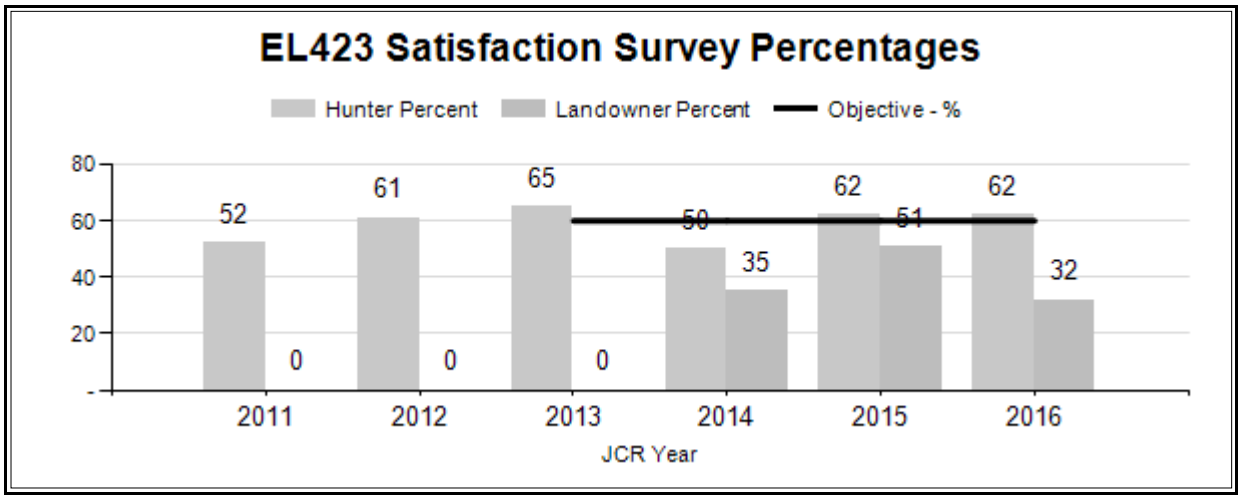
2016 - JCR Evaluation Form

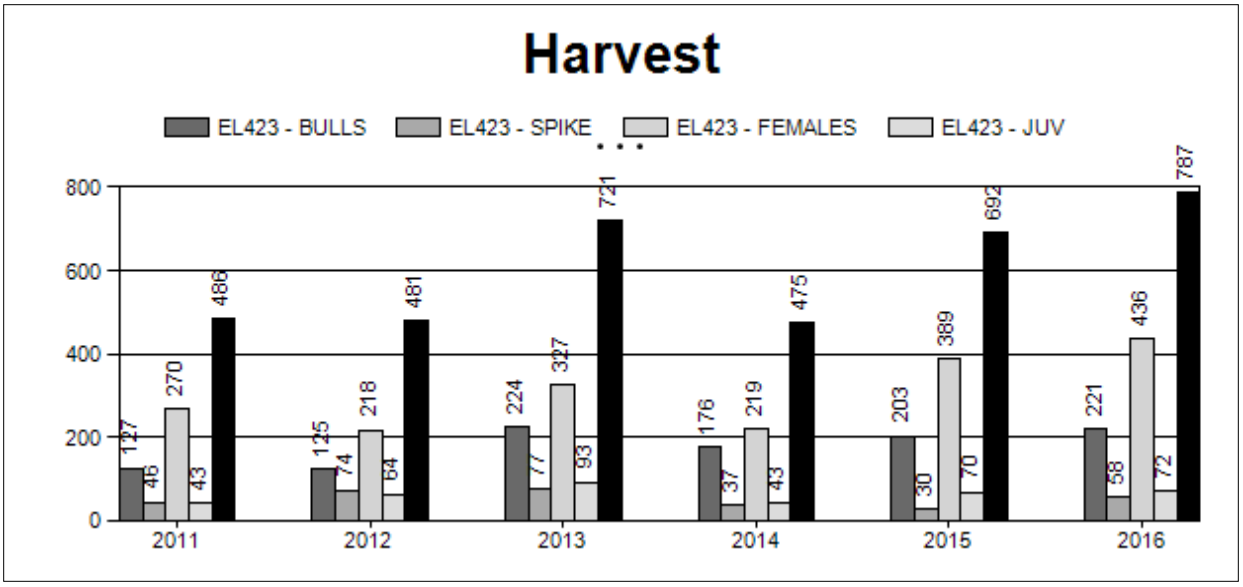
SPECIES: Elk
HERD: EL423 - UINTA
HUNT AREAS: 106-107

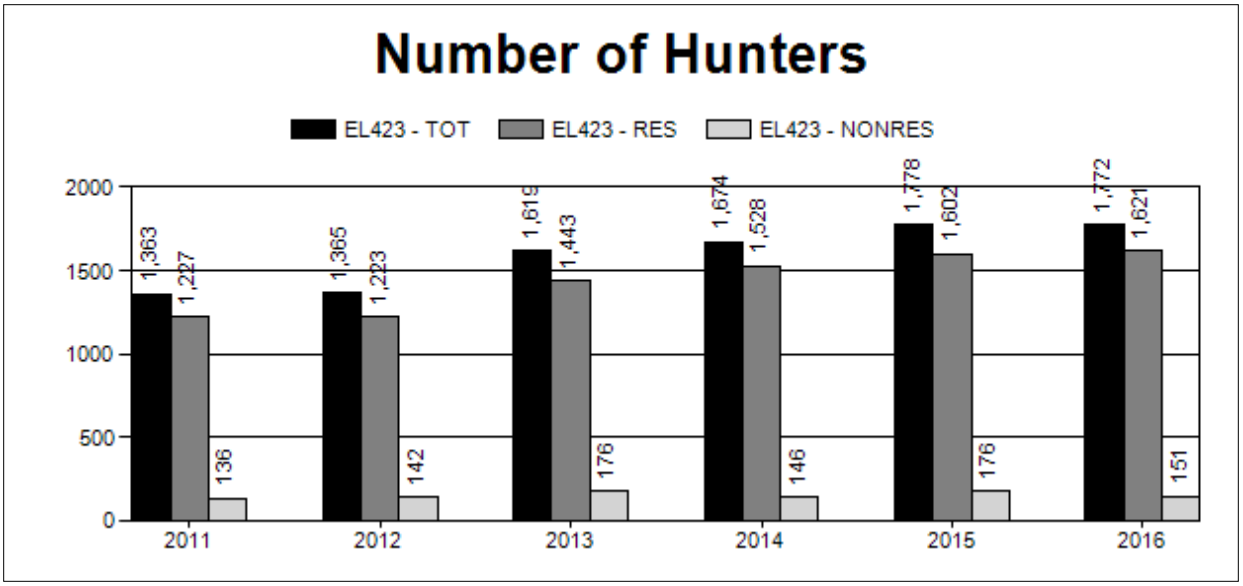
PERIOD: 6/1/2016 - 5/31/2017
PREPARED BY: JEFF SHORT

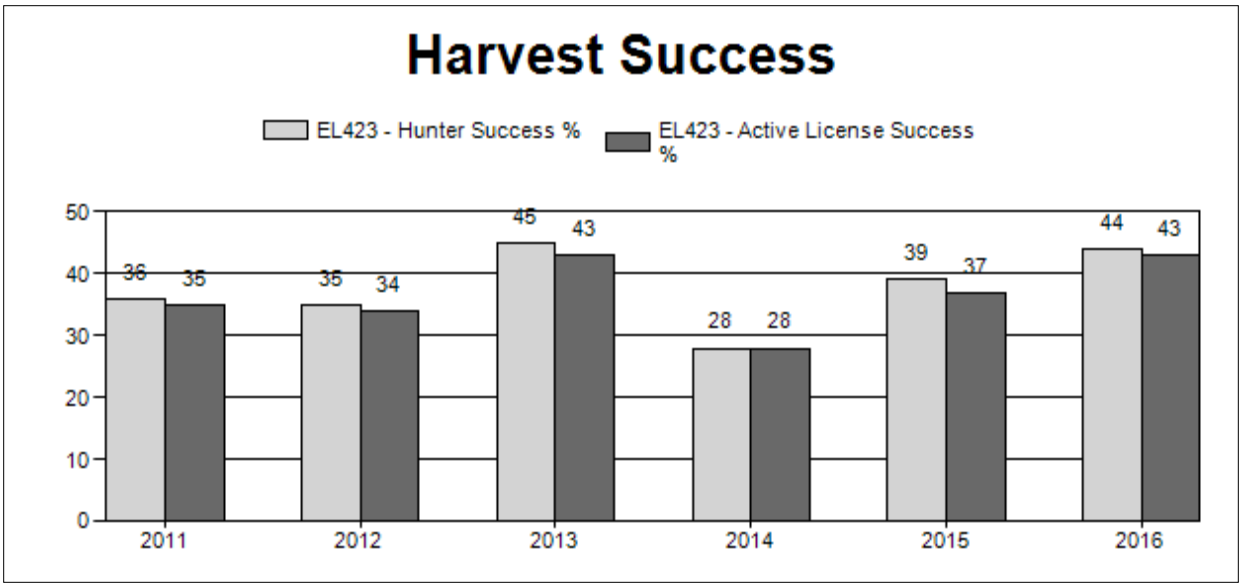
	2011 - 2015 Average	2016	2017 Proposed
Hunter Satisfaction Percent	58%	62%	60%
Landowner Satisfaction Percent	42%	32%	50%
Harvest:	571	787	700
Hunters:	1,560	1,772	1,750
Hunter Success:	37%	44%	40%
Active Licenses:	1,609	1,842	1,800
Active License Success:	35%	43%	39%
Recreation Days:	10,130	10,973	11,000
Days Per Animal:	17.7	13.9	15.7
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	

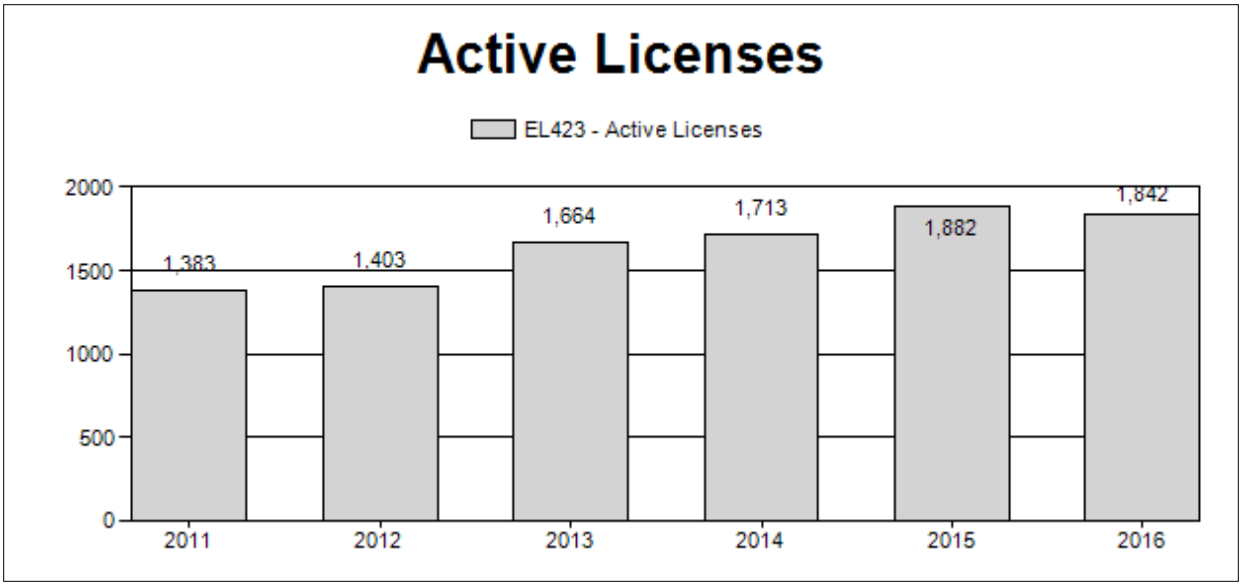
Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	-13%
Number of years population has been + or - objective in recent trend:	3

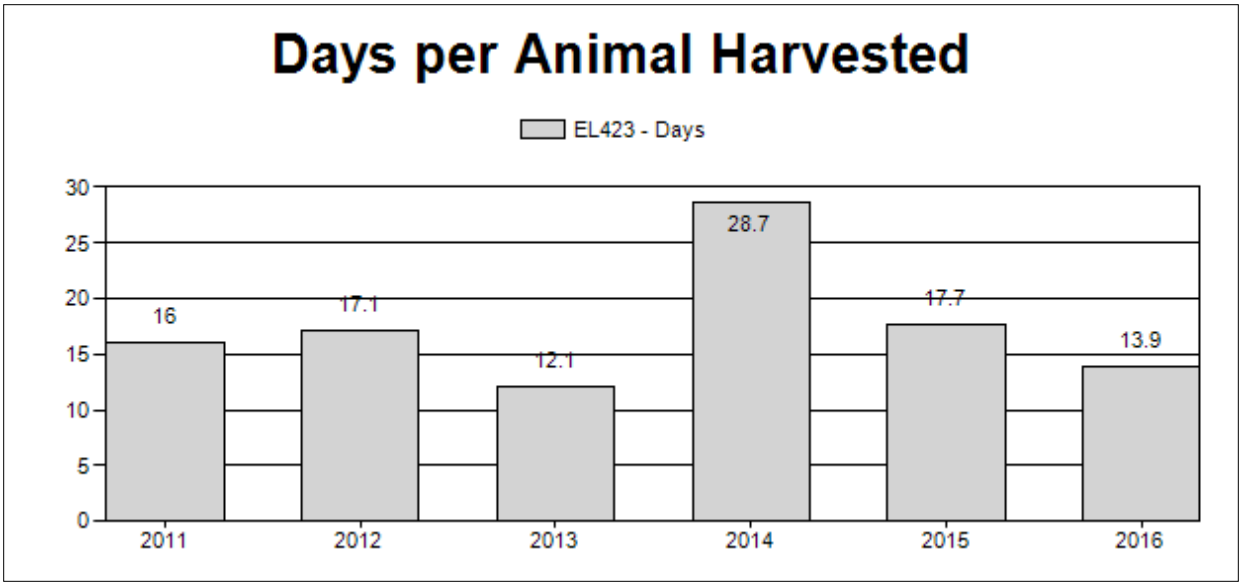


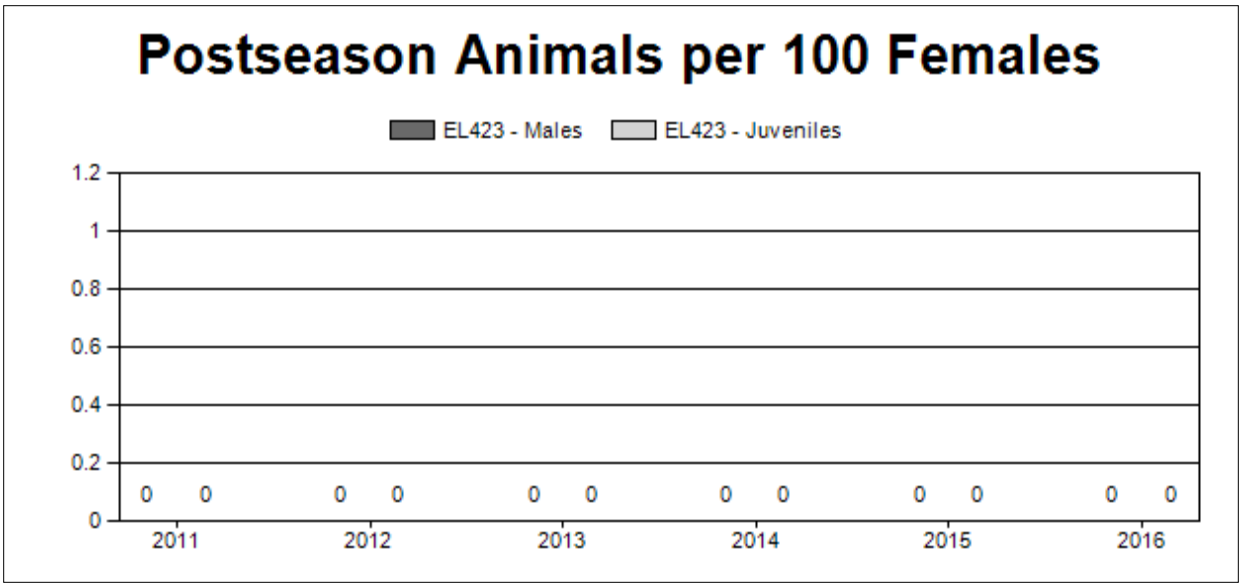

Harvest
EL423 - BULLS
EL423 - SPIKE
EL423 - FEMALES
EL423 - JUV
800
600
400
200
0
127
46
270
43
486
125
74
218
64
481
224
77
327
93
721
176
37
219
43
475
203
30
389
70
692
221
58
436
72
787
2011
2012
2013
2014
2015
2016


Number of Hunters
EL423 - TOT
EL423 - RES
EL423 - NONRES
2000
1500
1000
500
0
1,363
1,227
136
1,365
1,223
142
1,619
1,443
176
1,674
1,528
146
1,778
1,602
176
1,772
1,621
151
2011
2012
2013
2014
2015
2016


Harvest Success
EL423 - Hunter Success %
EL423 - Active License Success %
50
40
30
20
10
0
36
35
35
34
45
43
28
28
39
37
44
43
2011
2012
2013
2014
2015
2016


Active Licenses
EL423 - Active Licenses
2000
1500
1000
500
0
1,383
1,403
1,664
1,713
1,882
1,842
2011
2012
2013
2014
2015
2016


Days per Animal Harvested
EL423 - Days
30
25
20
15
10
5
0
16
17.1
12.1
28.7
17.7
13.9
2011
2012
2013
2014
2015
2016


Postseason Animals per 100 Females
EL423 - Males
EL423 - Juveniles
1.2
1
0.8
0.6
0.4
0.2
0
0 0
0 0
0 0
0 0
0 0
0 0
2011
2012
2013
2014
2015
2016

No classification data for this herd

2017 HUNTING SEASON

SPECIES : **Elk** HERD UNIT : **Uinta (423)**
HUNT AREAS: **106, 107**

Hunt Area	Type	Season Dates Opens	Closes	Quota	License	Limitations
106		Oct. 15	Oct. 31		General	Any elk
106		Nov. 1	Nov. 14		General	Antlerless elk
106	1	Nov. 15	Dec. 31	50	Limited quota	Any elk valid west of the Black's Fork River or north of Wyoming Highway 410; also valid in Area 105 west of the Bear River
106	1	Jan. 1	Jan. 31			Any elk valid in Area 105 west of the Bear River
106	4	Nov. 15	Dec. 31	100	Limited quota	Antlerless elk
106	4	Jan. 1	Jan. 31			Antlerless elk valid on private land or west of the Black's Fork River or north of Wyoming Highway 410
106	7	Aug. 15	Jan. 31	300	Limited quota	Cow or calf valid on private land or west of the Black's Fork River or north of Wyoming Highway 410
107		Oct. 15	Oct. 31		General	Any elk
107		Nov. 1	Nov. 14		General	Antlerless elk
107	4	Nov. 15	Dec. 31	150	Limited quota	Antlerless elk
107	4	Jan. 1	Jan. 31			Antlerless elk valid off national forest within the Henry's Fork River drainage
107	7	Aug. 15	Aug. 31	50	Limited quota	Cow or calf valid in Sweetwater County
107	7	Dec. 15	Jan. 31			Cow or calf valid off national forest within the Henry's Fork River drainage
106, 107	Archery	Sep. 1	Sep. 30			Refer to Section 2 of this chapter

Hunt Area	License Type	Quota change from 2016
Herd Unit Total		

Management Evaluation
Current Postseason Population Management Objective: Satisfaction
Management Strategy: Recreational
2016 Postseason Population Estimate: ~1300
2017 Proposed Postseason Population Estimate: ~1100

Herd Unit Issues

This is an interstate recreational elk herd shared with Utah. Elk summering in the Uinta Mountains in Utah come to Wyoming to winter. Elk hunting is a popular pastime for Uinta County locals in this herd unit, but limited access occurs, primarily on USFS lands on the Wasatch-Cache National Forest. Much of the remaining private land areas are leased to outfitters or otherwise restricted for access. Limited publicly owned winter range is the primary 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 livestock producers hosted 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. This meeting prompted us to take an even more aggressive approach to elk harvest. In difficult winters problems have occurred in parts of hunt area 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 public lands in the southeast part of the hunt area are too low and would like that segment to increase. The area in question has historically drawn 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.

Antlerless licenses in hunt area 107 are used to maintain pressure on elk on the Wyoming side of the state boundary during a hunt held on the Utah side. Damage complaints on the HA 107 side of the herd unit are typically low even during severe winters. 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 third year of this objective we are meeting the hunter satisfaction objective but are not meeting the landowner satisfaction objective. However, the landowner survey returns show the majority of the landowners are satisfied with the current season structure. 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 2016 and into 2017 has been highly variable. In the early part of 2016 the winter started out harsh with high snow loads but it warmed up in February and March to finish fairly mild. A moist spring and early summer followed. In July and August conditions dried up

considerably and into late December fairly low precipitation was received. Winter did not set in until late December 2016. The winter of 2016-2017 has since been very cold with high snowfall and elk migrated to winter ranges.. The winters from 2011 until 2016 were fairly mild with low snowpack and relatively warm temperatures resulting in easy winter conditions. However, the dry springs and summers of 2012 and 2013 negatively impacted summer and winter range forage production.

Habitat

Habitat data 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 which we have done.

	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 through 2016 we continued that harvest strategy. In 2014, weather conditions made elk hunting more difficult and harvest was low at 489 animals harvested. In 2015 weather was more favorable and harvest was up at 692 for the herd unit. For 2016 harvest was gain high at 787 elk harvested. For 2017 we will continue this aggressive hunting strategy to maintain harvest pressure on this herd.

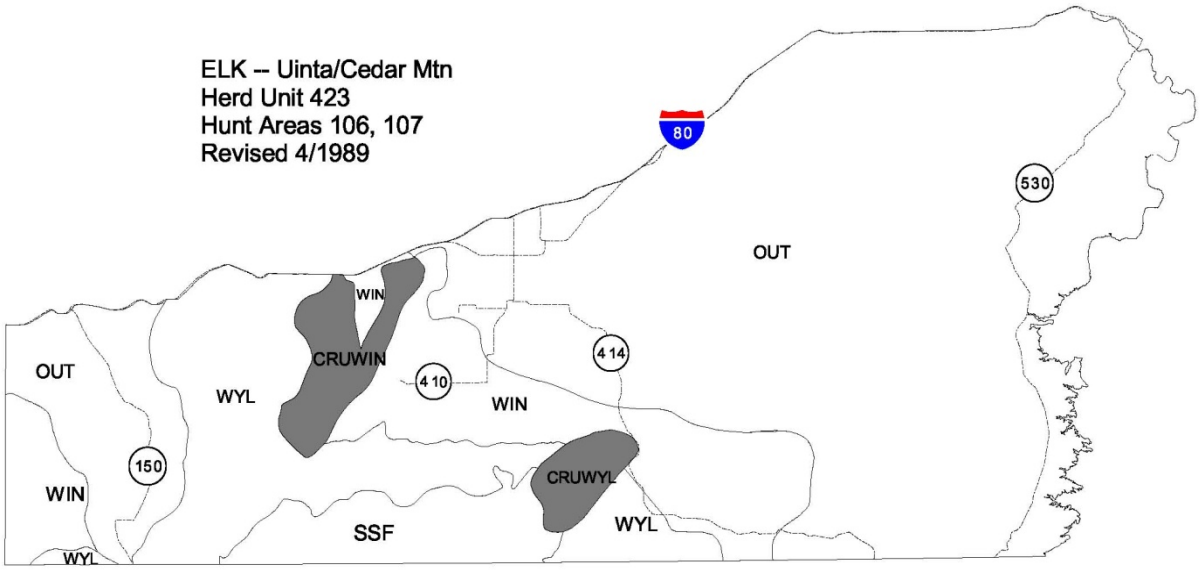
Population

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 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 large 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. It appears that these new season structures will reduce this elk herd. The August 15 – 31 portion of the area 106 and 107 type 7 hunts is to address specific damage issues on private lands. The Hunt Area 106 Type 1 licenses are in place to help deal with late damage problems in the area for which they are valid. They are also valid in a far western portion of HA 105 and extend that part of the season into January. This is to address a specific problem where Utah elk form Deseret Land and Livestock are coming over to Wyoming and damaging stored hay on years with hard winters. This hunt has been very helpful during the difficult winter we are having in 2016/17.


ELK -- Uinta/Cedar Mtn
Herd Unit 423
Hunt Areas 106, 107
Revised 4/1989
80
530
OUT
WIN
CRUWIN
414
410
OUT
WYL
WIN
150
CRUWYL
WIN
SSF
WYL
WYL

2016 - JCR Evaluation Form

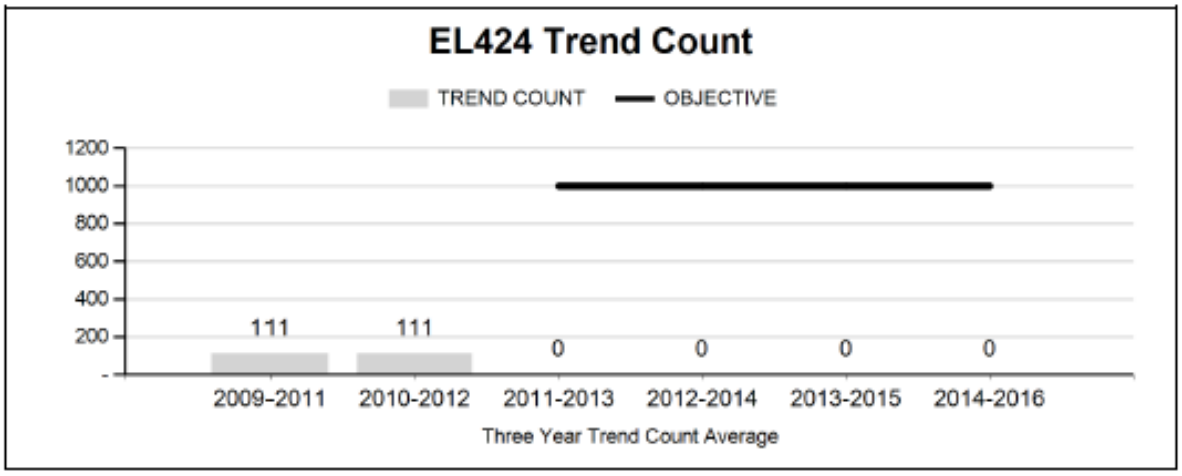
SPECIES: Elk
PERIOD: 6/1/2016 - 5/31/2017
HERD: EL424 - SOUTH ROCK SPRINGS
HUNT AREAS: 30-32
PREPARED BY: PATRICK BURKE

	2011 - 2015 Average	2016	2017 Proposed
Trend Count:	0	0	0
Harvest:	233	250	275
Hunters:	366	391	400
Hunter Success:	64%	64%	69 %
Active Licenses:	366	391	400
Active License Success	64%	64%	69 %
Recreation Days:	2,822	3,111	3,200
Days Per Animal:	12.1	12.4	11.6
Males per 100 Females:	42	38	
Juveniles per 100 Females	35	30	

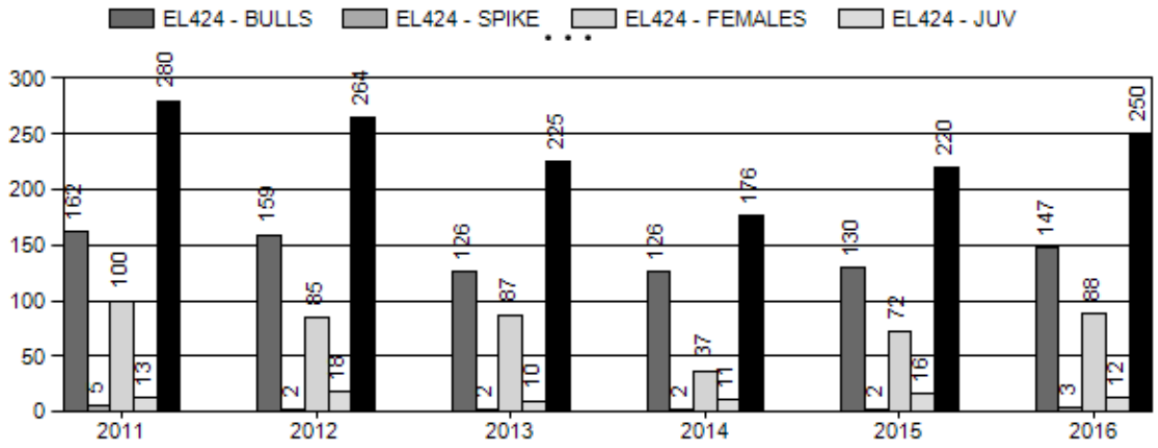
Trend Based Objective (± 20%)	1,000 (800 - 1200)
Management Strategy:	Special
Percent population is above (+) or (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0

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

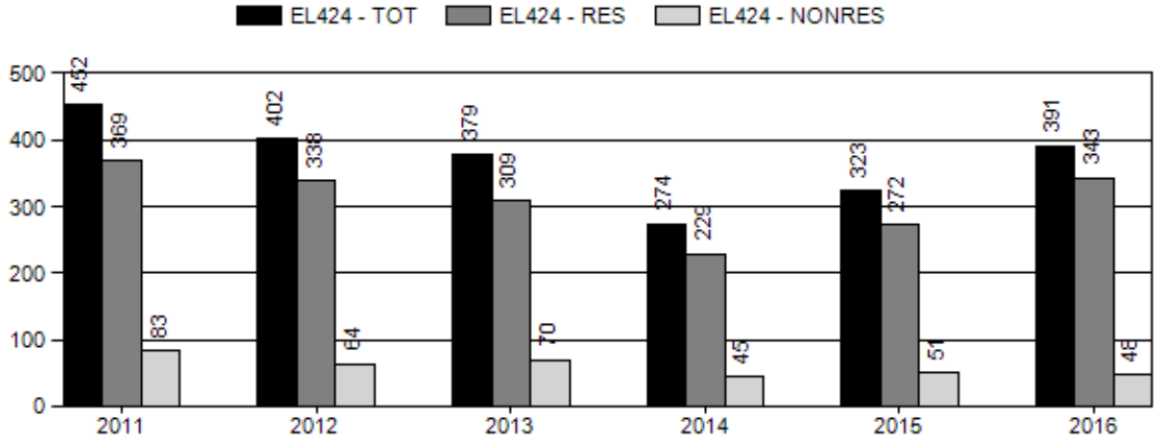
	JCR Year	Proposed
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%



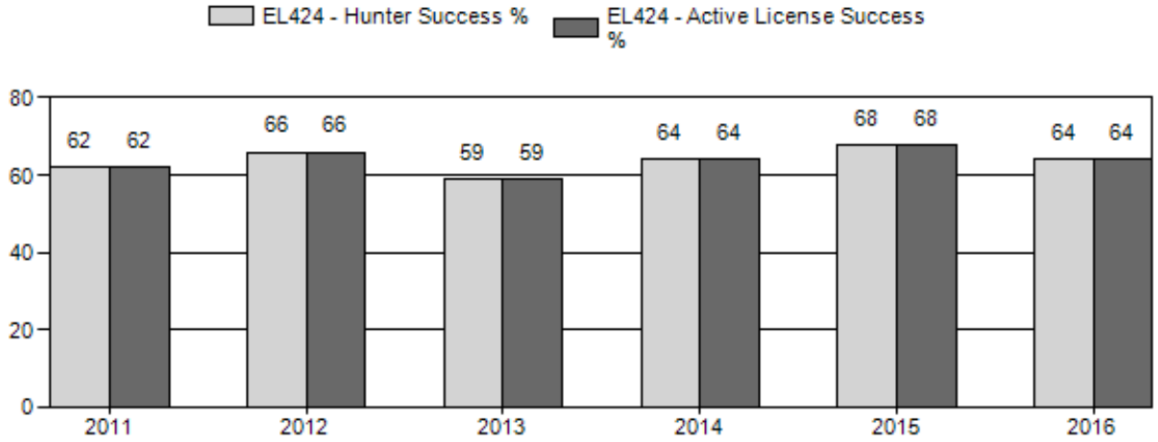
Harvest



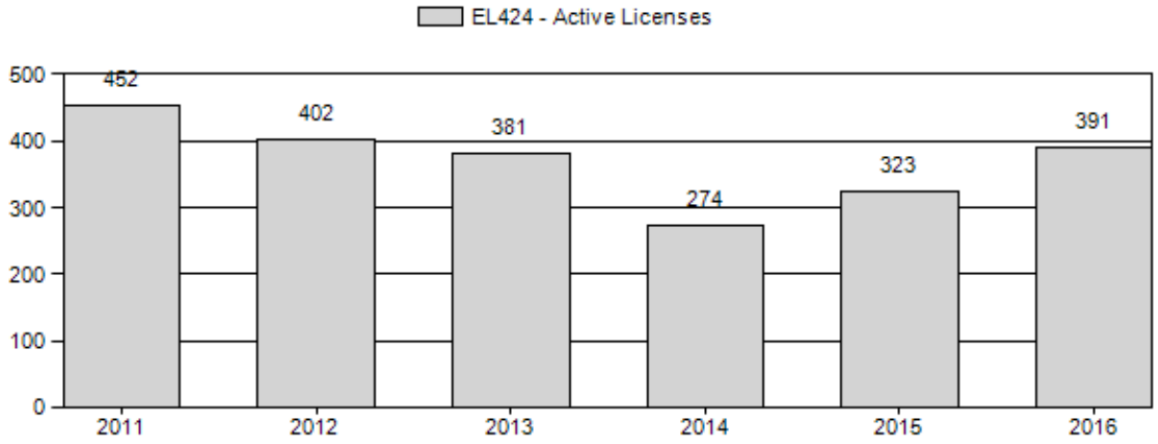
Number of Hunters



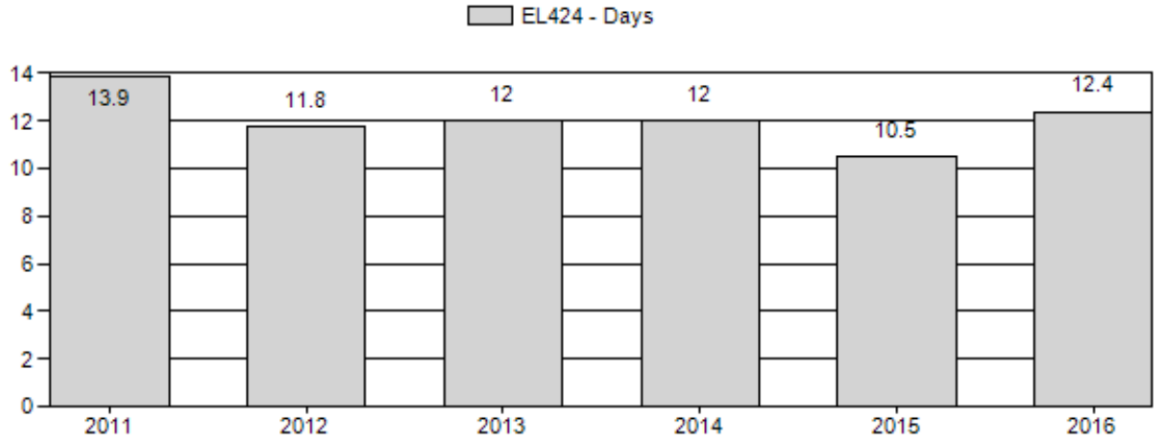
Harvest Success



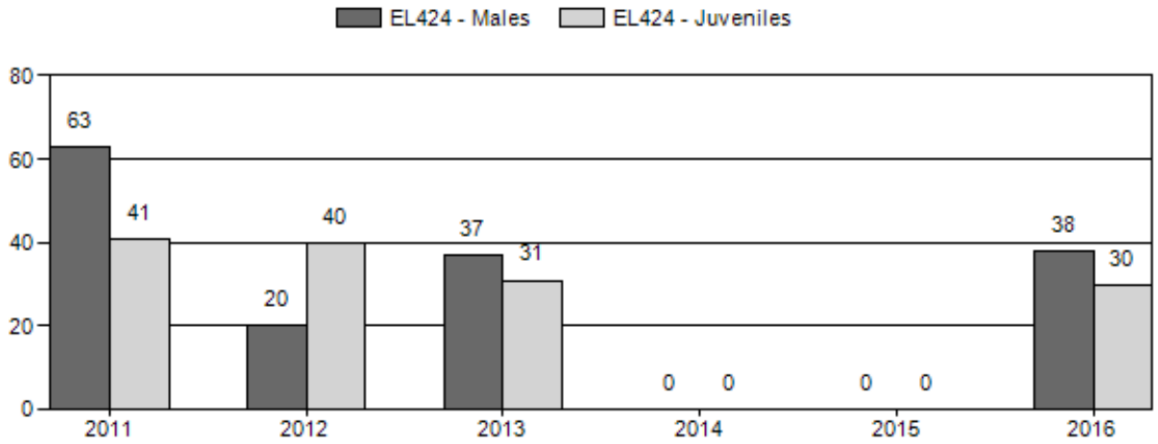
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Elk Herd EL424 - SOUTH ROCK SPRINGS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
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	397	0	0	0	± 0	0	± 0	0
2015	0	0	0	0	0%	0	0%	0	0%	0	397	0	0	0	± 0	0	± 0	0
2016	0	76	78	154	22%	410	60%	124	18%	688	485	19	19	38	± 0	30	± 0	22

2017 HUNTING SEASONS
SOUTH ROCK SPRINGS ELK HERD (EL424)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
30	1	Oct. 1	Oct. 31	50	Limited quota	Any elk
	4	Oct. 1	Oct. 31	50	Limited quota	Antlerless elk
31	1	Oct. 1	Oct. 31	100	Limited quota	Any elk
	4	Oct. 1	Oct. 31	100	Limited quota	Antlerless elk
32	1	Oct. 1	Oct. 31	50	Limited quota	Any elk
	4	Oct. 1	Nov. 12	50	Limited quota	Antlerless elk
	9	Sept. 1	Sept. 30	25	Limited quota	Antlerless elk, archery only

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
30-32	All	Sept. 1	Sept. 31	Valid in the entire area(s)

Hunt Area	Type	Quota change from 2016
30	1	+10
	4	+20
Herd Unit Total	**1**	**+10**
	4	**+20**

Management Evaluation
Current Management Objective: 1,000
Management Strategy: Special
2016 Postseason Population Estimate: N/A
2017 Projected 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 this interstate elk 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 changes on a nearly day-to-day basis, especially during the hunting season since significant interchange has been documented between the three states, with most of the interchange occurring between Wyoming and Colorado. There is a fairly large group of elk living near the Tri-State marker that tend to bounce back and forth 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. This segment of the herd has particularly difficult to target for harvest as they have learned that they can use the state line as a refuge from hunting pressure.

Weather

The most prominent weather condition present in the South Rock Springs herd unit for the last several years has been dry summer conditions with relatively mild winters. Those conditions changed somewhat in 2016 however, which saw an improvement in summer moisture levels and a significantly more severe winter than this area has been seen since the 2010-2011 winter. While, the country south of Interstate 80 did not receive as much in the way of persistent, deep snow conditions as the country further north, it did still receive significant snowfall and experienced bitterly cold temperatures during January 2017. Conditions moderated though during early February, which allowed for some snowmelt, which exposed some shrubs on the winter ranges, improving conditions for animals in this herd. The end of February saw a return to deep snow conditions in the herd unit however. Fortunately, the extreme cold temperatures of January did not return in February, which will be beneficial to wintering wildlife. While the harsh winter condition of this winter may result in a few of the weaker calves and older adults succumbing to the winter, it is not expected to have any noticeable effects of the South Rock Springs elk herd.

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, four of the five monitored sites showed positive LD values for 2016, while two of the sites had LD values at or just below zero.

Table 1. Trends in aspen regeneration LD Index values (vertical inches) for the SRS herd unit 2013-2016.

Monitoring site	2013	2014	2015	2016
Pine Mt/Red Ck.	NA	-7.8	-1.8	0
Tri-State /Red Ck.	NA	+3.36	+7.2	+13.2
Miller Mt.	+6.6	+4.6	+3.6	+18.6
Aspen Mt.	+4.6	-4.5	+1.2	+4.6
Little Mt./Dipping Spr.	0	-0.9	+1.2	-0.6
Little Mt./West Currant Ck.	0	-1.6	0	+5.5

Field Data

The South Rock Springs elk herd was classified from a helicopter in conjunction with the South Rock Springs deer herd during December 2016. During those classification flights, a total of 688 elk were classified in the herd unit, consisting of 410 cows, 124 calves, 78 adult bulls, and 76 yearling bulls. That resulted in observed ratios of 30 calves per 100 cows, and 38 bulls per 100 cows which included 19 yearling bulls per 100 cows.

The majority of the elk observed during those flights were seen in HA31, with 574 of the classified elk coming from that hunt area. Hunt Area 30 contained the next largest sample of elk, with 68 elk being found in that hunt area, and HA32 contained the smallest number of elk with only 46 elk being located in that hunt area during the classification flights.

Harvest Data

In 2016 there were a total of 391 active licenses in the herd unit. The overall harvest success rate for those 391 hunters across all hunt areas and license types in the herd unit was 64%, and it took the average hunter 12.4 days to harvest an elk in the herd unit. The 2016 hunting season resulted in a harvest of 250 elk across the herd unit. Of those 250 harvested elk, 147 of them were two year or older bulls, three were spike bulls, 88 of them were cows, and 12 were calves.

When broken out by individual hunt area, the hunt area with the highest harvest success rate in 2016 was HA30, with reported a 90% success rate for Type 1 and 4 license types combined, with 92% success for the Type 1 license holders and 86% for the Type 4 hunters. Hunt Area 31 reported a 68% overall success rate, with Type 1 licenses having a success rate of 82%, and a 54% success rate for Type 4 license holders. Hunt Area 32 reported a 43% overall success rate, with the Type 1 license holders experiencing a 64% success rate, and a 31% success rate for Type 4 license holders, along with a 24% success rate for the Type 9 license holders.

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 2016, tooth samples were submitted from 62 bull elk or about 42% of the bulls harvested based on the harvest survey. Based on these submissions, the average age of harvested bulls in 2016 was 6.2 years old. This compares with an average age of 5.6 in 2015, 6.2 in 2014, and 5.7 in both 2013 and 2012. The oldest bull aged from the herd unit in 2016 was one 11.5 year old bull that was harvested in HA31. The oldest bull aged from HA30 a 10.5 year old bull, and the oldest from HA32 was also 10.5 years old. In past years, the oldest age class of bull harvested was 9.5 in 2015, 10.5 in 2014, 9.5 in 2013, 7.5 in 2012, and 11.5 in 2011.

Population

Since collar data from three separate studies being conducted in Colorado, Utah, and Wyoming have demonstrated that at least portions of this herd move freely between Wyoming, Colorado, and to a lesser extent 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.

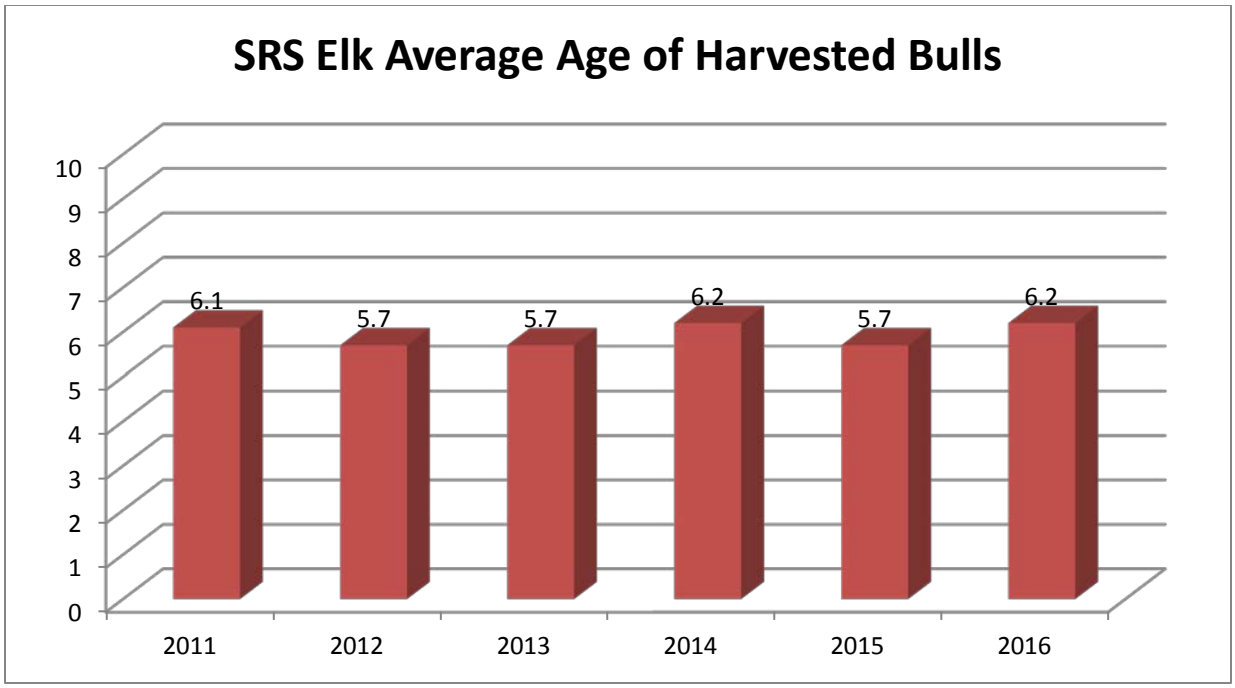
Due to the fact that funds were available for a classification flight in 2016 and an adequate number of elk were encountered during that flight, the 2016 data can be used to examine the number of elk in the herd. The classification sample size of 688 elk, while not a trend count and only a sample of the herd is generally in line with previous sample sizes and suggests that the herd is still at an appropriate level.

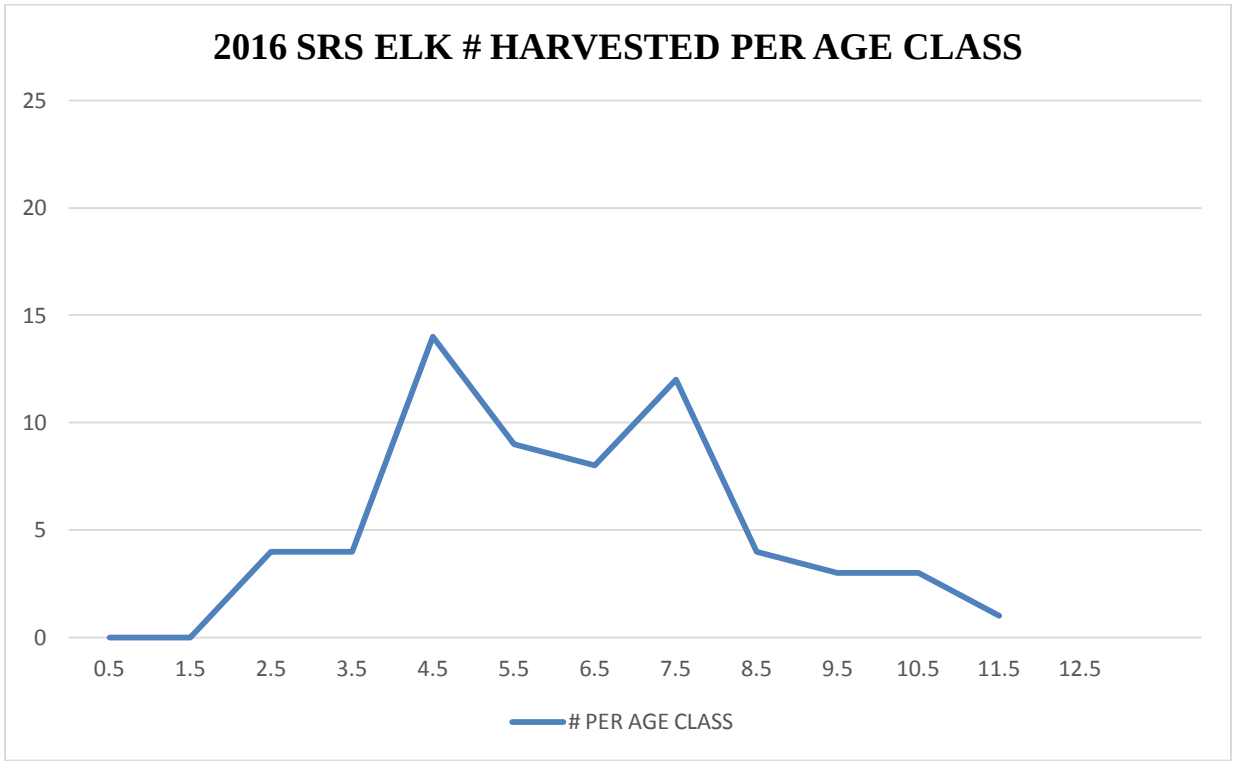
Due to budget restrictions and the need for data from higher profile herds in the region, no trend count flight was conducted in the herd unit in 2016.

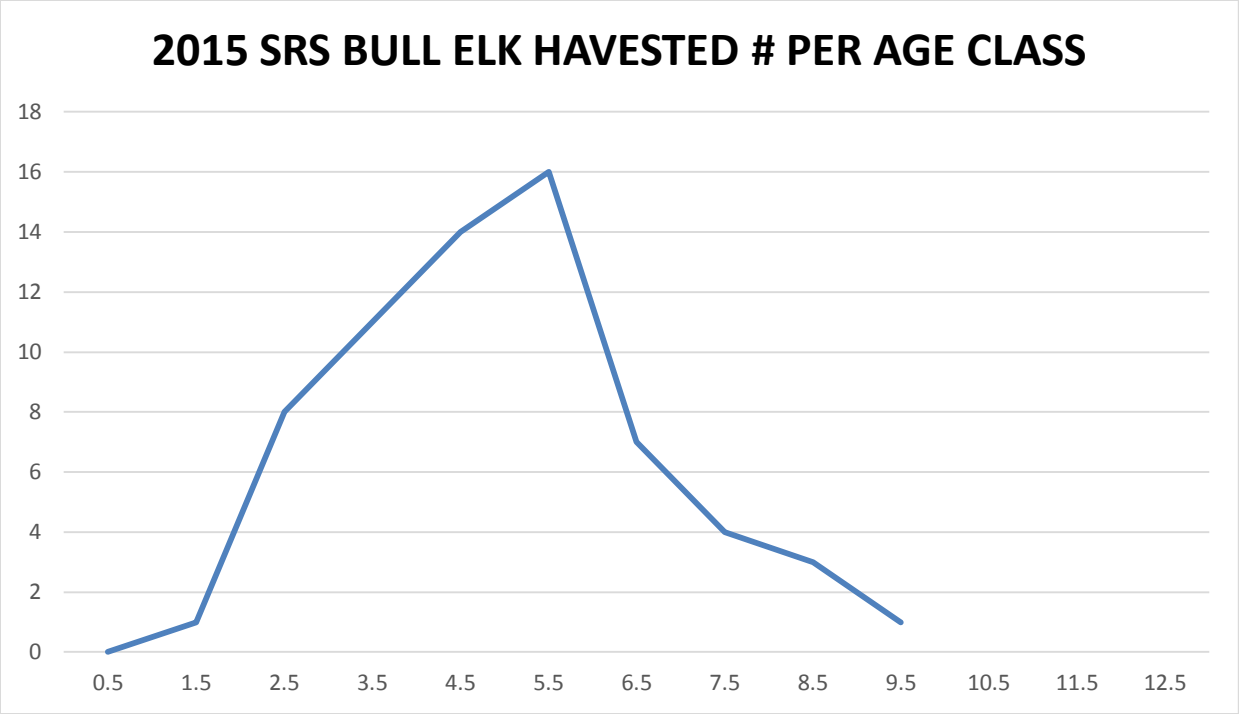
Management Summary

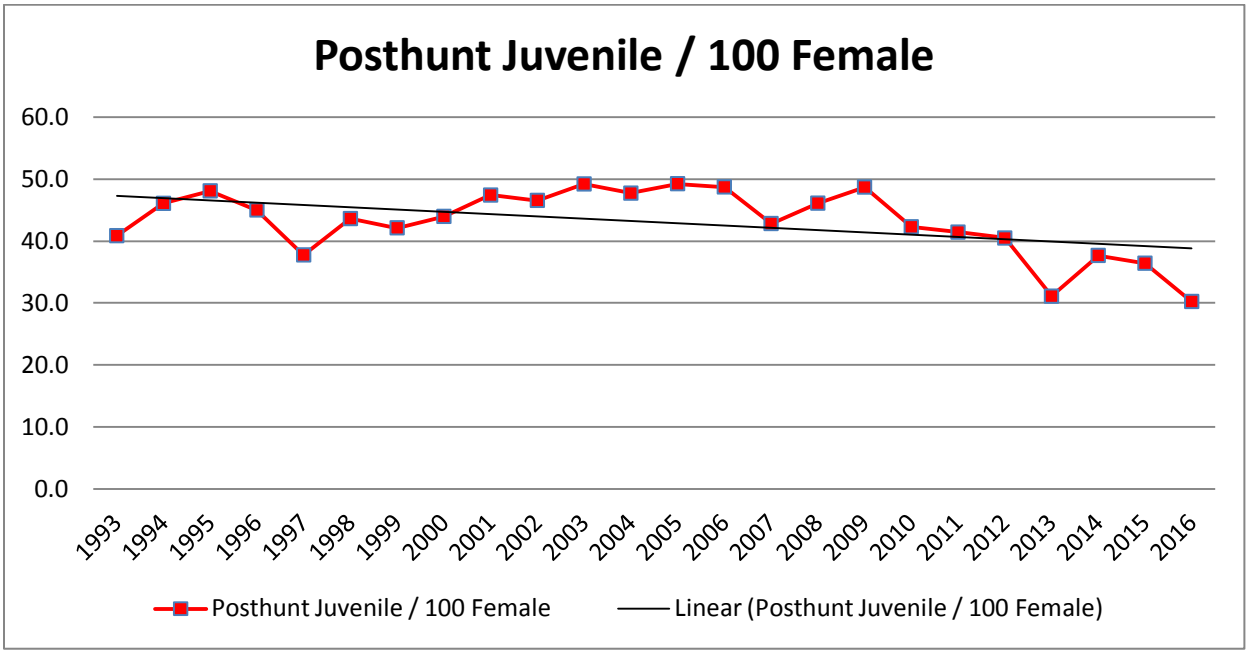
The 2017 hunting season is generally similar to season structures from the past few years. The only changes for 2017 are slight increases in both the Type 1 and Type 4 license types in Hunt Area 30. These increases were implemented due to the feeling by some of the local managers that the available elk population in that hunt area would allow for some increased hunter opportunity there.

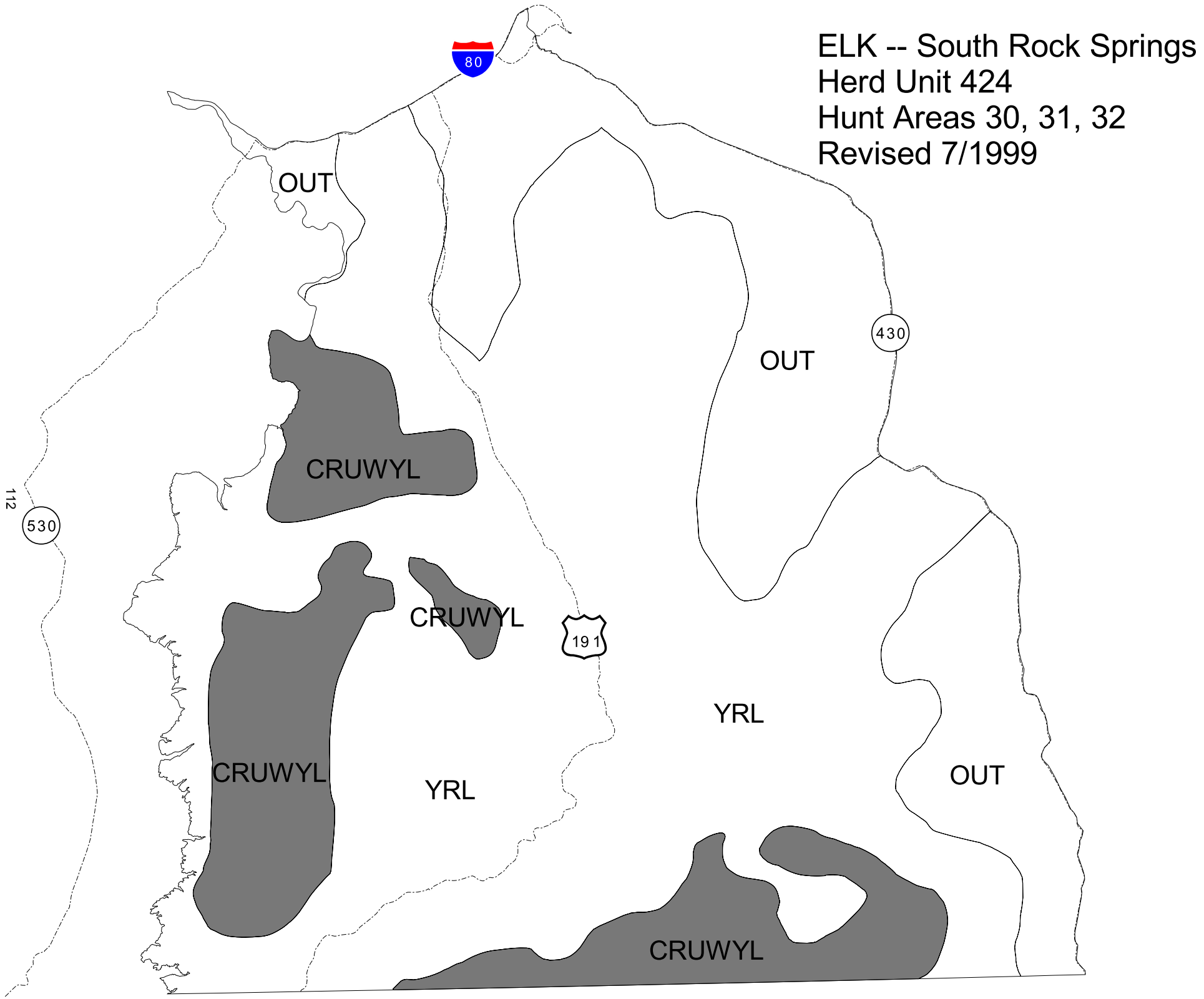
License increases were not proposed for Hunt Area 32 due to the lower success rates for hunters in that area, and due to the fact that almost all of the elk in the hunt area leave the state and move into Colorado as soon as hunters show up for rifle season. Comments received from the harvest survey and conversations with hunters in the field continue to revolve around hunter's inability to locate elk anywhere in the hunt area. During field contacts, many hunters say that they never encountered any elk during the hunting season. Instead of increasing Type 4 license numbers, which will probably not result in an increased elk harvest, the 2017 hunting season again includes offering the Type 9 license valid in September for cow elk only. While success was minimal on this license type in 2015 and 2016, it is still hoped that this strategy will help harvest some cow elk from the hunt area before they move into Colorado and are no longer available to Wyoming hunters.


SRS Elk Average Age of Harvested Bulls
10
9
8
7
6
5
4
3
2
1
0
6.1
5.7
5.7
6.2
5.7
6.2
2011
2012
2013
2014
2015
2016


2016 SRS ELK # HARVESTED PER AGE CLASS
25
20
15
10
5
0
0.5
1.5
2.5
3.5
4.5
5.5
6.5
7.5
8.5
9.5
10.5
11.5
12.5
PER AGE CLASS


2015 SRS BULL ELK HAVESTED # PER AGE CLASS
18
16
14
12
10
8
6
4
2
0
0.5
1.5
2.5
3.5
4.5
5.5
6.5
7.5
8.5
9.5
10.5
11.5
12.5


Posthunt Juvenile / 100 Female
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
Posthunt Juvenile / 100 Female
Linear (Posthunt Juvenile / 100 Female)


ELK -- South Rock Springs
Herd Unit 424
Hunt Areas 30, 31, 32
Revised 7/1999
80
OUT
OUT
430
CRUWYL
112
530
CRUWYL
191
YRL
CRUWYL
YRL
OUT
CRUWYL

2017 Proposed - Season Setting Evaluation Form

SPECIES: Elk
PERIOD: 6/1/2016 - 5/31/2017

HERD: EL425 - SIERRA MADRE

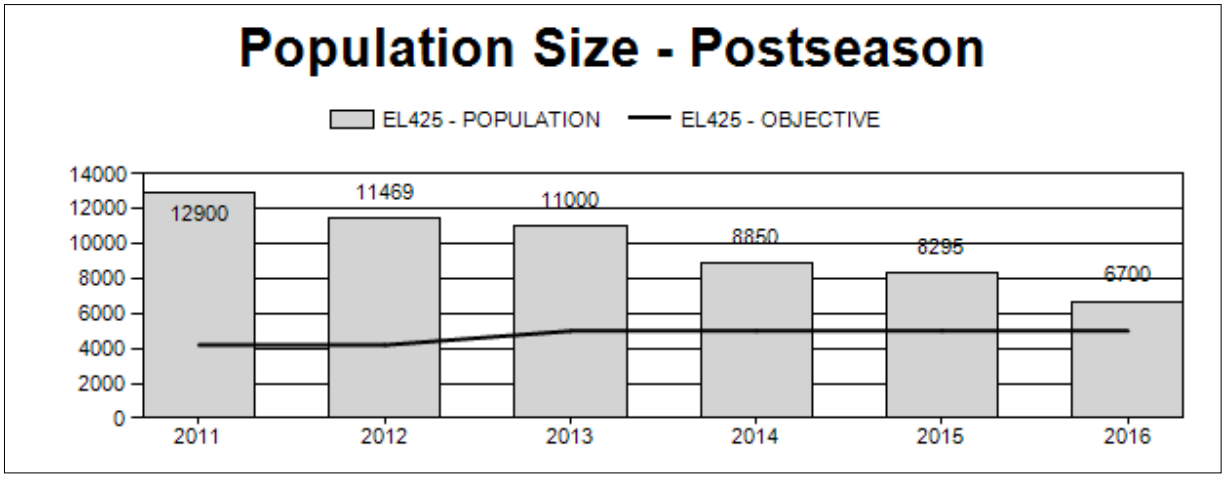
HUNT AREAS: 13, 15, 21, 108, 130
PREPARED BY: TONY MONG

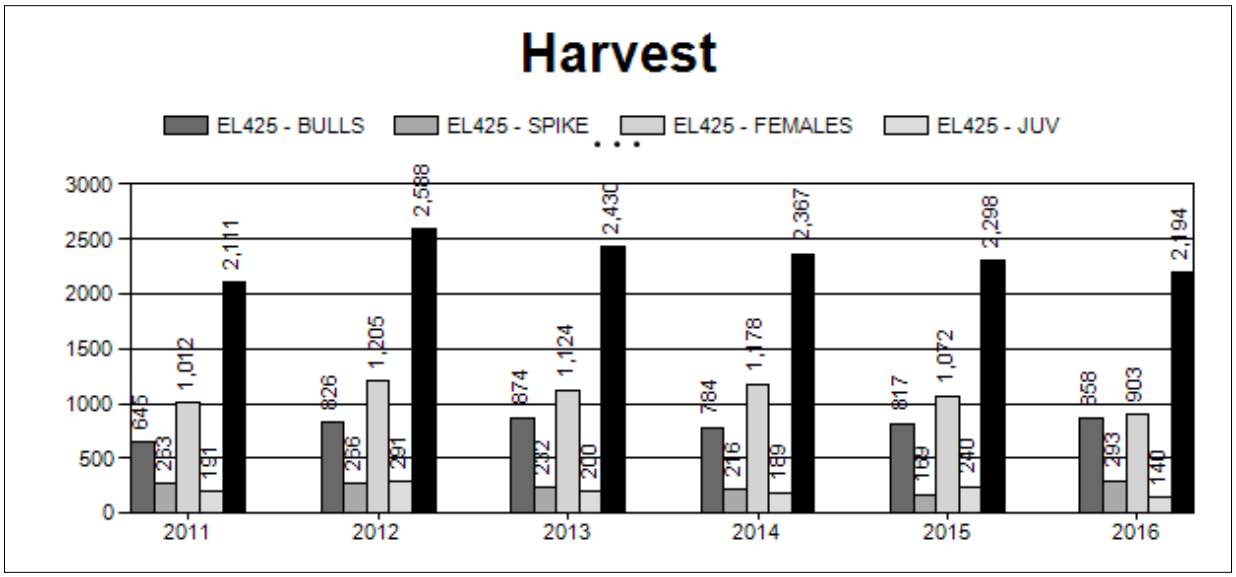
	2011 - 2015 Average	2016	2017 Proposed
Population:	10,503	6,700	5,500
Harvest:	2,359	2,194	1,500
Hunters:	5,834	6,038	5,800
Hunter Success:	40%	36%	26%
Active Licenses:	6,089	6,324	6,000
Active License Success:	39%	35%	25 %
Recreation Days:	40,253	45,825	35,000
Days Per Animal:	17.1	20.9	23.3
Males per 100 Females	27	39	
Juveniles per 100 Females	38	41	

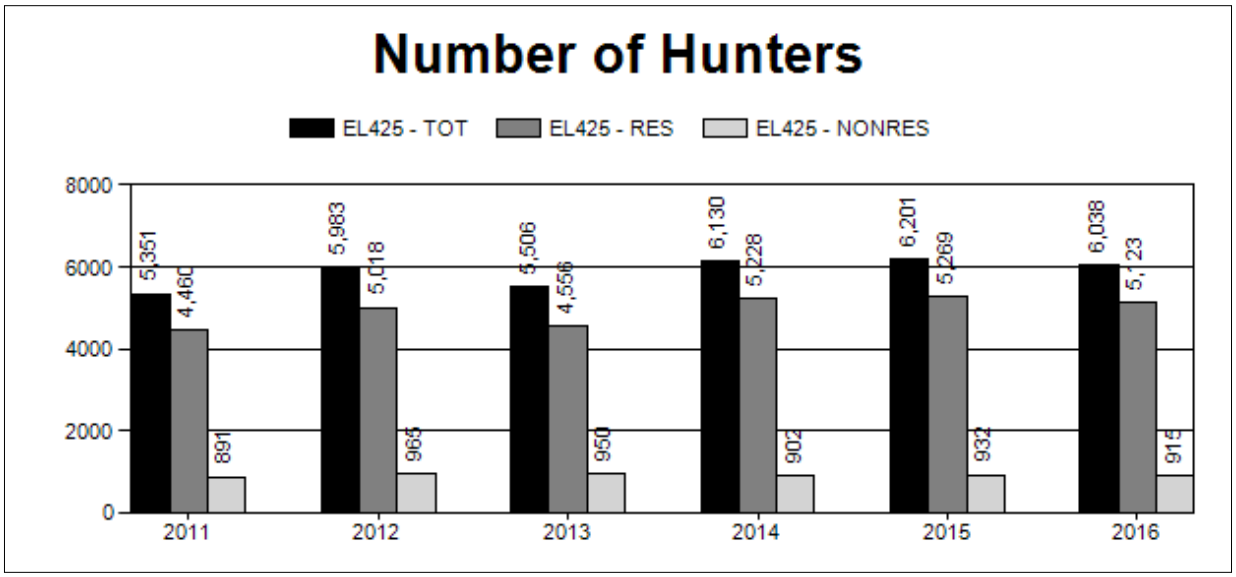
Population Objective (± 20%) :	5000 (4000 - 6000)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	34%
Number of years population has been + or - objective in recent trend:	10
Model Date:	2/21/2017

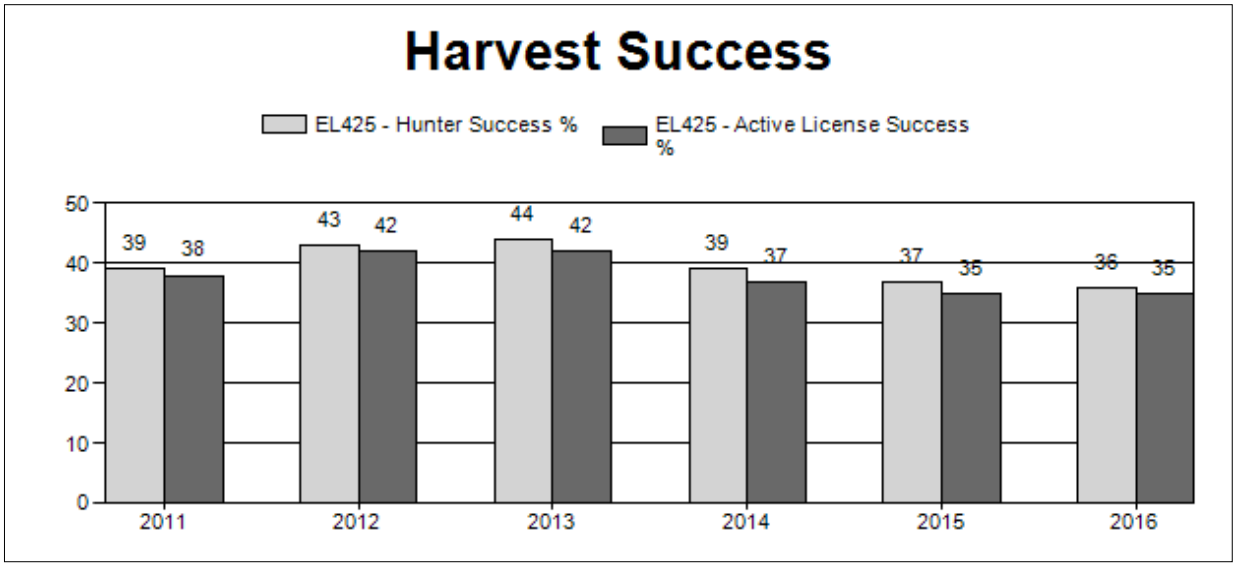
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

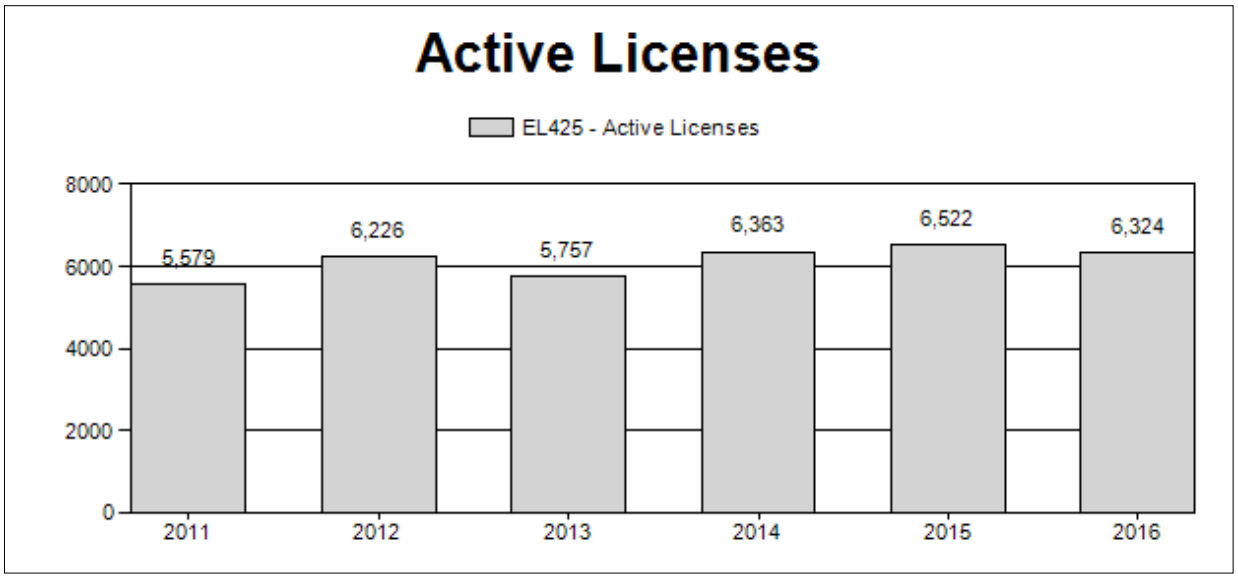
	JCR Year	Proposed
Females ≥ 1 year old:	18%	9%
Males ≥ 1 year old:	55%	72%
Total:	22%	20%
Proposed change in post-season population:	10%	10%

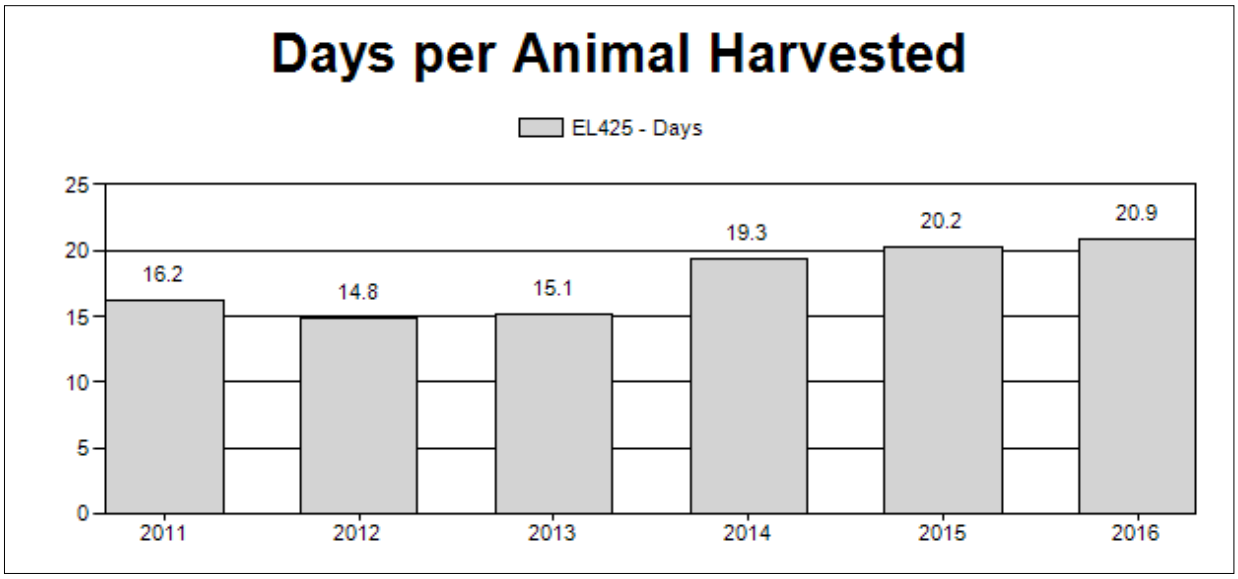


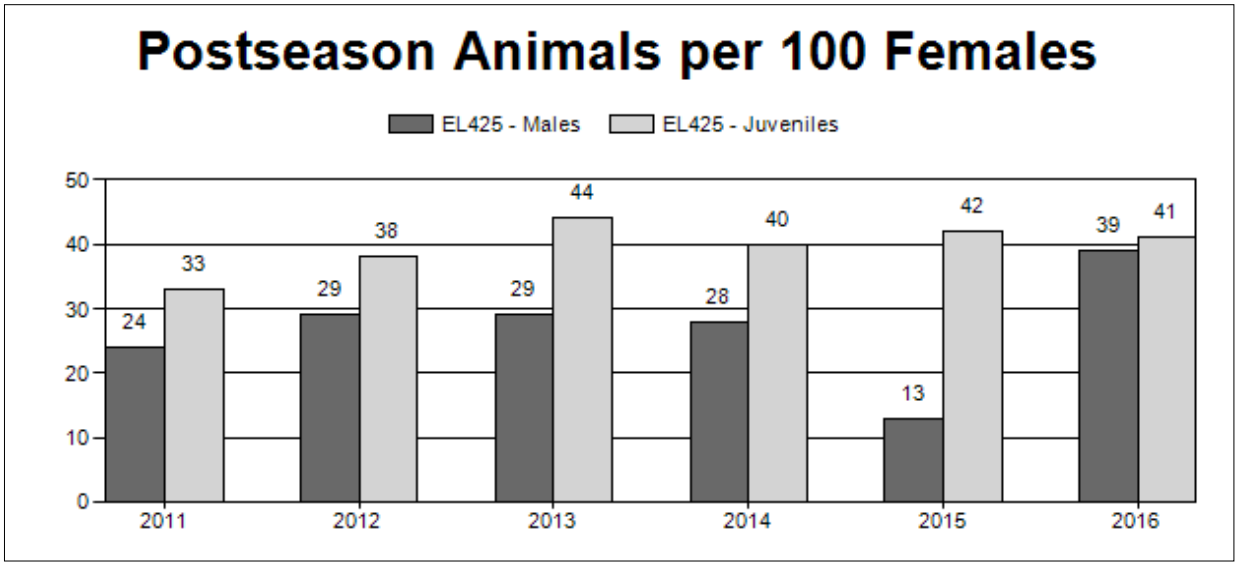

Harvest
EL425 - BULLS
EL425 - SPIKE
EL425 - FEMALES
EL425 - JUV
3000
2500
2000
1500
1000
500
0
645
253
1,012
191
2,111
826
256
1,205
291
2,588
874
232
1,124
200
2,430
784
216
1,178
189
2,367
817
169
1,072
240
2,298
858
293
903
140
2,194
2011
2012
2013
2014
2015
2016


Number of Hunters
EL425 - TOT
EL425 - RES
EL425 - NONRES
8000
6000
4000
2000
0
5,351
4,460
891
5,983
5,018
965
5,506
4,556
950
6,130
5,228
902
6,201
5,269
932
6,038
5,123
915
2011
2012
2013
2014
2015
2016


Harvest Success
EL425 - Hunter Success %
EL425 - Active License Success %
50
40
30
20
10
0
39
38
43
42
44
42
39
37
37
35
36
35
2011
2012
2013
2014
2015
2016


Active Licenses
EL425 - Active Licenses
8000
6000
4000
2000
0
5,579
6,226
5,757
6,363
6,522
6,324
2011
2012
2013
2014
2015
2016


Days per Animal Harvested
EL425 - Days
25
20
15
10
5
0
16.2
14.8
15.1
19.3
20.2
20.9
2011
2012
2013
2014
2015
2016


Postseason Animals per 100 Females
EL425 - Males
EL425 - Juveniles
50
40
30
20
10
0
24
33
29
38
29
44
28
40
13
42
39
41
2011
2012
2013
2014
2015
2016

2011 - 2016 Postseason Classification Summary

for Elk Herd EL425 - SIERRA MADRE

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2011	12,900	398	345	743	15%	3,113	64%	1,041	21%	4,897	0	13	11	24	± 1	33	± 1	27
2012	11,469	323	342	665	18%	2,259	60%	851	23%	3,775	0	14	15	29	± 1	38	± 2	29
2013	11,000	158	124	282	17%	985	58%	430	25%	1,697	0	16	13	29	± 2	44	± 3	34
2014	8,850	432	554	986	17%	3,546	60%	1,407	24%	5,939	0	12	16	28	± 1	40	± 1	31
2015	8,295	20	9	29	8%	222	65%	93	27%	344	0	9	4	13	± 3	42	± 6	37
2016	6,700	480	610	1,090	21%	2,835	56%	1,149	23%	5,074	0	17	22	38	± 1	41	± 1	29

2017 PROPOSED HUNTING SEASON

SPECIES : **Elk** HERD UNIT : **Sierra Madre (425)**
HUNT AREAS: **13, 15, 21, 108, 130**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
13		Oct. 15	Oct. 22		General	Antlered elk
		Oct. 23	Oct. 31		General	Any elk
	6	Oct. 1	Nov. 14	100	Limited quota	Cow or calf
15		Oct. 15	Oct. 22		General	Antlered elk
		Oct. 23	Oct. 31		General	Any elk
	6	Oct. 1	Nov. 14	100	Limited quota	Cow or calf
21		Oct. 13	Oct. 14		General youth	Any elk
		Oct. 15	Oct. 22		General	Antlered elk
		Oct. 23	Oct. 31		General	Any elk
	6	Oct. 15	Nov. 15	200	Limited quota	Cow or calf
	7	Aug. 15	Dec. 31	25	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
130		Oct. 1	Oct. 23		General	Any elk

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
13	All	Sep. 1	Sep. 30	Valid in the entire area(s)
15	All	Sep. 1	Sep. 30	Valid in the entire area(s)
21	All	Sep. 1	Sep. 30	Valid in the entire area(s)
108	All	Sep. 1	Sep. 30	Valid in the entire area(s)
130	All	Sep. 1	Sep. 30	Valid in the entire area(s)

Hunt Area	*Type*	*Quota change from 2016*
13	*6*	*0*
15	*6*	*0*
21	*6*	*-200*
	7	*0*
108	*1*	*0*
	4	*0*
	6	*0*
	7	*0*

Herd Unit Total	***1***	***0***
	4	***0***
	6	***-200***
	7	***0***
	Total	***0***

Management Evaluation
Current Management Objective: 5,000 (2013)
Management Strategy: *Recreational*
2016 postseason Estimate: 6700
2017 Proposed Postseason Population Estimate: 5500

The Sierra Madre elk herd is trending toward the established objective of 5000, and will likely be at objective following the 2017 hunting season. Because of the high number of hunters recreating in this area, we are proposing to decrease overall cow harvest through a removal of the general antlerless hunt and by reducing cow/calf type 6 licenses. However, we do not want to dramatically reduce antlerless harvest so the antlerless portion of the general season has been replaced with an "any elk" season. The proposed season structure should reduce cow elk harvest by roughly ½, but continue to reduce this herd toward the objective range of 4,000 to 6,000.

Herd Unit Issues

There were three major issues discussed by hunters in the elk general comments. These issues included 1) number of hunters/ATVs, 2) reduced elk numbers, and 3) beetle kill. Not surprisingly, we continue to receive significant negative hunter comments about crowding throughout the her, but especially in the three main general license areas (areas 13, 15, 21).

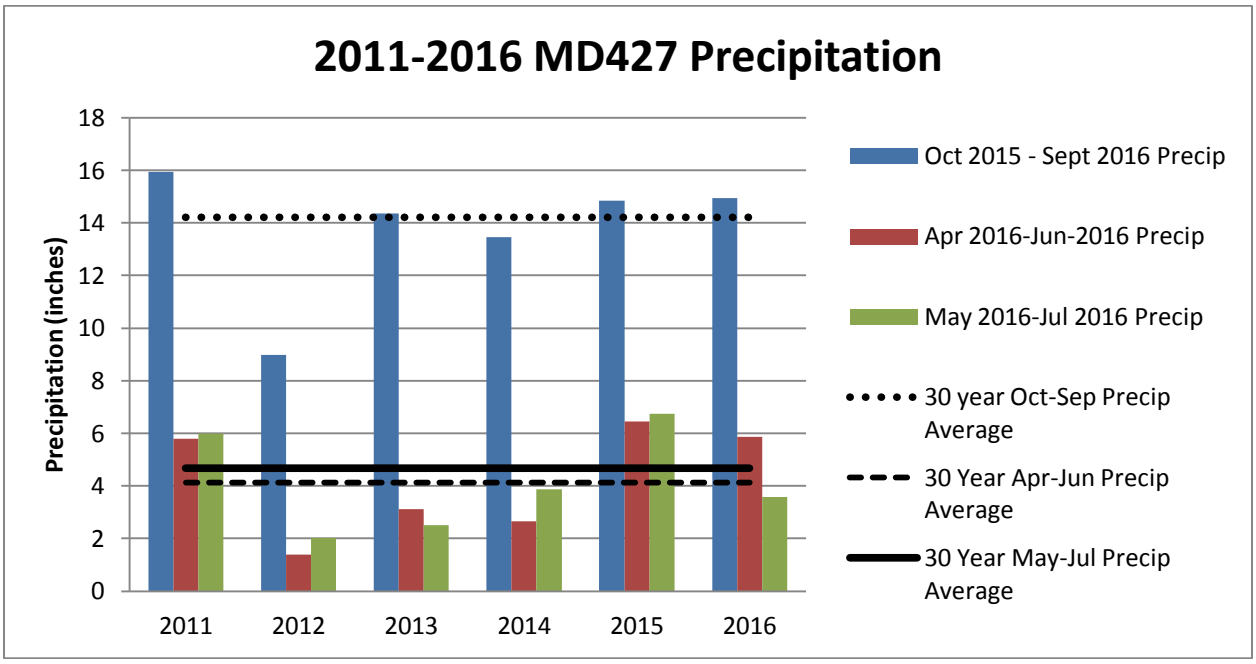
The Sierra Madre elk herd has been under a management strategy over the last 7 years designed to reduce elk numbers. This has been successful in reducing the number of elk within the herd, and numbers are now the lowest estimated in two decades. Negative comments from hunters regarding elk numbers have increased as elk numbers have decreased. Hunter numbers decreased slightly to 6,000 in 2016, while elk numbers were only slightly higher. This is alarming as we approach a 1:1 ratio of hunters and elk. As we have reported for the past few years, elk hunter opportunity in this herd unit will decrease as elk numbers decrease, and regulation complexity will increase to address a myriad of management concerns from elk numbers to bull ratios to damage management. We are currently at that point where we are implementing more conservative seasons given reduced elk numbers.

A landscape wide impact to this herd unit and hunters is the progression of beetle kill through the Sierra Madre range. Currently trees have begun to fall at alarming rates which may lead to disruption in traditional movement patterns of elk, or much more likely, the ability of hunters to access the forest and elk. One hunter commented in relation to the beetle kill "elk cannot transverse the area and are avoiding traveling corridors used in the past." We have noted limited affect on elk, but this timber issue is definitely heavily influencing hunters. A greater effort to

work with the U.S. Forest Service to address these areas must be made in the coming years to ensure areas remain accessible for hunters.

Another issue that will need to be addressed in the coming years is related to a refuge scenario being created in hunt area 108, by restricting or eliminating hunter access on the large acreage controlled by the Overland Trail Cattle Company. We need to continue to communicate the importance of elk harvest on the vast amount of lands they own within hunt area 108, the lack of which has significant impact to their neighbors and management of this species.

Weather



Parameter-Elevation Relationships on Independent Slopes Model (PRISM) was utilized to estimate precipitation by calculating a climate-elevation regression for each Digital Elevation Model grid cell (4 km resolution).

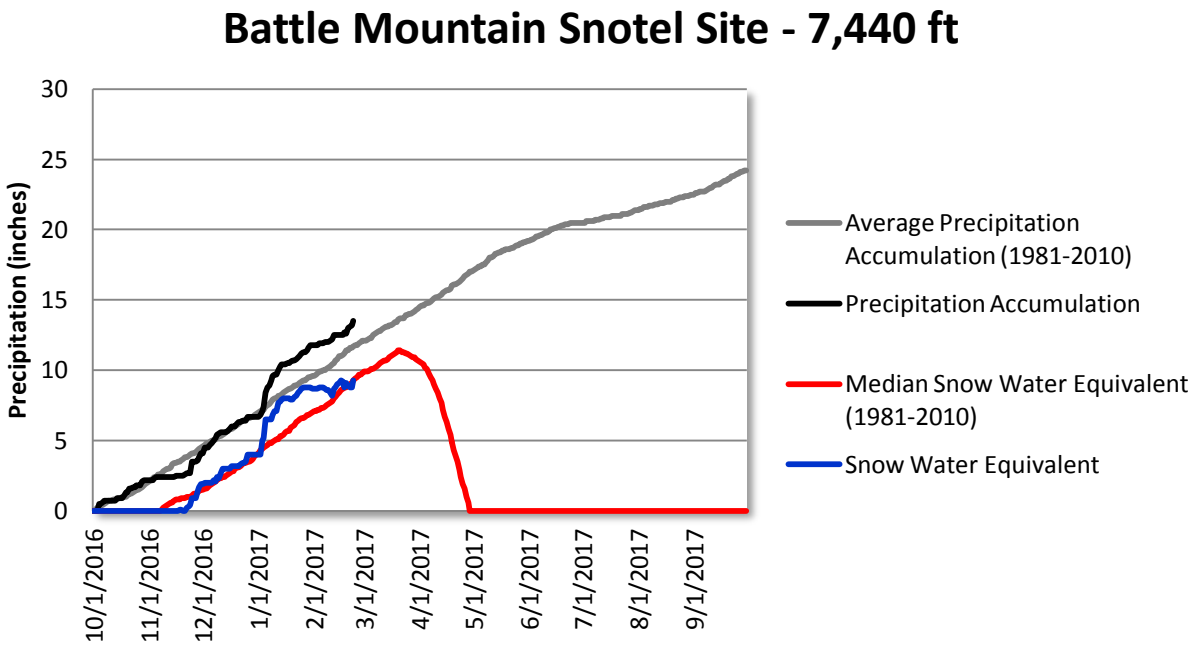
Precipitation

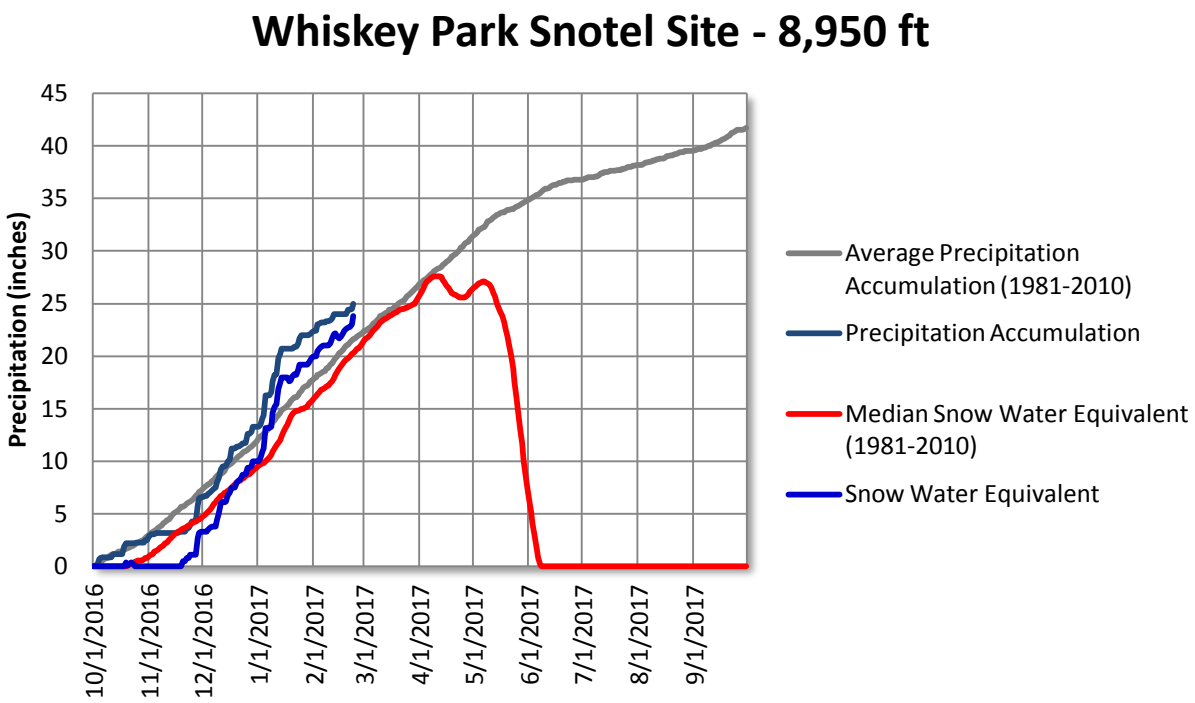
Annual bio-year precipitation from October 2015 through September 2016 was slightly higher than the 30 year average. Growing season precipitation (April-June 2016) across the herd unit was higher than the 30 year average, however later season precipitation from May-July 2016 (higher elevation growing season) was notably lower than the 30 year average. As illustrated by the above graph, most of the precipitation occurred outside of the primary growing season, likely in the form of snow. Although there was significant spring moisture in 2016 from both early spring snows and significant late spring rain events, precipitation slowed by early June. June through October 2016 was extremely dry causing vegetation to dry and cure fairly early in the growing season. The dry summer in conjunction with fine fuel loading from the high vegetative production seen in 2014 & 2015, big wind events, and the abundance of beetle killed lodgepole

created an environment conducive to large wildfires throughout the Sierra Madres. These fires will improve elk habitats through the herd unit.

Winter Severity

Early winter 2016 was unseasonably warm well into December across the herd unit. These warmer temperatures paired with late fall moisture resulted in a late fall green-up at some elevations, which may have provided elk with an extra nutritional boost prior to winter. January brought several big snowfall events throughout the area followed by sustained temperatures well below zero, which may have created severe energy demands on elk with very little access to food even in crucial winter range for several weeks. However, high winds and a sustained warming trend in February helped to melt off lower elevation habitats, and it is expected this winter had little effect on this species. At mid-range elevations, as reported by the Battle Mountain Snotel Site, snowpack (snow water equivalent) is currently at 100% of normal; however it was at 151% in mid-January reflecting those big snow events. Higher elevations have slightly higher current winter snowpack with the Whiskey Park Snotel Site reporting a snowpack that is 117% of normal (2/23/2017) also showing significantly higher snowpacks in mid-January of 146%. This was also seen in the distribution of elk in the herd unit with very few elk in the mid-elevation areas and higher numbers of elk found in the Wild Horse area near Hwy 789.





Field Data

Field data from the herd unit seems to verify the population model trend that shows a decreasing elk herd. In 2012 we began a new elk flight dollar distribution program within the region. Each year the majority of elk flight budget would switch between the West Green River Herd and the Sierra Madre herd. During "off" years for each herd an attempt would be made to ground classify elk. The Sierra Madre years for flight classifications fall on the even years, thus bio-year 2016 classifications for this herd were conducted by helicopter. Two striking changes to observed data were noted this year when compared to previous years; a significant increase in observed bull ratios, and a decrease in the total number of elk observed on the flight (despite more effort and flight time). Both observations are consistent with increased antlerless harvest and decreased elk population.

The 2016 bull ratio was 15:100 higher than the 2014 flight, and the highest bull ratio ever recorded in the herd. This may have been due to conditions being perfect for counting bull groups out in the open, and a reduction of cows in the herd through harvest. The number of cows harvested has exceeded bull harvest over 6 of the past 7 years (except for the 2016 season). This ratio will allow us to have a more bull focused harvest this year. The increased bull ratio was not being driven by the spike cohort as may be expected but rather a mix of both adult and spikes in the population (Figure 1).

The second change that again supports the decreasing herd numbers is the total number of elk observed on flights within hunt areas 21 and 108 (where the vast majority of elk occur in this herd). If you merely look at the "total" number of elk classified without taking into account the amount of effort put into those numbers it may seem there has not been a decrease in the

population. However, once you put in some type of metric for effort and couple that with elk numbers it becomes immediately apparent the ability for us to find elk is decreasing as effort increases, even under the optimum survey conditions we had in February 2017. Figure 2 depicts the number of elk counted per mile on 3 surveys over the last 5 years. Although this may not be a perfect method is does match the trends within the population model. If we simply take the 2011 post-season population estimate (12,000) and use the percentage of change from the elk/mile parameter (56%) to decrease that number we end up with an estimate of about 5,200 which is not too far off from our current post-season population estimate of 6,700. This should not be considered an independent estimate of population size, but does support the idea that we have reduced elk and are nearing objective levels.

Figure 1. EL425 bull ratios broken into yearling and adult bull groups.

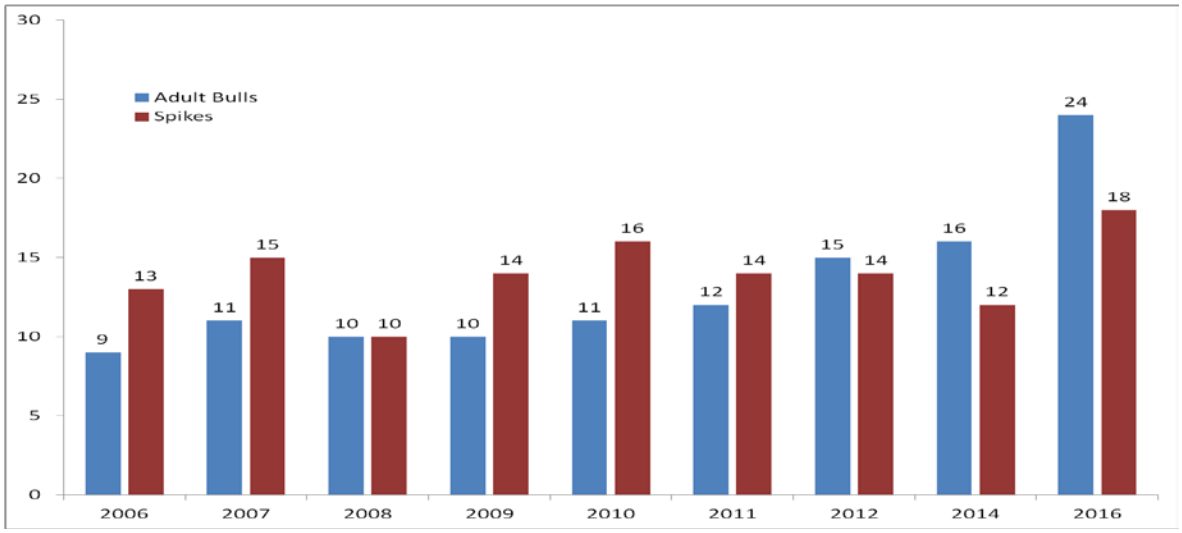
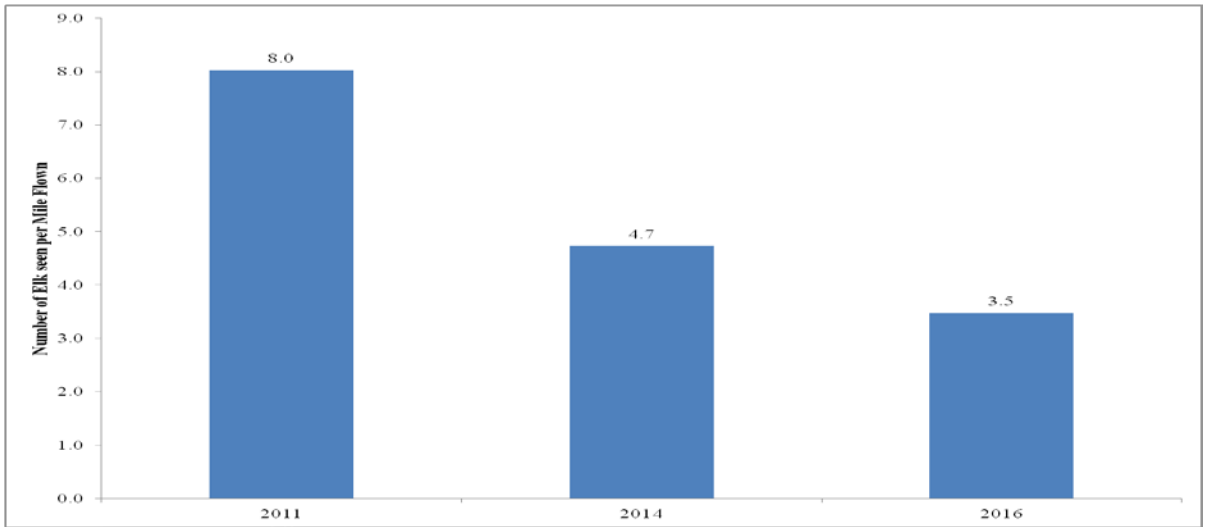


Figure 2. EL425 elk numbers per unit of effort for the 2011, 2014 and 2016 JCR years.



Harvest Data

Elk harvest data over the last several years indicates that it has become more difficult to find an elk during hunting season. Since 2013 we have seen a steady increase in effort and a decrease in hunter success (Figure 3). The increase in effort has increased by 30% and hunter success has decreased by 10%. In addition we have seen hunter satisfaction decline since 2013 with the lowest recorded "satisfied or very satisfied" rating since this data was initiated in 2011 (Figure 4).

Figure 3. EL425 hunter effort (bars associated with primary y-axis) and hunter success (line associated with the secondary y-axis) from 2011 to 2016.

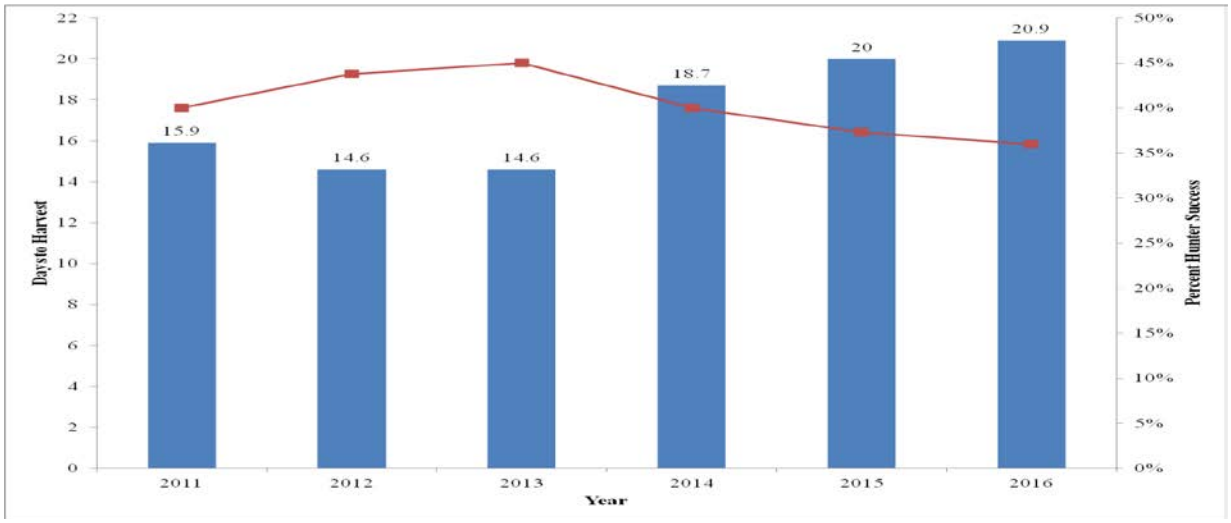
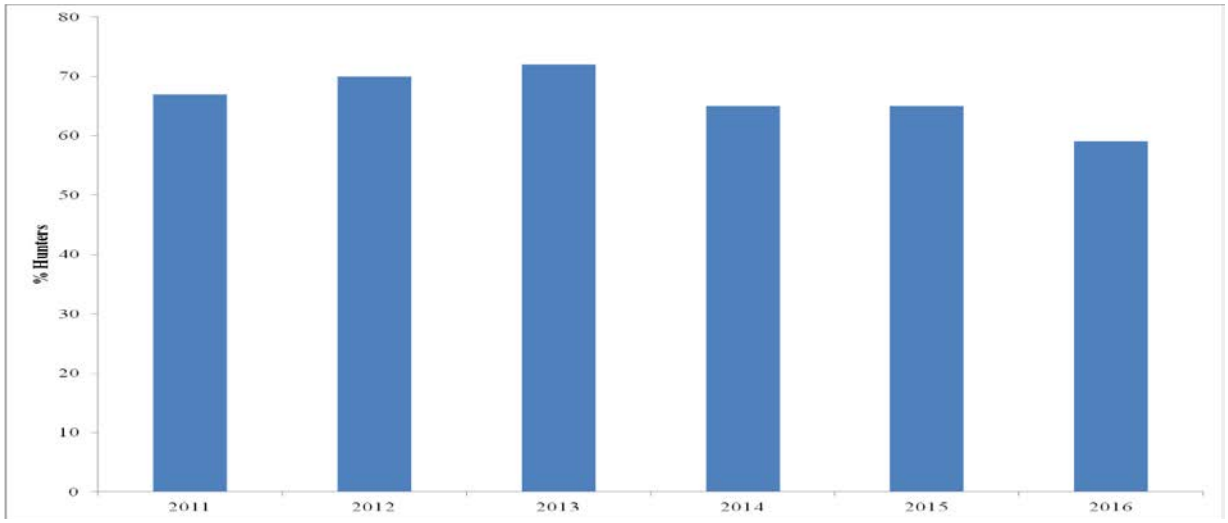


Figure 4. EL425 hunter "satisfied" or "very satisfied" responses to the satisfaction survey from 2011 to 2016.



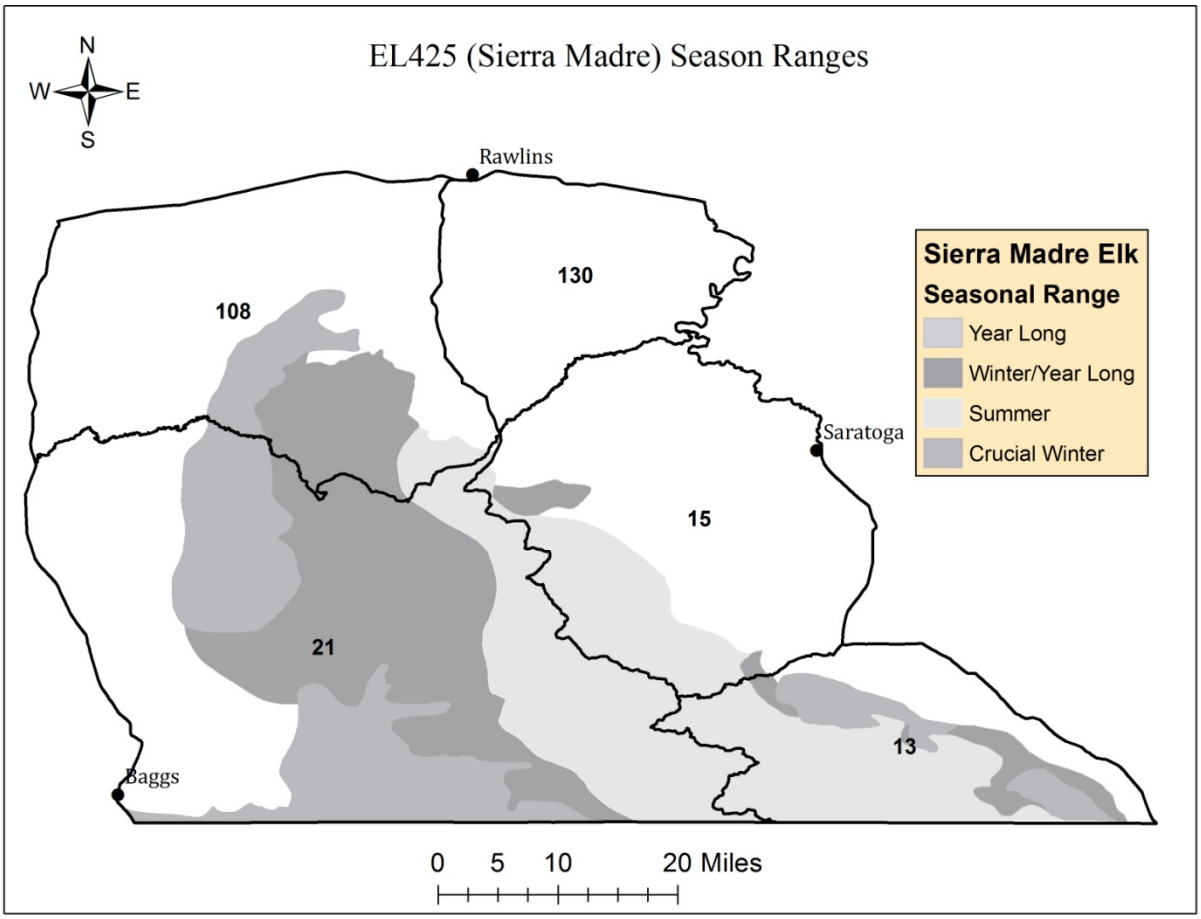
Population

The current post-hunt population model estimate for the herd indicates that we are still above the current objective of 5,000 (range 4000 to 6000) at 6,700 animals. The TSF, CA, MSC model has the lowest AICc value indicating the best model fit. The main issue with the model currently is the bull ratios are not tracking with what we observed this year. This is discussed above in the "Field Data" section. As this population continues to decrease, this model (and our experience) indicates that it cannot sustain the same harvest levels we have seen in the past, and hunter complaints will increase. In addition to the standard parameters included in the model, an independent estimate of the population was created from a sightability flight conducted in March 2013 (WGFD JCR 2012). The model indicates that the sightability estimate was most likely estimating low. However, adding that parameter does seem to restrain the model to more reasonable spreadsheet model estimates.

Management Summary

This herd has always presented a challenge due to popularity, high hunter numbers and harvest, high productivity, and typically low bull ratios. The implementation of any elk and general cow seasons starting in 2010 has been successful in providing ample opportunity for hunters in Wyoming and has actually addressed the low bull ratios issues of the past. The season structure over the last 7 years has been extremely successful in harvesting large numbers of cows (7,800 total harvested) and decreasing population sizes approaching objective. Although this is a win for managing herds to objective levels, it does create a management challenge given the popularity of the area with hunters and their expectations for success. Hunter opportunity in this herd is beginning to be reduced with reduced elk numbers and will likely be further reduced in the near future as the objective is achieved.

As we approach objective, we propose to slow the rate of reduction through a decrease in overall cow harvest. We are aligning general seasons between the three major general hunt areas (areas 13, 15, 21) in order to spread harvest and reduce season complexity. This mix of increasing the time allowed for bull harvest and any elk should still provide a cow harvest that will continue to decrease total elk numbers without falling below objective.


EL425 (Sierra Madre) Season Ranges
N
W
E
S
Rawlins
Saratoga
Baggs
108
130
15
21
13
Sierra Madre Elk
Seasonal Range
Year Long
Winter/Year Long
Summer
Crucial Winter
0 5 10 20 Miles

2016 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2016 - 5/31/2017

HERD: EL426 - STEAMBOAT

HUNT AREAS: 100 | PREPARED BY: PATRICK BURKE

	2011 - 2015 Average	2016	2017 Proposed
Population:	1,116	1,600	1,300
Harvest:	266	384	380
Hunters:	329	458	450
Hunter Success:	81%	84%	84 %
Active Licenses:	334	475	475
Active License Success:	80%	81%	80 %
Recreation Days:	1,456	1,755	1,800
Days Per Animal:	5.5	4.6	4.7
Males per 100 Females	49	52	
Juveniles per 100 Females	43	34	

Population Objective (± 20%): 1200 (960 - 1440)

Management Strategy: Special

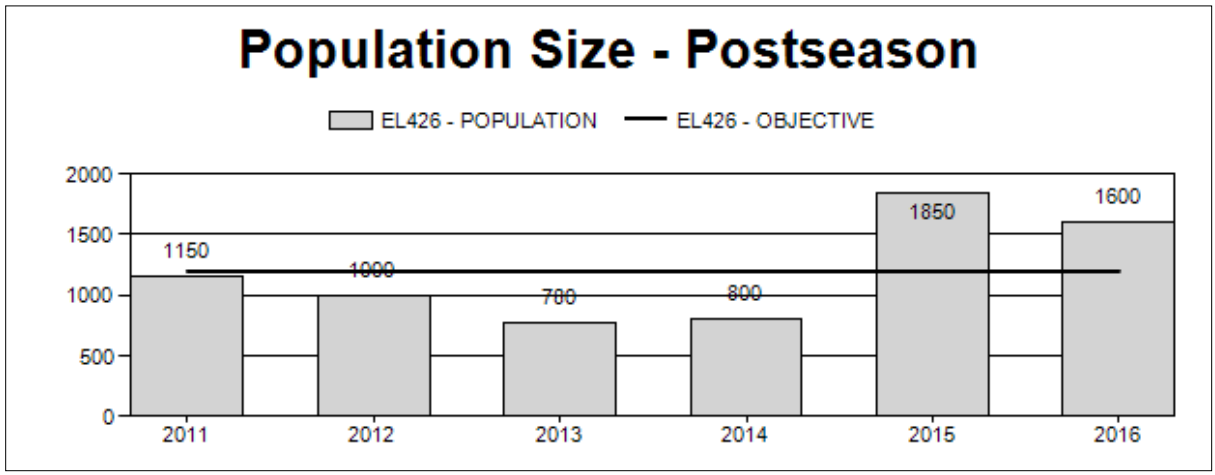
Percent population is above (+) or below (-) objective: 33%

Number of years population has been + or - objective in recent trend: 3

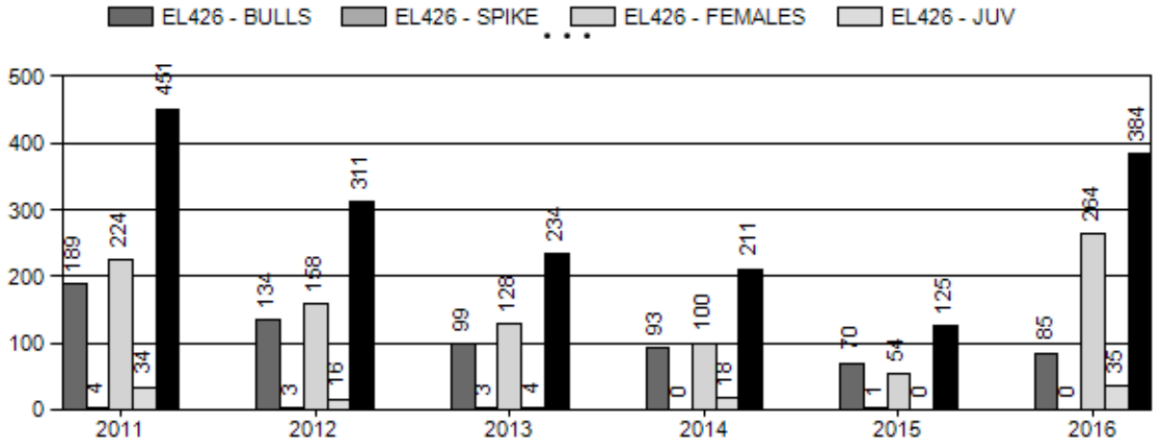
Model Date: 2/21/2017

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

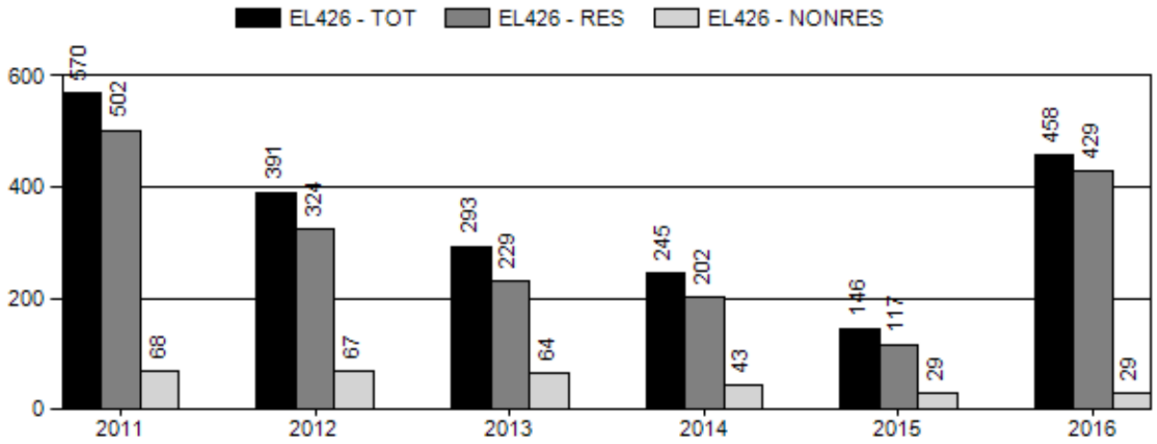
	JCR Year	Proposed
Females ≥ 1 year old:	20%	21%
Males ≥ 1 year old:	34%	31%
Total:	22%	22%
Proposed change in post-season population:	-35%	-20%



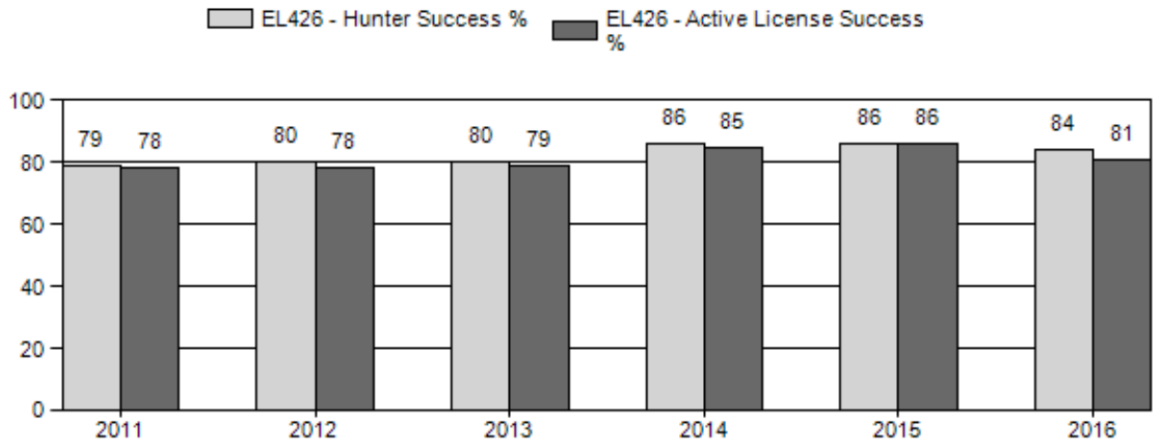
Harvest



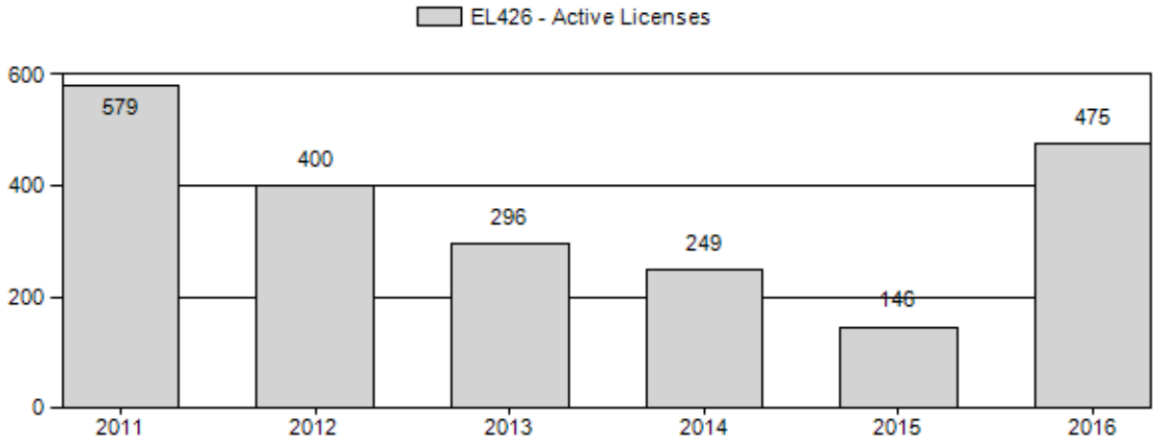
Number of Hunters



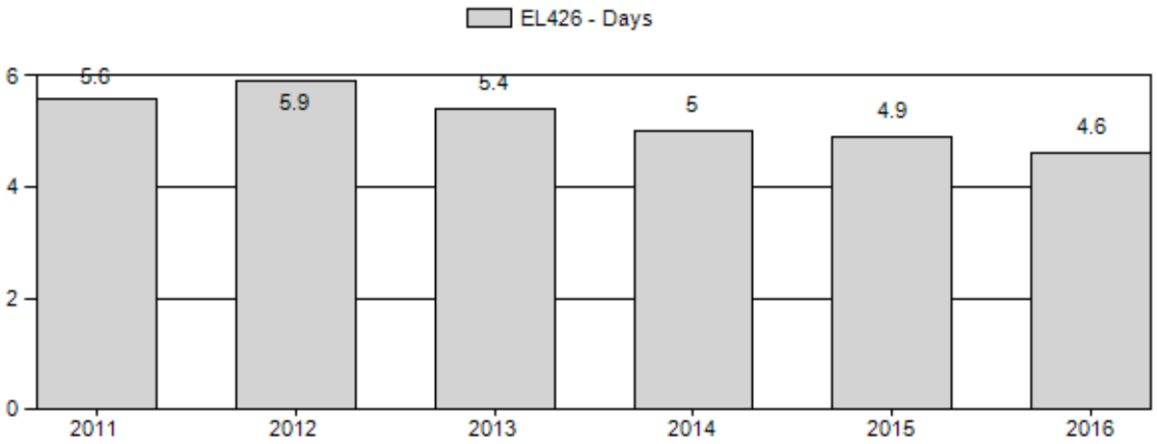
Harvest Success



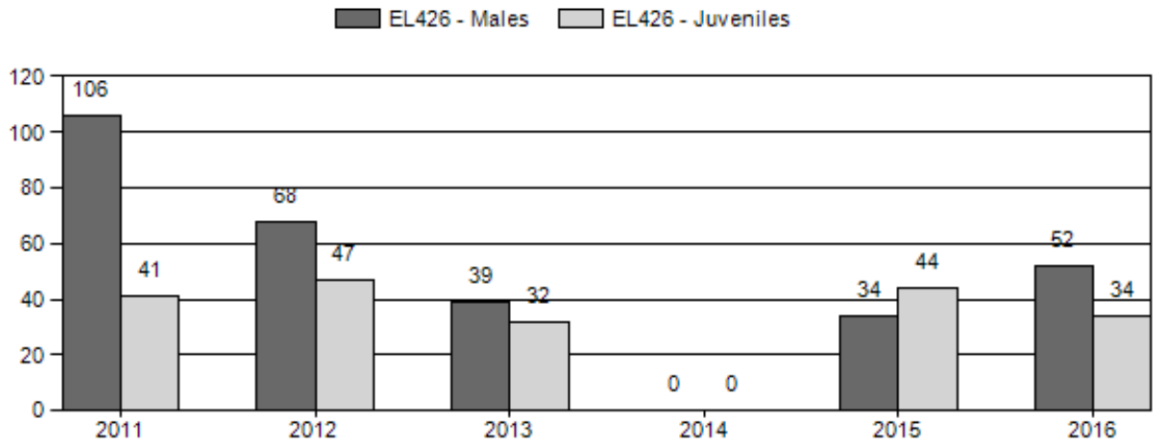
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2011 - 2016 Postseason Classification Summary

for Elk Herd EL426 - STEAMBOAT

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
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	1,850	167	172	339	19%	998	56%	442	25%	1,779	540	17	17	34	± 1	44	± 1	33
2016	1,600	166	221	387	28%	749	54%	257	18%	1,393	604	22	30	52	± 1	34	± 1	23

2017 HUNTING SEASONS
STEAMBOAT ELK HERD (EL426)

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
100	1	Oct. 15	Oct. 31	100	Limited quota	Any elk
	2	Oct. 15	Oct. 31	25	Limited quota	Spike elk only
	4	Oct. 15	Oct. 31	200	Limited quota	Antlerless elk
	6	Oct. 22	Nov. 30	100	Limited quota	Cow or calf valid east of Sweetwater County Road 19, south of Sweetwater County Road 82, east of Sweetwater County Road 21, and south of Sweetwater County Road 20
	7	Oct. 1	Oct. 31	100	Limited quota	Cow of calf valid east of US Highway 191, south of Sweetwater County Road 17, and Sweetwater County Road 15 and west of Sweetwater County Road 19
	8	Aug. 15	Sept. 15	25	Limited quota	Cow or calf valid on or within one (1) mile of irrigated land

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
100	All	Sept. 1	Sept. 30	Valid in the entire area

Hunt Area	Type	Quota change from 2016
100	2	+25
	8	+25
Herd Unit Total	**2**	**+25**
	8	**+25**

Management Evaluation
Current Management Objective: 1,200
Management Strategy: Special
2016 Postseason Population Estimate: ~1,600
2017 Projected Postseason Population Estimate: ~1,300

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. The Steamboat elk herd is managed under a special management prescription.

Herd Unit Issues

The Steamboat elk herd inhabits a rather large geographic area, and occurs at relatively low densities throughout most parts of the herd unit. This can sometimes lead to difficulties in estimating the size of this herd, despite the open nature of the country present in this portion of the Red Desert. In 2015, after a classification flight where over 1,700 elk were classified, the population model for this herd was moved radically upwards to 1,900 elk, when previous model estimates had put this herd under its population objective of 1,200 elk post season. These variations in population estimate depending on varying data quality years is one of the biggest issues for this elk herd. The large geographic area occupied by this herd and its relative low density can make locating groups of elk difficult, especially in years when funds for an aerial classification flight are not available. This uncertainty in the actual number of elk present in the herd unit, and the limited ability of the model for this herd to track with observed data are probably the largest issues facing the elk herd right now.

While, it's not currently as large of an issue as it has been in the past, another issue for this herd is that a very large proportion of the post-season bull population consists of yearling bulls. In 2015, 49% of the post-season bull population consisted of spike bulls. This has caused some concern about how much harvest pressure is being applied to the older age-class bulls in this herd in the name of bringing down total bull: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, especially since the Area 100 Type 1 license was the hardest elk license to draw in Wyoming is 2016. The fact that hunters are actively avoiding harvesting yearling bulls can be evidenced by the fact that no spike bulls were harvested in this herd unit in 2016 or 2014 and only 1 was harvested in 2015. If this trend is allowed to continue, the size class of harvested bulls will be negatively impacted in this special management herd. Based on casual observations made during the 2016 classification flight, this is currently evident, as the bulls viewed during the data collection flight were noticeably smaller than in previous years. It should be noted, however, that antler growth was negatively affected this past summer in adjacent herds, as well.

Weather

Due to the fact much of the Steamboat herd unit is situated in the Red Desert, winter weather conditions generally do not have a large impact on elk residing in this herd. However, because

the elk in this herd live year round in a low precipitation zone, dry summers that result in little plant growth can potentially have negative impacts on elk in the unit through reduced calf survival and recruitment. Fortunately, the summers of both 2015 and 2016 received normal or above precipitation levels resulting in ample grass production throughout the herd unit.

The 2016-2017 winter was severe in some portions of the herd unit, especially in the Steamboat Mountain/Jack Morrow Hills segment in the central portion of Area 100, and in all areas near Farson-Eden. Deep snow conditions and extreme cold (-45^{o}F) began in early January, with deep snow persisting through the winter. As mentioned previously, winter conditions do not normally affect elk in this herd unit. However, during the February 2017 classification flights, some groups of elk, especially some of the cow/calf groups around Steamboat Mountain, appeared to have been trapped by the deep snow present in that portion of the herd unit. Several groups of cows and calves were observed on top of Steamboat Mountain living in an area about 30 yards wide where the snow had been blown free by the wind right along the rim. This is an area where cow/calf groups are not usually observed and they appeared to have been unable to leave the windblown ridge due to the deep snow conditions surrounding them. It is likely some of the calves that were forced to winter in Steamboat Rim area and north into the Jack Morrow Hills probably succumbed to winter mortality, as some of them already appeared to have been weakened by winter conditions in early February. Winter mortality occurred in nearby areas as well, especially around the town of Farson. Winter conditions in the eastern portion of the herd unit were not as severe in terms of snowfall amounts or temperatures. Elk in those parts of the herd unit experienced near normal winter conditions.

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 drought conditions experienced from 2012 to 2014 did result in limited plant growth during those years. The grass growth the resulted from the moisture received in 2015 and 2016 was noticeably better than it had been in the preceding years, and elk definitely benefitted from this increased moisture and corresponding plant growth.

Field Data

Post-season classifications in the Steamboat herd were conducted from a helicopter during February 2017. Those aerial classification flights resulted in a total of 1,393 elk being classified and observed ratios of 34 calves per 100 cows and 51 total bulls per 100 cows (17 yearling bulls per 100 cows). Due to the concerns expressed by some landowners and grazing permitees about elk numbers in the eastern portion of the herd unit, especially in the checkerboard area, a concerted effort was made to survey that region of the herd. Those efforts lead to locating 176 elk residing east of the Bar X Road near the checkerboard. Those 176 elk represented approximately 12% of the total number of elk classified this year.

Harvest Data

Due to a large increase in the number of licenses issued in the herd unit, the number of elk harvested in the Steamboat herd unit increased dramatically in 2016 when compared to the prior year. According to the number of elk reported to have been harvested in hunt area 100 from the harvest survey, harvest jumped from 125 elk in 2015 to 384 elk harvested in 2016. That was a little over a threefold increase in just one year, a necessary increase given population status and significant landowner concerns. It is likely however, the actual number of elk harvested in area 100 was closer to 400 animals in 2016. Both area 118 (Shamrock Elk to the east) Type 4 and 6 license holders were able to hunt in the eastern portion of HA100 in 2016. Given these antlerless elk hunters saw a marked increase in harvest success in 2016, it is likely that most of those elk reported to have been harvest in 118 were actually harvested in Area 100.

According to the harvest survey, the overall harvest success rate for the Steamboat elk herd in 2016 was 84%. Broken out by license type, the success rates were 91% for the Type 1 license holders, 76% for the Type 4 hunters, 78% for the Type 6 licenses, and 82% for the Type 7 hunters. These harvest success rates are very typical for this elk herd. Due to the open nature of the country that this herd inhabits, harvest success rates are unusually high and effort low because the elk in the herd inhabit open sagebrush habitats and are visible from miles away. Since this herd lives only in open habitats with little to no security cover, largely on public land, this population exhibits harvest statistics more similar to a pronghorn population than a typical Wyoming elk herd.

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 2016 hunting season, the average age of harvested bulls was 6.1 years old. The 34 teeth submitted for laboratory aging represent around 40% of the bulls reported harvested in the harvest survey. The 2016 average age of 6.1 compares to 5.3 years old in 2015, 5.9 years old in 2014, and 5.7 years old in 2013. Based on the teeth that were submitted for aging, the oldest bull harvested in 2016 was one 9.5 year old bull. The oldest bulls aged in 2015 and 2014 were also 9.5 years old, 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 be attributed to the increased bull harvest rates of the last several years.

Population

The 2016 post-season population estimate for the Steamboat herd is just over 1,600 elk, down from the 2015 estimate of 1,900 elk. Since the objective for this herd is 1,200, and the estimate was significantly above that, the warranted but dramatic increase in the number of antlerless licenses issued in 2016 was necessary to move this population towards its objective. The population estimate for 2015 was driven primarily by a classification flight conducted in January 2016, when over 1,700 elk were classified. The number of elk classified in 2015 was a significant departure from the number of elk that had been classified in previous years and required that major modifications be made to the model in an attempt to try and accommodate the large number of elk observed that year. Even with those modifications, the model could not

both accommodate the number of elk classified in 2015, and still product a realistic trend for the population.

The population model for this herd tracks poorly with observed data due partly to varying data quality from year to year. In order to get the population model to accommodate the large number of elk classified after the 2015 season, population parameters range constraints had to be moved outside of the accepted limits or the model simply could not reconcile the number of elk classified that year. In order to attempt to fit the data, the model puts calf survival at an unrealistically low level and would probably put that value even lower if the constraints would allow for it. This unrealistically low calf survival rate, along with the models poor correlation with observed bull ratios suggests that its functionality is low.

The addition of possible errors in correctly placing harvested animals from the Shamrock herd unit license types that are also valid in the Steamboat herd unit, will further reduce the reliability of this model, as accurate harvest data are an important component of the model.

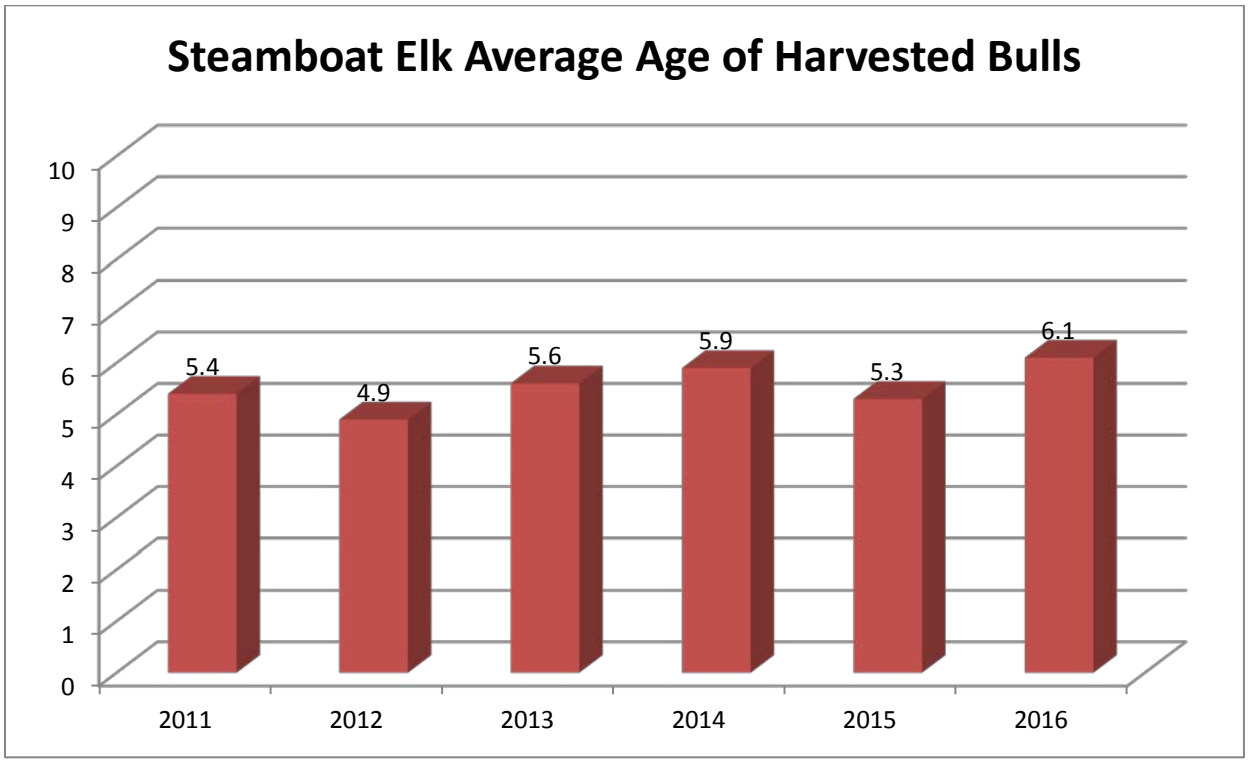
Management Summary

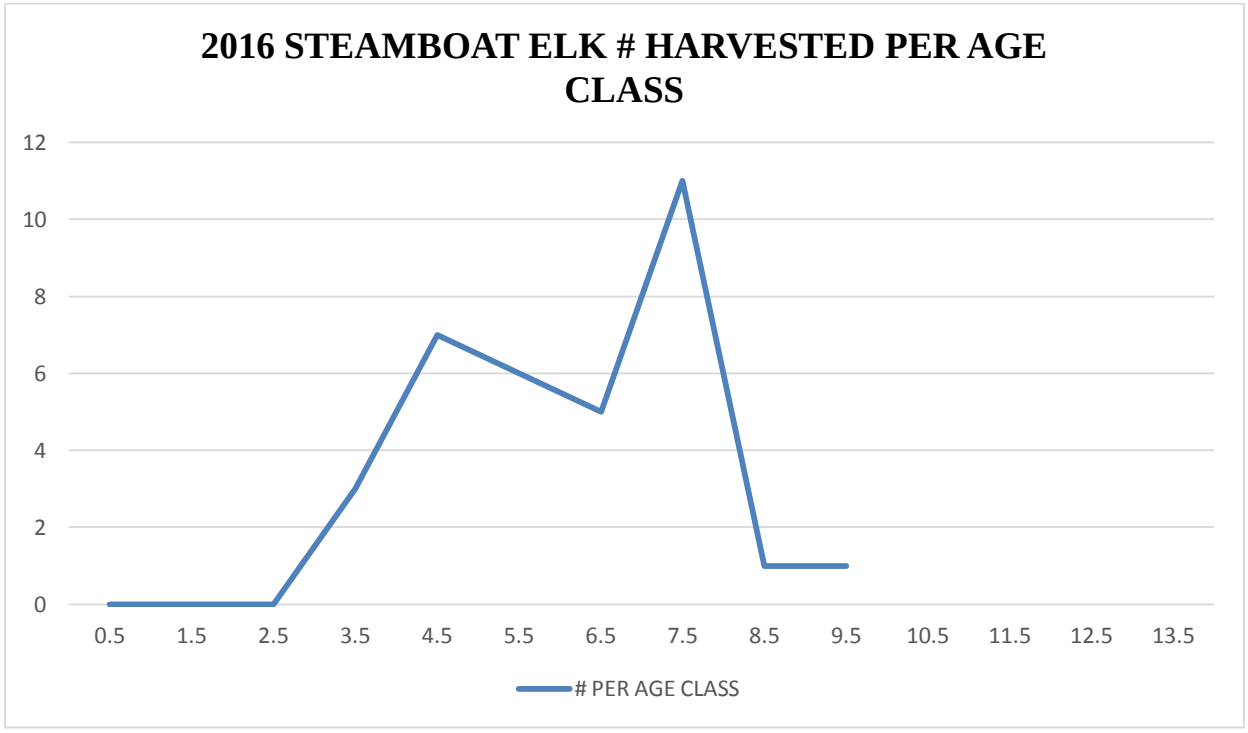
The 2017 season will maintain licenses in similar numbers as those offered in 2016. No changes will be instituted in the number of Type 1, 4, 6, or 7 license types for 2017. There will be a slight modification to the Type 1 licenses in 2017, and that is to change the license limitation from antlered elk only to an any elk offering. This was proposed because it is not felt that this restriction is needed given size of the herd and the limited number of cow elk that would potentially be harvested by Type 1 license holders.

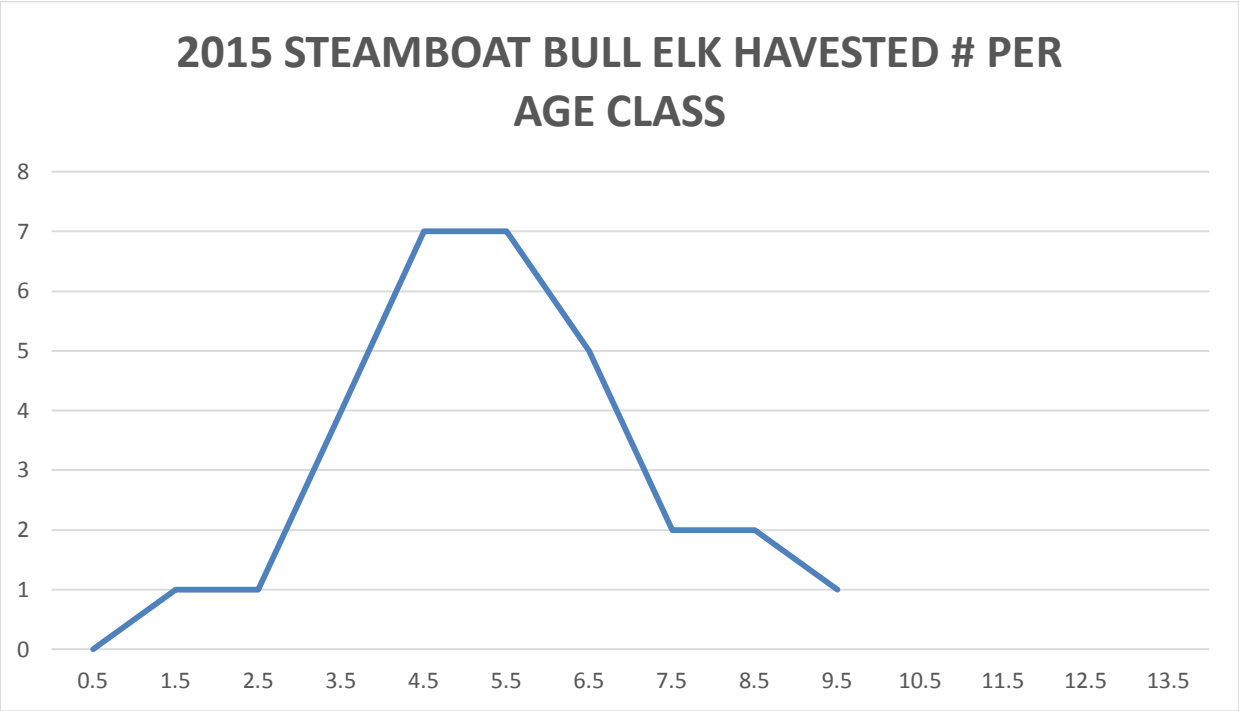
An addition to the 2017 season offering is the creation of a Type 2 license valid for spike elk only. A consistent issue in this herd has been that a large portion of the post-season bull population is made up yearling bulls. These young bulls are not harvested by hunters with Type 1 licenses, but drive up total bull numbers and are often responsible for the higher bull ratios seen in the herd unit. The addition of these Type 2 licenses will provide additional opportunity for hunters in this extremely difficult to draw hunt area, and will help to reduce observed bull to cow ratios in the herd.

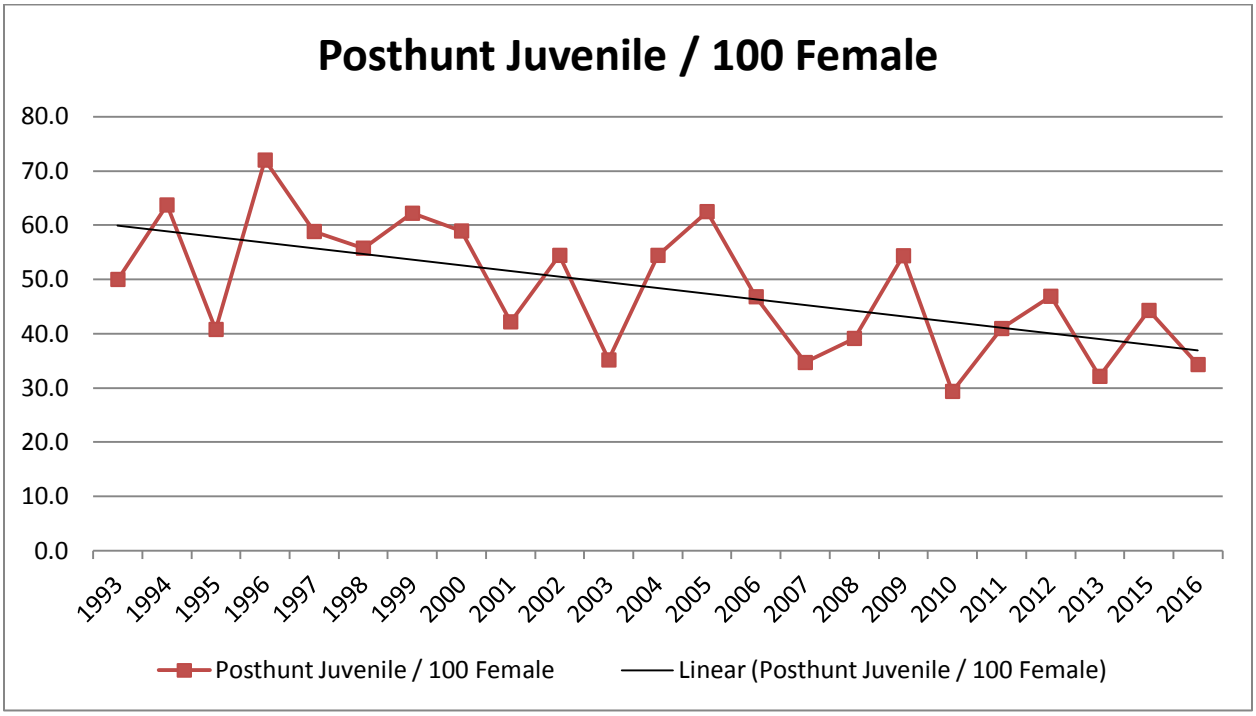
Another new license type for the 2017 season will be the addition of a Type 8 license valid on or within one mile of irrigated lands from August 15th to September 15th. This license type was added to direct some harvest towards elk that have been causing damage to crops in the Farson/Eden area, along Pacific Creek, and along the Green River.

It is anticipated that the 2017 hunting seasons will result in the harvest of approximately 380 elk on the Area 100 licenses, as well as maybe another 50 or so elk on Shamrock herd (Area 118) licenses that will again be valid in the southeastern portion of the Steamboat herd unit. The proposed seasons will also result in a projected 2017 post-hunt population of somewhere near 1,300 elk, which will be slightly above, but within 20% of its population objective of 1,200 elk post-season.

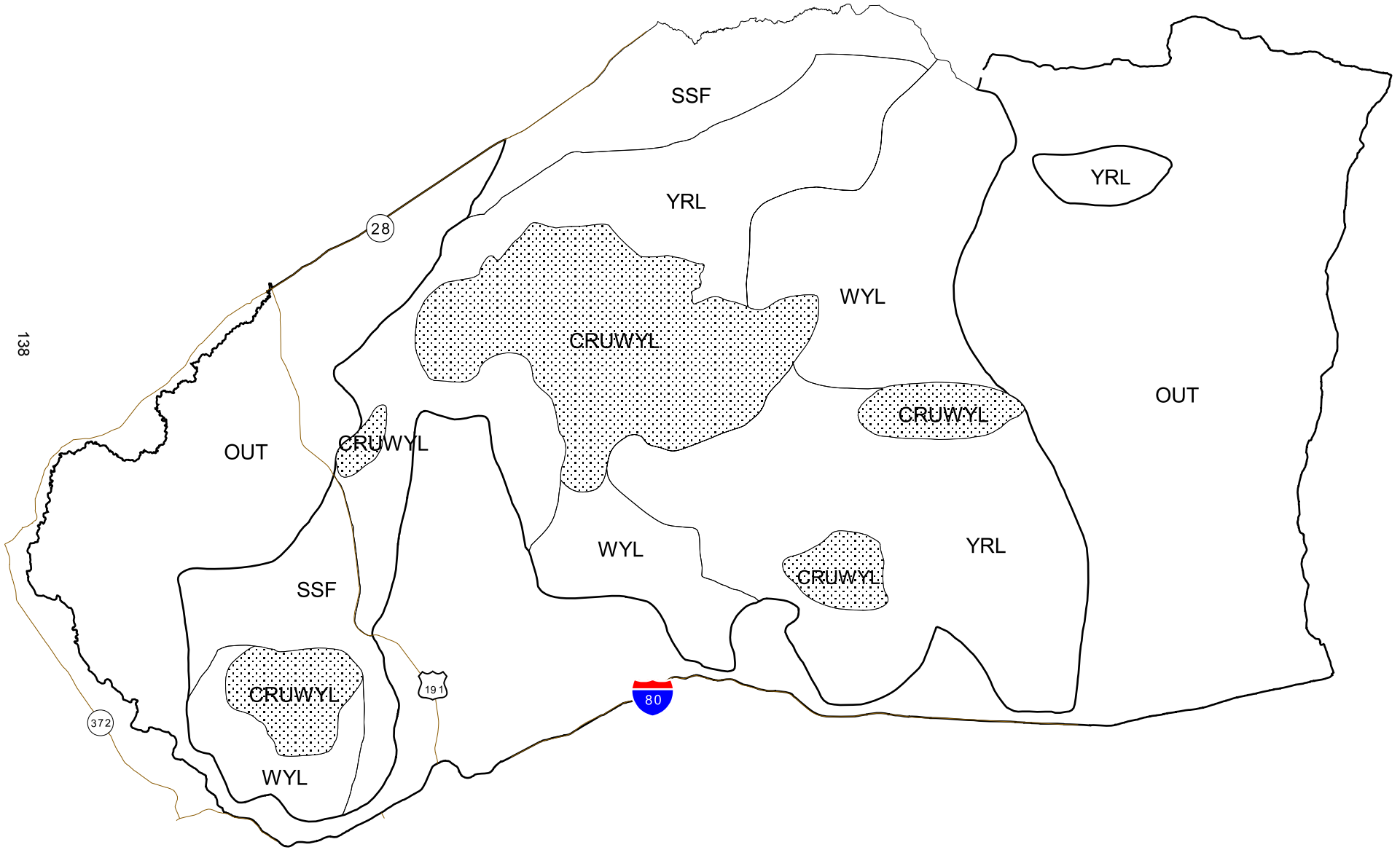

Steamboat Elk Average Age of Harvested Bulls
10
9
8
7
6
5
4
3
2
1
0
5.4
4.9
5.6
5.9
5.3
6.1
2011
2012
2013
2014
2015
2016


2016 STEAMBOAT ELK # HARVESTED PER AGE CLASS
12
10
8
6
4
2
0
0.5
1.5
2.5
3.5
4.5
5.5
6.5
7.5
8.5
9.5
10.5
11.5
12.5
13.5
PER AGE CLASS


2015 STEAMBOAT BULL ELK HAVESTED # PER AGE CLASS
8
7
6
5
4
3
2
1
0
0.5
1.5
2.5
3.5
4.5
5.5
6.5
7.5
8.5
9.5
10.5
11.5
12.5
13.5


Posthunt Juvenile / 100 Female
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2015
2016
Posthunt Juvenile / 100 Female
Linear (Posthunt Juvenile / 100 Female)

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



2016 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2016 - 5/31/2017

HERD: EL428 - WEST GREEN RIVER

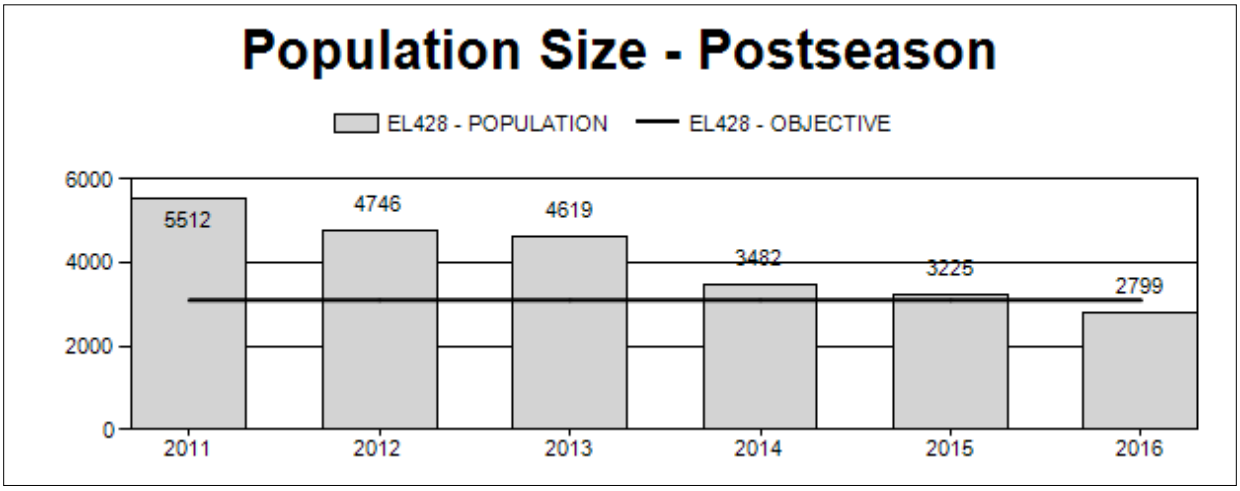
HUNT AREAS: 102-105 | PREPARED BY: JEFF SHORT

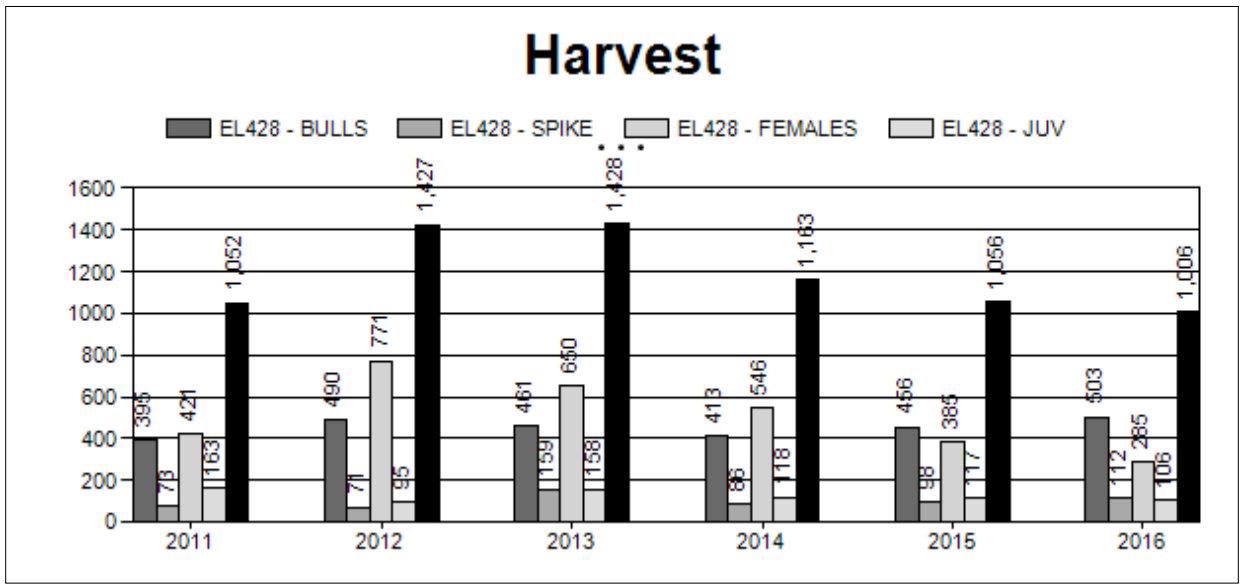
	2011 - 2015 Average	2016	2017 Proposed
Population:	4,317	2,799	2,360
Harvest:	1,225	1,006	900
Hunters:	4,150	3,294	3,000
Hunter Success:	30%	31%	30 %
Active Licenses:	4,334	3,370	3,100
Active License Success:	28%	30%	29 %
Recreation Days:	30,162	21,127	20,000
Days Per Animal:	24.6	21.0	22.2
Males per 100 Females	36	0	
Juveniles per 100 Females	32	0	

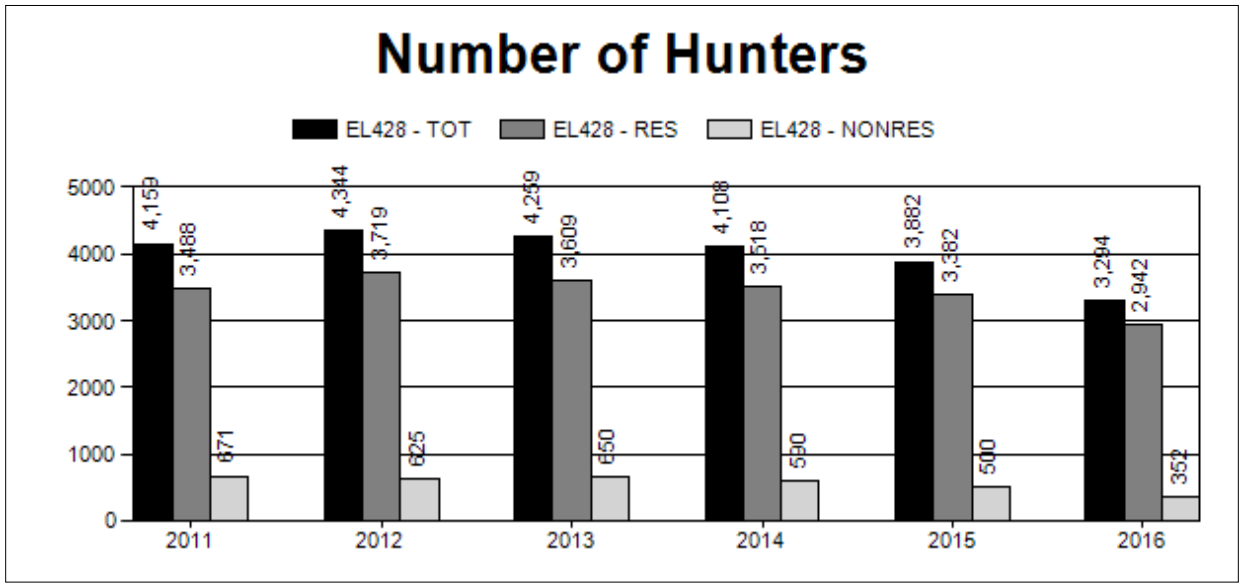
Population Objective (± 20%) :	3100 (2480 - 3720)
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-9.7%
Number of years population has been + or - objective in recent trend:	1
Model Date:	02/20/2017

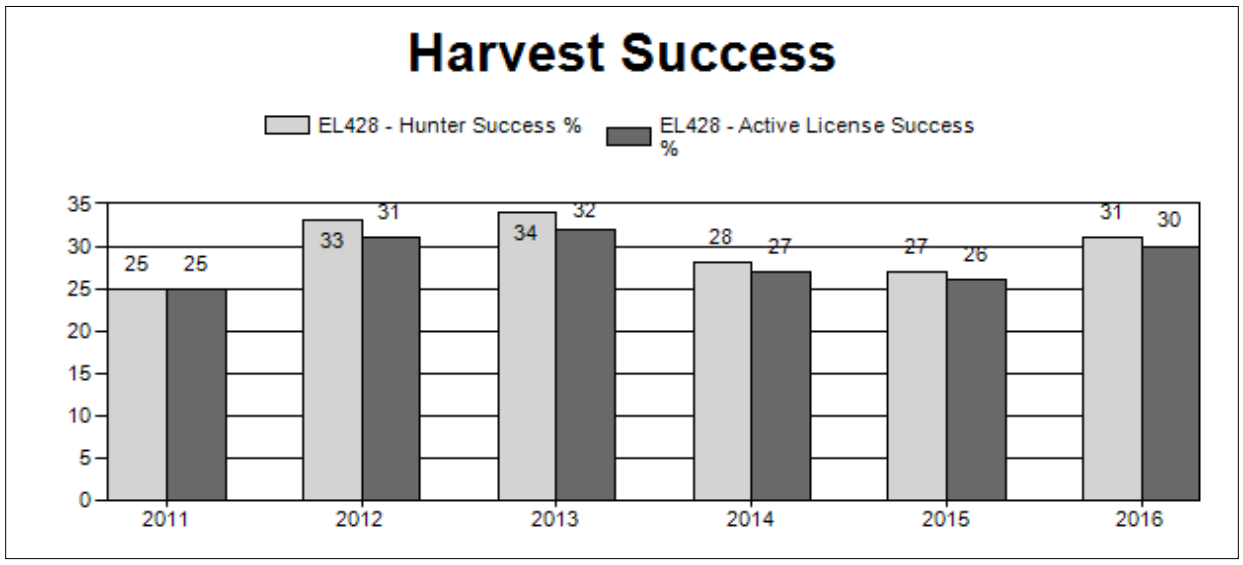
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

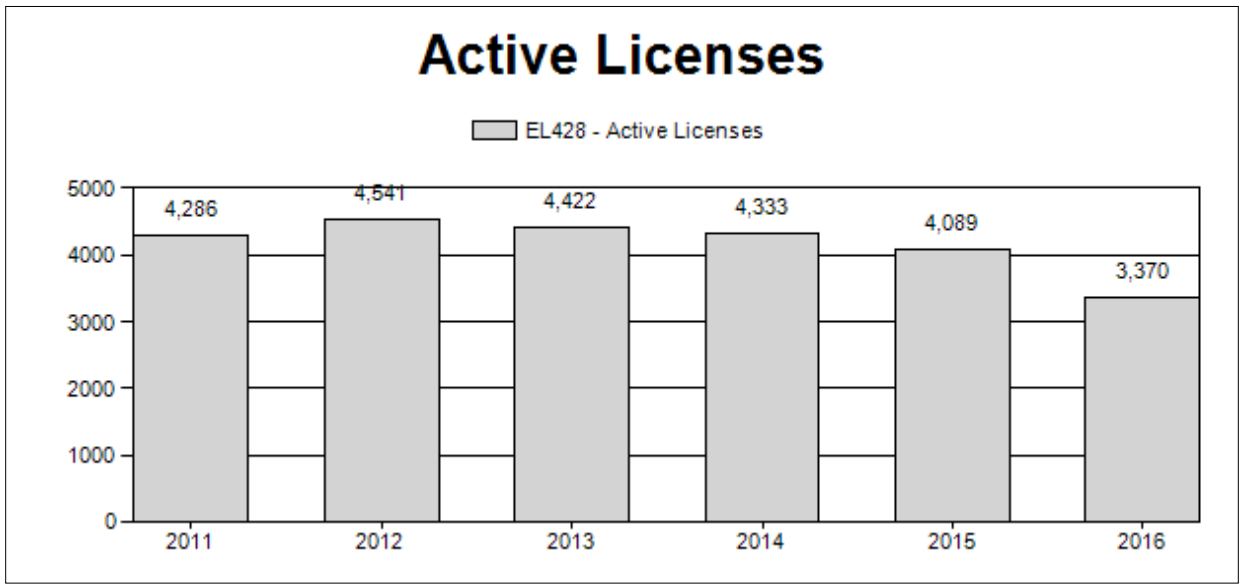
	JCR Year	Proposed
Females ≥ 1 year old:	12.7%	11.5%
Males ≥ 1 year old:	133.5%	421.9%
Total:	25.8%	26.9%
Proposed change in post-season population:	-6.9%	-15.7%

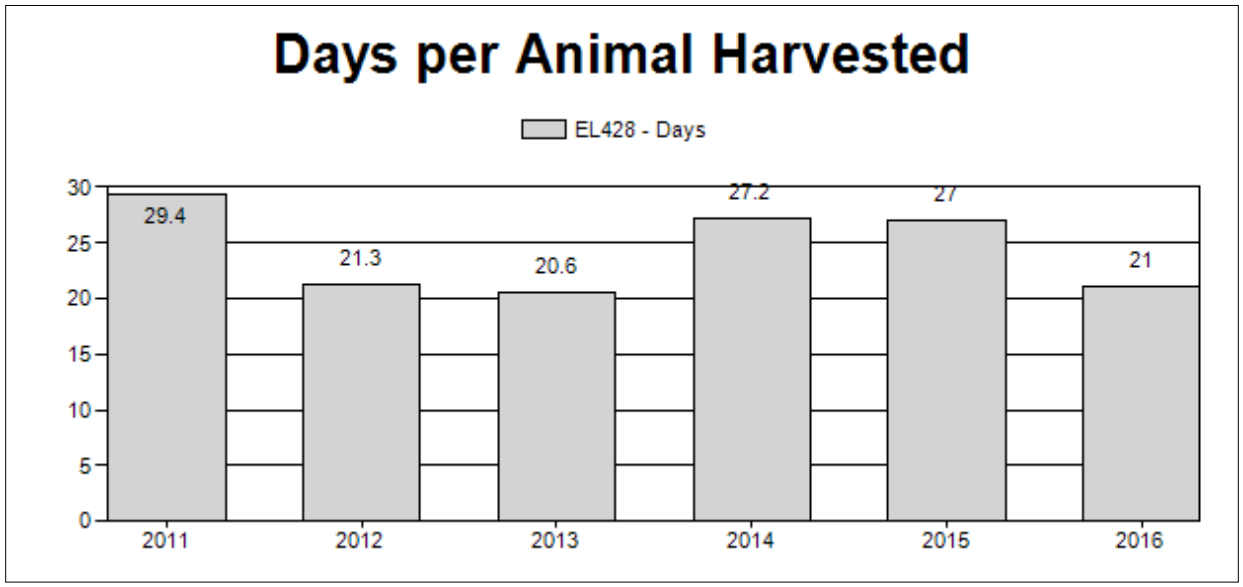


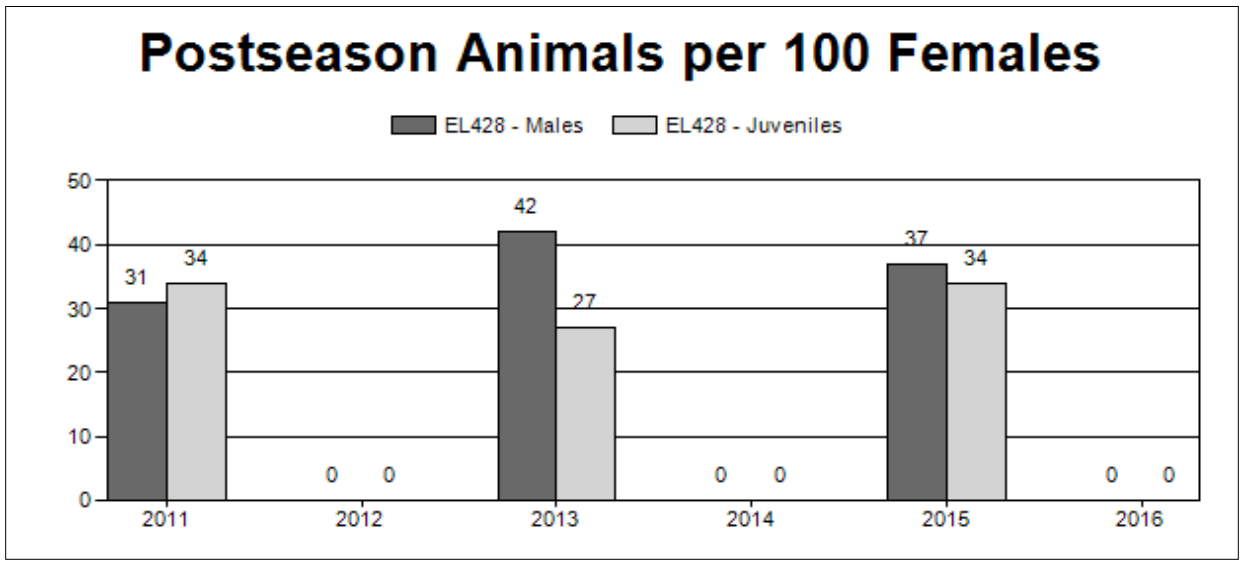

Harvest
EL428 - BULLS
EL428 - SPIKE
EL428 - FEMALES
EL428 - JUV
1600
1400
1200
1000
800
600
400
200
0
395
73
421
163
1,052
490
71
771
95
1,427
461
159
650
158
1,428
413
86
546
118
1,163
456
98
385
117
1,056
503
112
285
106
1,006
2011
2012
2013
2014
2015
2016


Number of Hunters
EL428 - TOT
EL428 - RES
EL428 - NONRES
5000
4000
3000
2000
1000
0
4,159
3,488
671
4,344
3,719
625
4,259
3,609
650
4,108
3,518
590
3,882
3,382
500
3,294
2,942
352
2011
2012
2013
2014
2015
2016


Harvest Success
EL428 - Hunter Success %
EL428 - Active License Success %
35
30
25
20
15
10
5
0
25
25
33
31
34
32
28
27
27
26
31
30
2011
2012
2013
2014
2015
2016


Active Licenses
EL428 - Active Licenses
5000
4000
3000
2000
1000
0
4,286
4,541
4,422
4,333
4,089
3,370
2011
2012
2013
2014
2015
2016


Days per Animal Harvested
EL428 - Days
30
25
20
15
10
5
0
29.4
21.3
20.6
27.2
27
21
2011
2012
2013
2014
2015
2016


Postseason Animals per 100 Females
EL428 - Males
EL428 - Juveniles
50
40
30
20
10
0
31
34
0
0
42
27
0
0
37
34
0
0
2011
2012
2013
2014
2015
2016

2011 - 2016 Postseason Classification Summary

for Elk Herd EL428 - WEST GREEN RIVER

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
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	3,482	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0
2015	3,225	283	354	637	21%	1,740	59%	593	20%	2,970	0	16	20	37	± 1	34	± 1	25
2016	0	0	0	0	0%	0	0%	0	0%	0	0	0	0	0	± 0	0	± 0	0

2017 HUNTING SEASONS

SPECIES : Elk

HERD UNIT : West Green River (428)
HUNT AREAS: 102, 103, 104, 105

Hunt Area	Type	Season Dates Opens	Closes	Quota	License	Limitations
102		Oct. 15	Oct. 24		General	Any elk
102	6	Oct. 15	Oct. 31	25	Limited quota	Cow or calf
102	7	Dec. 15	Jan. 31	25	Limited quota	Cow or calf
103		Oct. 15	Oct. 24		General	Any elk
103		Oct. 25	Oct. 31		General	Antlerless elk
103	6	Oct. 15	Oct. 31	75	Limited quota	Cow or calf
103	6	Dec. 15	Jan. 31			Cow or calf
104		Oct. 15	Oct. 24		General	Any elk
104		Oct. 25	Oct. 31		General	Antlerless elk
104	6	Oct. 15	Oct. 31	25	Limited quota	Cow or calf
104	7	Dec. 15	Dec. 31	75	Limited quota	Cow or calf
104	7	Jan. 1	Jan. 31			Cow or calf 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

Hunt Area	License Type	Quota change from 2016
103	6	+25
104	6	-25
104	7	+50
Herd Unit Total	6	0
	7	+50

Management Evaluation

Current Postseason Population Management Objective: 3,100
Management Strategy: Recreation
2016 Postseason Population Estimate: ~2,799
2017 Proposed Postseason Population Estimate: ~2,360

Herd Unit Issues

Energy development on crucial elk habitat is a potential issue for this herd. As an unfed elk herd in Western Wyoming, habitat integrity is of critical importance. Additionally, conflict with agriculture producers can be an issue for this elk herd. Damage complaints can occur during bad winters but are not common. Elk comingling with livestock during winter is rare in limited areas but needs to be considered a potential issue. Limited past 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 potential problems. Perceived reduction in livestock forage due to elk grazing is an issue that can be brought up.

In the last five hunting seasons hunters commonly complain that elk numbers are down significantly and they were too low for their standards. However, we have been over the set objective until last year. This herd recently went through an objective review in 2012 and it was determined that the objective should remain at 3,100 animals. This was mainly due to input from agriculture producers. Under our recent harvest strategies and attempts to get down to objective we have been successful and the population is now at the objective. Hunters are largely unhappy with the current elk population and the set objective.

In recent years elk moving onto Fossil Butte National Monument prior to the season has increased, and is estimated to be around 500 animals. Radio collar data indicates that a significant number of the marked animals moved back onto the Monument in early September. The Monument is closed to hunting. As the number of elk on the Monument 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 2016 and into 2017 has been highly variable. In the early part of 2016 the winter started out harsh with high snow loads but it warmed up in February and March to finish fairly mild. A moist spring and early summer followed. In July and August conditions dried up considerably and into late December fairly low precipitation was received. Winter did not set in until late December 2016. The winter of 2016-2017 was very cold with high snowfall and elk migrated to crucial winter ranges and beyond. The winters from 2011 until 2016 were fairly mild with low snowpack and relatively warm temperatures resulting in easy winter conditions. 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. A renewed effort involving the habitat section has begun, including collection of Rapid Habitat Assessment data. These data will be included in future versions of this JCR.

Field Data

Intensive helicopter based elk flights were performed in early 2012, 2014 and 2016. Idaho's sightability model correction was used for these three surveys. In the 2016 survey 2,970 elk were observed. Flight conditions were favorable and the sightability correction estimate was 3,053 elk. On these surveys a low sightability correction factor is produced 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 available elk winter range during the survey. There is an additional area in the herd unit that is not flown in Hunt Area 105. This is not flown due to budget constraints and low elk densities in that area. This area is thought by field personnel to contain approximately 100 elk. This information is added to the sightability estimates to create a total herd unit estimate.

Recent post-season bull ratios have been excellent. Calf ratios have fluctuated 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 has had to be greatly 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 2017. 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 model 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 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 to objective. The public has voiced many concerns about the population reduction but it was required to get the herd to objective. In 2016 antlerless harvest was reduced substantially since the herd had reached objective. For 2017 we have a similar low antlerless license allocation since the estimates indicate we are at or below the population objective. The current elk population level is very unpopular with the hunting public who feel elk numbers are too low.

Population

The post season 2016 population model estimate is 2,799 elk with the population still 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.

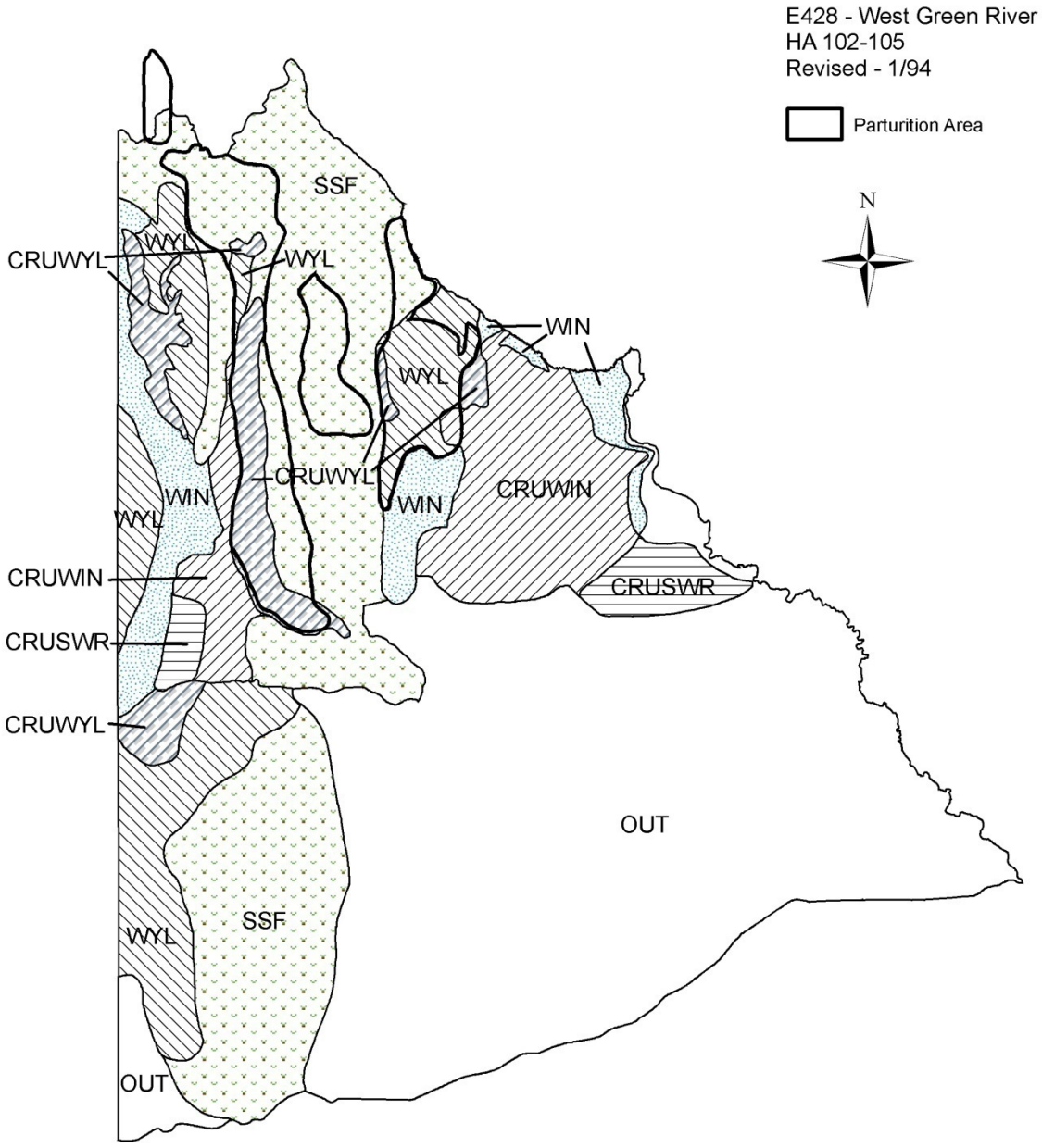
Due to documented interchange with adjacent herd units, models generated for this herd should be used with some caution. This interchange has been affirmed in recent years with several radio collared elk from multiple studies crossing the herd unit border at different times of year. More radio collar 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 2,799 elk in the herd. This is a significant reduction in the herd over the last five years and is essentially at 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 to objective. This supporting information gives us confidence in model results.

Management Summary

For the 2017 hunting season we will stay with the reduced antlerless harvest started in 2016 to reduce population decline since the population is at the objective. We are planning hunt timing and license management to minimize antlerless harvest. The harvest system in place should keep this herd near objective in the near future. This will need to be evaluated carefully each year to avoid taking this population further below objective.

During the winter of 2016/17 we have had extreme conditions on all the winter ranges in this herd unit. High ridges that usually blow clear of snow and south facing slopes that usually melt off have been covered in deep snow for several months. Deep crusted snows and extremely cold temperatures have pushed elk long distances to very low elevations. This has created high conflicts in several places. Elk have been getting hit on highways and railroad tracks. Elk have been down on private ranches where cattle are fed in the winter. Game Wardens have spent considerable time addressing problem areas. Elk have had to be pushed into places where they will cause less problems. In some extreme cases we have had to “bait” elk away from feed lines to keep them away from problems. This has been very unfortunate. Even with the lowest elk population we have had in decades we still experienced problems in this extreme winter. Some of our late season antlerless hunts were helpful in alleviating issues but the problems were too severe and persistent to be solved with those hunts alone.


E428 - West Green River
HA 102-105
Revised - 1/94
Parturition Area
N
SSF
WYL
CRUWYL
WYL
WIN
WYL
CRUWYL
WIN
WYL
WIN
CRUWIN
CRUWIN
CRUSWR
CRUSWR
CRUWYL
OUT
WYL
SSF
OUT

2017 Proposed - Season Setting Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2016 - 5/31/2017

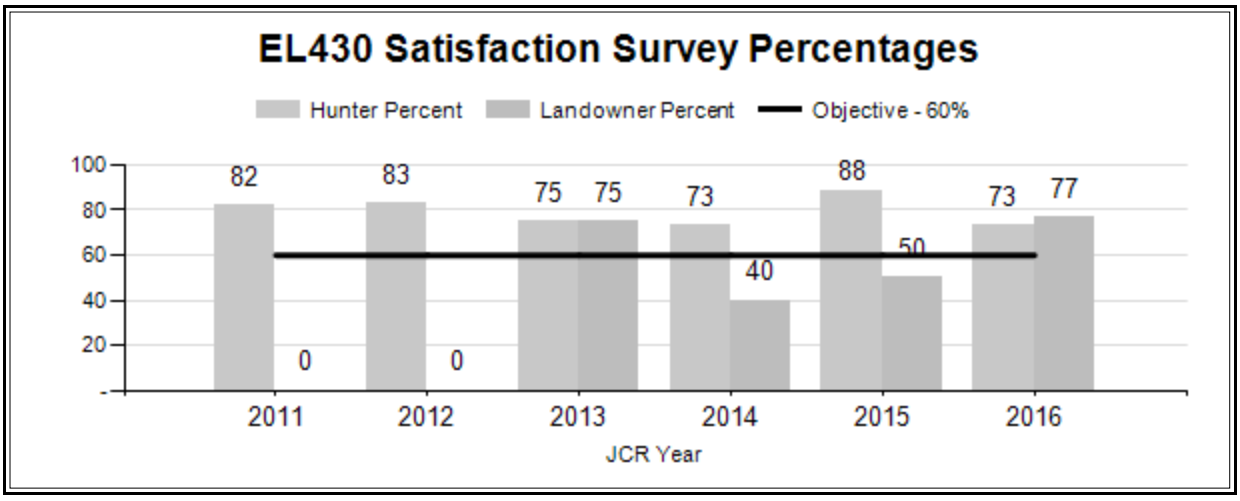
HERD: EL430 - PETITION

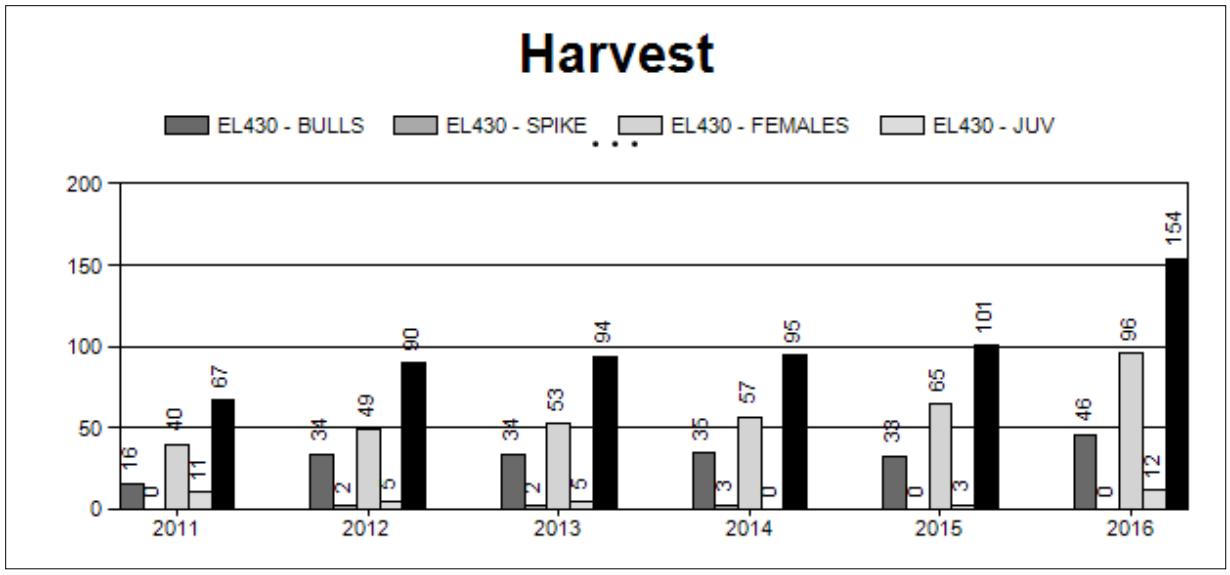
HUNT AREAS: 124

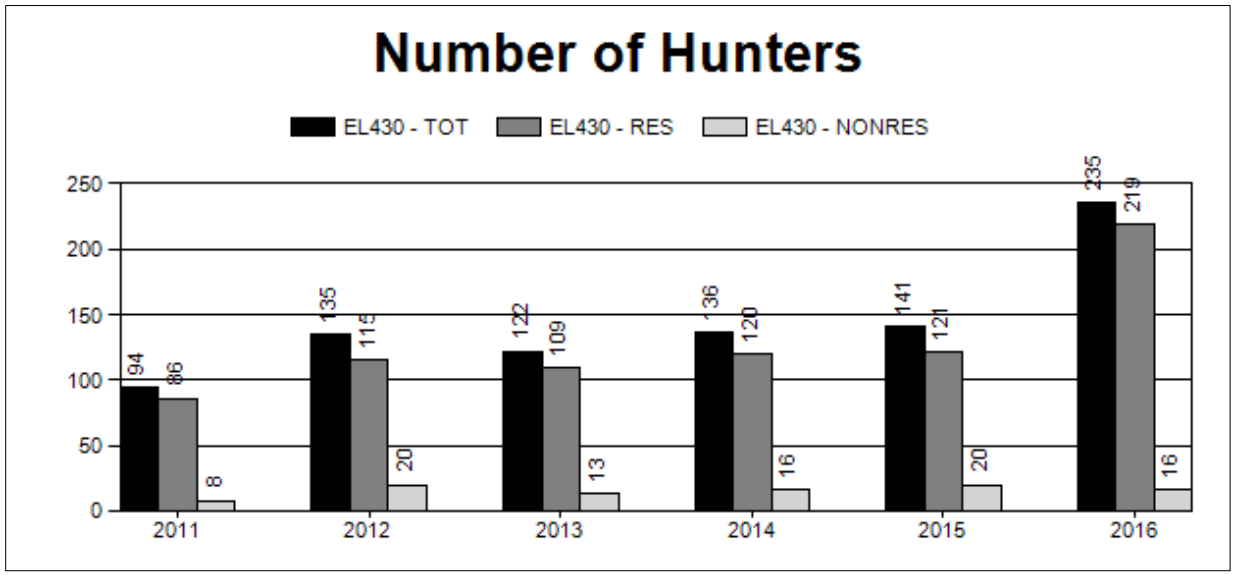
PREPARED BY: TONY MONG

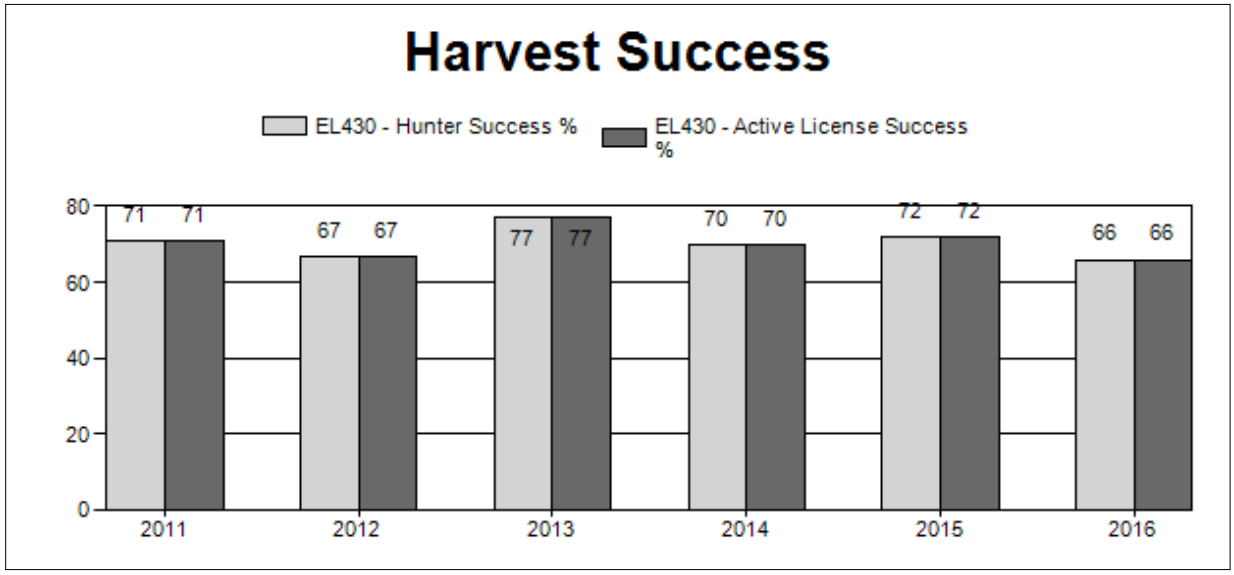
	2011 - 2015 Average	2016	2017 Proposed
Hunter Satisfaction Percent	80%	80%	80%
Landowner Satisfaction Percent	56%	56%	75%
Harvest:	89	154	100
Hunters:	126	235	175
Hunter Success:	71%	66%	57 %
Active Licenses:	126	235	175
Active License Success:	71%	66%	57 %
Recreation Days:	933	1,687	1,100
Days Per Animal:	10.5	11.0	11
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	

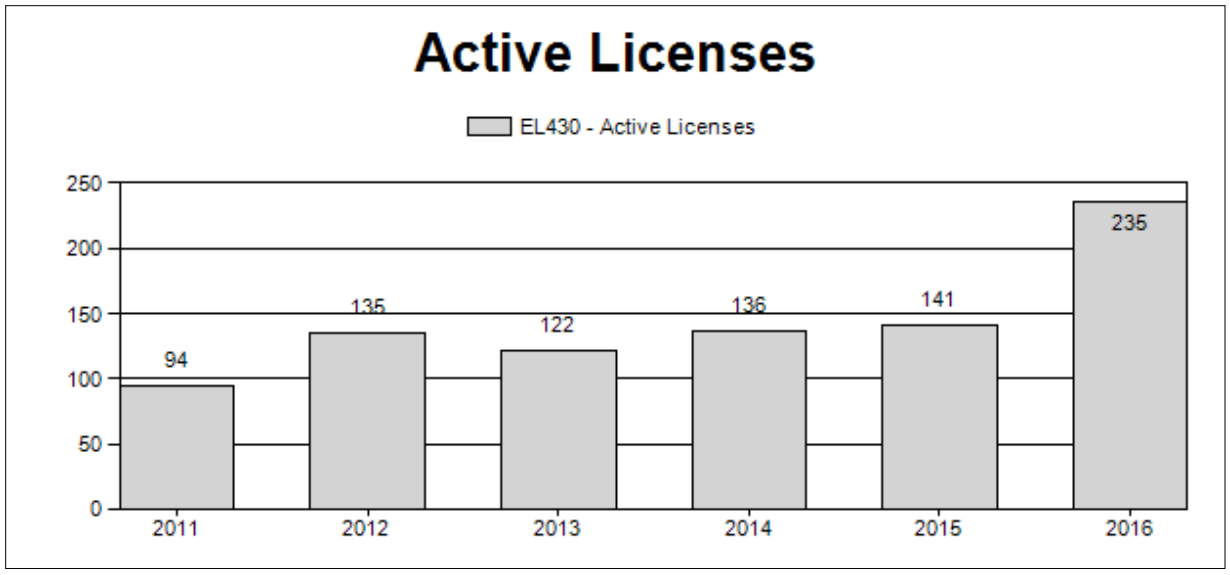
Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	15%
Number of years population has been + or - objective in recent trend:	2

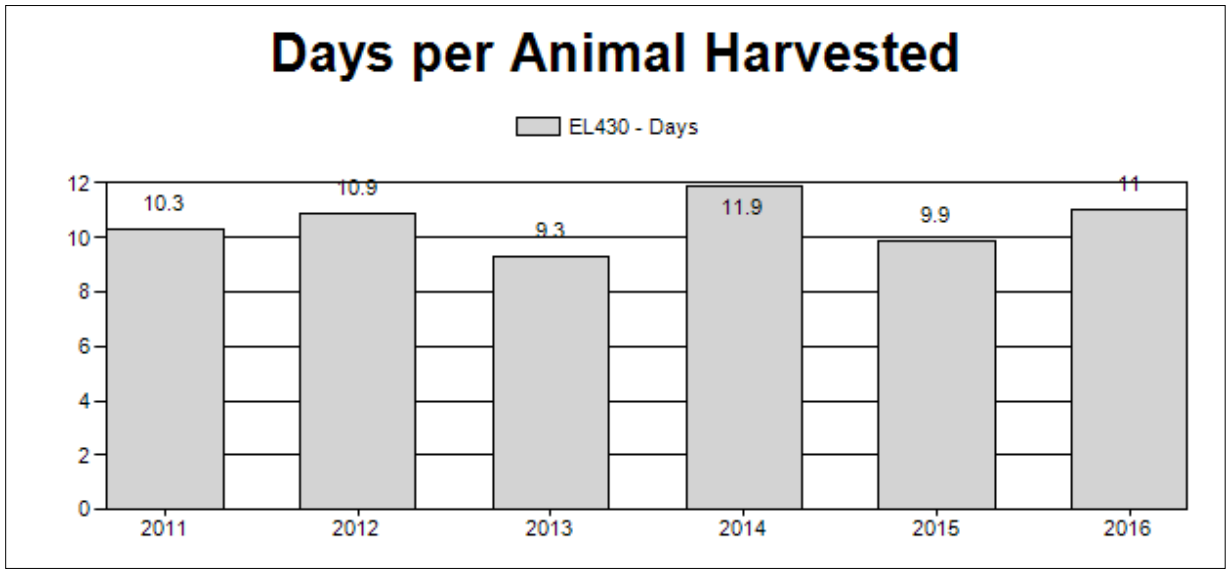


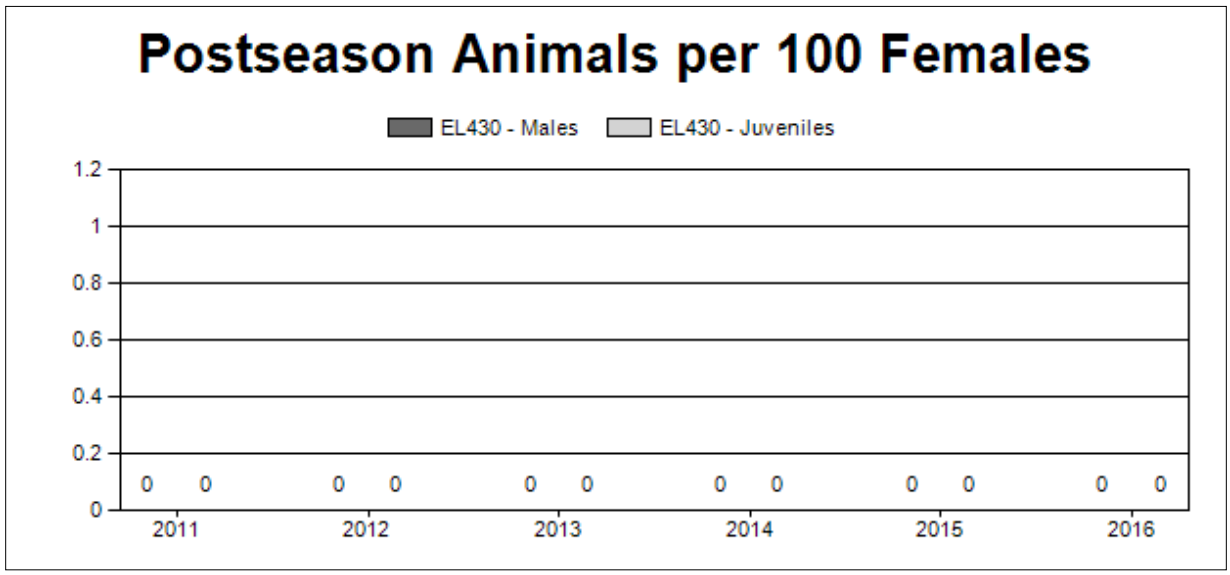

Harvest
EL430 - BULLS
EL430 - SPIKE
EL430 - FEMALES
EL430 - JUV
200
150
100
50
0
16
0
40
11
67
34
2
49
5
90
34
2
53
5
94
35
3
57
0
95
38
0
65
3
101
46
0
96
12
154
2011
2012
2013
2014
2015
2016


Number of Hunters
EL430 - TOT
EL430 - RES
EL430 - NONRES
250
200
150
100
50
0
94
86
8
135
115
20
122
109
13
136
120
16
141
121
20
235
219
16
2011
2012
2013
2014
2015
2016


Harvest Success
EL430 - Hunter Success %
EL430 - Active License Success %
80
60
40
20
0
71
71
67
67
77
77
70
70
72
72
66
66
2011
2012
2013
2014
2015
2016


Active Licenses
EL430 - Active Licenses
250
200
150
100
50
0
94
135
122
136
141
235
2011
2012
2013
2014
2015
2016


Days per Animal Harvested
EL430 - Days
12
10
8
6
4
2
0
10.3
10.9
9.3
11.9
9.9
11
2011
2012
2013
2014
2015
2016


Postseason Animals per 100 Females
EL430 - Males
EL430 - Juveniles
1.2
1
0.8
0.6
0.4
0.2
0
0 0
0 0
0 0
0 0
0 0
0 0
2011
2012
2013
2014
2015
2016

2017 PROPOSED HUNTING SEASON

SPECIES : **Elk** HERD UNIT : **Petition (430)**
HUNT AREAS: **124**

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
124	1	Oct. 15	Nov. 30	40	Limited quota	Any elk
	4	Oct. 15	Nov. 30	150	Limited quota	Antlerless elk
	4	Dec. 1	Dec. 31			Antlerless elk valid east of Sweetwater County Road 19, and north and east of B.L.M. Roads 4409 and 4411, and west of B.L.M. Road 3310 and Sweetwater County Road 23S

Special Archery Season Hunt Areas	Type	Season Dates		Limitations
		Opens	Closes	
124	All	Sep. 1	Sep. 30	Valid in the entire area(s)

Hunt Area	*Type*	*Quota change from 2015*
124	*1*	*-10*
	4	*-50*
Herd Unit Total	***1***	***-10***
	4	***-50***

Management Evaluation

Current Hunter/Landowner Satisfaction Objective: 60% landowner/hunter satisfaction; bull quality sub-objective (average age of harvested elk 7.0) (2013)

Management Strategy: Recreational

2016 Hunter Satisfaction Estimate: 73%

2016 Landowner Satisfaction Estimate: 77%

Most Recent 3-year Running Average Hunter Satisfaction Estimate: 80%

Most Recent 3-year Running Average Landowner Satisfaction Estimate: 56%

Most Recent 3-year Running Average Tooth Age: 6.8

The current management objective was established in 2013, and was set as an alternative objective of landowner and sportsmen satisfaction along with a sub-objective of bull quality as measured by average age of harvest. Our proposal is to decrease cow harvest across the area with more opportunity in the northern portion of the unit where we have had some concerned landowners, and decrease bull harvest due to average age of harvested bulls, comments from sportsmen, and concern for bull size.

Herd Unit Issues

The Petition elk herd is a small and highly mobile elk herd spread over a large area. A great deal of interchange occurs with Colorado, and hunt area 100 makes meaningful data collection and population estimation difficult. Four major issues face this herd; increasing oil and gas development throughout the herd, perceived competition with mule deer in the South Rock Springs Deer herd, competition with feral horses, and the increasing popularity of this herd for large antlered bulls.

Competition for space could occur between mule deer and elk in the western ½ of this herd (overlap with Deer Area 101). The South Rock Springs mule deer herd is a high profile population and any perception of competition between the two species could result in a call for a reduction of elk numbers in those areas where competition could be taking place. We need to ensure managers keep this in mind as we move forward with the management of this herd.

Many of the areas used by the Petition elk are also occupied by feral wild horses. Wild horses have been shown to be aggressive at water holes and may also exhibit the same behavior when it comes to feeding areas. The areas encompassed by both animals are typically low in plant production. Wild horses may be causing a shift in distribution by elk and other native wildlife and have a definite negative impact on herbaceous plants and shrubs in this area.

The popularity of this herd has increased over the last 10 years with 7 commissioner license holders choosing to hunt this herd unit in 2016. The overall “quality” of bulls harvested (as determined by antler size) was down from previous years mainly due to dry conditions from May to August. This may result in a decrease in the number commissioner licenses from this decline, but many large antlered bulls remain.

Weather

There continues to be an increasing trend in moisture within the herd unit which has resulted in the filling of reservoirs and a positive response from vegetation (Figure 1). The western portion of the unit saw the highest percent of normal precipitation falling in 2016. Most of the moisture fell during spring and late fall with very little rain falling during the middle portion of the summer, leading to earlier curing of vegetation and likely influenced antler growth in bulls.

Field Data

No population data is currently collected for this herd given the factors mentioned above, and this has a negative influence on management. Managers tend to be conservative in this herd unit

due to the overall lack of knowledge of this population, and elk numbers have definitely increased significantly in the area due to this factor. It is likely elk numbers change daily in this herd given emigration and immigration of elk to and from Colorado and adjacent areas in Wyoming. Flight budgets are insufficient to fly this very large, low density herd unit. Given the number of large bulls inhabiting this area, expanding distribution of elk, and limited antlerless harvest, it is likely elk are doing well in this area.

Tooth age data from teeth sent in to the WGFD tooth aging lab for 2016 (N = 20, 19 usable samples) yield an average age of 6.5 (range 2.5 to 10.5, Figure 2). Combined with 2014 and 2015 we have a 3-year average of a little over 6.8. There are two potential issues with the tooth data. The first is the low participation by landowner license holders within the unit. This may artificially decrease the average age of bulls harvested within the herd unit as personal discussions and knowledge of the bulls harvested on this license tend to be older age class bulls. The other potential issue is the potential lack of participation by those harvesting young bulls due to their lack of interest in the age of the animal, which could have the opposite effect of the landowner licenses. A greater effort must be made in the future to get a sample of all bulls harvested in the area.

Figure 1. Percent of normal precipitation for the herd unit from February 2016 to February 2017.

Sportsmen satisfaction in this herd is high with 73% of the 81 respondents “satisfied or very satisfied” with their overall hunting experience. There is some dichotomy between residents and non-residents though with residents showing a satisfactory rating of 75% and non-residents at 56%. This could be due to the high number of non-resident commissioner licenses (n = 5) and the lower size of bulls we saw this year in the unit. Reduced antler growth seems to be due to a very dry summer with a low quality of feed available. Non-resident commissioner license holders may have been disappointed with the money spent and the quality seen in the unit.

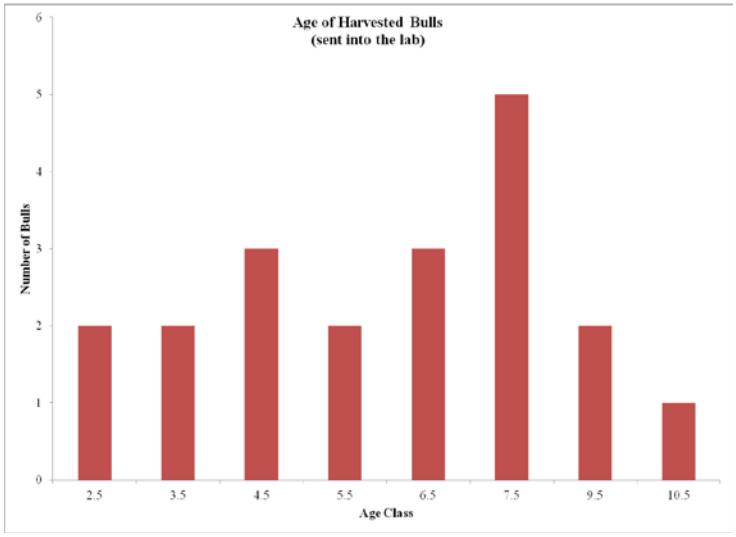
Landowner satisfaction was collected through personal contacts either via phone or face to face meetings. Fourteen landowners were contacted by 3 WGFD managers. Ten respondents felt elk numbers were “at or about at desired levels”, none felt numbers were “above desired levels” and

three felt elk numbers were “below desired levels”. One landowner did not feel like he could give an opinion on the abundance of elk in the unit.

Harvest Data and Population Indications

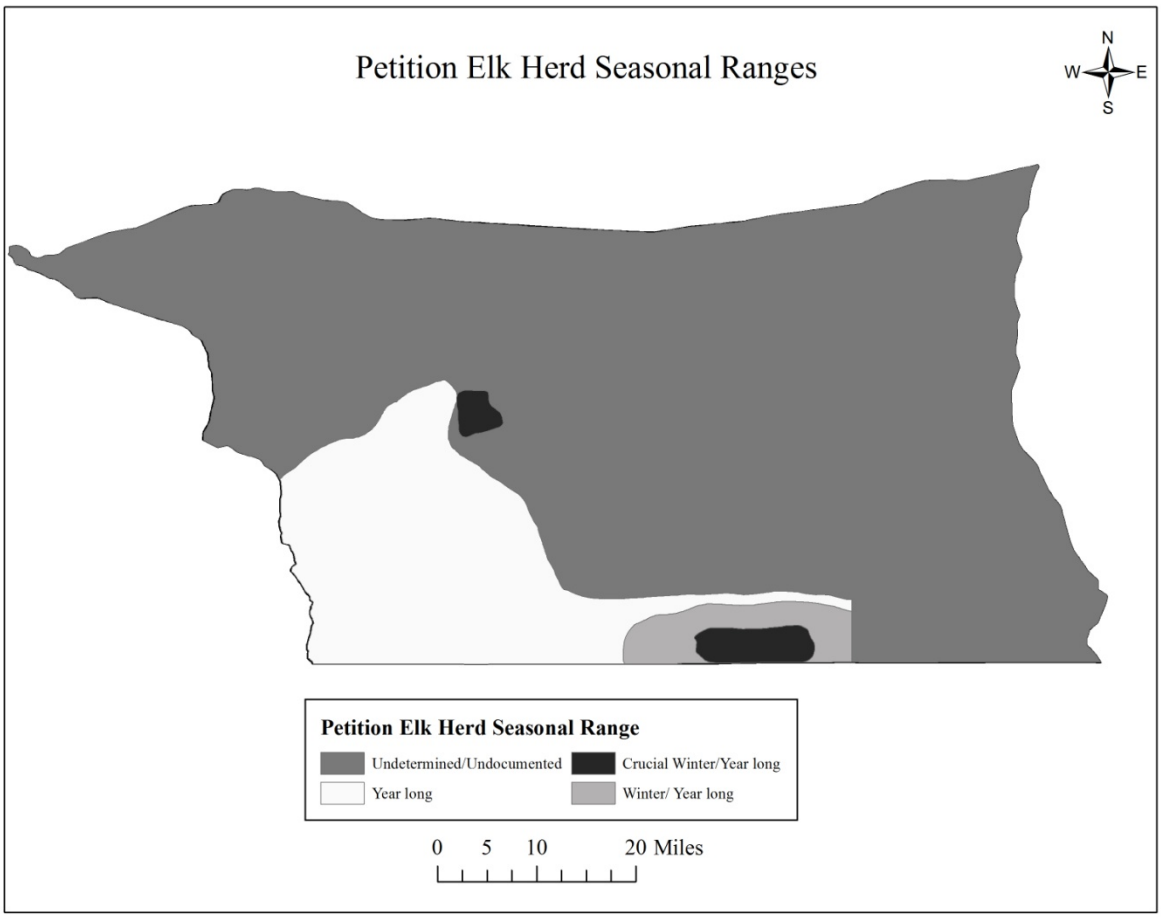
Hunter success declined slightly this year to 66%, primarily driven by a lower success rate on antlerless licenses (58%). This suggests it was difficult to find a cow within the unit, but is more likely affected by lower effort antlerless hunters tend to put into their hunt. Despite this lower success rate, we still were able to obtain a record cow harvest for this herd with 96 cows harvested.

Figure 2. EL430 bull ages from teeth submitted to the WGFD laboratory.



Management Summary

It is important we balance the management of an important resource to hunters (i.e. good opportunity for large bulls) and the extremely sensitive ecosystem found in the Petition elk herd as we move forward with the management of this herd. Currently we see only few issues between landowners and the Petition elk herd and strong support from sportsmen hunting elk within the herd. Because of the relatively low density of elk in this unit we believe having flexibility in the harvest numbers between years is key. Competition between these elk and the South Rock Springs mule deer herd unit has not been determined. Preliminary analysis of data involving South Rock Springs mule deer and South Rock Springs elk has suggested some affect from elk on deer, but whether this is negatively affecting deer at a population scale is unknown at this time. A modest reduction in average age of bull harvested and a higher landowner satisfaction rate has lead to our current management strategy to decrease both antlered and antlerless licenses in the area.


Petition Elk Herd Seasonal Ranges
N
W
E
S
Petition Elk Herd Seasonal Range
Undetermined/Undocumented
Crucial Winter/Year long
Year long
Winter/ Year long
0 5 10 20 Miles