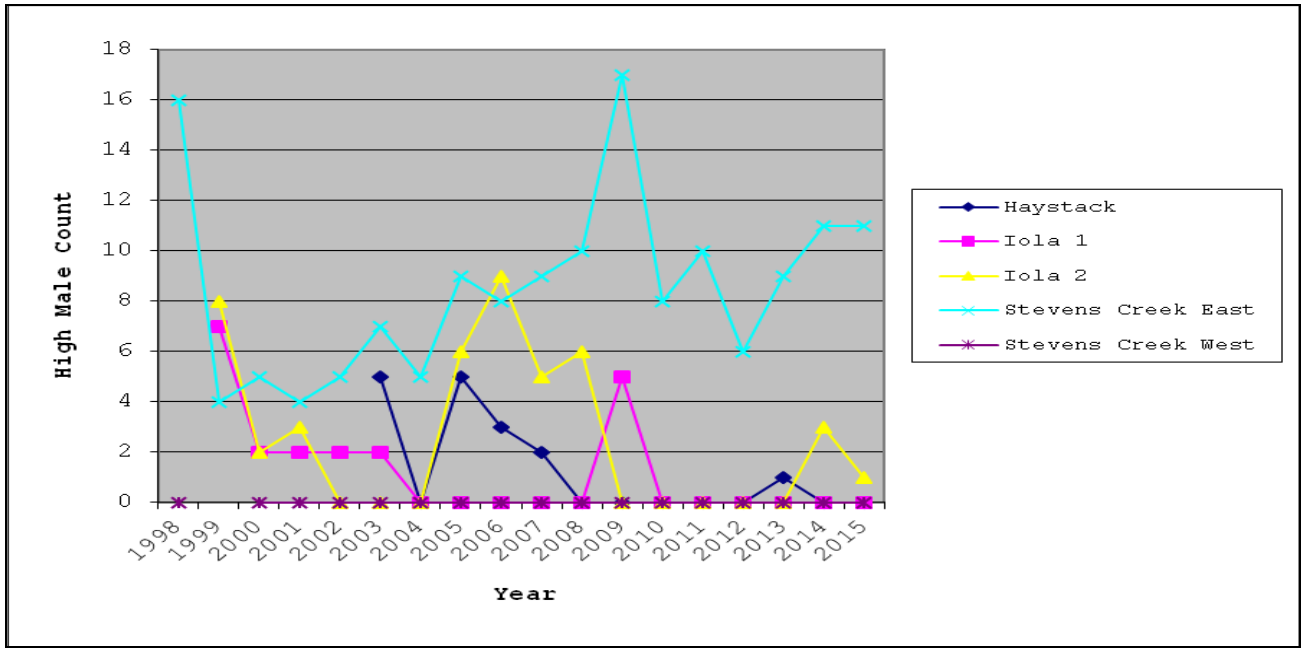


The following two graphs are a further breakdown of the previous graph:

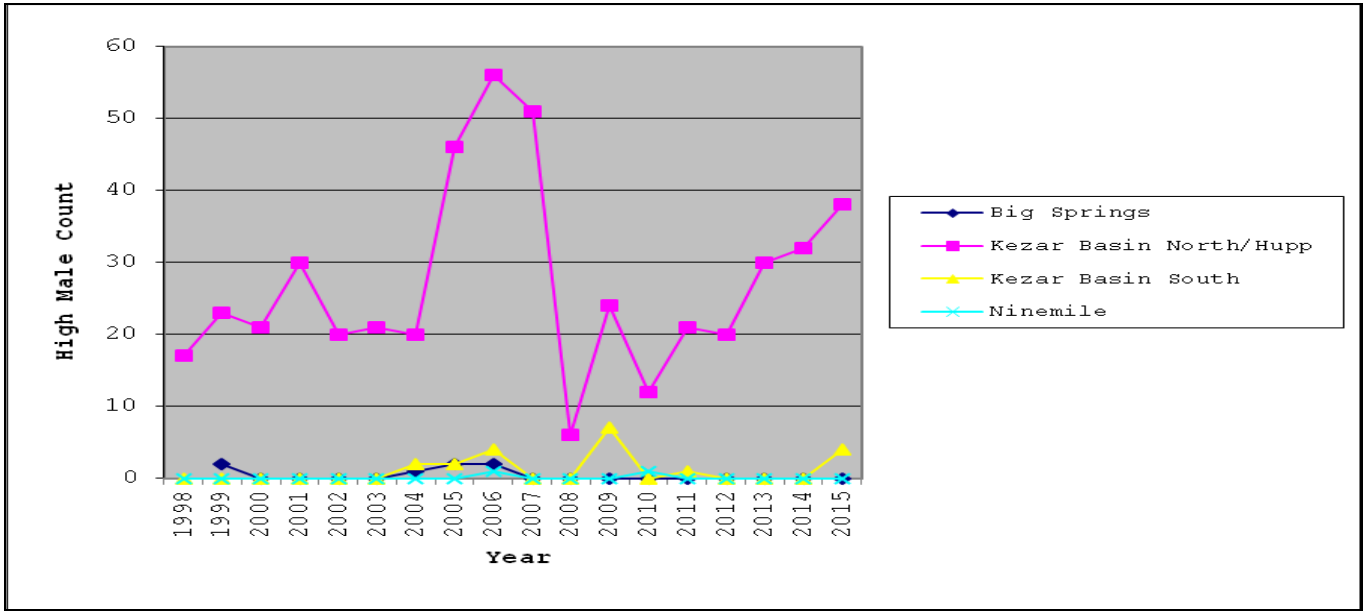


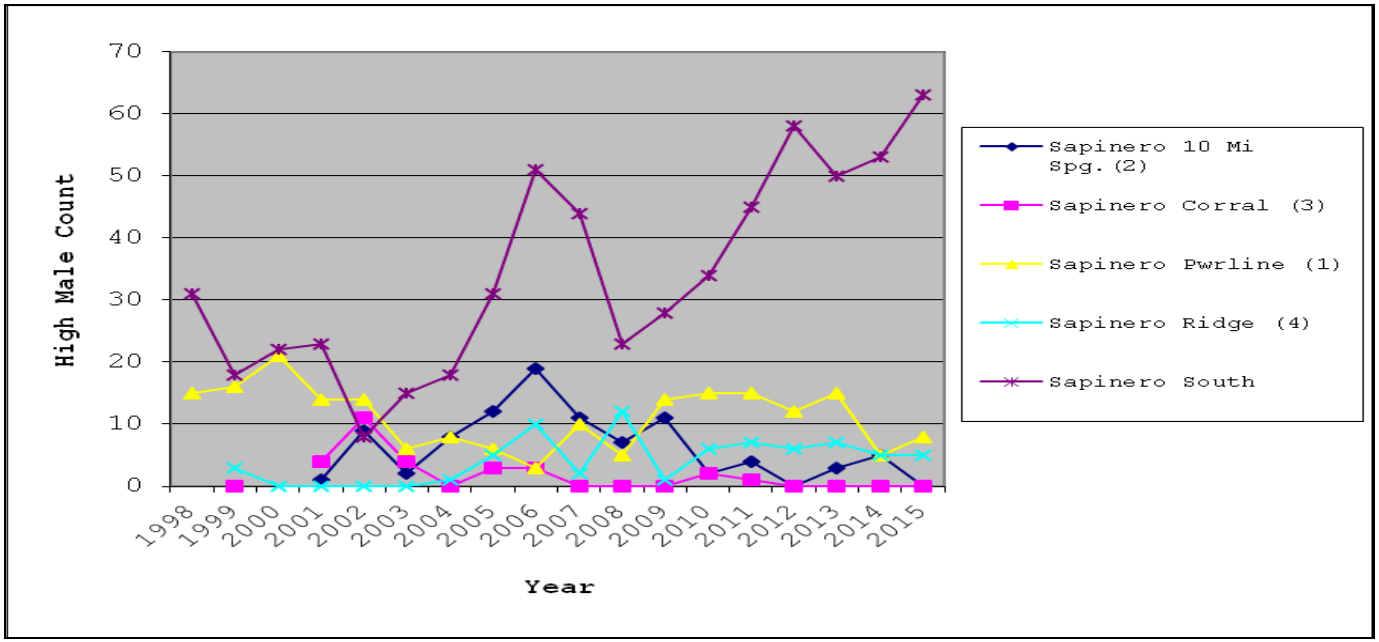


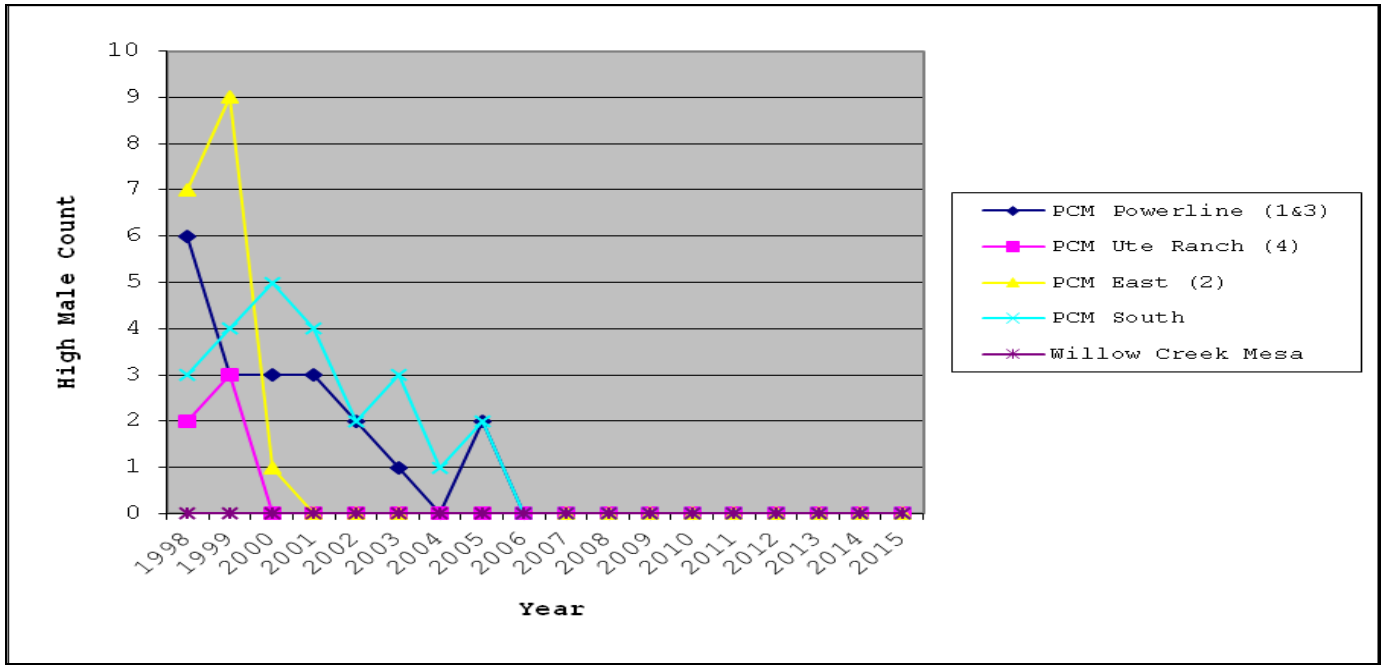

60
50
40
30
20
10
0
High Male Count
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year
Hartman Gulch
Antelope North Blinberry (3,4,5)
Antelope Ridge
Antelope S Subst, 1, & 2


18
16
14
12
10
8
6
4
2
0
High Male Count
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year
Haystack
Iola 1
Iola 2
Stevens Creek East
Stevens Creek West

Appendix I: Gunnison sage-grouse high male counts on leks in the Sapinero Zone of the Gunnison Basin from 1998–2015.







Willow Creek Mesa is Historic and PCM leks cannot be counted due to landowner access issues.

Appendix J: **Revised*** 2014 Gunnison sage-grouse lek count data in the Gunnison Basin in 2013 and 2014, organized by zone. HMC=High Male Count, HFC=High Female Count

Zone	Lek Area	Lek Area Total Males / Females*		Lek Site	2013 Annual Status	2013 HMC	2014 # Counts	2014 HMC	2014 HFC	2014 Annual Status	Official Status	High Count Date (Males / Females)
Doyleville	Cochetopa Dome	2	1	Double D	A	4	4	2	1	I	**U**	April 1/April1
	Needle Creek	0	0	Needle Creek	H	0	1	0	0	H	**H**	no birds
	Razor Creek	29	17	Razor Creek	A	12	6	29	17	A	**A**	April 24/April 5
				Razor Creek 1&2	H	0	1	0	0	H	**H**	no birds
	Razor Creek Divide	25	10	Razor Creek Divide	A	37	6	25	10	A	**A**	April 22, May 6/April 23
	Razor Dome	23	1	Razor Dome 1&2	A	12	3	23	1	A	**A**	May 7/April 9
	South Parlin	80	28	South Parlin Lower (#1)	A	25	4	26	6	A	**A**	April 18/April 18
				South Parlin Upper (#2)	A	38	4	43	4	A	**A**	April 30/April 9, 17
				South Parlin 1	I	0	5	11	18	A	**A**	April 4/April 4
				South Parlin (#3)	I	0	2	0	0	I	**U**	no birds
	Monson Gulch	12	1	Monson Gulch	I	0	2	0	0	I	**U**	no birds
				Monson Gulch on East Ridge	I	0	2	0	0	I	**U**	no birds
				Vito	A	20	4	12	1	A	**A**	April 23/April 13
	Waunita	24	9	Waunita	A	11	4	7	6	A	**A**	April 15/April 15
				Waunita Northwest	A	23	4	17	3	A	**A**	May 8/April 9
	Woods Gulch	19	6	Woods Gulch	A	7	6	19	6	A	**A**	April 24/April 10
Gold Basin	Chance Gulch	44	18	Chance Gulch	A	17	4	22	14	A	**A**	April 28/April 9
				Chance Gulch B	I	1	4	0	0	I	**U**	no birds
				Chance Gulch C	I	0	4	0	0	I	**I**	no birds
				Chance Gulch E	A	14	3	13	2	A	**A**	April 14/April 14
				Tylers	I	0	2	0	0	I	I	no birds
				Meyers	A	10	4	9	2	A	**A**	April 21/April 21
				Waterbar	I	0	2	0	0	I	**I**	no birds
	Gold Basin	24	3	South Beaver Creek	A	15	4	24	3	A	**A**	May 8/April 17, 24
				Gold Basin 1&2	H	0	1	0	0	H	**H**	no birds
	McCabe Lane	17	3	Big Mesa	A	5	3	7	1	A	**A**	April 24/May 10
				McCabe Lane	I	2	4	9	2	A	**A**	April 9/April 21
				Ridgeline	A	3	4	1	0	I	**U**	April 29/no females

Zone	Lek Area	Lek Area Total Males / Females*		Lek Site	2013 Annual Status	2013 HMC	2014 # Counts	2014 HMC	2014 HFC	2014 Annual Status	Official Status	High Count Date (Males / Females)
Gold Basin (cont)	Six Mile	34	22	Dutch Gulch	I	1	3	6	5	A	**A**	April 17/May 4
				South Six Mile Hupp	I	0	4	1	0	I	**I**	April 5/no females
				South Six Mile Meadow	A	4	4	11	15	A	**A**	April 19, 30/April 19
				South Six Mile Ridge	A	17	4	16	2	A	**A**	May 7/April 19
	Sugar Creek	57	3	Sugar Creek	A	62	4	57	3	A	**A**	May 10/May 10
Lost Canyon	Sewell Gulch/Hippie Knob	9	3	Hippie Knob	A	5	4	6	2	A	**A**	April 15/April 15
				Sewell Gulch	A	13	4	3	1	A	**A**	May 7/April 15
	Lost Canyon	25	0	Esty	H	0	1	0	0	H	**H**	no birds
				Scout	A	25	2	25	0	A	**A**	April 30/no females
				Waycamp	I	0	2	0	0	I	**I**	no birds
				Lost Canyon 1	H	0	2	0	0	H	**H**	no birds
				Lost Canyon 2	I	0	2	0	0	I	**U**	no birds
	North Parlin	3	0	North Parlin Hupp	I	0	4	0	0	I	**I**	no birds
				North Parlin North	I	0	5	2	0	I	**I**	May 7/no females
				North Parlin South	I	2	5	1	0	I	**U**	April 15/no females
				North Parlin West	I	0	2	0	0	I	**I**	no birds
	Tomichi Village	10	2	Signal Peak	I	0	2	0	0	I	**I**	no birds
				Signal Peak West	A	10	4	10	2	A	**A**	April 18/April 18
				Tomichi Village	H	0	3	0	0	H	**H**	no birds
Ohio Creek	Ohio Creek	128	45	Allen Lane	A	14	4	10	2	A	**A**	April 17/April 17
				Flattop	H	0	2	0	0	H	**H**	no birds
				Flattop Section 31	A	27	4	15	7	A	**A**	April 18/April 18
				Ochs/Redden/Teachout4	A	48	4	22	3	A	**A**	April 8/April8, 16
				Ohio Creek East A & C	I	0	2	0	0	I	**I**	no birds
				Teachout 1 & 2	I	0	2	0	0	I	**U**	no birds
				Teachout 3, 5, & 6	A	74	4	81	33	A	**A**	April 29/April 16
	Eagle Ridge	77	27	Campbell	A	7	4	9	7	A	**A**	April 29, May 6/April 16
				Henkel Rd	A	4	3	3	2	A	**A**	May 9/April30
				Miller	A	31	6	27	12	A	**A**	April 17/April 17
				Taila's	A	11	3	1	1	I	**U**	April 18/April 18
				Triangle	H	nc	0	nc	nc	H	**H**	nc
				7MB	A	7	3	2	0	U	**U**	April 18/no females
				7MB Eagle Ridge	A	50	4	30	3	A	**A**	April 29/April 16
				7MB Hupp	A	4	3	5	2	A	**A**	April 30/April 18, 30
	Almont	9	5	Almont	A	6	6	9	5	A	**A**	May 6/April 7
				Almont West	I	0	4	0	0	I	**I**	no birds

Zone	Lek Area	Lek Area Total Males / Females*		Lek Site	2013 Annual Status	2013 HMC	2014 # Counts	2014 HMC	2014 HFC	2014 Annual Status	Official Status	High Count Date (Males / Females)
Ohio Creek (cont.)	Antelope	17	0	Antelope South Substation, 1, & 2	I	0	2	0	0	I	**U**	no birds
				Antelope North Blinberry Gulch (3)	A	11	2	17	0	A	**A**	April 16/no females
				Antelope Ridge	I	1	1	0	0	U	**U**	no birds
	Hartman Gulch	29	8	Hartman Gulch	A	43	6	29	8	A	**A**	April 25/May 10
	Iola	14	1	Iola 1	I	0	2	0	0	I	**I**	no birds
				Iola 2	I	0	3	3	0	U	**U**	April 4/no females
				Haystack	U	1	2	0	0	I	**U**	no birds
				Steven's Creek East	A	9	6	11	1	A	**A**	April 25/April 4
				Steven's Creek West	H	0	4	0	0	H	**H**	no birds
Sapinero	Kezar Basin	32	0	Kezar Basin North/Hupp	A	30	4	32	0	A	**A**	April 22/no females
				Kezar Basin South	U	0	0	nc	nc	U	**U**	no count
	Ninemile	nc	nc	Big Springs	U	0	0	nc	nc	U	**U**	no count
				Ninemile	U	0	0	nc	nc	U	**U**	no count
	Pine Creek Mesa North	nc	nc	Pine Creek Mesa East (2)	U	NA	0	NA	NA	U	**U**	NA
				Pine Creek Mesa Powerline (1&3)	U	NA	0	NA	NA	U	**U**	NA
	Pine Creek Mesa South	nc	nc	Pine Creek Mesa South (5)	U	NA	0	NA	NA	U	**U**	NA
				Pine Creek Mesa Ute Ranch (4)	U	NA	0	NA	NA	U	**U**	NA
	Willow Creek	0	0	Willow Creek Mesa	H	0	1	0	0	H	**H**	no birds
	Sapinero South	63	17	Sapinero 10 Mile Spring (2)	I	3	4	5	0	I	**U**	May 8/no females
				Sapinero Corral (3)	I	0	0	nc	nc	U	**U**	no count
				Sapinero Ridge (4)	A	7	4	5	3	A	**A**	April 17, May 8/April 17
				Sapinero South	A	50	4	53	14	A	**A**	April 17/April 28
	Sapinero North	5	9	Sapinero Powerline (1)	A	15	4	5	9	A	**A**	April 10, 17, 28/April 10

Shaded leks: These leks cannot be counted due to private land access, and as of 2007 they are not used in data analysis.

2014 lek count data table Appendix D from "2014 GUSG Lek Count Report for Gunnison Basin" was incomplete. Lek Area Total Males/Females column has been updated.