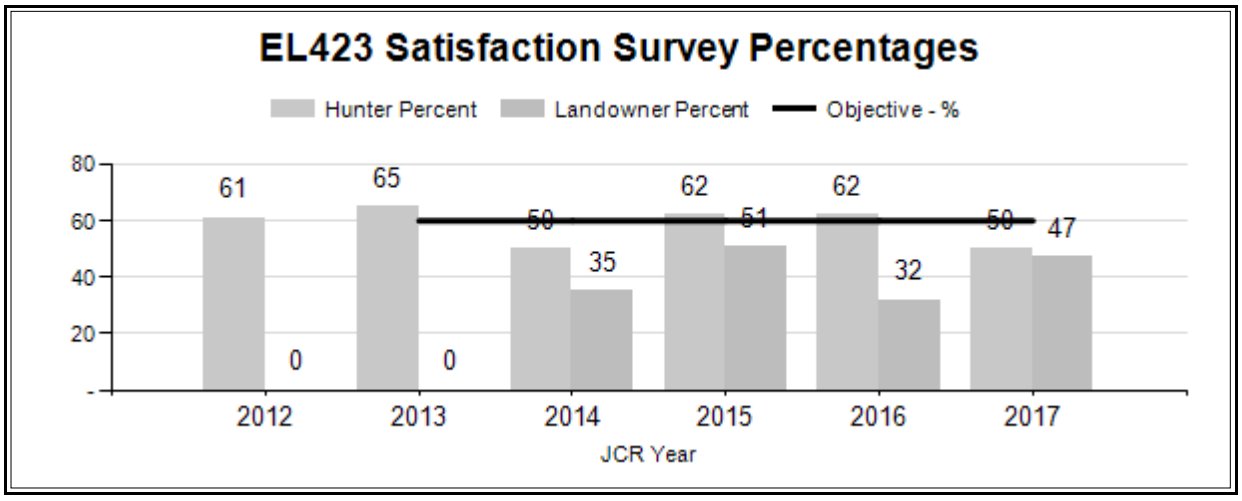
2017 - JCR Evaluation Form

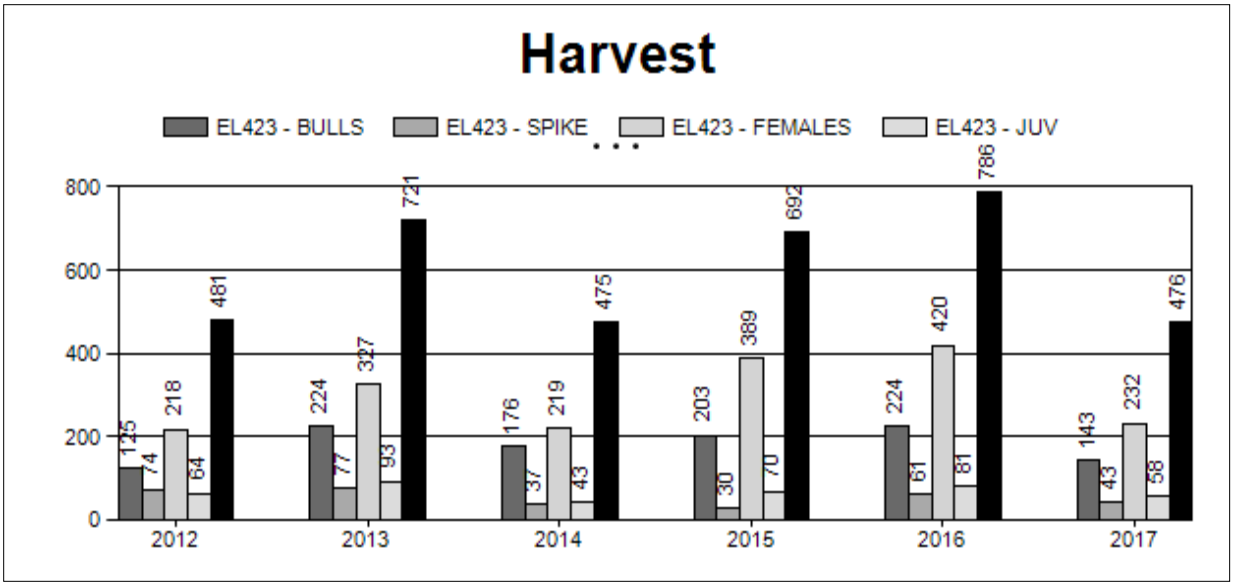
SPECIES: Elk
HERD: EL423 - UINTA
HUNT AREAS: 106-107

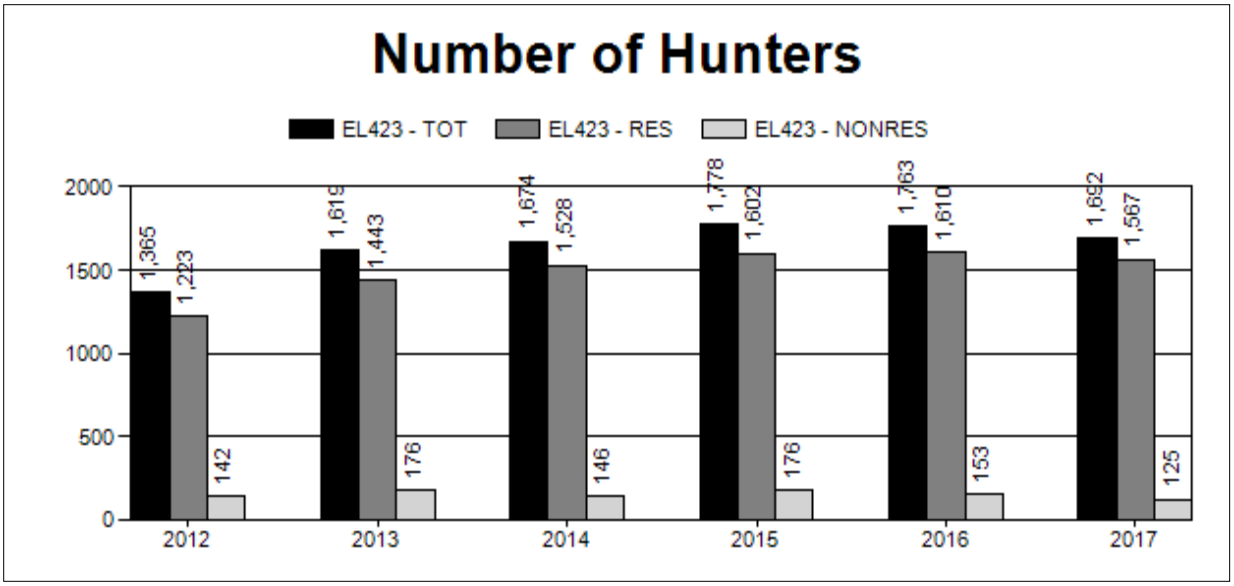
PERIOD: 6/1/2017 - 5/31/2018
PREPARED BY: JEFF SHORT

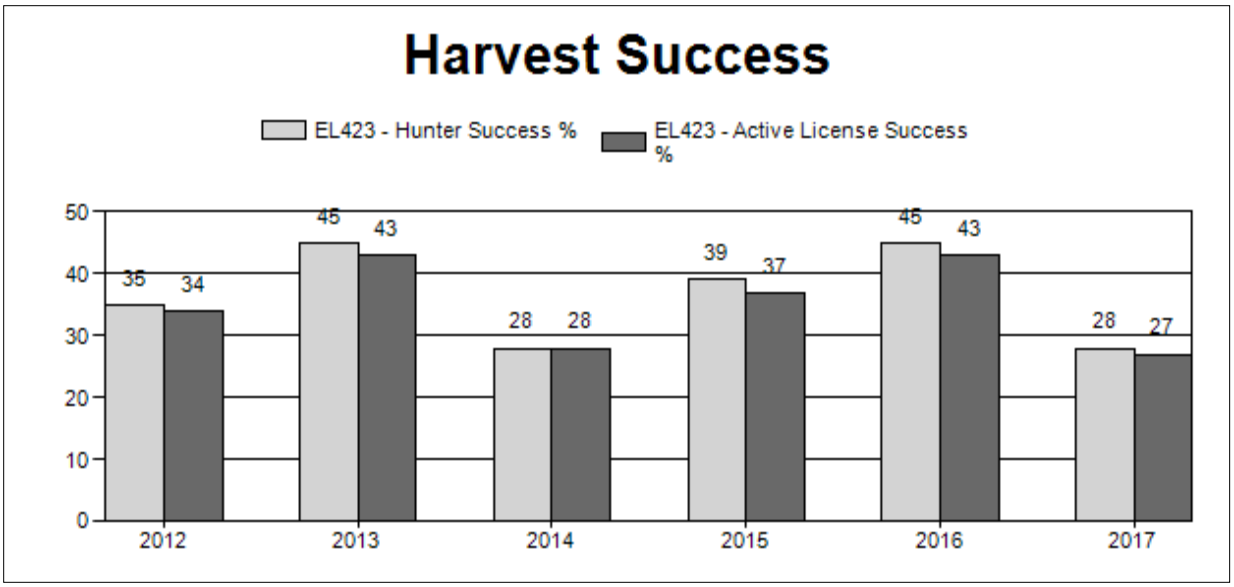
	2012 - 2016 Average	2017	2018 Proposed
Hunter Satisfaction Percent	60%	50%	60%
Landowner Satisfaction Percent	39%	47%	60%
Harvest:	631	476	550
Hunters:	1,640	1,692	1,700
Hunter Success:	38%	28%	32%
Active Licenses:	1,701	1,744	1,750
Active License Success:	37%	27%	31%
Recreation Days:	10,879	11,719	11,000
Days Per Animal:	17.2	24.6	20
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	

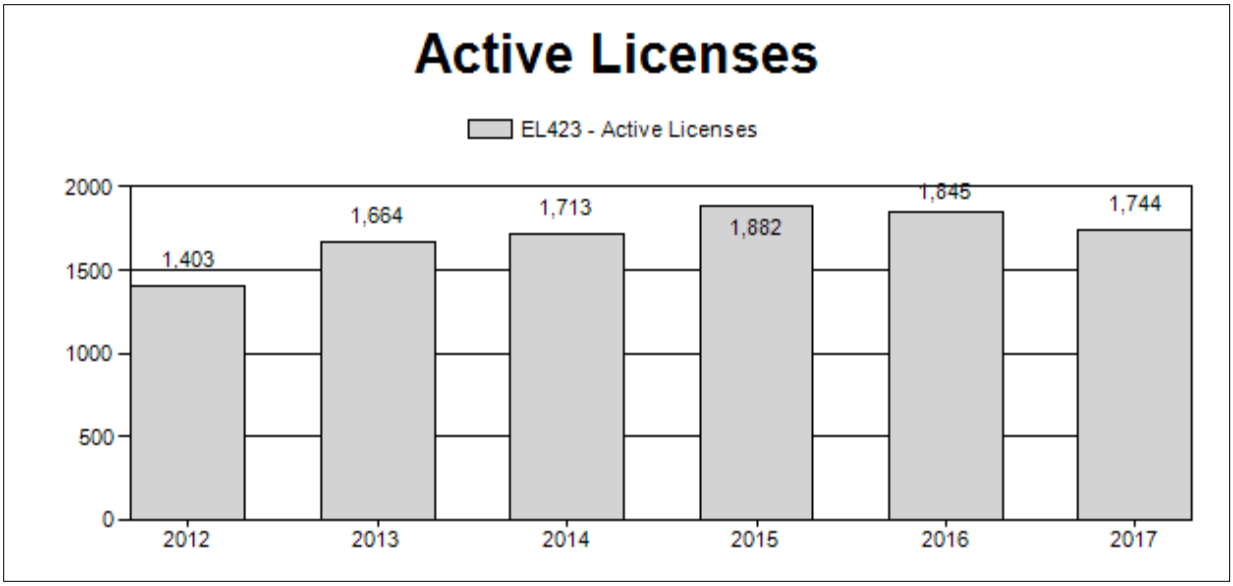
Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	-12%
Number of years population has been + or - objective in recent trend:	3

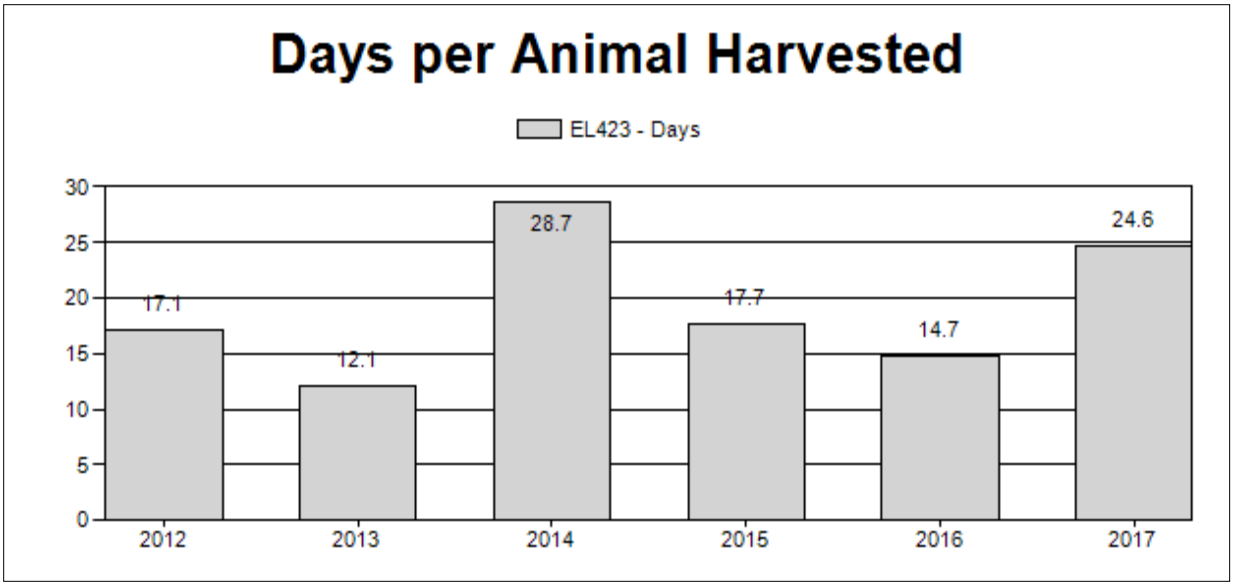


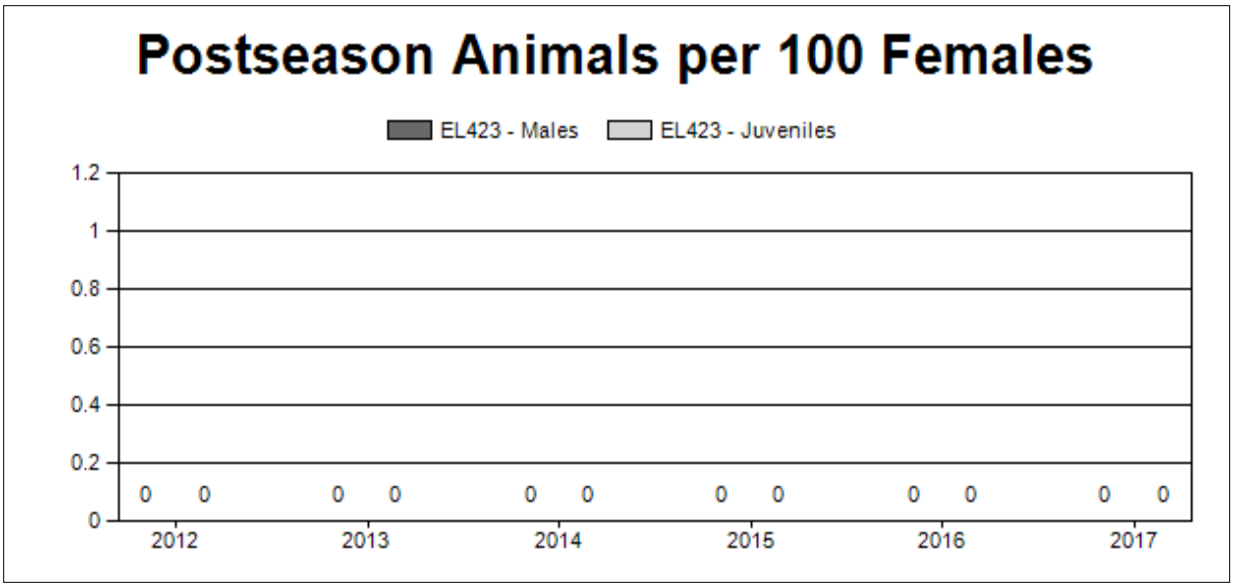

Harvest
EL423 - BULLS
EL423 - SPIKE
EL423 - FEMALES
EL423 - JUV
800
600
400
200
0
125
74
218
64
481
224
77
327
93
721
176
37
219
43
475
203
30
389
70
692
224
61
420
81
786
143
43
232
58
476
2012
2013
2014
2015
2016
2017


Number of Hunters
EL423 - TOT
EL423 - RES
EL423 - NONRES
2000
1500
1000
500
0
1,365
1,223
142
1,619
1,443
176
1,674
1,528
146
1,778
1,602
176
1,763
1,610
153
1,692
1,567
125
2012
2013
2014
2015
2016
2017


Harvest Success
EL423 - Hunter Success %
EL423 - Active License Success %
50
40
30
20
10
0
35
34
45
43
28
28
39
37
45
43
28
27
2012
2013
2014
2015
2016
2017


Active Licenses
EL423 - Active Licenses
2000
1500
1000
500
0
1,403
1,664
1,713
1,882
1,845
1,744
2012
2013
2014
2015
2016
2017


Days per Animal Harvested
EL423 - Days
30
25
20
15
10
5
0
17.1
12.1
28.7
17.7
14.7
24.6
2012
2013
2014
2015
2016
2017


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
2012
2013
2014
2015
2016
2017

No classification data for this herd

2018 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	Oct. 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	Oct. 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 3 of this chapter

Hunt Area	License Type	Quota change from 2017
Herd Unit Total		

Management Evaluation
Current Postseason Population Management Objective: Satisfaction
Management Strategy: Recreational
2017 Postseason Population Estimate: ~1300
2018 Proposed Postseason Population Estimate: ~1100

Herd Unit Issues
This is an interstate herd shared with Utah. Elk summering in the Uinta Mountains in Utah come to Wyoming to winter. Limited public land winter range is the main issue for this herd. With winter range in short supply conflict with agriculture producers becomes an issue. Damage complaints occur on bad winters. Summer damage also occurs on crops in limited areas. Significant efforts have been made by field personnel to alleviate these problems. Perceived reduction in livestock forage due to elk grazing is an issue brought up by livestock producers but is not substantiated biologically.

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

The HA 107 antlerless licenses are used to maintain pressure on elk on the Wyoming side of the state boundary during a hunt on the Utah side. Damage complaints on the HA 107 side of the herd unit are typically low even during 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 the small portion of public land in southeast 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 fourth year of this objective we are not meeting the hunter satisfaction objective or the landowner satisfaction objective. Hunter satisfaction is correlated to hunter harvest success and the mild weather conditions in the fall of 2017 made for low elk harvest. The landowner survey returns show the vast 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 2017 and into 2018 has been highly variable. In the early part of 2017 the winter was harsh with high snow loads and cold temperatures. Snow persisted late into early summer in the higher elevations. This provided ample moisture for forage production. In July and August conditions dried considerably and into late December fairly low precipitation was received. The winter of 2017/18 was very mild with low snow and relatively warm temperatures. It has been a welcome break for elk and animals are currently in excellent condition. The winter of 2016/17 turned out to be severe and may have even had increased impacts to calf and adult survival. This is unusual for elk in this area.

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**

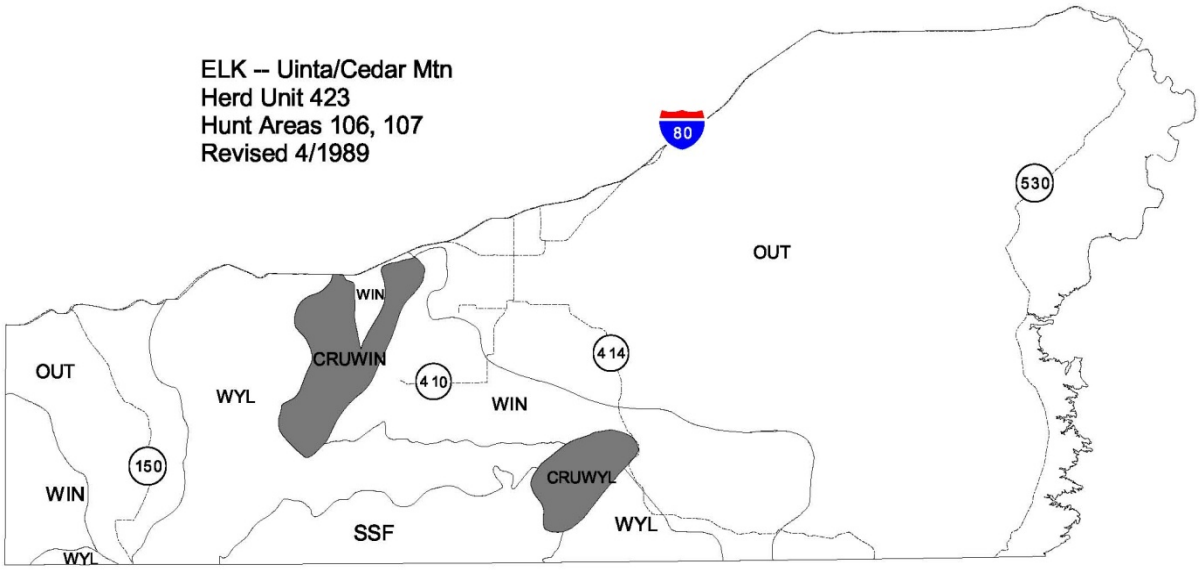
Harvest Data
Antlerless harvest opportunity was increased for several years in this herd unit. The 2010, 2011 and 2012 season structures offered substantially increased antlerless harvest opportunity to reduce the possibility of damage in the herd unit. Those seasons allowed significant antlerless harvest 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 mild weather brought the harvest back down to 493. We will continue this aggressive hunting strategy to maintain harvest pressure on this herd. We are also adding increased opportunity to the type 4 licenses making them good during the general any elk season which should increase cow harvest.

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 was very helpful during the difficult winter of 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

2017 - JCR Evaluation Form

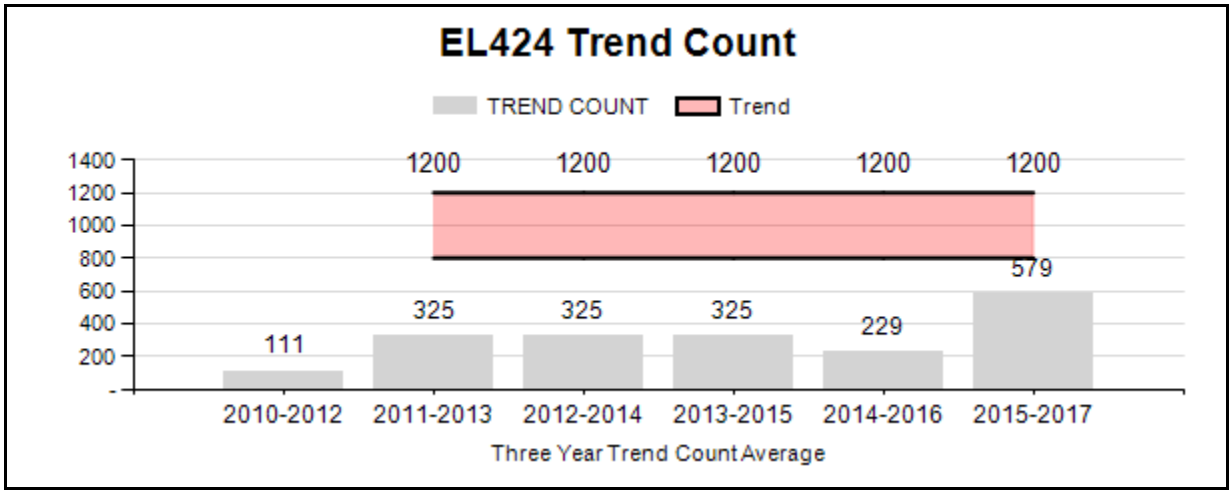
SPECIES: Elk
PERIOD: 6/1/2017 - 5/31/2018
HERD: EL424 - SOUTH ROCK SPRINGS
HUNT AREAS: 30-32
PREPARED BY: PATRICK BURKE

	2012 - 2016 Average	2017	2018 Proposed
Trend Count:	333	1,049	1,000
Harvest:	227	299	300
Hunters:	353	411	400
Hunter Success:	64%	73%	75 %
Active Licenses:	353	411	400
Active License Success	64%	73%	75 %
Recreation Days:	2,657	3,193	3,200
Days Per Animal:	11.7	10.7	10.7
Males per 100 Females:	35	35	
Juveniles per 100 Females	32	54	

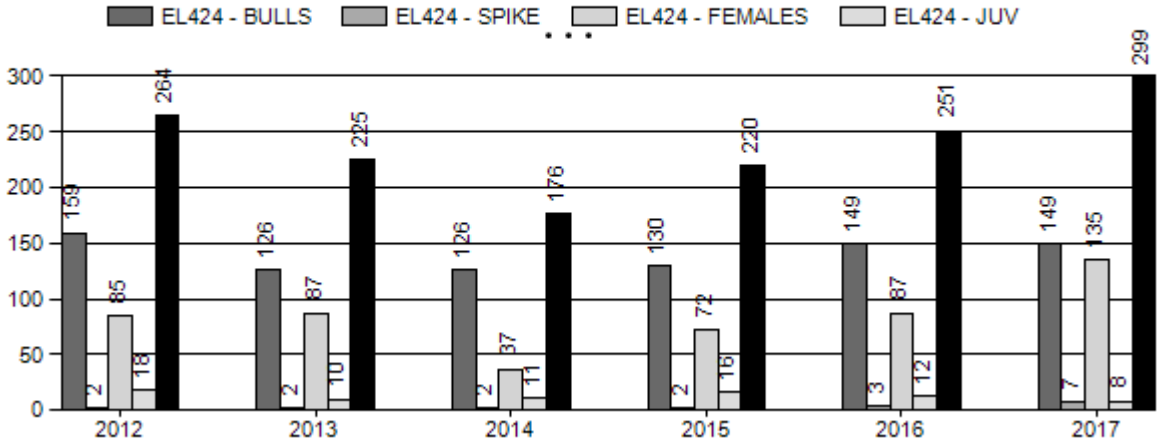
Trend Based Objective (± 20%)	1,000 (800 - 1200)
Management Strategy:	Special
Percent population is above (+) or (-) objective:	5%
Number of years population has been + or - objective in recent trend:	0

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

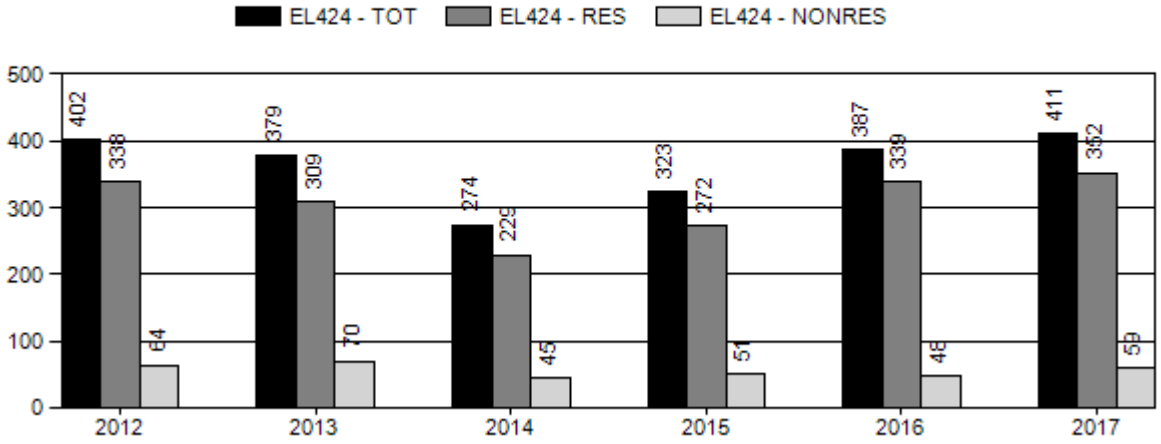
	JCR Year	Proposed
Females ≥ 1 year old:	0%	0%
Males ≥ 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%
Total:	0%	0%
Proposed change in post-season population:	0%	0%



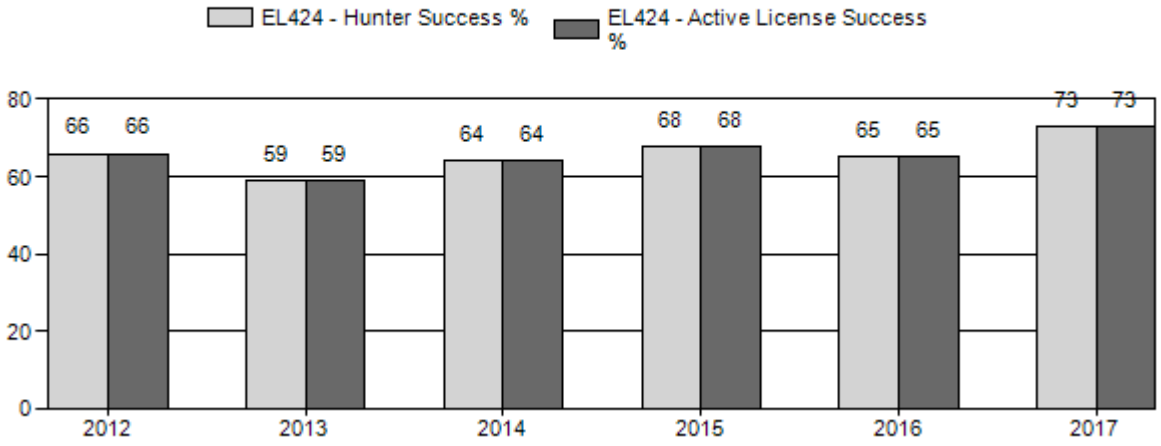
Harvest



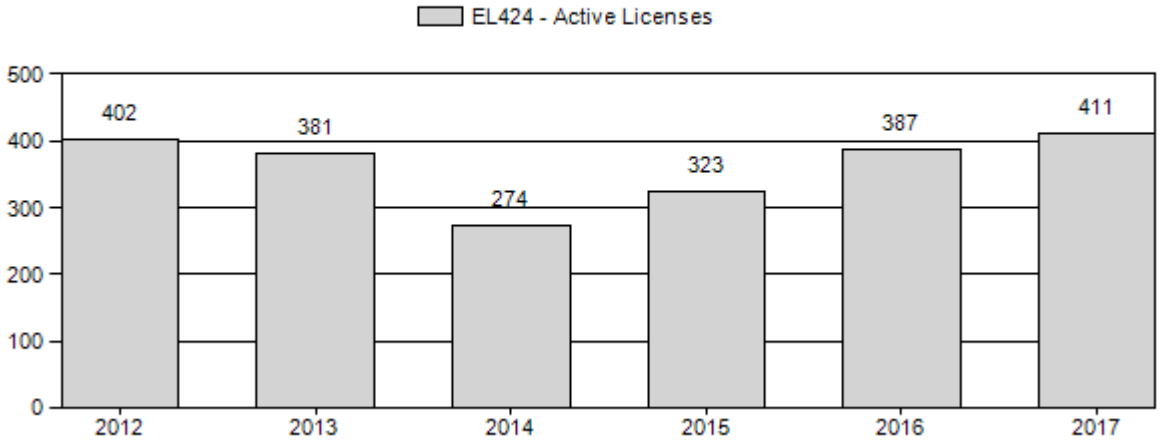
Number of Hunters



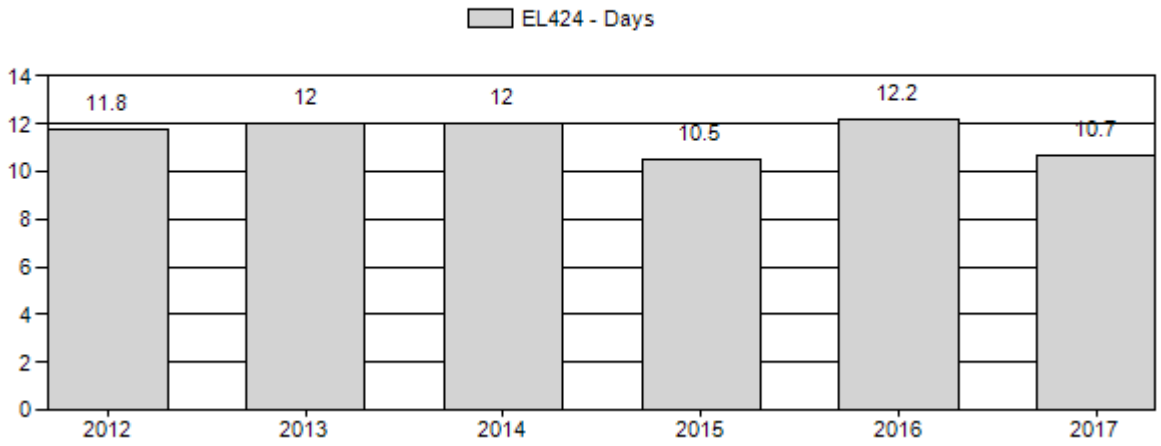
Harvest Success



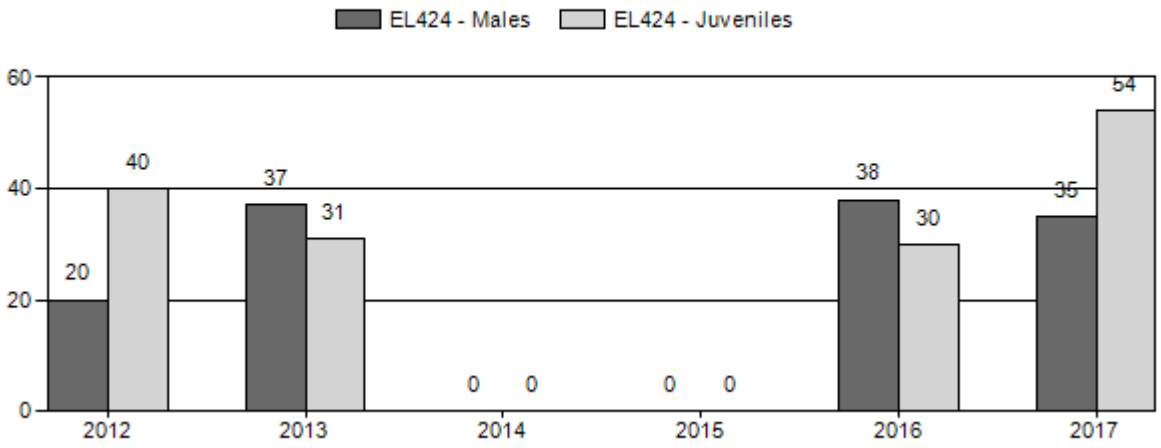
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2018 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. 11	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 2017
Herd Unit Total		**No Changes**

Management Evaluation
Current Management Objective: 1,000
Management Strategy: Special
2017 Postseason Population Estimate: N/A
2018 Proposed Postseason Population Estimate: N/A

The South Rock Springs elk herd is a special management herd, and has a mid-winter trend count objective of 1,000 elk. This objective was set in 2013, when the objective was changed from a population based objective to a trend count based objective. This change was made due to the difficulty and unreliability of attempting to model 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 pronghorn herd for the last several years has been dry summer conditions with relatively mild winters. Those conditions changed somewhat in 2016, which saw an improvement in summer moisture levels and a significantly more severe winter than this herd has been seen since the 2010-2011 winter. While, the country south of Interstate 80 did not receive as much in the way of deep snow conditions as the country further north, it did still receive significant snowfall and experienced bitterly cold temperatures during portions of the 2016-2016 winter. While the 2016-2017 winter was not as severe in the area occupied by the South Rock Springs Pronghorn Herd, the herd did still probably experience some level of increased overwinter mortality.

In comparison to 2016, this year has been relatively dry and the 2017-2018 has been one of the mildest winters in recent memory, with warmer than average temperatures and very light snowfall in the region. While the mild winter conditions have been easy on animals in the area, if the spring doesn't bring increased levels of precipitation, the lack of moisture in the area will have significant negative impacts on plant growth in the area.

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 by 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 2017, while one of the sites had LD values at or below zero.

The Little Mt. /Dipping Springs LD transect was not read in 2017, because that aspen stand was fenced with an ungulate excluding modified steel jack fence in 2016. The erection of that fence makes the LD values for that site not comparable to the other sites in the herd unit.

Table 1. Trends in aspen regeneration LD Index values (vertical inches) for the SRS herd unit 2014-2017.

Monitoring site	2014	2015	2016	2017
Pine Mt/Red Ck.	-7.8	-1.8	0	-4.1
Tri-State /Red Ck.	+3.36	+7.2	+13.2	+10.7
Miller Mt.	+4.6	+3.6	+18.6	+3.9
Aspen Mt.	-4.5	+1.2	+4.6	+8.3
Little Mt./Dipping Spr.	-0.9	+1.2	-0.6	N/A
Little Mt./West Currant Ck.	-1.6	0	+5.5	+10.6

Field Data

The South Rock Springs Elk Herd was classified from a helicopter in conjunction with the South Rock Springs Deer Herd during December 2017. During those classification flights, a total of 1,049 elk were classified in the herd unit, consisting of 555 cows, 301 calves, 110 adult bulls, and 83 yearling bulls. That resulted in observed ratios of 54 calves per 100 cows, and 35 bulls per 100 cows which included 15 yearling bulls per 100 cows.

The majority of the elk observed during those flights were seen in HA31, with 606 of the classified elk coming from that hunt area. Hunt Area 30 contained the next largest sample of elk, with 396 elk being found in that hunt area, and HA32 contained the smallest number of elk with only 47 elk being located in that hunt area during the classification flights.

Harvest Data

In 2017 there were a total of 411 active licenses in the herd unit, up slightly from the 391 active licenses seen in 2016. The overall harvest success rate for those 411 hunters across all hunt areas and license types in the herd unit was 72.7%, and it took the average hunter 10.7 days to harvest an elk in the herd unit. The 2017 hunting season resulted in a harvest of 299 elk across the herd unit. Of those 299 harvested elk, 149 of them were two year or older bulls, seven were spike bulls, 135 of them were cows, and 8 were calves.

When broken out by individual hunt area, the hunt area with the highest harvest success rate in 2017 was HA30, with reported an 80.8% success rate for Type 1 and 4 license types combined, with 88% success for the Type 1 license holders and 73.5% for the Type 4 hunters. Hunt Area 31 reported a 76.1% overall success rate, with Type 1 licenses having a success rate of 79.4%, and a 73% success rate for Type 4 license holders. Hunt Area 32 reported a 60% overall success

rate, with the Type 1 license holders experiencing a 84.8% success rate, and a 50% success rate for Type 4 license holders, along with a 26.3% 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 2017, tooth samples were submitted from 70 bull elk or about 47% of the bulls harvested based on the harvest survey. One of those samples was still being processed at time of this report, so based on the 69 useable submissions; the average age of harvested bulls in 2017 was 6.2 years old. This compares with an average age of also 6.2 years old in 2016, 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 2017 was one 10.5 year old bull that was harvested in HA30. The oldest bull aged from HA31 a 9.5 year old bull, and the oldest from HA32 was also 9.5 years old. In past years, the oldest age class of bull harvested was 11.5 in 2016, 9.5 in 2015, 10.5 in 2014, 9.5 in 2013, 7.5 in 2012, and 11.5 in 2011.

Population

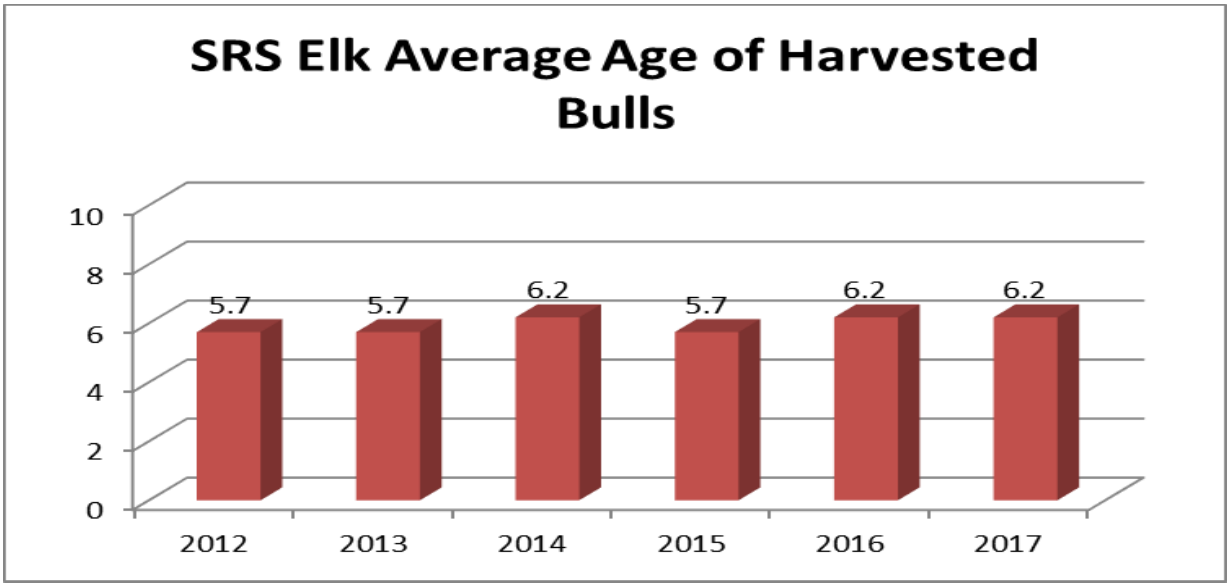
Since collar data from three separate studies being conducted in Colorado, Utah, and Wyoming have demonstrated that at least portions of this herd move freely between Wyoming, Colorado, and to a lesser extent Utah; attempting to model this herd is not feasible because it violates the fundamental assumption 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.

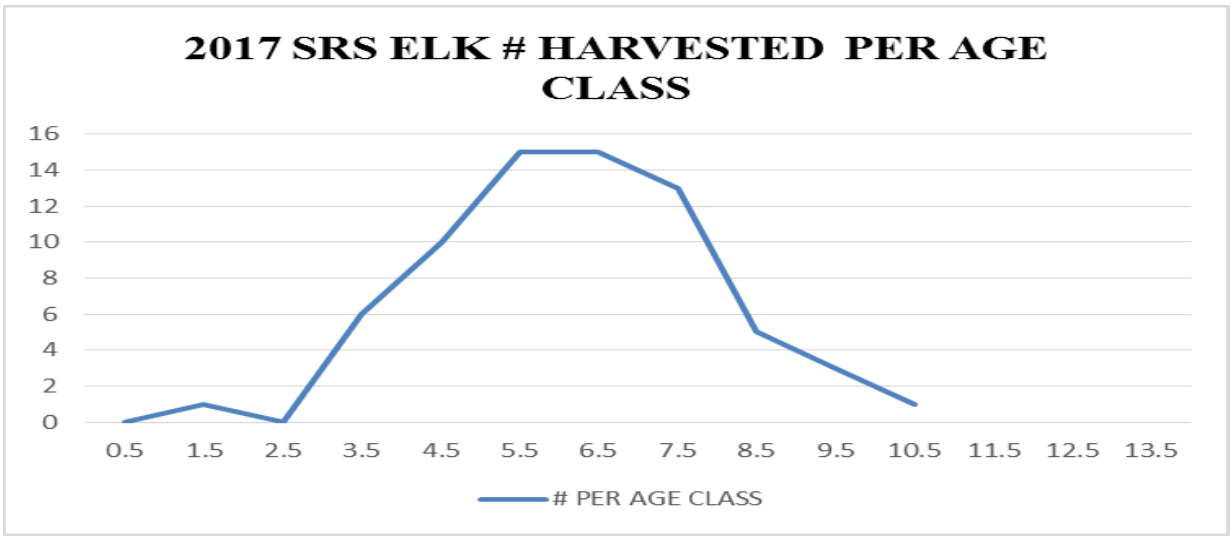
Due to the fact that funds were available for a classification flight in December 2017 and an adequate number of elk were encountered during that flight, the 2017 data can be used to examine the number of elk in the herd. The classification sample size of 1,049 elk, while not a trend count and only a sample of the herd is generally in line with previous sample sizes and suggests that the herd is still at an appropriate level. The total number of elk observed in each hunt area during the 2017 classification flights was 396 elk in HA30, 606 elk in HA31, and 47 elk in HA32.

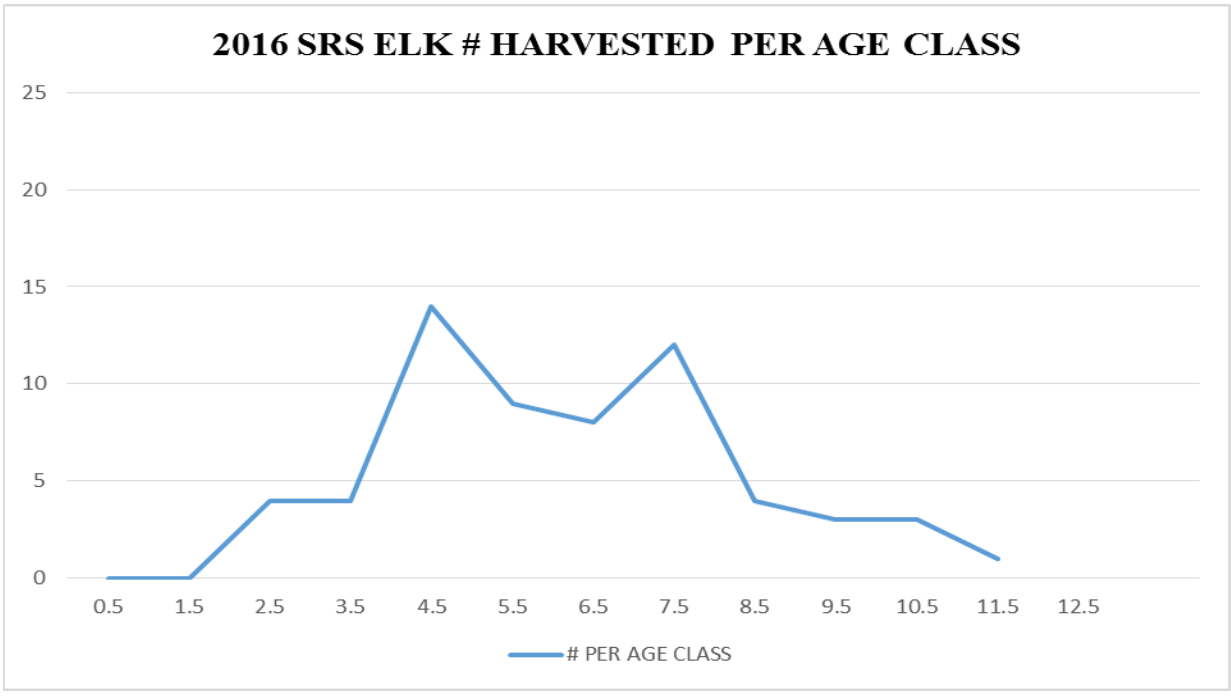
Management Summary

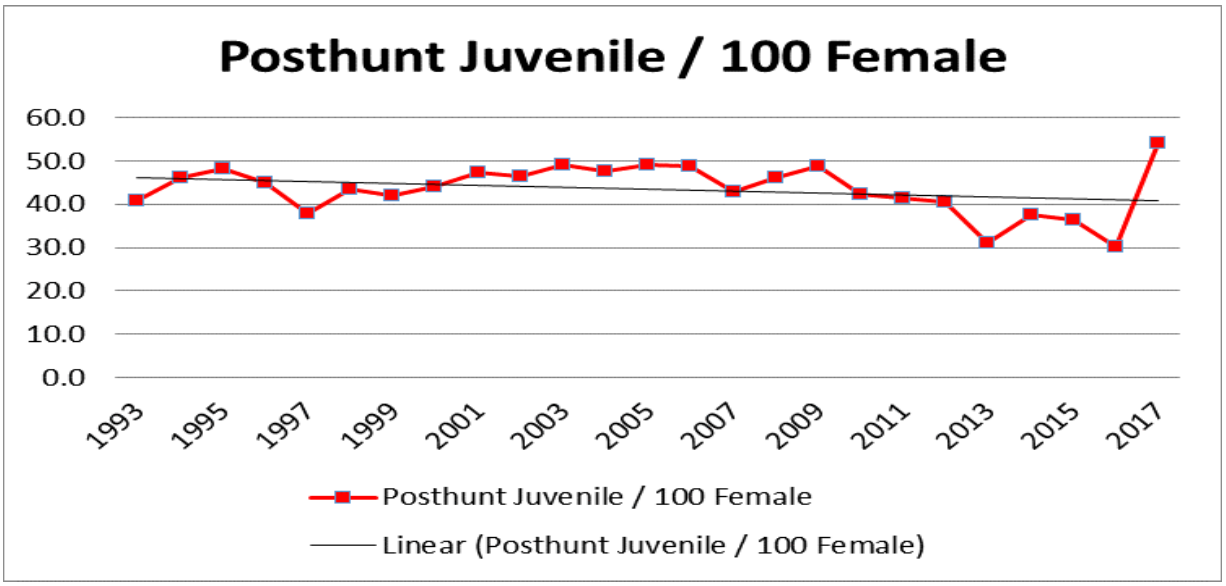
The 2018 season is generally similar to season structures from the past few years. The only changes for 2018 is a date change for the ending date for the HA32 Type 4 licenses. The change for 2018 is to move the closing date from November 12th to November 11th. This keeps the closing date on a Sunday and aligned with the closing data for Colorado's 4th rifle season

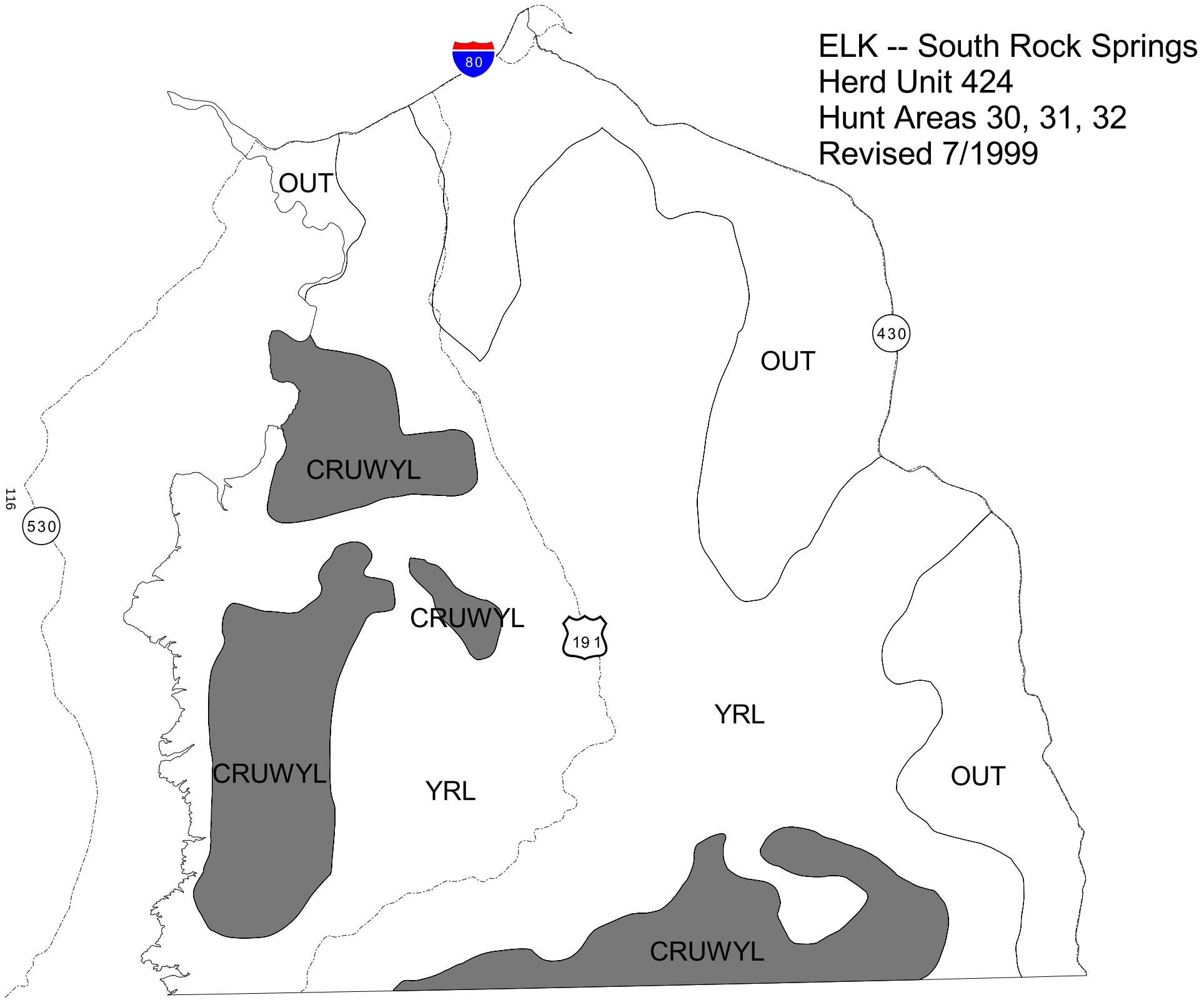
Since the recent classification sample sizes suggest that the current population level is reasonably near its objective of 1,000 elk mid-winter, the 2018 seasons should maintain elk numbers at approximately their current level. However, if the observed calf to cow ratio of 54 calves per 100 cows is anywhere near biologically accurate and represents what the actual recruitment of this population was, then increases in cow licenses may be needed in the future to keep this herd from growing above its objective.


SRS Elk Average Age of Harvested Bulls
10
8
6
4
2
0
5.7
5.7
6.2
5.7
6.2
6.2
2012
2013
2014
2015
2016
2017


2017 SRS ELK # HARVESTED PER AGE CLASS
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
13.5
PER AGE CLASS


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


Posthunt Juvenile / 100 Female
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
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
430
OUT
CRUWYL
116
530
CRUWYL
191
YRL
CRUWYL
YRL
OUT
CRUWYL

2017 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2017 - 5/31/2018

HERD: EL425 - SIERRA MADRE

HUNT AREAS: 13, 15, 21, 108, 130 | PREPARED BY: SAM STEPHENS

	2012 - 2016 Average	2017	2018 Proposed
Population:	9,263	9,644	6,800
Harvest:	2,369	1,700	1,600
Hunters:	5,966	5,026	4,900
Hunter Success:	40%	34%	33%
Active Licenses:	6,234	5,305	5,100
Active License Success:	38%	32%	31 %
Recreation Days:	42,549	36,481	34,000
Days Per Animal:	18.0	21.5	21.2
Males per 100 Females	31	0	
Juveniles per 100 Females	40	0	

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

Management Strategy: Recreational

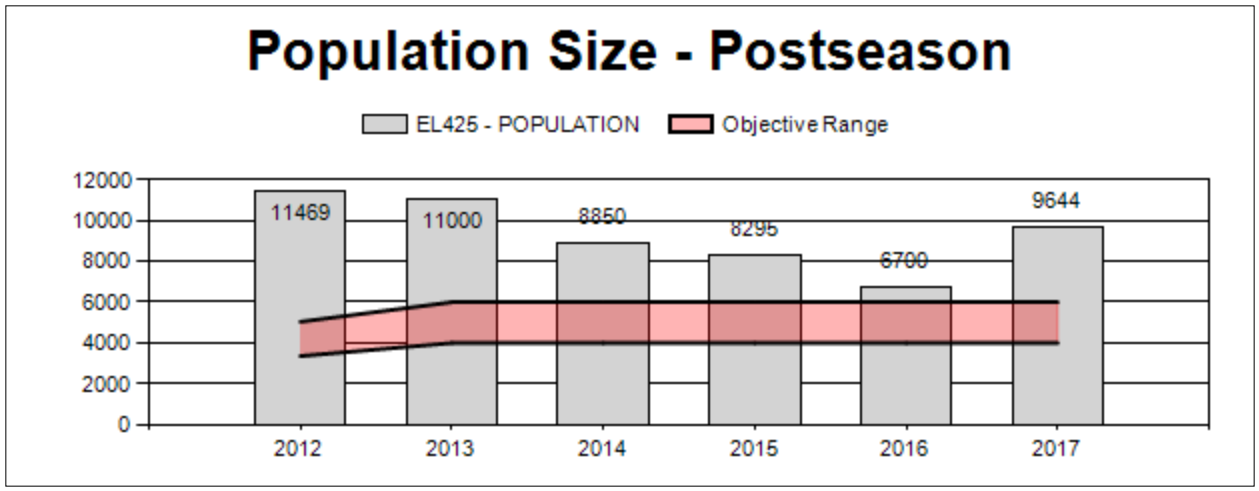
Percent population is above (+) or below (-) objective: 93%

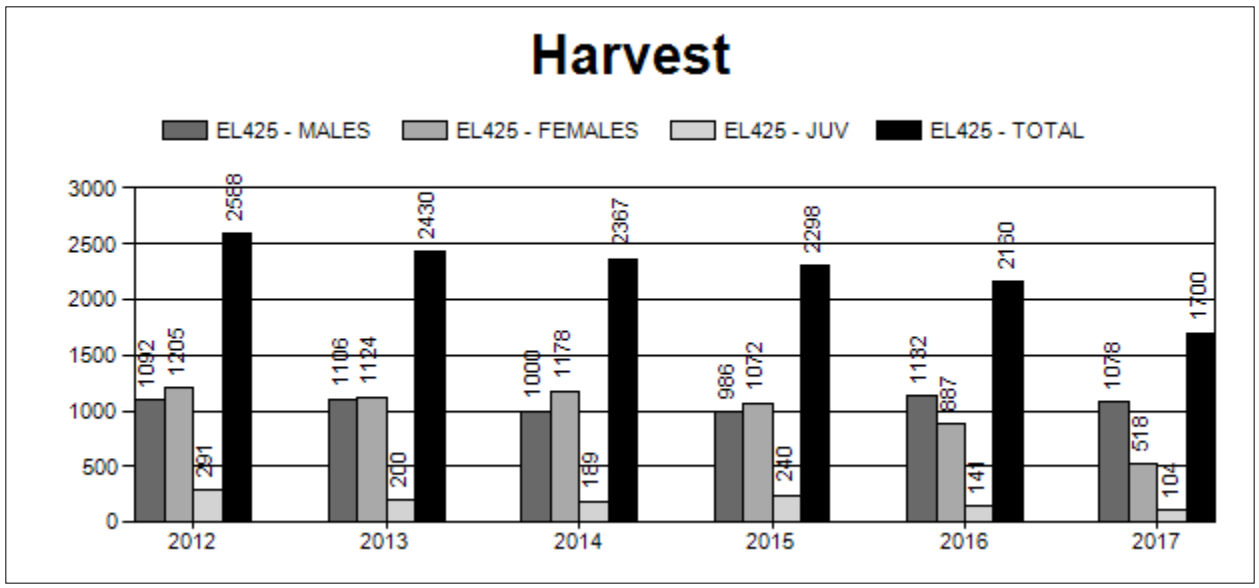
Number of years population has been + or - objective in recent trend: 0

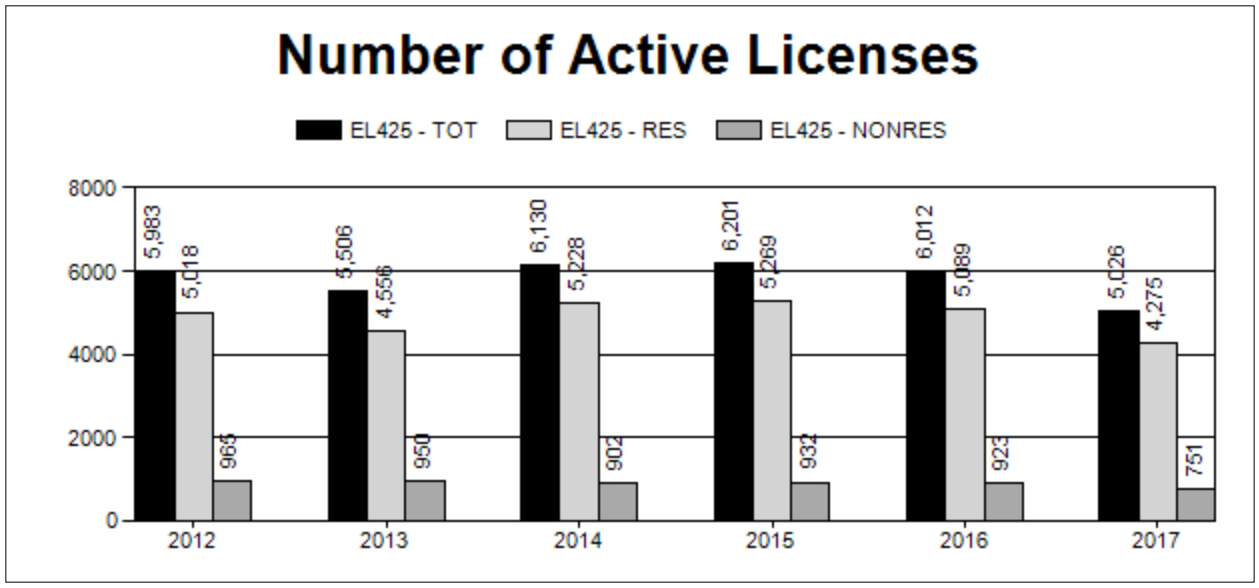
Model Date: 3/6/2018

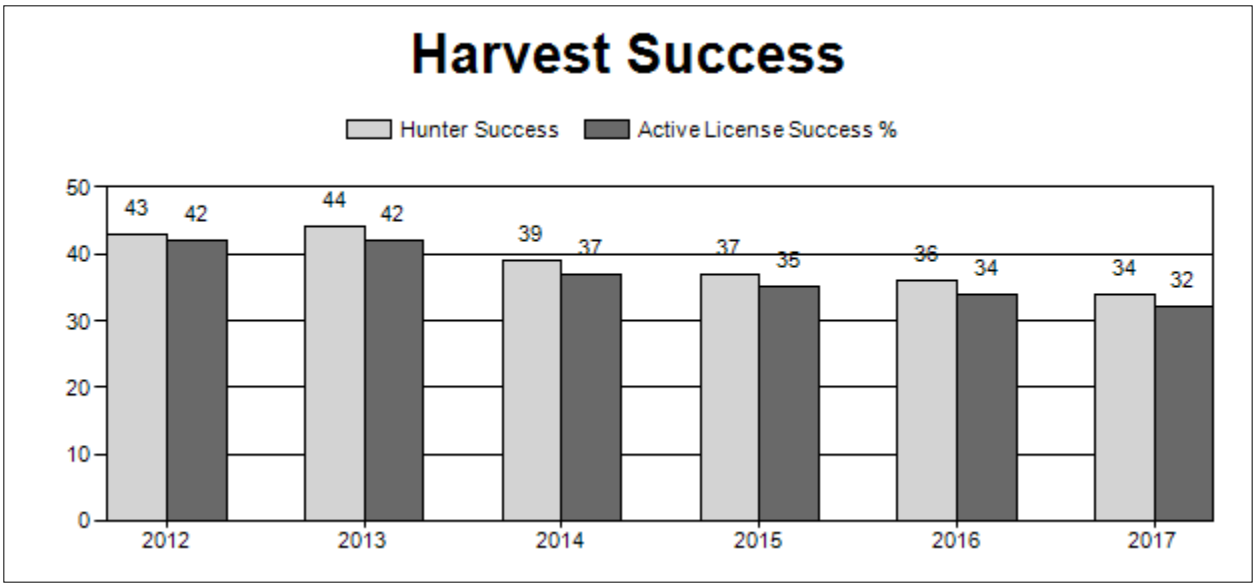
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

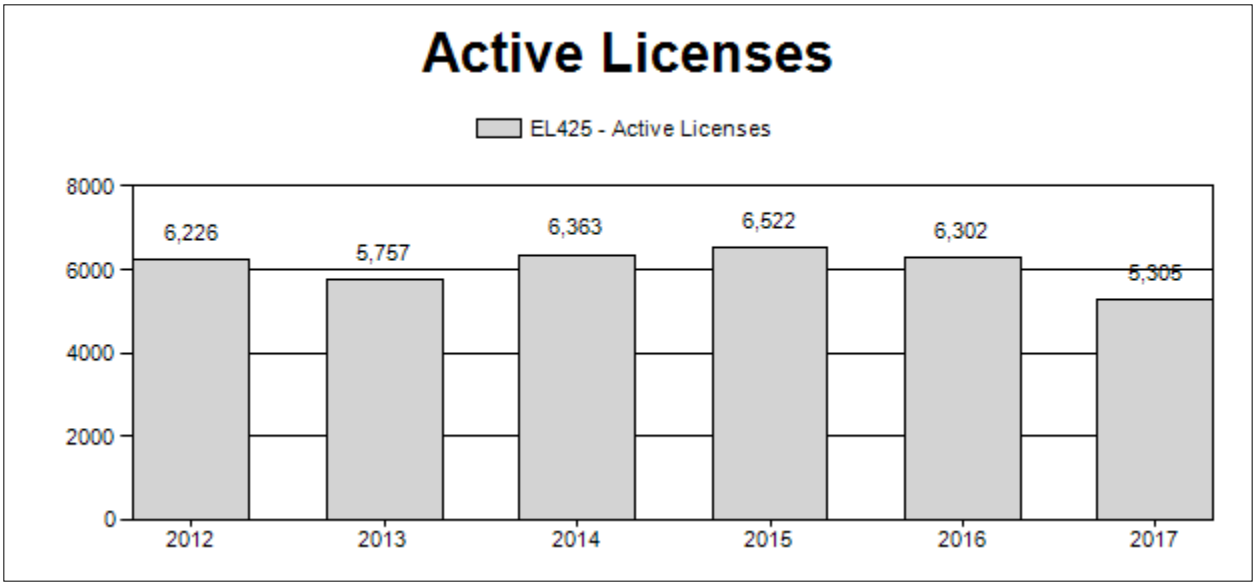
	JCR Year	Proposed
Females ≥ 1 year old:	9%	6%
Males ≥ 1 year old:	72%	12%
Total:	20%	18%
Proposed change in post-season population:	10%	25%

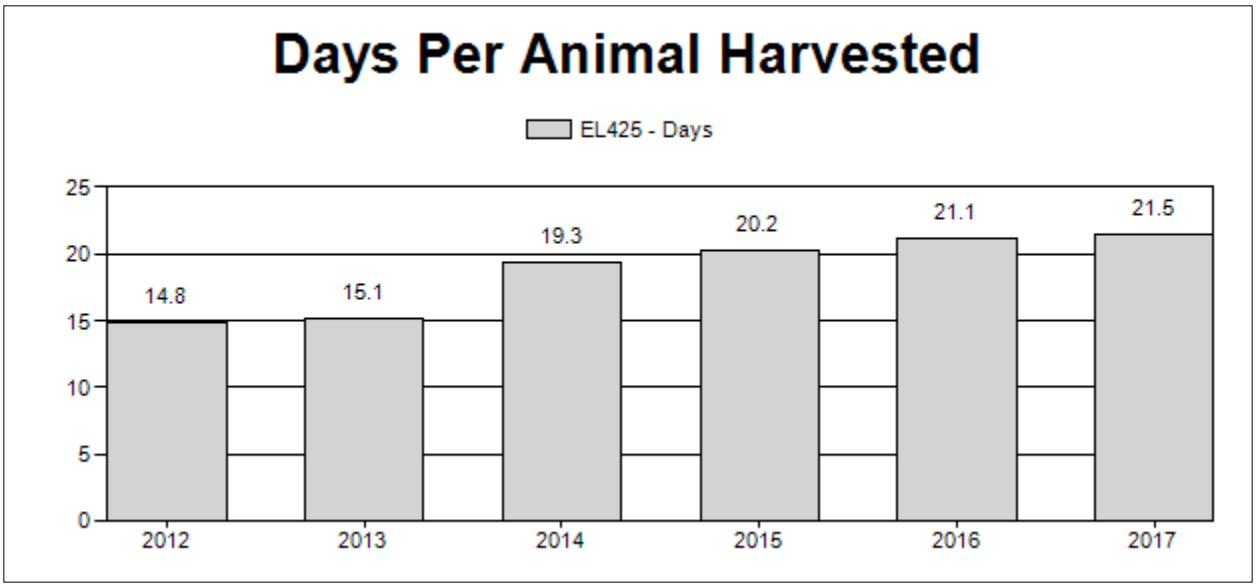

Population Size - Postseason
EL425 - POPULATION
Objective Range
12000
10000
8000
6000
4000
2000
0
11469
11000
8850
8295
6700
9644
2012
2013
2014
2015
2016
2017


Harvest
EL425 - MALES
EL425 - FEMALES
EL425 - JUV
EL425 - TOTAL
3000
2500
2000
1500
1000
500
0
1092
1205
291
2568
1106
1124
200
2430
1000
1178
189
2367
986
1072
240
2298
1132
887
141
2130
1078
518
104
1700
2012
2013
2014
2015
2016
2017


Number of Active Licenses
EL425 - TOT
EL425 - RES
EL425 - NONRES
8000
6000
4000
2000
0
5,983
5,018
965
5,506
4,556
950
6,130
5,228
902
6,201
5,269
932
6,012
5,089
923
5,026
4,275
751
2012
2013
2014
2015
2016
2017


Harvest Success
Hunter Success
Active License Success %
50
40
30
20
10
0
43
42
44
42
39
37
37
35
36
34
34
32
2012
2013
2014
2015
2016
2017


Active Licenses
EL425 - Active Licenses
8000
6000
4000
2000
0
6,226
5,757
6,363
6,522
6,302
5,305
2012
2013
2014
2015
2016
2017


Days Per Animal Harvested
EL425 - Days
25
20
15
10
5
0
14.8
15.1
19.3
20.2
21.1
21.5
2012
2013
2014
2015
2016
2017

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	Yling	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

2018 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	100	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 2017*
13	*6*	*0*
15	*6*	*0*
21	6	-100
	7	*0*
108	*1*	*0*
	4	*0*
	6	*0*
	7	*0*
Herd Unit Total	***1***	***0***
	4	***0***
	6	***-100***
	7	***0***
	Total	***0***

Management Evaluation

Current Management Objective: 5,000 (2013)

Management Strategy: *Recreational*

2017 postseason Estimate: 9644

2018 Proposed Postseason Population Estimate: 6800

The current abundance estimate for the Sierra Madre elk herd (SMEH) is 93% over objective. However, the current model being used to monitor this population is producing unrealistic results. It is because of this that we propose to extend our five year review into 2019 to allow managers to discuss alternative options for estimating this population and incorporate classification data which was absent from the 2017 analysis due to flights being annually cost-prohibitive. The spreadsheet model currently employed is only one tool in managing this elk herd. Other indices such as hunter success, satisfaction, landowner satisfaction, days/animal harvested, and overall harvest point to a declining elk population. Incorporating the 2017 harvest with the 2016 population estimate of 6,700, we found that it is not feasible for this elk herd to increase 44%. It is because of this that we deem the estimate of 9,644 to be unrealistic. The management strategy for this herd will be based largely off of the 2016 estimate which shows the

elk herd approaching objective. Cow harvest will be slightly reduced in hunt area 21 and conservative seasons in the general areas will be maintained.

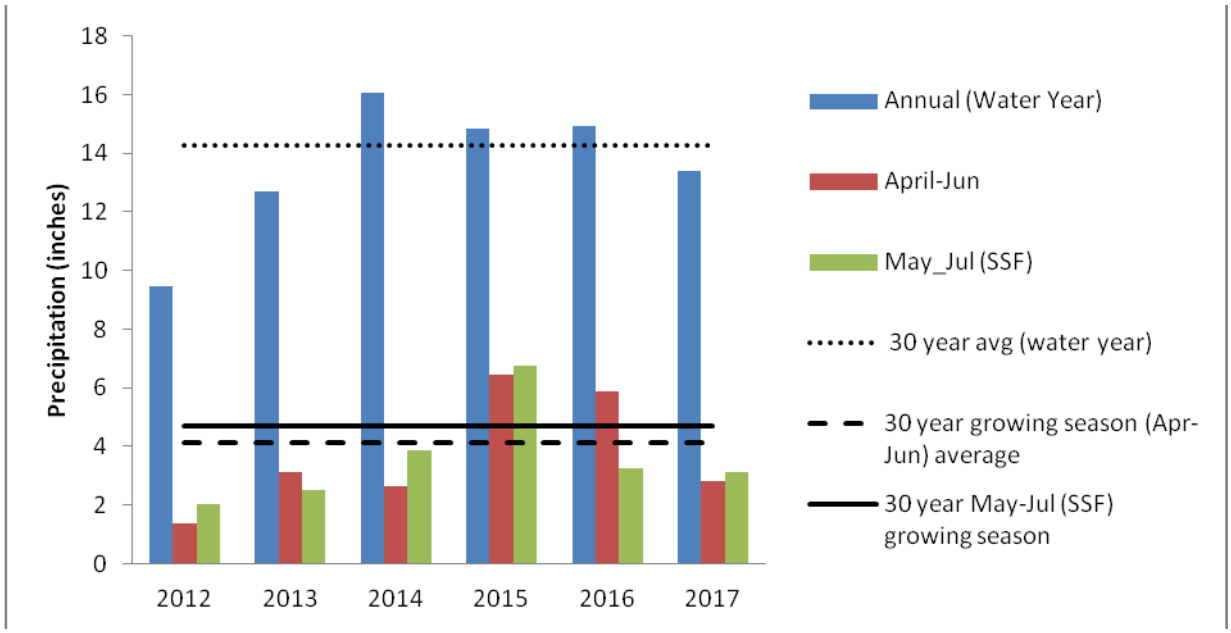
Herd Unit Issues

There were three major issues discussed by hunters in the elk general comments, these issues included number of hunters/ATVs, elk numbers and beetle kill. Again this year we have seen a high number of negative comments related to hunter crowding in 21, 13, and 15 which is where we see the majority of harvest due to the general season structure. The high harvest and management strategy within the SMEH over the last 7 years has been successful in reducing the number of elk within the herd. Negative comments from hunters regarding elk numbers have increased as elk numbers have decreased. Hunter numbers decreased slightly from 6,000 in 2016 to 5,000 in 2017. This is likely due to decreased elk abundance. As we enter into our objective review we should keep this number in mind. An objective of only 5,000 elk may not be sustainable for this level of hunting pressure. A 1:1 ratio of elk to hunters poses a risk when managing an elk herd largely influenced by over the counter general hunting opportunity where access is limited and harvest is largely predicated on unpredictable weather events.

A landscape wide impact to the SMEH that is being reflected in hunter comments is the progression of beetle kill through the Sierra Madre range. Research conducted with the University of Wyoming's Cooperative Unit has indicated that elk are avoiding beetle killed stands outside of the hunting season and selecting for these sites as refuge during the season. Subsequently hunters are avoiding these beetle killed stands which may be contributing to a perception of fewer elk. Greater effort to work with the U.S. Forest Service to address these areas must be made in the coming years to ensure the SMEH remains accessible to hunters who wish to access the resource by foot or horseback.

Another issue which we face in the management of this elk herd is that a growing proportion of resident elk subsist on private land in hunt areas 108 and 130. These areas are largely dominated by private land and remain inaccessible during the hunting season. Cooperative efforts with those landowners to explore alternative management and monitoring options will be a priority in 2018.

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).

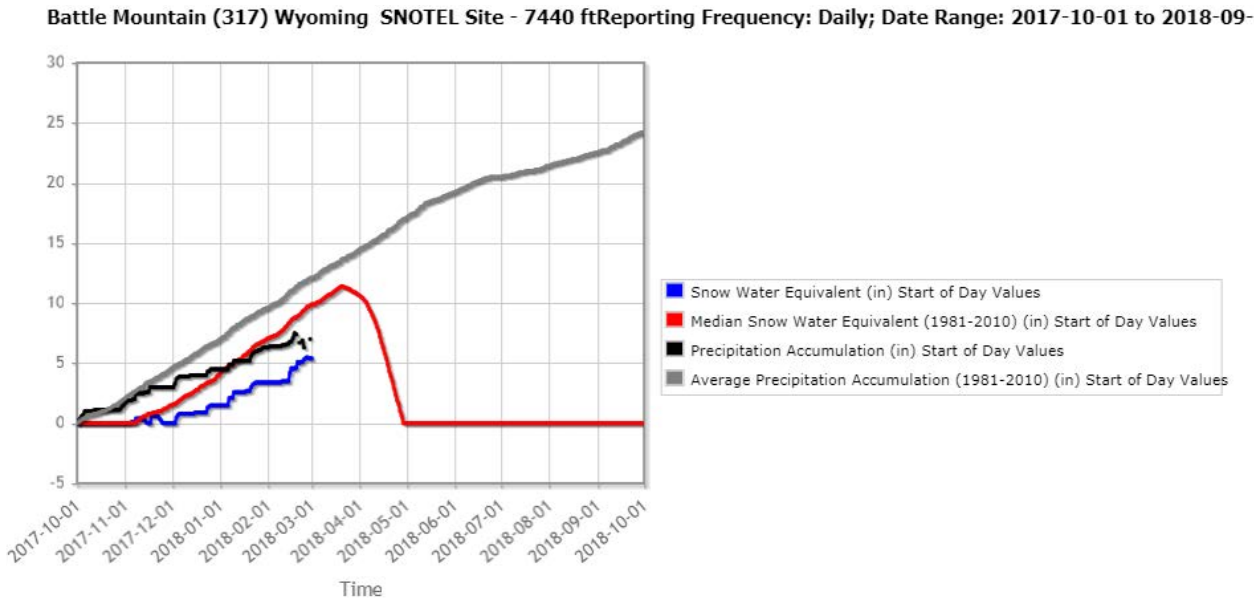
Precipitation

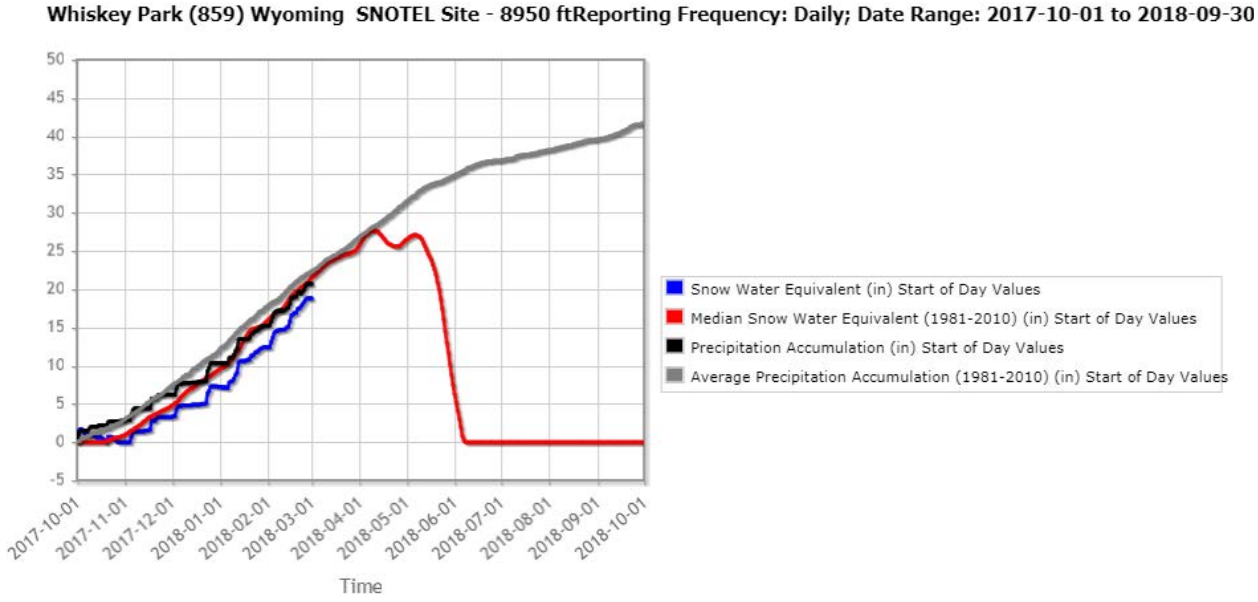
Annual bio-year precipitation from October 2016 through September 2017 is below the 30 year average. Similarly, both the growing season precipitation across the herd unit (April-June 2017) and the later growing season precipitation for high elevation spring/summer/fall ranges (May-July 2016) were both notably lower than the 30 year averages. As illustrated by the above graph, most of the annual precipitation occurred outside of the primary growing season, likely in the form of snow in the 2016-2017 winter. Significant early spring moisture events did not occur in 2017 like they have in the previous two years and moisture remained lower throughout the growing seasons.

Winter Severity

Winter severity does not seem to pose a very significant risk to this elk population. Relatively stable recruitment of yearling bulls over the past ten years indicates calves fare well in spite of severe Sierra Madre winters. The winter of 2017 was relatively mild with the exception being two large snow events followed by colder temps in the early spring. Late fall/early winter 2017 was unseasonably warm well into December across the SMEH. These warmer temperatures paired with November moisture resulted in a late fall green-up at some elevations, which may have provided elk with an extra nutritional boost prior to winter. As of late February 2018, upper elevations on the west slope of the Sierra Madres (7,440 – 10,000 ft) are at 71-92% of normal snowpack as reported by USDA - SNOTEL sites. Lower elevations have remained relatively free of persistent snow in winter 2017-2018 with the Little Snake River Basin reporting 78% of normal snow water equivalent to date. Winter conditions for big game have

been relatively mild, with a lack of deep snow and consecutive days of sub-zero temperatures. This has contributed to a well-dispersed elk herd throughout the winter. The majority of elk have remained at mid-elevations above 7,000 feet.





Habitat

Growing season precipitation was below normal across the herd unit in 2017, resulting in slower growth and less abundance of cool season grasses, forbs, and shrubs, particularly in lower

elevation seasonal ranges. In 2016, the Snake Fire burned approximately 2,565 acres located between the Roaring Fork and North Fork of the Little Snake River drainages. This was a high elevation wildfire that could improve summer range elk habitat by increasing herbaceous forage production within the burn area. Similarly as we see the progression of insect disturbance (beetle kill) in the forest, we can expect to see an increase in the graminoid component on the forest floor as canopy cover decreases.

Field Data

Due to limited funding for classification flights, field data was limited in 2017. Much of the herd demographics which we use for our analysis can only be collected every other year. Some ground classification was conducted though due to the geographic separation of cow/calf herds from bachelor groups during the winter, the data is highly biased and largely unreliable.

Two surveys conducted in person with hunters and landowners were conducted during the fall and winter to survey public perception of the elk population from varying stakeholders. The results showed that 55% of surveyed landowners thought we should increase the current population objective and that more elk were needed. Subsequently the remaining 45% were ok with the current population and objective. Landowner cooperation will continue to be incredibly important as we proceed with our objective review.

A separate survey was conducted by field personnel during the archery season to determine if there was a difference in hunt quality between the rifle and archery general season in hunt area 21. The results showed that 85% of archery hunters did not believe hunter crowding was an issue during September. Additionally the average number of daily elk encountered by those surveyed hunters was 10.3 elk per day.

Field data collected from classification flights in early 2017 seems to verify the population model trend that shows decreasing elk abundance. It should be mentioned that the flight time was tripled in 2017 from previous years. By merely looking 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 abundance. However, once effort is quantified and coupled with the number of elk classified it becomes apparent that the increase in survey effort is likely attributable to a lack of elk. 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 the 2016 post-season population estimate of 6,700. This should not be considered an independent estimate of population size, but it does support the idea that we have reduced elk and are nearing objective levels.

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 however hunter success has remained relatively static. The 2017 success of 34% was similar to the previous season's success of 36% although it should be noted that due to general season changes in hunt areas 13, 15, and 21, much of the harvest was focused on bulls. The slight increase in bull harvest (874) and drastic reduction in cow harvest from ~1,000 to 518 is likely to have adverse effects on the bull:cow ratio. This is something we will analyze more closely after the 2018-19 flights are conducted.

Population
The current abundance estimate for the Sierra Madre elk herd (SMEH) is 93% over objective. We used the time-specific juvenile, constant adult survival model despite the high AICc value because it was the most realistic estimate. That being said, this estimate is still too high and should not be considered when modeling the SMEH population trend. It is because of this that we will likely pursue other population monitoring options including but not limited to trend counts and sightability surveys.

Management Summary
The SMEH has always presented a challenge due to high 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 and decreasing population size close to objective. Although this is a win for managing herds to objective levels, it does create a management challenge because of the number of elk estimated in the population and the number of hunters that use the area are similar. We are cautious in both bull and cow harvest in order to keep numbers from the point where drastic season or hunter restrictions will occur.

In order to decrease the impact posed by high hunter numbers, we are proposing to maintain the conservative season structure and decrease type 6 licenses in hunt area 21. This will prolong our effort to decrease female harvest and slow population decline.

INPUT		
Species:		Elk
Biologist:		Sam Stephens
Herd Unit & No.:		EL425 Sierra Madre
Model date:		03/06/18

Clear form

MODELS SUMMARY		Fit	Relative AICc	Check best model to create report	Notes
CF,CA	Constant Juvenile & Adult Survival	376	385	CF,CA Model	
SCF,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	292	301	SCF,SCA	
TSF,CA	Time-Specific Juvenile & Constant Adult Survival	268	406	TSJ,CA Model	
TSF,CA,MSC	Time-Specific Juv, Constant Adult Survival, Male survival coefficient	134	283	TSJ,CA,MSC M	

Population Estimates from Top Model

Year	Posthunt Population Est.		Trend Count	Predicted Prehunt Population				Predicted Posthunt Population				Objective
	Field Est	Field SE		Juveniles	Total Males	Females	Total	Juveniles	Total Males	Females	Total	
1993				2266	1908	5608	9781	2158	1041	4982	8181	4200
1994				2415	2023	5800	10238	2285	682	5245	8212	4200
1995				2767	1625	5999	10390	2668	726	5455	8849	4200
1996				2772	1830	6363	10965	2662	1330	5702	9694	4200
1997				2585	2406	6597	11588	2478	1242	5870	9589	4200
1998				2631	2243	6680	11554	2561	1345	5901	9806	4200
1999				2806	2505	6873	12184	2573	1346	5993	9911	4200
2000				2736	2512	6966	12215	2563	1475	5937	9974	4200
2001				2716	2631	6908	12254	2602	1337	6072	10011	4200
2002				2948	2518	7056	12522	2694	1402	6010	10107	4200
2003				2912	2624	7041	12577	2763	1393	6174	10330	4200
2004				2902	2648	7230	12780	2822	1277	6625	10724	4200
2005				3366	2564	7691	13621	3215	1468	6907	11589	4200
2006				3319	2773	7987	14079	3106	1694	7234	12035	4200
2007				3115	2944	8255	14313	2983	1782	7604	12369	4200
2008				2838	2976	8556	14370	2748	2066	8005	12819	4200
2009				3203	3149	8841	15192	3091	2086	8258	13436	4200
2010				2936	3313	9230	15479	2679	2329	7840	12848	4200
2011				2713	3371	8654	14738	2503	2372	7541	12415	4200
2012	7900	1225		2968	3463	8417	14848	2645	2227	7050	11922	4200
2013				3116	3259	7882	14256	2890	2020	6621	11532	5000
2014				2687	3165	7575	13427	2470	2010	6225	10705	5000
2015				2455	3100	7141	12696	2191	2015	5961	10168	5000
2016				2301	2973	6755	12028	2147	1707	5762	9615	5000
2017				2350	2656	6543	11548	2231	1453	5960	9644	5000

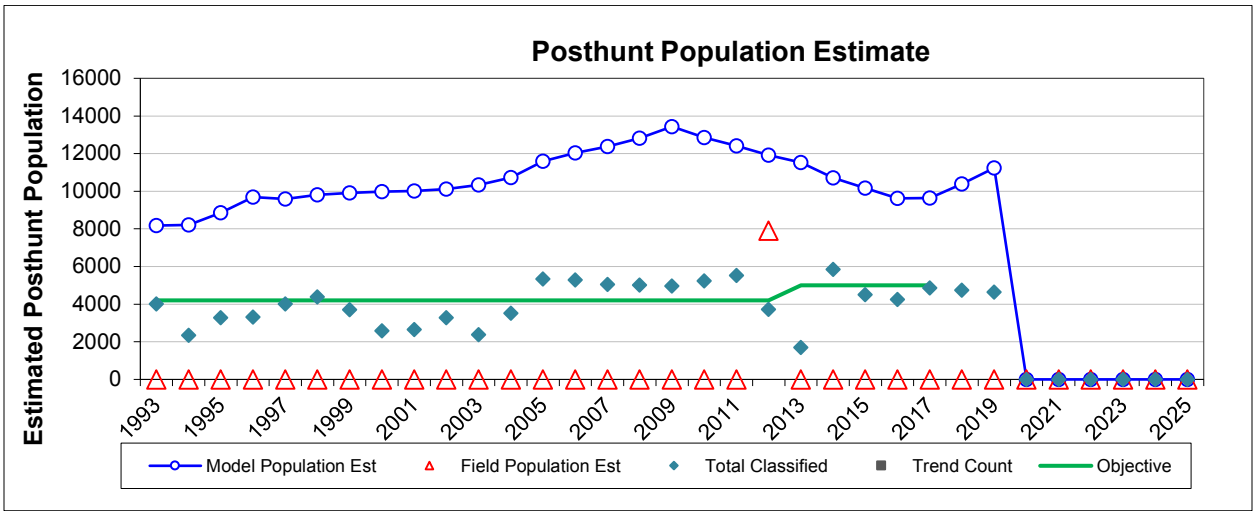
Survival and Initial Population Estimates

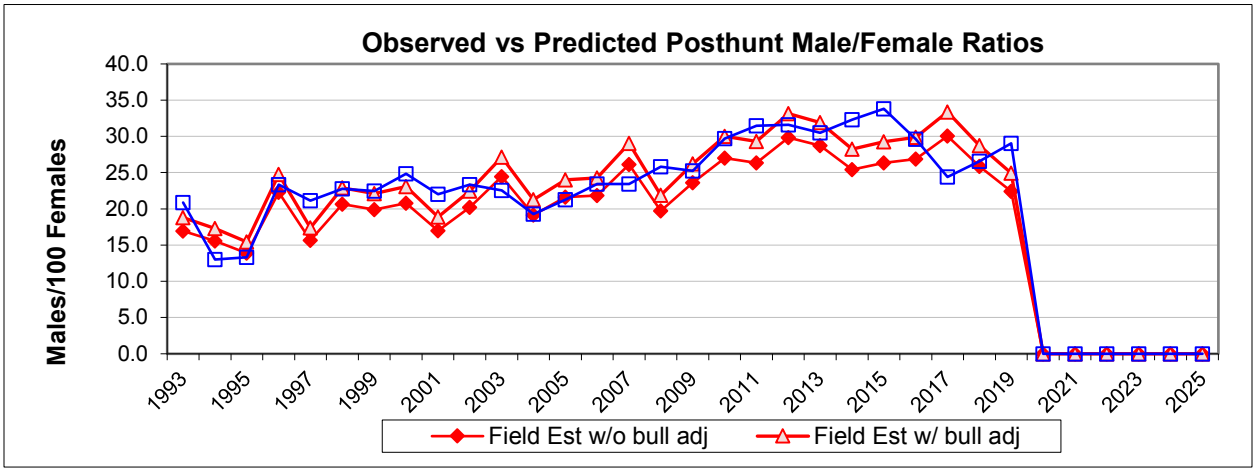
Year	Winter Juvenile Survival Rates			Annual Adult Survival Rates		
	Model Est	Field Est	SE	Model Est	Field Est	SE
1993	0.95			0.96		
1994	0.85			0.96		
1995	0.85			0.96		
1996	0.85			0.96		
1997	0.85			0.96		
1998	0.95			0.96		
1999	0.95			0.96		
2000	0.95			0.96		
2001	0.95			0.96		
2002	0.95			0.96		
2003	0.95			0.96		
2004	0.95			0.96		
2005	0.85			0.96		
2006	0.85			0.96		
2007	0.85			0.96		
2008	0.85			0.96		
2009	0.85			0.96		
2010	0.85			0.96		
2011	0.95			0.96		
2012	0.85			0.96		
2013	0.85			0.96		
2014	0.95			0.96		
2015	0.95			0.96		
2016	0.95			0.96		
2017	0.85			0.96		

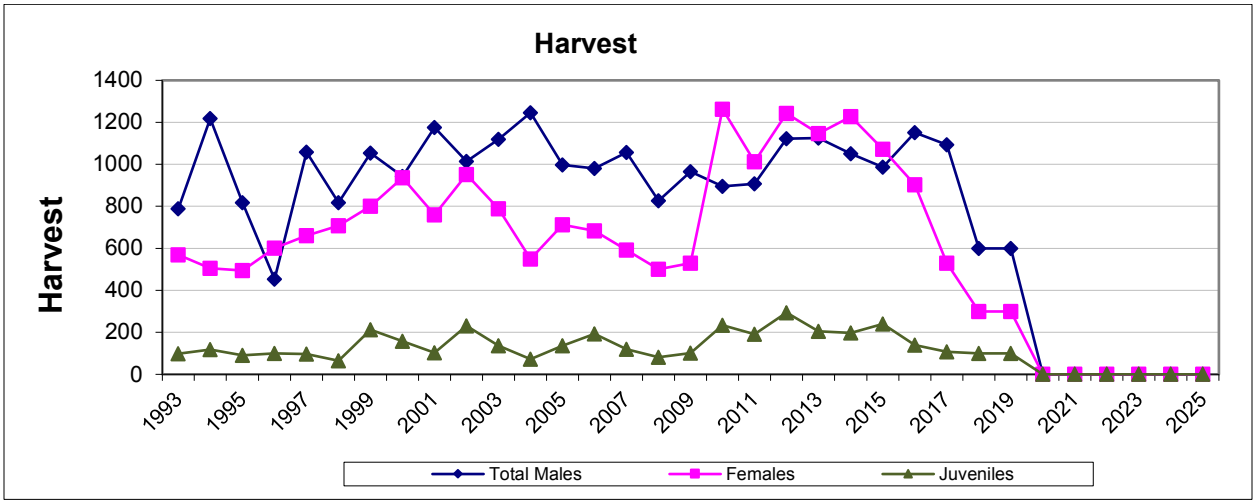
Parameters:	**Optim cells**
Adult Survival =	0.959
Initial Total Male Pop/10,000 =	0.104
Initial Female Pop/10,000 =	0.498

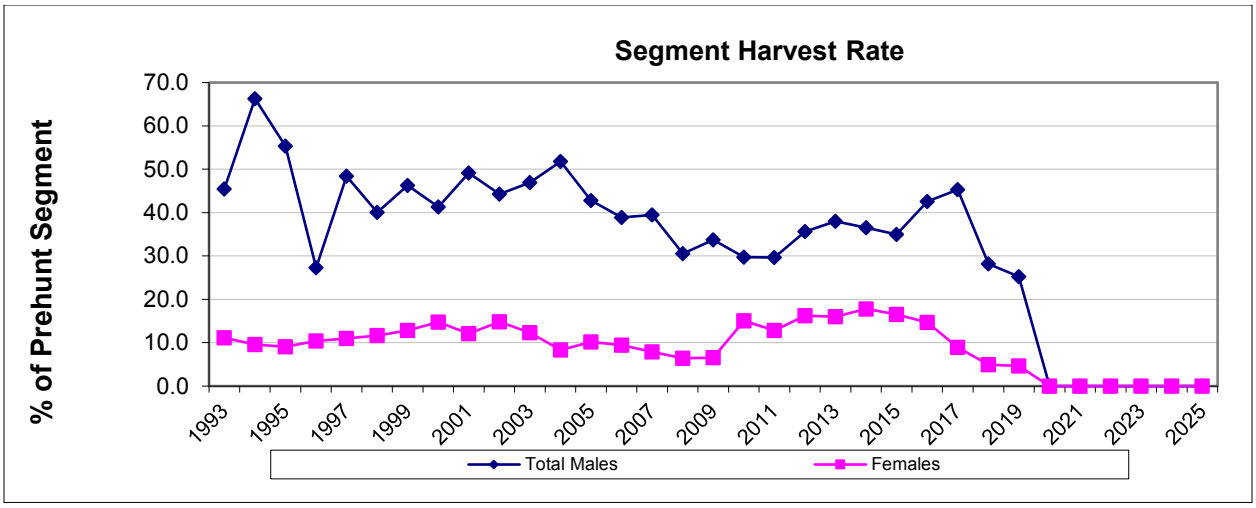
MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%
Total Bulls Adjustment Factor	90%

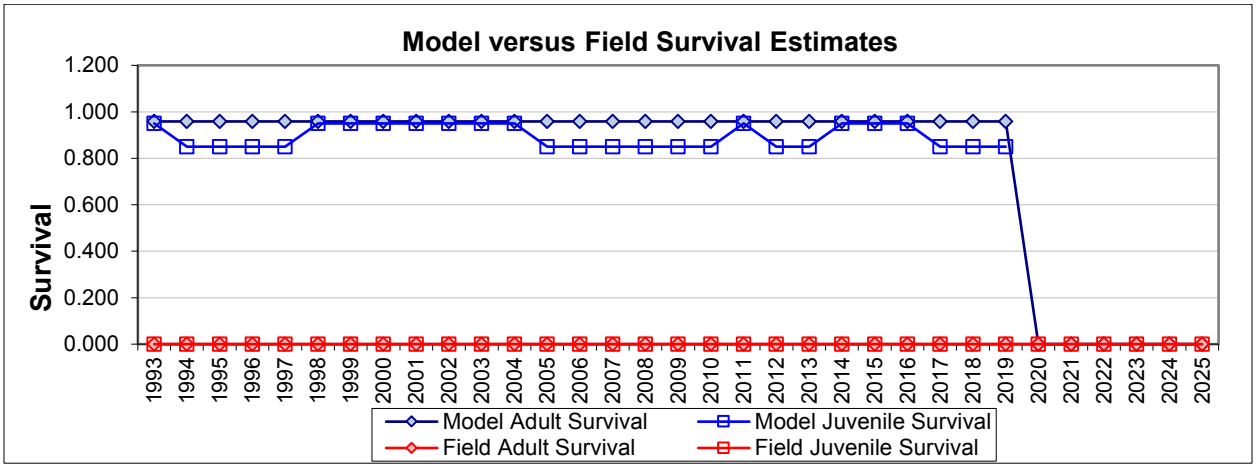
Classification Counts							Harvest				
Juvenile/Female Ratio			Total Male/Female Ratio								
Derived Est	Field Est	Field SE	Derived Est	Field Est w/ bull adj	Field Est w/o bull adj	Field SE	Juv	Yrl males	2+ Males	Females	Total Harvest
	43.31	1.58	20.89	18.82	16.93	0.89	98	254	534	569	1455
	43.56	2.06	13.00	17.31	15.58	1.10	118	462	757	505	1842
	48.91	1.90	13.31	15.43	13.89	0.89	90	335	482	494	1401
	46.68	1.87	23.33	24.74	22.27	1.18	100	7	447	601	1155
	42.22	1.54	21.15	17.39	15.65	0.84	97	405	654	661	1817
	43.39	1.53	22.79	22.92	20.63	0.97	64	271	546	708	1589
	42.93	1.64	22.46	22.10	19.89	1.02	212	392	662	800	2066
	43.17	1.98	24.84	23.10	20.79	1.26	158	313	630	936	2037
	42.86	1.92	22.02	18.89	17.00	1.09	103	401	775	760	2039
	44.82	1.81	23.33	22.45	20.20	1.10	231	301	713	951	2196
	44.74	2.14	22.56	27.15	24.43	1.47	136	452	667	788	2043
	42.59	1.67	19.27	21.26	19.14	1.02	73	357	889	550	1869
	46.55	1.47	21.25	24.02	21.62	0.91	137	330	667	713	1847
	42.94	1.38	23.42	24.25	21.83	0.91	193	272	709	684	1858
	39.23	1.34	23.44	29.04	26.14	1.04	120	392	664	592	1768
	34.33	1.19	25.81	21.91	19.72	0.85	82	296	531	501	1410
	37.44	1.29	25.26	26.23	23.60	0.97	101	361	605	530	1597
	34.17	1.19	29.70	30.02	27.02	1.03	234	347	548	1263	2392
	33.19	1.13	31.46	29.30	26.37	0.98	191	263	645	1012	2111
	37.52	1.52	31.59	33.14	29.82	1.32	294	276	847	1243	2660
	43.65	2.52	30.52	31.92	28.73	1.94	205	230	896	1146	2477
	39.68	1.25	32.29	28.26	25.44	0.95	197	223	827	1227	2474
	36.76	1.35	33.81	29.27	26.34	1.10	240	169	817	1072	2298
	37.25	1.40	29.62	29.87	26.88	1.15	140	293	858	903	2194
	37.44	1.33	24.38	33.38	30.04	1.16	108	219	874	530	1731

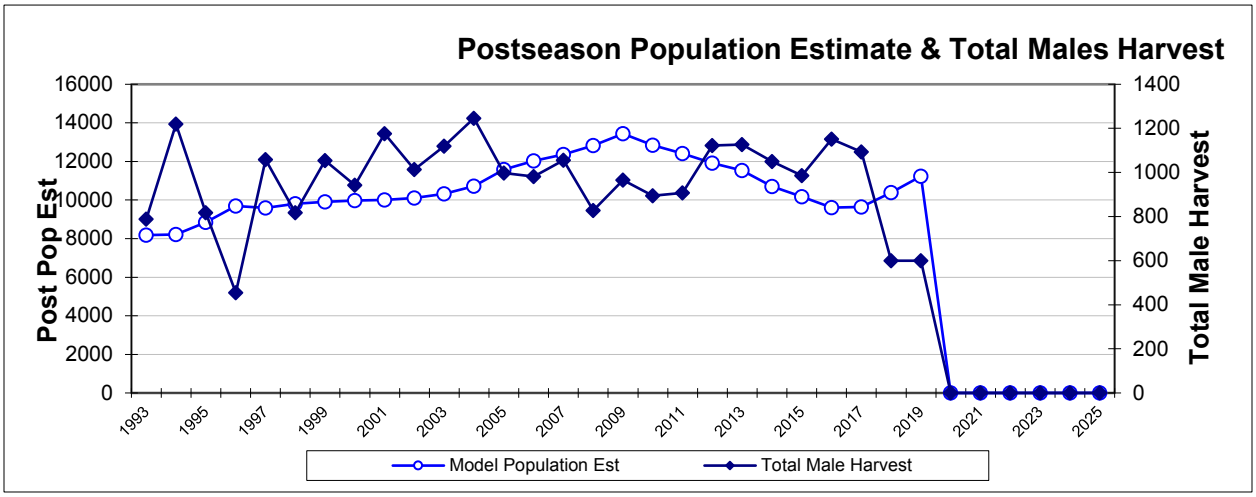

Posthunt Population Estimate
Estimated Posthunt Population
16000
14000
12000
10000
8000
6000
4000
2000
0
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
Model Population Est
Field Population Est
Total Classified
Trend Count
Objective

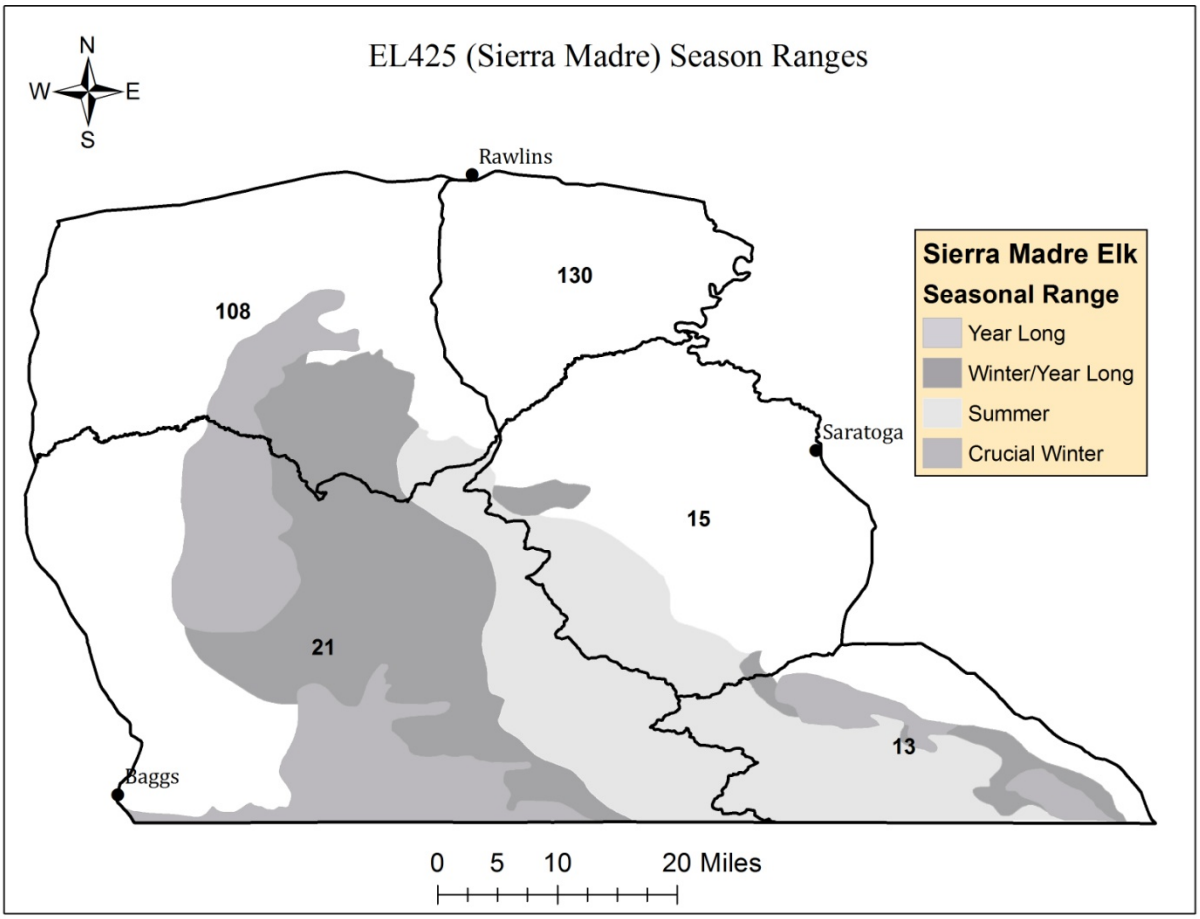

Observed vs Predicted Posthunt Male/Female Ratios
Males/100 Females
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
Field Est w/o bull adj
Field Est w/ bull adj


Harvest
Harvest
1400
1200
1000
800
600
400
200
0
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
Total Males
Females
Juveniles


Segment Harvest Rate
% of Prehunt Segment
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
Total Males
Females


Model versus Field Survival Estimates
Survival
1.200
1.000
0.800
0.600
0.400
0.200
0.000
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Model Adult Survival
Model Juvenile Survival
Field Adult Survival
Field Juvenile Survival


Postseason Population Estimate & Total Males Harvest
Post Pop Est
16000
14000
12000
10000
8000
6000
4000
2000
0
Total Male Harvest
1400
1200
1000
800
600
400
200
0
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
Model Population Est
Total Male Harvest


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

2017 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2017 - 5/31/2018

HERD: EL426 - STEAMBOAT

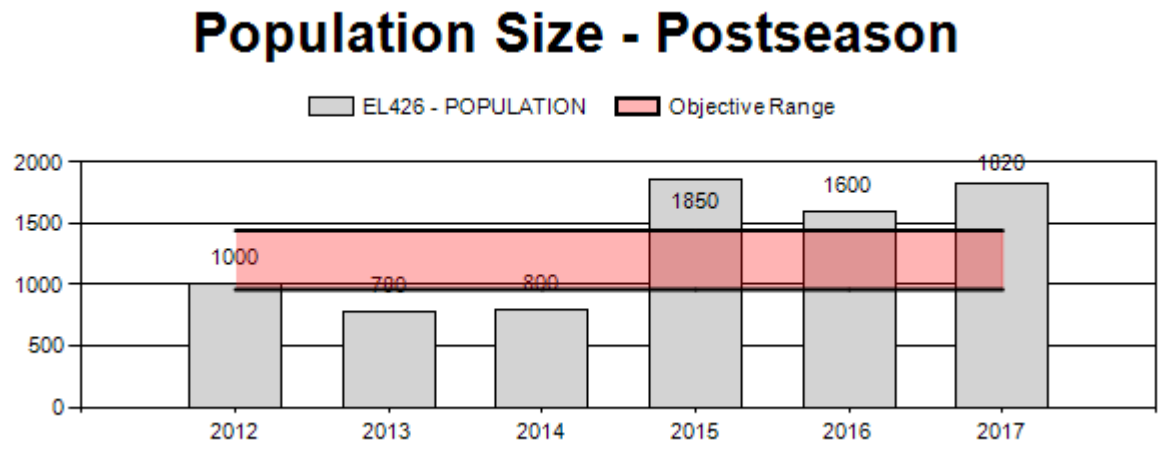
HUNT AREAS: 100 | PREPARED BY: PATRICK BURKE

	2012 - 2016 Average	2017	2018 Proposed
Population:	1,206	1,820	1,350
Harvest:	253	467	490
Hunters:	306	552	575
Hunter Success:	83%	85%	85 %
Active Licenses:	313	562	580
Active License Success:	81%	83%	84 %
Recreation Days:	1,304	1,901	2,500
Days Per Animal:	5.2	4.1	5.1
Males per 100 Females	46	65	
Juveniles per 100 Females	40	55	

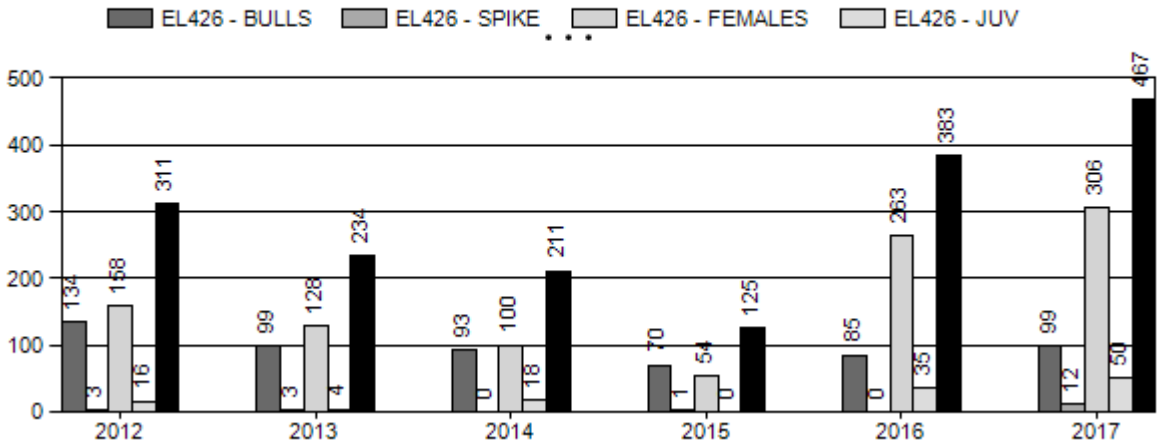
Population Objective (± 20%) :	1200 (960 - 1440)
Management Strategy:	Special
Percent population is above (+) or below (-) objective:	52%
Number of years population has been + or - objective in recent trend:	3
Model Date:	2/21/2017

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

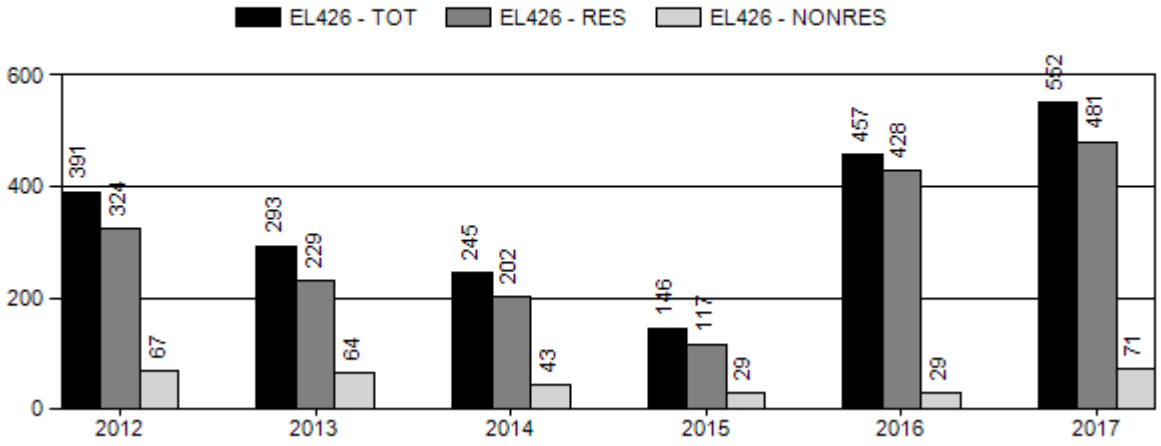
	JCR Year	Proposed
Females ≥ 1 year old:	21%	37%
Males ≥ 1 year old:	31%	23%
Total:	22%	25%
Proposed change in post-season population:	-20%	-25%



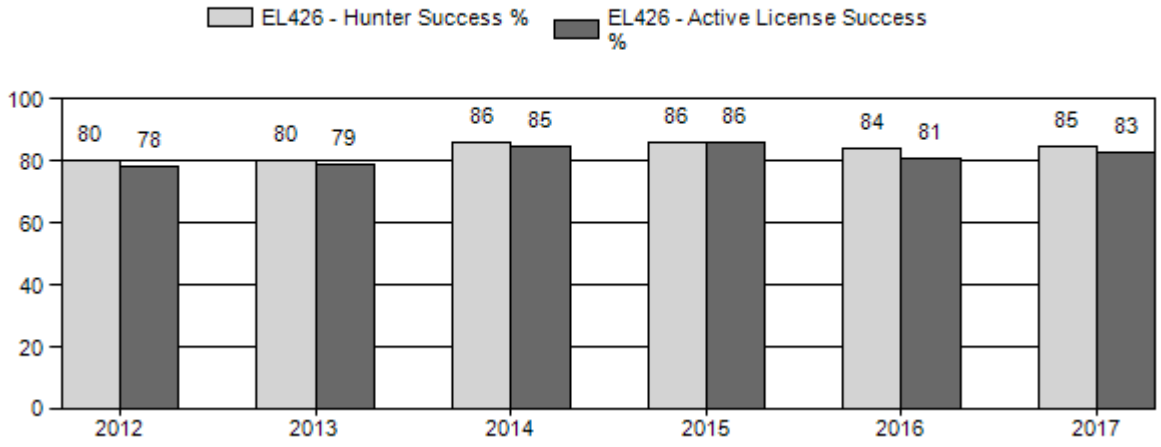
Harvest



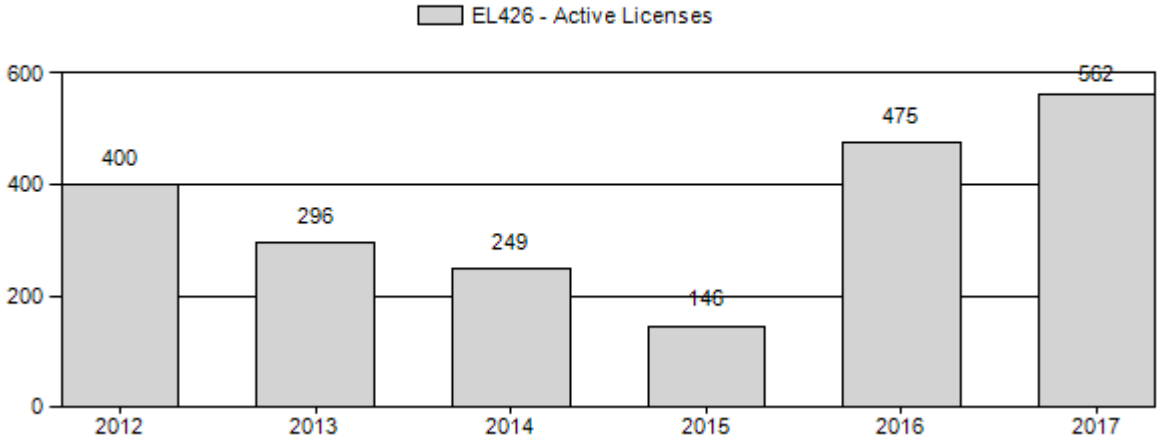
Number of Hunters



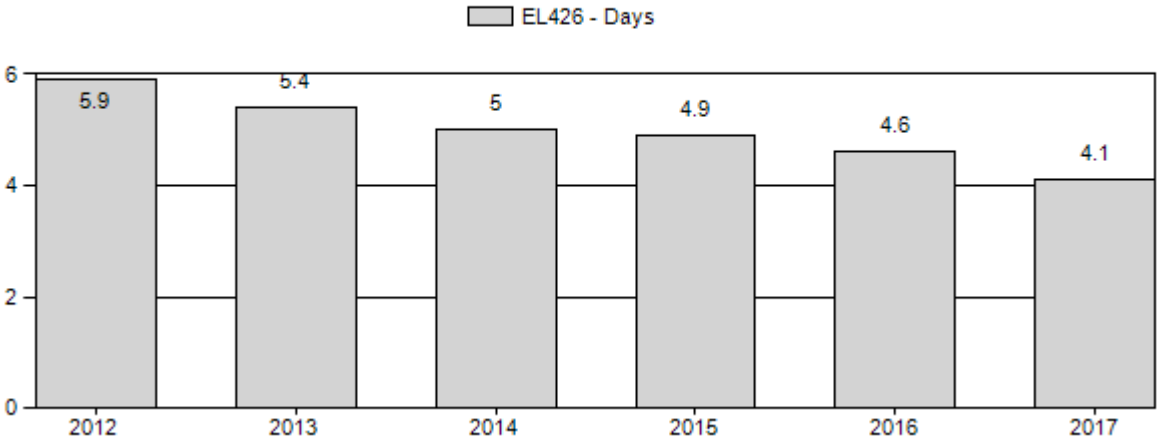
Harvest Success



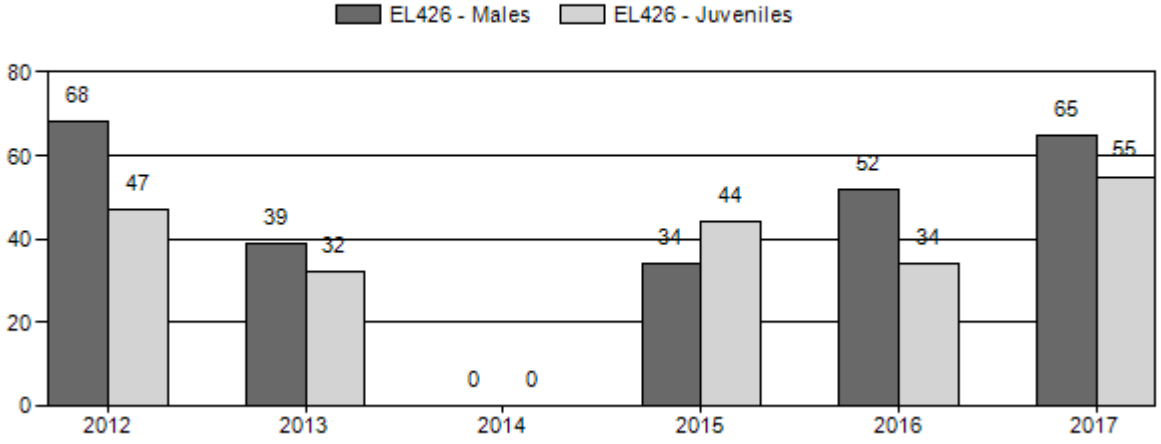
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2018 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
	5	Sept. 16	Oct. 31	150	Limited quota	Antlerless elk valid west of U.S. Highway 191
	5	Nov. 1	Nov. 30			Antlerless elk valid in the entire area
	6	Oct. 15	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	100	Limited quota	Cow or calf valid-west of the Blue Rim Road (Sweetwater County Road 5) and the Lower Farson Cutoff Road (Sweetwater County Road 8)

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 2017
100	5	+150
	8	+75
Herd Unit Total	**5**	**+150**
	8	**+25**

Management Evaluation
Current Management Objective: 1,200
Management Strategy: Special
2017 Postseason Population Estimate: ~1,800
2018 Proposed Postseason Population Estimate: ~1,000

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, with large portions of the herd unit being unoccupied by elk. 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.

Starting in 2015, the number of elk classified in this herd has radically changed. Prior to that year, the number of elk annually classified in the herd was usually somewhere around 800 elk, since then the number of elk classified each year has been in the 1,400 to 1,700 range. This sudden increase in the number of elk classified each year suggests that some number of elk from outside the herd unit have moved into the area. If these elk have moved into the herd unit and set up permanent year-round residency, or if they are using the Red Desert as a new winter range is currently unknown. This feeling that new elk have moved into the area from elsewhere is echoed by some of the landowners in the area. This sudden and fairly drastic increase in the number of elk, at least wintering, in the herd unit is currently the largest issue facing this herd.

Another issue that has been developing in recent years is a growing damage issue with some irrigated alfalfa pivots in the far western portion of the herd unit. There has been a number of elk that have almost become residents on these irrigated fields, and since these fields have provided an oasis in the desert, the number of elk residing on these fields has grown in the past few years. As the number of elk occupying these fields has grown, landowner tolerance for their presence has decreased. In order to address this situation, increased harvest pressure will need to be placed on the elk that are visiting these fields.

Weather

Due to where the Steamboat herd unit is situated in the Red Desert, weather condition 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 herd unit. Fortunately, the last three summers saw decent moisture levels in the Steamboat herd unit, which resulted 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 center part of Area 100. Deep snow conditions and

extremely cold conditions started in early January, with the deep snow persisting through the winter. The 2017-2018 winter by contrast was one of the mildest winters in recent memory. The 2017-2018 winter was characterized by long periods of warm weather with only moderate precipitation that often melted due to the warm conditions. The only concern about this mild winter is that unless the area receives some increased level of precipitation this spring, growing conditions for vegetation in the area may not grow much due to lacking adequate moisture.

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, however that resulted from the moisture received in the last several years has been noticeably better than it had been in the preceding years.

Field Data

Post-season classifications on the Steamboat herd were conducted from a helicopter during December 2017. Those aerial classification flights resulted in a total of 1,739 elk being classified, consisting of 791 cows, 433 calves, 385 adult bulls, and 130 yearling bulls and resulted in observed ratios of 55 calves per 100 cows and 65 total bulls per 100 cows including 16 yearling bulls per 100 cows.

Harvest Data

Due to a drastic increase in the number of licenses issued in the herd unit, the number of elk harvested in the Steamboat herd unit increased dramatically starting in 2016. According to the number of elk reported to have been harvested in HA100 from the harvest survey, a total of 467 elk were harvested in 2017. This total is up from the 384 elk harvested in 2016 and the 125 harvested in 2015. This number represents only the elk harvests that were attributed to HA100, but because HA118 Type 4 and Type 6 licenses were able to hunt in the southeastern portion HA100 in 2017, the actual number harvested in 2017 was probably even higher that what was reported.

According to the harvest survey, the overall harvest success rate for the Steamboat elk herd in 2017 was 84.6%. Broken out by license type, the success rates were 98% for the Type 1 license holders, 68% for the Type 2 hunters, 89.8% for the Type 4 hunters, 69.4% for the Type 6 licenses, 73.2% for the Type 7 hunters, and 91.3% for the Type 8 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 usually high and days per harvest are generally 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 46 bull elk tooth samples submitted from the 2017 hunting season, the average age of harvested bulls was 5.7 years old. The 46 teeth submitted from bull elk for laboratory aging represent around 47% of the bulls reported harvested in the harvest survey. The 2017 average age of 57 years old compares to 6.1 years old in 2016, 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 2017 was one 9.5 year old bull. The oldest bulls aged in 2016, 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.

Population

The 2017 post-season population estimate for the Steamboat herd is just over 1,800 elk. The recent population estimates have been driven by an increased number of elk classified in the last three years. The number of elk classified in the last three winters has been a significant departure from the number of elk that had been classified in previous years. The average number of elk classified during the 10 year period for 2005 to 2014 was 775 elk, while the average classification sample size for 2015 to 2017 is 1,600 elk. This increase in the number of elk observed each winter suggests that a number of elk has moved into the hunt area from other nearby elk populations. This sudden change in the number of elk observed during winter classification counts has required that major modifications be made to the model in an attempt to try and accommodate the large number of elk observed in recent years. Even with those modifications, the model has a difficult time accommodating the number of elk classified from 2015 to 2017, and still produce a realistic trend for the population. This is because the model is not designed to deal with immigration events like what appears to have happened in this area, as this a violation of the assumption of a closed population.

Because of these issues, the population model for this herd tracks poorly with observed data due partly to varying data quality from year to year, and partly due to what appears to be the movement of animals into this area. In order to get the population model to accommodate the large number of elk classified in the last several winters, 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 recently. 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 model's 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 in 2016 and 2017, has further reduced the reliability of this model, as accurate harvest data are an important component of the model.

Management Summary

The 2018 season proposal will again offer increases in the number of elk licenses being offered throughout the herd unit, especially cow license numbers. Increases are being offered in the number of cow licenses in the form of the creation of a new license type, a Type 5 license, and in increases in the number of Type 8 licenses being offered. These increases will bring the total number of licenses being offered to 775 licenses for the herd unit. This level of license issuance is by far the most licenses ever issued for this relatively small desert elk population. The 2018 season should harvest somewhere over 500 cow elk. The most cow elk that have ever been harvested in a single year prior to the substantial increases of recent years was just above 200 cows.

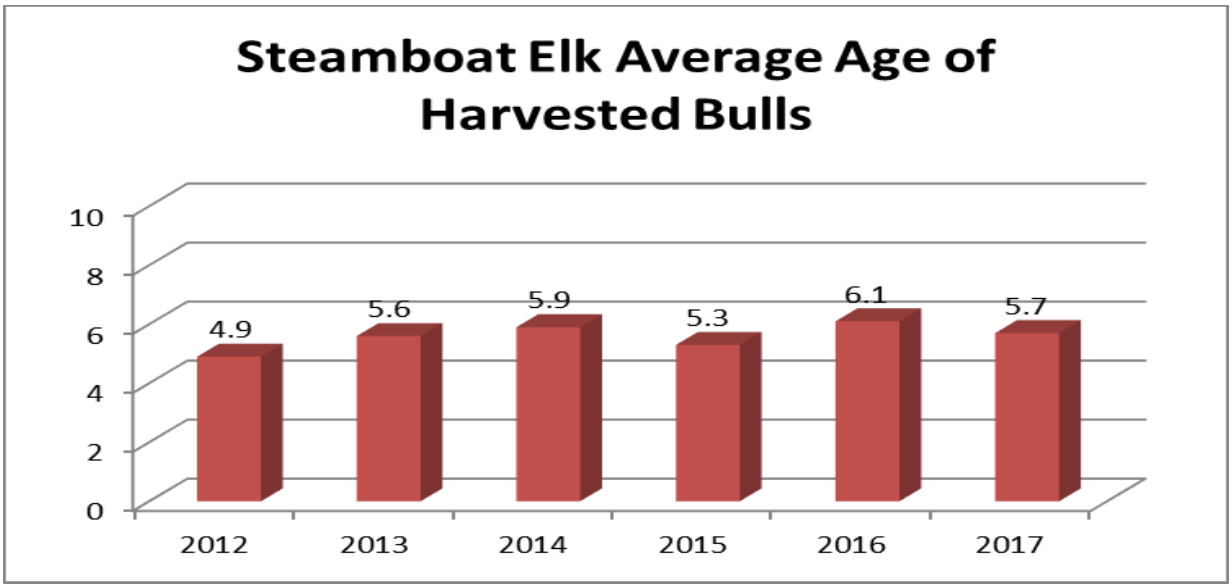
Much of the increased cow harvest will attempt to target the population of elk that are causing damage concerns on the river in the western part of HA100. The increase in the number of Type 8 licenses from 25 to 100, and the change in their language from being valid within one mile of irrigated land to being valid west of the Blue Rim Road, will hopefully put more hunters in the fields where damage concerns have become an issue in recent years.

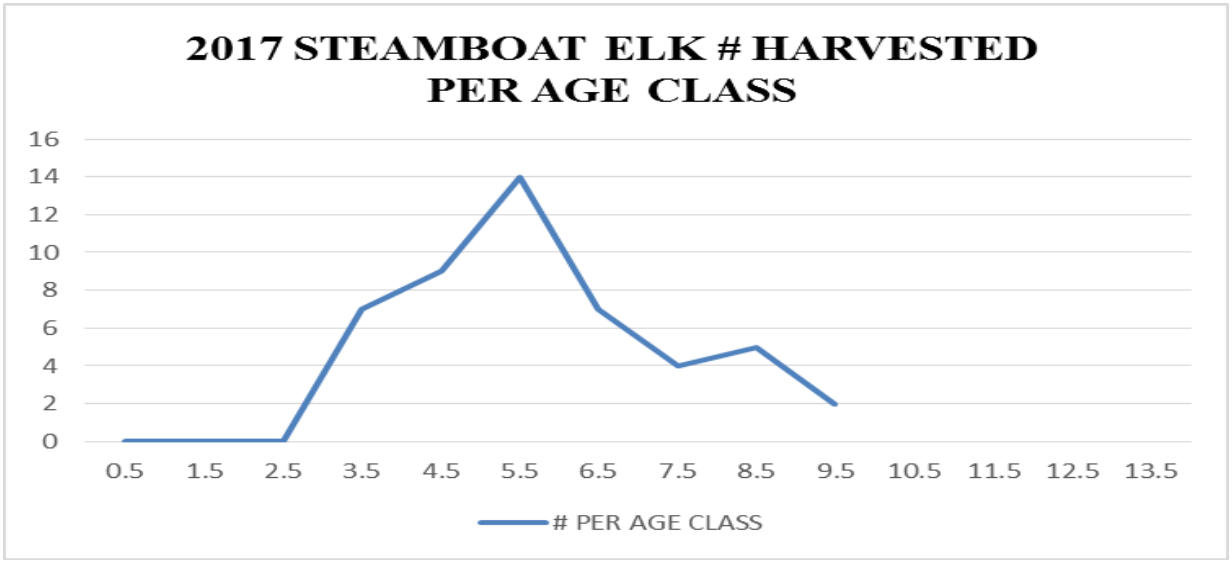
The new Type 5 licenses are also being put in place to hopefully harvest some of the elk that have been creating the damage concerns and also help reduce the overall number of cow elk in the herd. These licenses will be open from mid-September through the end of October in the area west of U.S. Hwy 191, and then be valid for the entire hunt area for the month of November. The rationale behind these limitations and the timing of this license type is to hopefully help reduce elk numbers without negatively impacting Type 1 license holders who have been waiting many years to draw that license. In 2017, and in many other years, the HA100 Type 1 license has been the hardest elk license to draw in the state of Wyoming, with drawing odds for residents being about 2% for the license type. This, combined with the special management status of the herd, has raised concerns that placing almost 800 hunters in the field during a short two week season, that the resulting crowding would lead to a shooting gallery atmosphere that would be unacceptable for most hunters that may have waited a decade or more to draw this coveted license. The goal with the Type 5 licenses is both help remove some elk from the river that have been creating a damage issue, and to harvest cows from the general population without creating crowding during the two week October season when the Type 1, 2, and 4 hunters are hunting in the main portion of the herd. The Type 5, however is valid in a much larger portion of the hunt area than the Type 8 license, and therefore will probably be much less effective at actually targeting the elk that are causing the damage situation on the river.

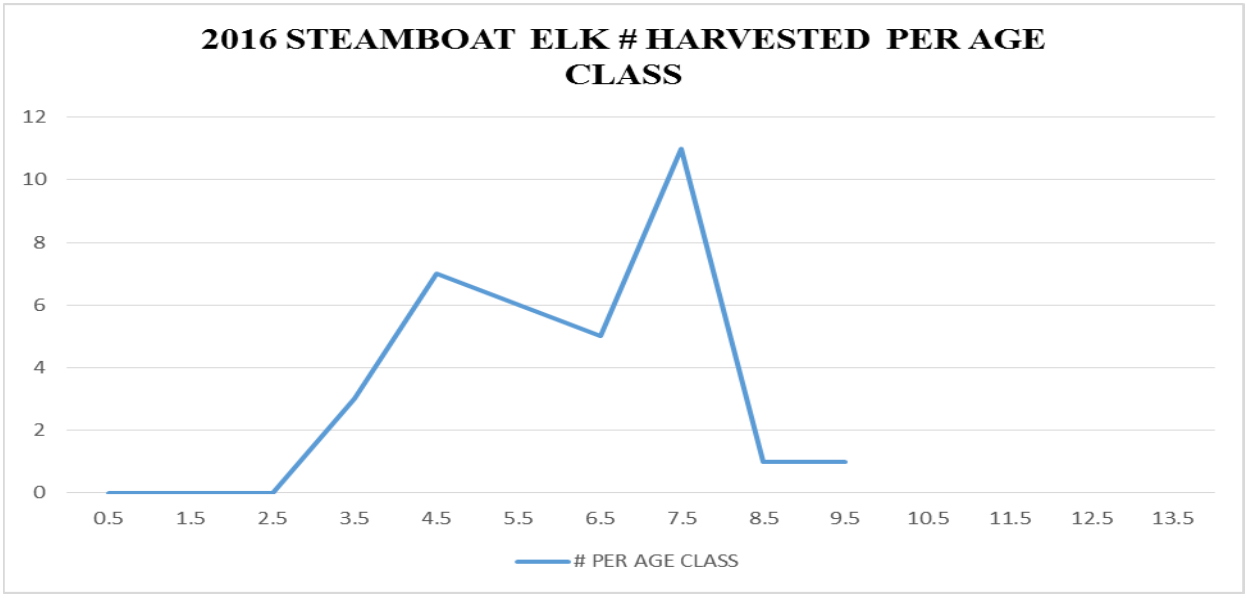
The Type 8 licenses have the limitation of being valid only west of the Blue Rim Road in the western part of the hunt area. This restriction was chosen in order to make sure that hunting pressure is placed on the actual elk that are causing the damage concerns along the river. Collar data from a recent study have shown that only a portion of elk that live in the White Mountain area west of US Highway 191 actually go down the alfalfa fields, where the damage situation has been taking place. The goal of these licenses it to specifically target those elk that are utilizing the croplands along the Green River, as removing elk that are living in the Pilot Butte area of White Mountain does nothing to address the damage issue along the river. The collar data have shown that elk that reside in the Green's Canyon/Pilot Butte area of White Mountain do not go down to the crop fields along the river, and that the elk that are frequenting the irrigated fields

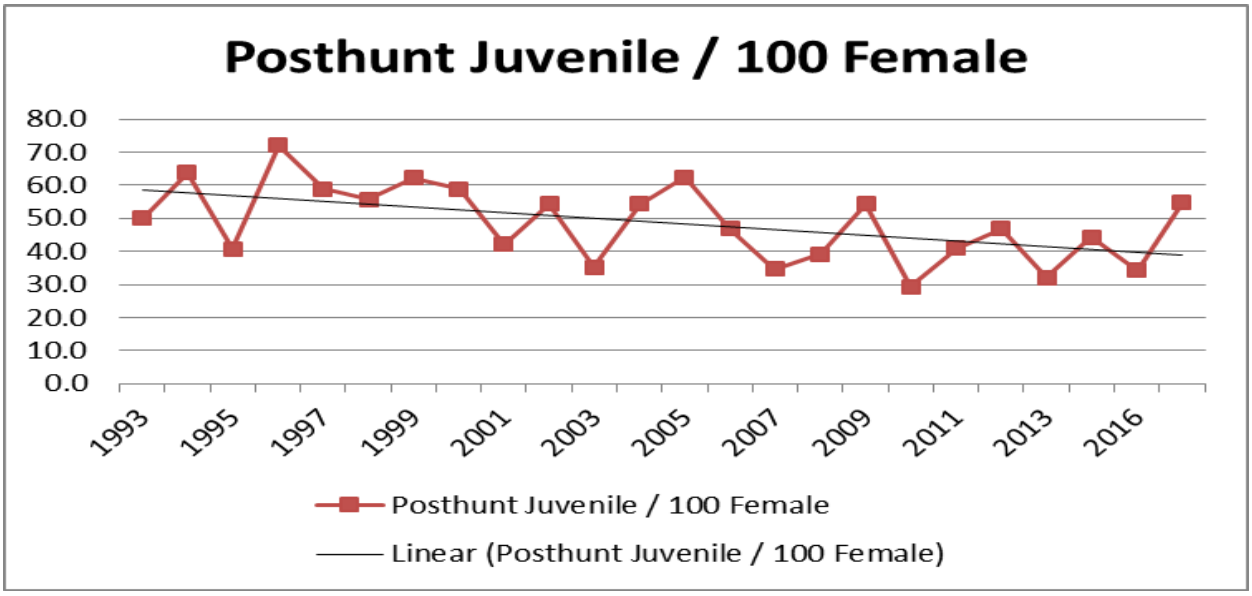
appear to be a different group of elk. This limitation will force hunters to go to the private lands along the river to harvest their elk, as many local hunters a very reluctant to ask permission to hunt on private land if the option to hunt public land is available. However, in order to reduce the number of elk residing on the irrigated alfalfa fields, we must harvest those specific elk that have been causing the damage situation.

It is anticipated that the 2018 season will result in the harvest of approximately 630 elk in Hunt Area 100. While it is difficult to project where the population will be after the 2018 season, as putting this level of harvest on a population of this size artificially alters bull and calf ratios to a point that the model cannot accommodate, the 2018 seasons will certainly substantially reduce the number of elk in the Steamboat herd and may even bring the herd down to near 20% of its population objective.

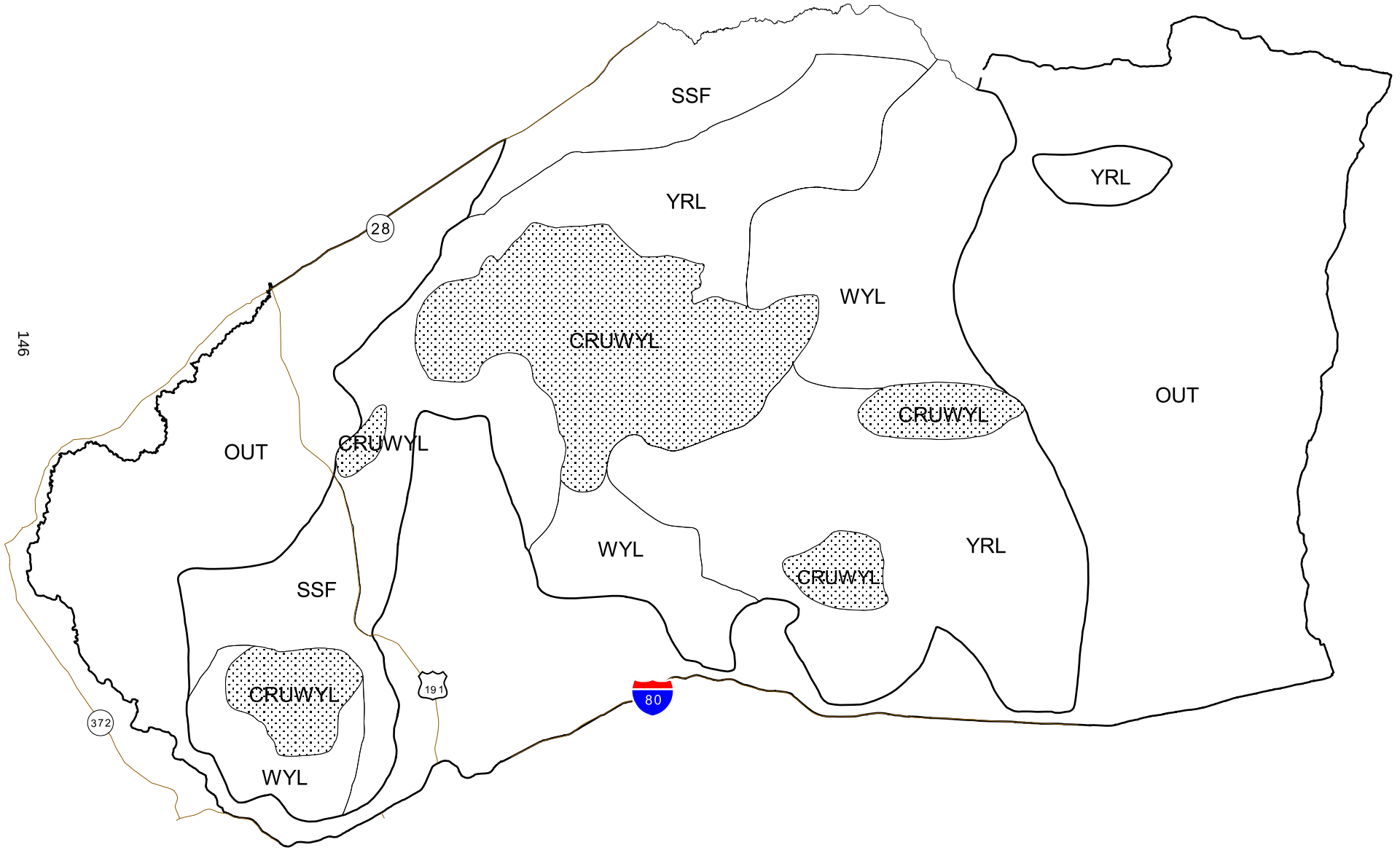

Steamboat Elk Average Age of Harvested Bulls
10
8
6
4
2
0
4.9
5.6
5.9
5.3
6.1
5.7
2012
2013
2014
2015
2016
2017


2017 STEAMBOAT ELK # HARVESTED PER AGE CLASS
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
13.5
PER AGE CLASS


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


Posthunt Juvenile / 100 Female
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2016
Posthunt Juvenile / 100 Female
Linear (Posthunt Juvenile / 100 Female)

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



2017 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2017 - 5/31/2018

HERD: EL428 - WEST GREEN RIVER

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

	2012 - 2016 Average	2017	2018 Proposed
Population:	3,774	3,874	3,687
Harvest:	1,217	968	11
Hunters:	3,977	3,177	3,200
Hunter Success:	31%	30%	0%
Active Licenses:	4,151	3,265	3,500
Active License Success:	29%	30%	0%
Recreation Days:	28,235	19,534	20,000
Days Per Animal:	23.2	20.2	1818.2
Males per 100 Females	39	17	
Juveniles per 100 Females	30	30	

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

Management Strategy: Recreational

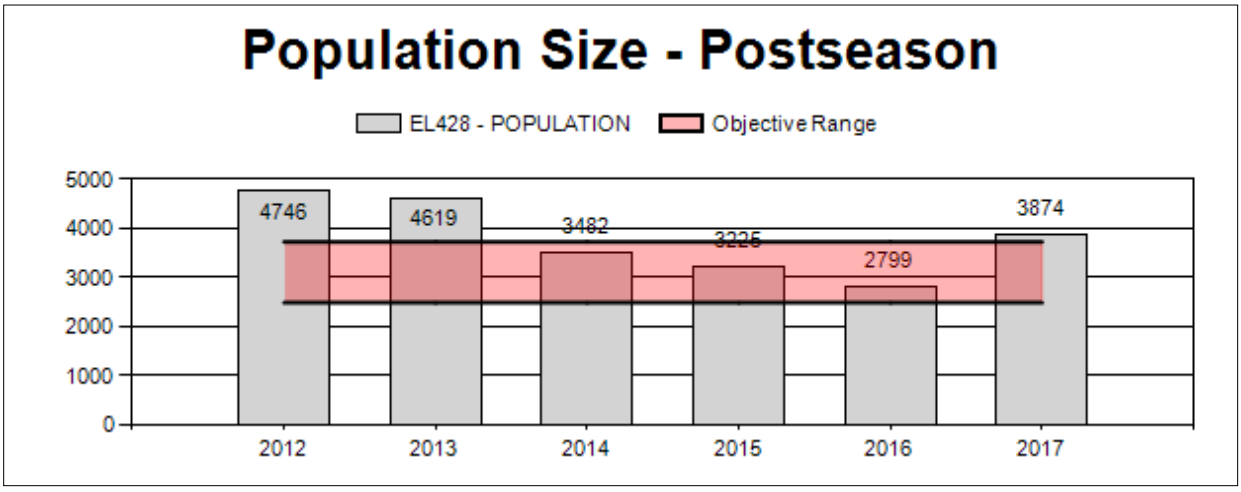
Percent population is above (+) or below (-) objective: 25%

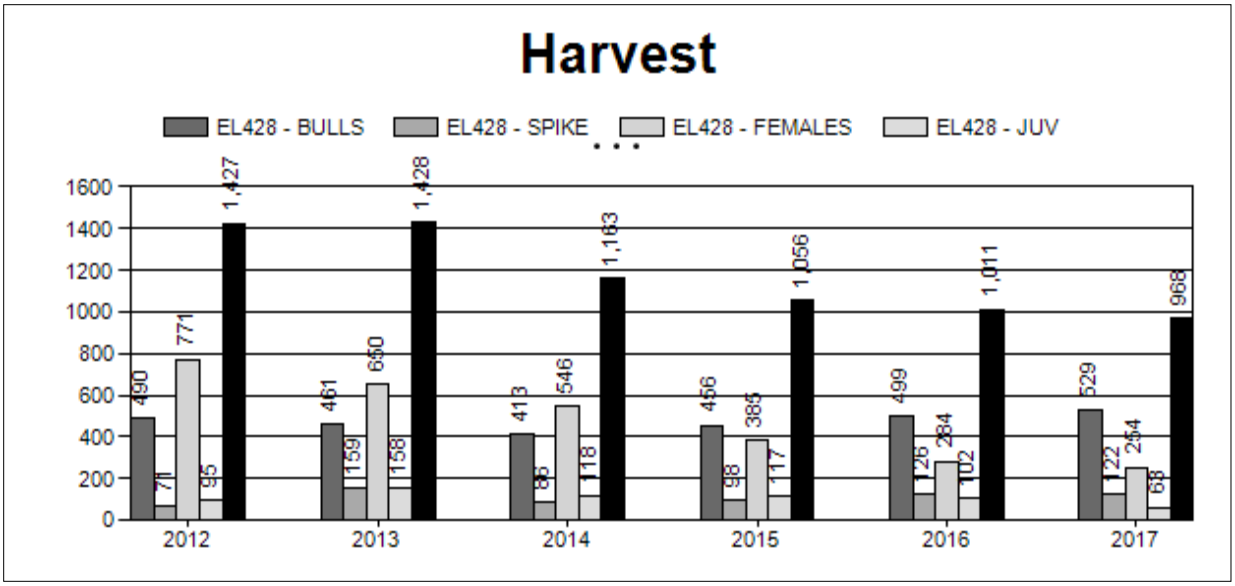
Number of years population has been + or - objective in recent trend: 1

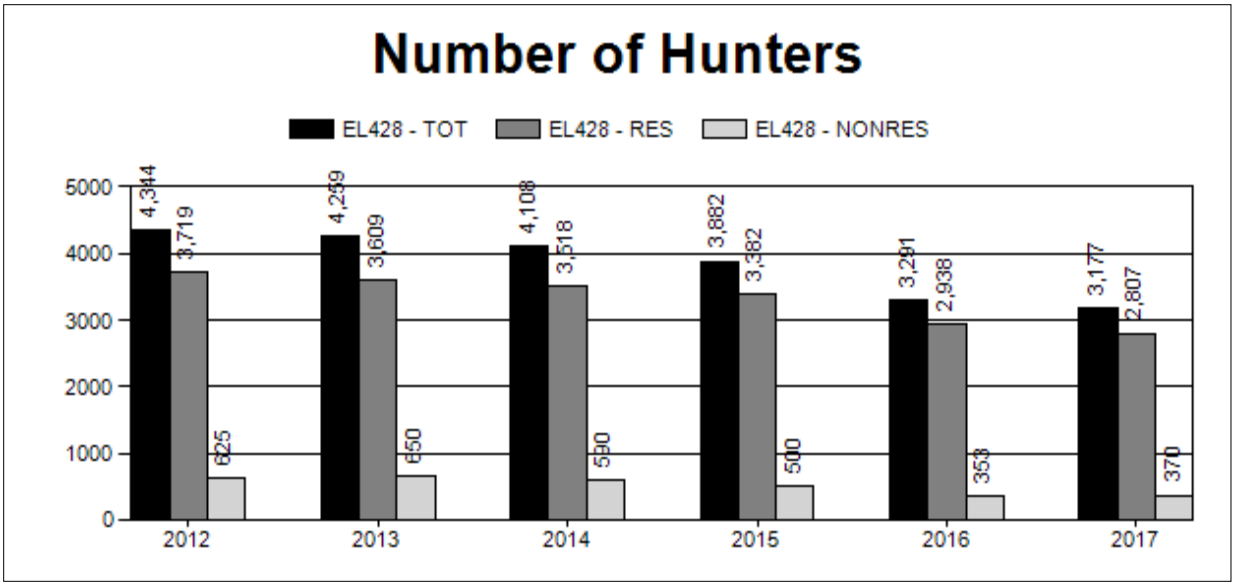
Model Date: 03/04/2018

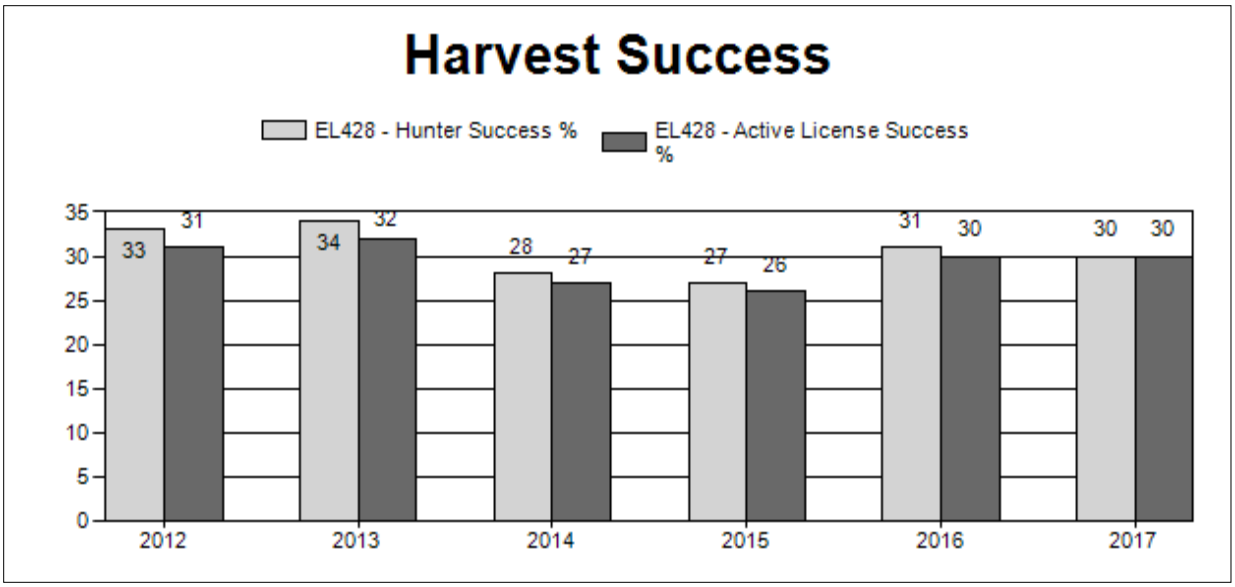
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

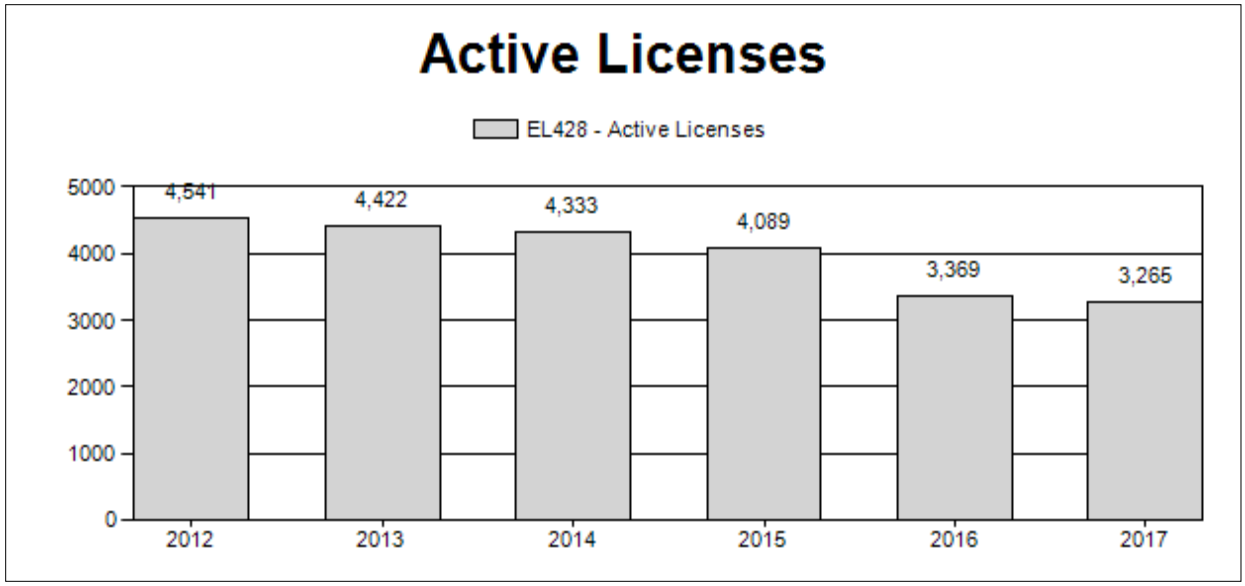
	JCR Year	Proposed
Females ≥ 1 year old:	7.34%	8.26%
Males ≥ 1 year old:	66.65%	70.85%
Total:	7.16%	10.20%
Proposed change in post-season population:	-3.4%	-3.3%

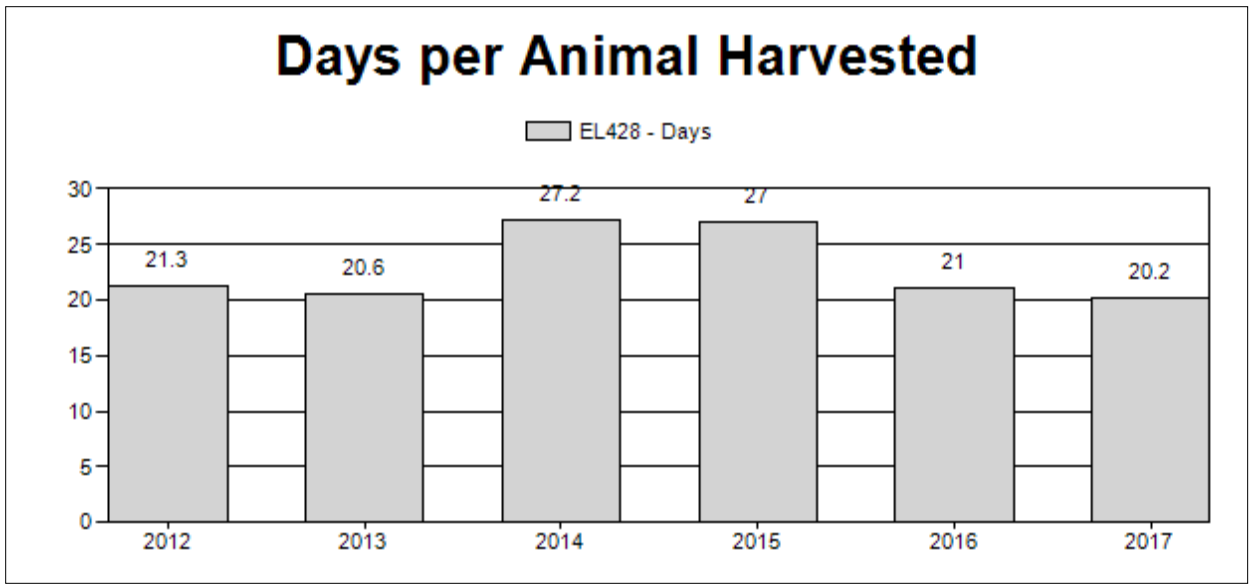


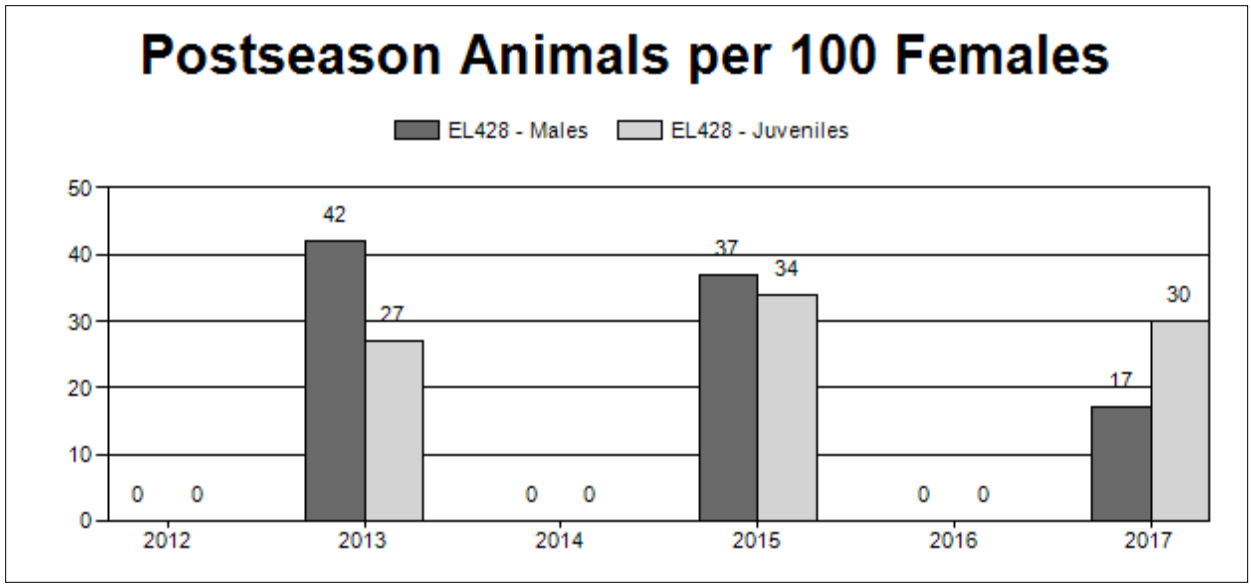

Harvest
EL428 - BULLS
EL428 - SPIKE
EL428 - FEMALES
EL428 - JUV
1600
1400
1200
1000
800
600
400
200
0
490
71
771
95
1,427
461
159
650
158
1,428
413
86
546
118
1,163
456
98
385
117
1,056
499
126
284
102
1,011
529
122
264
68
968
2012
2013
2014
2015
2016
2017


Number of Hunters
EL428 - TOT
EL428 - RES
EL428 - NONRES
5000
4000
3000
2000
1000
0
4,344
3,719
625
4,259
3,609
650
4,108
3,518
590
3,882
3,382
500
3,291
2,938
353
3,177
2,807
370
2012
2013
2014
2015
2016
2017


Harvest Success
EL428 - Hunter Success %
EL428 - Active License Success %
35
30
25
20
15
10
5
0
33
31
34
32
28
27
27
26
31
30
30
30
2012
2013
2014
2015
2016
2017


Active Licenses
EL428 - Active Licenses
5000
4000
3000
2000
1000
0
4,541
4,422
4,333
4,089
3,369
3,265
2012
2013
2014
2015
2016
2017


Days per Animal Harvested
EL428 - Days
30
25
20
15
10
5
0
21.3
20.6
27.2
27
21
20.2
2012
2013
2014
2015
2016
2017


Postseason Animals per 100 Females
EL428 - Males
EL428 - Juveniles
50
40
30
20
10
0
0
0
42
27
0
0
37
34
0
0
17
30
2012
2013
2014
2015
2016
2017

2018 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	100	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	Nov. 11		General	Antlerless elk
104	6	Oct. 15	Nov. 30	200	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 2017
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
2017 Postseason Population Estimate: ~ 3,874
2018 Proposed Postseason Population Estimate: ~ 3,687

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 rare. Elk comingling with livestock during winter is rare in limited areas but is considered a potential issue. Limited past problems have typically been dealt with if the Department was notified. The area has been added to the Brucellosis surveillance area. Even though the area has very low brucellosis prevalence in elk this adds additional concern over elk and cattle comingling specifically on the west side of the herd unit. Summer damage is rare. Significant efforts have been made by field personnel to alleviate potential conflicts. Perceived reduction in livestock forage due to elk grazing is an issue that can be brought up but in not biologically substantiated.

In the last six hunting seasons hunters commonly complain that elk numbers are down significantly and they were too low for their standards. However, we were over the set objective until 2016. This herd 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 aggressive harvest strategies and attempts to get down to objective we were successful and the population was at the objective. In 2016 we backed off on harvest and the population is again over objective. Hunters are largely unhappy with the recent 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 500-700 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 2017 and into 2018 has been highly variable. In the early part of 2017 the winter was harsh with high snow loads and cold temperatures. Snow persisted late into early summer in the higher elevations. This provided ample moisture for forage production. In July and August conditions dried considerably and into late December fairly low precipitation was received. The winter of 2017/18 was very mild with low snow and relatively warm temperatures. It has been a welcome break for elk and animals are currently in excellent condition. The winter of 2016/17 turned out to be severe and may have even had increased impacts to calf and adult survival. This is unusual for elk in this area but increased winter mortalities were noted in the field.

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

Field Data
Intensive helicopter based elk flights were performed in Hunt areas 102, 103 and 104 every other year from 2012 to 2018. Idaho's sightability model correction was used for these four surveys. In the 2018 survey 3,740 elk were observed. Flight conditions were favorable and elk were primarily in very large groups. The sightability correction estimate was 3,774 elk. This is a very low correction. 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 all known 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 population estimates to create a total herd unit estimate.

Recent post-season bull:cow ratios have been excellent. However, during the 2018 survey snow conditions were highly unusual creating a situation where we were unable to find many bull groups. This is a common phenomenon in many elk herds but does not usually happen in the West Green River Herd. Due to this bad data point we decided to use average bull:cow ratios for modeling purposes. Calf ratios have fluctuated recently but are still reasonable. Harvest was decreased on this herd markedly in 2016 in an effort to keep the herd from going below objective. This has worked and the herd is again slightly above objective. This is mainly due to high numbers in the western side of the herd unit. Antlerless harvest will need to be increased on that segment to get back within the objective range. 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 will not be conducted until post season 2019. This is a 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 reduced this population to objective in 2016. 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 2018 we are recommending an increase in antlerless license allocation since the estimates indicate we are once again above the population objective. The current elk population level is still unpopular with the hunting public who feel elk numbers are too low.

Population

The West Green River elk model is comprised of data from Hunt Areas 102, 103 and 104 only. Hunt Area 105 is left out due to a different hunting season structure, sub-objective and survey methodology. The post season 2017 population model estimate is 3,713 elk with the population trending downward. The TSJ,CA, MSC model was selected due to the low AICc score and its good fit with the data. That model accuracy is obviously questionable since we observed 3,740 elk on flights. For this reason we are reporting the sightability estimate of 3,774 instead. The herd estimate published will be plus 100 to account for unknown numbers of elk residing in Hunt Area 105. The model cannot reconcile the current population level with bull harvest estimated in this herd. We do not know if this is a data issue or a model issue but it has been the case for over 6 years and gives us concern over the validity of the model.

The addition of aerial population estimates every other year since 2012 has been very valuable to check the status of the herd and this data is more useful than the model. With this continuing into the future it is likely that we can provide good population estimates and track the trend of

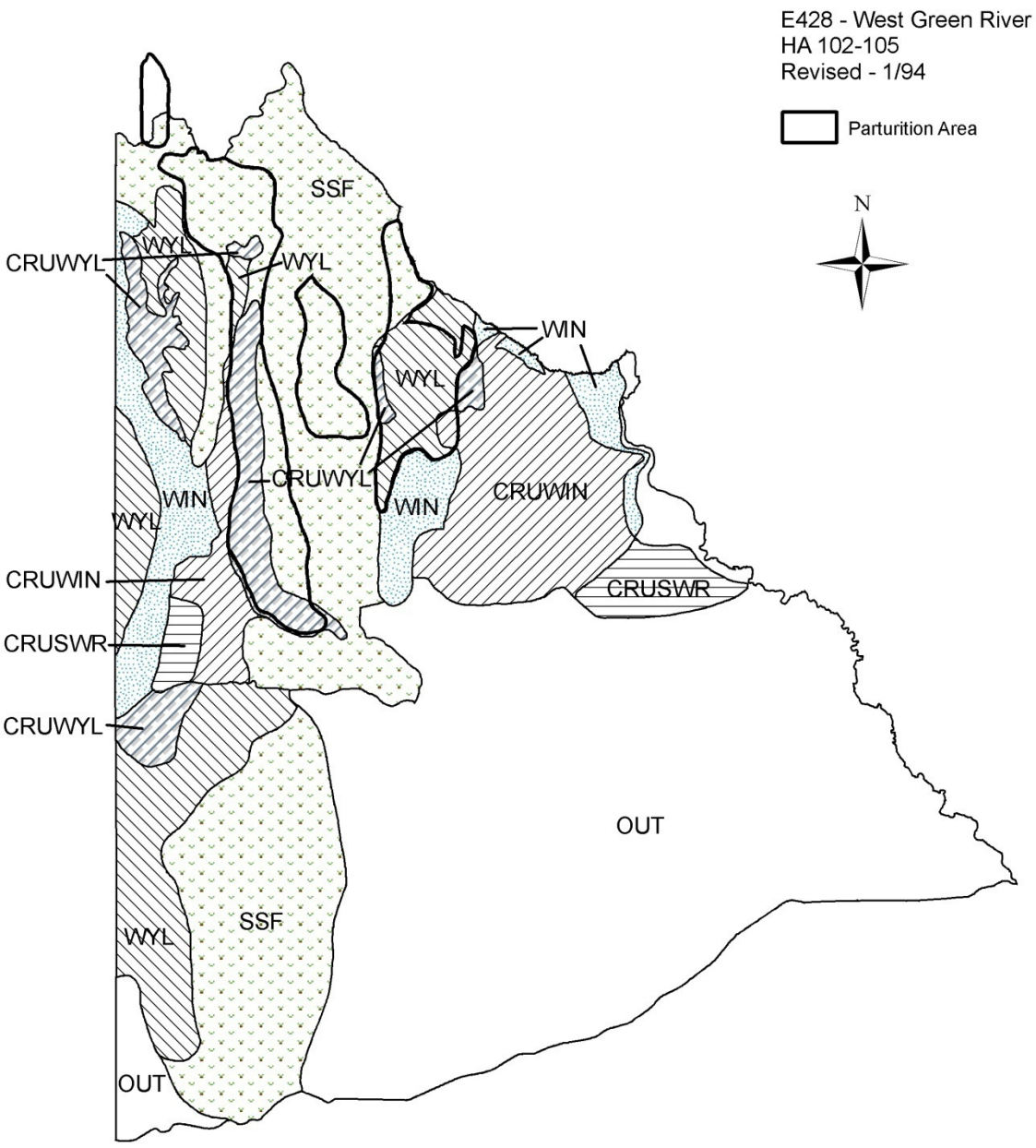
this population. Without this, the model would not function and it would be unclear if our current harvest levels can be sustained or if we are on the right management track relative to objective.

Due to documented interchange with adjacent herd units, models generated for this herd should be used with 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.

Management Summary

For 2018 season setting we will increase antlerless harvest on the west side of the herd unit to try and bring that portion of the herd down and reach the overall objective. We are planning hunt timing and license management to increase antlerless harvest. The harvest system in place should help get this herd back to objective in the near future. This will need to be evaluated carefully each year to avoid taking this population below objective.

During the winter of 2016/17 we 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 were covered in deep snow for the better part of 2 months. Deep crusted snows and extremely cold temperatures pushed elk long distances to very low elevations. This created conflicts in several places. Elk were getting hit on highways and railroad tracks. Elk were down on private ranches where cattle are fed in the winter. Game Wardens spent considerable time addressing problem areas. Elk had to be pushed into places where they cause less problems. In some extreme cases we had to “bait” elk away from feed lines to keep them out of problems. This was 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
SSF
WYL
OUT

2017 - JCR Evaluation Form

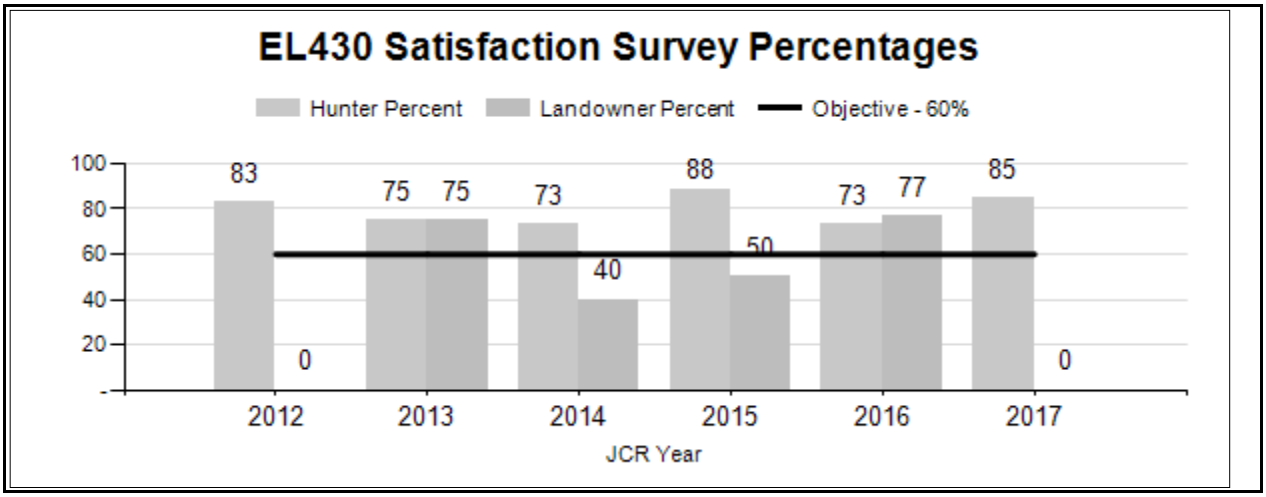
SPECIES: Elk
PERIOD: 6/1/2017 - 5/31/2018

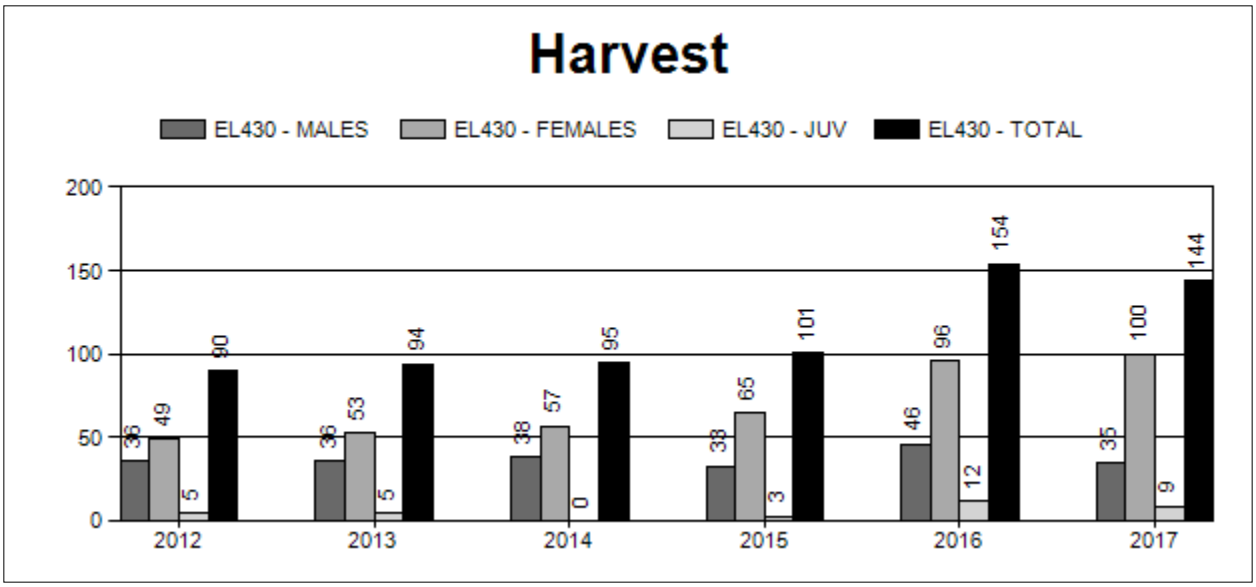
HERD: EL430 - PETITION

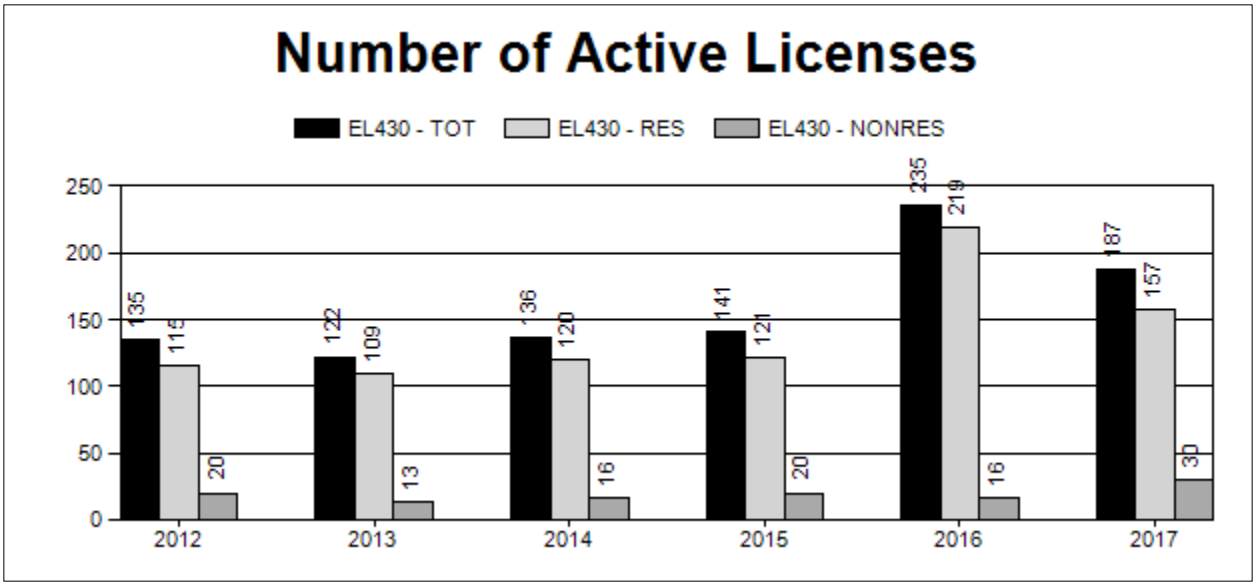
HUNT AREAS: 124
PREPARED BY: SAM STEPHENS

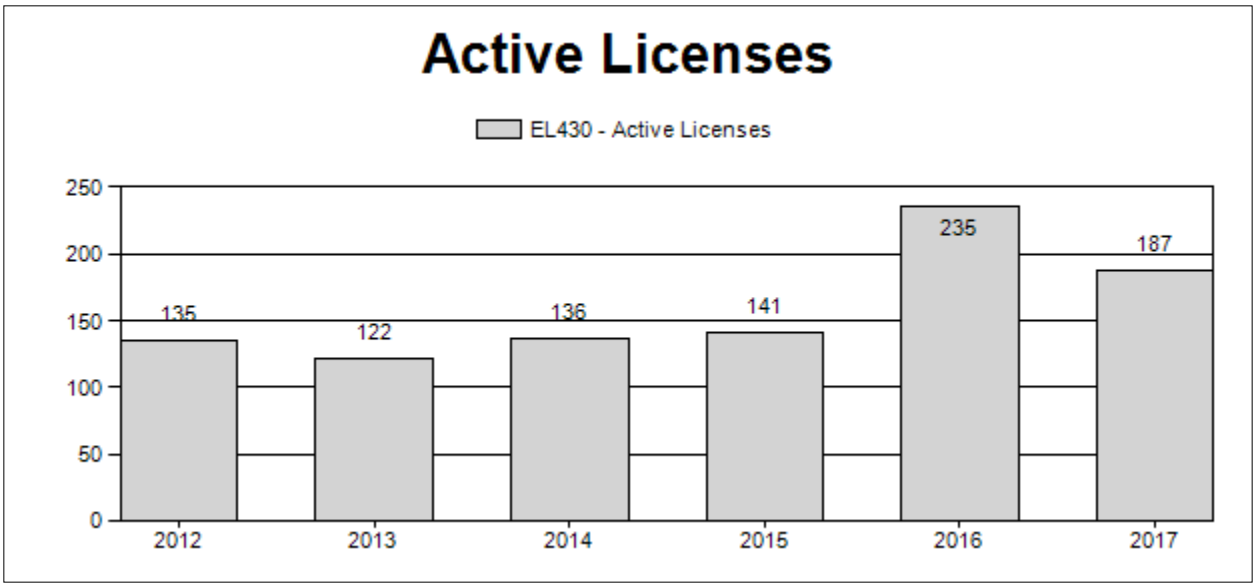
	2012 - 2016 Average	2017	2018 Proposed
Hunter Satisfaction Percent	78%	78%	80%
Landowner Satisfaction Percent	62%	80%	75%
Harvest:	107	144	150
Hunters:	154	187	197
Hunter Success:	69%	77%	76 %
Active Licenses:	154	187	197
Active License Success:	69%	77%	76 %
Recreation Days:	1,132	1,257	1,275
Days Per Animal:	10.6	8.7	8.5
Males per 100 Females:	0	0	
Juveniles per 100 Females	0	0	

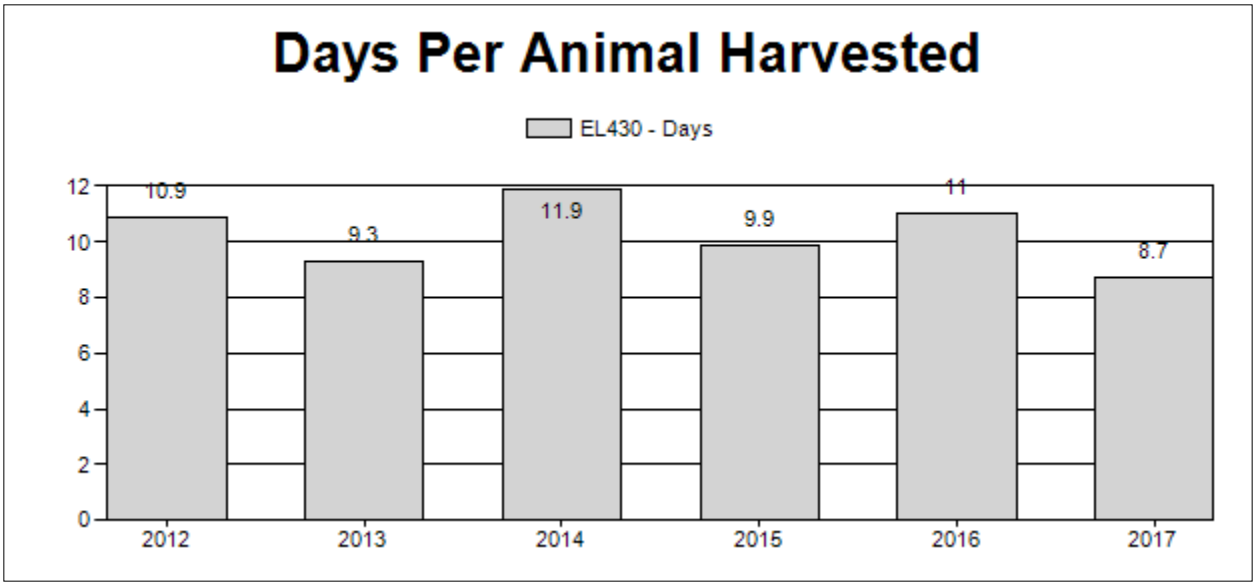
Satisfaction Based Objective	60%
Management Strategy:	Recreational
Percent population is above (+) or (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0




Harvest
EL430 - MALES
EL430 - FEMALES
EL430 - JUV
EL430 - TOTAL
200
150
100
50
0
36
49
5
90
36
53
5
94
38
57
0
95
33
65
3
101
46
96
12
154
35
100
9
144
2012
2013
2014
2015
2016
2017


Number of Active Licenses
EL430 - TOT
EL430 - RES
EL430 - NONRES
250
200
150
100
50
0
135
115
20
122
109
13
136
120
16
141
121
20
235
219
16
187
157
30
2012
2013
2014
2015
2016
2017


Active Licenses
EL430 - Active Licenses
250
200
150
100
50
0
135
122
136
141
235
187
2012
2013
2014
2015
2016
2017


Days Per Animal Harvested
EL430 - Days
12
10
8
6
4
2
0
10.9
9.3
11.9
9.9
11
8.7
2012
2013
2014
2015
2016
2017

2018 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	50	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	
Herd Unit Total	1	+10
	4	

Management Evaluation

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

Management Strategy: Special

2016 Hunter Satisfaction Estimate: 78%

2017 Landowner Satisfaction Estimate: 80%

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

Most Recent 3-year Running Average Landowner Satisfaction Estimate: 70%

Most Recent 3-year Running Average Tooth Age: 7.1

Currently the average bull elk tooth age, landowner satisfaction, and hunter satisfaction indicates that we are meeting our management objective. The current management objective was set in 2013 and was set as an alternative objective of landowner and sportsmen satisfaction along with a bull quality measurement using tooth age of harvested bulls. Our proposal is to maintain cow harvest across the herd unit with a liberal late season harvest. Bull harvest is proposed to remain highly limited to maintain antler quality but with a marginal increase in licenses to account for a growing herd and meeting management objectives.

Herd Unit Issues

The Petition elk herd is a small highly mobile elk herd spread over a large area. A great deal of interchange occurs with Colorado and hunt area 100, which makes meaningful data collection and population estimation difficult. There are three issues for the herd; possible competition with mule deer in the South Rock Springs and Baggs Deer Herds, competition with wild 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 and southern portions of this herd (overlap with deer areas 100&101). The South Rock Springs Mule Deer Herd (hunt area 101) 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 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 definitely negatively impact both herbaceous plants and shrubs in this area.

The popularity of this herd has increased due to the reputation for trophy bulls. However, overall antler quality was down from previous years, which can likely be attributed to a decrease in precipitation and subsequent decrease in forage production.

Weather

Dry weather and decreased precipitation persisted through the summer of 2017 and into the winter. The annual moisture for the herd unit between October 2016 and September 2017 amounted to only 9.88 inches of precipitation, a marginal 1.89 of which was received during the growing season. Current moisture levels within the Petition Herd unit continue to be below average. If drought conditions persist it will likely have deleterious effects on antler growth in 2018.

Field Data

No population data is currently collected for this herd which negatively influences management. It is likely elk numbers change daily in this herd given emigration and immigration of elk to and from Colorado. 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 = 10) yield an average age of 7.7 (range 6.5 to 10.5). Combined with 2015 and 2016 we have a 3-year average of a little over 7.1. An issue with the tooth age sample is that the vast majority of hunters who are interested in the age of their animals typically have a proclivity for large antlers. This could be skewing the data towards an older average age.

Sportsmen satisfaction in this herd is high with 85% of hunters "satisfied or very satisfied" with their overall hunting experience.

Landowner satisfaction was collected through personal contacts either via phone or face to face meetings. Ten landowners were contacted by 2 WGFD managers. eight of which 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 level of elk numbers in the unit.

Harvest Data and Population Indications

Hunter success increased slightly this year to 77%, which is not representative of the type 1 license but is mainly driven by a lower success rate on the type 4 license (74%). This may indicate that it is tougher to find a cow within the unit, but likely suggests the 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 area at 100 cows and nine calves harvested.

Management Summary

It is important that 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 land owners and the Petition elk herd and strong support from sportsmen hunting elk within the herd. Due to the low number of elk in this unit we feel having flexibility in the

harvest numbers between years is intrinsic to sound population management. The overlap of these elk within the xeric habitats of two mule deer herd units has not been shown to be adverse to those deer but may be a point of contention in the future leading to specific harvest in that portion of the herd unit. An increase in average age of bull harvested and a higher landowner satisfaction rate has lead to our current management strategy to propose increasing bull licenses in the area to allow for increased chances to draw the highly coveted opportunity.