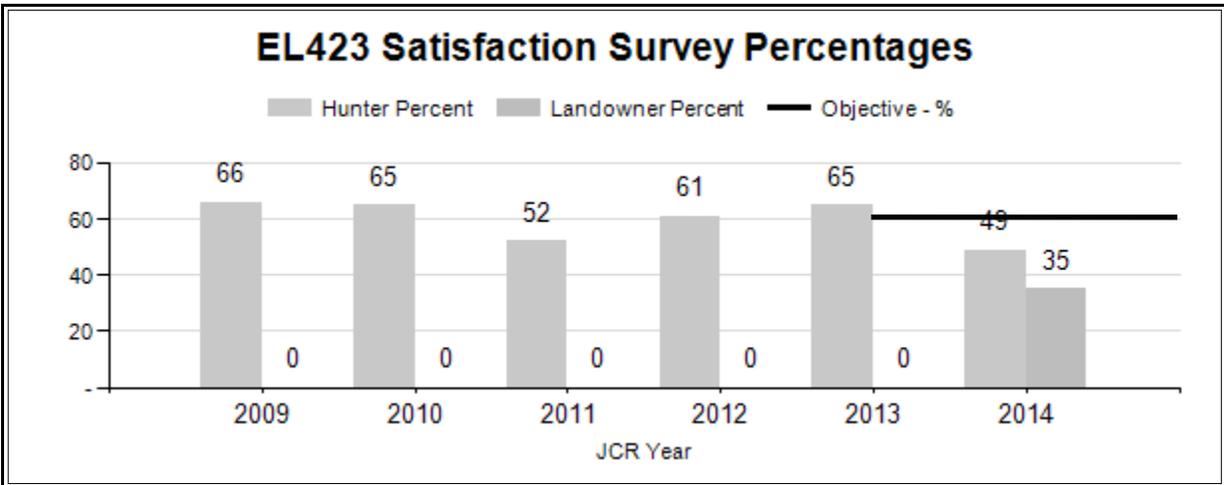


2014 - JCR Evaluation Form

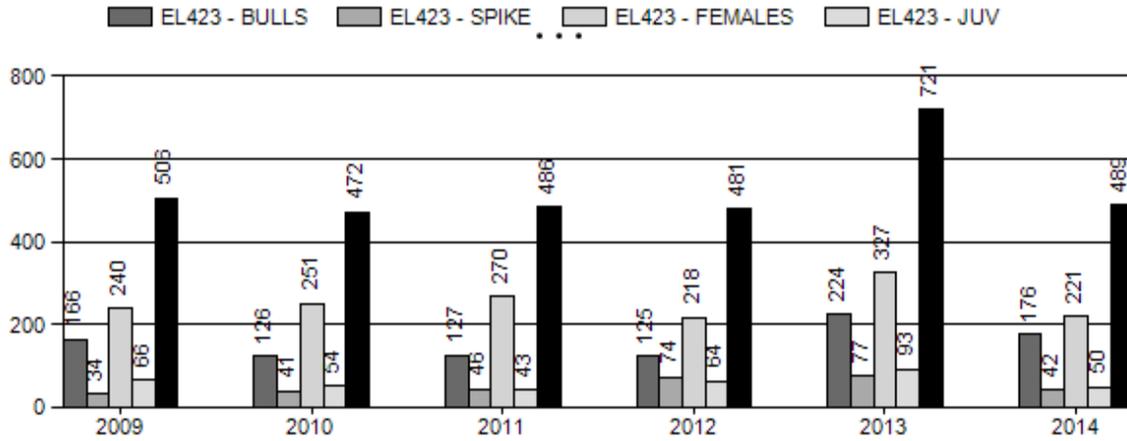
SPECIES: EIK
 HERD: EL423 - UINTA
 HUNT AREAS: 106-107

PERIOD: 6/1/2014 - 5/31/2015
 PREPARED BY: JEFF SHORT

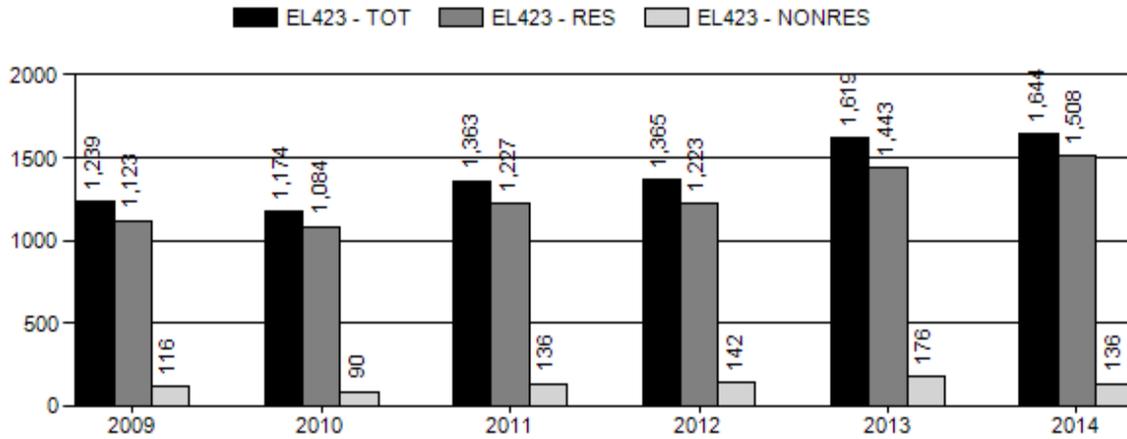
	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Hunter Satisfaction Percent	62%	49%	60%
Landowner Satisfaction Percent	0%	35%	60%
Harvest:	533	489	500
Hunters:	1,352	1,644	1,500
Hunter Success:	39%	30%	33%
Active Licenses:	1,381	1,687	1,550
Active License Success:	39%	29%	32%
Recreation Days:	7,772	13,886	13,000
Days Per Animal:	14.6	28.4	26
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	
Satisfaction Based Objective			60%
Management Strategy:			Recreational
Percent population is above (+) or (-) objective:			-18%
Number of years population has been + or - objective in recent trend:			0



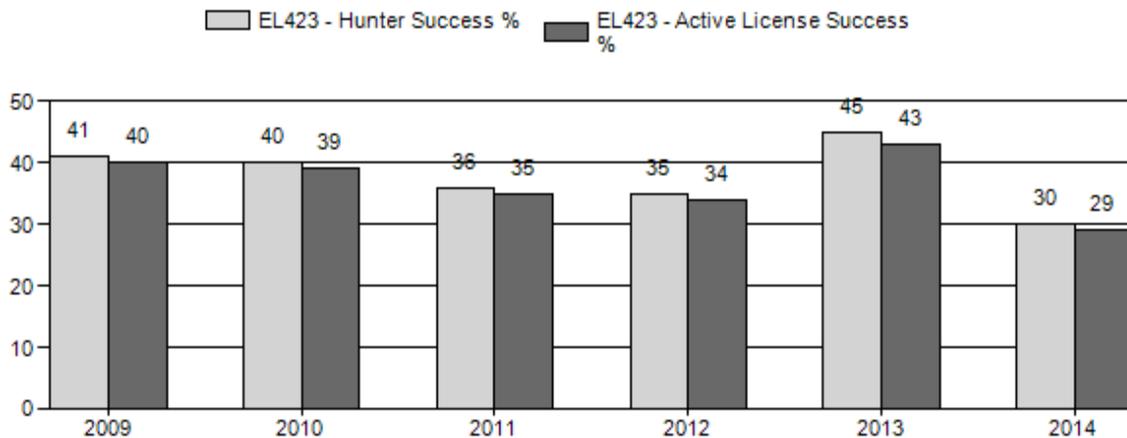
Harvest



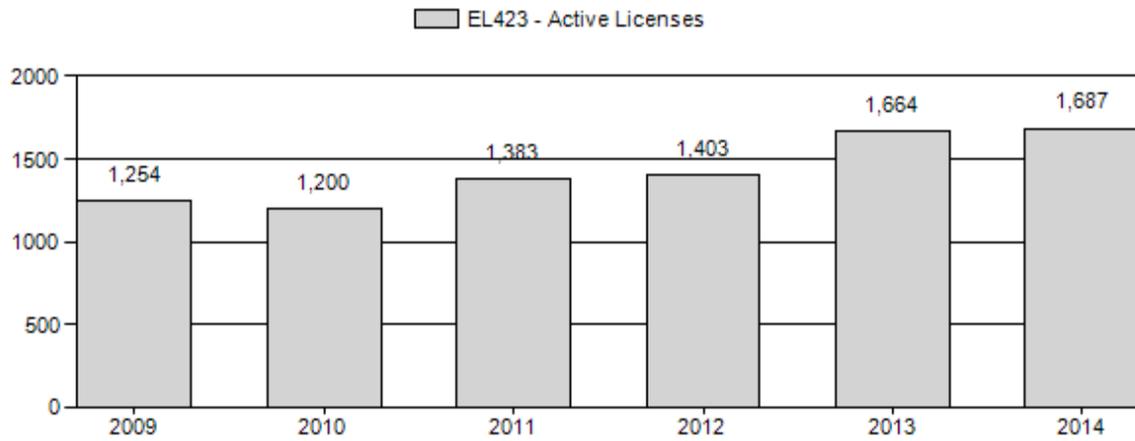
Number of Hunters



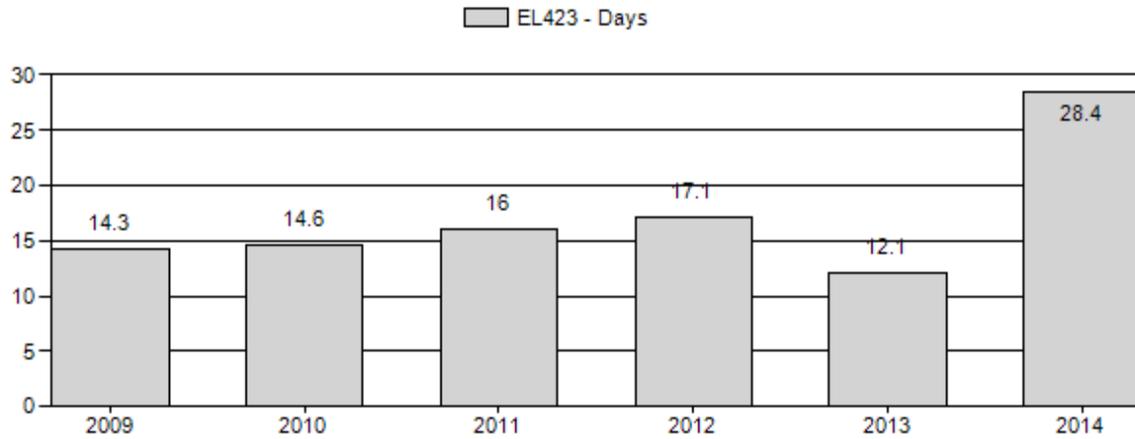
Harvest Success



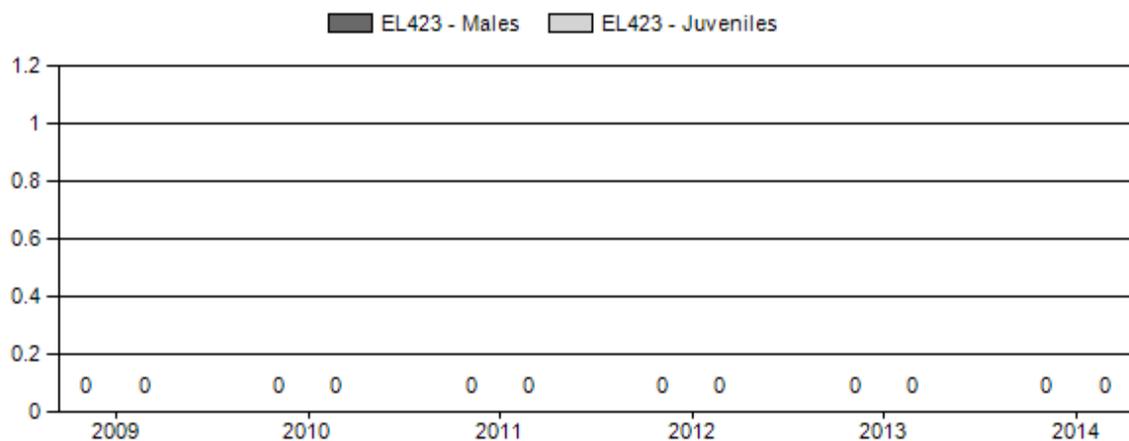
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



No classification data for this herd

2015 HUNTING SEASON

SPECIES : **Elk**

HERD UNIT : **Uinta (423)**

HUNT AREAS: **106, 107**

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
106		Oct. 15	Oct. 31	50	General	Any elk
		Nov. 1	Nov. 14		General	Antlerless elk
	1	Nov. 15	Dec. 31	Limited quota	Any elk valid west of the Blacks Fork River or north of Wyoming Highway 410	
	4	Nov. 15	Dec. 31	Limited quota	Antlerless elk	
		Jan. 1	Jan. 31			Unused Area 106 Type 4 licenses; valid on private land or west of the Blacks Fork River or north of Wyoming Highway 410
	7	Aug. 15	Jan. 31	300	Limited quota	Cow or calf valid on private land or west of the Blacks Fork River or north of Wyoming Highway 410
107		Oct. 15	Oct. 31	150	General	Any elk
		Nov. 1	Nov. 14		General	Antlerless elk
	4	Nov. 15	Dec. 31	Limited quota	Antlerless elk	
			Jan. 1	Jan. 31		
	7	Dec. 15	Jan. 31	50	Limited quota	Cow or calf valid off national forest and within the Henrys Fork River drainage
106, 107	Archery	Sept. 1	Sept. 30			Refer to Section 3 of this chapter

Hunt Area	License Type	Quota change from 2014
Herd Unit Total		

Management Evaluation

Current Postseason Population Management Objective: Satisfaction

Management Strategy: Recreational

2014 Postseason Population Estimate: ~1300

2015 Proposed Postseason Population Estimate: ~1100

Herd Unit Issues

This is an interstate herd shared with Utah. Elk summering in the Uinta Mountains in Utah come to Wyoming to winter. Limited winter range is the main issue for this herd. With winter range in short supply conflict with agriculture producers becomes an issue. Damage complaints occur on bad winters. Summer damage also occurs on crops in limited areas. Significant efforts have been made by field personnel to alleviate these problems. Perceived reduction in livestock forage due to elk grazing is an issue brought up by livestock producers.

Local ranchers set up a meeting through the county Farm Bureau Agency in February 2013 to discuss elk management in this herd. During the meeting ranchers expressed significant dissatisfaction with elk in areas of the herd unit. In difficult winters problems have occurred in parts of HA 106 with elk comingling with livestock along the Bear River and Blacks Fork River where cattle feeding operations occur. However, hunters feel that elk numbers in the southeast part of the hunt area are too low and would like that segment to increase. That area is largely public land and historically draws large hunter numbers due to its easy access. We direct pressure onto the northern and western portions of the hunt area with type 7 permits. The Hunt Area 106 Type 7 licenses also help deal with an early damage problem on growing crops.

The HA 107 antlerless licenses are used to maintain pressure on elk on the Wyoming side of the state boundary during a hunt on the Utah side. Damage complaints on the HA 107 side of the herd unit are typically low even during the severe winter of 2010/11. However, ranchers will complain about elk numbers and the herd has been over objective. The late portions of antlerless hunts are designed to target elk that have potential to cause depredation problems while protecting elk in those areas where they can winter with low probability of problems. Hunters would like to see more elk in accessible public land areas in HA 107. These areas and a small portion of public land in HA 106 are the main areas for elk hunter access in the herd unit.

The strategy in this herd unit has been to ultimately minimize elk damage problems. However, it is difficult to manage a herd for limiting damage based solely on a number. Elk damage changes relative to many other factors. In 2014 the objective was reviewed and a new Satisfaction based objective was approved. This objective is to have a landowner satisfaction of 60% and a hunter satisfaction of 60%. In the first year of this objective we are not meeting either of those objective parameters; however, the five year average for hunter satisfaction is 62%. There is also a secondary objective of having $\geq 60\%$ branch-antlered bulls in the harvest. We are meeting that objective. The objective and management strategy were last revised in 2014.

Weather

Weather during 2014 and into 2015 was highly variable. In the early part of 2014 the winter was very mild and dry. A moist spring and summer followed. In late August and into September precipitation continued. The winter of 2014-2015 has been very mild to this point. The winters of 2011/12, 2012/13 and 2013/14 were also mild with low snowpack resulting in good over winter survival. However, the dry springs and summers of 2012 and 2013 negatively impacted summer and winter range forage production. Conditions were better at the higher elevations. The mild winters we have experienced recently have kept wintering elk at higher elevations and away from problem situations for the most part.

Habitat

Habitat data collection has been inconsistently collected in this herd unit and has been absent in the recent past.

Field Data

Elk surveys are flown in cooperation with Utah DNR, most recently in February 2013. The results are shown below. No classification data is available. The 2011 count in Wyoming was higher than previous counts, the result of severe winter weather. The winter of 2012/13 was very mild but forage availability was a problem due to severe drought conditions. Damage involving elk has occurred but has not been a large problem. However, the 2013 count was still very high indicating we needed to increase harvest.

	YEAR								
	1992	1994	1996	1998	2001	2004	2007	2011	2013
Utah West Daggett	920	970	1408	919	923	716	863	No data	1055
Utah Summit	332	131	200	80	101	215	228	268	1006
Wyoming	298	238	635	299	512	446	746	1723	1810
Total	1550	1339	2243	1298	1536	1377	1837	1991	3871

Harvest Data

Antlerless harvest opportunity was increased for several years in this herd unit. The 2010, 2011 and 2012 season structures offered substantially increased antlerless harvest opportunity to reduce the possibility of damage in the herd unit. Those seasons allowed significant antlerless harvest with increases in permits and season lengths. These hunts had good success rates if weather conditions resulted in elk movement out of Utah and were largely successful at reducing damage issues. In 2013 we again made significant increases in antlerless hunting opportunity to further reduce elk numbers and damage concerns. Harvest numbers responded to the increased opportunity. Success rates were high at 45%. That combined with higher hunter numbers produced a harvest of 732 elk in the herd unit. That was well above the previous five year average of 450. In 2014 we continued the harvest strategy used in 2013 however weather conditions made elk hunting more difficult and harvest was lower at 489 animals harvested. For 2015 we will continue this hunting strategy to maintain harvest pressure on this herd.

Population

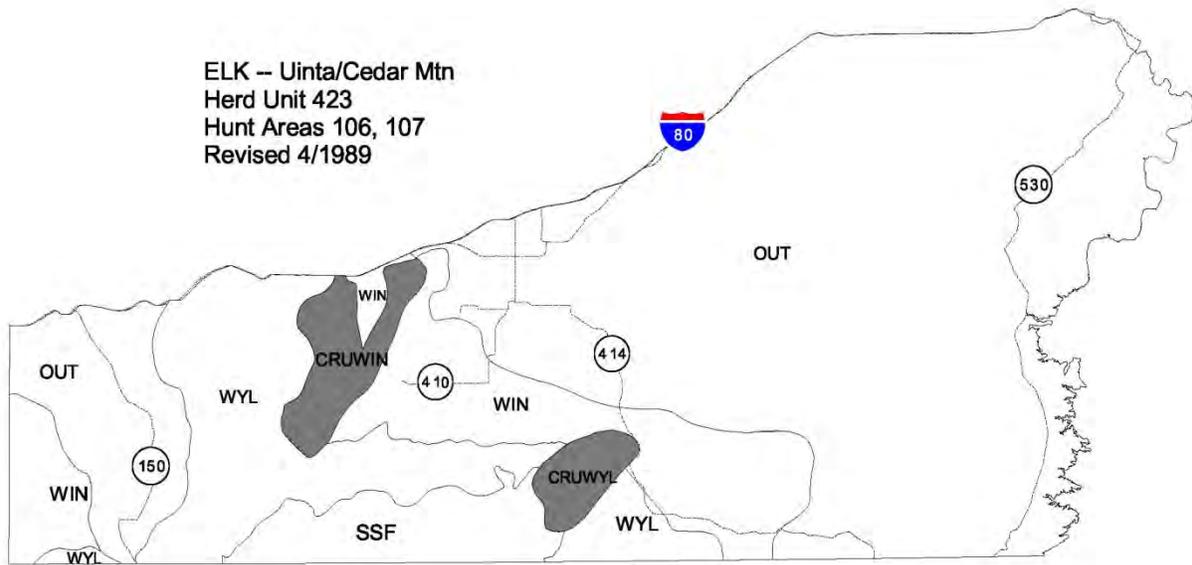
There is no population model for this interstate herd. Weather severity and forage availability are the determining factors in the number of elk that come into Wyoming from Utah during the winter. This and other factors make data collected in Wyoming inconsistent and unreliable.

Since data is very limited in this herd it is very difficult to look at data trends. It is not possible to model this interstate herd. Classification data is not collected. Harvest rates are highly variable due to weather conditions pushing elk into the state from Utah. Harvest survey data indicate that we have likely had adequate harvest in recent years to reduce this herd.

Management Summary

Starting in 2013 we greatly increased hunter opportunity for antlerless elk. Comments from landowners in areas around Lonetree and in the north and western portions of area 106 are that elk numbers are still an issue. We will continue with hunt timing and license management to maximize elk harvest opportunities throughout the season to target elk causing problems in those areas. It appears that these new season structures will reduce this elk herd. The objective and management strategy were last revised in 2014.

ELK -- Uinta/Cedar Mtn
Herd Unit 423
Hunt Areas 106, 107
Revised 4/1989



2014 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2014 - 5/31/2015

HERD: EL424 - SOUTH ROCK SPRINGS

HUNT AREAS: 30-32

PREPARED BY: PATRICK BURKE

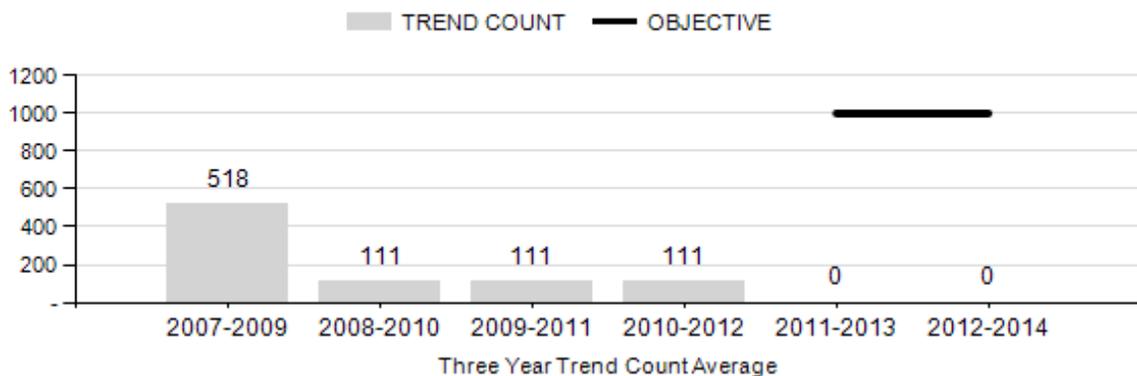
	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Trend Count:	67	0	1,000
Harvest:	379	176	180
Hunters:	559	274	300
Hunter Success:	68%	64%	60%
Active Licenses:	559	274	300
Active License Success	68%	64%	60%
Recreation Days:	4,197	2,119	2,200
Days Per Animal:	11.1	12.0	12.2
Males per 100 Females:	47	0	
Juveniles per 100 Females	40	0	

Trend Based Objective ($\pm 20\%$) 1,000 (800 - 1200)
 Management Strategy: Special
 Percent population is above (+) or (-) objective: N/A%
 Number of years population has been + or - objective in recent trend: 0

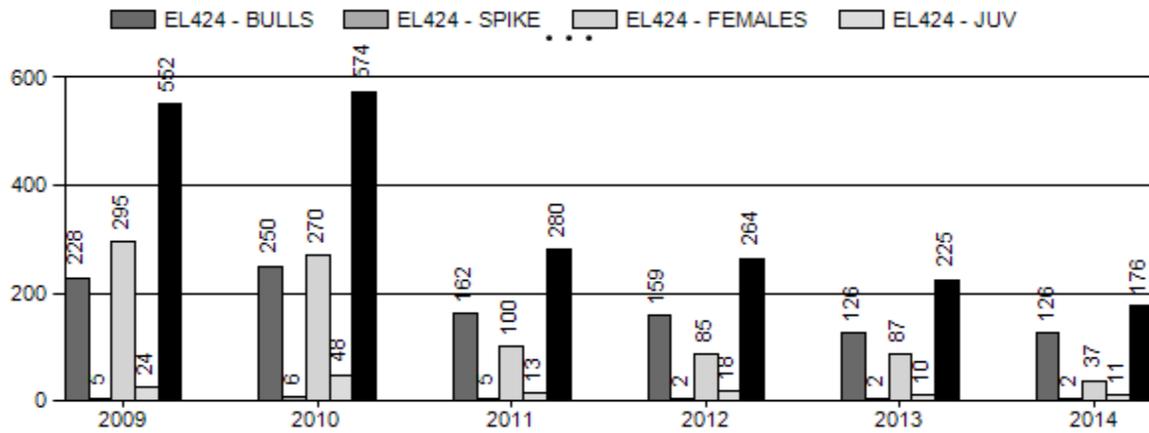
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	13%	0%
Males ≥ 1 year old:	90%	0%
Juveniles (< 1 year old):	4%	0%
Total:	20%	0%
Proposed change in post-season population:	-5%	0%

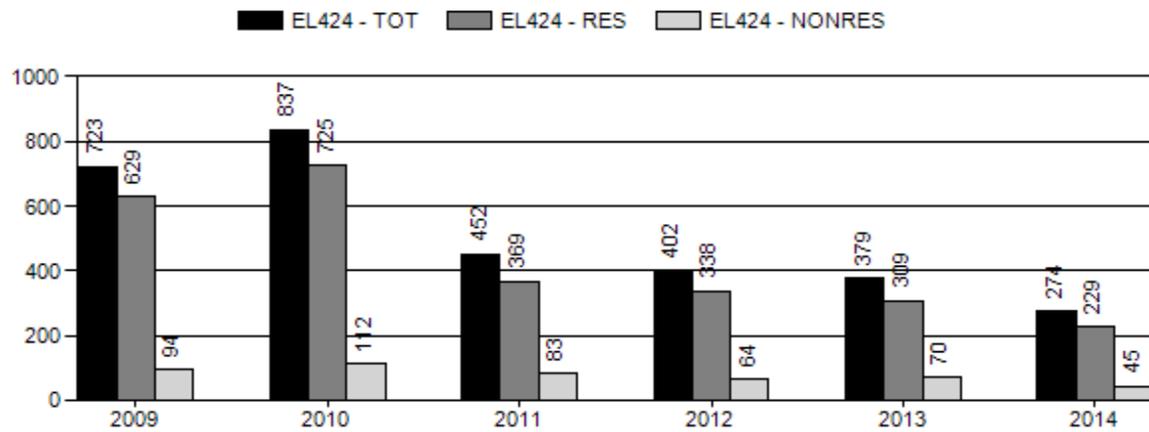
EL424 Trend Count



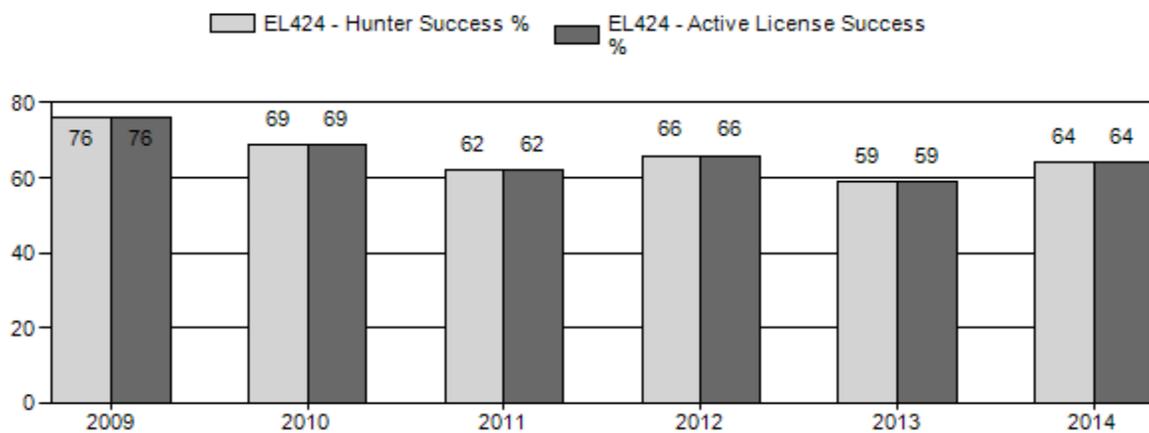
Harvest



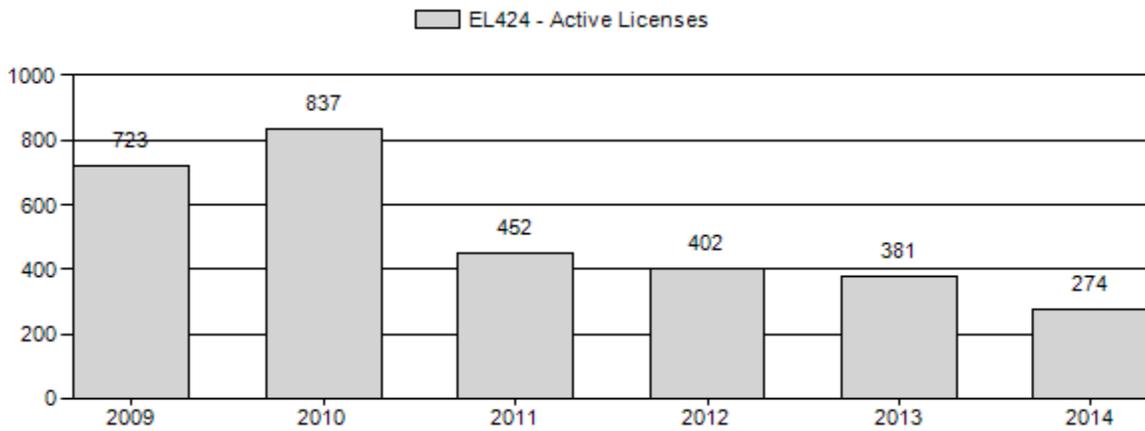
Number of Hunters



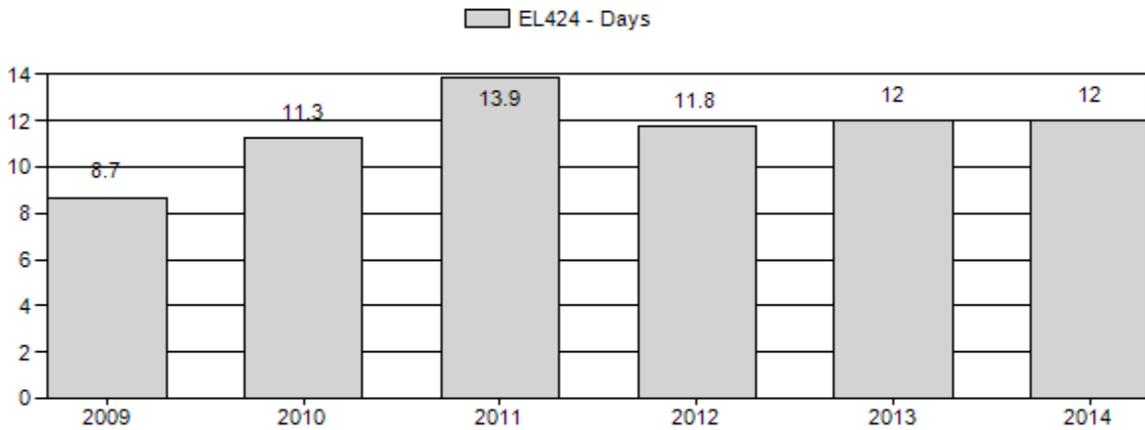
Harvest Success



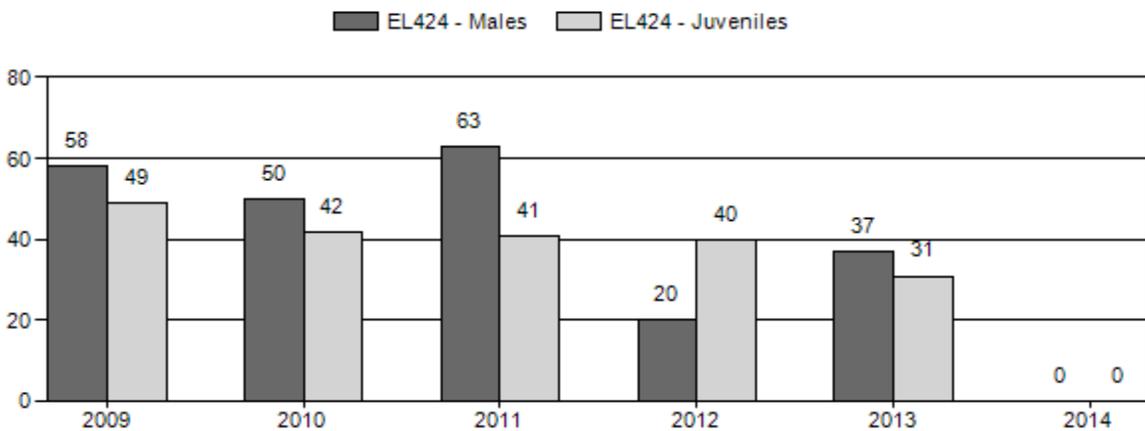
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2009 - 2014 Postseason Classification Summary

for Elk Herd EL424 - SOUTH ROCK SPRINGS

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2009	1,150	81	95	176	28%	306	48%	149	24%	631	529	26	31	58	± 0	49	± 0	31
2010	625	106	156	262	26%	525	52%	222	22%	1,009	379	20	30	50	± 19	42	± 22	28
2011	1,100	60	116	176	31%	280	49%	116	20%	572	485	21	41	63	± 5	41	± 4	25
2012	799	18	7	25	12%	126	62%	51	25%	202	361	14	6	20	± 5	40	± 7	34
2013	0	78	135	213	22%	582	60%	181	19%	976	398	13	23	37	± 0	31	± 0	23
2014	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0

**2015 HUNTING SEASONS
SOUTH ROCK SPRINGS ELK HERD (EL424)**

Hunt Area	Type	SEASON DATES		Quota	Limitations
		Opens	Closes		
30	1	Oct. 1	Oct. 31	30	Limited quota; any elk
30	4	Oct. 1	Oct. 31	20	Limited quota; antlerless elk
31	1	Oct. 1	Oct. 31	75	Limited quota; any elk
31	4	Oct. 1	Oct. 31	75	Limited quota; antlerless elk
32	1	Oct. 1	Oct. 31	50	Limited quota; any elk
32	4	Oct. 1	Oct. 31	50	Limited quota; antlerless elk
32	9	Sept. 1	Sept 30	25	Limited quota; antlerless elk archery only
Archery		Sept. 1	Sept. 30		Refer to license type and limitations in Section 3.

Hunt Area	Type	Quota change from 2014
30	4	+20
32	9	+25
Herd Unit Total	4	+20
	9	+25

Management Evaluation

Current Management Objective: 1,000

Management Strategy: Special

2014 Postseason Population Estimate: N/A

2015 Proposed Postseason Population Estimate: N/A

The South Rock Springs elk herd is a special management herd and has a mid-winter trend count objective of 1,000 elk. This objective was set in 2013, when the objective was changed from a population based objective to a trend count based objective. This change was made due to the difficulty and unreliability of attempting to model an interstate population.

Herd Unit Issues

This herd is shared between the states of Wyoming, Colorado, and Utah, with the largest segment of the population probably residing in Colorado. Because of the interstate nature of this population, the number of elk actually residing in Wyoming has been difficult to estimate since it probably changes on a day-to-day basis especially during hunting season since significant interchange has been documented between the three states, especially between Wyoming and Colorado. Because of the interstate nature of this herd, the management scheme for Hunt Areas 30, 31, and 32 for many years has relied on significant immigration of elk into Wyoming from Colorado and Utah in order to support the level of harvest that has been occurring in the Wyoming segment of the population.

In order to learn more about the amount of interchange between the three states that this herd occupies, the states of Colorado and Utah have placed GPS collars on cow elk in their portions of this herd. Colorado deployed collars in the 2011-2012 winter and Utah put out collars during the 2012-2013 winter. Early results from these studies have documented use of Wyoming by elk collared in both Utah and Colorado with more interchange occurring between Colorado and Wyoming than between Wyoming and Utah or between Utah and Colorado. Most of the collared elk appear to be frequenting the areas between Middle Mountain in Colorado and the Little Red Creek, 4-J Basin areas in Wyoming with some of the elk using areas further south in Colorado and Utah. Most of the elk collared in Utah left that state after being collared and have been spending most of their time in either Colorado or Wyoming.

Weather

The summers of 2012 and 2013 were both extremely dry with little summer precipitation, especially the summer of 2012. This lack of moisture was especially evident in areas of the herd unit below 8,000 ft. The drought conditions at the lower elevation winter ranges of the herd unit have had some minor impacts on this in the form of elk choosing to winter at higher elevations than normal which may result in more use of already stressed summer parturition ranges that are used by this herd and the South Rock Springs mule deer herd. During December 2013 classification flights, some elk were seen wintering at over 9,000 ft. and other groups were observed at higher elevations than typically occupied despite substantial snow depths in those areas. The summer of 2014 saw substantially better moisture in most of Wyoming, however the portion of southwest Wyoming inhabited by the this elk herd did not receive as much increased

moisture as the rest of the state, although it was better than what was received during the previous two years. Three summers in a row of less than desired precipitation certainly had a negative impact on the vegetation in the area, but do not appear to have had a negative impact on this herd. So far the 2014-2015 winter has been very mild with little precipitation. Hopefully, 2015 will see some spring moisture that will lead to better plant growth than has been seen in recent years.

Habitat

The Green River aquatic habitat biologist has established six aspen regeneration monitoring transects throughout the herd unit. These transects are designed to evaluate browsing impacts from ungulates on young aspen suckers, especially elk. Two transects were established on Little Mountain in 2007, as well as four additional transects that were established in 2009, one each on Aspen and Miller Mountains and two in the Pine Mountain area. These transects have been read each summer since their establishment, except that one of the Pine Mountain transects was not read in 2013 due to difficulty in accessing that site caused by the amount of rain and snow received that fall and the South Pine Mountain site was not read in 2014 due to the aspen stand that it was located in dying off resulting in an insufficient number of aspen suckers left alive to measure. Because of the loss of the South Pine Mountain site, a new transect was established near the tri-state marker in 2014.

A detailed accounting of the technique and results from these monitoring efforts can be found in the aquatic habitat annual report. In general, this method compares the height of the initial growth point for the current year's terminal leader to the height of the tallest previous terminal leader branch that was killed as a result of browsing. A positive Live-Dead (LD) value suggests growth of young trees, while a negative value or value near zero suggests that browsing may be suppressing tree growth. Results of monitoring efforts are presented in the following table (Table 1) taken from the aquatic habitat annual progress report, but in general, two of the five monitored sites showed positive LD values for 2014, while four of the sites had LD values below zero. The new Tri-state monitoring site, not reported in the table below had a positive LD value of +3.4 inches.

Table 1. Trends in aspen regeneration LD Index values (vertical inches) for the SRS herd unit 2011-2014

Monitoring site	2011	2012	2013	2014
Pine Mt/Red Ck.	-0.5	-3.0	NA	-7.8
South Pine Mt.	+0.7	-3.2	-4.3	NA
Miller Mt.	+8.7	+5.3	+6.6	+4.6
Aspen Mt.	+1.5	-6.0	+4.6	-4.5
Little Mt./Dipping Spr.	-4.1	-2.6	0	-0.9
Little Mt./West Curreant Ck.	+4.2	0	0	-1.6

Field Data

The South Rock Springs elk herd is classified in conjunction with the South Rock Springs deer herd alternating between ground classifications and aerial classifications every other year. This herd was classified from a helicopter in 2013, which meant that 2014 was a ground classification year for the South Rock Springs herds. During the ground classification efforts, insufficient numbers of elk were observed to obtain classification ratios for the herd. This was most likely because during November, when the counts were conducted, the elk were probably in areas that were inaccessible from the ground. This situation is often encountered during years when monies are not available for aerial classifications. The average ratios from the last three years when adequate sample sizes were obtained are 36 calves per 100 cows and 32 bulls per 100 cows with an average sample of 583 elk.

Harvest Data

In 2014 there was a total of 274 active licenses in the herd unit. The overall harvest success rate for those 274 licenses across all hunt areas and license types in the herd unit in 2014 was 65% and it took the average hunter just under 12 days to harvest an elk in the herd unit. A total of 178 elk were harvested during the 2014 season, with 128 two year or older bulls, two spike bulls, 37 cows and 11 calves harvested. The hunt area with the highest harvest success rate was HA30, with reported a 100% success rate, although the number of licenses issued in that hunt area was relatively small with only 32 Type 1 licenses and no Type 4 licenses in the hunt area. Hunt area 31 reported an 86% success rate for the Type 1 licenses and a 53% success rate for Type 4 license holders. Hunt area 32 reported a 61% success rate for Type 1 license holders and a 21% success rate for Type 4 license holders with an average of 48 days of hunting per cow harvested.

Because of the special management status and the local prominence of the South Rock Springs elk herd, successful Type 1 license holders are asked to voluntarily submit tooth samples from harvested elk for cementum annuli analysis. In 2014, tooth samples were submitted from 72 bull elk. Based on these submissions, the average age of harvested bulls in 2014 was 6.2 years old. This compares with an average age of 5.7 in both 2013 and 2012, and 6.1 years old in 2011. One 10.5 year old bull was harvested and aged from the herd unit in 2014. This bull came from HA30. In past years, the oldest age class of bull harvested was 9.5 in 2013, 7.5 in 2012, and 11.5 in 2011. Teeth from two cow elk were also submitted in 2014, one yearling cow from HA31 and one 6.5 year old cow from HA32.

Population

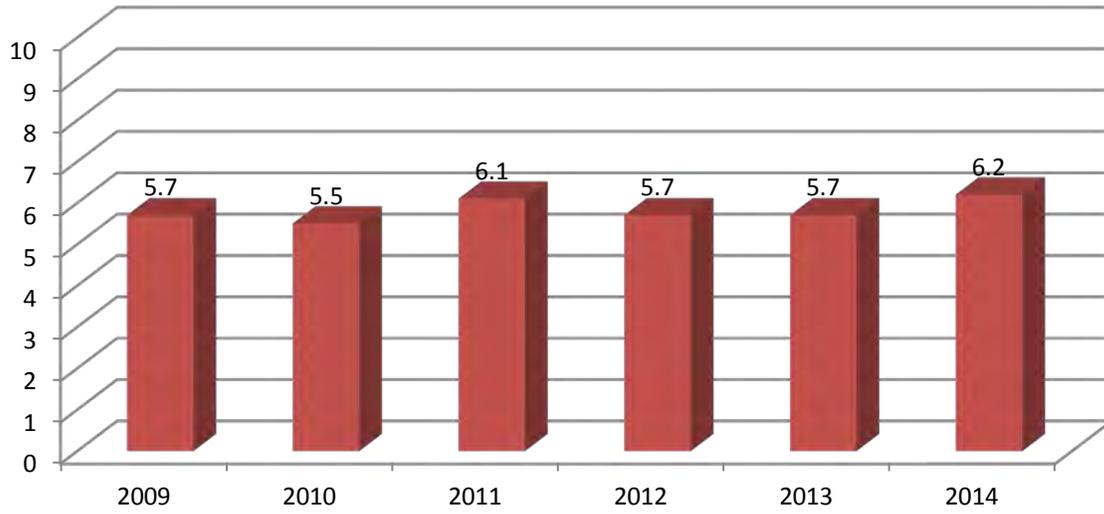
Since collar data from studies being conducted in Colorado and Utah have demonstrated that at least portions of this herd move freely between Wyoming, Colorado, and Utah; attempting to model this herd is not feasible because it violates the fundamental assumption of a closed population. Therefore, there is no population estimate for this herd and classification numbers are probably the best approximation for the number of animals in the herd in years when trend-

counts are not conducted. The most recent year that had an adequate classification sample size for consideration was 2013 when 976 animals were observed in Wyoming with 536 of those elk probably residing in Wyoming year-round, since the other 440 elk classified that year were within one mile of the state line and contained at least nine cows that were collared in other states. The last trend count flown on this herd was conducted in 2010, when 334 elk were counted.

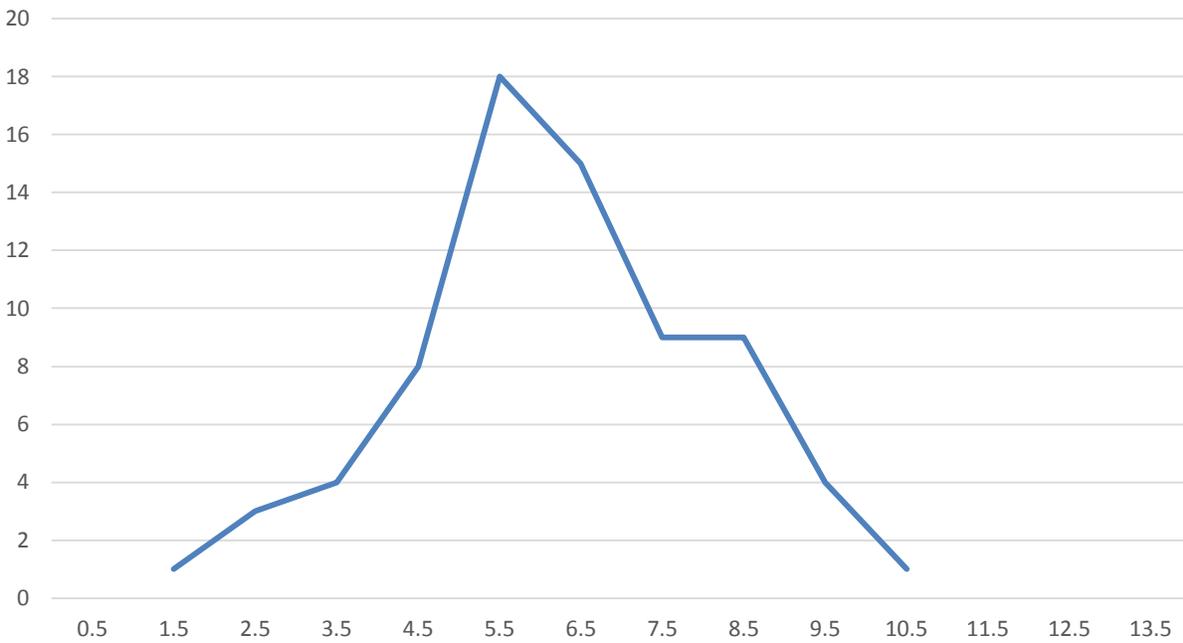
Management Summary

The 2015 season proposal is generally similar to season structures from the past few years. Some changes are being proposed for 2015 in Hunt Areas 30 and 32 however. The first of these proposed changes is the addition of the Type 4 licenses in HA30. This change is being proposed since the alleviation of drought conditions in 2014 meant that more cow elk were seen in HA30 than were seen in 2013, so some cow hunting opportunity can again be allowed in that hunt area. The second proposed modification is to add a Type 9 license in HA32 valid in September for cow elk only. This change is being suggested since the interstate elk are more likely to be present in Wyoming during September than after the rifle seasons start on October 1st. It is hoped that putting archery only cow hunters out in the field in September when elk are still in the state, that some harvest pressure can be applied to the interstate segment of this herd.

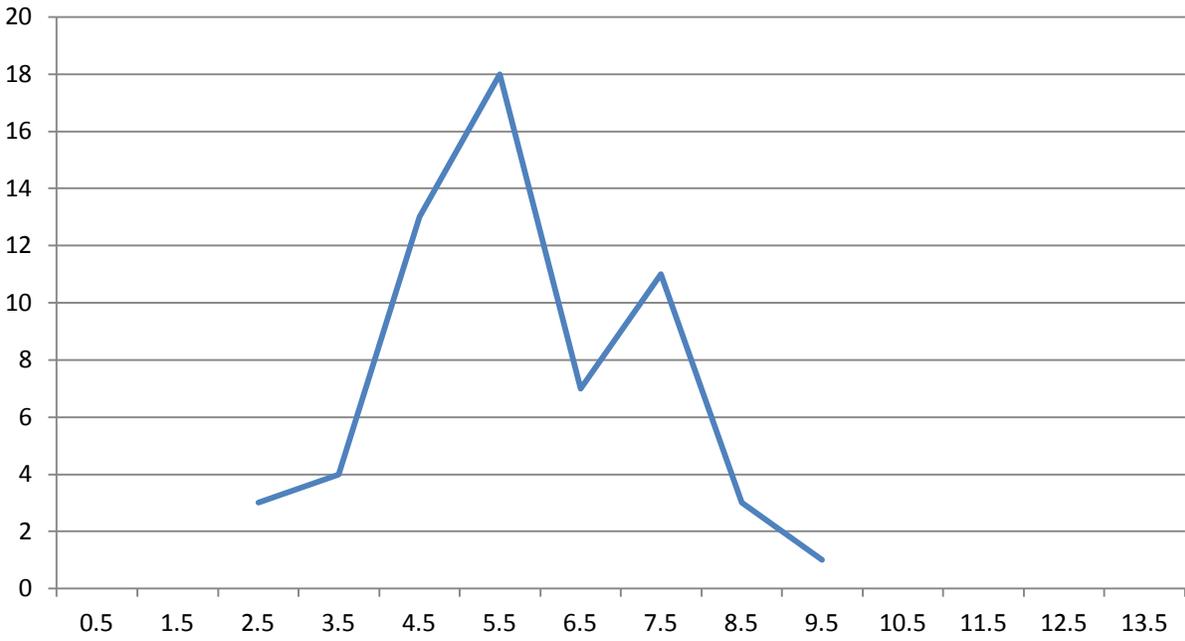
SRS Elk Average Age of Harvested Bulls



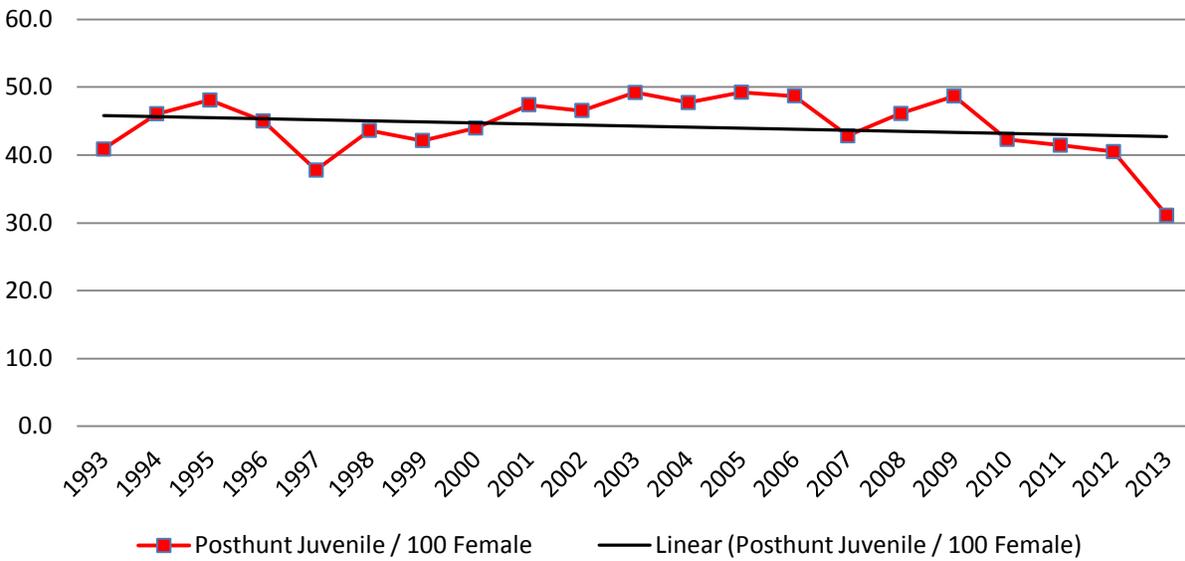
2014 SRS BULL ELK HAVESTED # PER AGE CLASS



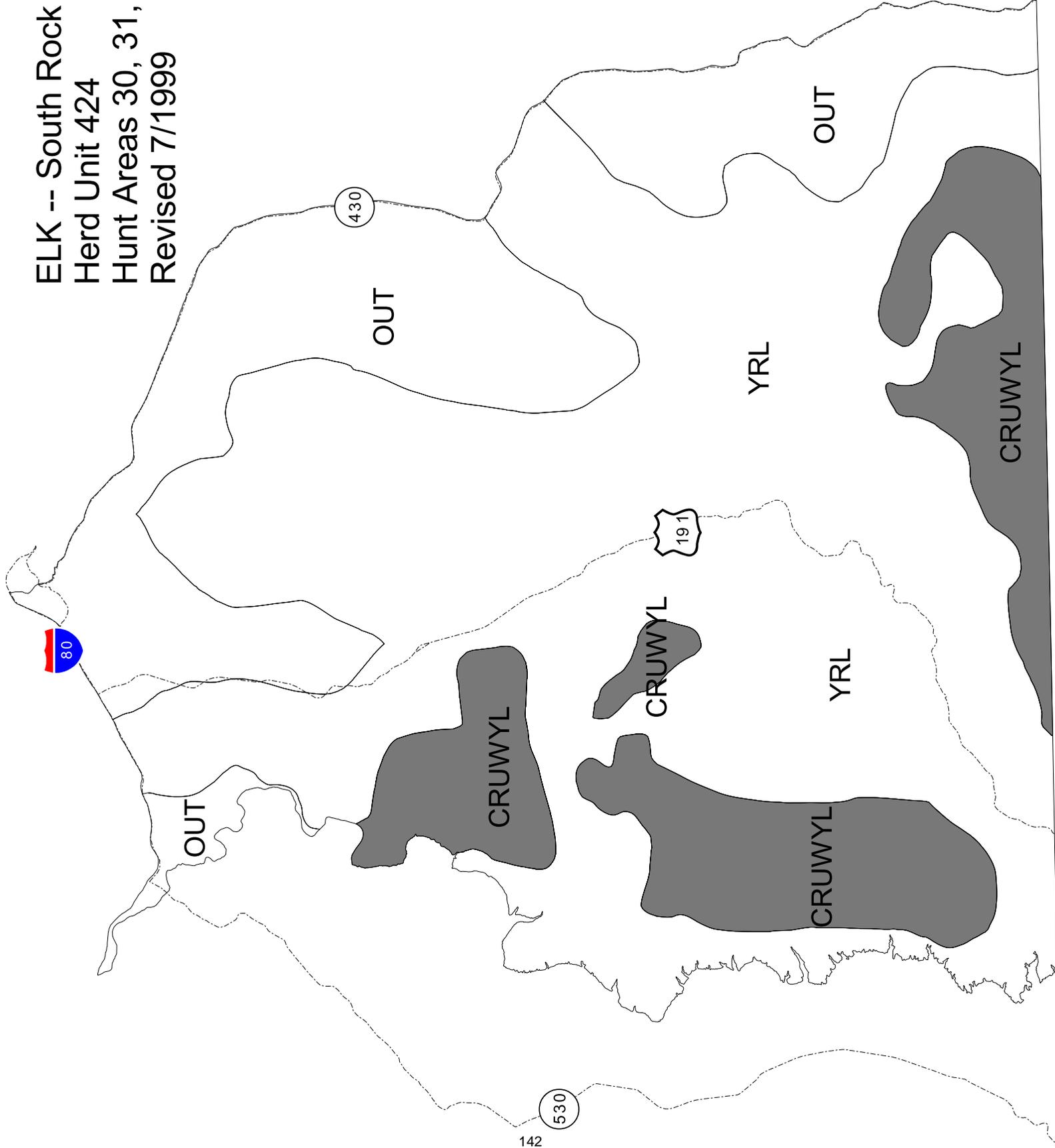
2013 SRS BULL ELK # HARVESTED PER AGE CLASS



Posthunt Juvenile / 100 Female



ELK -- South Rock Springs
Herd Unit 424
Hunt Areas 30, 31, 32
Revised 7/1999



2014 - JCR Evaluation Form

SPECIES: EIK

PERIOD: 6/1/2014 - 5/31/2015

HERD: EL425 - SIERRA MADRE

HUNT AREAS: 13, 15, 21, 108, 130

PREPARED BY: TONY MONG

	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Population:	12,762	8,850	7,800
Harvest:	2,236	2,367	2,200
Hunters:	5,308	6,130	6,000
Hunter Success:	42%	39%	37%
Active Licenses:	5,508	6,363	6,400
Active License Success:	41%	37%	34%
Recreation Days:	34,266	45,688	46,000
Days Per Animal:	15.3	19.3	20.9
Males per 100 Females	26	28	
Juveniles per 100 Females	36	40	

Population Objective (± 20%) : 5000 (4000 - 6000)

Management Strategy: Recreational

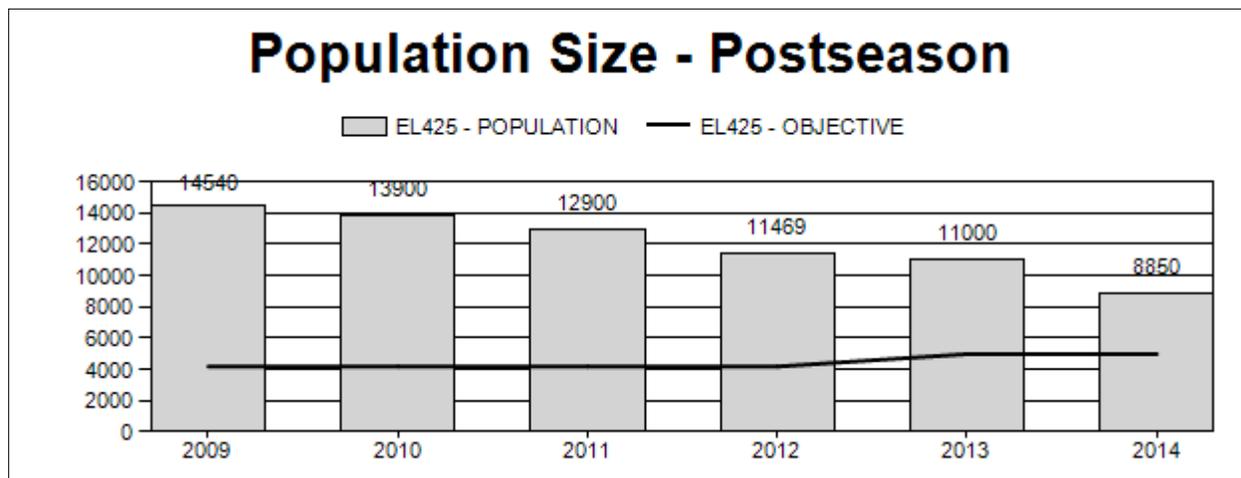
Percent population is above (+) or below (-) objective: 77%

Number of years population has been + or - objective in recent trend: 15

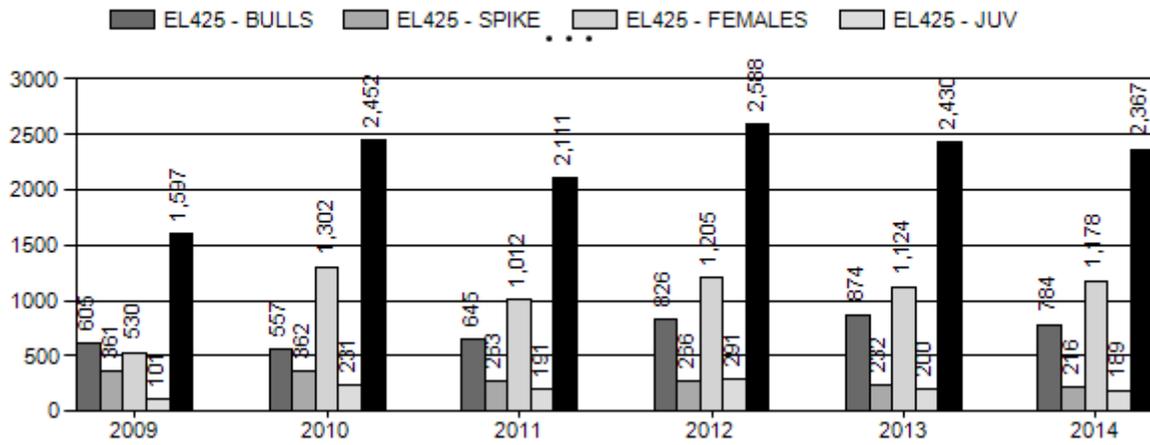
Model Date: 03/02/2014

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

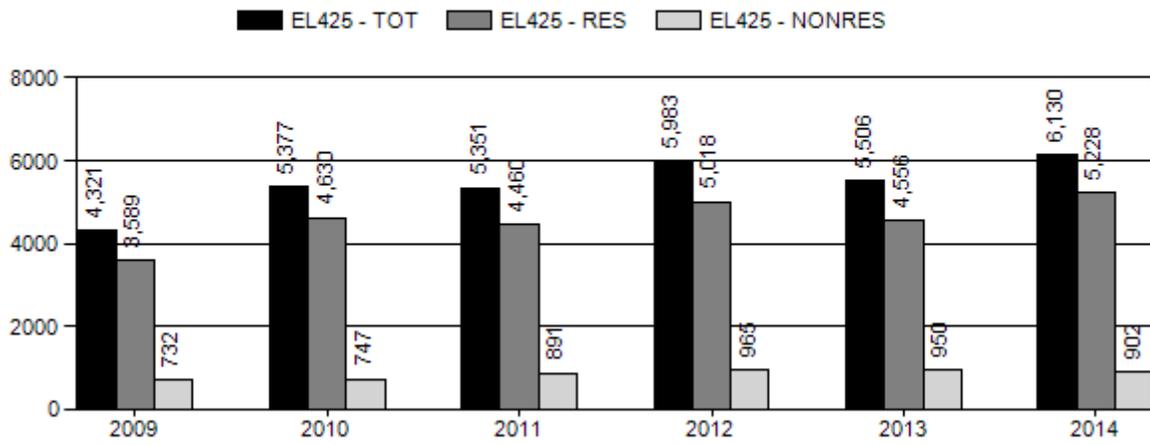
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	18%	15%
Males ≥ 1 year old:	31%	62%
Juveniles (< 1 year old):	7%	9%
Total:	20%	22%
Proposed change in post-season population:	10%	9%



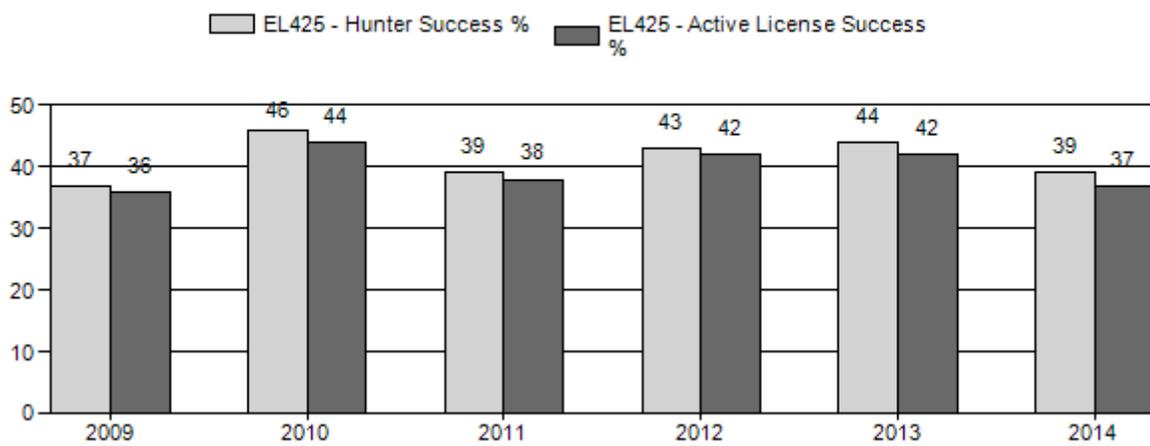
Harvest



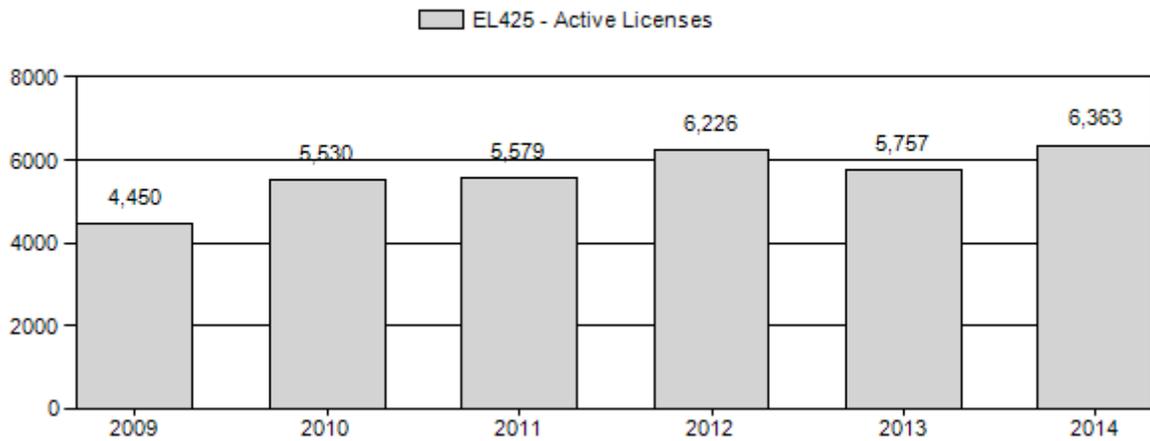
Number of Hunters



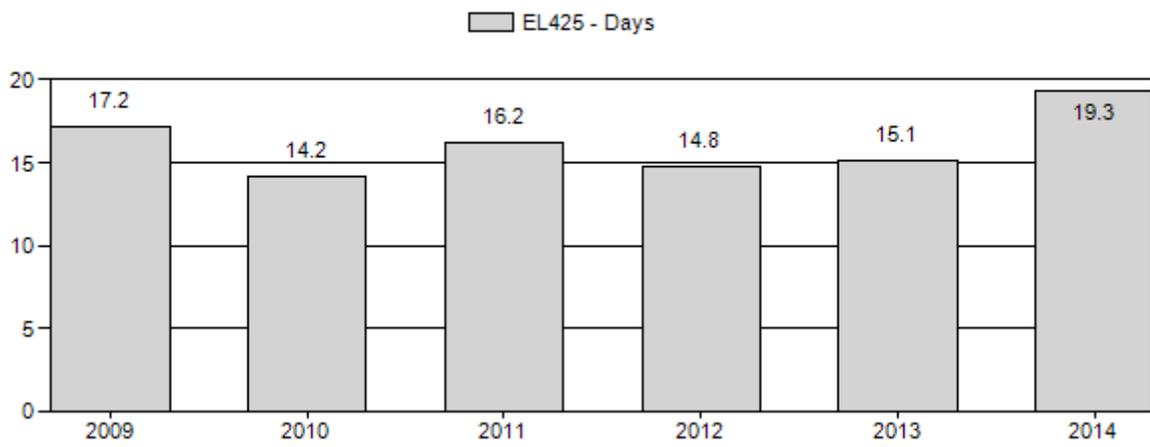
Harvest Success



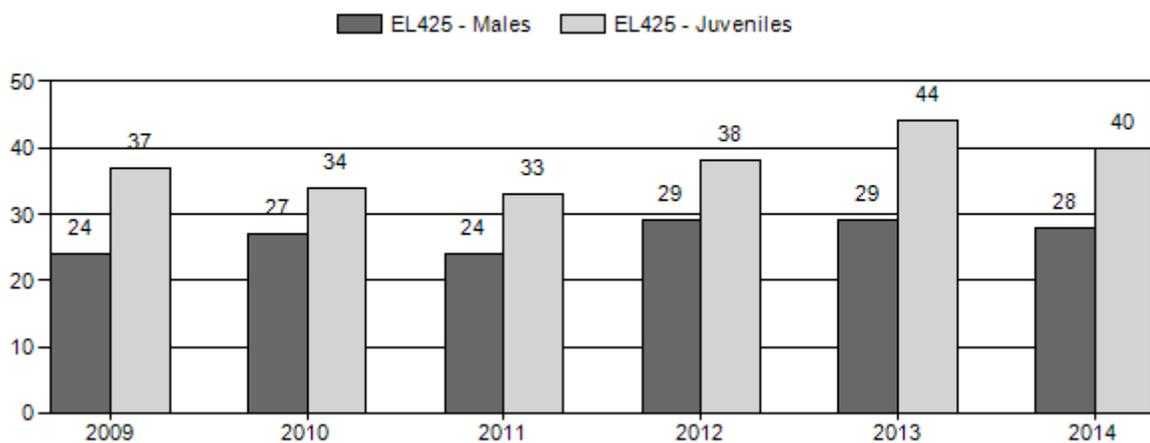
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2015 HUNTING SEASON

SPECIES : **Elk**

HERD UNIT : **Sierra Madre (425)**

HUNT AREAS: **13, 15, 21, 108, 130**

Hunt Area	Type	Date of Seasons		Quota	Licenses	Limitations
		Opens	Closes			
13		Oct. 15	Oct. 31		General	Any elk, spikes excluded
	6	Oct. 15	Nov. 14	100	Limited quota	Cow or calf
15		Oct. 15	Oct. 31		General	Any elk, spikes excluded
	6	Oct. 1	Nov. 14	100	Limited quota	Cow or calf
21		Oct. 11	Oct. 14		General youth	Antlerless elk
		Oct. 15	Oct. 25		General	Any elk
		Oct. 26	Nov. 15		General	Antlerless elk
	6	Oct. 15	Nov. 30	450	Limited quota	Cow or calf
	7	Sept. 1	Dec. 31	50	Limited quota	Cow or calf valid on private land
108	1	Oct. 11	Oct. 31	75	Limited quota	Any elk
	4	Oct. 11	Nov. 30	50	Limited quota	Antlerless elk
	6	Oct. 11	Nov. 30	150	Limited quota	Cow or calf
	7	Dec. 1	Jan. 31	200	Limited quota	Cow or calf
			Dec. 1	Jan. 31		
130		Oct. 1	Oct. 23		General	Any elk
13, 15, 21, 108, 130	Archery	Sep. 1	Sep. 30		General	General license; any elk; Limited quota license refer to Section 3

<i>Hunt Area</i>	<i>Type</i>	<i>Quota change from 2014</i>
<i>13</i>	<i>6</i>	<i>0</i>
<i>15</i>	<i>6</i>	<i>0</i>
<i>21</i>	<i>6</i>	<i>0</i>
	<i>7</i>	<i>-75</i>
<i>108</i>	<i>1</i>	<i>0</i>

	4	-50
	6	+50
	7	-300
Herd Unit Total	1	0
	4	-50
	6	+50
	7	-375
	Total	-375

Management Evaluation

Current Management Objective: 5,000 (2013)

Management Strategy: *Recreational*

2014 postseason Estimate: 9,000

2015 Proposed Postseason Population Estimate: 7,800

The Sierra Madre elk herd (SMEH) is above the objective of 5,000 (set in 2013). Our current management strategy is to decrease herd size but in a slightly more conservative method than the previous 4 years.

Herd Unit Issues

This herd continues to be productive, and has shown limited negative impacts from the increased oil and gas activities in the herd unit, primarily due to locations of those activities. The large Choke Cherry-Sierra Madre wind project may impact SMEH negatively because this project could impact both wintering elk and migrating elk. Another landscape wide impact to the SMEH will be the progression of beetle kill through the Sierra Madre range, but this may in fact result in positive effects for elk and mule deer. Currently, trees have begun to fall at alarming rates, which may lead to disruption in traditional movement patterns. It is far more likely to impact our ability to manage elk through hunter harvest as access to the forest becomes increasingly difficult.

Elk and hunter distribution throughout the herd unit have been, and remain, issues for managers in the three different Game and Fish regions that hold management responsibilities for the herd. The three general hunt areas (Areas 13, 15, and 21) possess major differences in elk and hunter numbers, as well as differences in harvest success, hunter effort, and classification survey results. The two northern areas (Areas 108 and 130) have significant hunter access and elk distribution concerns, impacting their overall contribution to elk harvest and management options in this herd. A continuing challenge is increasing our understanding of elk distribution in each of these hunt areas during the hunting season, and how best to manage hunters to maximize both opportunity and hunting experience in future years.

An emerging issue, that will become more apparent as we approach objective, is maintaining the high level of opportunity for residents and non-residents, and maintaining bull ratios at acceptable levels. Maintaining hunter expectations and bull ratios is likely an impossibility as

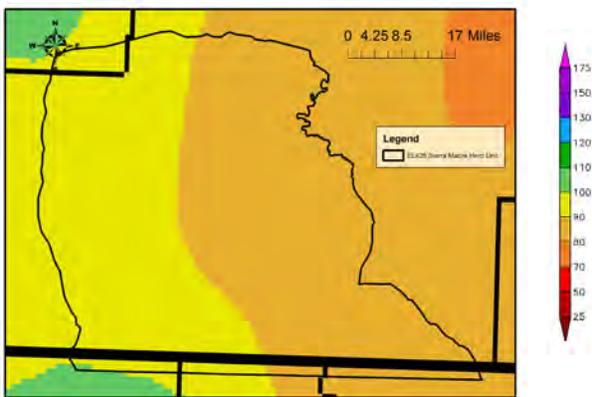
elk numbers are further reduced. Complaints from sportsmen will increase and hunter success statistics will worsen as we draw closer to the current objective.

Weather

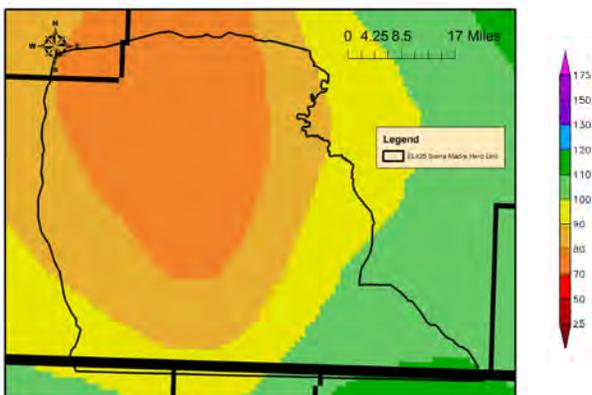
Weather conditions have been quite variable over the last several years. Overall the herd unit has seen higher than normal precipitation from 2013 to 2014 (Figure 1). This increased moisture should equate to better vegetation for 2015. The 2014-15 winter was an extremely mild winter, with low levels of snow fall and higher than average temperatures throughout winter. Although reduced winter moisture was a growing concern, spring moisture levels have more than made up for reduced snowfall. Mild winter temperatures will have a positive impact on insect abundance, as well, and we can expect to see additional insect damage to forested habitats.

Figure 1. A) Percent of normal precipitation for the herd unit from January 2013 to December 2013, B) Percent of normal precipitation for the herd unit from January 2014 to December 2013.

A)



B)



Habitat

Precipitation in 2014 and early 2015 have allowed for greatly improved habitat conditions. Increased precipitation in the early fall months of 2014 induced a late growth opportunity for most vegetation in the herd unit, providing additional forage opportunities and increased animal condition prior to winter. An early warming trend following the 2014-15 winter, coupled with consistent moisture through the spring months, has resulted in an early green up and continued green up through this day. Some areas in the herd unit have received more precipitation than seen in many years, resulting in some of the best habitat conditions observed in many years across the herd unit.

Field Data

In March 2015 we conducted an extensive helicopter survey (24 hours) in the herd unit, collecting classification and distribution data. During those surveys we counted nearly 6,000 elk and coverage of the herd unit was increased when compared to previous survey attempts (Appendix A). Calf ratios, on average, have been higher over the last 3 years, while the population model predicts population levels have decreased during that same period. This is consistent with field observations and hunter comments. Calf ratios are expected to increase as elk numbers are reduced below carrying capacity. Dramatically increased antlerless elk harvest also tends to artificially increase cow:calf ratios, as more cows are harvested.

Historically this herd has had low bull ratios and low bull quality due to heavy hunting pressure on bulls. However, with the recent focus on increased cow harvest and any elk seasons we are seeing an increase in branch antlered bull ratios (10 year average during “antlered elk” general seasons = 9; average following implementation of “any elk” general seasons = 13). This is most likely a combination of artificial inflation due to increased antlerless harvest, and actual increases in the number of bulls that survive the season due to hunter selection of an antlerless elk.

Among the general hunt areas in this herd (which support the vast majority of hunters and harvest), there remains a divergence in data between hunt area 21 (west side of Sierra Madres) and areas 13 and 15 (east side) regarding harvest data, habitat type and condition, and classification survey results. Traditionally, hunt area 21 has contributed ~60% of the total harvest for the herd unit, which drives harvest data for the herd unit. Hunt areas 13 and 15 tend to run 10%-15% lower in harvest success rates when compared to hunt area 21. Additionally, classification data for elk in hunt areas 13 and 15 have shown much lower total bull ratios over the last 3 years (Areas 13 and 15 3-year average = 14; Area 21 3-year average = 29) which has led to the implementation of a spikes excluded season in 2015. This should result in a boost to total bull ratios in future years due to protection of the yearling bull cohort (the largest in the herd unit) in these areas. Removal of this antler point restriction should occur as ratios improve.

Harvest Data

The SMEH continues to receive some of the highest hunter numbers and harvest in Wyoming. Over the past 5 years, 28,000+ hunters have harvested an excess of 12,000 elk in the SMEH. The trend in hunters and harvest has been upward in recent years due to liberalized seasons. The 2014 hunting season resulted in a new high for hunter participation for the herd unit (6,192 hunters), but resulted in a slightly decreased elk harvest. This season was one of the warmest on

record with an opening day high temperature at the Battle Mountain weather station of 67° F, and an average high temperature for the entire general season of 61° F. Warm weather conditions result in poor elk hunting, and coupled with fewer elk, negatively impacted total harvest, hunter success (down from 45% to 40%), and increased hunter effort (from 15 days per elk harvested in 2013, to 19 days in 2014). The decrease in success, increased effort, warm weather conditions, and higher hunter numbers had a negative impact on hunter satisfaction (combined “very satisfied” or “satisfied”) in the herd unit, with satisfaction decreasing from 72% in 2013 to 65% in 2014. We can expect hunter satisfaction to continue to decline as elk numbers are reduced to reach the herd unit objective.

Population

The current post-season model estimate for the SMEH indicates we remain above the current objective of 5,000, at around 9,000 elk, with a downward trend since 2009. The TSF, CA, MSC model was selected due to a lower AICc value, indicating best model fit. Additionally, this model tracks observed bull ratios better than other model options. An independent estimate of the population was created from a sightability flight conducted in March 2013 (WGFD JCR 2012), but results of this trial survey are of limited value due to flight budget shortfalls, elk distribution issues, and the resulting exceptionally wide confidence intervals. The spreadsheet estimate is higher than the estimate from the sightability flights in 2013, but again the results should be viewed with caution. We believe the current model can be considered “good” based on field observations, 2015 classification flights, and harvest statistics, and presents a reasonable estimate of population size and trend.

Management Summary

Despite the discrepancies between model estimates, total number of elk classified and local personnel sense of population size, all indications are that elk numbers have decreased in this herd unit, but remain above the current objective. Overall, the 2015 season is designed to continue to reduce elk numbers toward the established objective.

INPUT	
Species:	Elk
Biologist:	Tony Mong
Herd Unit & No.:	EL425 Sierra Madre
Model date:	03/03/15

MODELS SUMMARY		Fit	Relative AICc	Notes
CF,CA	Constant Juvenile & Adult Survival	249	258	
SCF,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	210	219	<input type="checkbox"/> CF,CA Model <input type="checkbox"/> SCF,SCA Mo
TSF,CA	Time-Specific Juvenile & Constant Adult Survival	406	492	<input type="checkbox"/> TSJ,CA Model
TSF,CA,MSC	Time-Specific Juv, Constant Adult Survival, Male survival coefficient	51	185	<input type="checkbox"/> TSJ,CA,MSC Model

Year	Posthunt Population Est.		Trend Count	Population Estimates from Top Model				Objective				
	Field Est	Field SE		Predicted Prehunt Population Juveniles	Total	Females	Predicted Posthunt Population Total Males		Total			
1993				2883	2087	7032	12002	2775	1220	6406	10402	4200
1994				3109	2475	7394	12978	2979	1135	6838	10952	4200
1995				3442	1970	7378	12790	3343	1071	6835	11249	4200
1996				3298	2024	7490	12812	3188	1525	6829	11542	4200
1997				2937	2402	7433	12772	2831	1237	6705	10773	4200
1998				3057	2476	7662	13196	2987	1578	6883	11448	4200
1999				3160	2665	7697	13522	2927	1506	6817	11249	4200
2000				3006	2554	7590	13150	2832	1517	6561	10909	4200
2001				3001	2650	7433	13084	2827	1356	6597	10780	4200
2002				3191	2629	7599	13420	2937	1514	6553	11004	4200
2003				3167	2831	7610	13607	3017	1600	6743	11360	4200
2004				3131	2890	7768	13789	3051	1520	7163	11733	4200
2005				3622	2890	8242	14754	3471	1794	7457	12722	4200
2006				3443	2904	8276	14623	3230	1825	7523	12579	4200
2007				3251	3200	8603	15054	3119	2038	7952	13109	4200
2008				2811	2869	8477	14156	2721	1959	7926	12605	4200
2009				3190	3150	8809	15149	3079	2087	8226	13392	4200
2010				2901	3307	9128	15337	2644	2323	7739	12706	4200
2011				2625	3252	8389	14266	2415	2254	7276	11944	4200
2012	7900	1225		2829	3284	8047	14160	2506	2049	6679	11234	4200
2013				2960	3133	7525	13618	2735	1895	6264	10893	5000
2014				2149	2640	6783	11572	1932	1485	5433	8850	5000
2015				2043	2326	6070	10439	1826	896	5135	7857	5000

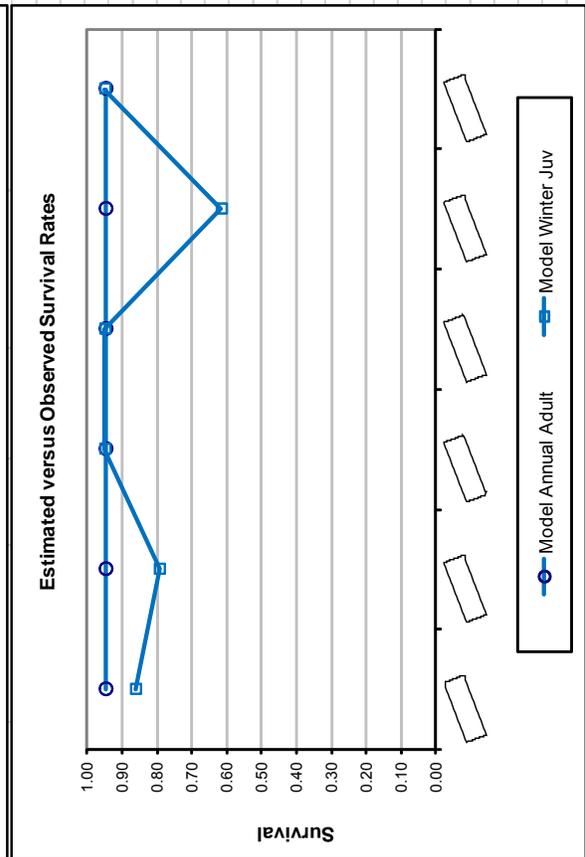
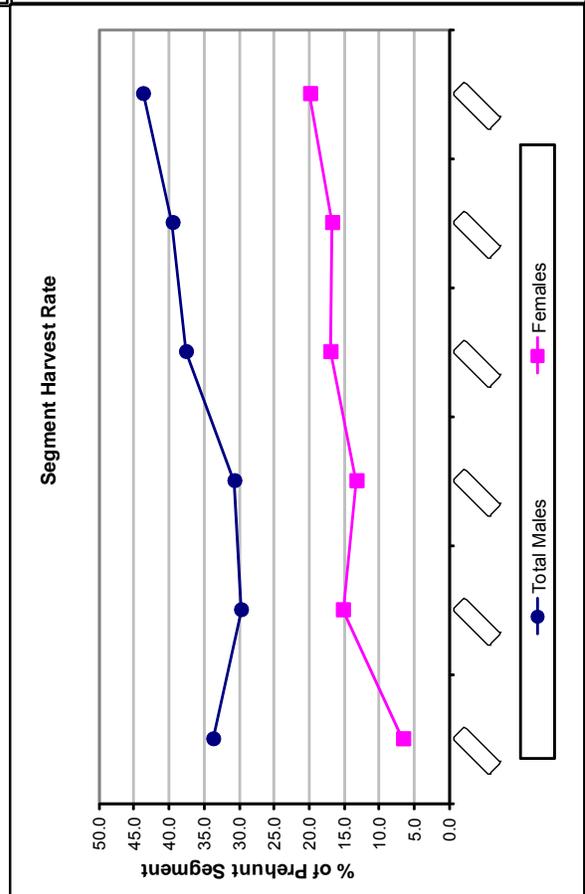
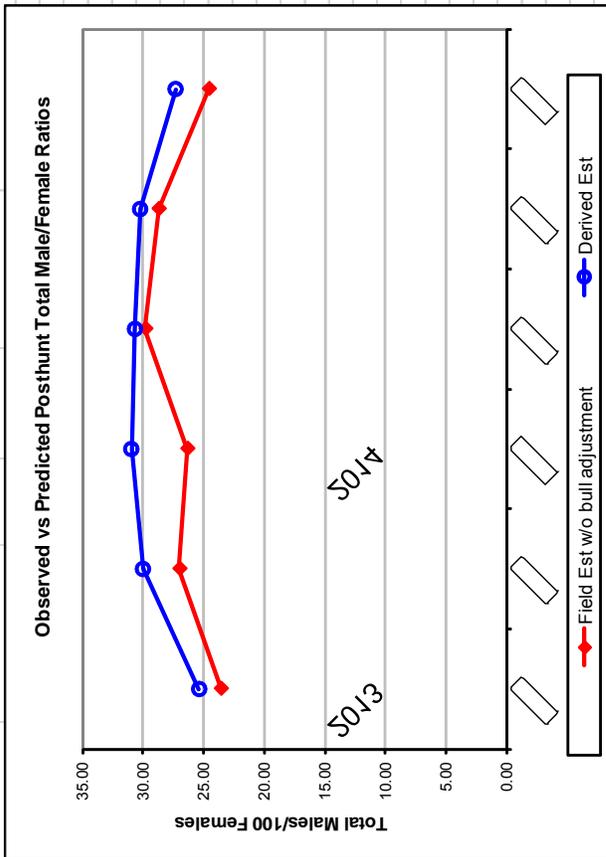
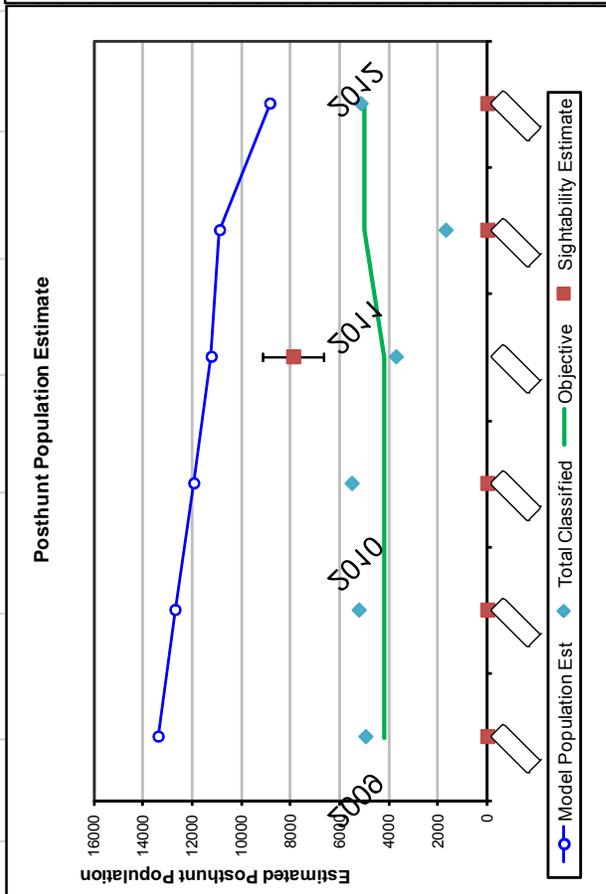
Survival and Initial Population Estimates

Year	Winter Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1993	0.95		0.95	
1994	0.60		0.95	
1995	0.60		0.95	
1996	0.60		0.95	
1997	0.92		0.95	
1998	0.78		0.95	
1999	0.77		0.95	
2000	0.86		0.95	
2001	0.95		0.95	
2002	0.95		0.95	
2003	0.91		0.95	
2004	0.95		0.95	
2005	0.69		0.95	
2006	0.91		0.95	
2007	0.60		0.95	
2008	0.95		0.95	
2009	0.86		0.95	
2010	0.79		0.95	
2011	0.95		0.95	
2012	0.95		0.95	
2013	0.62		0.95	
2014	0.95		0.95	
2015	0.60		0.95	

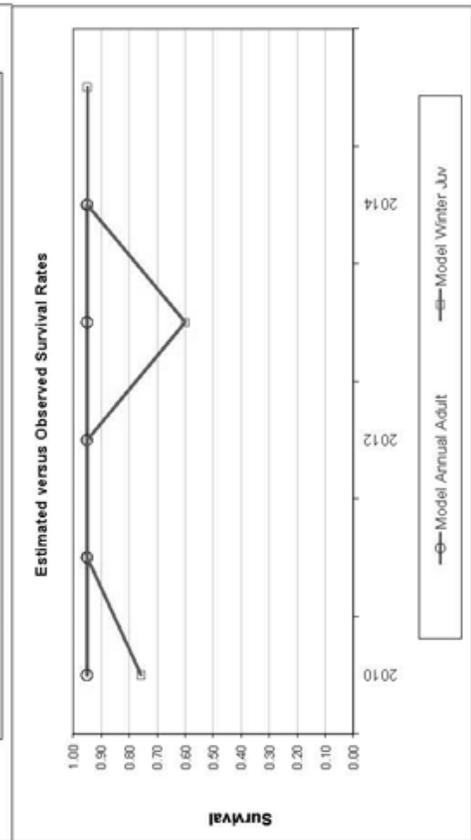
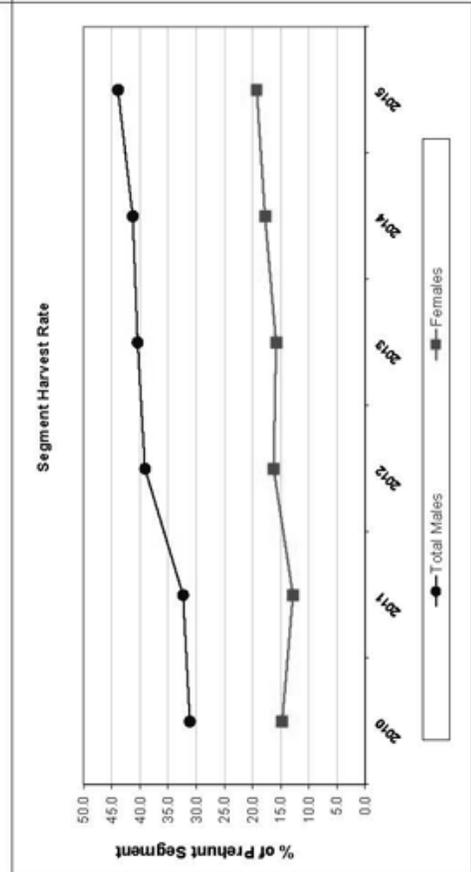
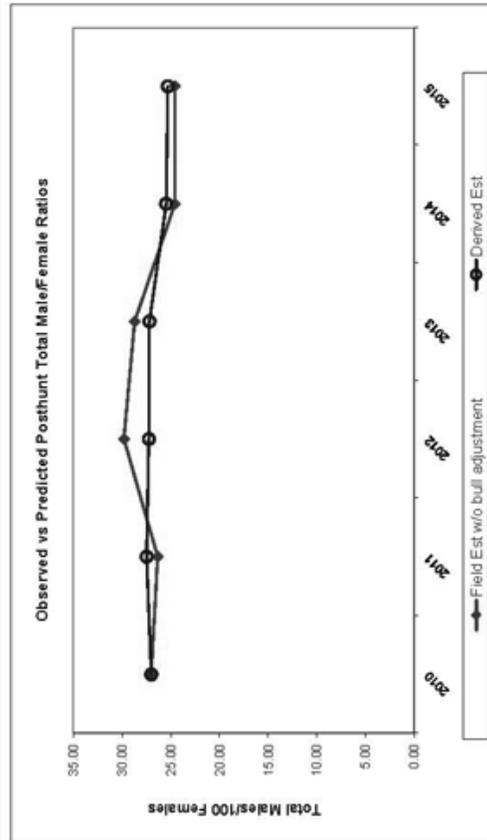
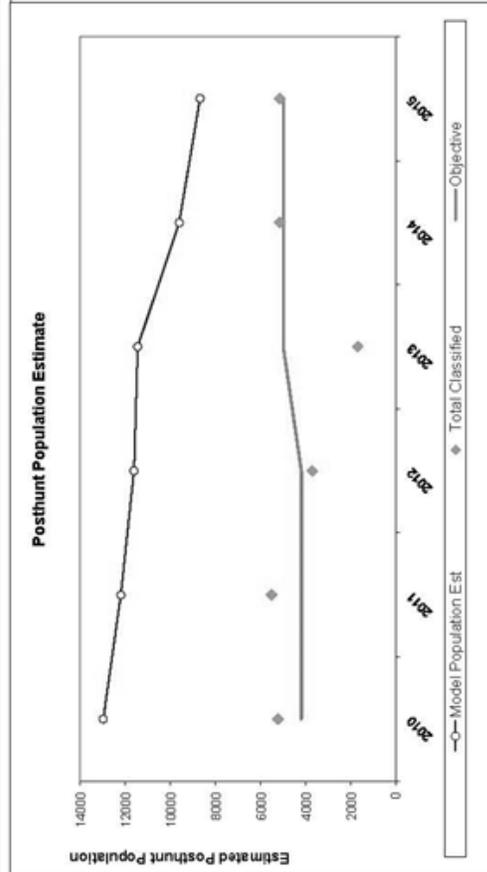
Parameters:	Optim cells
Male Survival Coefficient	1,000
Adult Survival =	0.948
Initial Total Male Pop/10,000 =	0.122
Initial Female Pop/10,000 =	0.641

MODEL ASSUMPTIONS
Sex Ratio (% Males) = 50%
Wounding Loss (total males) = 10%
Wounding Loss (females) = 10%
Wounding Loss (juveniles) = 10%
Total Bulls Adjustment Factor 90%

FIGURES

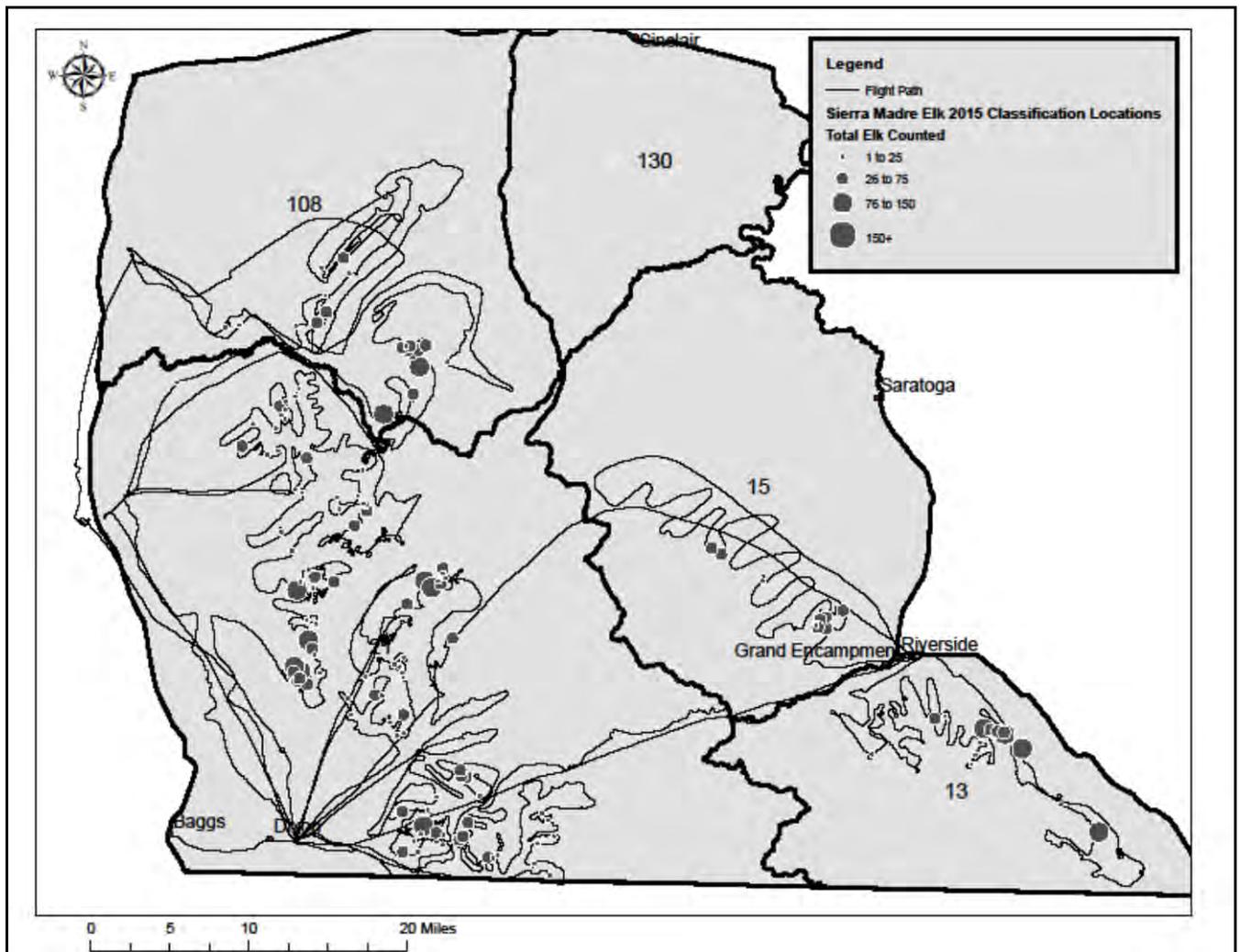


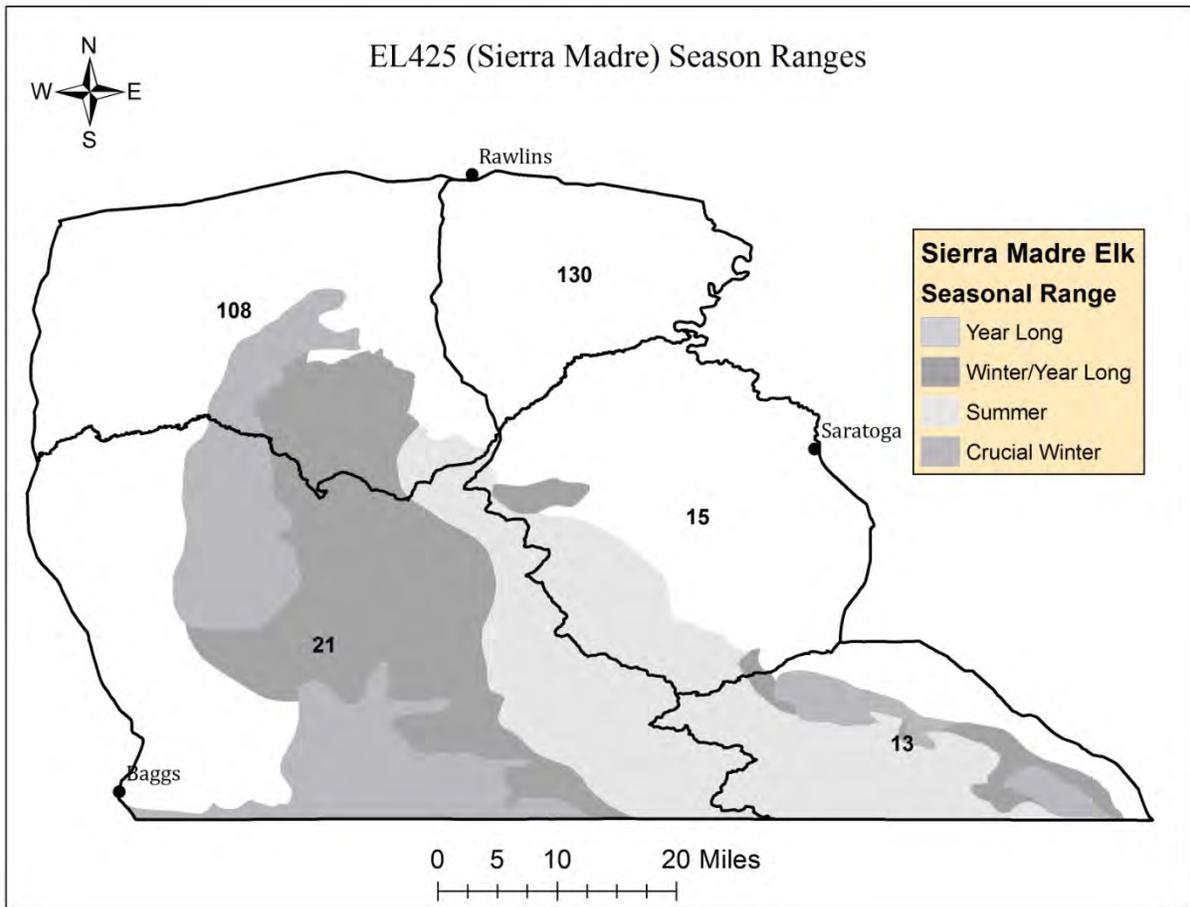
FIGURES



Comments:

Appendix A. 2015 Sierra Madre elk herd classification flight path and classification locations.





2014 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2014 - 5/31/2015

HERD: EL426 - STEAMBOAT

HUNT AREAS: 100

PREPARED BY: PATRICK BURKE

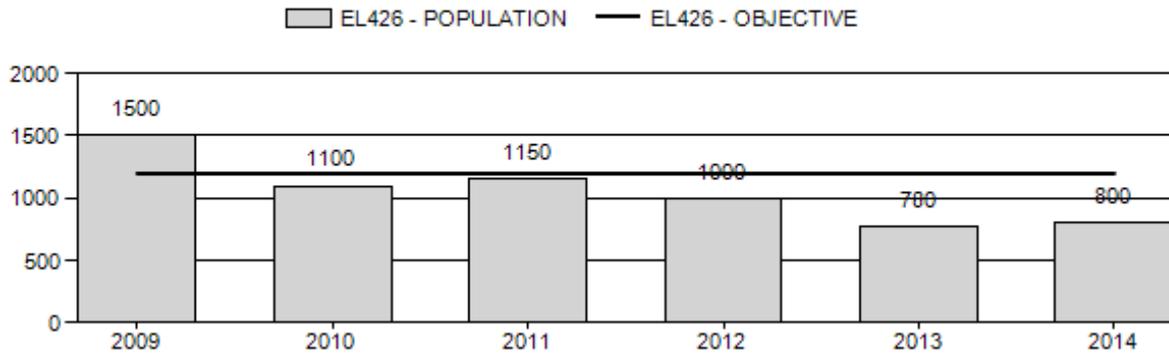
	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Population:	1,106	800	800
Harvest:	328	211	140
Hunters:	398	245	150
Hunter Success:	82%	86%	93%
Active Licenses:	403	249	150
Active License Success:	81%	85%	93%
Recreation Days:	1,709	1,055	1,000
Days Per Animal:	5.2	5.0	7.1
Males per 100 Females	58	0	
Juveniles per 100 Females	40	0	

Population Objective ($\pm 20\%$) :	1200 (960 - 1440)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	-33.3%
Number of years population has been + or - objective in recent trend:	4
Model Date:	02/11/2015

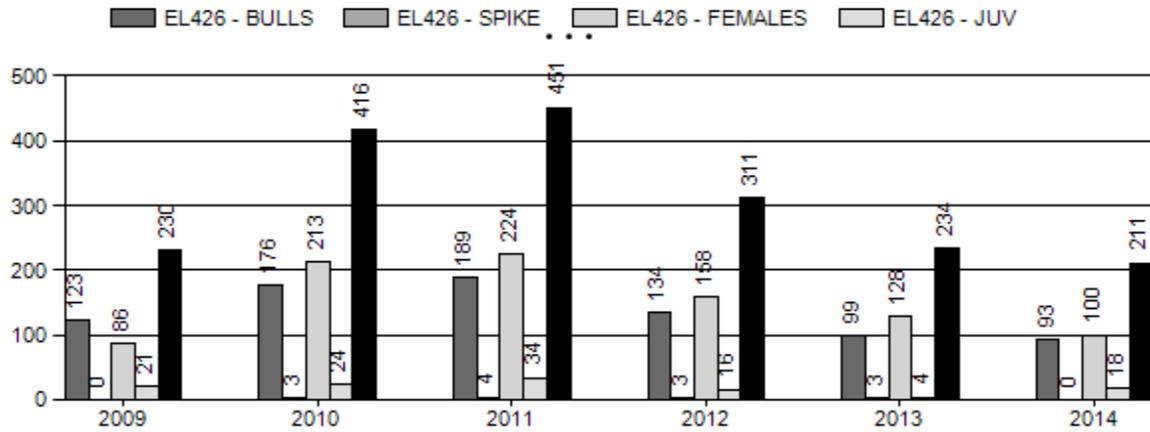
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	11%	11%
Males ≥ 1 year old:	41%	41%
Juveniles (< 1 year old):	0%	0%
Total:	17%	17%
Proposed change in post-season population:	0%	0%

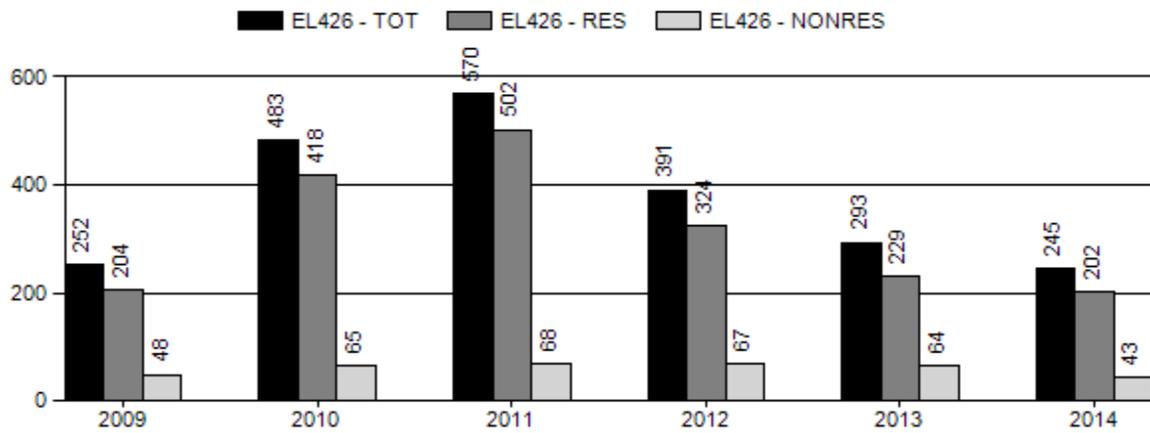
Population Size - Postseason



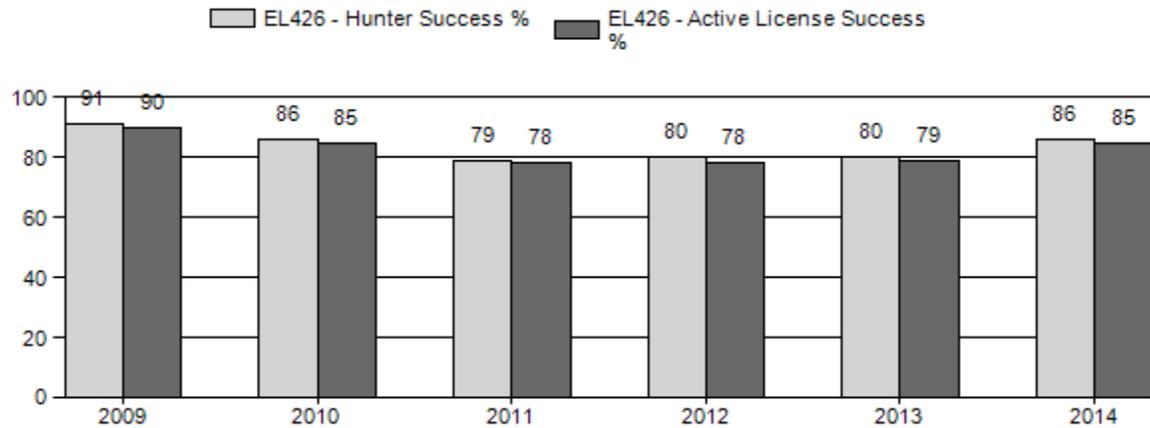
Harvest



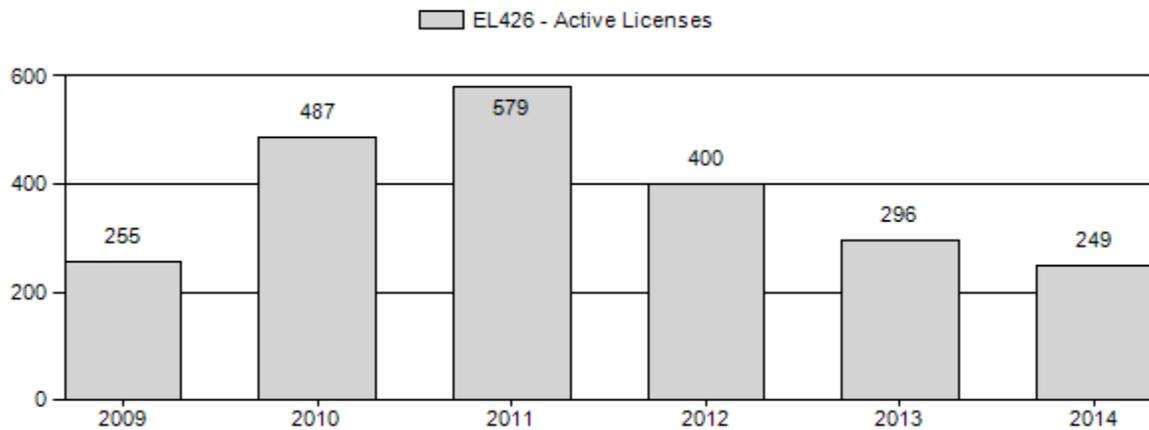
Number of Hunters



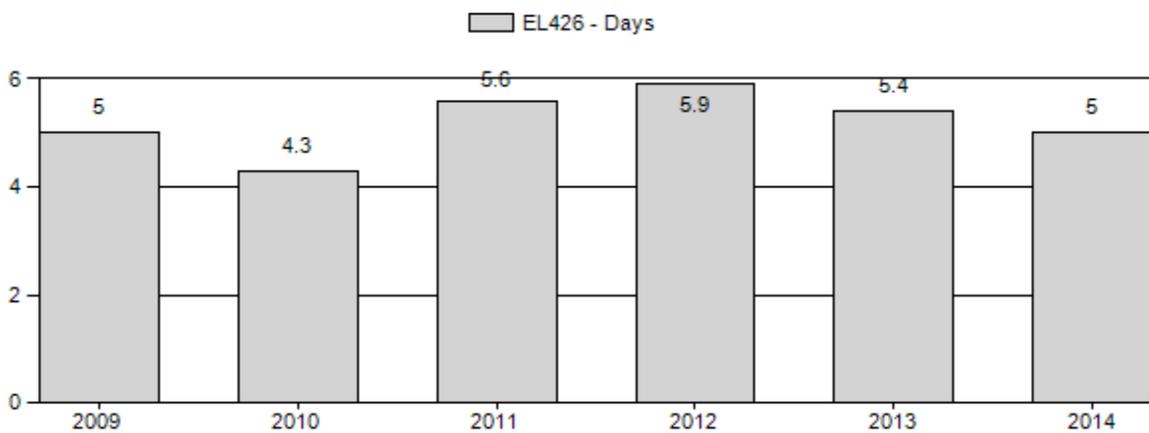
Harvest Success



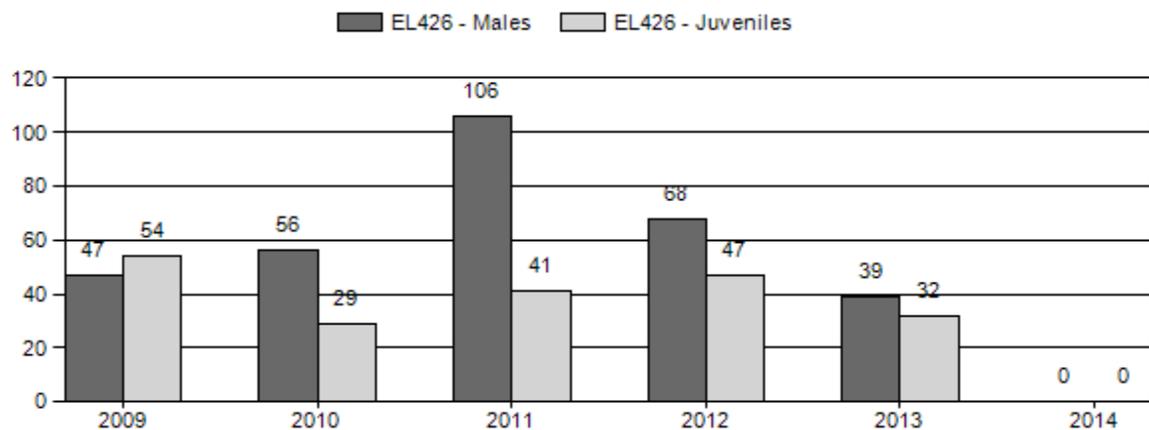
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2009 - 2014 Postseason Classification Summary

for Elk Herd EL426 - STEAMBOAT

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	CIs Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Yng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2009	1,500	78	158	236	23%	504	50%	274	27%	1,014	519	15	31	47	± 0	54	± 0	37
2010	1,100	168	243	411	30%	739	54%	217	16%	1,367	657	23	33	56	± 0	29	± 0	19
2011	1,150	45	131	176	43%	166	40%	68	17%	410	505	27	79	106	± 12	41	± 6	20
2012	1,000	102	171	273	32%	403	47%	189	22%	865	485	25	42	68	± 3	47	± 2	28
2013	780	34	76	110	23%	280	58%	90	19%	480	432	12	27	39	± 4	32	± 3	23
2014	800	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0

**2015 HUNTING SEASONS
STEAMBOAT ELK HERD (EL426)**

Hunt Area	Type	SEASON DATES		Quota	Limitations
		Opens	Closes		
100	1	Oct. 15	Oct. 31	75	Limited quota; antlered elk
	4	Oct. 15	Oct. 31	25	Limited quota; antlerless elk
	7	Oct. 1	Oct. 31	50	Limited quota; cow or calf elk valid in that portion of Area 100 east of U.S. Highway 191, south of Sweetwater County Road 17 and Sweetwater County Road 15 and west of Sweetwater County Road 19
Archery		Sept. 1	Sept. 30		Refer to license type and limitations in Section 3.

Hunt Area	Type	Quota change from 2014
100	1	-25
	4	-25
	6	-50
Herd Unit Total	1	-25
	4	-25
	6	-50

Management Evaluation

Current Management Objective: 1,200

Management Strategy: Special

2014 Postseason Population Estimate: ~800

2015 Proposed Postseason Population Estimate: ~800

The population objective for the Steamboat elk herd of 1,200 elk post-season was set in 2002 and was reviewed in 2014, when no changes were made. This special management herd has been above objective for much of its history with the population probably peaking around the year 2000. Since then increased harvest levels and decreased calf ratios have caused the population to decline to the point that estimates for the last several years have placed this herd 33% below its population objective.

Herd Unit Issues

The 2014 post-season modeled population estimate for the Steamboat elk herd is approximately 800 elk with a declining trend. During the past several years, post-season classifications have indicated that a large proportion of the post-season bull population is made up of yearling bulls. Some years, the yearling bull segment of the population makes up as much as 40% of the total bull population. This has caused some concern about how much harvest pressure is being applied to the older age-class bulls of this herd in the name of bringing down total bull to cow ratios. This continued high proportion of yearlings in the post-hunt population can probably be explained by the open nature of the area this herd occupies and a preference for harvesting larger branch antlered bulls by the hunting public. This can be evidenced by the fact that no spike bulls were harvested in this herd unit in 2014. If this trend is allowed to continue, the size class of harvested bulls will be significantly reduced to a level that the hunting public will find simply unacceptable.

Weather

The summers of 2012 and 2013 were extremely dry with little summer precipitation, especially the summer of 2012. The summer of 2014 saw substantially better moisture in most of Wyoming, however the portion of southwest Wyoming inhabited by the Steamboat elk herd did not receive as much increased moisture as the rest of the state, although it was better than what was received during the previous two years. Three summers in a row of less than desired precipitation certainly had a negative impact on the vegetation in the area, but due to the hardy nature of elk and the relatively low densities of elk in the herd unit, the drought conditions will probably not have any population level impacts on this herd. So far the 2014-2015 winter has been very mild with little precipitation. Hopefully, 2015 will see some spring moisture that will lead to better plant growth than has been seen in recent years.

Habitat

No habitat transects targeting elk habitat were conducted within the Steamboat herd unit since the Green River Region lacks a terrestrial habitat biologist. However, the last several summers have seen limited precipitation during the growing season which probably resulted in limited plant growth. The drought conditions during the 2012 and 2013 summer and to a lesser extent 2014, while not likely to have any population level impacts on the Steamboat elk herd, will certainly have negative consequences for habitat conditions since little plant growth has occurred in recent years.

Field Data

At the time of this proposal, there are no post-season classification data for the Steamboat elk herd. Three year averages of population statistics were used to create the 2014 model. Those average values are 40 calves per 100 cows and 51 total bulls per 100 cows.

Harvest Data

Harvest statistics for the Steamboat herd from the 2014 hunting season are generally in line with normal values for this herd. The overall harvest success rate for the herd was 88% and the days per animal harvested was 5 days per animal harvested. Both statistics are in the normal range for this herd. Due to the open nature of the country that this herd inhabits, harvest success rates and days per harvest will certainly always remain fairly constant for this herd. Since this herd lives only in open sagebrush habitat largely on public land, this population exhibits harvest statistics more similar to a pronghorn population than a typical Wyoming elk herd.

During the 2014 hunting season, Type 1 license holders in HA100 enjoyed a 92% success rate harvesting a total of 95 adult bulls and no spike bulls. The Type 4 license holders had 81% success, harvesting 36 cows and 10 calves, while the Type 6 & 7 license holders had 78% and 94% success rates respectively. The total number of elk harvested in the herd unit in 2014 was 217 elk - 95 adult bulls, 0 spikes, 104 cows, and 18 calves.

Because of the special management status of the Steamboat elk herd, hunters who draw a Type 1 license are asked to voluntarily submit tooth samples from harvested bulls for cementum annuli analysis. Based on the 34 bull elk tooth samples submitted from the 2014 hunting season, the average age of harvested bulls was 5.9 years old. It should be noted that is a fairly small sample size of lab-aged teeth and therefore could be biased, which might explain the unexpectedly high average age of harvest bulls reported from the 2014 season. The 2014 average age of 5.9 compares to 5.7 years old in 2013, 4.9 years old in 2012, and 5.4 years old in 2011. Based on the teeth that were submitted for ageing, the oldest bull harvested in 2014 was one 9.5 year old bull. This compares with 10.5 in 2013, 7.5 in 2012, 9.5 in 2011, 10.5 in 2010, 12.5 in 2009, and 13.5 in 2008. This general decline in the oldest age class harvested can probably be attributed to an overall smaller population and to the increased bull harvest rates of the last several years. The model for this herd is estimating that over 40% of the male segment of the population is being harvested annually, with most of that harvest being directed towards the older aged males. One 13.5 year old cow harvested on a Type 7 license was also submitted for tooth age analysis.

Population

The 2014 post-season population estimate for this herd is a little over 800 elk with a slightly declining trend. This estimate is based on average herd unit statistics however for seven of the 22 years in the model and could change slightly if better data become available in the future. The season proposal for 2015 should slow this decline to an almost stable population, but further reductions in harvest will be required to allow this herd to increase back towards its population objective.

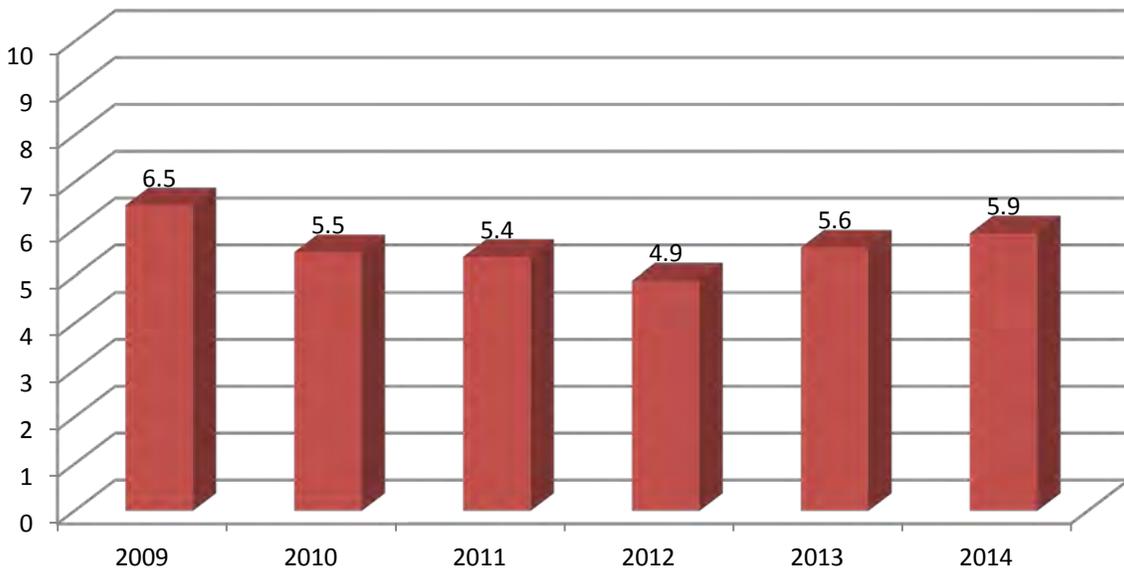
The population model for this herd tracks moderately well with observed data. The general post-season population estimate trend however does tracks reasonably well with trend count numbers with the exception of the outlier post-hunt population size point observed during a trend count flown in the severe winter of 2010. The model does have a hard time accommodating the high bull ratios that are sometimes observed during difficult data collection years in this population.

Management Summary

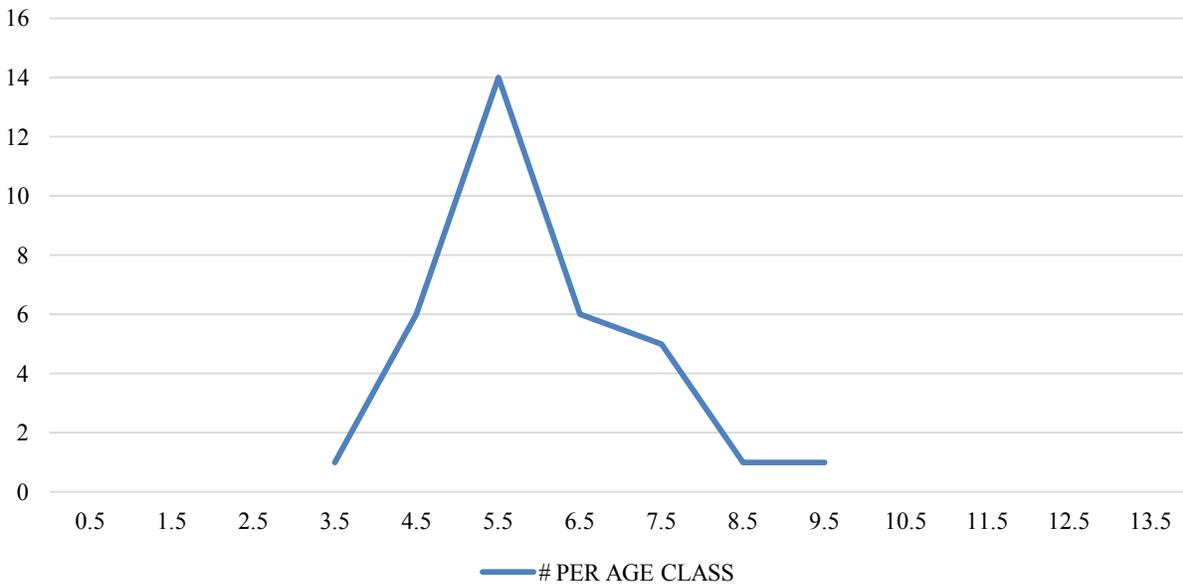
The 2015 season proposal includes decreases in the Type 1 and Type 4 licenses and a removal of the Type 6 license type. The decrease in the Type 1 and Type 4 licenses is being proposed because the current population model is estimating this herd as being under its population objective and the reduction is needed to stop the decline and stabilize the population. The removal of the Type 6 licenses is being proposed because of some hunt area boundary changes that will take effect in 2015. The Type 6 licenses were originally created to direct some cow harvest to the northeast corner of HA100 to make sure that elk from HA24 & HA25 could not use HA100 as a refuge from hunters in those areas. But starting in 2015, the portion of HA100 that was covered by the Type 6 licenses will be moved into areas 24 & 25, so the license type is no longer necessary.

It is anticipated that the proposed season for 2015 will result in the harvest of approximately 70 bulls, 50 cows and 10 sub-adult elk. The proposed seasons will also result in a projected 2015 post-hunt population of roughly 800 elk, which is still 33% below its population objective of 1,200 elk post-season.

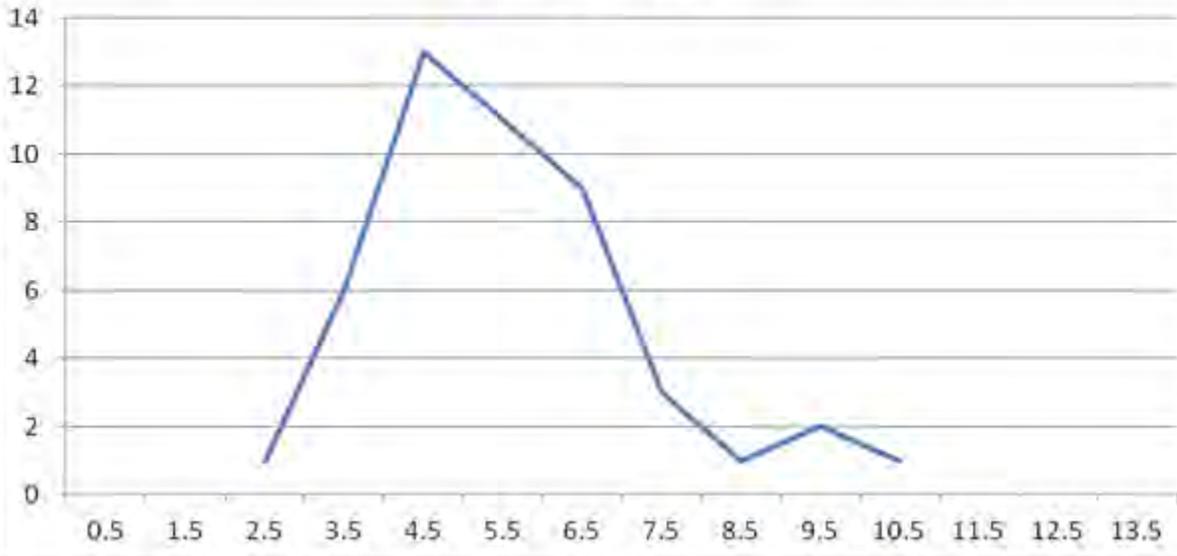
Steamboat Elk Average Age of Harvested Bulls

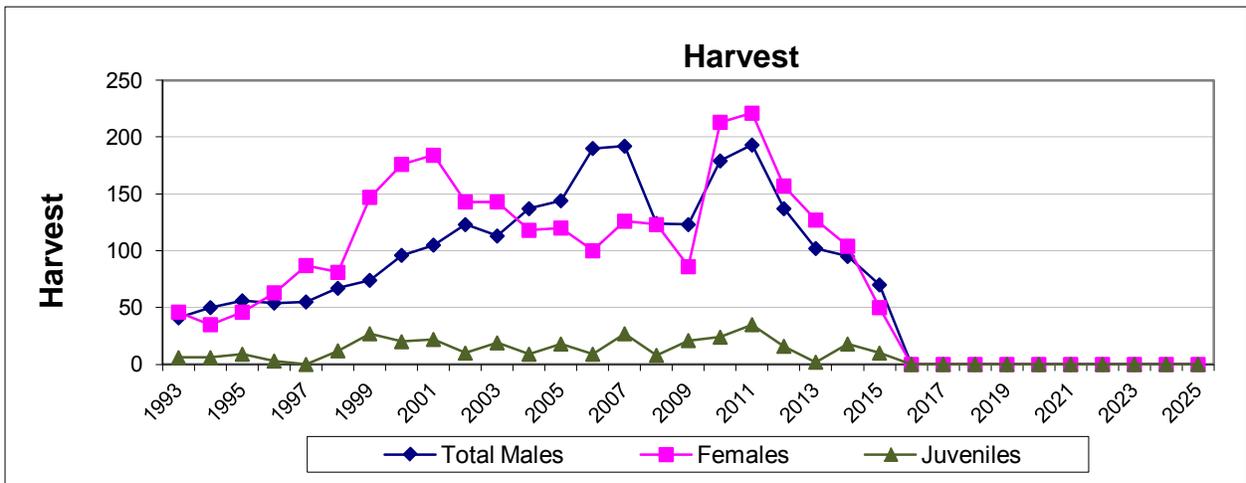
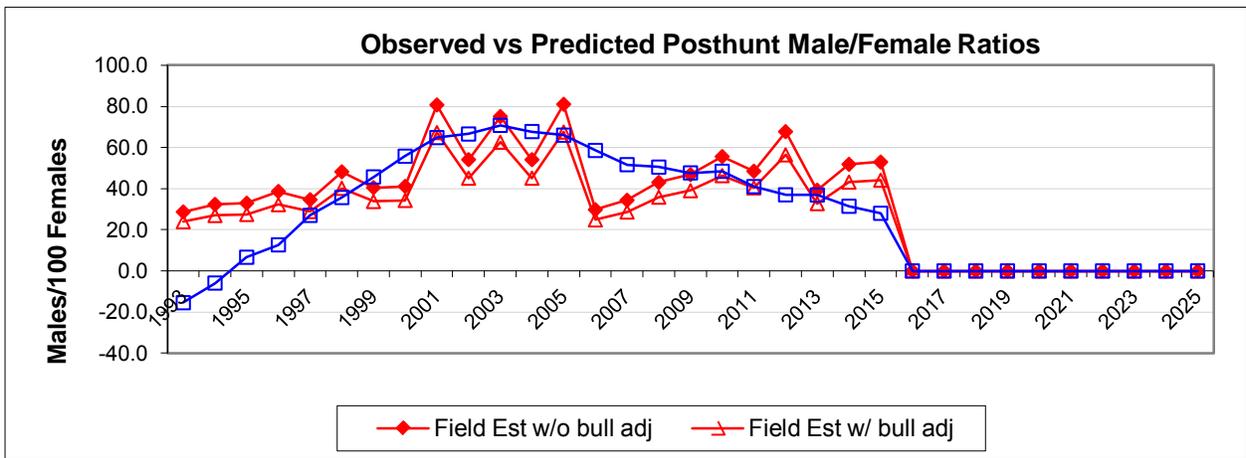
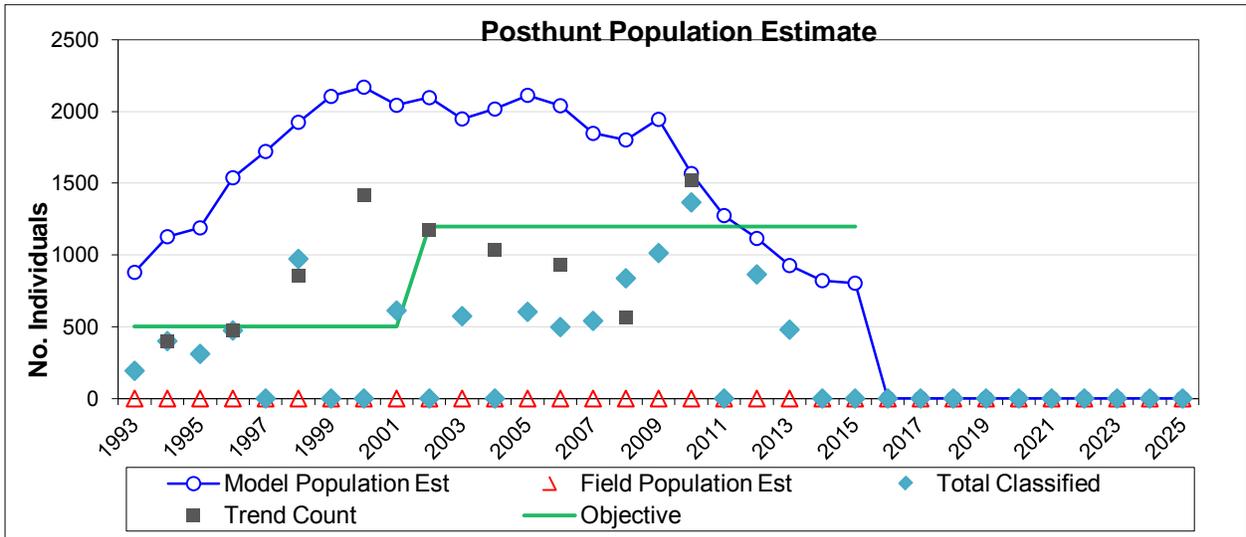


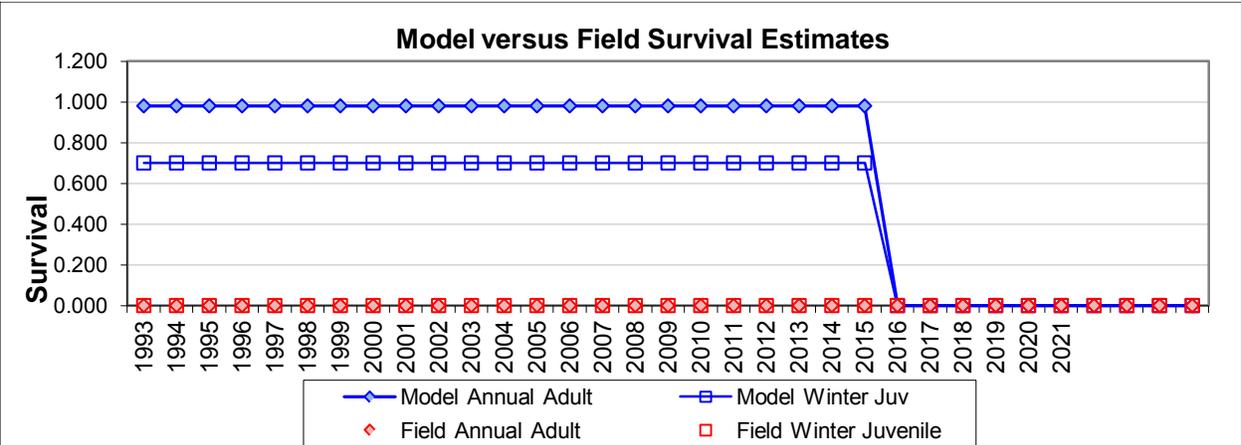
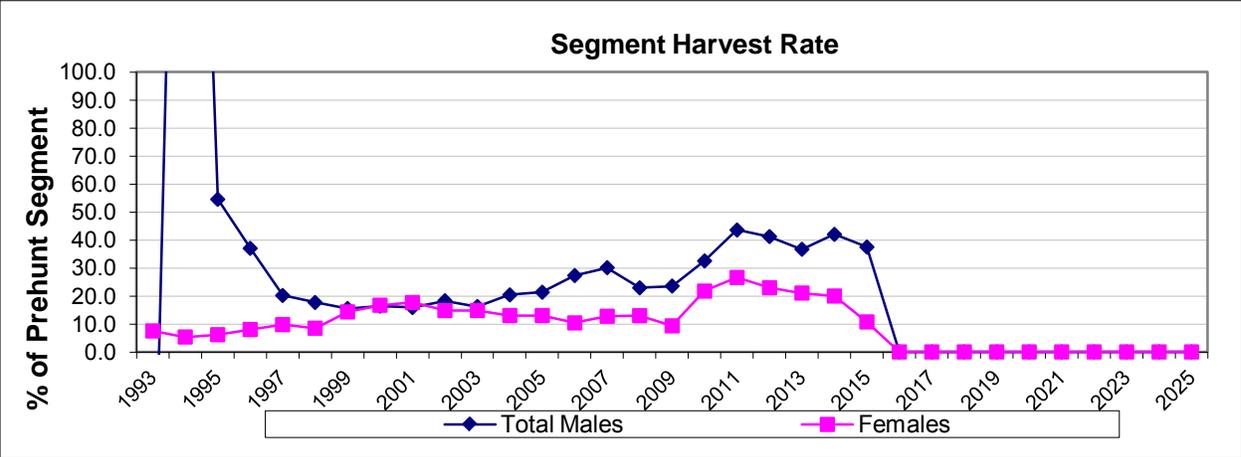
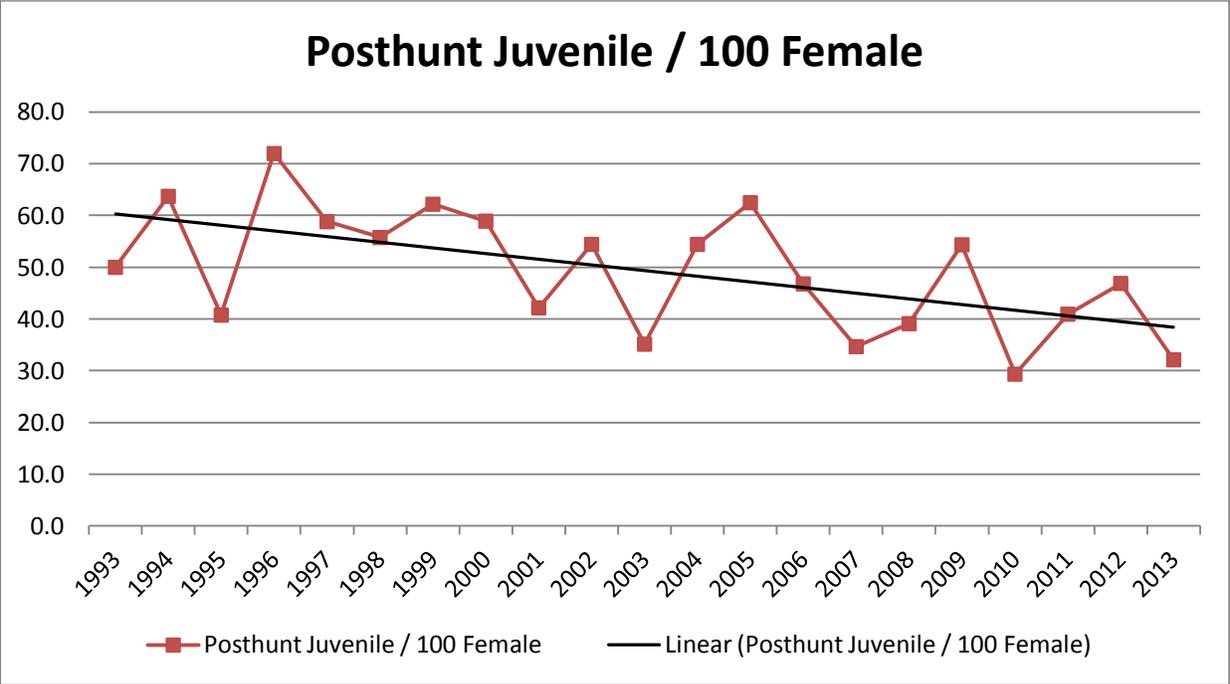
2014 STEAMBOAT ELK # BULLS HAVESTED PER AGE CLASS

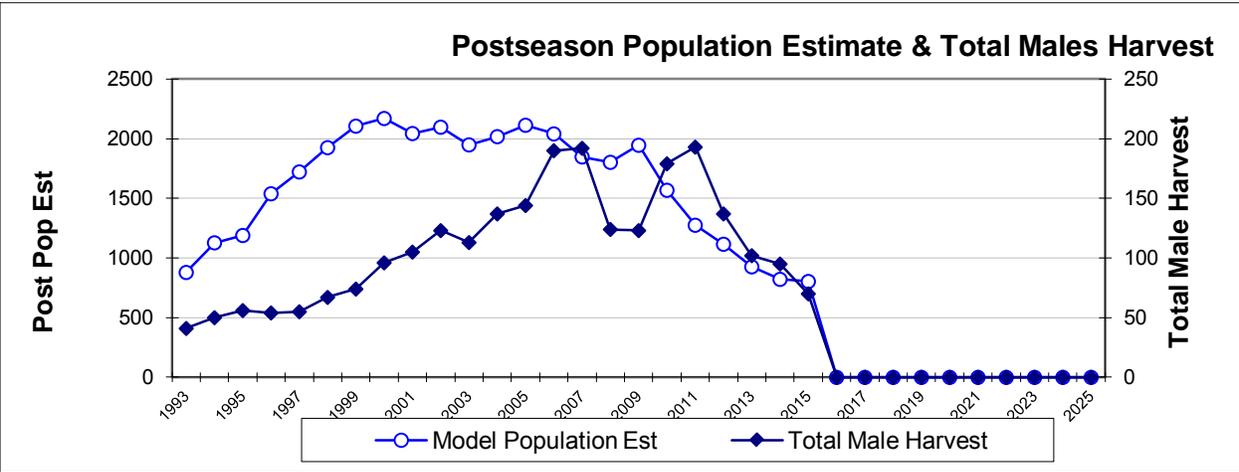


2013 STEAMBOAT ELK # HARVESTED PER AGE CLASS









INPUT	
Species:	Elk
Biologist:	Patrick Burke
Herd Unit & No.:	Steamboat EL426
Model date:	02/11/15

MODELS SUMMARY		Fit	Relative AICc	Check best model to create report	Notes
CJ,CA	Constant Juvenile & Adult Survival	361	370	<input checked="" type="checkbox"/> CJ, CA Model	
SCJ,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	200	209	<input type="checkbox"/> SCJ, SCA Model	
TSJ,CA	Time-Specific Juvenile & Constant Adult Survival	287	375	<input checked="" type="checkbox"/> TSJ, CA Model	
TSJ,CA,MSC	Time-Specific Juv, Constant Adult Survival, Male survival coefficient	597	693	<input type="checkbox"/> TSJ, CA, MSC Model	

Population Estimates from Top Model

Year	Posthunt Population Est.		Trend Count	Predicted Prehunt Population			Total	Predicted Posthunt Population			Total	Objective
	Field Est	Field SE		Juveniles	Total Males	Females		Juveniles	Total Males	Females		
1993				334	-54	706	986	327	-101	653	879	500
1994				462	15	755	1232	455	-42	715	1128	500
1995				339	118	860	1317	329	54	807	1189	500
1996			474	603	168	906	1677	600	106	833	1539	500
1997				545	314	1027	1885	545	250	927	1722	500
1998			859	575	436	1099	2109	561	359	1006	1925	500
1999				661	548	1182	2391	630	463	1013	2106	500
2000			1415	619	674	1213	2506	596	564	1011	2170	500
2001				442	761	1199	2402	416	640	987	2044	500
2002			1172	526	773	1113	2414	516	632	949	2097	1200
2003				355	800	1111	2265	333	670	946	1949	1200
2004			1038	505	773	1044	2321	494	615	908	2018	1200
2005				599	776	1063	2438	578	610	925	2113	1200
2006			929	475	801	1109	2385	465	582	994	2041	1200
2007				375	733	1136	2245	344	512	992	1848	1200
2008			568	381	623	1092	2096	372	480	951	1803	1200
2009				548	601	1062	2210	523	459	963	1946	1200
2010			1524	287	633	1127	2047	259	427	882	1568	1200
2011				327	609	955	1792	287	287	701	1275	1200
2012				303	382	787	1472	285	225	607	1116	1200
2013				178	320	694	1192	176	202	548	927	1200
2014				212	260	599	1071	192	151	479	822	1200
2015				202	215	537	953	190	134	479	804	1200
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												

Survival and Initial Population Estimates

Year	Annual Juvenile Survival Rates			Annual Adult Survival Rates		
	Model Est	Field Est	SE	Model Est	Field Est	SE
1993	0.70			0.98		
1994	0.70			0.98		
1995	0.70			0.98		
1996	0.70			0.98		
1997	0.70			0.98		
1998	0.70			0.98		
1999	0.70			0.98		
2000	0.70			0.98		
2001	0.70			0.98		
2002	0.70			0.98		
2003	0.70			0.98		
2004	0.70			0.98		
2005	0.70			0.98		
2006	0.70			0.98		
2007	0.70			0.98		
2008	0.70			0.98		
2009	0.70			0.98		
2010	0.70			0.98		
2011	0.70			0.98		
2012	0.70			0.98		
2013	0.70			0.98		
2014	0.70			0.98		
2015	0.70			0.98		
2016						
2017						
2018						
2019						
2020						
2021						
2022						
2023						
2024						
2025						

Parameters: **Optim cells**

Juvenile Survival = 0.700

Adult Survival = 0.980

Initial Total Male Pop/10,000 = -0.010

Initial Female Pop/10,000 = 0.065

MODEL ASSUMPTIONS

Sex Ratio (% Males) = 50%

Wounding Loss (total males) = 15%

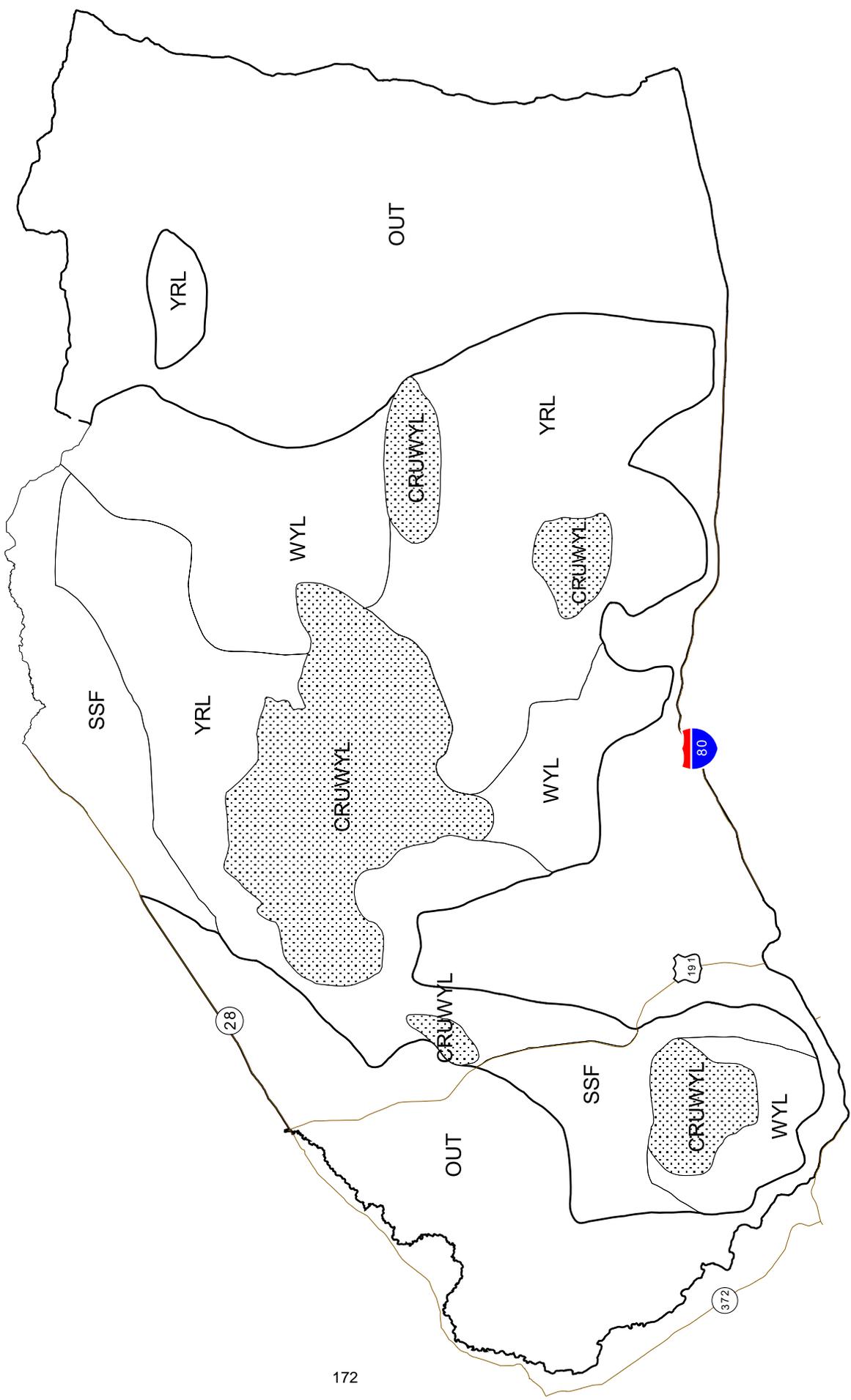
Wounding Loss (females) = 15%

Wounding Loss (juveniles) = 15%

Total Bulls Adjustment Factor = 120%

Year	Classification Counts							Harvest					Segment Harvest Rate (% of Prehunt Segment)	
	Juvenile/Female Ratio			Total Male/Female Ratio				Juv	Yrl males	2+ Males	Females	Total Harvest	Total Males	Females
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/ bull adj	Field Est w/o bull adj	Field SE							
1993		50.00	8.33	-15.46	23.92	28.70	5.85	6	7	34	46	93	-87.6	7.5
1994		63.73	7.15	-5.90	26.96	32.35	4.58	6	13	37	35	91	373.9	5.3
1995		40.78	5.66	6.66	27.47	32.96	4.95	9	12	44	46	111	54.5	6.2
1996		72.00	7.42	12.68	32.22	38.67	4.88	3	2	52	63	120	37.0	8.0
1997		58.84	6.74	27.01	28.88	34.66	4.80	0	0	55	87	142	20.2	9.7
1998		55.77	4.27	35.70	40.18	48.22	3.87	12	1	66	81	160	17.7	8.5
1999		62.20	6.14	45.72	33.76	40.51	4.52	27	2	72	147	248	15.5	14.3
2000		58.93	5.72	55.79	34.28	41.13	4.40	20	5	91	176	292	16.4	16.7
2001		42.18	4.67	64.85	67.27	80.73	7.28	22	2	103	184	311	15.9	17.7
2002		54.44	5.51	66.59	45.10	54.12	5.40	10	2	121	143	276	18.3	14.8
2003		35.16	4.17	70.81	62.58	75.09	6.94	19	2	111	143	275	16.2	14.8
2004		54.44	5.51	67.78	45.10	54.12	5.40	9	6	129	118	264	20.4	13.0
2005		62.50	6.40	66.02	67.54	81.05	7.69	18	2	142	120	282	21.3	13.0
2006		46.81	4.94	58.59	24.82	29.79	3.70	9	10	180	100	299	27.3	10.4
2007		34.69	3.82	51.68	28.65	34.38	3.80	27	0	192	126	345	30.1	12.8
2008		39.13	3.44	50.49	35.87	43.04	3.66	8	0	124	123	255	22.9	13.0
2009		54.37	4.08	47.68	39.02	46.83	3.69	21	0	123	86	230	23.6	9.3
2010		29.36	2.27	48.45	46.35	55.62	3.42	24	3	176	213	416	32.5	21.7
2011		40.95	3.26	41.01	40.41	48.49	3.59	35	4	189	221	449	43.6	26.6
2012		46.90	4.13	37.02	56.45	67.74	5.31	16	3	134	157	310	41.2	22.9
2013		32.14	3.89	36.92	32.74	39.29	4.42	2	3	99	127	231	36.7	21.0
2014		40.00	3.76	31.46	43.20	51.84	4.44	18	0	95	104	217	42.0	20.0
2015		39.68	3.93	28.03	44.13	52.96	4.72	10	0	70	50	130	37.5	10.7
2016														
2017														
2018														
2019														
2020														
2021														
2022														
2023														
2024														
2025														

ELK -- Steamboat
Herd 426
Hunt Area 100
Revised 5/2004



2014 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2014 - 5/31/2015

HERD: EL428 - WEST GREEN RIVER

HUNT AREAS: 102-105

PREPARED BY: JEFF SHORT

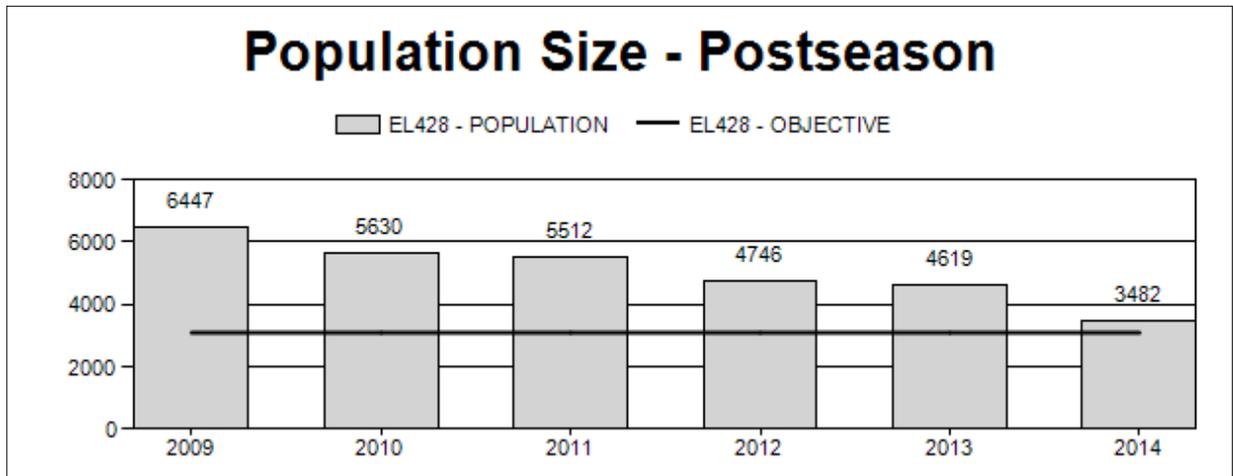
	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Population:	5,391	3,482	2,819
Harvest:	1,396	1,236	990
Hunters:	4,202	4,088	3,500
Hunter Success:	33%	30%	28 %
Active Licenses:	4,383	4,298	3,500
Active License Success:	32%	29%	28 %
Recreation Days:	30,168	31,091	27,000
Days Per Animal:	21.6	25.2	27.3
Males per 100 Females	34	0	
Juveniles per 100 Females	31	0	

Population Objective (± 20%) : 3100 (2480 - 3720)

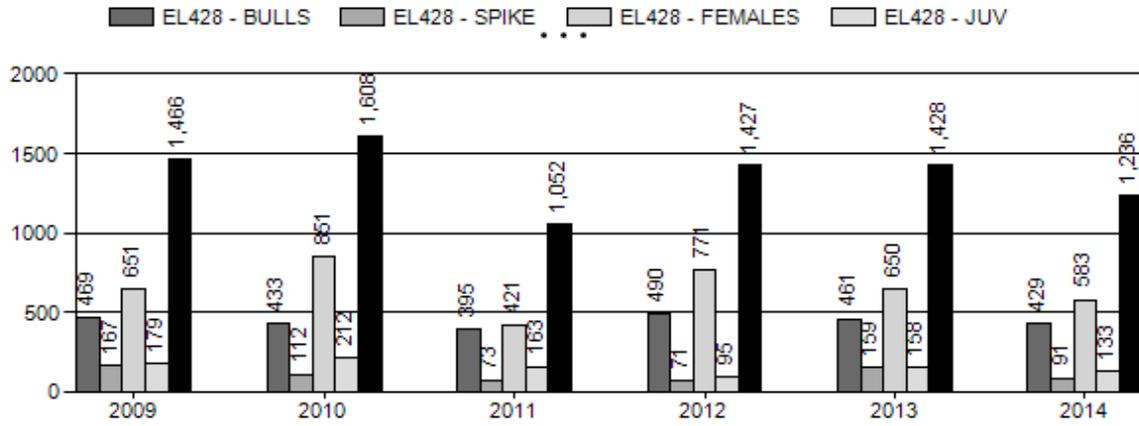
Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: 12%
 Number of years population has been + or - objective in recent trend: 0
 Model Date: 2/28/2015

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

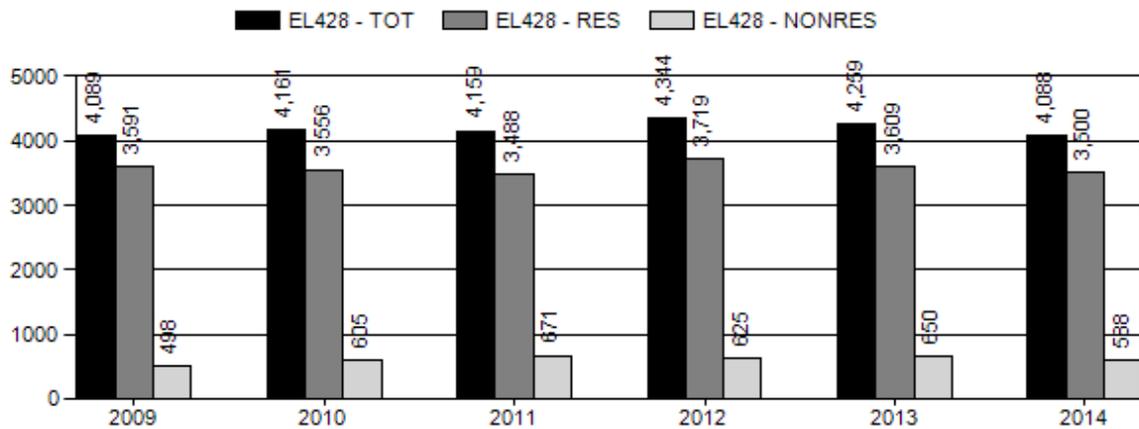
	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	21.8%	20.3%
Males ≥ 1 year old:	54.3%	67.8%
Juveniles (< 1 year old):	15.7%	11.7%
Total:	25.5%	25.3%
Proposed change in post-season population:	-21.3%	-19.0%



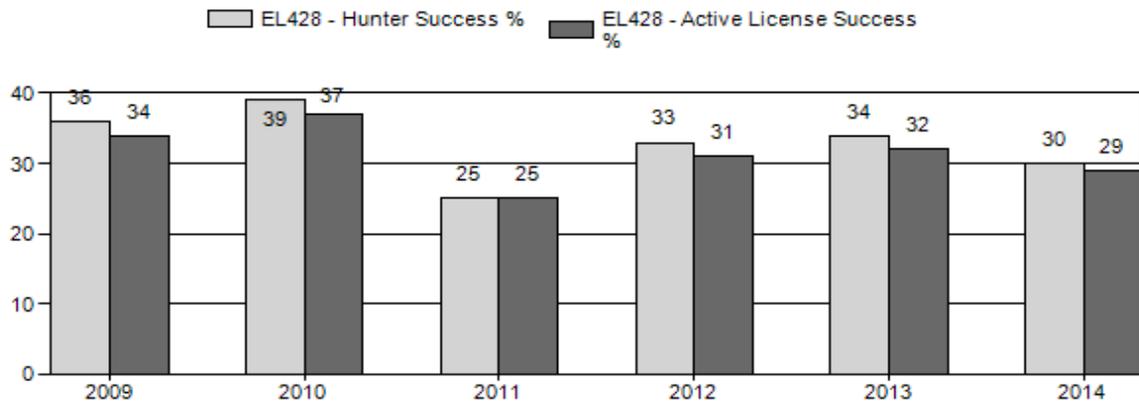
Harvest



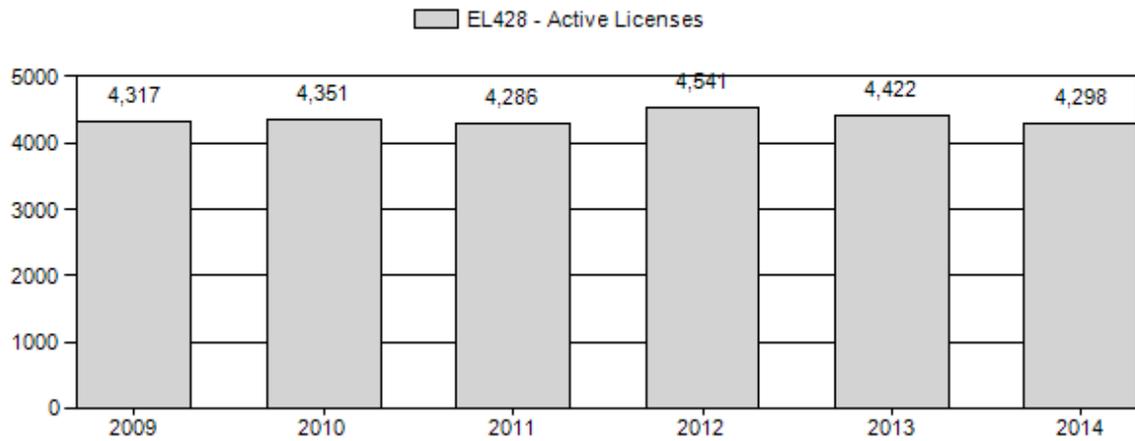
Number of Hunters



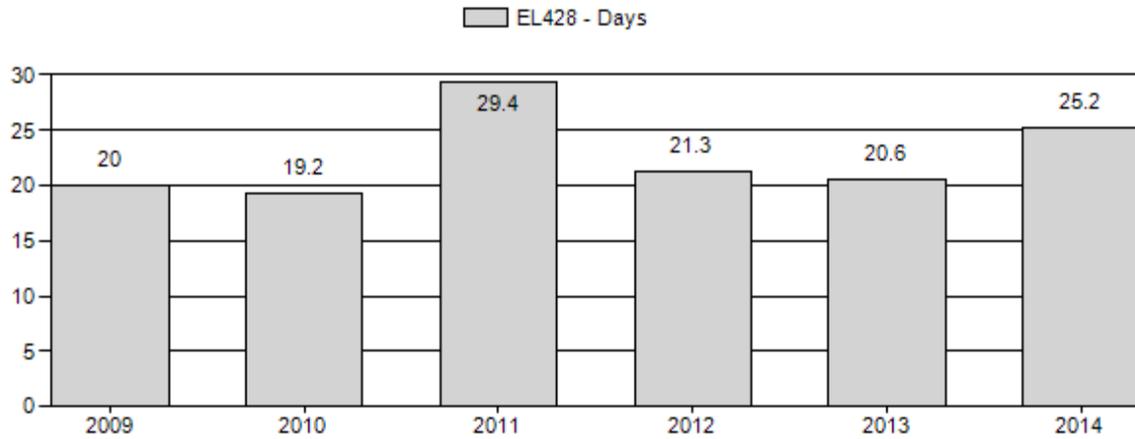
Harvest Success



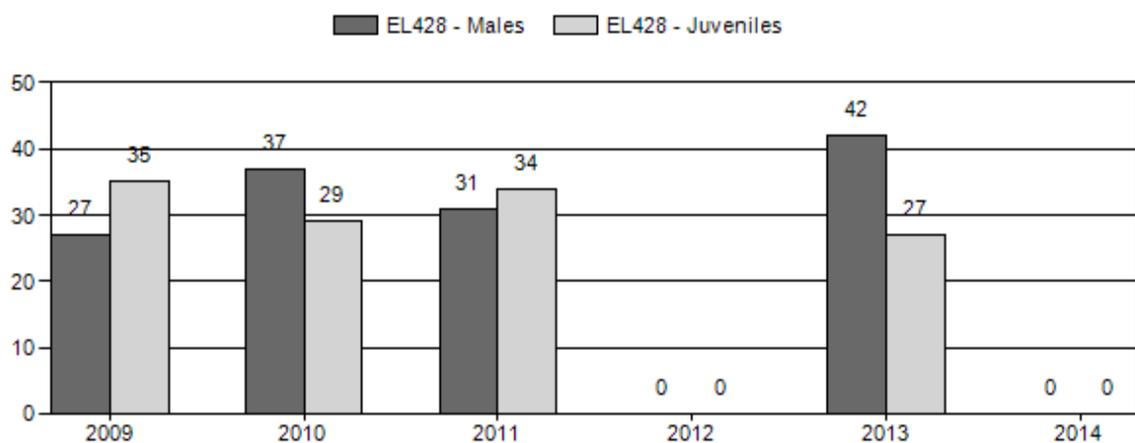
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2009 - 2014 Postseason Classification Summary

for Elk Herd EL428 - WEST GREEN RIVER

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	CIs Obj	Males to 100 Females			Young to			
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2009	6,447	286	242	528	17%	1,921	62%	672	22%	3,121	0	15	13	27	± 1	35	± 1	27
2010	5,630	265	264	529	22%	1,424	60%	409	17%	2,362	0	19	19	37	± 2	29	± 2	21
2011	5,512	385	474	859	19%	2,758	61%	929	20%	4,546	0	14	17	31	± 1	34	± 1	26
2012	4,746	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2013	4,619	440	510	950	25%	2,285	59%	627	16%	3,862	0	19	22	42	± 1	27	± 1	19
2014	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0

2015 HUNTING SEASONS

SPECIES : Elk

HERD UNIT : West Green River (428)

HUNT AREAS: 102, 103, 104, 105

Hunt Area	Type	Dates of Seasons		Quota	License	Limitations
		Opens	Closes			
102	6	Oct. 15	Oct. 24	100	General	Any elk
		Oct. 25	Oct. 31		General	Antlerless elk
		Oct. 15	Nov. 22		Limited quota	Cow or calf
		Dec. 5	Dec. 13			Unused Area 102 Type 6 licenses
103	6	Dec. 15	Jan. 31	25		Limited quota licenses; cow or calf
		Oct. 15	Oct. 24	150	General	Any elk
		Oct. 25	Nov. 15		General	Antlerless elk
		Oct. 15	Nov. 22		Limited quota	Cow or calf
Dec. 15	Jan. 31		Unused Area 103 Type 6 licenses			
104	6	Oct. 15	Oct. 24	400	General	license; any elk
		Oct. 25	Nov. 15		General	license; antlerless elk
		Oct. 15	Nov. 22		Limited quota	licenses; cow or calf
		Dec. 5	Dec. 13			Unused Area 104 Type 6 licenses
105	7	Dec. 15	Dec. 31	100	Limited quota	licenses; cow or calf
		Jan. 1	Jan. 31			Unused Area 104 Type 7 licenses valid west of U.S. Highway 30 and east of Lincoln County Road 207, or east of Rock Creek within the Twin Creek drainage.
105		Oct. 15	Oct. 31		General	Any elk
102-105	Archery	Sept. 1	Sept. 30			Refer to Section 3 of this chapter

Hunt Area	License Type	Quota change from 2014
102	6	-150
104	6	-300
Herd Unit Total	6	-450

Management Evaluation

Current Postseason Population Management Objective: 3,100

Management Strategy: Recreation

2014 Postseason Population Estimate: ~3,482

2015 Proposed Postseason Population Estimate: ~2,819

Herd Unit Issues

Energy development on crucial elk habitat is a looming issue for this herd. As an unfed elk herd in Western Wyoming, habitat integrity is of critical importance. Additionally, conflict with agriculture producers is a primary issue for this elk herd. Damage complaints typically occur during bad winters. Elk comingling with livestock during winter can be an issue in limited areas. Problems have typically been dealt with if the Department was notified. The area was recently added to the Brucellosis surveillance area. Even though the area has a very low brucellosis prevalence in elk this adds additional concern over elk and cattle comingling. Summer damage is rare. Significant efforts have been made by field personnel to alleviate problems. Perceived reduction in livestock forage due to elk grazing is an issue commonly brought up.

In the last four hunting seasons hunters commonly complained that elk numbers were down significantly and they were too low for their standards. However, we have still been over the set objective. This herd recently went through an objective review in 2012 and it was determined that the objective should remain at 3,100 mainly due to input from agriculture producers. Under our recent harvest strategies and attempts to get down to objective it appears that we have been successful and the population is now at or very near to the objective.

In recent years elk moving onto Fossil Butte National Monument prior to the season has increased, and is estimated to be 500 animals. Radio collar data indicates that a significant number of the marked animals moved back onto the Monument in early September. Additionally 100+ head of elk have stayed yearlong on Cokeville Meadows National Wildlife Refuge. Both the Monument and the Refuge have been closed to hunting. As the number of elk on the Monument and the refuge increased, it has become more difficult to manage this herd to objective while still providing huntable elk for sportsmen. The Cokeville Meadows National Wildlife Refuge became open for elk hunting in 2014 and this has greatly helped to alleviate elk problems in the Bear River valley but there is no solution in sight for Fossil Butte.

Weather

Weather during 2014 and into 2015 was highly variable. In the early part of 2014 the winter was very mild and dry. A moist spring and summer followed. In late August and into September precipitation continued. The winter of 2014-2015 has been very mild to this point. The winters of 2011/12, 2012/13 and 2013/14 were also mild with low snowpack resulting in good over winter survival. However, the dry springs and summers of 2012 and 2013 negatively impacted summer and winter range forage production.

Habitat

Habitat data collection has been inconsistently collected in this herd unit and has been absent in the recent past.

Field Data

Intensive helicopter based elk flights were performed in March of 2012 and 2014. In the 2014 survey 3,866 elk were observed. Flight conditions were favorable for congregating elk. Idaho's sightability model correction was used for the surveys and produced an estimate of 3,978 for the area flown in 2014. The low correction factor was due to large groups of elk in high snow cover and open environments. This creates survey conditions where very few elk are missed during helicopter surveys. We flew the majority of the available elk winter range during the survey. An additional area that was not flown in Hunt Area 105, due to budget constraints, was thought by field personnel to contain approximately 100 elk. Addition of this information produced a total Herd Unit sightability estimate of 4,078 elk post season 2013. The 2012 and 2014 winter sightability estimates fit very well in the spreadsheet model.

Recent post-season bull ratios have been excellent. Calf ratios have below average for this herd recently but are still reasonable. Harvest was increased on this herd markedly over several years in an effort to get the herd to objective. It appears that this has worked and that the herd is at objective. Antlerless harvest needs to be reduced now that the herd has reached objective. It is probable that bull harvest will go down in the future due to less elk production with a smaller herd and it may become difficult to maintain favorable bull:cow ratios. Another intensive helicopter survey is planned for post season 2015 barring projected budget limitations. This is a new sampling strategy where surveys are flown every other year and with greater intensity. In the past, classification surveys were flown on a yearly basis but with less intensity. This provided excellent classification data but did not provide any estimate of overall population size and/or trend information. The new strategy improves overall population estimates and gives us a better estimate of trend.

Harvest Data

Antlerless harvest opportunity was increased every year for several years in this herd unit. The 2010 to 2014 season structures offered substantially increased cow/calf harvest opportunity to try to reduce the herd. Those seasons allowed significant antlerless harvest with large increases in licenses and season lengths. These hunts had good success rates as weather moved elk to winter ranges during those hunts. This management framework has reduced this population based on the dramatic population declines shown in the model and concerns voiced by the public. For 2015 we are recommending a reduction of this strategy since the estimates indicate we are at or near the population objective. The current elk population is unpopular with the hunting public who feel elk numbers are too low.

Population

The post season 2014 population model estimate is about 3,482 elk with the population trending downward. The TSJ,CA model was selected due to the low AICc score and its good fit with the data. The TSJ,CA, MSC model scored very similar but there is no information to indicate that a MSC model would be appropriate for this herd.

The addition of aerial population estimates every other year since 2012 has been very valuable to check the status of the herd and anchor the model. With this continuing into the future it is likely that we can provide a reasonable population model and track the trend of this population. Without this it will be unclear if our current harvest levels can be sustained or if we are on the right management track relative to objective.

Due to documented interchange with adjacent herd units, models generated for this herd should be used with some caution. This interchange has been affirmed in recent years with several radio collared elk from multiple studies crossing the herd unit border at different times of year. More radio collar studies would help determine the extent of these movements. In 2012 the Department switched from POPII models to an Excel spreadsheet model. Since these are new models they are going to be under development and subject to extensive refining. They will likely change over time with new data.

Currently the model is estimating we have around 3,482 elk in the herd. This is a significant reduction in the herd over the last few years and is within 20% of the objective of 3,100 elk. The sharp decline in population was driven by antlerless harvest. This is substantiated by hunter comments and field observations. Harvest survey data indicate that we have had more than adequate harvest in the past four years to reduce this herd and move toward objective. This supporting information gives us some confidence in model results

Management Summary

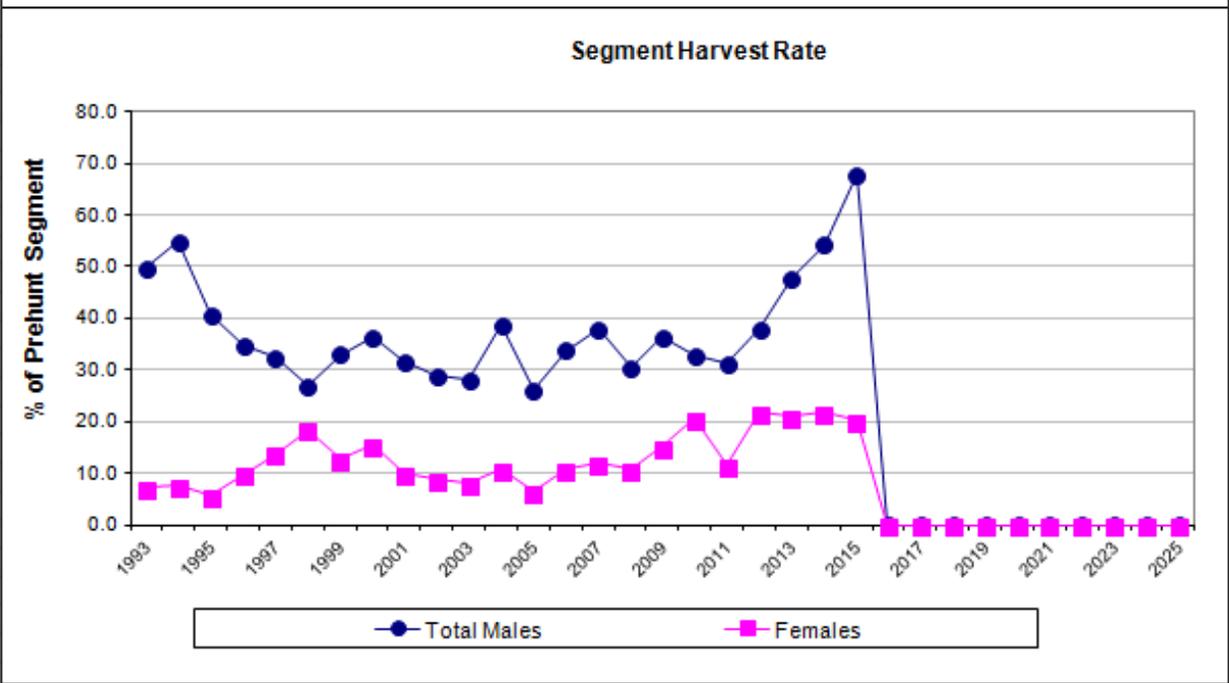
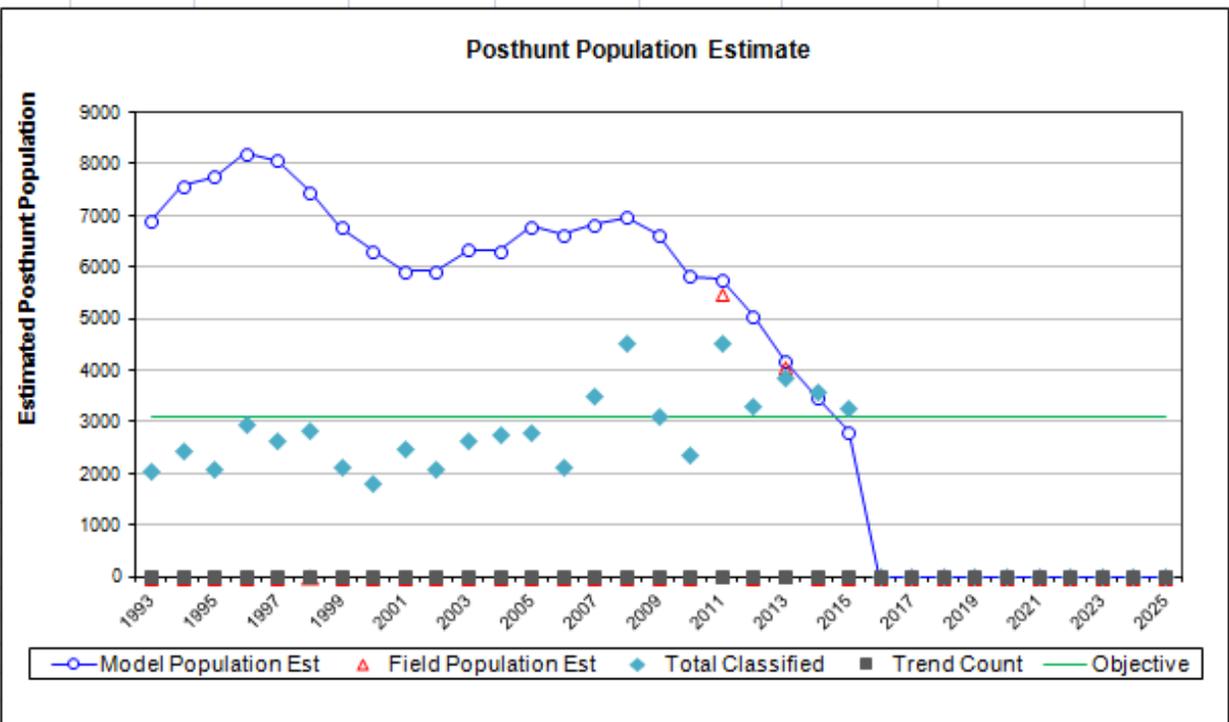
For 2015 season setting we will reduce antlerless harvest to reduce population decline since the population is very near the current objective. We will continue with hunt timing and license management to allow antlerless harvest to keep the population close to objective. To do this we provide a break in the hunt to placate elk and promote unhindered migration to more open winter ranges where the elk are more vulnerable to harvest. The harvest system in place should keep this herd near objective in the near future.

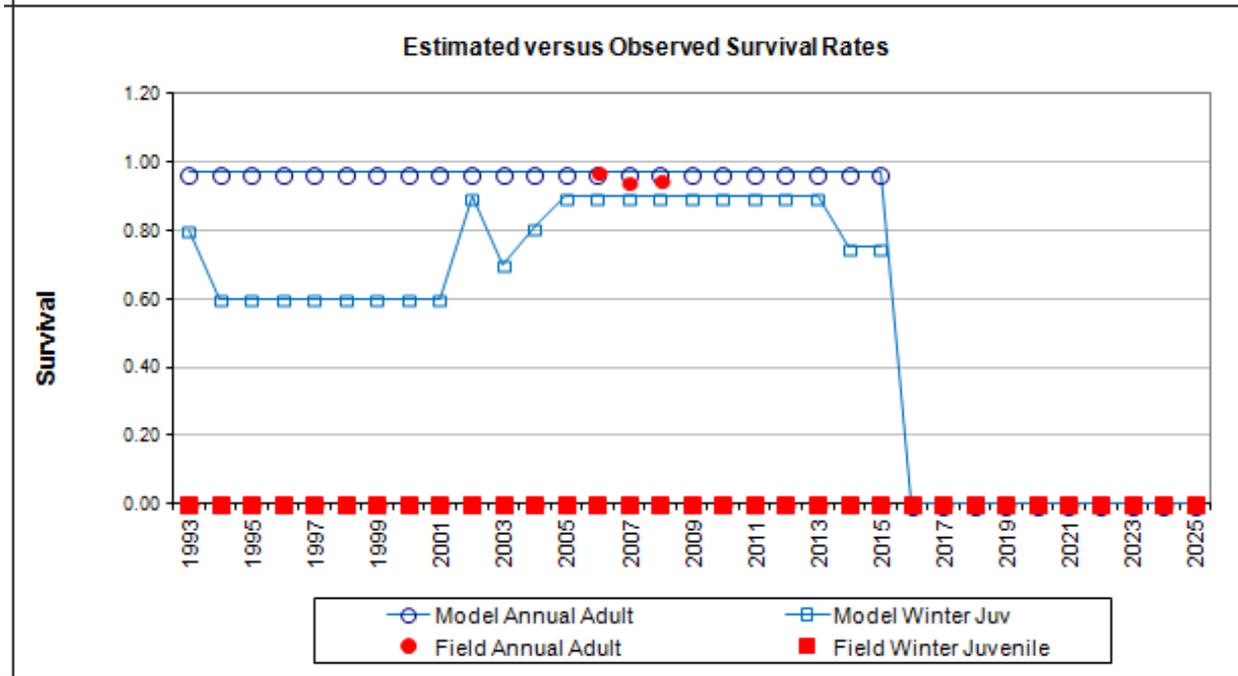
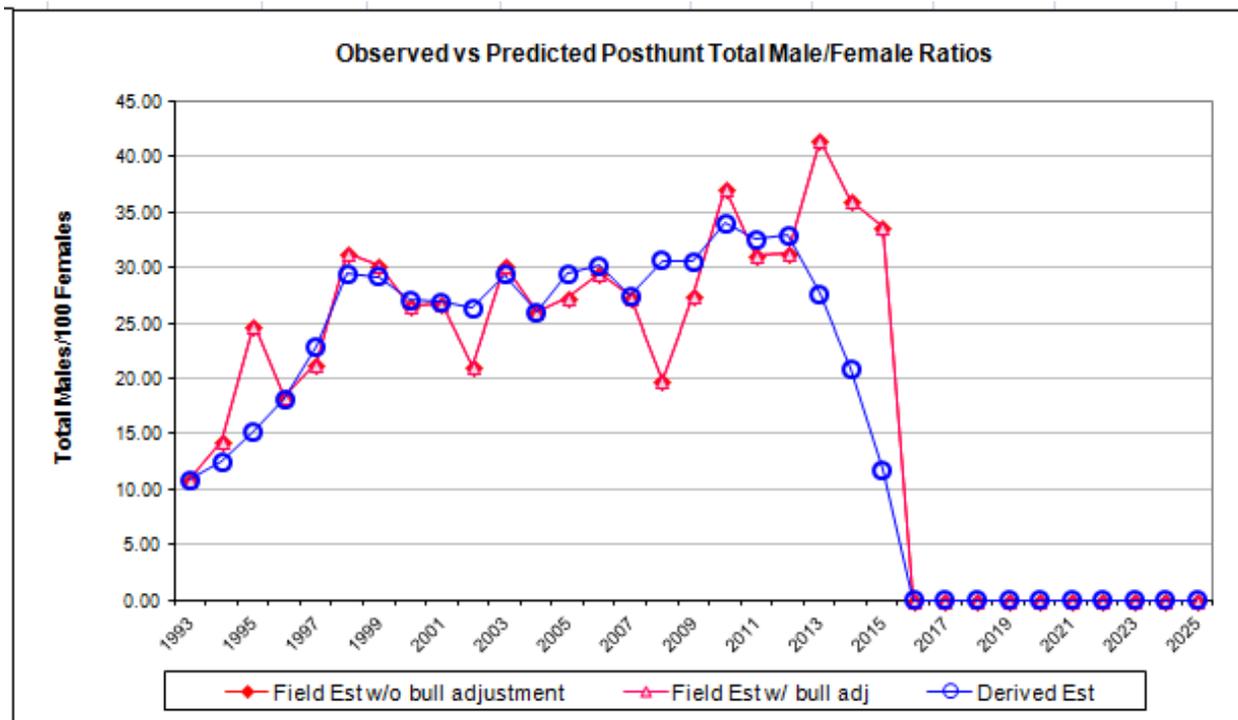
INPUT												
Species:	Elk											
Biologist:	Jeff Short											
Herd Unit & No.:	WGR EL428											
Model date:	02/28/14											
<input type="button" value="Clear form"/>												
MODELS SUMMARY								Fit	Relative AICc	Check best model to create report		
CJ,CA	Constant Juvenile & Adult Survival						2152	2161	<input type="checkbox"/> CJ,CA Model			
SCJ,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival						947	964	<input type="checkbox"/> SCJ,SCA Mo			
TSJ,CA	Time-Specific Juvenile & Constant Adult Survival						399	510	<input checked="" type="checkbox"/> TSJ,CA Model			
TSJ,CA,MSC	Time-Specific Juv, Constant Adult Survival, Male survival coefficient						393	513	<input type="checkbox"/> TSJ,CA,MSC Model			

Population Estimates from Top Model												
Year	Posthant Population Est.		Trend Count	Predicted Prehant Population				Predicted Posthant Population				Objective
	Field Est	Field SE		Juveniles	Total Males	Females	Total	Juveniles	Total Males	Females	Total	
1993				2151	943	4681	7775	2086	472	4346	6905	3100
1994				2467	1294	5052	8813	2325	584	4657	7566	3100
1995				2113	1264	5215	8592	2085	750	4922	7757	3100
1996				2495	1353	5400	9247	2444	884	4869	8197	3100
1997				2389	1591	5456	9436	2285	1076	4705	8066	3100
1998				2163	1729	5250	9142	1913	1265	4280	7458	3100
1999				1586	1801	4725	8113	1438	1206	4128	6772	3100
2000				1729	1601	4435	7766	1553	1016	3746	6315	3100
2001				1351	1451	4099	6902	1249	990	3681	5921	3100
2002				1490	1335	3946	6771	1375	952	3601	5928	3100
2003				1523	1542	4112	7177	1439	1111	3777	6327	3100
2004				1765	1582	4168	7514	1622	969	3723	6314	3100
2005				1688	1596	4268	7552	1619	1177	3987	6783	3100
2006				1452	1870	4596	7918	1298	1238	4094	6630	3100
2007				1863	1784	4555	8203	1705	1105	4015	6825	3100
2008				1669	1839	4662	8170	1524	1276	4160	6961	3100
2009				1598	1924	4721	8243	1401	1224	4005	6631	3100
2010				1261	1818	4516	7595	1028	1219	3579	5826	3100
2011	5500	250		1349	1645	3935	6928	1169	1130	3472	5771	3100
2012				1108	1622	3894	6623	1003	1005	3046	5054	3100
2013	4078	32		912	1426	3406	5744	738	744	2691	4173	3100
2014				845	1054	2942	4842	699	482	2301	3482	3100
2015				684	730	2494	3908	596	235	1988	2819	3100

Survival and Initial Population Estimates								
Year	Annual Juvenile Survival Rates			Annual Adult Survival Rates			Parameters:	Optim cells
	Model Est	Field Est	SE	Model Est	Field Est	SE		
1993	0.80			0.97			Adult Survival =	0.970
1994	0.60			0.97			Initial Total Male Pop/10,000 =	0.047
1995	0.60			0.97			Initial Female Pop/10,000 =	0.435
1996	0.60			0.97				
1997	0.60			0.97				
1998	0.60			0.97				
1999	0.60			0.97				
2000	0.60			0.97				
2001	0.60			0.97				
2002	0.90			0.97				
2003	0.70			0.97				
2004	0.81			0.97				
2005	0.90			0.97				
2006	0.90			0.97	0.97	0.05		
2007	0.90			0.97	0.95	0.05		
2008	0.90			0.97	0.95	0.05		
2009	0.90			0.97				
2010	0.90			0.97				
2011	0.90			0.97				
2012	0.90			0.97				
2013	0.90			0.97				
2014	0.75			0.97				
2015	0.75			0.97				

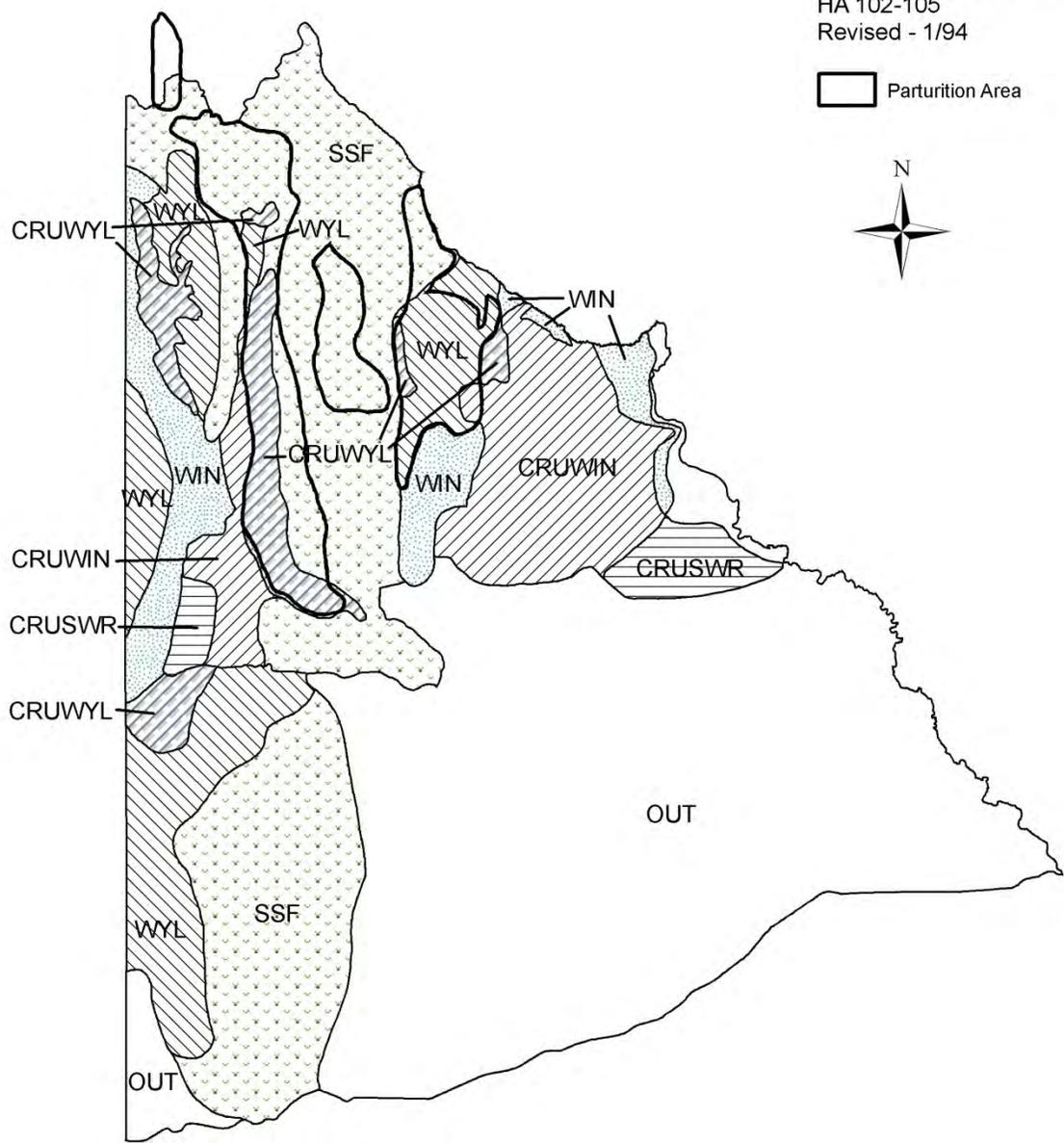
Classification Counts							Harvest									
Year	Juvenile/Female Ratio			Total Male/Female Ratio				Juv	Yrl males	2+ Males	Females	Total Harvest	Segment Harvest Rate % of Prehant			
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/ bull adj	Field Est w/o bull adj	Field SE						Total Males	Females	juv	total
1993	47.99	2.34	10.87	10.90	10.90	0.97	59	158	270	304	791	49.9	7.1	2.7%	10.2%	
1994	49.93	2.24	12.55	14.31	14.31	1.05	129	260	385	359	1133	54.8	7.8	5.2%	12.9%	
1995	42.37	2.20	15.23	24.86	24.86	1.58	25	194	274	266	759	40.7	5.6	1.2%	8.8%	
1996	50.20	2.07	18.16	18.37	18.37	1.11	46	192	234	483	955	34.6	9.8	1.8%	10.3%	
1997	48.56	2.15	22.87	21.40	21.40	1.29	95	190	278	682	1245	32.4	13.8	4.0%	13.2%	
1998	44.71	1.99	29.56	31.30	31.30	1.59	227	166	256	882	1531	26.8	18.5	10.5%	16.7%	
1999	34.83	1.91	29.21	30.19	30.19	1.74	135	172	369	543	1219	33.0	12.6	8.5%	15.0%	
2000	41.46	2.31	27.12	26.58	26.58	1.75	160	153	379	627	1319	36.5	15.5	9.3%	17.0%	
2001	33.93	1.71	26.90	26.80	26.80	1.48	93	88	331	380	892	31.8	10.2	6.9%	12.9%	
2002	38.18	1.99	26.42	21.08	21.08	1.38	104	99	250	313	766	28.7	8.7	7.0%	11.3%	
2003	38.11	1.83	29.41	30.21	30.21	1.58	76	100	292	305	773	28.0	8.2	5.0%	10.8%	
2004	43.55	1.96	28.03	26.04	26.04	1.42	130	128	429	404	1091	38.7	10.7	7.4%	14.5%	
2005	40.80	1.84	29.52	27.26	27.26	1.44	63	117	264	255	699	28.3	6.8	3.7%	9.3%	
2006	31.69	1.76	30.23	29.46	29.46	1.69	140	138	437	456	1171	33.8	10.9	9.6%	14.8%	
2007	42.45	1.71	27.51	27.40	27.40	1.30	144	167	451	491	1253	38.1	11.9	7.7%	15.3%	
2008	36.63	1.31	30.68	19.90	19.90	0.91	132	108	403	456	1099	30.6	10.8	7.9%	13.5%	
2009	34.98	1.57	30.57	27.49	27.49	1.35	179	167	469	651	1466	36.4	15.2	11.2%	17.8%	
2010	28.72	1.61	34.04	37.15	37.15	1.89	212	112	433	851	1608	33.0	20.7	16.8%	21.2%	
2011	33.68	1.28	32.54	31.15	31.15	1.22	163	73	395	421	1052	31.3	11.8	12.1%	15.2%	
2012	32.93	1.47	33.00	31.39	31.39	1.42	95	71	490	771	1427	38.0	21.8	8.6%	21.5%	
2013	27.44	1.24	27.66	41.58	41.58	1.60	158	159	461	650	1428	47.8	21.0	17.3%	24.9%	
2014	30.39	1.36	20.96	36.15	36.15	1.51	133	91	429	583	1236	54.3	21.8	15.7%	25.5%	
2015	30.00	1.40	11.82	33.75	33.75	1.50	80	70	380	460	990	67.8	20.3	11.7%	25.3%	





E428 - West Green River
HA 102-105
Revised - 1/94

 Parturition Area



2014 - JCR Evaluation Form

SPECIES: EIk

PERIOD: 6/1/2014 - 5/31/2015

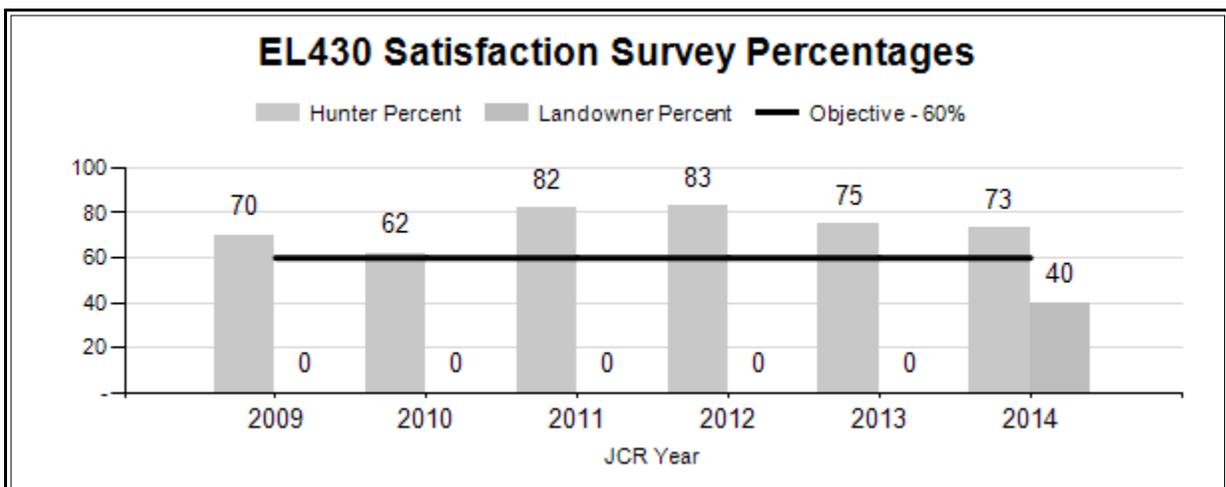
HERD: EL430 - PETITION

HUNT AREAS: 124

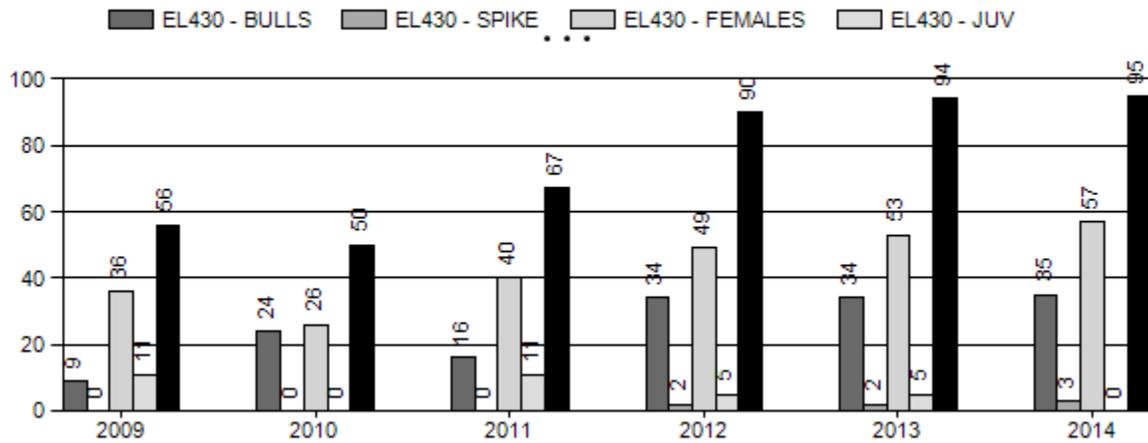
PREPARED BY: TONY MONG

	<u>2009 - 2013 Average</u>	<u>2014</u>	<u>2015 Proposed</u>
Hunter Satisfaction Percent	75%	73%	75%
Landowner Satisfaction Percent	75%	40%	60%
Harvest:	71	95	95
Hunters:	110	136	136
Hunter Success:	65%	70%	70%
Active Licenses:	110	136	136
Active License Success:	65%	70%	70%
Recreation Days:	796	1,126	1,200
Days Per Animal:	11.2	11.9	12.6
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	

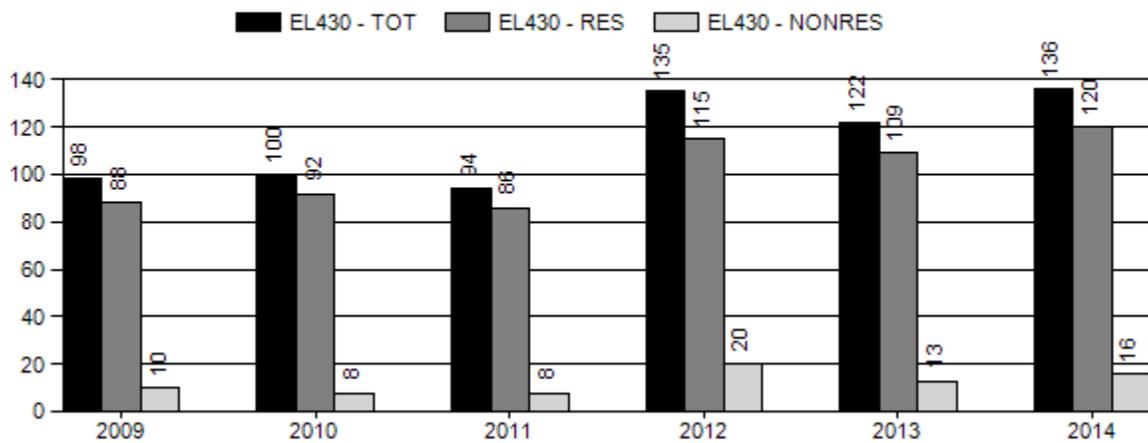
Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	-4%
Number of years population has been + or - objective in recent trend:	0



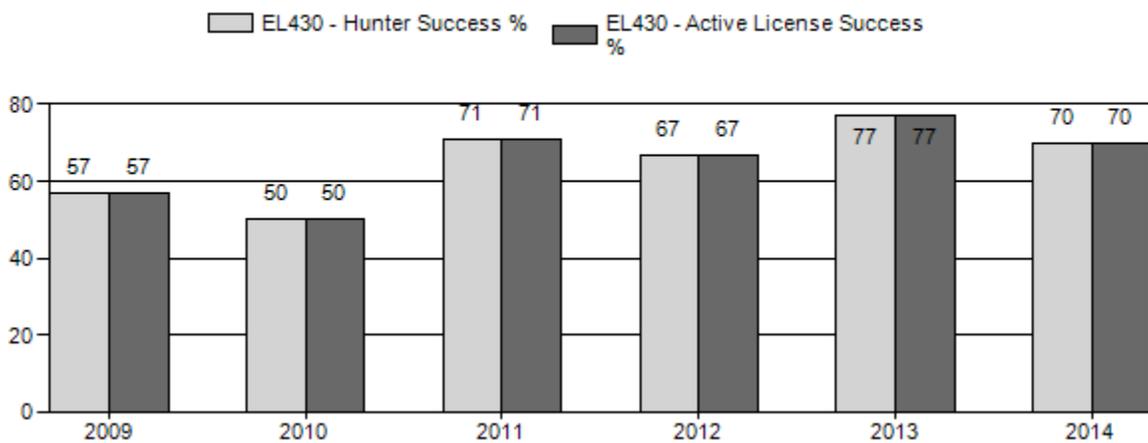
Harvest



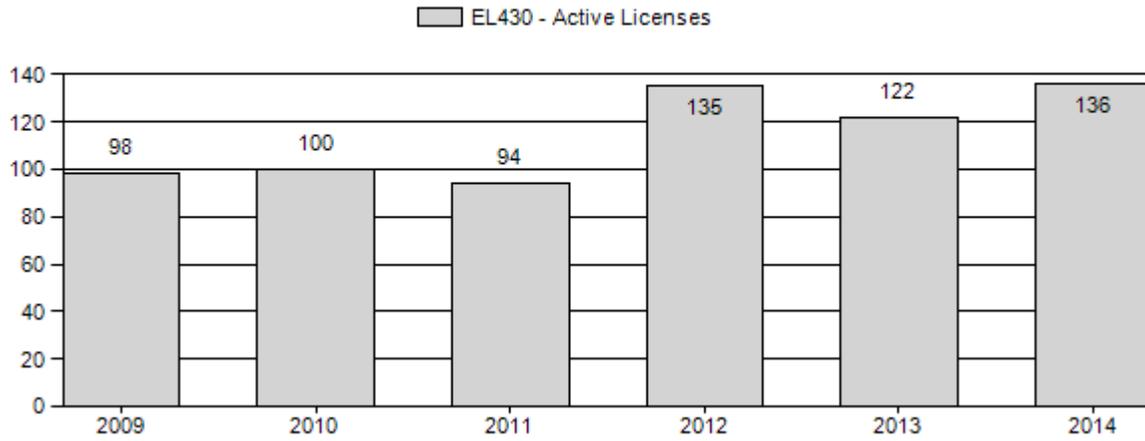
Number of Hunters



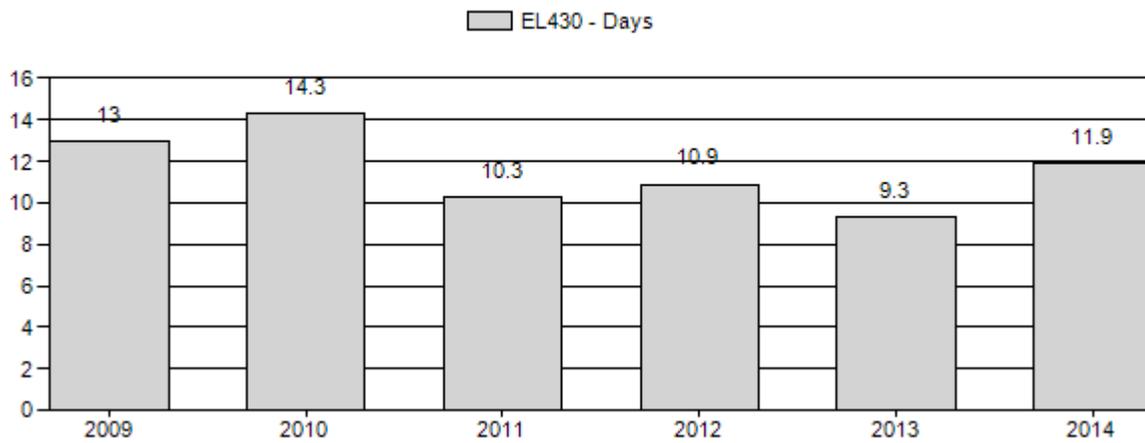
Harvest Success



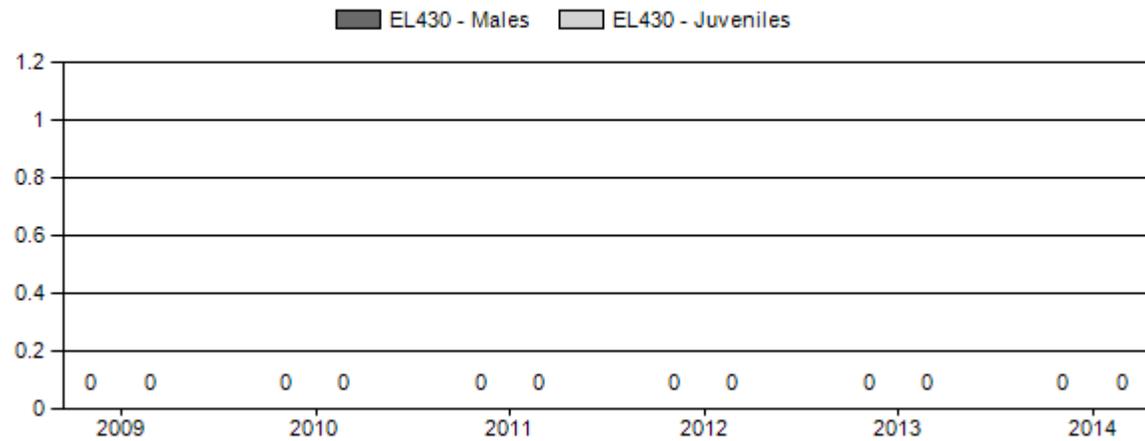
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2015 HUNTING SEASONS

SPECIES : **Elk**

HERD UNIT : **Petition (430)**

HUNT AREAS: **124**

Hunt Area	Type	Opens	Closes	Quota	License	Limitations
124	1	Oct. 15	Nov. 30	40	Limited quota	Any elk
	4	Oct. 15	Nov. 30	100	Limited quota	Antlerless elk
		Dec. 1	Dec. 31			Unused Area 124 Type 4 licenses valid on the Tipton Hunter Management Area (HMA permission slip required)
	Archery	Sep. 1	Sep. 30			Refer to Section 3

<i>Hunt Area</i>	<i>Type</i>	<i>Quota change from 2014</i>
<i>124</i>	<i>1</i>	<i>0</i>
	<i>4</i>	<i>0</i>
	<i>7</i>	<i>0</i>
<i>Herd Unit Total</i>	<i>1</i>	<i>0</i>
	<i>4</i>	<i>0</i>
	<i>7</i>	<i>0</i>

Management Evaluation

Current Hunter/Landowner Satisfaction Objective: 60% landowner/hunter satisfaction; sub-objective regarding average bull age

Management Strategy: Recreational

2014 Hunter Satisfaction Estimate: 72%

2014 Landowner Satisfaction Estimate: 40%* (5 out of 13 respondents to the survey)

Most Recent 3-year Running Average Hunter Satisfaction Estimate: 77%

Most Recent 3-year Running Average Landowner Satisfaction Estimate: n/a

Most Recent 3-year Running Average Tooth Age: n/a

The current management objective was established in 2013, and consists of an alternative objective of landowner and sportsmen satisfaction, along with an index of bull quality using average harvest age. Our strategy is to maintain current levels of harvest across the area, and continue to direct additional cow harvest to the northern portion of the area (specifically within the Tipton Hunter Management Area) to address landowner concerns.

Herd Unit Issues

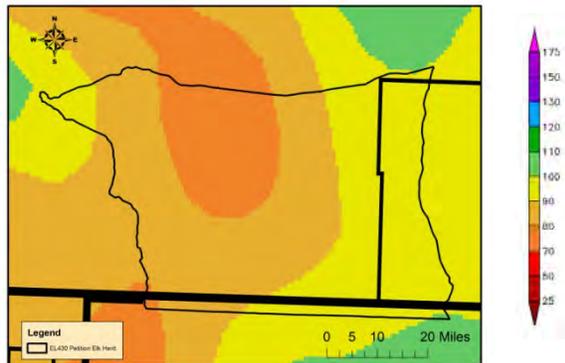
The Petition elk herd is a small, highly mobile elk herd occupying a large area of desert habitats, interspersed with infrequent pockets of more suitable habitats. A high degree of interchange (from a Petition Elk standpoint) occurs with Colorado to the south, and with hunt areas 30/32 and 100 to the west and north, respectively. Based on herd sizes, the “loss” of elk to Petition is insignificant, but may have a larger influence on Petition herd size (since there are relatively few elk in this area). This interchange, flight budget shortfalls, and the sheer size of Area 124 makes meaningful data collection and population estimation very difficult. Possible competition with mule deer in the South Rock Springs Deer herd is becoming an issue of concern in the western ½ of this area, and may need to be addressed in the future. This herd unit is extremely popular with hunters, particularly those seeking a large, trophy class bull. Many Governor’s license holders choose this as an area to use their license.

Weather

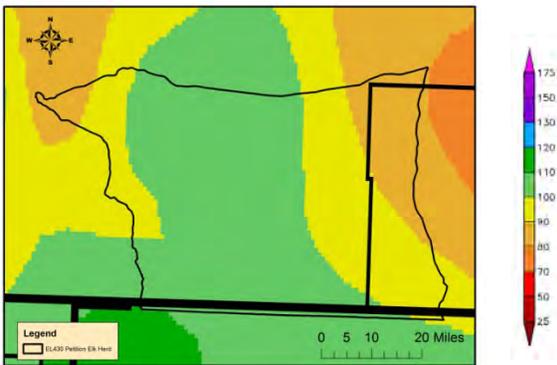
Weather conditions in the Petition herd unit have been quite variable over the last several years. Overall, this herd unit has received more precipitation in 2014, when compared to 2013 (Figure 1), and dramatically more than the “exceptional” drought conditions of 2012. This return to normal, or above normal, precipitation should equate to better vegetation for 2015. The 2014-15 winter was extremely mild, with limited snowfall, and higher than average temperatures throughout winter. Although initially concerning because of reduced precipitation during the winter, spring moisture levels have been exceptional, and have more than made up for the low winter moisture.

Figure 1. A) Percent of normal precipitation for the herd unit from January 2013 to December 2013, B) Percent of normal precipitation for the herd unit from January 2014 to December 2014.

A)



B)



Habitat

Precipitation during 2014 and 2015 has allowed for dramatically improved habitat conditions in this herd unit. The increase in precipitation during the early fall months of 2014 induced a late growth opportunity for most vegetation in the herd unit, resulting in improved condition for all browsers and grazers. An early warming trend following the 2014-15 winter, coupled with regular, and above average, spring precipitation, has resulted in an early green up that persists to this day. Some areas in this herd unit have received moisture in levels not observed in many years, resulting in dramatically improved habitat conditions through a majority of the herd unit.

Field Data

No population data is currently collected for this herd, negatively influencing management. Public input and harvest statistics lead us to believe this herd has grown over the last 5 years, which may result in more licenses in the future. Field checks and pre-season setting meetings have indicated that many hunters that have hunted in this area are seeing more elk than they had historically.

Sportsmen satisfaction in this herd is very high with 72% of the 54 respondents “satisfied or very satisfied” with their overall hunting experience. Landowner satisfaction was collected through a mailed survey. We sent out surveys to 13 landowners, but the response rate was poor (5).. Two landowners responded that there are too many elk, two responded that elk numbers are “at or about” where they need to be, and one responded that elk numbers are too low. The small sample of landowners responding makes it difficult to draw meaningful conclusions from the data, but demonstrate landowners are split on their desires. Given the poor response rate, we will rely on phone calls or personal contacts to gather this information in the future.

Age data from teeth submitted to the Game and Fish tooth aging lab for 2014 (N = 19) yield an average age of 7.0 (range 1.5 to 12.5). Our initial internal discussions had indicated a 3-year average age of 7.0 would be sufficient to maintain trophy quality bulls within this herd, but this is higher than typical and may be unrealistic as a sub-objective.

Harvest Data and Population Indications

Hunter success over the last 4 years (average = 71%) is higher than the previous 10 year average (55%), while hunter effort is similar (3 year average = 10.7 days, previous 10 year average = 12.6 days). Cow harvest was similar between 2013 and 2014 (53 and 55, respectively), but may be insufficient in future years to maintain this herd at levels considering other wild ungulates of

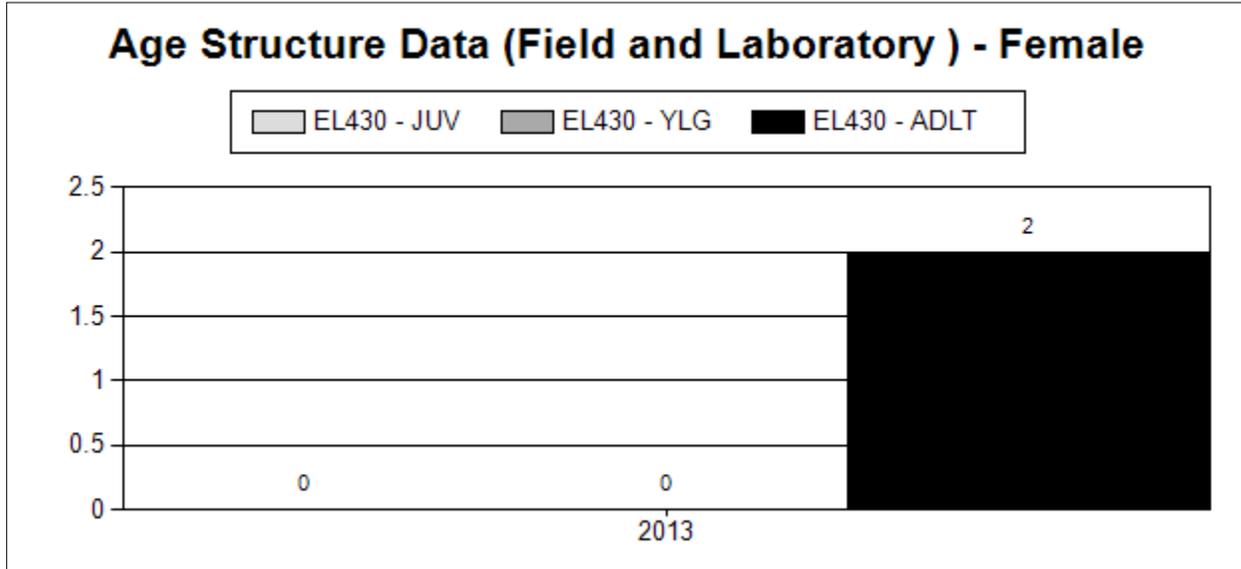
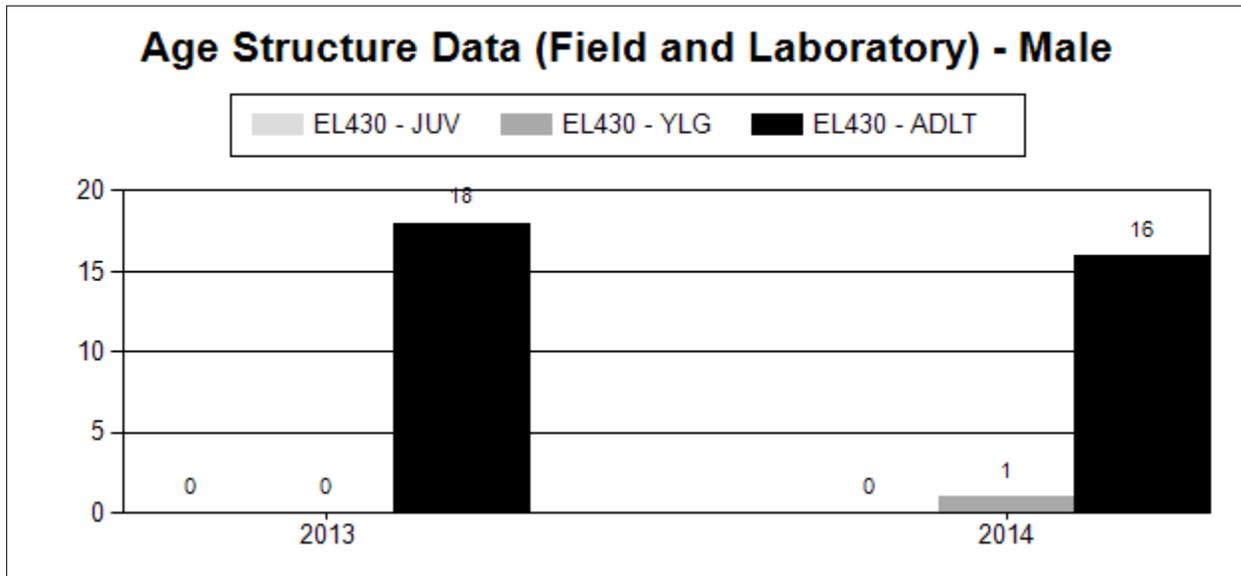
interest (mule deer and pronghorn). Higher success rates, reduced hunter effort, and the ability to sustain a higher antlerless harvest may be an indication that population levels are higher than they were 5 years ago, which is consistent with reports from sportsmen and landowners.

Management Summary

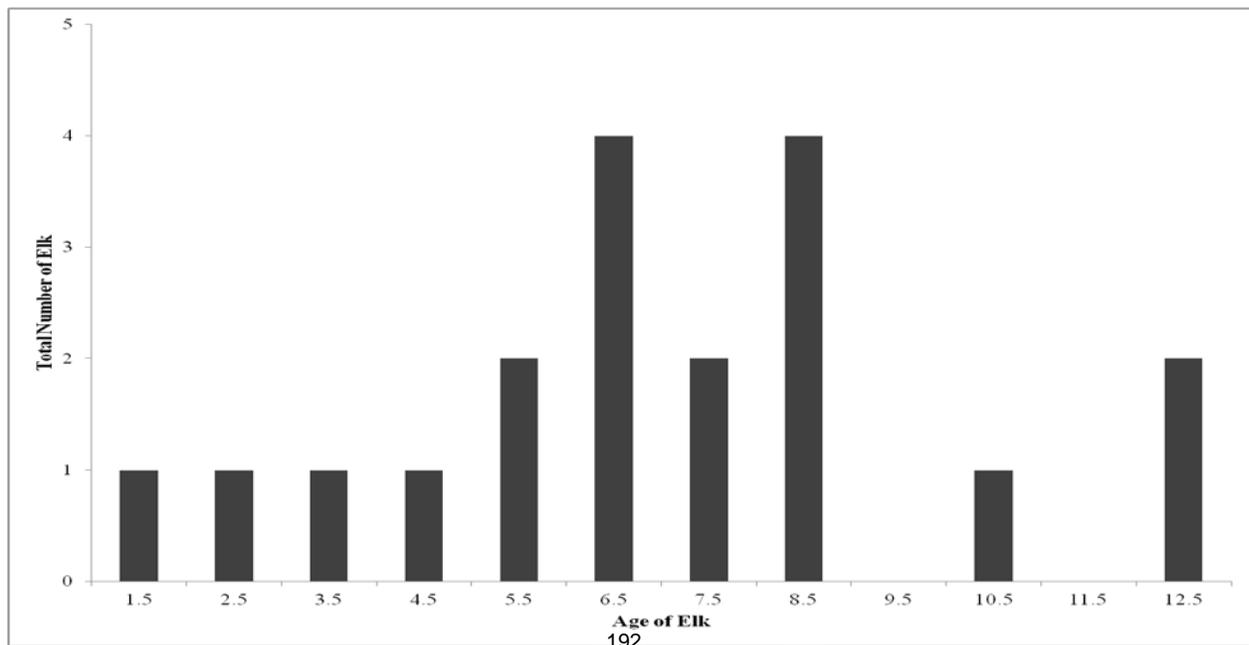
It is important that we balance the management of a popular hunted resource (i.e. good opportunity for large bulls), and the extremely sensitive ecosystem found in the Petition elk herd. Much of this area is in a 5-7 inch precipitation zone, and habitats are easily disturbed, with limited recovery potential. Significant energy development occurs in this area, and most is grazed by domestic livestock and feral horses, the latter of which can have significant impacts on native wildlife if allowed to increase unchecked. Currently, we see some issues between landowners and these elk, and strong support from sportsmen that hunt this herd. However, we need to make a better effort to survey sportsmen hunting the same areas for other species (i.e. mule deer and pronghorn). In lieu of better data, and a complete 3-year data cycle, our current management strategy is to maintain harvest rates in an effort to maintain or slightly decrease elk numbers in this herd.

Appendix A. a) Tooth age data from the JCR summary program, b) specific lab tooth age summary of male elk harvested in the EL430 herd unit.

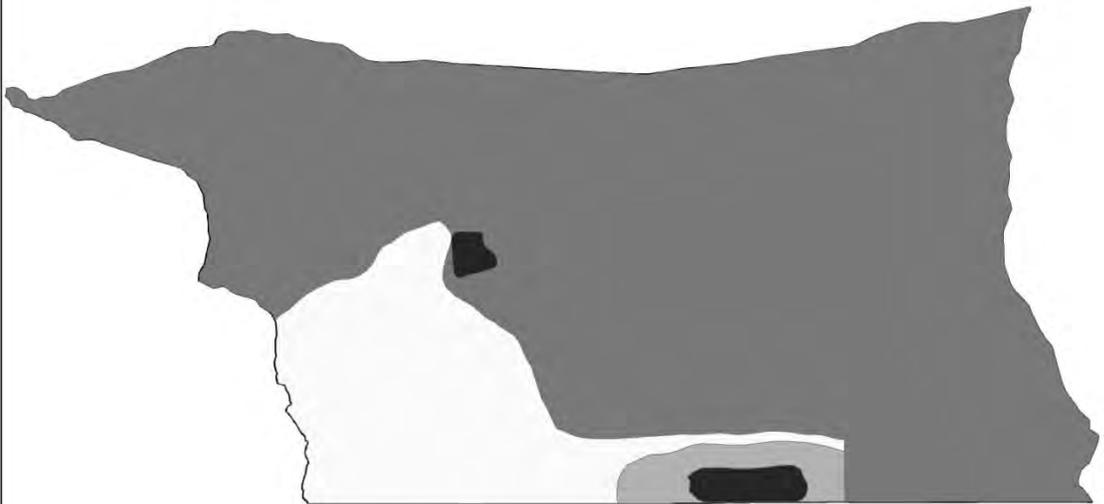
a.



b.



Petition Elk Herd Seasonal Ranges



Petition Elk Herd Seasonal Range

	Undetermined/Undocumented		Crucial Winter/Year long
	Year long		Winter/ Year long

